Appendix A

Notices of Preparation (2019 and 2021) and Comments

2019 Notice of Preparation and Comments

Notice of Preparation

Date: July 8, 2019

To: Responsible Agencies, Interested Parties, and Organizations

Subject: Notice of Preparation of an Environmental Impact Report for the South Industrial Priority Area Specific Plan project, Fresno, California

Lead Agency: City of Fresno

Contact:
Jennifer Clark, Director
c/o Marty Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
Jennifer.Clark@fresno.gov
Marty.Sorge-Jauss@fresno.gov

Comment Period: July 8, 2019 to August 6, 2019

PURPOSE OF NOTICE

The City of Fresno is the lead agency responsible for preparation of an Environmental Impact Report (EIR) for the proposed South Industrial Priority Area Specific Plan project (proposed project), located in the City of Fresno. Pursuant to provisions of the California Environmental Quality Act (CEQA), the City has prepared this Notice of Preparation (NOP) for the proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

The EIR will provide an evaluation of potential environmental impacts associated with the proposed project. A brief project description, location, and potential environmental issue areas that may be affected by development of the proposed project are described below. The EIR will evaluate the potentially significant environmental impacts of the proposed project, on both a direct and cumulative basis, identify mitigation measures that may be feasible to lessen or avoid such impacts, and identify alternatives to the proposed project.

PUBLIC REVIEW PERIOD

This NOP is being circulated for public review and comment for a period of 30 days beginning July 8, 2019. The City will hold a public scoping meeting to inform interested parties about the proposed project and to provide agencies and the public with an opportunity to provide comments on the scope and content of the EIR. The meeting time and location is as follows:

City of Fresno, City Council Chambers
2600 Fresno Street
Fresno, CA 93721
Monday, July 15, 2019
Time: 5:30 to 7:30 PM

Copies of the NOP may be reviewed at the following locations:

- Fresno County Public Library during library hours;
- City of Fresno, 2600 Fresno St, Room 3065 between 7:00 a.m. and 6:00 p.m.; or
- Online at: https://www.fresno.gov/cityclerk/notices-publications/

Your views and comments on how the project may affect the environment are welcomed. Please contact Jennifer Clark if you have any questions about the environmental review process for the proposed project.

PROJECT LOCATION

The approximately 6,150-acre planning area, located in the southern portion of the City, is largely comprised of land within the City limits. However, as shown in Figures 1 and 2, the planning area also includes land within the City's Sphere of Influence (SOI) to the north, east, and west, and (as an option) land outside of the City's SOI to the south. Pursuant to General Plan Policy LU-1-g, the City's SOI boundary can be expanded to include land located proximate to and south of the SOI boundary between State Route 41 and State Route 99 for the purposes of siting a maintenance yard for the California High Speed Train project and related industrial and employment priority areas.

PROJECT DESCRIPTION

The City of Fresno is preparing the South Industrial Priority Area Specific Plan to facilitate opportunities for economic growth, job creation, and promote development of underutilized lands within the planning area. The proposed project would establish a planning framework to facilitate and guide future development within the 6,150-acre planning area through the year 2040. The planning framework is comprised of previously adopted goals and policies from the following City planning documents:

- Roosevelt Community Plan (1992),
- City of Fresno General Plan (2014), and
- Southwest Fresno Specific Plan (2017).

As noted above, the EIR will evaluate potential impacts associated with development within the plan area, consistent with the proposed specific plan, that may occur within the planning area through the year 2040. No land use/zoning designation changes or specific development projects are currently proposed as part of this EIR. Future development would be required to comply with the proposed specific plan, as well as existing General Plan Land Use designations and Zoning Districts within the planning area.

RESPONSIBLE AGENCIES

For the purposes of CEQA, the term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the project (CEQA Guidelines Section 15381). Discretionary approval may include such actions as issuance of a permit, authorization, or easement needed to complete some aspect of the proposed project. Responsible agencies may include, but are not limited to:

- California Department of Transportation (Caltrans),
- California State Water Resources Control Board (SWRCB),
- California Department of Fish and Wildlife (CDFW),
- Central Valley Regional Water Quality Control Board (CVRWQCB),
- County of Fresno,
- Fresno Local Agency Formation Commission (LAFCo), and
- San Joaquin Valley Air Pollution Control District (SJVAPCD).

AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will analyze the significant environmental effects associated with adoption and implementation of the proposed project. Specific areas of analysis will include the following topics based on Appendix G of the 2019 State CEQA Guidelines:

- Aesthetics
- Agricultural and Forestry Services
- Ai Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Cumulative Impacts

The EIR will also include a discussion of environmental justice issues, and identify and evaluate a range of reasonable alternatives to the proposed project.

SUBMITTING COMMENTS

Comments and suggestions as to the appropriate scope of analysis in the EIR are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the City's environmental project manager at the following address by 5:00 p.m. on August 6, 2019. Please include the commenter's full name and address.

Jennifer Clark, Planning Director
c/o Marty-Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
SIPA@fresno.gov

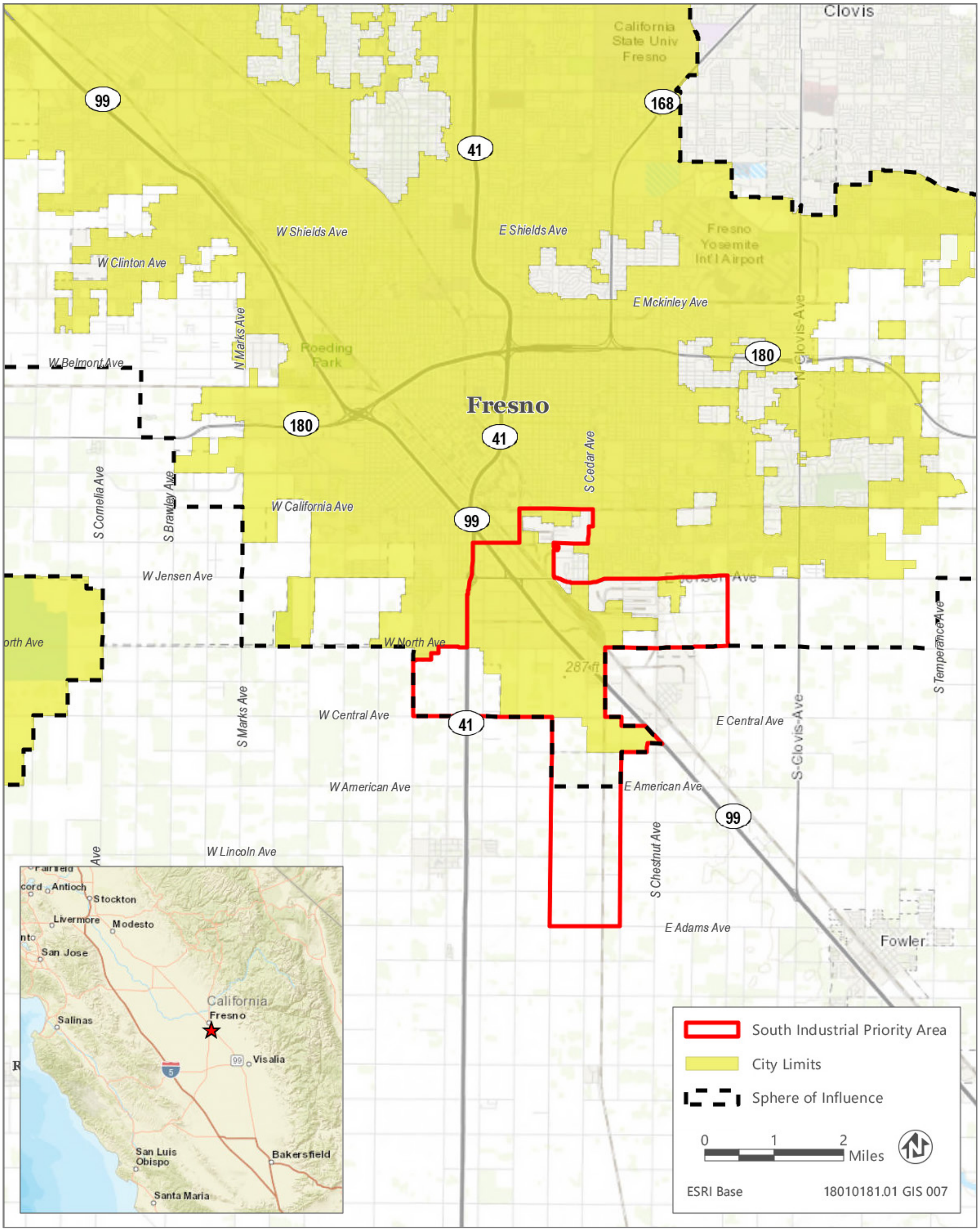


Figure 1 **Regional Location**

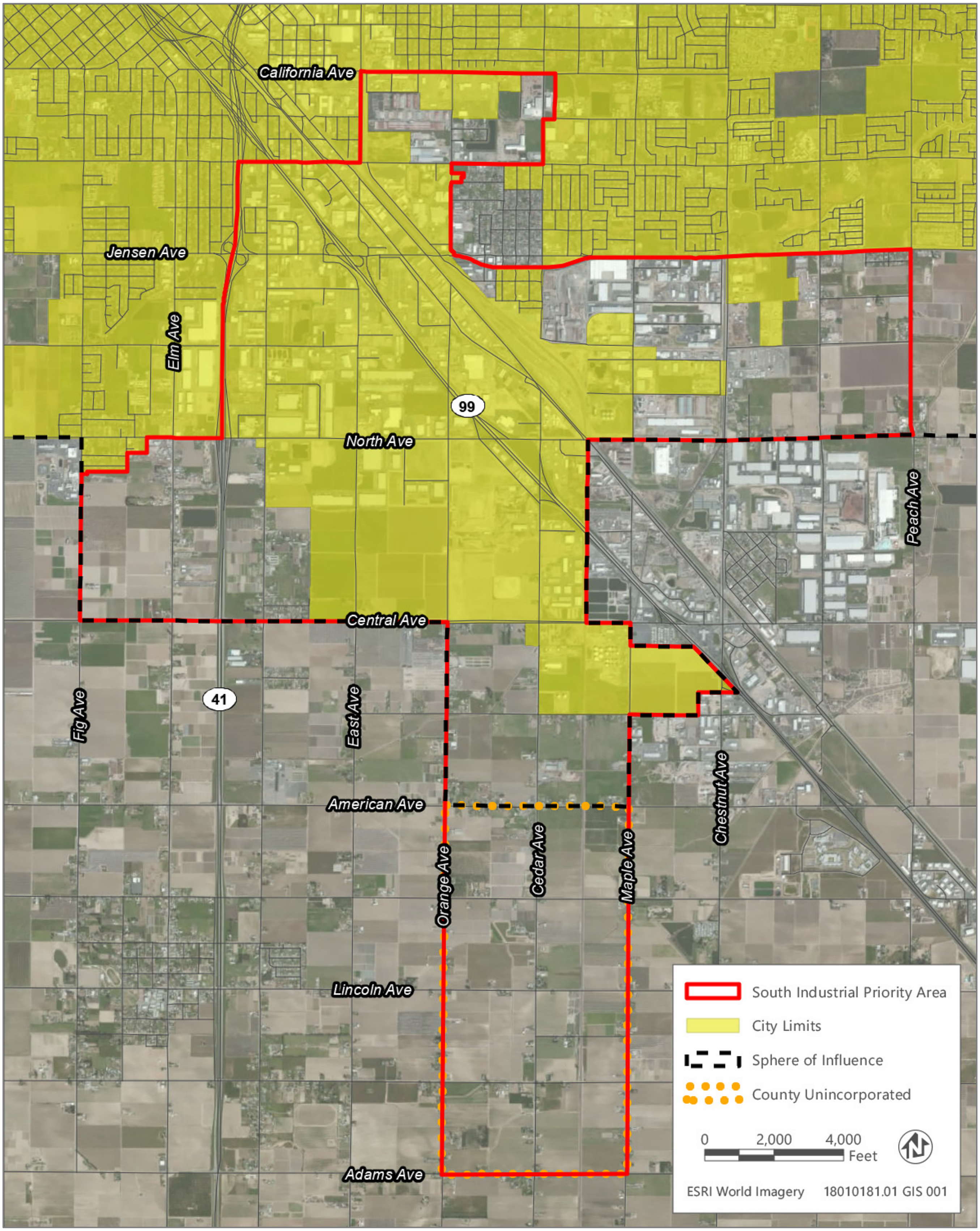


Figure 2 **Planning Area**

Table 1 NOP Comment Summary

Commenter/Date	Summary	Draft EIR Topic Area
Comments Received in Writing during 2019 Scoping Period (July 8, 2019 to August 6, 2019)		
Dirk Charley Dunlap Band of Mono Indians July 8, 2019	▸ The project is outside of the area of interest ▸ Recommends the City engage Table Mountain Rancheria, Santa Rosa Rancheria of Tachi Yokuts, and the Traditional Choinumni Tribe	▸ Tribal Cultural Resources
Karen Coletti Fresno County Library July 9, 2019	▸ No comment.	NA
Fresno County Department of Agriculture July 15, 2019	▸ Requests that the EIR consider how noise and dust generated from nearby agricultural activities will affect proposed development within the Plan Area ▸ Requests that the EIR acknowledge the Fresno County Right to Farm Ordinance (Sections 17.04.100 and 17.72.075)	▸ Agriculture and Forestry Resources
Gayle Totton Native American Heritage Commission July 23, 2019	▸ Recommends that the City engage in early consultation with California Native American tribes pursuant to Assembly Bill (AB) 52 and Senate Bill (SB) 18	▸ Cultural and Tribal Cultural Resources
Rohit Sharma Department of Conservation Division of Oil, Gas, and Geothermal Resources July 24, 2019	▸ Provide potential location of one abandoned oil and gas well ▸ Requests the developer/project owner consult with the Division prior to commencing work to uncover a known abandoned well ▸ Attachment 1, includes a well review report for the abandoned well	▸ Mineral Resources ▸ Hazards and Hazardous Materials
Monique Wilber Department of Conservation Division of Land Resource Protection July 30, 2019	▸ Requests that the EIR include information on potential farmland conversion that could result from project implementation, impacts on agricultural operations, cumulative agricultural impacts, and proposed mitigation measures ▸ Suggests that the City consider the adoption of an agricultural land mitigation program	▸ Agriculture and Forestry Resources
Scott Lichtig Deputy Attorney General August 2, 2019	▸ Requests that the EIR accurately disclose, analyze, and mitigate all the potential impacts, including cumulative impacts, of future development on vulnerable communities residing within the South Industrial Specific Plan Area (SIPA) ▸ Provide a clear project description that adequately describes the actions of the project including the amount and type of development proposed ▸ Requests the EIR address compliance with AB 617 air quality improvement requirements ▸ Requests that the EIR include all feasible mitigation measures to avoid significant impacts ▸ Requests that the EIR analyze the whole of the project and avoid piecemealing	▸ Environmental Justice (Not an issue addressed under CEQA)) ▸ Project Description ▸ Air Quality ▸ Greenhouse Gas Emissions ▸ Mitigation Monitoring and Reporting Program

Table 1 NOP Comment Summary

Commenter/Date	Summary	Draft EIR Topic Area
Mariah C. Thompson California Rural Legal Assistance, Inc August 5, 2019	▶ Request that the EIR analyze impacts resulting from population growth, distribution, and concentration. ▶ Requests that the EIR analyze impacts resulting from job creation and employment ▶ Requests that the EIR analyze housing needs outside of the SIPA ▶ Requests that the EIR analyze social and economic impacts of the project ▶ Requests the preparation of a Water Supply Assessment ▶ Requests that the EIR analyze Vehicle Miles Traveled (VMT) ▶ Requests that the EIR analyze growth inducing impacts and cumulative impacts ▶ Requests that the EIR link the project's air quality impacts to human health consequences ▶ Requests that the EIR consider environmental justice issues	▶ Population and Housing ▶ Utilities and Service Systems ▶ Transportation ▶ Air Quality ▶ Greenhouse Gas Emissions ▶ Other Statutory Requirements (Growth Inducing) ▶ Cumulative Impacts ▶ Environmental Justice (Not a CEQA related issue)
Tom Thomas Community Meeting Comment Card August 6, 2019	▶ Inquires about utility projects along Central Frontage Road ▶ Requests that the City notify residents prior to initiating projects	▶ CEQA noticing
Rosa DePew Community Meeting Comment Card August 6, 2019	▶ Requests that the City notify residents about community meetings	▶ CEQA noticing
Terry Hirschfield Community Meeting Comment Card August 6, 2019	▶ Requests that the EIR analyze air pollution from vehicles, soil/dust, health impacts, and quality of life issues ▶ Requests that the EIR include mitigation and prohibit facilities that could result in increased health risks ▶ Requests that the project include buffer walls to screen development, air filters, green space, air quality monitors, and reroute freight vehicles	▶ Air Quality ▶ Greenhouse Gas Emissions ▶ Transportation ▶ Project Description ▶ Mitigation Monitoring and Reporting Program
Jeff Roberts Community Meeting Comment Card August 6, 2019	▶ Inquires about the amount of agricultural land within the SIPA ▶ Inquires about biological resources within the SIPA ▶ Inquires about a proposed urban land use pattern within the SIPA	▶ Agriculture and Forestry Resources ▶ Biological Resources ▶ Land Use and Planning
David Gomez August 6, 2019	▶ Expressed concern about traffic impacts and access during construction	▶ Transportation
Wendell Lum Fresno Metropolitan Flood Control District August 6, 2019	▶ Requests that the project comply with the adopted Storm Drainage and Flood Control Master Plans ▶ Requests that grading be designed consistent with storm drains and provide surface flow easements or covenants ▶ States that development proposals will require Fresno Metropolitan Flood Control District (FMFCD) review and approval ▶ States that the SIPA is outside the FMFCD services area ▶ Upon City request, FMFCD is willing to meet with City staff to discuss feasibility and requirements for providing service to the SIPA	▶ Hydrology and Water Quality ▶ Utilities and Service Systems

Table 1 NOP Comment Summary

Commenter/Date	Summary	Draft EIR Topic Area
Leadership Council August 6, 2019	▶ Expresses concern about the lack of community engagement during the planning process ▶ Requests that the City engage in meaningful public participation as part of the SIPA planning process ▶ Requests that the EIR include an accurate baseline of existing environmental conditions ▶ Requests that the EIR accurately describe existing sensitive land uses within the SIPA ▶ Requests that the EIR include project alternatives that would reduce project impacts on vulnerable populations and disadvantaged neighborhoods within and surrounding the SIPA ▶ Requests that the EIR be consistent with AB 617 and AB 686 ▶ Requests that the EIR analyze impacts to housing, water supply, traffic safety, public health, utilities, and construction ▶ Attachment 1, includes information on Department of Justice letterhead about environmental justice and the CEQA process ▶ Attachment 2, includes a letter from the Leadership Council to the Fresno City Council dated November 27, 2018	▶ Public Participation ▶ Project Description (Baseline) ▶ Biological Resources ▶ Alternatives ▶ Air Quality ▶ Greenhouse Gas Emissions ▶ Population and Housing ▶ Transportation ▶ Utilities ▶ Hazards and Hazardous Materials
John Maloney Alin Window Systems August 6, 2019	▶ Expresses support for the project	▶ Not an issue addressed under CEQA.
Mike Betts August 6, 2019	▶ Expresses support for the project	▶ Not an issue addressed under CEQA.
Rosa DePew et al. August 6, 2019	▶ Requests that the City engage in meaningful public participation as part of the SIPA planning process ▶ Requests that the EIR analyze cumulative impacts, air quality impacts, noise, light and glare, safety, transportation, water quality, and septic system failure ▶ Requests that the EIR include mitigation that prohibits facilities that would create serious health risks, reroute truck trips, create sidewalks, include urban greening, and provide air monitors and filters for schools and private residences	▶ Public Participation ▶ Cumulative impacts ▶ Air Quality ▶ Greenhouse Gas Emissions ▶ Aesthetics ▶ Noise ▶ Hazards and Hazardous Materials ▶ Transportation ▶ Hydrology and Water Quality ▶ Geology and Soils

Table 1 NOP Comment Summary

Commenter/Date	Summary	Draft EIR Topic Area
Arnaud Marjollet San Joaquin Valley Air Pollution Control District August 9, 2019	▶ Requests that the SIPA Specific Plan incorporate policies that will reduce or mitigate VMT impacts ▶ Requests that the Air Quality section analyze construction and operational criteria air pollutants, use CalEEMod to model emissions, and discuss the feasibility of implementing a Voluntary Emission Reduction Agreement (VERA). ▶ The Air Quality section should analyze nuisance odors, include a health risk screening/assessment, and dispersion modeling to determine if emissions increases from the project will contribute to a violation of ambient air quality standards. ▶ Includes a list of recommended policies and mitigation ▶ Recommends that the City monitor the San Joaquin Valley Air Pollution Control District AB617 process and consider community-suggested opportunities to bring additional resources and emissions mitigation to the SIPA	▶ Air Quality
Fresno Business Council 2019	▶ Expresses support for the project	Not an issue addressed under CEQA.
David Padilla Caltrans August 12, 2019	▶ No comments	NA

From: SIPA <SIPA@fresno.gov>
Sent: Monday, July 8, 2019 9:48 AM
To: DIRK CHARLEY; SIPA
Subject: RE: Notice of Preparation for an Environmental Impact Report for the proposed South Industrial Priority Area Specific Plan (www.fresno.gov/SIPA)

Good Morning Mr. Charley,

Thank you for your email.

Rodney Horton, Planner
Planning & Development Department

From: DIRK CHARLEY [mailto:dcharley2016@gmail.com]
Sent: Monday, July 08, 2019 9:32 AM
To: SIPA
Cc: Dirk Charley
Subject: Re: Notice of Preparation for an Environmental Impact Report for the proposed South Industrial Priority Area Specific Plan (www.fresno.gov/SIPA)

Dear Rodney Horton,
On behalf of the Dunlap Band of Mono Indians Tribe I am providing this official response. This project is outside our area of interest. We will not be requesting consultation nor providing comments. We recommend you continue to engage the following tribes: Table Mountain Rancheria, Santa Rosa Rancheria of Tachi Yokuts and the Traditional Choinumni Tribe. Please write back to confirm receipt. Feel free to contact me if you have any questions or need additional information.

Respectfully submitted,

Dirk Charley
Tribal Secretary/Land Management Ordinance Officer
Dunlap Band of Mono Indians
P.O. Box 14
Dunlap, Ca. 93621
(559) 554-5433

Sent from my iPhone

On Jul 8, 2019, at 1:00 AM, Rodney Horton <Rodney.Horton@fresno.gov> wrote:

> ***TO: All Responsible Agencies, Interested Parties, and Organizations,***
>
> I am pleased to provide you with an electronic copy of the Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the proposed South Industrial Priority Area (SIPA) Specific Plan. The City of Fresno is the lead agency responsible for preparation of an EIR for the proposed SIPA Specific Plan project, located in the City of Fresno. Pursuant to provisions of the California Environmental Quality Act (CEQA), the City has prepared this NOP for the

proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

The EIR will provide an evaluation of potential environmental impacts associated with the proposed project. A brief project description, location, and potential environmental issue areas that may be affected by development of the proposed project are described below. The EIR will evaluate the potentially significant environmental impacts of the proposed project, on both a direct and cumulative basis, identify mitigation measures that may be feasible to lessen or avoid such impacts, and identify alternatives to the proposed project. You may use the following methods:

Mail:
City of Fresno – Planning & Development Department
Attn: Jennifer K. Clark, AICP, HDFP
2600 Fresno Street, Suite 3065
Fresno, CA 93721-3604

Electronic mail:
SIPA@fresno.gov

Also, on Monday, July 15, 2019, the City of Fresno will conduct a public scoping meeting to solicit input and comments from public agencies and the general public on the proposed project and scope of the EIR. This meeting will be held at Fresno City Hall, 2nd Floor, 2600 Fresno Street, Fresno, CA 93721, from 5:30 PM to 7:30 PM. Representatives from the City of Fresno and the EIR consultant will be available to address questions regarding the EIR process and scope. Members of the public may provide written comments throughout the meeting.

For more information and to view the draft Specific Plan – please visit www.fresno.gov/SIPA. If you have any questions regarding the scoping meeting, contact the project team at SIPA@fresno.gov or (559) 621-8003.

In Public Service,

Rodney L. Horton, MPA
Planner III
Planning and Development Department
Rodney.Horton@fresno.gov
559.621.8181

Disclaimer:

Please be advised, in accordance with the applicable provisions of the Brown Act, all forms of community feedback and public input that is provided to the City of Fresno will be made available to the general public.

<EIR_NOP_FINAL.pdf>

INTER OFFICE MEMO

Fresno County Public Library

Date: July 9, 2019

To: Jennifer K. Clark, AICP, HDFP

From: Karen Coletti, Executive Secretary

Subject: Notice of Preparation of an Environmental Impact Report for the South Industrial Priority Area Specific Plan project.

There is no comments.

Comments from the Fresno County Department Agriculture: July 15, 2019

APPLICANT: City of Fresno South Industrial Priority Area Specific Plan

Along the boundary of Fig Ave, Central Ave, Orange Ave, Adams Ave and Maple Ave of the plan there are properties which are existing agricultural operations. There is always the concern that normal agricultural practices may affect residents, schools, commercial sites or business employees. Tractor activity will create noise and dust, while crops will have scheduled pesticide treatments. Both must be taken in to account by the City of Fresno.

The City of Fresno should acknowledge the Fresno County "Right-to-Farm" ordinance 17.04.100 and 17.72.075.

The Fresno County "Right to Farm" ordinance 17.04.100 and 17.72.075 shall be presented to applicant so that any necessary mitigation measures can be considered by any developer, resident, commercial site, or facility to minimize any potential discomfort or risk.

Fresno County Right-to-Farm Notice: "It is the declared policy of Fresno County to preserve, protect, and encourage development of its agricultural land and industries for the production of food and other agricultural products. Residents of property in or near agricultural districts should be prepared to accept the inconveniencies and discomfort associated with normal farm activities. Consistent with this policy, California Civil Code 3482.5 (right-to-farm law) provides that an agricultural pursuit, as defined, maintained for commercial uses shall not become a nuisance due to a changed condition in a locality after such agricultural pursuit has been in operation for three years."

Notice of Preparation

Date:	July 8, 2019
To:	Responsible Agencies, Interested Parties, and Organizations
Subject:	Notice of Preparation of an Environmental Impact Report for the South Industrial Priority Area Specific Plan project, Fresno, California
Lead Agency:	City of Fresno
Contact:	Jennifer Clark, Director c/o Marty Sorge-Jauss, Executive Assistant Development and Resource Management 2600 Fresno Street, Room 3065 Fresno, CA 93721 (559) 621-8003 Jennifer.Clark@fresno.gov Marty.Sorge-Jauss@fresno.gov
Comment Period:	July 8, 2019 to August 6, 2019

PURPOSE OF NOTICE

The City of Fresno is the lead agency responsible for preparation of an Environmental Impact Report (EIR) for the proposed South Industrial Priority Area Specific Plan project (proposed project), located in the City of Fresno. Pursuant to provisions of the California Environmental Quality Act (CEQA), the City has prepared this Notice of Preparation (NOP) for the proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

The EIR will provide an evaluation of potential environmental impacts associated with the proposed project. A brief project description, location, and potential environmental issue areas that may be affected by development of the proposed project are described below. The EIR will evaluate the potentially significant environmental impacts of the proposed project, on both a direct and cumulative basis, identify mitigation measures that may be feasible to lessen or avoid such impacts, and identify alternatives to the proposed project.

PUBLIC REVIEW PERIOD

This NOP is being circulated for public review and comment for a period of 30 days beginning July 8, 2019. The City will hold a public scoping meeting to inform interested parties about the proposed project and to provide agencies and the public with an opportunity to provide comments on the scope and content of the EIR. The meeting time and location is as follows:

> City of Fresno, City Council Chambers
> 2600 Fresno Street
> Fresno, CA 93721
> Monday, July 15, 2019
> Time: 5:30 to 7:30 PM

Copies of the NOP may be reviewed at the following locations:

- Fresno County Public Library during library hours;
- City of Fresno, 2600 Fresno St, Room 3065 between 7:00 a.m. and 6:00 p.m.; or
- Online at: https://www.fresno.gov/cityclerk/notices-publications/

Your views and comments on how the project may affect the environment are welcomed. Please contact Jennifer Clark if you have any questions about the environmental review process for the proposed project.

PROJECT LOCATION

The approximately 6,150-acre planning area, located in the southern portion of the City, is largely comprised of land within the City limits. However, as shown in Figures 1 and 2, the planning area also includes land within the City's Sphere of Influence (SOI) to the north, east, and west, and (as an option) land outside of the City's SOI to the south. Pursuant to General Plan Policy LU-1-g, the City's SOI boundary can be expanded to include land located proximate to and south of the SOI boundary between State Route 41 and State Route 99 for the purposes of siting a maintenance yard for the California High Speed Train project and related industrial and employment priority areas.

PROJECT DESCRIPTION

The City of Fresno is preparing the South Industrial Priority Area Specific Plan to facilitate opportunities for economic growth, job creation, and promote development of underutilized lands within the planning area. The proposed project would establish a planning framework to facilitate and guide future development within the 6,150-acre planning area through the year 2040. The planning framework is comprised of previously adopted goals and policies from the following City planning documents:

- Roosevelt Community Plan (1992),
- City of Fresno General Plan (2014), and
- Southwest Fresno Specific Plan (2017).

As noted above, the EIR will evaluate potential impacts associated with development within the plan area, consistent with the proposed specific plan, that may occur within the planning area through the year 2040. No land use/zoning designation changes or specific development projects are currently proposed as part of this EIR. Future development would be required to comply with the proposed specific plan, as well as existing General Plan Land Use designations and Zoning Districts within the planning area.

RESPONSIBLE AGENCIES

For the purposes of CEQA, the term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the project (CEQA Guidelines Section 15381). Discretionary approval may include such actions as issuance of a permit, authorization, or easement needed to complete some aspect of the proposed project. Responsible agencies may include, but are not limited to:

- California Department of Transportation (Caltrans),
- California State Water Resources Control Board (SWRCB),
- California Department of Fish and Wildlife (CDFW),
- Central Valley Regional Water Quality Control Board (CVRWQCB),
- County of Fresno,
- Fresno Local Agency Formation Commission (LAFCo), and
- San Joaquin Valley Air Pollution Control District (SJVAPCD).

AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will analyze the significant environmental effects associated with adoption and implementation of the proposed project. Specific areas of analysis will include the following topics based on Appendix G of the 2019 State CEQA Guidelines:

- Aesthetics
- Agricultural and Forestry Services
- Ai Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Cumulative Impacts

The EIR will also include a discussion of environmental justice issues, and identify and evaluate a range of reasonable alternatives to the proposed project.

SUBMITTING COMMENTS

Comments and suggestions as to the appropriate scope of analysis in the EIR are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the City's environmental project manager at the following address by 5:00 p.m. on August 6, 2019. Please include the commenter's full name and address.

Jennifer Clark, Planning Director
c/o Marty-Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
SIPA@fresno.gov

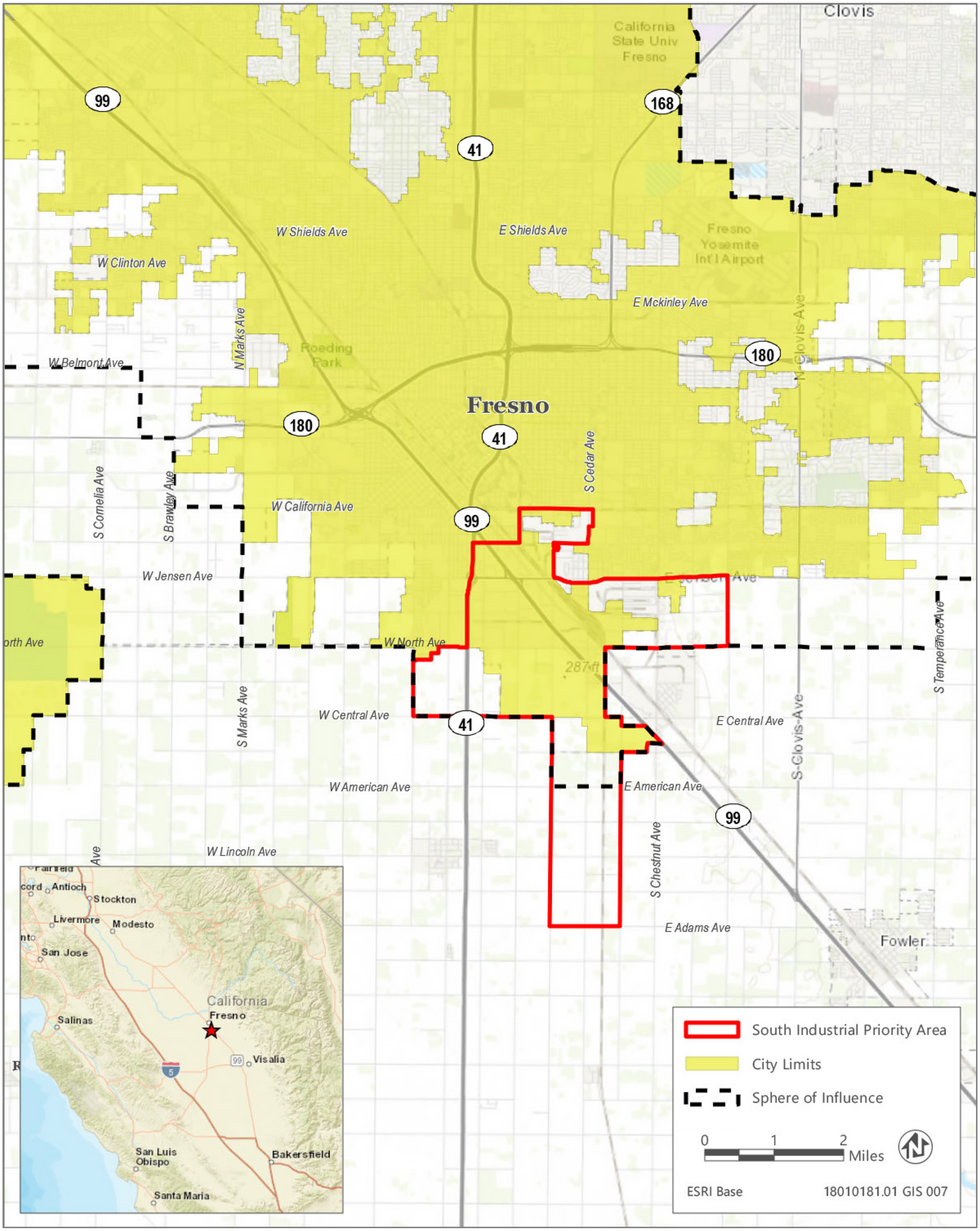


Figure 1 **Regional Location**

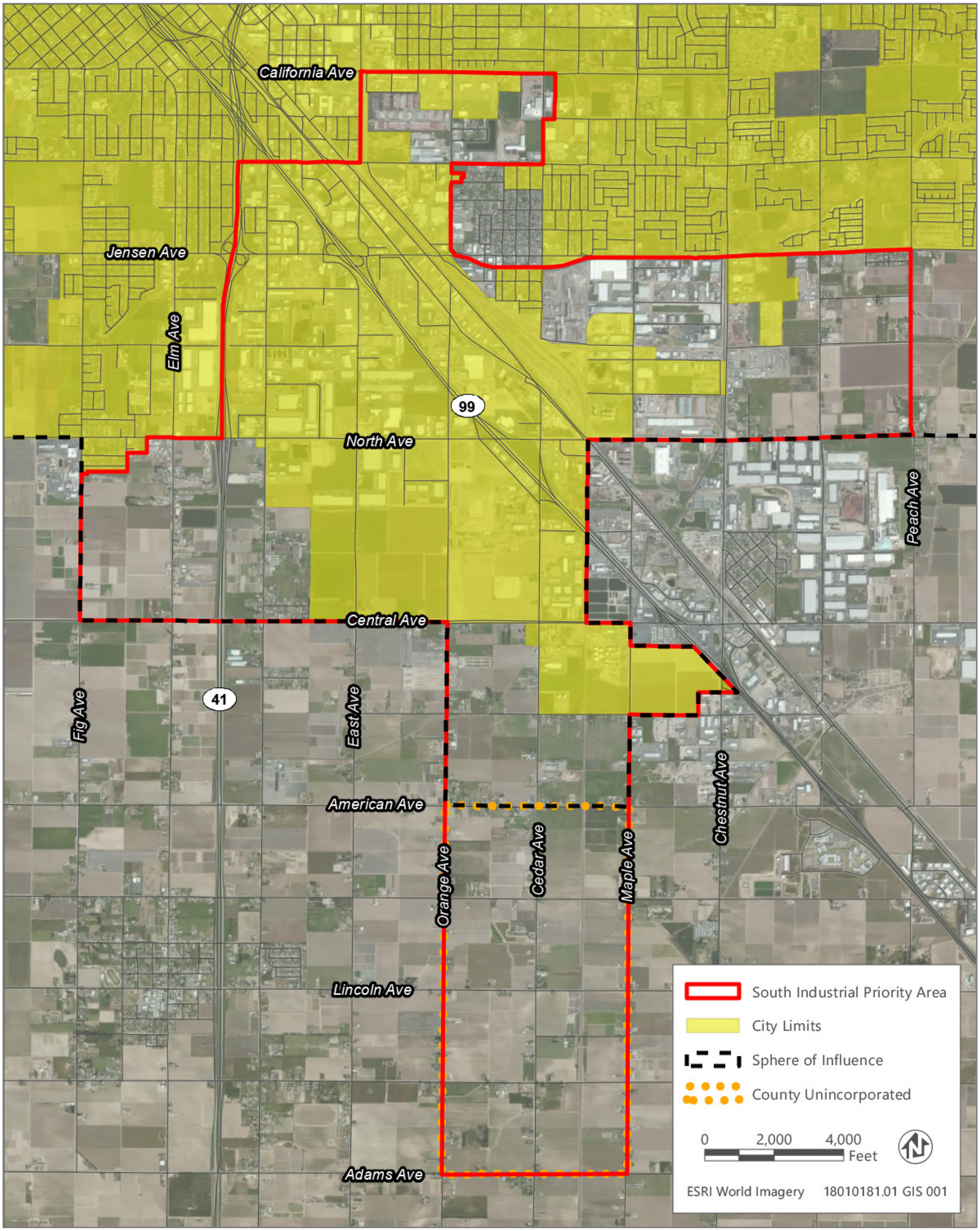


Figure 2 **Planning Area**

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

July 23, 2019

Jennifer Clark
City of Fresno
2600 Fresno Street
Fresno, CA 93721

RE: SCH# 2019079022 South Industrial Priority Area Specific Plan Project, Fresno County

Dear Ms. Clark:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    - **a.** A brief description of the project.
    - **b.** The lead agency contact information.
    - **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
    - **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
    - **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
    - **a.** Alternatives to the project.
    - **b.** Recommended mitigation measures.
    - **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
    - **a.** Type of environmental review necessary.
    - **b.** Significance of the tribal cultural resources.
    - **c.** Significance of the project's impacts on tribal cultural resources.
    - **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
    - **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
    - **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    - **a.** The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    - **b.** A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    - **a.** Avoidance and preservation of the resources in place, including, but not limited to:
        - **i.** Planning and construction to avoid the resources and protect the cultural and natural context.
        - **ii.** Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    - **b.** Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        - **i.** Protecting the cultural character and integrity of the resource.
        - **ii.** Protecting the traditional use of the resource.
        - **iii.** Protecting the confidentiality of the resource.
    - **c.** Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    - **d.** Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    - **e.** Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    - **f.** Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    - **a.** The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    - **b.** The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    - **c.** The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Gayle.Totton@nahc.ca.gov.

Sincerely,

Nancy Gonzalez
for
Gayle Totton
Associate Governmental Program Analyst

cc: State Clearinghouse

California
Department of Conservation
Division of Oil, Gas, and Geothermal Resources

Gavin Newsom, Governor
David Bunn, Director

July 24, 2019

Jennifer Clark
2600 Fresno St.
Fresno, CA 93721

Subject: South Industrial Priority Area Specific Plan Project
SCH#: 2019079022

Dear Ms. Clark:

The Department of Conservation, Division of Oil, Gas, and Geothermal Resources (Division) regulates oil and gas production facilities in addition to supervising the drilling, maintenance, and plugging and abandonment of oil, gas, and geothermal wells in California. All oil and gas well operations are subject to the Division's well permitting process, and all oil and gas operations must abide by any pertinent Division statute or regulation. The Division has received and reviewed the above referenced Initial Study and Mitigated Negative Declaration and submits the following evaluation.

The project is located in **Fresno County**, outside of any of the Division's oil field administrative boundaries. Division records indicate there is one known abandoned oil and gas well located within the proposed development boundaries. Please see the enclosed Well Review Report for additional information about this well.

The well may have had a mud pit/drilling sump associated with drilling operations. The Division recommends soil testing and remediation of any contamination found. Please see comment 8 in the enclosed Well Review Report.

According to Section 3208.1 (a) of the Public Resources Code (PRC), the supervisor or district deputy may order the reabandonment of any previously abandoned well if the supervisor or district deputy has reason to question the integrity of the previous abandonment. Depending on circumstances described in PRC 3208.1 (b) (1), (2), (3), and PRC 3208.1 (c), the landowner, developer, or project owner could be responsible for reabandonment operations.

The developer/project owner is required to consult with the Division prior to the commencement of any work to uncover a known abandoned well.

If during project operations, any unrecorded wells are encountered the project developer or property owner shall immediately notify the Division's Inland District office for consultation. Remedial plugging and abandonment operations may be required

Should you have any questions, please contact the Victor Medrano at (661) 326-4060 or via e-mail at Victor.Medrano@conservation.ca.gov

Sincerely,

Rohit Sharma
Senior Oil and Gas Engineer for

Cameron D. Campbell
District Deputy, Inland District

WELL REVIEW REPORT

The Division of Oil, Gas, and Geothermal Resources (Division) possesses records regarding oil and gas wells drilled and operated in the State of California. (Cal. Public Res. Code, §§ 3215, 3126.) Based on the Division's records and expertise, the Division has undertaken review of the well(s) referenced below at the request of a party either having jurisdiction over the use of the parcel referenced above, or a party having control over, or an interest in, the use of the parcel. This request is considered by the Division as voluntary participation in the Division's Well Review Program. The Division provides the information below to facilitate local permitting agencies' exercise of local land use authority regarding use of land where oil and gas wells are situated. In contrast, the Division does not possess local land use decision authority, but alternatively has authority for permitting any necessary work on any well in the state. (Cal. Public Res. Code, §§ 3106 and 3203.)

The Division has conducted a record review of the known well(s) located on the referenced parcel(s). The record review process consists of determining the possible location, last known operator, and abandonment status of any known well on the property by examining records previously submitted to the Division, and then comparing the abandonment status with current abandonment standards.

In general, a well may be considered adequately abandoned when both the record review and on-site evaluation process reflect that steps have been taken to isolate all oil-bearing or gas-bearing strata encountered in the well, and to protect underground or surface water suitable for irrigation or farm or domestic purposes from the infiltration or addition of any detrimental substance, and to prevent damage to life, health, property, and other resources. (Cal. Public Res. Code, § 3208.)

The local permitting agency, property owner, and/or developer should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil and gas wells. These issues are non-exhaustively identified in the following comments, and are provided by the Division for consideration by the local permitting agency, in conjunction with the property owner and/or developer, on a parcel-by-parcel or well-by-well basis. **As stated above, the Division provides the above well review information solely to facilitate decisions made by the local permitting agency regarding potential development near oil or gas wells.**

1. The Division recommends that access to any well located on the property be maintained in the event abandonment or re-abandonment of the well becomes necessary in the future. Impeding access to a well could result in the need to remove any structure or obstacle that prevents or impedes access. This includes, but is not limited to, buildings, housing, fencing, landscaping, trees, pools, patios, sidewalks, and decking.

2. Nothing guarantees that wells abandoned to current standards will not start leaking oil, gas, and/or water in the future. It always remains a possibility that any well may start to leak oil, gas, and/or water after abandonment, no matter how thoroughly the well was plugged and abandoned. The Division acknowledges wells that are presently abandoned to current standards have a lower probability of leaking oil, gas, and/or water in the future, but makes no guarantees as to the adequacy of the abandonment or the potential need for future re-abandonment.

3. Based on comments **1** and **2** above, the Division makes the following general recommendations:

    a. Maintain physical access to all oil and gas wells.

    b. Ensure that the abandonment of all oil and gas wells is to current standards.

    If the local permitting agency, property owner, and/or developer chooses not to follow recommendation **b** for each well located on the development site property, the Division believes that the importance of following recommendation **a** for each well located on the subject property increases. If recommendation **a** cannot be followed for each well located on the subject property, then the Division advises the local permitting agency, property owner, and/or developer to consider any and all alternatives to proposed construction or development on the site (see comment **4** below).

4. Sections 3208 and 3255(a)(3) of the Public Resources Code give the Division the authority to order the re-abandonment of any well that is hazardous, or that poses a danger to life, health, or natural resources. Responsibility for re-abandonment costs for any well may be affected by the choices made by the local permitting agency, property owner, and/or developer in considering the general recommendations set forth in this letter. (Cal. Public Res. Code, § 3208.1.)

5. Maintaining sufficient access to an oil or gas well may be generally described as maintaining “rig access” to the well. Rig access allows a well servicing rig and associated necessary equipment to reach the well from a public street or access way, solely over the parcel on which the well is located. A well servicing rig, and any necessary equipment, should be able to pass unimpeded along and over the route, and should be able to access the well without disturbing the integrity of surrounding infrastructure.

6. The Division recommends that a local permitting agency consider the use of surface mitigation measures as a condition for project approval, if and when appropriate. Examples of surface mitigation measures include venting systems for wells, venting systems for parking lots, patios, and other hardscape, methane barriers for building foundations, methane detection systems, and collection cellars for well fluids. The Division **does not** regulate the design, installation, operation, or adequacy of such measures. The Division recommends that such surface mitigation measures are designed, installed, and operated by qualified engineers. The permitting of surface mitigation measures falls under the jurisdiction of the local permitting agency.

7. If during the course of development of a parcel any unknown wells are discovered, the Division should be notified immediately so that the newly discovered well(s) can be incorporated into the Well Review processes.

8. The Division recommends that any soil containing significant amounts of hydrocarbons be disposed of in accordance with local, state, and federal laws. Please notify the appropriate authorities if soil containing significant amounts of hydrocarbons is discovered during development.

9. The Division recommends that the information contained in this Well Review Report, and any pertinent information obtained after the issuance of this report, be communicated to the appropriate county recorder for inclusion in the title information of the subject real property. This is to ensure that present and future property owners are aware of (1) the wells located on the property, and (2) potentially significant issues associated with any improvements near oil or gas wells.

No well work may be performed on any oil or gas well without written approval from the Division in the form of an appropriate permit. This includes, but is not limited to, mitigating leaking fluids or gas from abandoned wells, modifications to well casings, and/or any other re-abandonment work. NOTE: The Division regulates the depth of any well below final grade (depth below the surface of the ground). Title 14, Section 1723.5 of the California Code of Regulations states that all well casings shall be cut off at least 5 feet but no more than 10 feet below grade. If any well needs to be lowered or raised (i.e. casing cut down or casing riser added) to meet this grade regulation, a permit from the Division is required before work can start.

To reiterate, the local permitting agency, property owner, and/or developer should be aware of, and fully understand, that the above comments are made by the Division with the intent to encourage full consideration of significant and potentially dangerous issues associated with development near oil or gas wells.

Total number of known wells on development site: **1**

Well	Status
Fresno Expl. Co., Inc. Well 1 019-06062	The record review process shows that these subject wells are **not** abandoned to current Division standards as of **7/24/2019**. Section 29, T. 20S, R. 15E, MD B&M Based on well records: This well does not meet plugging and abandonment requirements for surface plugging. CCR 1723.5 Please refer to the enclosed maps and the Division's online Well Finder map for well location at *http://www.conservation.ca.gov/dog/Pages/Wellfinder.aspx* California Code of Regulations (CCR) and PRC may be found at ftp://ftp.consrv.ca.gov/pub/oil/laws/PRC10.pdf CCR accessed on July 24, 2019 for this review.

California
Department of Conservation
Division of Land Resource Protection

Gavin Newsom, Governor
David Bunn, Director

July 30, 2019

VIA EMAIL: SIPA@FRESNO.GOV
Ms. Jennifer Clark, Planning Director
c/o Marty-Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721

Dear Ms. Clark:

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED SOUTH INDUSTRIAL PRIORITY AREA SPECIFIC PLAN PROJECT, SCH# 2019079022

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Notice of Preparation for the proposed South Industrial Priority Area Specific Plan Project (Project). The Division monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. We offer the following comments and recommendations with respect to the proposed project's potential impacts on agricultural land and resources.

Project Description

The City of Fresno is preparing the South Industrial Priority Area Specific Plan to facilitate opportunities for economic growth, job creation, and promote development of underutilized lands within the planning area. The proposed project would establish a planning framework to facilitate and guide future development within the 6,150-acre planning area through the year 2040.

The approximately 6,150-acre planning area, located in the southern portion of the City, is largely comprised of land within the City limits. However, the planning area also includes land within the City's Sphere of Influence (SOI) to the north, east, and west, and (as an option) land outside of the City's SOI to the south.

Department Comments

The Department recommends the following discussion under the Agricultural Resources section of the Environmental Impact Report:

- Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project.
- Impacts on any current and future agricultural operations in the vicinity; e.g., land-use conflicts, increases in land values and taxes, loss of agricultural support infrastructure such as processing facilities, etc.
- Incremental impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed project, as well as impacts from past, current, and likely future projects.
- Proposed mitigation measure for all impacted agricultural lands within the proposed project area.

Although direct conversion of agricultural land is often an unavoidable impact under CEQA analysis, mitigation measures must be considered. In some cases, the argument is made that mitigation cannot reduce impacts to below the level of significance because agricultural land will still be converted by the project, and therefore, mitigation is not required. However, reduction to a level below significance is not a criterion for mitigation under CEQA. Rather, the criterion is feasible mitigation that lessens a project's impacts.

All mitigation measures that are potentially feasible should be considered. A measure brought to the attention of the Lead Agency should not be left out unless it is infeasible based on its elements. The Department suggests that the City consider the adoption of an agricultural land mitigation program that will effectively mitigate the conversion of agricultural land.

Agricultural Mitigation Program

Agricultural conservation easements are an available mitigation tool that the City should consider. The Department highlights easements as a mitigation tool because of their acceptance and use by lead agencies as an appropriate mitigation measure under CEQA and because they follow an established rationale similar to that of wildlife habitat mitigation.

Programs that establish agricultural conservation easements and in-lieu fees for mitigation banking are most effective at conserving comparable quality agricultural land when the easement requirements or fees are determined concurrent with project approval. Should significant time elapse between initial approval and the applicant's receipt of a building or grading permit, conflict may arise over the agricultural quality or value of the land being converted.

Mitigation via agricultural conservation easements can be implemented by at least two alternative approaches: the outright purchase of easements or the donation of mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements. The conversion of agricultural land should be deemed an impact of at least regional significance. Hence, the search for replacement lands should not be limited strictly to lands within the project's surrounding area.

A source that has proven helpful for regional and statewide agricultural mitigation banks is the California Council of Land Trusts. They provide helpful insight into farmland mitigation policies and implementation strategies, including a guidebook with model policies and a model local ordinance. The guidebook can be found at:

https://www.calandtrusts.org/resources/conserving-californias-harvest/

Another source is the Division's California Farmland Conservancy Program (CFCP), which has participated in bringing about conservation easements throughout the State of California involving many California land trusts. Any other feasible mitigation measures should also be considered.

Conclusion

Thank you for giving us the opportunity to comment on the Notice of Preparation of an Environmental Impact Report for the proposed South Industrial Priority Area Specific Plan Project. Please provide this Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Environmental Planner at (916) 324-7347 or via email at Farl.Grundy@conservation.ca.gov.

Sincerely,

Monique Wilber
Conservation Program Support Supervisor

XAVIER BECERRA ***State of California***
Attorney General ***DEPARTMENT OF JUSTICE***

1300 I STREET, SUITE 125
P.O. BOX 944255
SACRAMENTO, CA 94244-2550

Public: (916) 445-9555
Telephone: (916) 210-7815
E-Mail: Scott.Lichtig@doj.ca.gov

August 2, 2019

Jennifer Clark, Director
c/o Marty Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno St., Room 3065
Fresno, CA 93721

RE: City of Fresno's South Industrial Priority Area Specific Plan

Dear Ms. Clark:

The Office of the Attorney General appreciates this opportunity to provide comments regarding the City of Fresno's preparation of its South Industrial Priority Area (SIPA) Specific Plan and the scope of the accompanying environmental analysis pursuant to the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq.[1] The City proposes to prioritize south Fresno for future additional industrial development in an effort to support the City's economic growth and fiscal sustainability. We recognize Fresno's efforts to attract good job opportunities for its residents and we appreciate the City's efforts to develop a comprehensive plan for the SIPA. Because the SIPA Specific Plan will serve as the "framework" for increased industrial development, it is critical that the Environmental Impact Report (EIR) fully evaluate the associated significant impacts on the public health and safety of Fresno's residents and the environment. We respectfully submit these comments for the City's consideration as it develops its EIR for the SIPA Specific Plan.

I. THE EIR MUST ACCOUNT FOR THE FACT THAT THE SIPA IS ALREADY ONE OF THE MOST HEAVILY POLLUTED AREAS IN CALIFORNIA

The SIPA contains and is adjacent to several communities already suffering from the highest pollution burdens in Fresno and indeed in the State. The SIPA Specific Plan anticipates substantially increasing industrial development in and around the same communities that have historically borne and continue to bear a disproportionate share of industrial pollution in Fresno. Though the several neighborhoods impacted by development of the SIPA are distinct, they share several common characteristics. For example, a significantly higher than average number of young children live in these communities. Children and pregnant mothers are more vulnerable to

---

[1] The Attorney General submits these comments pursuant to his independent power and duty to protect the environment and natural resources of the State. (*See* Cal. Const., art. V, § 13; Gov. Code, §§ 12511, 12600-12612; *D'Amico v. Bd. of Medical Examiners* (1974) 11 Cal.3d 1.)

the health effects of exposure to pollution. They are also overwhelmingly low-income communities and communities of color.

SIPA CalEnviroScreen Statistics[2]

Census Tract No.	Population	CalEnviroScreen Pollution Burden (%)	Population Children Under 10 (%)[A]	Population People of Color (%)[B]	Poverty Rate (%)
6019001100	3,174	100	19	96	97
6019001201	5,936	99	21	95	94
6019001202	4,756	100	23	97	98
6019001410	9,109	98	18	87	74
6019001500	2,206	100	15	79	90
6019001700	5,701	97	16	74	72
6019001800	4,615	98	15	68	64

[A] The average census tract in California contains 13% children under 10 years of age.

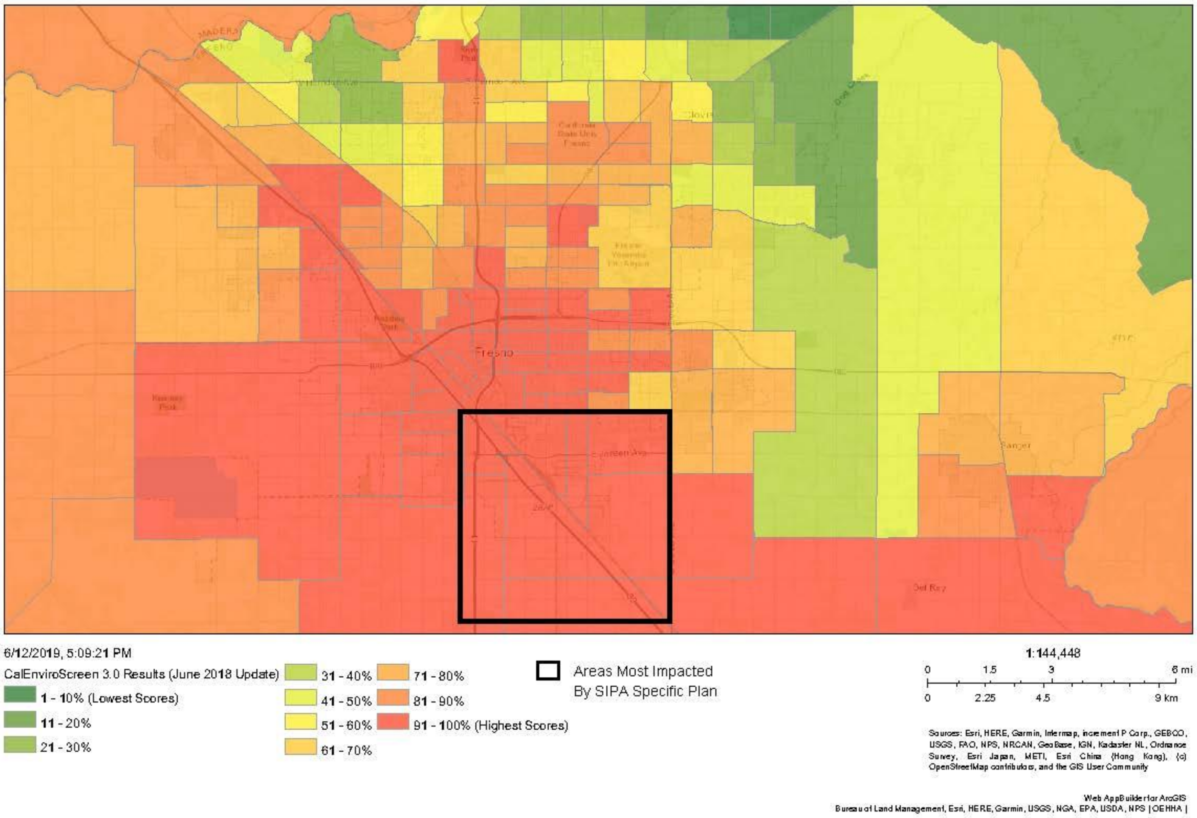
[B] According to the 2010 census, Fresno's total population consists of approximately 50% people of color.

According to the Office of Environmental Health Hazard Assessment's CalEnviroScreen 3.0 tool, which uses environmental, health, and socioeconomic information to produce scores and rank every census tract in the state, the census tracts that comprise the SIPA and its surrounding area are among the worst off in the state. Because of the extremely high amounts of pollution these vulnerable communities are already exposed to, it is critical that the SIPA Specific Plan EIR accurately disclose, analyze, and mitigate all the potential impacts, including cumulative impacts, of future development on these communities.

---

[2] Figures from CalEnviroScreen 3.0, available at https://oehha.ca.gov/calenviroscreen. A census tract with a high score is one that experiences a much higher pollution burden than a census tract with a low score. (Office of Environmental Health Hazard Assessment, CalEnviroScreen 3.0 Report (January 2017), available at https://oehha.ca.gov/media/downloads/calenviroscreen/report/ces3report.pdf.

CalEnviroScreen 3.0 Results (June 2018 Update)



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Web AppBuilder for ArcGIS
Bureau of Land Management, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS | OEHHA |

The SIPA Specific Plan EIR must consider the potential environmental impacts from increased industrial development on both the families living within the SIPA boundaries and those adjacent to the SIPA. Within the SIPA boundaries, communities already suffer the highest pollution burden in all of California, the 100th percentile. Along and around East Central Avenue between Highways 41 and 99 are several small communities such as Daleville and the Flamingo Mobil Home Lodge. Also in the boundaries of the SIPA is the Orange Center Elementary School, where over 300 low-income, largely minority students are enrolled. According to the California Department of Education, the Orange Center Elementary School enrollment consists of 96% students that qualify for free or reduced lunches and 46% English language learners.[3] Down the street from the school is the Gurdwara Nanaksar Sahib, and the Fuerza del Calvario church is around the corner. These sensitive receptors are already exposed to levels of ozone in the 98th percentile and particulate matter smaller than 2.5 micrometers ($PM_{2.5}$) in the 97th percentile. $PM_{2.5}$ is a particularly pernicious air pollutant that lodges deep into the lungs and is linked to several serious health impacts. Studies have linked increases in daily $PM_{2.5}$ exposure, to which children and the elderly are most vulnerable, with increased respiratory and cardiovascular hospital admissions, emergency department visits, and deaths. Short-term health

---

[3] *See* California Department of Education website: https://www.cde.ca.gov/sdprofile/details.aspx?cds=10623316007009.

effects include eye, nose, throat and lung irritation, coughing, sneezing, runny nose and shortness of breath. Long term exposure to $PM_{2.5}$ can also affect lung function and worsen medical conditions such as asthma and heart disease. Notably, this portion of the SIPA already suffers an asthma rate in the 90th percentile for California and a rate of cardiovascular disease in the 92nd percentile.

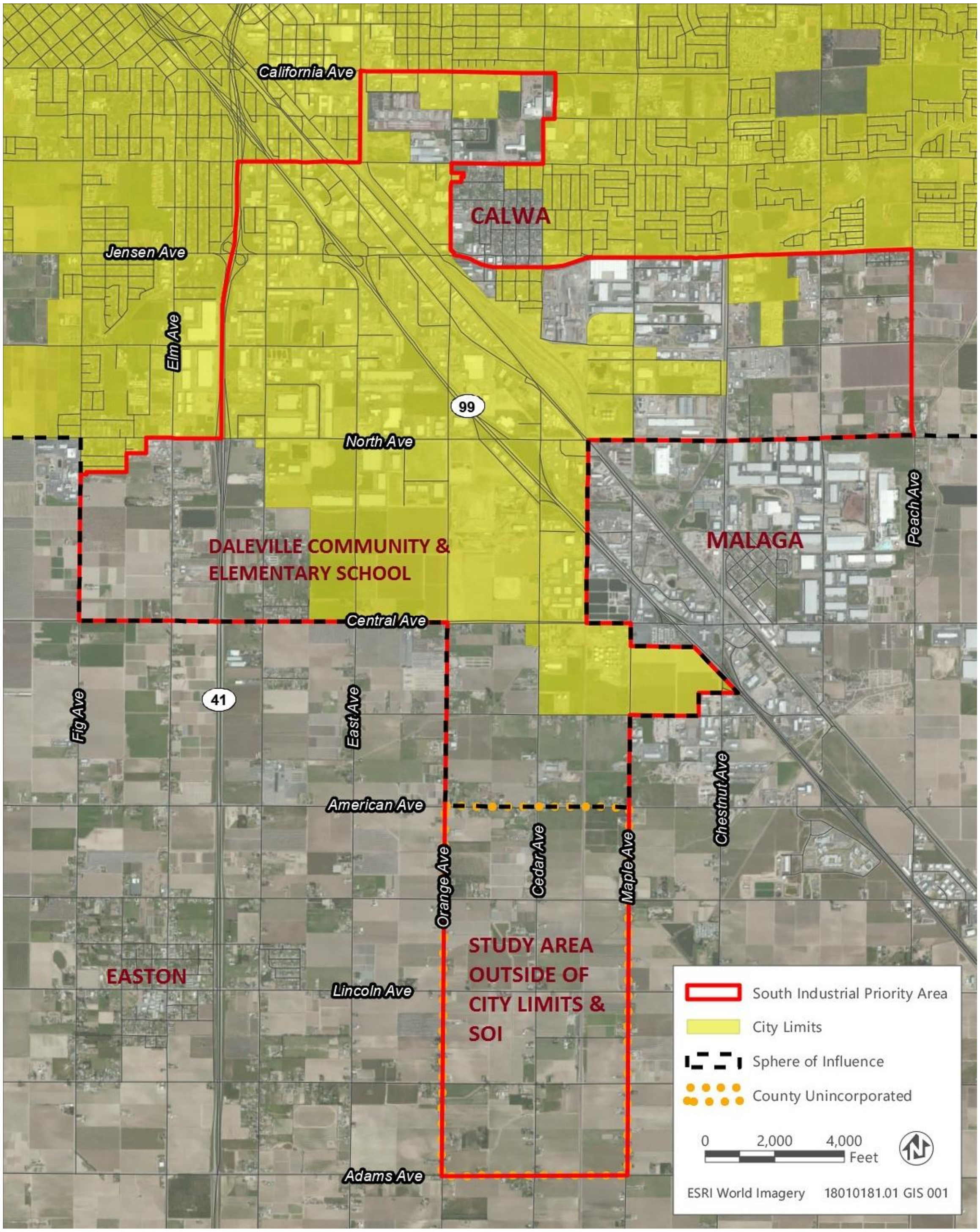
The SIPA Specific Plan EIR must also address the impact of planned industrial development on residential neighborhoods adjacent to the SIPA boundaries, including those that exist outside of City boundaries.[4] The SIPA virtually encircles, but excludes, the large residential neighborhoods of Calwa and Malaga that sit just outside City lines. Calwa is an unincorporated community of approximately 6,000 residents already suffering a pollution burden in the 99th percentile, including exposure to ozone in the 99th percentile and $PM_{2.5}$ in the 98th percentile.[5] The community is largely populated by low-income households and includes over 95% people of color. CalEnviroScreen estimates that 21% of Calwa residents are children under the age of 10, over double the statewide average, and the neighborhood includes several schools, such as Calwa Elementary School, Balderas Elementary School, and Aynesworth Elementary School. Several churches and other houses of worship are located in parts of Calwa that will be impacted by increased industrial development. Malaga is similarly a community of several thousand residents already suffering from an extraordinarily high pollution burden in the 100th percentile. If the portion of the SIPA adjacent to Malaga is built out, the families living in that community will be encircled by industrial uses. Malaga also has a disproportionately high number of children and includes the Malaga Elementary School and Konkel Junior High School. The SIPA Specific Plan must disclose, analyze, and mitigate the Plan's impact on the communities' public health and safety and the environment both within the SIPA as well as in the adjacent unincorporated communities, Calwa and Malaga.[6]

---

[4] According to the Specific Plan, the SIPA includes 3,360 acres of unincorporated Fresno County land, compared to only approximately 2,790 acres of City land. (SIPA Specific Plan at p. 7.)

[5] Calwa consists largely of census tract 6019001201.

[6] Depending on the nature of development planned for the Study Area, the EIR may need to analyze the potential impacts on Easton, another nearby unincorporated community to the west of the SIPA suffering a similarly high pollution burden in the 98th percentile.


California Ave
CALWA
Jensen Ave
Elm Ave
99
North Ave
MALAGA
Peach Ave
DALEVILLE COMMUNITY & ELEMENTARY SCHOOL
Central Ave
41
Fig Ave
East Ave
American Ave
Chestnut Ave
Orange Ave
Cedar Ave
Maple Ave
STUDY AREA OUTSIDE OF CITY LIMITS & SOI
EASTON
Lincoln Ave
Adams Ave
South Industrial Priority Area
City Limits
Sphere of Influence
County Unincorporated
0
2,000
4,000
Feet
ESRI World Imagery
18010181.01 GIS 001

II. THE PROJECT DESCRIPTION NEEDS TO BE CLARIFIED

A project description that adequately describes the action being taken is necessary to meet CEQA's central purposes of enhancing informed decision making and public participation.[7] We request clarification regarding the Project Description provided within the City's Notice of Preparation (NOP), which indicates that the City intends to make no changes to existing land use plans or policies. Specifically, the City identifies the "Project" as the "previously adopted goals and policies" from several existing planning documents, including the 1992 Roosevelt Community Plan, the 2014 City of Fresno General Plan, and the 2017 Southwest Fresno Specific Plan. Indeed, the draft SIPA Specific Plan released in March consists mostly of policies copied from those already-in-place land use plans.[8] The NOP further asserts that "no land use/zoning designation changes or specific development projects are currently proposed as part of this EIR." It appears from the information provided by the City that the SIPA Specific Plan is simply a combination of already-existing land use policies requiring no further action by the City to be applicable in the SIPA. Regardless of the City's ultimate approval or denial of this Specific Plan, it seems the same land use policies will be active. It is therefore not clear what discretionary action the City is taking in approving or denying the Specific Plan.

Relatedly, the Project Description is unclear as to the amount and type of development the City is considering in the SIPA Specific Plan. The NOP explains that the EIR will "evaluate potential impacts associated with development … that may occur in the planning area through the year 2040." But the City has not provided a projection of the amount or type of development that the City expects, making it unclear as to the scope of the impacts the EIR will need to analyze. The City should provide a clear, detailed explanation of what it envisions to be "buildout" of the SIPA Specific Plan. Without this information, Fresno's decision makers and the public will not have the critical information necessary to understand the impacts of approving the SIPA Specific Plan.

Further, the City should provide additional information regarding the approximately 20% of the total SIPA located in the "Study Area" south of both City boundaries and the City's sphere of influence (SOI). The City's General Plan requires that the City not expand its SOI except "to allow for the siting of a maintenance yard for the California High Speed Train project and related industrial and employment priority areas."[9] The City should provide additional information regarding the status of siting decisions related to High Speed Rail, in addition to defining what

---

[7] See *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 C3d 553; *Laurel Heights Improvement Ass'n v. Regens of Univ. of Cal.* (1988) 47 C3d 376; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730, *as modified (Sept. 12, 1994)* ["an accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity."]

[8] The draft SIPA Specific Plan includes the 1973 "North-Avenue-Industrial-Triangle Specific Plan," but that plan is not identified as relevant in the NOP.

[9] Fresno General Plan LU-1-g SOI Expansion.

type of industrial development qualifies as “related industrial and employment priority areas.” Further, the City should disclose the status of plans to annex this Study Area, including expanding Fresno’s SOI to include newly impacted areas.

III. THE EIR MUST ADDRESS THE SIPA SPECIFIC PLAN’S COMPLIANCE WITH AB 617

The SIPA Specific Plan EIR should address the Plan’s compliance with existing legal requirements, including AB 617’s air quality improvement requirements. The California Legislature passed AB 617 specifically to combat the State’s existing air quality inequities, in which historically disadvantaged communities still bear substantially higher pollution burdens than others.[10] Pursuant to AB 617, the California Air Resources Board (CARB) analyzed communities throughout California and selected seven of the most impacted areas in which to prioritize emissions reductions to protect the public health and safety of local residents. Given its current status as one of the most heavily-polluted regions in the State, the area of south Fresno encompassing the SIPA and surrounding communities was unsurprisingly selected in the first year of AB 617 implementation. As such, the San Joaquin Valley Air Pollution Control District (SJVAPCD) is required by state law, in consultation with the City and community, to develop a plan that “shall result in emissions reductions in the community, based on monitoring or other data.”[11]

The SJVAPCD is currently developing an emissions reduction plan for south Fresno and recently released the South Central Fresno Community Emissions Reduction Program (CERP). The South Central Fresno CERP proposes expenditures of tens of millions of dollars in public funds in order to reduce air pollutants in south Fresno.[12] In contrast, the City’s SIPA Specific Plan proposes substantially increasing industrial development in this same area, which is likely to greatly increase the very same air pollutants SJVAPCD is mandated to reduce. For example, a SJVAPCD proposal includes investing $15 million to replace 150 heavy-duty diesel trucks in order to reduce nitrogen oxide (NOx) and $PM_{2.5}$.[13] Yet full buildout of the SIPA Specific Plan, particularly with the types of distribution warehouses most recently constructed, could bring thousands of additional heavy-duty trucks daily into the area, negating any reductions in NOx and $PM_{2.5}$ that the SJVAPCD hopes to achieve and likely exacerbating the already dire situation. Similarly, the SJVAPCD proposes investing $7 million to deploy 50 new low-emission yard truck and transportation refrigeration units, while full buildout of the SIPA would add hundreds, if not thousands, of these types of vehicles to the area.[14] While the SJVAPCD is working on a

---

[10] Stats. 2017, ch. 136, § 8

[11] Health & Saf. Code § 44391.2, subd. (c)(5).

[12] See SJVAPCD Presentation on South Central Fresno Community Emissions Reduction Program Development dated July 24, 2019, available at: http://community.valleyair.org/media/1334/scfresnocerpstrategypresentation-7-24-19-final.pdf

[13] *Id*. at p. 3.

[14] *Id*. at p. 4.

plan to decrease emissions to protect the public health and safety of Fresno's residents, the City appears headed in the opposite direction, facilitating new industrial development that will likely exacerbate the existing extreme air pollution burden in this part of south Fresno. The City's EIR must account for how additional industrial development will comply with the existing legal requirement that emissions be reduced in this area.

IV. THE CITY MUST CONSIDER ALL FEASIBLE MITIGATION MEASURES

CEQA prohibits agencies from approving projects with significant environmental effects where there are feasible mitigation measures that would substantially lessen or avoid those effects. The lead agency is expected to develop mitigation in an open public process,[15] and mitigation measures must be fully enforceable and cannot be deferred to a future time.[16] To the extent the EIR finds significant environmental impacts – especially any affecting sensitive receptors – the City should consider robust mitigation measures to avoid or limit those impacts.

For example, possible air quality mitigation measures[17] could include:

- Requiring buffer zones between industrial uses, including warehouses, and sensitive receptors;
- Ensuring that operations of diesel trucks or equipment on site are as far from sensitive receptors as possible;
- Limiting the size of the SIPA away from City and County residents and sensitive receptors;
- Limiting the maximum amount of industrial space, including warehouse space, that can be built in the SIPA;
- Limiting operation and construction days and times;
- Establishing and enforcing truck routes that avoid sensitive receptors;

---

[15] *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 93.

[16] CEQA Guidelines, § 15126.4.

[17] For more in-depth information about potential air quality mitigation measures near high volume roadways, see CARB's Technical Advisory on the topic and, more generally, the CARB Handbook, which offers more mitigation ideas. Both are available at: https://www.arb.ca.2:ov/ch/landuse.htm. The mitigation measures included here are focused on air quality; however, additional mitigation measures may be necessary for traffic, noise, or other significant impacts.

- Requiring special consideration and mitigation for warehouses with cold storage capability, including requiring the use of zero-emission or all-electric, plug-in capable transport refrigeration units and electrical hookups at all loading docks;

- Establishing fleet requirements for warehouse tenants and carriers serving tenants, such as requiring the exclusive use of zero-emission delivery trucks and vans and requiring any Class 8 trucks entering the site use zero-emissions technology or meet CARB's lowest optional NOx emissions standard;

- Requiring installation of indoor air filtration at nearby schools and residences;

- Requiring installation of indoor air filtration and climate control at new warehouses to reduce-impacts on workers;

- Requiring electric vehicle charging infrastructure for both cars and trucks necessary to support zero-emission vehicles and equipment on site;

- Requiring and enforcing no idling policies;

- Requiring the use of electric-powered yard equipment onsite

- Requiring that all construction equipment meet Tier 4 emission standards;

- Constructing new or improved transit stops, sidewalks, bicycle lanes, crosswalks, and traffic control or traffic safety measures, such as speed bumps or speed limits;

- Improving vegetation and tree canopy for communities in and around the SIPA to avoid the “heat island effect;”

- Requiring methods to reduce employee vehicle traffic, such as van shuttles, transit and carpool incentives, and providing bicycle parking and facilities for employees;

- Requiring installation of solar panels with backup energy storage on each building roof area with a capacity that matches the maximum allowed for distributed solar connections to the grid; and

- Adhering to green building standards.

Mitigation measures like these are feasible and have been adopted by similar projects throughout California over the past several years. The Attorney General's Office would be happy to continue to provide any assistance it can as the City considers how best to mitigate the SIPA’s environmental impacts.

V. FRESNO MUST ACCOUNT FOR THE FULL IMPACTS OF EACH PROJECT AS REQUIRED BY CEQA

We also use this opportunity to reiterate our Office's concern that the City has previously approved large-scale industrial projects in the SIPA in a manner that does not adequately disclose, analyze, and mitigate the projects' significant environmental impacts as required by CEQA. As mentioned above, one of CEQA's basic purposes is to accurately inform government decision makers and the public about a project's potential significant environmental impacts *before* the decision is made to approve the project. However, because the City has not analyzed the entirety of project impacts in previous environmental review documents, it has provided Fresno's public officials and residents with an inaccurate picture of the significant negative impacts created by recent large-scale industrial approvals.

In the past few years, Fresno has approved over 5 million square feet of industrial warehouse space along E. Central Avenue, and the City prepared no EIR for this massive increase in industrial development.[18] According to the City's respective analyses, none of this industrial development, including the thousands of associated truck trips visiting these warehouses daily, had any significant environmental impacts on the surrounding community.[19] When evaluating the impacts of a project, CEQA mandates the lead agency consider the "whole of the action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."[20] However, to support its findings of no significant impacts for these large-scale industrial developments, the City incorrectly applied the applicable significance thresholds. Rather than considering the entirety of the approval, the City broke each "project" into pieces for applying the significance threshold, a practice commonly referred to as "piece-mealing." The use of such a "truncated project concept" that does not consider the entirety of the project and its foreseeable impacts violates CEQA and renders the ultimate approval legally deficient.[21] The unfortunate result of such a practice is that the City's project approvals have created significant impacts on residents that remain undisclosed, unaccounted for, and unmitigated. These residents are now exposed to the impacts from a significant increase in new development and related heavy duty

---

[18] See Fresno approvals of TPM-2012-06 (authorizing approx. 2.1 million sq. ft. of heavy industrial space); TPM-2015-06 (authorizing approx. 1 million sq. ft. of heavy industrial space); and D-16-109 (authorizing approx. 2.1 million sq. ft. of industrial space). Fresno's 2017 approval of D-16-109 was challenged in court as legally deficient for violating CEQA's requirement to adequately disclose, analyze, and mitigate the project's environmental impacts, a case in which this Office intervened on behalf of Petitioners. On January 17, 2019, the Fresno City Council voted unanimously to withdraw its prior project authorization.

[19] As explained further below, the City's findings of no significant impact were based on an inaccurate accounting of, at minimum, these projects' air quality emissions.

[20] CEQA Guidelines section 15378(a).

[21] *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730, *as modified (Sept. 12, 1994).*

diesel truck traffic, including substantial increases in diesel emissions, street noise and vibrations, nighttime light pollution, temperature increases from paving over and developing farmland (i.e., the "heat island effect"), and the consequent risks to their health and safety.

For example, in 2017, Fresno approved a project, Tentative Parcel Map TPM-2012-06, that authorized the development of a 122-acre parcel with several separate warehouses totaling approximately 2.1 million square feet of industrial space, anticipated by the City to attract approximately 14,000 daily vehicle trips. Nonetheless, the City concluded that the project would not have any significant environmental impacts, either individually or cumulatively, and accordingly analyzed the Project pursuant to a Mitigated Negative Declaration (MND), rather than an EIR, which requires a more thorough analysis and public process. Specifically, the City found that the project would not exceed the CEQA threshold of significance for NOx, which SJVAPCD has set as 10 tons per year. However, in order to support this finding, the City applied the 10-ton NOx threshold not to the entirety of the approved 2.1 million square foot warehouse project, but to each smaller, individual warehouse as it approved building permits pulled by the landowner. Thus, relying on the analysis from the City's initial approval of the project, the City approved Permit D-16-145 for the first building at the site, an approximately 855,000 sq. ft. warehouse that is now an Amazon Fulfillment Center. The Amazon Fulfillment Center comprises less than half of the total 2.1 million square feet approved by the City through the original project. According to the City's figures, that facility emits 14.9 tons of NOx annually, and because it exceeded the SJVAPCD threshold, the City required that the developer pay into a fund to mitigate the 4.9 tons of NOx it would emit above the threshold.[22] With the 4.9 tons of NOx mitigated, the Amazon Fulfillment Center adds 10 tons per year of NOx to the environment.

After issuing the Amazon building permit and permitting the associated 10 tons of annual NOx, the City again relied on its earlier TPM-2012-06 project approval to authorize a second building permit, D-17-175. With this permit, the City allowed the construction of several additional buildings totaling 804,045 square feet of commercial space.[23] Despite the fact that the project originally approved through TPM-2012-06 was already emitting 10 tons of NOx annually, and that any additional NOx would surpass the 10-ton NOx significance threshold and therefore have a significant impact pursuant to CEQA, the City applied a new 10-ton annual NOx threshold of significance to the second permit, requiring no additional mitigation of the estimated seven tons of annual NOx the new buildings would emit.[24] Even though the City

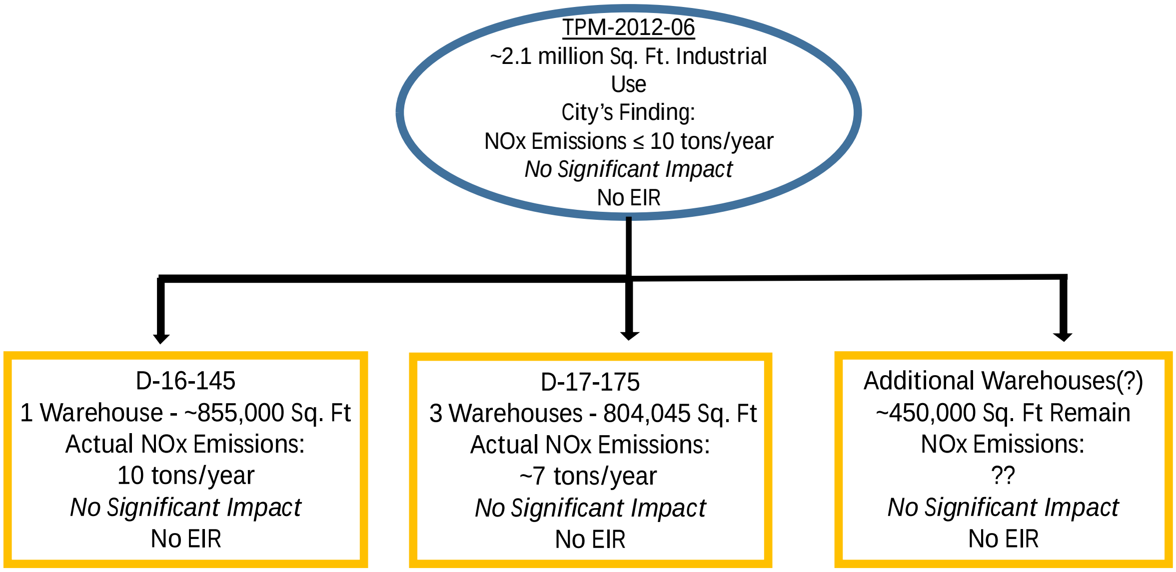
---

[22] Despite our multiple requests for this information, we have not received confirmation from the City that the mandatory mitigation fee of $456,211 was paid by Amazon. We request confirmation that the City has fully enforced its mitigation measure and collected the fee.

[23] The City released an Addendum to the MND for TPM-2012-06 for the approval of D-17-175 on January 16, 2018, without public review, asserting that D-17-175 would create no new significant environmental impacts not previously analyzed. However, the current status of D-17-175 is unclear, and the additional warehouses are not yet constructed.

[24] Estimation of NOx emissions for D-17-175 based on Indirect Source Review application submitted to SJVAPCD for "North Pointe Business Park Buildings 25, 27, & 31"

originally found that the project as a whole would not have a significant impact because it would not exceed 10 tons of NOx annually, the building permits subsequently approved by the City will result in NOx emissions far greater than the significance threshold. Chopping a project into smaller pieces and double-counting the significance threshold in this manner is prohibited by CEQA because it fails to disclose and mitigate the full scope of the environmental impacts from a project's approval.



PROJECT'S ACTUAL NOX EMISSIONS = MINIMUM 17 TONS/YEAR
NOX SIGNIFICANCE THRESHOLD = 10 TONS/YEAR

The City has pointed to addenda to the MND it produced, without public notice or review, for the subsequent approval of permits for these individual warehouses.[25] However, neither addendum the City produced identified any significant environmental impacts nor disclosed new information regarding the NOx emissions exceeding the SJVAPCD significance threshold. Absent public disclosure and adequate mitigation of the significant air quality impacts, the City's addenda fail to correct the CEQA violation. Ultimately, the result of the respective Project approvals is an increase in NOx that far exceeds the SJVAPCD's threshold of significance, without adequate disclosure or mitigation. Moving forward, authorization of industrial uses in

---

totaling 804,045 sq. ft. of "industrial warehouse buildings" dated November 20, 2017, and SJVAPCD's resulting "Off-site Emissions Estimator Worksheet."

[25] See Attachment A, E-mail from City Attorney's Office dated July 1, 2019; *see also* City's First Addendum to MND for TPM-2012-06 for the approval of D-16-145 dated December 5, 2016 and the City's Second Addendum to MND for TPM-2012-06 for the approval of D-17-175 dated January 16, 2018.

the SIPA must accurately account for the entirety of a project's impacts in compliance with CEQA.

VI. CONCLUSION

Thank you for the opportunity to provide these comments. While the Attorney General's Office fully supports Fresno's efforts to provide its residents with economic opportunity, we encourage the City to take seriously its obligation to adequately disclose, analyze, and mitigate the environmental and public health impacts of additional industrial development in one of the most heavily polluted areas in the State. We look forward to working with the City throughout this process to ensure an equitable future for all Fresno residents.

Sincerely,

SCOTT LICHTIG
Deputy Attorney General

For XAVIER BECERRA
Attorney General

ATTACHMENT A

From: Talia Kolluri
To: Scott Lichtig
Cc: Douglas Sloan; Katie Doerr; Laurie Avedisian-Favini
Subject: re VERA Calculations for TPM-2012-06 and Associated Projects
Date: Monday, July 01, 2019 3:10:57 PM
Importance: High

Scott,

Thank you for your patience while I worked with staff to answer your questions.

1. The first answer is pretty simple. Project Couger (formally entitled as D-16-145) is expected to have annual NOx emissions of 14.9 tons annually, which is 4.9 over the threshold of 10 tons per year. Based on information available to me, ISR analysis assumes 10 years of a project life. So 4.9 tons per year produces 49 tons because of the 10 year multiplier.
2. As to your second question, you are correct, the City intends to tier from the MND for TPM-2012-06 (dated March 20, 2015) for development permits or other discretionary approvals that are within that footprint. And as we have discussed, CEQA encourages the use of tiering to discourage duplication of analysis and encourage efficiency. I have carefully reviewed the mitigation measures that apply to emissions thresholds, specifically AQ III in the project specific mitigation measures for the MND for TPM-2012-06. The two that are relevant state as follows:
    1. MM AQ III.1 "Individual projects to be developed within the limits of the proposed project will be subject to San Joaquin Valley Air pollution Control District Rules and regulations, including Rule 9510 (Indirect Source Review), Regulation VIII (Fugitive Dust Prohibitions), Rule 2201 (New and Modified Stationary Source Review; applying to any stationary/industrial equipment that emits regulated pollutants in amounts specified by the rule), Rule 4002 (National Emissions Standards for Hazardous Air Pollutants), Rule 4102 (Nuisance; applying to any operation that emits or may emit air contaminants or other materials), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations)."
    2. MMAQIII.2 "Development projects that exceed San Joaquin Valley Air Pollution Control District thresholds after accounting for Rule 9510 reductions to mitigate significant criteria pollutant impacts shall enter into Voluntary Emission Reduction Agreement (VERA) contracts with the SJVAPCD to purchase emission reduction obtained through projects funded under SJVAPCD grant and incentive programs."

The City and the Air District have both interpreted the plain language of the mitigation measures to show the clear intent of the document to be that individual projects are each subject to ISR on their own instead of cumulatively reviewed pieces of the previous project (i.e. the Parcel map). The key language for these measures is that "individual projects" and "development projects" are identified as being subject to SJVAPCD rules including ISR. If there had been no further discretionary approvals after the parcel map, then the entire map would be subject to those rules as a single project. However, the subsequent discretionary projects are reviewed individually per the mitigation measures. As a practical matter, this means that each project's emissions are reviewed to determine whether or not they exceed the thresholds. This is the approach that was taken with D-16-145 and my understanding is the City will be applying that same interpretation of the mitigation measures for TPM-2012-06 consistently for discretionary approvals within the parcel map footprint. Also, based on information available to me, this is how the Air District interprets this set of mitigation measures as well as the application of ISR.

All this being said though, since we are in the midst of our process for the industrial specific plan, we would love your suggestions on how to refine similar mitigation measures for the specific plan EIR. If you have ideas for crafting language for these types of situations, please do send them my way and I'll circulate to the team.

Please let me know if I can answer any other questions in the meantime. Thank you very much.

Talia Kolluri
Supervising Deputy City Attorney
City of Fresno
(559) 621-7500 office
(559) 621-7531 office direct
talia.kolluri@fresno.gov

CONFIDENTIAL ATTORNEY CLIENT COMMUNICATION
AND ATTORNEY WORK PRODUCT
Do not forward or produce pursuant to Public Records Act request.

From: Scott Lichtig <Scott.Lichtig@doj.ca.gov>

Sent: Monday, June 10, 2019 10:39 AM
To: Talia Kolluri
Subject: VERA Calculations for TPM-2012-06 and Associated Projects

Good Morning, Talia-

Hope you had a nice weekend. I appreciate the City's assistance over the past few weeks explaining the status of Fresno's ongoing permitting of industrial facilities in the Reverse Triangle. Having reviewed several documents provided, can we schedule a time this week to discuss two different issues regarding Fresno's permitting/mitigation process that I'm trying to better understand:

1. In it March 1, 2019, letter (attached), specifically the chart on p.5 for "Project Cougar (Amazon)" the City stated that the total annual NOx emissions after compliance with ISR for Project Cougar/Amazon will be 14.9 tons/year. But in the related Air Quality and Greenhouse Gas Analysis Report (also attached) submitted to the City by the operator's consultants (FirstCarbon Solutions), on p. 77 FirstCarbon states that the total annual mitigated NOx emissions for the project is expected to be 49.0 tons. I'm trying to understand the substantial discrepancy between these two figures. It's possible that I am misunderstanding the data, and I was hoping that you could explain how the City reached the 14.9 tons/year determination in light of the report's 49.0 NOx tons/year emission information contained in Section 5: Air Quality Impact Analysis (e.g, additional onsite mitigation, VERA, etc.).

2. Per our earlier conversation, it is my understanding that the City is in the process of permitting (through D-175-05) several additional warehouses by tiering off of the MND for TPM-2012-06, the Tentative Parcel Map environmental analysis based on which the City has also authorized the operational Amazon Fulfillment Center (D-16-145) (see attached Addenda). As you know, the City's MND for TPM-2012-06 determined that the "Project" being analyzed (up to 2,125,728 sq. ft. of construction) would not have any significant air quality impact because total project emissions would remain under the SJVAPCD's significance threshold of 10 tons of NOx per year. Given the operational Amazon Fulfillment Center and the associated impacts, which are already substantially greater than 10 tons NOx/year, I'd like to discuss how the City will process the pending additional industrial warehouse applications to ensure that the Project authorized by TPM-2012-06 remains, per the City's prior determination, under the 10 ton NOx significance threshold.

Thank you, and please feel free to invite anyone else that might need to participate in this call. My schedule is fairly flexible this week, let me know a time/date that works on your end, and I can make myself available (except Thursday morning, which I know is City Council day).

Sincerely,

Scott J. Lichtig
Deputy Attorney General | Environment Section
California Department of Justice

1300 I Street, 15th Floor | Sacramento, CA 95814
Phone: 916.210.7815

Table 10 (cont.): Mitigated Construction Air Pollutant Emissions Table (2017–2018)

Year	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Maximum Annual Construction Emissions	*3.6*	*9.9*	*6.0*	*0.8*	*0.4*
Significance threshold (tons/year)	10	10	100	15	15
Exceed threshold—significant impact?	No	No	No	No	No

Notes:
PM_{10} and $PM_{2.5}$ emissions are from the mitigated output to reflect compliance with Regulation VIII—Fugitive PM_{10} Prohibitions.
ROG = reactive organic gases NO_X = oxides of nitrogen; CO = carbon monoxide; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns.
Source: CalEEMod output (Appendix A).

As shown in Table 10, after implementation of mitigation, construction-related NO_X emissions would be below the SJVAPCD's significance threshold. Therefore, with mitigation, the project's construction-related emissions would be less than significant on a project basis.

Operational Emissions

Operational emissions occur over the lifetime of the project and are from two main sources: area sources and motor vehicles, or mobile sources. Construction is scheduled to be completed in a single phase. Operations were modeled for the earliest year the project is expected to become operational in 2018. The SJVAPCD considers construction and operational emissions separately when making significance determinations.

For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. The emissions modeling results for project operation are summarized in Table 11. As shown in Table 11, long-term operational NO_X emissions would exceed SJVAPCD's threshold of significance, and, therefore, operational emissions are considered a significant impact.

Table 11: Unmitigated Operational Air Pollutant Emissions (2018)

Source	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	4.4	<0.1	<0.1	<0.1	<0.1
Energy	0.1	0.8	0.7	0.1	0.1
Non-Peak Passenger Mobile	1.5	2.1	19.3	4.6	1.2
Passenger Peak Mobile	0.6	0.9	8.2	1.9	0.5
Trucks Mobile Non-Peak	1.2	35.4	5.3	2.7	0.9
Trucks Mobile Peak	0.3	9.9	1.5	0.8	0.3

Table 11 (cont.): Unmitigated Operational Air Pollutant Emissions (2018)

Source	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Total	**8.1**	**49.1**	**35.0**	**10.0**	**3.0**
Significance threshold	**10**	**10**	**100**	**15**	**15**
Exceed threshold—significant impact?	**No**	**Yes**	**No**	**No**	**No**

Notes:
ROG = reactive organic gases NO_X = oxides of nitrogen; CO = carbon monoxide; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns.
Area source emissions include emissions from natural gas, landscape, and painting.
Source: CalEEMod output (Appendix A).

As shown in Table 11, operational NO_X emissions would exceed SJVAPCD's threshold of significance. Mitigation Measures AIR-2e to AIR-2g are recommended since part of this analysis to reduce long-term operational emissions to a less than significant level. Although all of the measures recommended in MM AIR-2e to AIR-2g would help reduce operational emissions, at the time of this analysis, the precise emission reductions associated with each measure cannot be accurately determined because of a lack of sufficient information about how the project would operate and to what extent the measures would affect those activities. Therefore, when possible, emission reductions associated with MM AIR-2e to AIR-2g were quantified; however, it should be noted the full emission reduction potential is not reflected in the mitigated long-term operational emissions shown in Table 12.

Table 12: Mitigated Operational Air Pollutant Emissions (2018)

Source	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	4.4	<0.1	<0.1	<0.1	<0.1
Energy	0.1	0.8	0.7	0.1	0.1
Non-Peak Passenger Mobile	1.4	2.0	18.3	4.3	1.1
Passenger Peak Mobile	0.6	0.8	7.7	1.8	0.5
Trucks Mobile Non-Peak	1.2	35.4	5.3	2.7	0.9
Trucks Mobile Peak	0.3	9.9	1.5	0.8	0.3
Total	**8.1**	**49.0**	**33.6**	**9.6**	**2.9**
Significance threshold	**10**	**10**	**100**	**15**	**15**
Exceed threshold—significant impact?	**No**	**Yes**	**No**	**No**	**No**

Table 12 (cont.): Mitigated Operational Air Pollutant Emissions (2018)

Source	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$

Notes:
ROG = reactive organic gases NO_X = oxides of nitrogen; CO = carbon monoxide; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns.
Area source emissions include emissions from natural gas, landscape, and painting.
Source: CalEEMod output (Appendix A).

As shown in Table 12, even with the implementation of mitigation measures, the project's long-term operational NO_X emissions would continue to exceed SJVAPCD's threshold of significance. Therefore, operational NO_X emissions would be considered a significant and unavoidable impact. This finding is consistent with the findings presented in the Fresno General Plan Master EIR. The MEIR concluded that the development within the Planning Area will result in increases in annual emissions that exceed SJVAPCD significant thresholds for all nonattainment pollutants for both construction- and operation- related emissions. As discussed in the Fresno General Plan MEIR, the growth in emissions is accounted for in SJVAPCD attainment plans and total emissions will decline even accounting for growth.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-2a All offroad construction equipment in excess of 50 horsepower shall be equipped with engines meeting the EPA Tier III offroad engine emission standards.

MM AIR-2b During construction, all equipment shall be maintained in good operation condition so as to reduce emissions. The construction contractor shall ensure that all construction equipment is being properly serviced and maintained in accordance with the manufacturer's specification. Maintenance records compliant with SJVAPCD Rule 9510 shall be available at the construction site for City verification and submitted to the District within 30 days of completing construction for each project phase. Construction equipment records shall comply and include all required information (e.g., total hours per equipment type, equipment model year and horsepower) detailed in SJVAPCD's *Detailed Fleet Template* (SJVAPCD 2009c).

MM AIR-2c The following measures shall be applied to all projects during construction of the project:

- Adhere to the provisions of SJVAPCD Rule 4601
- Use paints with a volatile organic compound (VOC) that average to 65 grams per liter for both interior and exterior coatings.

CALIFORNIA RURAL LEGAL ASSISTANCE, INC.
FIGHTING FOR JUSTICE, CHANGING LIVES

August 5, 2019

Jennifer Clark, Planning Director
c/o Marty-Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721

Via email to SIPA@fresno.gov

Re: Scoping Comments Fresno South Industrial Priority Area Specific Plan Draft Environmental Impact Report

Dear Jennifer Clark:

California Rural Legal Assistance, Inc. (CRLA) submits this letter in response to the Notice of Preparation of an Environmental Impact Report (NOP) for the Fresno South Industrial Priority Area Specific Plan (S. Industrial Project) that Fresno City (City) staff sent to our firm on July 8, 2019. CRLA is a non-profit law firm with over fifty-years of experience providing legal representation to low-income Californians. CRLA provides the following scoping comments on the draft environmental analysis to ensure compliance with the California Environmental Quality Act. (CEQA).

I. Overview of CEQA Mandate

CEQA mandates that the City undertake a good faith effort to analyze foreseeable direct, indirect, and cumulative environmental impacts of the S. Industrial Project in the project's environmental impact report (EIR). *Pub. Resources Code §21100; 14 CCR §15126(a).* City staff explained at the June 4, 2019 public scoping meeting on this project that the EIR would analyze complete build-out of the Industrial Triangle area in south Fresno, the area covered in the S. Industrial Project, located between Highways 99 and 41. The EIR analysis must therefore evaluate the environmental impact of the complete industrial development of the six thousand, one hundred and fifty (6,150) acre planning area. *Notice of Preparation dated July 8, 2019.*

II. EIR Must Analyze Potential Impacts on Residential and Commercial Development Resulting from the Project

The EIR must analyze physical changes that will result from the project as well as changes to population distribution, population concentration, and human uses of land induced by the project.

Specifically, an EIR must analyze changes to commercial and residential development that will result from the project. *14 CCR§ 15126.2(a).*

The increase of industrial and commercial development within the project area, and the creation of additional jobs resulting from this development, will impact population density and concentration in and adjacent to the project area and will lead to a need for additional housing stock and services. The City must identify and evaluate these impacts even if they take place outside of the boundaries of the project area. *Napa Citizens for Honest Government v. Napa County Bd. of Supervisors, 91 Cal. App. 4th 342.* Specifically, the EIR must identify the number and type of housing units that persons working in the project area can be anticipated to require, as well as the probable location of those units. If housing and services are not sufficient or accessible to serve the needs of persons working in the area, that fact should be identified and the EIR must explain the actions that will be needed to provide those services and units, or both. *Napa Citizens for Honest Government v. Napa County Bd. of Supervisors, 91 Cal. App. 4th 342.*

Housing units in the area within and adjacent to the S. Industrial Project area are limited. There is very little residential development in the nearest community of Malaga, and residential development within the S. Industrial Project area is sparse. Vacant land within the Industrial Triangle is not zoned for residential development, and Malaga and Calwa, also nearby, have limited areas where additional residential development is possible. The City must therefore analyze the need for additional housing outside of the project area and the immediately surrounding communities, and may not dismiss the requirement of this analyze based on the fact that housing will be required in other areas of the City or County.

The EIR must also analyze the environmental impact that the project will have on commercial development. *14 CCR §15126.2*. Build-out of the project area will result in over six-thousand acres of industrial and commercial development. The environmental impacts of this build-out will include but are not limited to increased VMT in the area due to trucks and employee commuting, changes in traffic patterns and volume, odors, noise, air emissions, night-time lighting, aesthetic impact, loss of agricultural land, increased water usage, and cumulative environmental impacts. The EIR must analyze each of these issues, including their impacts on the environment outside of the planning area.

III. The EIR Must Analyze Social and Economic Effects of the Project

a. *Analysis of social and economic impacts of a project is required when those impacts lead to environmental changes*

Environmental changes resulting from the economic and social impacts of a project must be analyzed in the EIR. *14 CCR §15065 (e).* “An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes.” *14 CCR §15131(a).*

The project will foreseeably have social and economic impacts that will result in changes to the environment. The increase in residents re-locating to the area will result in an increased strain on existing facilities, including recreation and educational facilities in Malaga, which is the most proximate residential community. Strained facilities will necessitate expansion of existing facilities or addition of new facilities and services, which will have a resulting physical environmental impact of construction, related air, noise, and aesthetic impacts, as well as traffic increases. *14 CCR §15131(a)*. The additional growth will also require expansion of fire facilities such as fire stations, the construction of which will have environmental impacts. *See City of Hayward v. Board of Trustees of Cal. State Univ. (2015) 242 CA4th 833, 842.*

b. Analysis of social and economic impacts of a project is required to determine the significance of an environmental effect

Evaluation of social and economic impacts of a project should also be considered when determining if an environmental impact is significant. *14 CCR §§15064(e), 15382*. For example: "if construction of a new freeway or rail line divides an existing community, the construction would be the physical change, but the social effect on the community would be the basis for determining that the effect would be significant." *14 CCR §15131 (b).* If the environmental effects of a project have substantial adverse social and economic effects, either directly or indirectly, those effects must be considered significant and subject to further environmental review and mitigation measures. *Pub. Resources Code §21083(b)(3).* When evaluating build-out of the S. Industrial Project area, the City must evaluate whether the environmental changes resulting from the project will have a substantial adverse social and economic effects. If they do, those impacts must be considered when determining the significance of the environmental impact.

c. Analysis of social and economic impacts of a project is required for mitigation purposes

The CEQA Guidelines also require an agency to consider the social and economic impacts of a mitigation measure when "deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment identified in the EIR." *14 CCR §§15091(a)(3); 15131(c).* The CEQA Guidelines define feasible as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." *14 CCR §15364*. In order to determine whether a mitigation measure is feasible, CEQA requires an analysis of the social and economic impacts of the mitigation measure.

A social and economic impact analysis is required where, as in the S. Industrial Project, the project will lead to environmental changes, to determine the significance on an environmental effect and the feasibility of mitigation measures.

IV. The EIR Must Include a Water Supply Assessment

a. A water supply assessment must be completed for large industrial projects

A lead agency must assess water supply conditions in its EIR when an industrial project occupies more than forty (40) acres of land. *W. Code §10912(a)(5); Pub. Resources Code §21151.9.* Since the S. Industrial Project EIR will consider complete build-out of 6,150 acres of industrial development, a water supply assessment must be included.

Water Code §§10910-10915 detail the requirements of this analysis. The lead agency must identify all public water systems that supply or could potentially supply water for the project and request a water supply assessment from those systems. The assessment must include

> a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses. *W. Code §10910 (c)(3).*

The assessment must also include an analysis of water rights, entitlements, or contracts impacting water supply. *W. Code §10910(d).* If the project includes groundwater reliance, as the current project will, additional information must be included: (1) a review of any information contained in any urban water management plan relevant to the project; (2) a description of any water basins that will supply water for the project; (3) any adjudicated determinations about the groundwater supply; (4) whether the basin is in overdraft and subject to overdraft conditions; (5) a copy of any relevant groundwater sustainability plan adopted by a local groundwater sustainability agency; (6) an analysis of the amount and location of groundwater serving the project; (7) the ability of groundwater supplies to adequately supply the project. *W. Code §10910(f).* If it is determined that water supplies are not sufficient to serve the project, the lead agency must describe plans for acquiring additional water resources. *W Code §10911.*

b. The City must include a water analysis in the EIR

The City must include an assessment of the water supply for the S. Industrial Project area in the EIR. The closest public water systems to the area are the City of Fresno and the Malaga County Community Services District (Malaga CSD), which currently provides water service to some industrial projects within the area and may foreseeably provide additional water in the future to projects within the S. Industrial Project area. The City must request water supply assessments from Malaga CSD and the City of Fresno and include them in the EIR.

V. The EIR Must Analyze Transportation Impacts of the Project

a. CEQA requires an analysis of the Vehicle Miles Traveled impact of a project

CEQA requires an analysis of changes in the man-made and natural physical conditions which exist within the area by the proposed project. *14 CCR §15360; Pub. Resources Code §21060.5.* Changes to transportation infrastructure constitute a direct change in the physical environment and must be analyzed in an EIR. Vehicles, whether driven or parked, may constitute man-made physical conditions in the area and require a lead agency to study their impact on the environment. *Taxpayers for Accountable School Bond Spending v. San Diego (2013) 15 Cal. App. 4th 1013, 1053.* Changes in traffic and traffic infrastructure also will foreseeably increase direct and cumulative air quality and GHG emissions.

Changes to CEQA implemented in January 2019 require the use of a vehicle miles traveled (VMT) analysis in traffic impact studies, replacing the traditional level of service (LOS) analysis. A lead agency adopting a threshold of significance, or evaluating transportation impacts on a case-by-case basis should ensure that the analysis addresses: (1) Direct, indirect and cumulative effects of the transportation project, *14 CCR§ 15064(d), (h*); (2) Near-term and long-term effects of the transportation project, *14 CCR §§15063(a)(1); 15126.2(a);* (3) The transportation project's consistency with state greenhouse gas reduction goals, *Pub. Resources Code § 21099*; (4) The impact of the transportation project on the development of multimodal transportation networks, *Pub. Resources Code § 21099;* and (5) The impact of the transportation project on the development of a diversity of land uses. *Pub. Resources Code § 21099.*

An EIR traffic study also must analyze the health impacts that will result from increased VMT. The Office of Planning and Research explains that

> human health is impacted as increases in VMT lead to more vehicle crashes, poorer air quality, increases in chronic diseases associated with reduced physical activity, and worse mental health. Increases in vehicle travel also negatively affect other road users, including pedestrians, cyclists, other motorists, and other transit users.[1]

Lead agencies should ensure that their analysis is substantive and complete. Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries, for example, by failing to count the portion of a trip that falls outside the jurisdiction or by discounting the VMT from a trip that crosses a jurisdictional boundary. CEQA requires environmental analyses to reflect a "good faith effort at full disclosure." *CEQA Guidelines, §15151.* Thus, where methodologies exist that can estimate the full extent of vehicle travel from a project, the lead agency should apply them to do so. Where those VMT effects will grow over time, analyses should consider both a project's short-term and long-term effects on VMT.

---

[1] Office of Planning and Research, 'Technical Advisory on Evaluating Transportation Impacts in CEQA,' December 2018, pg 17

b. The S. Industrial Project will result in increased VMT and cause additional changes to the physical environment

It is reasonably foreseeable that the S. Industrial Project will increase total VMT and cause a significant effect on the environment. Complete build-out of the Industrial Triangle will lead to a substantial increase in industrial development in the project area. The build-out of over six-thousand acres of industrial land will lead to a substantial increase in VMT as vehicles enter the area to serve the facilities located there. Complete build-out will lead to thousands of additional truck trips and employee trips into the area, especially if the City continues siting distribution warehouses in the project area.

The substantial increase in traffic in the area will foreseeably lead to capacity-increasing transportation projects in the area, as traffic congestion traditionally has been addressed by adding capacity to transportation infrastructure.[2] Determinations related to traffic infrastructure to serve the project area are currently underway in a study being conducted by Fresno Council of Governments; Caltrans is also beginning interchange expansion projects to serve the Industrial Triangle.

Studies have shown that capacity-increasing transportation projects ultimately fail to relieve congestion and lead to an overall increase in VMT. The National Center for Sustainable Transportation has found that a capacity expansion of 10% is likely to increase VMT by 3-6% in the short run and 6-10% in the long run. This increase does not happen immediately; the full effects on increased VMT from a capacity-increasing project take 5-10 years to materialize. Evidence has shown that a net increase of VMT takes place—not merely a shifting of VMT from one road to another—as cars utilize new expanded infrastructure. A short-term and long-term analysis of the environmental and human health impacts resulting from an increase of VMT, including a cumulative impacts analysis, must be included in the S. Industrial Project EIR.

VI. The EIR Must Analyze Growth-Inducing Impacts from the Project

a. CEQA requires an analysis of significant growth-inducing impacts from a project

An EIR must examine whether a project will foreseeably, directly or indirectly, lead to an increase in population growth, economic growth, or will encourage development or other activities that could affect the environment. *Pub. Resources Codeode §21100(b)(5); 14 CCR §15126.2(d).* The EIR must analyze growth-inducing impacts even if those effects will only indirectly result from the project. *Napa Citizens for Honest Gov't v. Napa County Bd of Supervisors (2001) 91 CA4th 342, 368.* Increases in growth that may tax existing community service facilities, necessitating the construction of new facilities that could impact the environment, should also be included. *14 CCR §15126.2(d).* An EIR must include growth-inducing impacts even if they take place outside the project area; failure to analyze these impacts undermines the purpose of CEQA and may be

---

[22] Id.

prejudicial. *Napa Citizens for Honest Gov't v. Napa County Bd of Supervisors (2001) 91 CA4th 342, 368.*

b. *The S. Industrial Project will encourage economic and industrial development that has a significant environmental effect*

Given that the EIR will analyze the full build-out of the S. Industrial Project's 6,150 acres, the EIR must analyze the growth-inducing impacts of this build-out. It also must analyze the foreseeable additional industrial and economic growth that will result from additional parcels being annexed into the area and re-zoned in the long-term due to the City's policy of directing all future industrial development into the area.

The City must consider the degree to which siting and build-out of industrial and commercial projects in the S. Industrial Project area will foreseeably lead to the County directing industrial development to the area. It must also evaluate the economic and commercial development necessary to support the increased population density and housing development required to support additional workers in the industrial facilities. Secondary environmental impacts from the development of these projects that must be analyzed include air, noise, and traffic impacts during construction in addition to the environmental changes resulting from the growth itself.

VII. The EIR Must Substantively Link the Project's Air Quality Impacts to Human Health Consequences

CEQA Guidelines §15162.2 (a) requires a project EIR to "identify and focus on the significant environmental effects of the proposed project . . . examin[ing] changes in the existing physical conditions in the affected area" and discuss, inter alia, "health and safety problems caused by the physical changes" that the proposed project will precipitate. These requirements mandate that agencies evaluate the specific human health consequences caused by significant air quality impacts from the project. *Bakersfield Citizens for Local Control v. City of Bakersfield (2004) 124 Cal. App. 4th 1184, 1220.*

The EIR discussion of air emissions resulting from the project must be informative and substantive; a member of the public must be able to understand the specific health consequences that will result from the project. *Bakersfield, supra, 1220.* The project air quality analysis should not simply provide a generalized description of health impacts that commonly result from exposure to certain types of pollutants. The quantity and composition of pollutants resulting from the project must be connected to specific adverse effects on human health and must identify the concentration at which the pollutants will trigger identified health impacts. *Sierra Club v. County of Fresno (2018) 6 Cal. 5th 502, 524.* Agencies should analyze the air quality effects of the project over time, not merely when the project is initially implemented. *City of Long Beach v. City of Los Angeles (2018) 19 Cal App. 5th 465, 487.*

The S. Industrial Project will have significant adverse air impacts that must be thoroughly analyzed in the EIR and connected to specific human health consequences. Build-out of the S. Industrial Project area will lead to increased adverse air quality impacts resulting from stationary sources such as the industrial facilities that will be built in the area, and non-stationary sources such as increased truck traffic serving the communities and increased car traffic for employees driving to the facilities. The increased traffic will result in tens of thousands, if not more, of additional daily vehicle trips to the area.

The air quality impacts must be clearly laid out, including the type of air pollutants and the estimated concentration and quantity of each over the life of the S. Industrial Project. The air quality impacts will change over time as the build-out continues, and this should be clearly shown. The specific health impacts that will be triggered by the air pollution must also be discussed. As well as a clear indication of the concentration levels that will trigger each health impact. If it is not possible to connect specific emissions data to specific health impacts, the City must identify why that analysis is not possible. *Sierra Club v. County of Fresno (2018) 6 Cal. 5th 502, 524.* Mitigation measures must also be developed to offset the human health impacts of these air emissions.

VIII. The EIR Must Analyze and Address Cumulative Impacts

a. CEQA requires an analysis of a project's cumulative impacts

A project EIR must identify and analyze the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. *14 CCR §15130 (a).* "Cumulative impacts" refers to "two or more individual effects which, when considered together, are considerable or which increase or compound other environmental impacts. . . [c]umulative impacts can result from individually minor but collectively significant projects taking place over a period of time." *14 CCR § 15355.* A cumulative impacts analysis must evaluate a project's cumulative impact with "related past, present and reasonably foreseeable probable future projects." *14 CCR § 15355(b).* The EIR should consider all sources of related impacts, not only those that are similar sources or projects. *14 CCR §15130(a)(1); City of Long Beach v. Los Angeles Unified Sch. Dist (2009) 176 CA4th 889, 907.* The regional cumulative impacts of a project must also be considered. *Citizens of Goleta Valley v. Board of Supervisors, (1990) 52 Cal. 3d 553,575*

The EIR must summarize the anticipated cumulative environmental effects of the project and other related projects, provide a reasonable analysis of their cumulative impacts, and identify reasonable mitigation measures to reduce or eliminate the project's contribution to the significant cumulative impacts. *14 CCR §15130(b).* The analysis should describe the severity of the impacts and their likelihood of occurrence. *14 CCR §15130(b).* The summary of projections may be based on local, regional, or statewide planning documents such as general plans, community plans, or regional transportation plans. *14 CCR §§15130(b);(d).*

b. The Project will result in significant cumulative impacts in the project area

Build-out of the S. Industrial Project area will result in significant cumulative environmental impacts, particularly related to air quality. The project zip codes rank in the top 1% most polluted zip codes in the State of California as determined by CalEnviroScreen 3.0, a cumulative pollution-burden analysis tool developed by the California Office of Environmental Health Hazard Assessment. The air basin is in severe non-attainment status for several air pollutants. Significant stationary and mobile sources of these pollutants are sited within the project area and adjacent to the area in the community of Malaga. Malaga includes several of the highest emitters of particulate matter in the San Joaquin Valley: the Rio Bravo biomass facility and a glass manufacturer. Other local stationary air pollution sources include car crushing facilities, recycling and demolition facilities, truck stops, and fabrication facilities. These sources cumulatively contribute significant levels of the same air pollutants that likely will be produced by build-out of the S. Industrial Project, and therefore must be considered in a cumulative impact analysis. Any emissions of the non-attainment pollutants from the S. Industrial Project will cumulatively compound the current non-attainment status of the basin, as well as the specific human health impacts that result; they must be analyzed.

Foreseeable future projects that will have the same potential environmental effects as the Industrial Triangle build-out also must be considered in the cumulative impacts analysis. The Fresno County draft 2020-2040 General Plan indicates that the County will direct all future industrial development adjacent to the project boundaries. The Fresno Council of Governments is undertaking an infrastructure study of the industrial area to further facilitate industrial development in the project area. Recent construction of distribution warehouses in the area has led, and will continue to lead, to an increase in industrial truck traffic that will utilize the project interchanges. The City is anticipating that the heavy-duty maintenance facility for the High Speed Rail Project may be located in the project area. At least two parcels in Malaga are under consideration for rezoning from agricultural to heavy industrial uses and it can be anticipated that these uses will also contribute to cumulative environmental impacts. These and other future projects must be considered in evaluating cumulative impacts from the project.

IX. The EIR Must Consider and Address the Environmental Justice Impacts of the Project

The Notice of Preparation for the project states that the EIR will “include a discussion of environmental justice issues, and identify and evaluate a range of reasonable alternatives to the proposed project.” *Notice of Preparation.* To adequately comply with this requirement, the EIR must consider the current cumulative pollution burdens of the project area, the way that build-out of the project area will impact those pollution burdens, and alternative options that would eliminate or substantially mitigate any negative impacts on environmental justice communities.

a. The City has civil rights and environmental justice obligations

Civil rights and environmental justice obligations for cities extend from both federal and state law. Title VI of the federal Civil Rights Act of 1964 prohibits recipients of federal financial assistance from discriminating on the basis of race, color, or national origin in the provision of their programs or activities. Title VI obligations extend to all programs and activities conducted by the funding recipient, not merely the programs specifically funded by federal dollars.

The City is also subject to federal legal requirements related to environmental justice, which originate from Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." These regulations are designed to address historical patterns wherein low-income communities and communities of color have been disproportionately burdened with the social, economic, environmental, and health costs of development while being largely excluded from its benefits. Executive Order 12898 and implementing guidance mandate that recipients of federal funds identify and address the disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations.

California Government Code §11135 prohibits discrimination on the basis of sex, race, color, religion, ancestry, national origin, ethnic group identification, age, mental disability, physical disability, medical condition, genetic information, marital status, or sexual orientation by any agency receiving state funding. As a recipient of both state and federal funding, the City is subject to both Title VI and Government Code §11135 obligations.

Senate Bill 1000 (SB 1000) created additional environmental justice obligations for jurisdictions engaging in land use planning. SB 1000 mandates that jurisdictions updating their General Plans implement an environmental justice element that, at a minimum, must:

> A) Identify objectives and policies to reduce the unique or compounded health risks in disadvantaged communities by means that include, but are not limited to, the reduction of pollution exposure, including the improvement of air quality, and the promotion of public facilities, food access, safe and sanitary homes, and physical activity.
>
> (B) Identify objectives and policies to promote civil engagement in the public decision-making process.
>
> (C) Identify objectives and policies that prioritize improvements and programs that address the needs of disadvantaged communities.

The mandates of SB1000 take effect when a jurisdiction updates two (2) or more of its general plan elements. Fresno City is in the process of updating its general plan, a process that is taking place concurrently with the development of the S. Industrial Project. The City will be mandated to develop policies to comply with SB1000 at the same time as it is developing the EIR for the S. Industrial Project. All projects must be consistent with a jurisdiction's general plan. Because the

City's general plan update will include SB1000 environmental justice mandates, to ensure consistency between the S. Industrial Project and the general plan, these environmental justice principles must be integrated into the project EIR.

b. Build-out of the S. Industrial Project area will conflict with the City's environmental justice obligations

Complete build-out of the S. Industrial Project area will conflict with the City's environmental justice obligations. This area is one of the most pollution-burdened census tracts in the State of California. Communities living within and adjacent to the project area are comprised primarily of low-income individuals and communities of color—groups explicitly protected by environmental justice laws. Permitting or facilitating additional industrial uses within and adjacent to these communities will have a disproportionate negative impact on protected communities by contributing additional pollution to an already over-burdened area.

c. *The City must develop alternatives to citing industrial facilities in environmental justice communities*

The City must develop alternatives to siting industrial facilities in environmental justice communities. It is inequitable and unlawful to direct all industrial development to economically and racially segregated areas that have the lowest life expectancy rates, highest rates of asthma, and highest pollution burdens. The City must consider other locations for industrial sites that will have a diminished impact on protected populations and will equitably distribute the pollution burdens associated with industrial development. Developing mitigation measures that reduce but do not eliminate pollution burdens on environmental justice communities is necessary but not sufficient as it does not prevent a disproportionate negative impact on protected populations.

The City, at a minimum, must consider (1) zoning unpopulated and remote parts of the City's Sphere of Influence for industrial development and directing future industrial development to those locations instead of the S. Industrial Project area, examples could include the area adjacent to the waste water treatment plant, (2) expanding the City's Sphere of Influence to include additional remote land where industrial development can be located away from residences, (3) siting industrial facilities in parts of the City not currently overburdened by pollution or protected by civil rights and environmental justice laws, such as in the northern part of the jurisdiction.

X. The EIR Must Be Written in Plain and Transparent Language

The EIR must be written in clear, everyday language that allows citizens of Fresno City and Fresno County to reasonably understand the project and the environmental impacts that will result from the project. The purpose of an EIR is to 'inform the public and its responsible officials of the environmental consequences of their decisions before they are made." *Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal. 3d 553, 563-564*. A document the precludes informed decision-making and informed public participation is considered a prejudicial error and may expose a lead agency to litigation. *Napa Citizens for Honest Government v. Napa County Bd. of Supervisors, 91 Cal. App. 4th 342, 356.* It is critical that Fresno prepare an EIR that is transparent and accessible to citizens and can ensure their informed participation in the environmental review and development process.

Sincerely,

Mariah C. Thompson
Staff Attorney, Community Equity Initiative
California Rural Legal Assistance, Inc.
Fresno, CA 93726
(559) 441-8721
mthompson@crla.org

cc: Ilene J. Jacobs, Director of Litigation, Advocacy, and Training, California Rural Legal Assistance, Inc. ijacobs@crla.org

Marisol F. Aguilar, Director, Community Equity Initiative, California Rural Legal Assistance, Inc. maguilar@crla.org

City of FRESNO

South Industrial Priority Area Specific Plan Project
Public Scoping Meeting
Comment Card

www.fresno.gov/SIPA

City of Fresno, City Council Chambers, 2600 Fresno Street, Fresno

Comments may be submitted at this scoping meeting or sent to the following address no later than 5:00 p.m. on August 6, 2019.

Jennifer Clark, Director
c/o Marty Sorge-Jauss, Executive Assistant
Planning & Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721
E-Mail: SIPA@fresno.gov

Name: TOM THOMAS

Organization:

Mailing Address: 7426 N. FANCHER, CLOVIS CA. 93619

Email: thomasfarm@msn.com

Comment: NEW CONSTRUCTION (UTILITIES) IS TAKING PLACE ON ORANGE AVE, SOUTH OF CENTRAL, ON MALAGA BETWEEN ORANGE AND CEDAR, AND ON CEDAR NORTH OF MALAGA. THE CITY IS FUNDING THIS PROJECT BUT IT'S IN THE COUNTY.
THE PROPERTIES ALONG CENTRAL FRONTAGE ROAD HAVE BEEN EXCLUDED FROM ANY OF THESE IMPROVEMENTS.
CAN THE CITY OR COUNTY JUSTIFY THESE EXCLUSIONS?
ALL RESIDENTS & PROPERTY OWNERS MUST BE NOTIFIED PRIOR TO COMMENCMENT OF THIS WORK.

Please use reverse side of page or use additional sheets as needed

South Industrial Priority Area Specific Plan Project
Public Scoping Meeting
Comment Card

www.fresno.gov/SIPA

City of Fresno, City Council Chambers, 2600 Fresno Street, Fresno

Comments may be submitted at this scoping meeting or sent to the following address no later than 5:00 p.m. on August 6, 2019.

Jennifer Clark, Director
c/o Marty Sorge-Jauss, Executive Assistant
Planning & Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721
E-Mail: SIPA@fresno.gov

Name: Rosa DePew

Organization:

Mailing Address: 521 E Britten Ave

Email: Fresno 93706

Comment: rosadepew@yahoo.com

I live in the county, I was not notified of the meeting. Lucio - notified me today right before the meeting. Please include us! Many don't get the Fresno Bee & they will not drive down my street.

Thank You, Rosa DePew

Please use reverse side of page or use additional sheets as needed

City of FRESNO

South Industrial Priority Area Specific Plan Project
Public Scoping Meeting
Comment Card

www.fresno.gov/SIPA

City of Fresno, City Council Chambers, 2600 Fresno Street, Fresno

Comments may be submitted at this scoping meeting or sent to the following address no later than 5:00 p.m. on August 6, 2019.

Jennifer Clark, Director
c/o Marty Sorge-Jauss, Executive Assistant
Planning & Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721
E-Mail: SIPA@fresno.gov

Name: Terry Hirschfield

Organization: Orange Center School District

Mailing Address: 3530 S. Cherry Ave.

Email: thirschfield@orangecenter.org

Comment: EIR Should Study:

- Air pollution from vehicles & facitiy operations in relation to Orange Center School.
- Soil/dust pollution
- Health impacts on residents/students/employees/community members.
- Quality of life impacts noise/dust/lights/sleep/Animal wildlife
- TO include Current & approved projects

Mitigation Factors:

- Prohibit facilities associated w/ health risks
- rerouting freight vehicles
- Air quality monitors

Please use reverse side of page or use additional sheets as needed

- Buffer walls / Shrubs / greenery
- air filters
- green space

★ Traffic on all days of the week and all times of day based on local businesses busy shift changes, Cherry Auction, & delivery & truck traffic

★ ensure community / school / land owners input

South Industrial Priority Area Specific Plan Project
Public Scoping Meeting
Comment Card

www.fresno.gov/SIPA

City of Fresno, City Council Chambers, 2600 Fresno Street, Fresno

Comments may be submitted at this scoping meeting or sent to the following address no later than 5:00 p.m. on August 6, 2019.

Jennifer Clark, Director
c/o Marty Sorge-Jauss, Executive Assistant
Planning & Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721
E-Mail: SIPA@fresno.gov

Name: Jeff Roberts

Organization: Assemi Group

Mailing Address: 1396 W. Herndon #110 Fresno, Ca. 93711

Email: jroberts@assemigroup.com

Comment:

1. How many acres of ag are within the SOI / Additional Area and not yet annexed?
2. What Biological Resources to you expect to find within the study area?
3. Do you intend to propose an urban land use pattern for the 1200 acre proposed addition?

Please use reverse side of page or use additional sheets as needed

From: SIPA <SIPA@fresno.gov>
Sent: Wednesday, August 7, 2019 11:48 AM
To: Jennifer Clark; Chris Mundhenk
Subject: FW: Comments to NOP regarding EIR

From: David Gomez [mailto:David.Gomez@trilliumflow.com]
Sent: Tuesday, August 06, 2019 4:56 PM
To: SIPA
Subject: Comments to NOP regarding EIR

Jennifer,

Our business just got an email today from the City of Fresno regarding an Environmental Impact Report that would be done for the area in which our business is located. Weir Floway/ Trillium's only concern is traffic during construction if the project would take place near 2494 S Railroad. This is our only concern due to HSR plans to remove access to Railroad Avenue, we have large shipments and imports that are of concern if Goldenstate Avenue were to be impacted during this future project.

David Gomez
Lean Facilitator/
Special Projects Manager

T. 559-443-6446
M. 559-367-4100
E. david.gomez@trilliumflow.com

TRILLIUM Flow Technologies
2494 S Railroad Ave
Fresno,CA 93706
USA
www.trilliumflow.com

Fresno Metropolitan Flood Control District
Capturing Stormwater since 1956

File 420.215

August 6, 2019

Jennifer Clark, Director
c/o Marty Sorge-Jauss, Executive Assistant
City of Fresno, Development and Resources Management Department
2600 Fresno Street, Room 3065
Fresno, CA 93721

Dear Jennifer,

FMFCD Comments on the City of Fresno Notice of Preparation of an Environmental Impact Report for the South Industrial Priority Area Specific Plan Project

General Comments

This letter is in response to the City's request for comments regarding the Notice of Preparation of an Environmental Impact Report for the South Industrial Priority Area Specific Plan Project. Fresno Metropolitan Flood Control District (FMFCD) bears responsibility for storm water management within the Fresno-Clovis metropolitan area, including the area within the Plan boundary. Within this area, the community has developed and adopted Storm Drainage and Flood Control Master Plans as shown in the attached Exhibit Nos. 1 and 2. In general, each property contributes its pro-rata share to the cost of the public drainage system. All properties are required to participate in the community system for everyone. It is this form of participation in the cost and/or construction of the drainage system that will mitigate the impact of development. The subject property shall pay drainage fees pursuant to the Drainage Fee Ordinance prior to approval of any final maps and/or issuance of building permits at the rates in effect at the time of such approval. Please contact FMFCD for a final fee obligation prior to issuance of the construction permits within the Plan area.

The grading of proposed development within the Plan area shall be designed such that there are not adverse impacts to the passage of said major storm through that development. Additionally, the development shall provide any surface flowage easements or covenants for any portions of the development area that cannot convey storm water to public right of way without crossing private property.

If there are to be storm water discharges from the private facilities to FMFCD's storm drainage system, they shall consist only of storm water runoff and shall be free of solids and debris. Landscape and/or area drains are not allowed to connect directly onto FMFCD's facilities.

k:\letters\general plan amendment letters\fresno\fresno nop eir south industrial priority area specific plan project(wl).docx

FMFCD will need to review and approve the final improvement plans for all development (i.e. grading, street improvement and storm drain facilities) within the boundaries of the proposed project to insure consistency with the Master Plan.

Storm drain easements will be required whenever storm drain facilities are located on private property. No encroachments into the easement will be permitted including, but not limited to, foundations, roof overhangs, swimming pools, and trees.

Permanent drainage service is available in those areas where Master Plan facilities exist provided the developer can verify to the satisfaction of the City and FMFCD that runoff can be safely conveyed to existing the Master Plan facilities. Permanent drainage service will not be available if the downstream Master Plan facilities are not constructed or operational and in this instance FMFCD recommends the City require temporary drainage facilities until permanent drainage service is available. Prior to submitting any development proposal, it is recommended FMFCD be contacted for information regarding the status of the Master Plan drainage facilities and the availability of permanent drainage service.

FMFCD may require the developer to construct certain storm drain facilities as described in the Master Plan. The cost of construction of Master Plan facilities excluding dedication of storm drainage easements is eligible for credit against the drainage fee of the drainage area served by the facilities. A development agreement shall be executed with FMFCD to affect such credit. Reimbursement provisions, in accordance with the Drainage Fee Ordinance, will be included to the extent that developer's Master Plan costs for an individual drainage area exceed the fee of said area. Should the facilities cost for such individual development total less than the fee of said area, the difference shall be paid upon demand to the City or FMFCD.

Within the Plan area there are certain flood prone areas as designated on the most current official Flood Insurance Rate Maps. It is responsibility of the developer to review and verify the information at the time of the development proposal. The official Flood Insurance Rate Maps are available at the Federal Emergency Management Agency (FEMA) Flood Map Service Center.

In an effort to improve storm runoff quality, outdoor storage areas shall be constructed and maintained such that material that may generate contaminants will be prevented from contact with rainfall and runoff and thereby prevent the conveyance of contaminants in runoff into the storm drain system.

FMFCD encourages, but does not require that roof drains from non-residential development be constructed such that they are directed onto and through a landscaped grassy swale area to filter out pollutants from roof runoff.

Runoff from areas where industrial activities, product, or merchandise come into contact with and may contaminate storm water must be directed through landscaped areas or otherwise treated before discharging it off-site or into a storm drain. Roofs covering such areas are recommended. Cleaning of such areas by sweeping instead of washing is to be required unless such wash water can be directed to the sanitary sewer system. Storm drains receiving untreated runoff from such areas that directly connect to FMFCD's system will not be permitted. Loading docks, depressed areas, and areas servicing or fueling vehicles are specifically subject to these requirements. FMFCD's policy governing said industrial site NPDES program requirements are available. Contract FMFCD's Environmental Department for further information regarding these policies related to industrial site requirements.

Specific Comments to the South Industrial Priority Area Specific Plan

These comments are Specific to the South Industrial Priority Area Specific Plan report "Initiated March 2019". For the purposes in this report, the "flood control district" should be referred to as the Fresno Metropolitan Flood Control District or FMFCD.

The portion of this plan area south of American Avenue is located outside of the FMFCD. Should the City of Fresno require urban drainage service and flood protection from the FMFCD, FMFCD staff is willing to meet with City Staff and/or Council to discuss the feasibility and requirements necessary to provide such service and bring this to our Board for consideration.

In general, there has been significant progress on acquiring the master planned basin facilities and the construction of the pipeline collection and conveyance system. However, there are still some remaining drainage facilities that need to be constructed. See the attached "Exhibit No. 1" to view the current Storm Drainage Master Plan Map, and "Exhibit No. 2" for more specific existing and future FMFCD pipeline facilities. This map may be used as a reference to show the existing, proposed and in-design or construction of the master planned drainage facilities. The drainage plans are continually evolving and being updated. Check with the FMFCD for the most current status of the master planned facilities. For a digital copy (GIS) of our facilities, please contact Rick Hara, Engineer Services Manager at (559) 456-3292 or via email at Rickh@fresnofloodcontrol.org

Page 70 –

T-13.3, "Work with FMFCD to reduce or waive development impact fees if LID development is implemented onsite"

Should be changed to "FMFCD to collect drainage and development fees consistent with the current FMFCD Drainage Fee Ordinance at the time of any development entitlement.

Page 93 - In paragraph three under Flood Control:

"However, as an interim measure, flood control may have to be handled on a temporary basis for each lot developed until the proposed drainage basins are put into operation".

Should be changed to "As an interim measure, urban drainage may have to be handled on a temporary basis for each lot developed until the proposed permanent downstream drainage facilities are in place".

"It is recognized that the development of temporary on-site drainage facilities by the developer represents a double payment for flood control service, a condition that the City and flood control district is attempting to prevent".

This sentence should be removed.

Page 112 - Flood Control Map

This Map is out dated and does not accurately depict the current status of the Master Planned drainage facilities. It should be removed and replaced with the included attachment "Exhibit Nos. 1 and 2".

Page 113 –

The general flood control discussion should be replace and revised to the following: "The FMFCD has developed and adopted storm drainage master plans for a portion of the plan area. In general, the adopted plans do not cover the plan area south of American Avenue, the limit of the FMFCD boundary. Should the City require urban drainage service from the FMFCD, FMFCD will need to expand its boundary to include the entire plan area. All basins north of American Avenue and within the plan boundary have been acquired by the FMFCD (with the exception of Basin "AV" which the purchase is currently being negotiated with the property owner for acquisition now) and portions of the pipeline collection systems have been constructed. See the attached Exhibit No. 2 for the latest drainage system status. In order to provide for permanent drainage service, the downstream drainage facilities must be in place or it is recommended that a temporary on-site ponding basin be required".

Pages 113, 120, 121, 122 and 123 -

The FMFCD has acquired the Master Planned basin facilities that serve the South Industrial Priority Area north of American Avenue (except Basin "AV"). Should the City desire urban drainage service and flood control south of American Avenue, the FMFCD would need to annex this area into its service area. In addition, portions of the Master Planned pipeline collection system have been constructed (see Exhibit No. 2). Basins "LL", "AW1" and "AW2" are acquired basin facilities. However, all of the improvements for these basin facilities have not been completed. Should the City desire the completion of certain components of the Master Planned storm drainage system, FMFCD staff is willing to meet to discuss, prioritize and coordinate our efforts (contact Peter Sanchez, District Engineer at (559) 456-3292 or via email at peters@fresnofloodcontrol.org).

Page 120 - Phase I Capital Improvement Program North Avenue Industrial Triangle.
Flood Control –District LL Drainage Basin

The call out on the Phase I Capital Improvement Program table for the Flood Control – District LL Drainage Program should be revised. Property for the basin "LL" facility has been acquired. Some but not all of the necessary improvements have been constructed in order to make this facility fully functional (see Exhibit No. 2).

Page 121 – Phasing Schedule - Phase I: Public Effort

Under the Flood Control heading, bullet point item "Acquire Drainage Basin LL" should be deleted.

Page 122 Phase II: Combined Public and Private Effort

Under the Flood Control heading, the fourth bullet point item "Install storm drain line on Annadale Avenue in coordination with development of Drainage Basin KK" should be deleted. All of the Master Planned storm drain pipe in Annadale Avenue within this plan area has either been constructed, is in-design and/or is being constructed. There are three Master Planned inlets that need to be constructed along Annadale Avenue to complete this portion of the public drainage system.

Page 123 Phase III Future Actions

Under the Flood Control heading, the first bullet point item "Acquire and excavate Drainage Basins AW-land AW-2" should be revised to "Complete excavation, interior pipe, outfalls and pump station for Basins AW1 and AW2".

The FMFCD would like to state, that in general, areas where no drainage facilities have been constructed, the drainage plans can be revised to accommodate new land uses and pipe alignments that respect the City's South Industrial Priority Area Specific Plan Project. For areas that have existing drainage facilities, changing to land uses that generate more runoff than originally planned as proposed by the South Industrial Priority Area Specific Plan Project, some type of mitigation, such as parallel pipes, to accommodate the increased flow and/or on-site retention or expansion of the basin facility to accommodate increased runoff volume may be required. However, this would be a minor deviation as most all areas within the specific plan and within the inclusive FMFCD Drainage Areas as shown on "Exhibit Nos. 1 and 2" have already been planned for Heavy Industrial uses.

Thank you for your consideration of these comments and for allowing us to be a part of the South Industrial Priority Area Specific Plan Project process. We continue to look forward to working with you and the City of Fresno on this project.

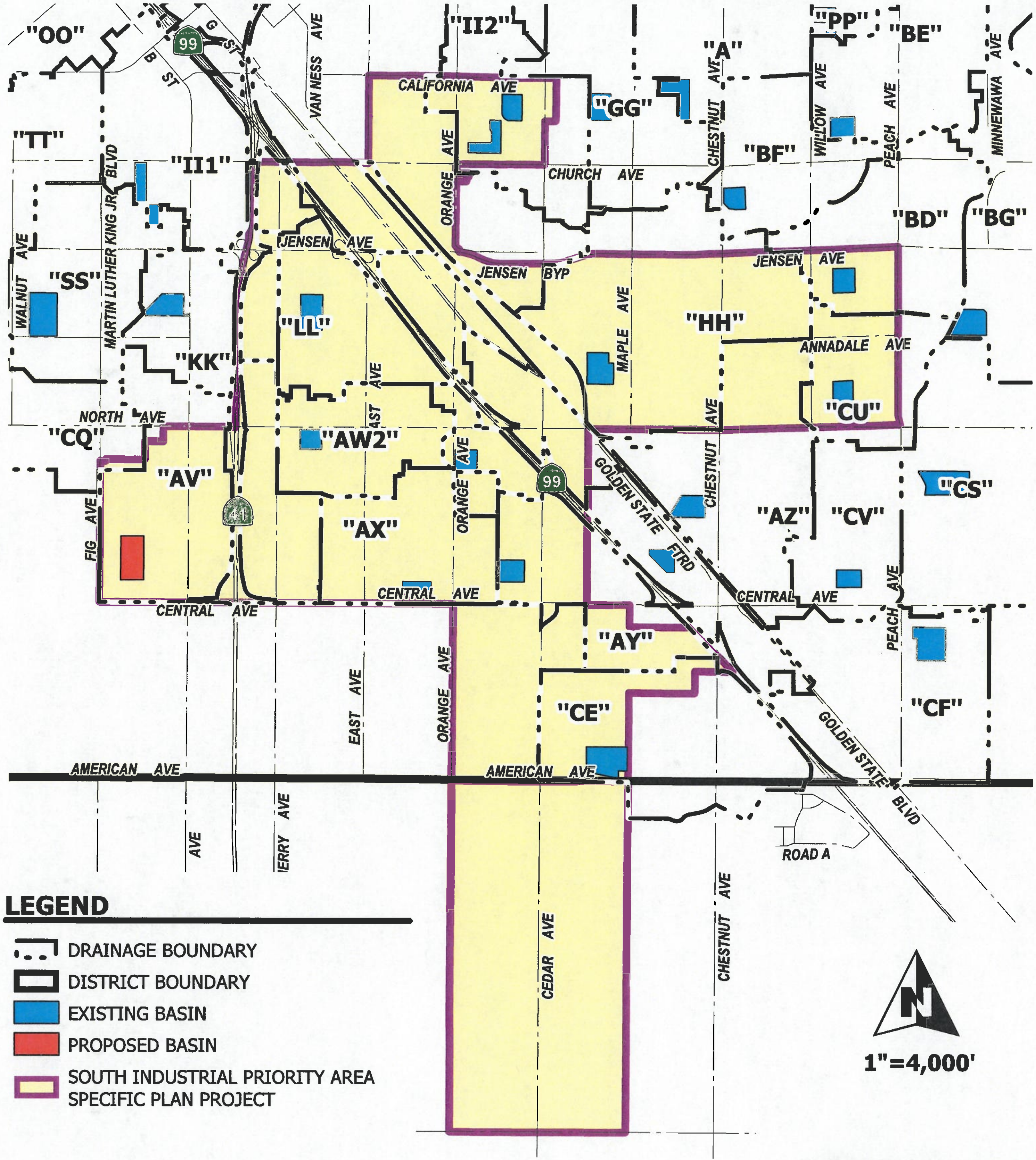
Very truly yours,

Debbie Campbell for
Wendell Lum
Master Plan Special Projects Manager

WL/lrl

Attachments

k:\letters\general plan amendment letters\fresno\fresno nop eir south industrial priority area specific plan project(wl).docx

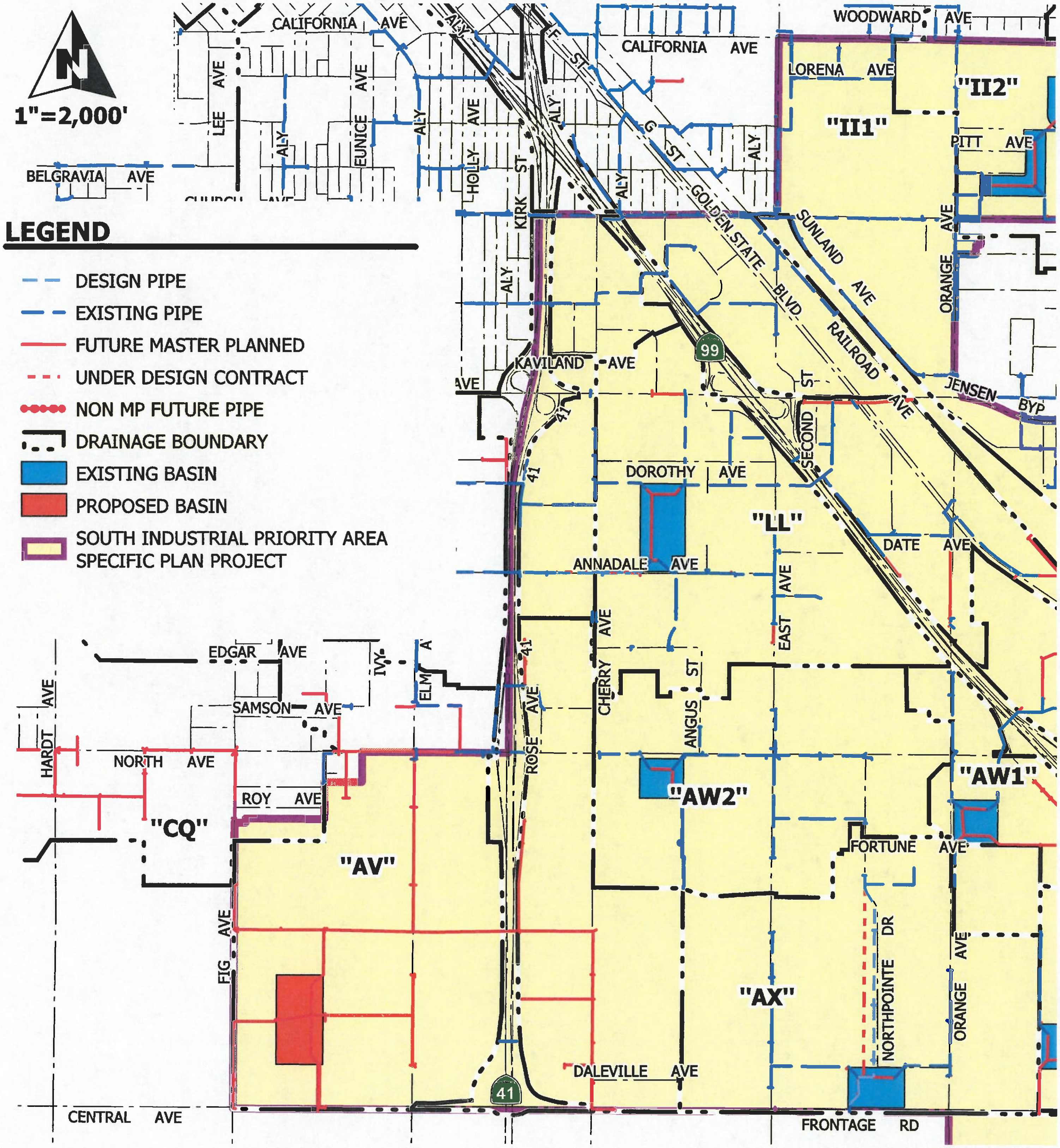


FMFCD Existing and Planned Facilities

Exhibit No. 1

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

Prepared by: kyles
Date: 8/1/2019 1:43 PM
Path: K:\Autocad\DWGS\0EXHIBIT\MP-STUDY\South Industrial Area\South Industrial Priority Area.aprx

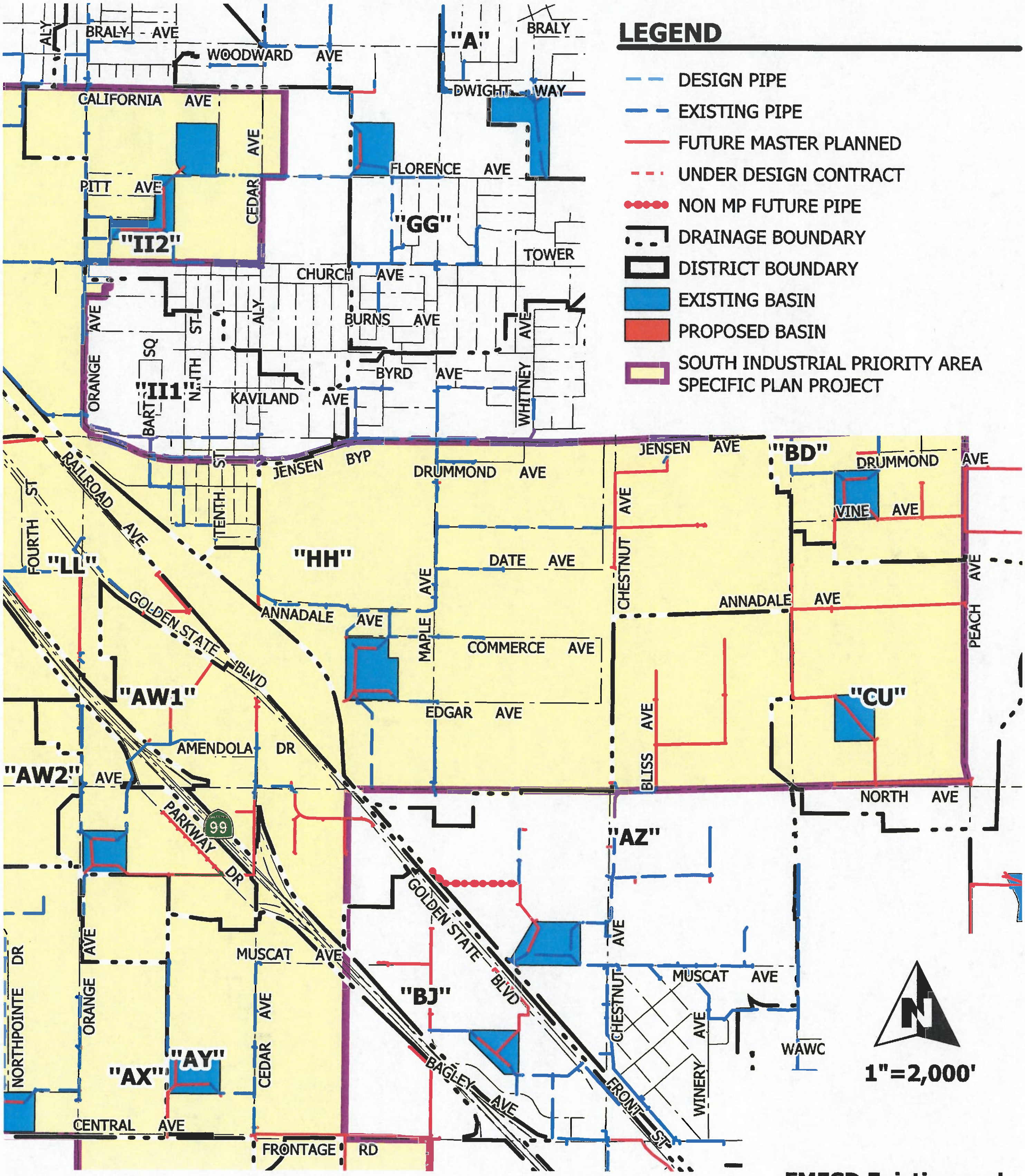


FMFCD Existing and Planned Facilities

Exhibit No. 2
Page 1

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

Prepared by: kyles
Date: 8/1/2019 1:44 PM
Path: K:\Autocad\DWGS\0EXHIBIT\MP-STUDY\South Industrial Area\South Industrial Priority Area.aprx

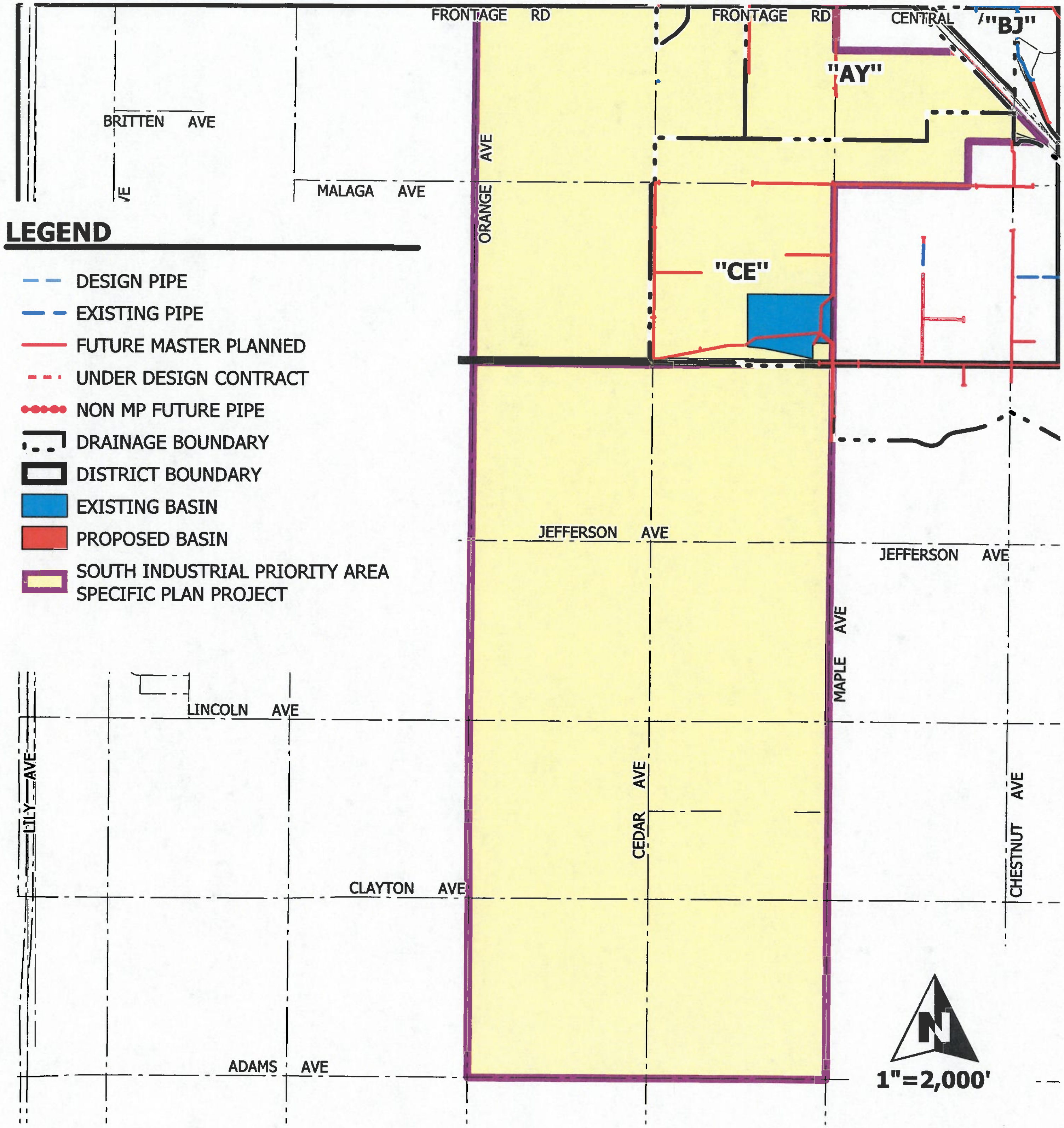


FMFCD Existing and Planned Facilities

Exhibit No. 2
Page 2

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

Prepared by: kyles
Date: 8/1/2019 1:44 PM
Path: K:\Autocad\DWGS\0EXHIBIT\MP-STUDY\South Industrial Area\South Industrial Priority Area.aprx



FMFCD Existing and Planned Facilities

Exhibit No. 2
Page 3

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

Prepared by: kyles
Date: 8/1/2019 1:45 PM
Path: K:\Autocad\DWGS\0EXHIBIT\MP-STUDY\South Industrial Area\South Industrial Priority Area.aprx

Building Healthy Communities FRESNO
CCAC Central California Asthma Collaborative
Central California Environmental Justice Network
CVAQ
CULTIVA la SALUD Cultivating Health Equity in California's Central Valley
FAITH IN THE VALLEY
Friends of Calwa Inc.
AHNE
FRESNO BARRIOS UNIDOS Advocacy • Education • Wellness
LEADERSHIP COUNSEL FOR JUSTICE & ACCOUNTABILITY

August 6, 2019

Jennifer Clark, Department Director
Development and Resource Management Department
2600 Fresno Street, Room 3065
Fresno, CA 93721

RE: Comments on Notice of Preparation of an Environmental Impact Report for the South Industrial Priority Area Specific Plan

Dear Ms. Clark,

The undersigned organizations are writing to provide comments in response to the Notice of Preparation ("NOP") of an Environmental Impact Report ("EIR") for the South Industrial Priority Area Specific Plan ("SIPA"). The expansive industrial development proposed in the SIPA will have detrimental consequences in an already overburdened community. The City of Fresno must properly assess the potential impacts on public health, housing stability, community well-being, and overall access to opportunity as it develops the EIR. It is of the utmost importance the City proactively and meaningfully engage the public within and around the planning area.

I. The SIPA is at Odds with State and Federal Fair Housing and Civil Rights Laws

Before turning to our comments regarding the Notice of Preparation, we first want to reiterate our concerns that several of our organizations have previously conveyed to the City of Fresno regarding the SIPA itself. As discussed in the attached correspondence dated December 2018, the SIPA was created by City planners with no public process yet it covers large swaths of South Fresno which are racially and ethnically concentrated areas of poverty, rank among the most environmentally burdened in the State of California, and would pave the way for further industrial development with significant environmental, health, and quality of life impacts throughout the plan area, including surrounding schools, homes, places of worship and other important sensitive receptors and community spaces. This process contrasts starkly with all other community plan processes that the City has undertaken in recent years, which have included the establishment of community advisory committees to guide plan development, numerous community workshops to inform and vet successive drafts, and the examination and alteration of land use designations and zoning to fit the vision and parcel-specific feedback provided by stakeholders.

The lack of community engagement in the development of the SIPA is evident in the content of the SIPA itself. The SIPA consists of policies taken from the General Plan (2014), the Roosevelt Community Plan (1992) the Southwest Specific Plan (2017), and the North Avenue Industrial Triangle Specific Plan (1973) relevant to the facilitation and promotion of industrial development yet notably omits policies and implementation measures contained in those plans relating to the development of complete and healthy communities. The SIPA moreover is premised on the land use designation for the plan area reflected in the General Plan, which consists almost entirely of heavy industrial designations, in addition to several pockets of light industrial and regional business park[1] designations, with those industrial designations encompassing even existing neighborhoods (such as the homes on East Central Avenue between Orange and Cedar Avenues) and places of worship, such as the Gurdawara Nanaksar Sahib.

In addition, while the SIPA covers extensive areas, including numerous neighborhoods and communities, currently in unincorporated County, only City of Fresno residents were directly engaged in the development of plans from which the SIPA is derived. Based on these facts, the City's adoption of the SIPA and its EIR, without further public process to meaningfully include and respond to input from residents of impacted neighborhoods, is at odds with state and federal civil rights and fair housing laws requiring local governments to refrain from actions which disproportionately adversely impact people on the basis of race, ethnicity, and other protected characteristics and to affirmatively further fair housing through meaningful actions to address conditions of segregation and inequality. Gov. Code §§ 8899.50, 11135, 12955, 65008; Federal Fair Housing Act, 42 U.S.C. 3604.

Therefore, we reiterate our request that the City of Fresno not proceed with an EIR for the SIPA at this time, but rather, initiate a public process which solicits and facilitates the input of residents and other community stakeholders in and near the plan area to create a community plan which balances the City's economic development objectives with the needs and priorities

---

[1] Under the Citywide Development Code, a broad range of land uses falling within the "General Industrial" classification are permitted in the Regional Business Park land use designation.

of residents for the future of their neighborhoods. We believe that a meaningful iterative community engagement process could be accomplished expeditiously in approximately six to eight months and would allow for the creation of a plan that responds to the needs of all stakeholders and reduces the potential for conflicts between incompatible land uses in the future.

II. Comments Relating to the Content of the EIR

To the extent that the City decides to continue with the preparation of the EIR at this time, the City must ensure that it satisfies the requirements of the California Environmental Quality Act ("CEQA"). For environmentally burdened communities, such as those encompassed by the SIPA plan area, CEQA plays an especially critical role in ensuring that local governments accept and consider input from residents in land use decision-making processes; adverse impacts to the environment and people are studied; enforceable mitigation measures are adopted to avoid and reduce harm; and alternatives to the proposed plan area considered in the spirit of the statute's goal of "preventing environmental damage, while providing a decent home and satisfying living environment for every Californian." Public Resources Code § 2100(g).

Specifically, the City must ensure that the SIPA EIR:

1. Accurately captures and analyzes baseline conditions, and potentially significant project-specific and cumulative impacts within and adjacent to the planning area;
2. Identifies plan alternatives, which would mitigate negative impacts of plan implementation on disadvantaged communities and promote positive outcomes aligned with community members' expressed vision and priorities;
3. Identifies and adopts all feasible and enforceable mitigation measures that avoid and reduce negative impacts;
4. Analyzes and creates mitigation measures consistent with all applicable laws, including but not limited to state and federal fair housing and civil rights laws and;
5. Meaningfully engages the public, and especially residents who live within and near the planning area through a robust, accessible, and responsive process.

III. <u>Baseline Conditions</u>

Establishing an accurate baseline for existing environmental conditions is a critical foundation for the SIPA EIR, since it is the baseline from which the significance of impacts are measured and determinations regarding the need for and nature of appropriate mitigation are made. In addition, the significance of a project's impacts may vary based according to variations in baseline conditions and land uses in in particular locations. C.C.R. § 15064(b) (significance of an activity may vary with the setting); *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718. A project that will have adverse impacts on a particularly sensitive area, an area already burdened by environmental impacts, or on sensitive receptors is more likely to result in significant impacts than the project would in a less sensitive context. *See* Environmental Justice at the Local and Regional Level, State of California Department of Justice Attorney General, p. 3.[2]

We recommend that the EIR include a granular analysis of baseline conditions that take into account the existing conditions in neighborhoods within the boundary lines and also those adjacent to the boundary line such as the community of Calwa and the neighborhood on North and Fig Avenues. To this end, we recommend that the EIR use the following data and resources, among others, to inform its analysis[3].

a. California Environmental Protection Agency and California Office of Environmental Health Hazard Assessment's California Communities Environmental Health Screening Tool (CalEnviroScreen), 3.0, which includes census tract level data on a range of environmental pollution and socio-demographic indicators.[3]
b. Documents developed by the San Joaquin Valley Air Pollution Control District as part of its efforts to implement AB 617 in South Central Fresno, including but not limited to mapping of emissions sources and receptors and emissions summaries for District permitted facilities within the South Central Fresno community boundary.[4]
c. California Housing Partnership reports and data on housing supply and affordability in Fresno County, including but not limited to its paper, "Fresno County's Housing Emergency Update," published in May 2019.
d. Fresno County Health Index Prism
e. Department of Housing and Urban Development Affirmatively Furthering Fair Housing Data and Mapping Tool

The EIR should also identify and map the location of existing sensitive uses within and adjacent to the planning boundary, including but not limited to residential land uses, schools, places of worship, and other community-serving land uses. The baseline conditions analysis should reflect conditions unique to the areas within and just outside of the boundary lines and their unincorporated status.

For example, the EIR should identify the multiple neighborhoods, communities, and religious institutions located within the general reach of the planning area, which stand to be impacted by the industrial land use designations that encompass the entirety of those areas in the SIPA

---

[2] Available at https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/ej_fact_sheet.pdf?

[3] The CalEnviroScreen map and excel spreadsheet with census tract level data are available at https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

[4] Materials available at http://community.valleyair.org/selected-communities/south-central-fresno

Specific Plan. Furthermore, the baseline conditions section should note the reliance on groundwater via domestic wells by households on portions of East Central, Malaga, and Britten Avenues, among other residential areas; the lack of sidewalks, streetlights, storm water drainage, and on certain streets, even paved roads; and the lack of public and private amenities to serve existing residents and the anticipated growth. This and other neighborhood-level information will support compatible development in the region ensuring the cost of economic development is not paid for by the health and quality of lives of the families who live here, or the children who go to school here.

IV. Alternatives

Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects..." Pub. Res. Code § 21002. Accordingly, we strongly recommend that the SIPA EIR consider project alternatives in response to community priorities that would reduce project impacts on the vulnerable populations and disadvantaged neighborhoods within and surrounding the planning area. In particular, we request that the EIR consider the following alternatives to the current SIPA Specific Plan:

a. Incorporation of policies contained in the Southwest Specific Plan, General Plan, Roosevelt Community Plan, among other applicable plans, in support of complete and healthy communities.

b. modifications to the land use designations and zoning in the plan area to ensure buffers between sensitive (especially homes, schools, and religious institutions) and industrial and potentially hazardous land uses, in order to reduce impacts to human beings and promote the existing quality of life for existing neighborhoods.

c. Revisions to the circulation map to minimize conflict between planned high-traffic roadways with sensitive uses, such as along East Central and Cherry Avenues.

These alternatives should be refined through communications with residents and stakeholders.

V. Impact of and Consistency with AB 617 and 686

In addition to the laws listed in the NOP, we recommend that EIR consider the passage of AB 617 (2017) and AB 686 (2018) in order to identify mitigation measures or alternatives necessary to ensure compliance with and promote the goals of these laws.

Passed in 2017, AB 617 authorized the California Air Resources Board ("ARB") to develop and implement a monitoring plan to evaluate "criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems" for communities identified by the ARB as highest priority[5]. In addition to a Community Air Monitoring Plan, AB 617 mandates identified communities to create a Community Emission Reduction Plan with policies and strategies to incentivize and regulate toxic and air contaminants and criteria air pollutants. In its first round of implementation, the southern area of the City of Fresno along with the neighboring county communities of Malaga, Calwa, and unincorporated neighborhoods were selected. As such, the presiding local air district must deploy a plan with the Community Steering Committee to monitor and reduce this regions emissions. With this legal mandate in place, this EIR should ensure that the General Plan and its mitigation measures are consistent with the objectives of this effort to reduce air pollution exposure through strategies developed by the Community Steering Committee representing these areas.

AB 686 became effective in January 2018 and requires all cities and counties, in addition to other public agencies, in California to affirmatively further fair housing in all of their programs relating to housing and community development and to "take no action that is materially inconsistent" with this obligation. Gov. Code § 8899.50. Affirmatively further fair housing means:

> "taking meaningful actions, in addition to combating discrimination, that overcome patterns of segregation and foster inclusive communities free from barriers that restrict access to opportunity based on protected characteristics. Specifically, affirmatively furthering fair housing means taking meaningful actions that, taken together, address significant disparities in housing needs and in access to opportunity, replacing segregated living patterns with truly integrated and balanced living patterns, transforming racially and ethnically concentrated areas of poverty into areas of opportunity, and fostering and maintaining compliance with civil rights and fair housing laws."

Zoning lower income neighborhoods and communities of color for industrial development and planning for industrial development surrounding these neighborhoods and communities without balancing those communities needs for protection from hazardous pollutants, other environmental impacts, and neighborhood-serving amenities like fresh food and open space, is inconsistent with the duty to affirmatively further fair housing. Likewise, zoning entirely or nearly exclusively for single-family housing in higher income areas with high inconsistent with the duty to affirmatively further fair housing. Likewise, zoning entirely or nearly exclusively for single-family housing in higher income areas with high performing schools, without creating opportunities for more affordable multi-family housing, also is inconsistent with Section 8899.50.

---

[5] Statute found at https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB617

VI. Impacts

We advise that the EIR analyze and include appropriate mitigation for impacts in the following topic areas:

a. Impacts to housing. This includes, but is not limited to, potential economic and physical displacement, negative impacts to housing quality and quality of life, and economic hardship from having property values decrease. This analysis should include an extensive analysis of the impacts which significantly undermine the use and enjoyment of housing and the marketability of housing. For instance, during the construction and operation of the Amazon warehouse at East Central Avenue and Orange Avenue families nearby experienced temporary physical and health related impairments, and overall decreased quality of life.
b. Impacts on water supply access by homes and institutions located in unincorporated county that are reliant on groundwater. Analysis should include the water consumption from facilities in the plan area distinguishing between the specific amounts of groundwater and surface water that were used.
c. Traffic safety impacts on pedestrians given existing and projected infrastructure conditions, including in areas adjacent to the plan area which lack sidewalks, streetlights, paved roads and other infrastructure to support pedestrian safety and on routes to school frequented by children and families. Road improvements made to improve access to proposed future facilities will result in more single occupancy vehicles and freight truck traffic that will affect communities within and outside the plan boundaries. Thus, a comprehensive analysis which includes complete streets development beyond typical development code standards must be included in this EIR.
d. Public health impacts associated with all environmental impacts and public health impacts that may create environmental impacts, including health impacts associated with sound, vibration, traffic/pedestrian safety, and air quality impacts, as set forth in *Sierra Club v. Fresno County* (2018).
e. Impacts associated with construction, including noise, air quality, light/glare, vibration, and traffic impacts in particular.
f. Utility impacts in the general region of the planning area. This includes analysis of adjacent communities and the residents and institutions who may have increased utility bills as a result of the heat island effect.

VII. Standard for Mitigation

Under CEQA, "[m]itigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments." C.C.R. § 15126.4(a)(2). The EIR must meet this requirement for all mitigation measures which it includes. In addition, we note that it is not sufficient to state the existence of a law, code or regulation constitutes mitigation without justification that that that provision will result in no significant impact and that it will be enforced.

VI. Environmental Justice

The most socio-economically and environmentally burdened census tract in the 8,057 census tracts in California is found in the City of Fresno within the boundary lines of the SIPA Specific Plan[6]. The rest of the census tracts within the boundary lines are all found in the top 5% of CalEnviroScreen's most impacted census tracts across California. Across the vast state of California, the residents living in and adjacent to the southern portion of the City of Fresno are arguably the most impacted households in the entire state. Despite having mountains of empirical and anecdotal data, the South Industrial Priority Specific Plan is laying the foundation to further exacerbate these conditions by laying the foundation for future industrial development.

Developing a plan to facilitate industrial development would only allow multi-million dollar companies to profit off the extraction of this community's limited resources. The development of this plan has thus far not been conducive for informed public decision making or encouraging public participation. Fostering and encouraging public engagement to help inform any public process is important, but especially necessary in a disadvantaged community seeking environmental justice. Under California law, environmental justice is defined as "the fair treatment of people of all races, cultures, and incomes with respect to development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." Gov. Code § 65040.12, subd. (e). Meaning that both the benefits of a vibrant neighborhood or the burdens of pollution are not unfairly being placed on any one community over another. To provide further definitions and responsibilities under state law, we have attached *Exhibit A: Environmental Justice at the Local and Regional Level Legal Background* developed by the California Attorney General's Office.

We urge the City of Fresno to first conduct a meaningful specific plan process before initiating an EIR on a plan that was developed with no public participation. The City has undergone meaningful public processes before in the development of the Southwest Specific Plan and is underway with Southeast Specific Plan. As such, the City should mimic a similar process for the specific plan of this south central region. Meaningful public engagement is necessary to properly identify and address all potential repercussions for this already severely impacted environmental justice community.

*	*	*	*	*

Thank you for your consideration of these comments. We look forward to working with the City as its proceeds with development of the PEIR in order to realize our shared objectives to advance the prosperity and health of all neighborhoods in the Plan area.

---

[6] CalEnviroScreen 3.0. https://oehha.maps.arcgis.com/apps/webappviewer/index.html?id=4560cfbce7c745c299b2d0cbb07044f5.

Sincerely,

Laura Moreno
Friends of Calwa

Kim McCoy
Fresno Building Healthy Communities

Nayamin Martinez
Central California Environmental Justice Network

Genevieve Gale
Central Valley Air Quality Coalition

Jim Grant
Roman Catholic Diocese

Michelle D'cruz
Alliance of Nurses for Healthy Environments

Grecia Elenes
Leadership Counsel for Justice and Accountability

Kevin Hamilton
Central California Asthma Collaborative

Andy Levine
Faith in Fresno

Ashley Rojas
Fresno Barrios Unidos

Genoveva Islas
Cultiva la Salud

KAMALA D. HARRIS
Attorney General

State of California
DEPARTMENT OF JUSTICE

Environmental Justice at the Local and Regional Level
Legal Background

Cities, counties, and other local governmental entities have an important role to play in ensuring environmental justice for all of California's residents. Under state law:

> "[E]nvironmental justice" means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.

(Gov. Code, § 65040.12, subd. (e).) Fairness in this context means that the *benefits* of a healthy environment should be available to everyone, and the *burdens* of pollution should not be focused on sensitive populations or on communities that already are experiencing its adverse effects.

Many local governments recognize the advantages of environmental justice; these include healthier children, fewer school days lost to illness and asthma, a more productive workforce, and a cleaner and more sustainable environment. Environmental justice cannot be achieved, however, simply by adopting generalized policies and goals. Instead, environmental justice requires an ongoing commitment to identifying existing and potential problems, and to finding and applying solutions, both in approving specific projects and planning for future development.

There are a number of state laws and programs relating to environmental justice. This document explains two sources of environmental justice-related responsibilities for local governments, which are contained in the Government Code and in the California Environmental Quality Act (CEQA).

Government Code

Government Code section 11135, subdivision (a) provides in relevant part:

> No person in the State of California shall, on the basis of race, national origin, ethnic group identification, religion, age, sex, sexual orientation, color, or disability, be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination under, any program or activity that is conducted, operated, or administered by the state or by any state agency, is funded directly by the state, or receives any financial assistance from the state….

While this provision does not include the words "environmental justice," in certain circumstances, it can require local agencies to undertake the same consideration of fairness in the distribution of environmental benefits and burdens discussed above. Where, for example, a general plan update is funded by or receives financial assistance from the state or a state agency, the local government should take special care to ensure that the plan's goals, objectives, policies and implementation measures (a) foster equal access to a clean environment and public health benefits (such as parks, sidewalks, and public transportation); and (b) do not result in the unmitigated concentration of polluting activities near communities that fall into the categories defined in Government Code section 11135.[1] In addition, in formulating its public outreach for the general plan update, the local agency should evaluate whether regulations governing equal "opportunity to participate" and requiring "alternative communication services" (*e.g.*, translations) apply. (See Cal. Code Regs., tit. 22, §§ 98101, 98211.)

Government Code section 11136 provides for an administrative hearing by a state agency to decide whether a violation of Government Code section 11135 has occurred. If the state agency determines that the local government has violated the statute, it is required to take action to "curtail" state funding in whole or in part to the local agency. (Gov. Code, § 11137.) In addition, a civil action may be brought in state court to enforce section 11135. (Gov. Code, § 11139.)

California Environmental Quality Act (CEQA)

Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects …." (Pub. Res. Code, § 21002.) Human beings are an integral part of the "environment." An agency is required to find that a "project may have a 'significant effect on the environment'" if, among other things, "[t]he environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly[.]" (Pub. Res. Code, § 21083, subd. (b)(3); see also CEQA Guidelines,[2] § 15126.2 [noting that a project may cause a significant effect by bringing people to hazards].)

CEQA does not use the terms "fair treatment" or "environmental justice." Rather, CEQA centers on whether a project may have a significant effect on the physical environment. Still, as set out below, by following well-established CEQA principles, local governments can further environmental justice.

CEQA's Purposes

The importance of a healthy environment for all of California's residents is reflected in CEQA's purposes. In passing CEQA, the Legislature determined:

- "The maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern." (Pub. Res. Code, § 21000, subd. (a).)

- We must "identify any critical thresholds for the health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds from being reached." (*Id.* at subd. (d).)

---

[1] To support a finding that such concentration will not occur, the local government likely will need to identity candidate communities and assess their current burdens.

[2] The CEQA Guidelines (Cal. Code Regs., tit. 14, §§ 15000, et seq.) are available at http://ceres.ca.gov/ceqa/.

- "[M]ajor consideration [must be] given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian." (*Id.* at subd. (g).)

- We must "[t]ake all action necessary to provide the people of this state with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from excessive noise." (Pub. Res. Code, § 21001, subd. (b).)

Specific provisions of CEQA and its Guidelines require that local lead agencies consider how the environmental and public health burdens of a project might specially affect certain communities. Several examples follow.

Environmental Setting and Cumulative Impacts

There are a number of different types of projects that have the potential to cause physical impacts to low-income communities and communities of color. One example is a project that will emit pollution. Where a project will cause pollution, the relevant question under CEQA is whether the environmental effect of the pollution is significant. In making this determination, two long-standing CEQA considerations that may relate to environmental justice are relevant – setting and cumulative impacts.

It is well established that "[t]he significance of an activity depends upon the setting." (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718 [citing CEQA Guidelines, § 15064, subd. (b)]; see also *id.* at 721; CEQA Guidelines, § 15300.2, subd. (a) [noting that availability of listed CEQA exceptions "are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant."]) For example, a proposed project's particulate emissions might not be significant if the project will be located far from populated areas, but may be significant if the project will be located in the air shed of a community whose residents may be particularly sensitive to this type of pollution, or already are experiencing higher-than-average asthma rates. A lead agency therefore should take special care to determine whether the project will expose "sensitive receptors" to pollution (see, e.g., CEQA Guidelines, App. G); if it will, the impacts of that pollution are more likely to be significant.[3]

In addition, CEQA requires a lead agency to consider whether a project's effects, while they might appear limited on their own, are "cumulatively considerable" and therefore significant. (Pub. Res. Code, § 21083, subd. (b)(3).) "'[C]umulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future

---

[3] "[A] number of studies have reported increased sensitivity to pollution, for communities with low income levels, low education levels, and other biological and social factors. This combination of multiple pollutants and increased sensitivity in these communities can result in a higher cumulative pollution impact." Office of Environmental Health Hazard Assessment, *Cumulative Impacts: Building a Scientific Foundation* (Dec. 2010), Exec. Summary, p. ix, available at http://oehha.ca.gov/ej/cipa123110.html.

projects." (*Id.*) This requires a local lead agency to determine whether pollution from a proposed project will have significant effects on any nearby communities, when considered together with any pollution burdens those communities already are bearing, or may bear from probable future projects. Accordingly, the fact that an area already is polluted makes it *more likely* that any additional, unmitigated pollution will be significant. Where there already is a high pollution burden on a community, the "relevant question" is "whether any additional amount" of pollution "should be considered significant in light of the serious nature" of the existing problem. (*Hanford*, *supra*, 221 Cal.App.3d at 661; see also *Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1025 [holding that "the relevant issue … is not the relative amount of traffic noise resulting from the project when compared to existing traffic noise, but whether any additional amount of traffic noise should be considered significant in light of the serious nature of the traffic noise problem already existing around the schools."])

The Role of Social and Economic Impacts Under CEQA

Although CEQA focuses on impacts to the physical environment, economic and social effects may be relevant in determining significance under CEQA in two ways. (See CEQA Guidelines, §§ 15064, subd. (e), 15131.) First, as the CEQA Guidelines note, social or economic impacts may lead to physical changes to the environment that are significant. (*Id.* at §§ 15064, subd. (e), 15131, subd. (a).) To illustrate, if a proposed development project may cause economic harm to a community's existing businesses, and if that could in turn "result in business closures and physical deterioration" of that community, then the agency "should consider these problems to the extent that potential is demonstrated to be an indirect environmental effect of the proposed project." (See *Citizens for Quality Growth v. City of Mt. Shasta* (1988) 198 Cal.App.3d 433, 446.)

Second, the economic and social effects of a physical change to the environment may be considered in determining whether that physical change is significant. (*Id.* at §§ 15064, subd. (e), 15131, subd. (b).) The CEQA Guidelines illustrate: "For example, if the construction of a new freeway or rail line divides an existing community, the construction would be the physical change, but the social effect on the community would be the basis for determining that the effect would be significant." (*Id.* at § 15131, subd. (b); see also *id.* at § 15382 ["A social or economic change related to a physical change may be considered in determining whether the physical change is significant."])

Alternatives and Mitigation

CEQA's "substantive mandate" prohibits agencies from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that would substantially lessen or avoid those effects. (*Mountain Lion Foundation v. Fish and Game Commission* (1997) 16 Cal.4th 105, 134.) Where a local agency has determined that a project may cause significant impacts to a particular community or sensitive subgroup, the alternative and mitigation analyses should address ways to reduce or eliminate the project's impacts to that community or subgroup. (See CEQA Guidelines, § 15041, subd. (a) [noting need for "nexus" between required changes and project's impacts].)

Depending on the circumstances of the project, the local agency may be required to consider alternative project locations (see *Laurel Heights Improvement Assn. v. Regents of University of*

California (1988) 47 Cal.3d 376, 404) or alternative project designs (see *Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1183) that could reduce or eliminate the effects of the project on the affected community.

The lead agency should discuss and develop mitigation in a process that is accessible to the public and the affected community. "Fundamentally, the development of mitigation measures, as envisioned by CEQA, is not meant to be a bilateral negotiation between a project proponent and the lead agency after project approval; but rather, an open process that also involves other interested agencies and the public." (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 93.) Further, "[m]itigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments." (CEQA Guidelines, § 15126.4, subd. (a)(2).)

As part of the enforcement process, "[i]n order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented," the local agency must also adopt a program for mitigation monitoring or reporting. (CEQA Guidelines, § 15097, subd. (a).) "The purpose of these [monitoring and reporting] requirements is to ensure that feasible mitigation measures will actually be implemented as a condition of development, and not merely adopted and then neglected or disregarded." (*Federation of Hillside and Canyon Assns. v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261.) Where a local agency adopts a monitoring or reporting program related to the mitigation of impacts to a particular community or sensitive subgroup, its monitoring and reporting necessarily should focus on data from that community or subgroup.

Transparency in Statements of Overriding Consideration

Under CEQA, a local government is charged with the important task of "determining whether and how a project should be approved," and must exercise its own best judgment to "balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian." (CEQA Guidelines, § 15021, subd. (d).) A local agency has discretion to approve a project even where, after application of all feasible mitigation, the project will have unavoidable adverse environmental impacts. (*Id.* at § 15093.) When the agency does so, however, it must be clear and transparent about the balance it has struck.

To satisfy CEQA's public information and informed decision making purposes, in making a statement of overriding considerations, the agency should clearly state not only the "specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits" that, in its view, warrant approval of the project, but also the project's "unavoidable adverse environmental effects[.]" (*Id.* at subd. (a).) If, for example, the benefits of the project will be enjoyed widely, but the environmental burdens of a project will be felt particularly by the neighboring communities, this should be set out plainly in the statement of overriding considerations.

* * * *

The Attorney General's Office appreciates the leadership role that local governments have played, and will continue to play, in ensuring that environmental justice is achieved for all of California's residents. Additional information about environmental justice may be found on the Attorney General's website at http://oag.ca.gov/environment.

Friends of Calwa Inc.
Leadership Counsel for Justice & Accountability
Roots of Resistance
Central California Environmental Justice Network
CVAQ
Central Valley Air Quality Coalition
CNC Education Fund
Building Healthy Communities Fresno
CCAC
Central California Asthma Collaborative

November 27, 2018

Sent via Electronic Mail
Fresno City Council
2600 Fresno St.
Fresno, CA 93721

RE: Council Agenda Items 3-B, ID 18-1419, General Plan Environmental Impact Report & 3-C, ID 18-1420, Industrial Area Specific Plan

Dear Council President Soria and Council Members,

The undersigned organizations submit the following comments in response to agenda items *3-B ID18-1419* regarding the General Plan Environmental Impact Report ("EIR) and *3-C ID18-1420* regarding the Industrial Area Specific Plan ("IASP") EIR. These EIRs and the IASP have the potential to significantly impact public health, housing stability, community well-being, and access to opportunity in some of the state's most pollution-burdened communities as well as the City of Fresno as a whole and the Fresno County region. It is of utmost importance the City proactively and meaningfully engage the public, and especially the neighborhoods in the proposed IASP area and other areas which stand to be impacted, in the development of the documents to ensure that those documents fully reflect and respond to the community members' concerns and priorities.

1. Status and Content of the Industrial Area Specific Plan

As a preliminary matter, we note that based on our knowledge, the City has not prepared or released to the public a draft of the IASP nor initiated any sort of public process for the development of the IASP. The City cannot analyze the environmental impacts of a plan which has not yet been created and so the City's proposal to hold a scoping meeting and initiate an EIR for the plan this winter is premature.

Second, to our knowledge, the City has not provided the public generally, or communities within the proposed IASP area boundaries, with *any* information about the proposed plan, including but not limited to the City's plans to engage impacted stakeholders and the public in the plan's development; the purpose of the plan; any proposed content or themes; names of responsible staff or consultants; and timeline and steps for plan development. Before proceeding with an EIR for the IASP, the City must provide this information to the public and engage in a robust outreach process that ensures that the thousands of residents of the proposed plan area have the opportunity to shape the plan's development. This includes but is not limited to portions of Southeast and Southwest Fresno, Calwa, Malaga, Daleville, the Flamingo Mobile Home Park, Malaga Avenue, and the numerous residences within the study area that are outside of the City's Sphere of Influence. Failure to do so, and the adoption of a plan focused on industrial development in these neighborhoods without regard for community priorities and without adequate mitigation, could result in violations of state and federal fair housing and civil rights laws. See e.g., Gov. Code Sec. 12955(l); 11135; 65008.

We also question the inclusion of multiple neighborhoods and disadvantaged unincorporated communities, all with unique characteristics, needs, and priorities, within one specific plan, as well as the proposed plan name, "Industrial Area Specific Plan," which fails to acknowledge the existence of neighborhoods with names and with realities and futures that are far more than industrial centers.

Any plan must reflect the priorities and vision expressed by the residents of those communities during a public process. These priorities may include but are not limited to those typically studied in community and specific plans, such as the attainment of basic infrastructure and services such as clean drinking water and community sewer systems; active transportation infrastructure and safety measures; access to commercial retail and services; educational and health care opportunities; environmental health; housing opportunities; zoning changes and overlay districts; and processes and standards for annexations, given the inclusion of unincorporated areas within the proposed plan boundaries.

2. EIR Development Process and Content

The City must deeply involve the public in the development of the IASP EIR and General Plan MEIR update themselves. Given the extreme levels of existing pollution burdens within the IASP area and other areas of Fresno and the potential for the IASP and the City's industrial development plans to exacerbate those burdens, the City must plan for and dedicate sufficient resources to engage community members and impacted stakeholders from the IASP area and other impacted neighborhoods to ensure that the EIRs accurately and comprehensively reflect localized impacts and include all appropriate and feasible mitigation. In addition, the City should provide information to and seek input from the General Plan District Implementation Committees, including in particular those with boundaries that overlap with the proposed IASP boundaries. Also to facilitate public engagement, we also urge the City to modify the MEIR update timeline to release the NOP and hold a scoping meeting after the holiday season.

Though we appreciate the indication in the proposed consulting agreement for the IASP EIR that the City may potentially translate the Notice of Preparation (NOP) into Spanish, the City must recognize that the neighborhoods in the IASP area have high rates of linguistic isolation and several other languages are spoken in the IASP area, including several API languages. To ensure that residents have meaningful opportunity to provide input and compliance with state language access and civil rights laws, the City must ensure translation of all notices for both the IASP and General Plan MEIRs into commonly spoken languages areas proposed for study.

The IASP MEIR scope of work also fails to identify certain impacts which must be studied and mitigated in addition to the substantive topics listed. We recommend the following modifications to each section to address these deficiencies:

I. Overall: In addition to studying “conflicts” of land use with existing communities, the specific plan should thoroughly assess the compatibility of current zoning and pre-zoning of the IASP area given the existing sensitive land uses and consider changes that promote housing stability, public health, and community well-being. Currently the project map extends south of the current sphere of influence, which includes several disadvantaged unincorporated communities, which must not be planned for industrial use.

II. Population and Housing — The EIR must assess displacement potential of existing residents as a result of significant project impacts that deteriorate housing quality and quality of life within homes.

III. Public Services and Recreation — The EIR must consider service extension requirements and options associated with applicable laws like SB 244 as annexations are proposed next to existing unincorporated neighborhoods that are served by wells and septic systems.

IV. Transportation — The scope of work indicates that no analysis of alternatives is included in the consulting agreement proposal. The MEIR must assess alternative roadway options that reduce impacts on people, such as by restricting truck routes to roads without existing communities.

V. Transit, Bicycle, and Pedestrian — The scope of work states that KDA will describe existing and planned facilities in the area. The City must study traffic safety impacts on pedestrians given existing and projected infrastructure conditions, including, but not limited to, children who walk to and from Orange Center Elementary School.

Furthermore, the EIR must not relegate its analysis of project impacts on communities solely to an Environmental Justice section. These impacts and their effect on public health must be considered and mitigated in section of the EIR. Each EIR section should also include an assessment of potential construction impacts, such as noise, vibration, traffic, and air quality impacts, and feasible mitigation measures.

With respect to the General Plan MEIR Scope of Work, we also recommend the following additions to the subjects to be studied:

I. Air Quality — This section is to be based on the General Plan EIR analysis and findings of specific plans, and reflective of current conditions. Currently, the scope of work proposes to conduct a Health Risk Assessment only by certain freeways. To accurately measure health risks associated with air quality impacts, this analysis must also include truck routes located next to sensitive receptors, such as Central and Jensen Avenues. Given the City's plans for new industrial development, the analysis should also consider impacts of location of new industrial developments next to sensitive land uses, not only the impacts of the location of new sensitive land uses near industry.

II. Noise Analysis — Analysis and mitigation efforts should include construction noise. Current noise levels have serious unmitigated impacts on the community. During the construction of the Amazon Distribution Facility, the noise resulted in permanent loss of hearing in one ear for a nearby resident.

III. Transportation — Mitigation measures assessed must not be limited to Capital Improvement Programs and General Plan policies, as those programs and policies do not address the impacts of planned development in many impacted neighborhoods.

IV. Utilities and Service Systems — The analysis must include not only the ability to serve the project but also the impact on service access for surrounding uses. For instance, City water usage directly impacts residences and businesses immediately outside of City limits which rely on shallow domestic wells.

Thank you for your time and consideration of our comments. If any questions arise, you can reach me at gelenes@leadershipcounsel.org or (559) 369-2790.

Sincerely,

Grecia Elenes
Leadership Counsel for Justice and Accountability

Sandra Celedon-Castro
Fresno Building Healthy Communities

Venise Curry
Communities for a New California Education Fund

Nyamin Martinez
Central California Environmental Justice Alliance

Laura Moreno
Friends of Calwa

Dolores Weller
Central Valley Air Quality Coalition

Kevin Hamilton
Central California Asthma Collaborative

1665 Tollhouse Road
Clovis, CA 93611

Anlin
Window Systems

(559) 322-1531 • (800) 287-7996
FAX (559) 322-1532

August 6, 2019

Jennifer Clark
Planning Director
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721

Dear Ms. Clark:

This purpose of this communication is to express our strong support for the development of manufacturing in the South Industrial Park. The South Industrial Park is critical to the goal of increasing economic mobility for Fresno county.

Manufacturing has been the path to development and is the most attractive industry sector for the expansion of middle-class income jobs. We need a strong and growing manufacturing base because manufacturing jobs have the highest multiplier of any industry sector. While U.S. Manufacturing has grown by 13.3%, since the great recession bottomed out, California has only grown by 5.4% Importantly, Fresno county has kept trend with U.S growth at 13.1%.

Simply stated manufacturing creates jobs. Most jobs, directly or indirectly, depend on manufacturing. Fresno County could have grown faster if not for 2 constraints: (a) the availability of skilled workers; and (b) availability of shovel-ready land. That is why the development of the South Industrial Park is so essential. CTE programs and growing enrollment in STEM courses at Fresno State have been effective in the education of the skilled workers. However, Fresno has a very low percentage of workers with BS Degrees, CTE certifications or industry recognized credentials. This needs to be remedied, but it will take time to catch up. Fresno needs more good entry-level jobs for people with just high school degrees. Many of the jobs in manufacturing fulfill that need.

Anlin Industries urges that we aggressively pursue the development of the South Industrial Park.

Thank you for your attention to this very important topic.

Sincerely,

John J. Maloney
President/CEO
Anlin Industries
(559) 322-1531
jmaloney@anlin.com

From: SIPA <SIPA@fresno.gov>
Sent: Tuesday, August 6, 2019 11:46 AM
To: Marty Sorge-Jauss
Cc: Jennifer Clark; Chris Mundhenk
Subject: FW: Letter of Support for the EIR and Industrial Park moving forward

Please see the attached.

Rodney

From: Mike Betts [mailto:Mike.Betts@Betts1868.com]
Sent: Tuesday, August 06, 2019 11:31 AM
To: SIPA
Subject: Letter of Support for the EIR and Industrial Park moving forward

Jennifer Clark, Planning Director
c/o Marty-Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
SIPA@fresno.gov

Dear Jennifer

Betts Company is honored to be celebrating its 151st year doing business in California. In 2009 we moved our headquarters and main manufacturing location to Fresno. Many in our business have been actively involved in Fresno since our move here. I say this because we are proud and supportive of a strong Fresno where quality jobs are plentiful into the future. We built our first Fresno plant approximately 25 years ago. Both plants sit on the same property on South Maple Ave. We purchased our property in an Enterprise and Empowerment Zone. We were one of the first companies to do such in our neighborhood, and if you look at our neighborhood today you can see significant additional investment has occurred.

Our company started looking at Fresno in 1980 and we looked elsewhere in and out of the State. During my visits to Fresno I met with several city leaders who were excited about a new industrial park they were working on, it was called Roeding Park. Unfortunately, the investment on the new Roeding Industrial Park never materialized. I understood there were several reasons, but from an outsiders perspective, it looked as though our city leaders could not come together and get it done. The idea was to have industrial sites shovel ready for businesses that were interested in moving and investing in the Central Valley. What occurred for Betts Company was a journey to find another property and build on our own accord. While our journey dealing with all the bureaucracy to find a new property and building with all the necessities to operate were many, we got it done. The issue is this, finding the property and getting it shovel ready to build took us two years.

The benefit of having the 6,500 acres zoned properly with shovel ready property that includes all the necessities like water, sewer, power to the sites eliminates significant time to get projects approved and built. Why is this important, moving a business is not something that companies take lightly, making the process as easy as possible is what business is looking to achieve. In manufacturing we are focused on taking care of our customers and delivering product on time. The distraction of a move can be debilitating and put a business in jeopardy if not done right.

Fresno is competing with other States and Cities for business and job growth. Not having shovel ready sites makes it difficult to come here? States like Texas, Oklahoma, Nevada and hundreds of Cities throughout the west have shovel ready industrial parks that are for sale and ready for purchase. I think it is important to know that most manufacturers, especially those that are family owned want to own their property and buildings. Why, because the capital expenditure on manufacturing buildings with all the improvement like the installations of equipment, electrical, BACT technology is expensive. So, that makes the thought of leasing cost prohibitive. Fresno has historically had mostly lease held developers that build buildings for warehousing, which makes it difficult for family owned manufacturers to move here.

Below are some talking points several business leaders and I put together for consideration;

- The South Industrial Park is critical to the goal of increasing economic mobility for Fresno County residents.
- Fresno needs more high-income jobs.
- Preferably, these high income jobs should be in the tradeable sector (exports out of the county)
- The Manufacturing sector is the most attractive industry sector for expansion of middle-income jobs because (a) we have a strong and growing manufacturing base; and (b) manufacturing jobs have the highest multiplier of any industry sector, up to 3 to 5 more jobs created.
- While U.S. manufacturing has grown by 13.3% since the great recession bottomed out, California has grown by only 5.4%, but Fresno County has grown by 13.1%.
- We could have grown faster if not for two constraints: (a) availability of skilled workers; and (b) availability of shovel-ready land. The former is being addressed through increasingly more effective CTE programs and growing enrollment in STEM courses at Fresno State. The latter is a constraint that we have failed to address for decades (i.e., the failed effort to develop the Roeding Industrial Park).
- Fresno has a very low percentage of workers with BS degrees, CTE certificates or industry-recognized credentials. This needs to be remedied, but it will take time to catch up. Both shovel ready land and proper educational credentials go hand in hand for job growth. You can not have one without the other.

We started the Manufacturing Alliance in order to bring everyone together behind shared goals—industry, education, government and job seekers. We are committed to advancing this work as civic stewards, ensuring that we are considering impacts on the economy, social equity and the environment in everything we do. We believe by working together, we can create an industrial park that enhances all of these concerns and serves the best interests of the whole community.

If I was asked what is the most important thing that could help Fresno become a World Class City, it would be to properly prepare the available 6,500 with shovel ready properties for purchase. There is an old saying " Build it and they will come". Having shovel ready properties available will make Fresno much more attractive for the right investors.

Betts Company is 100% in favor of completing the EIR and moving forward on approving the 6,500 acres for industrial development. Fresno's future depends on this bold initiative.

Sincerely,

Mike Betts
Chairman & CEO

Betts Company
2843 S Maple Ave, Fresno
93725, CA, US
t: 559.498.3304 x 9802
m: 510.813.5090
e: Mike.Betts@Betts1868.com

www.betts1868.com

Mike Betts
Chairman & CEO

Betts Company
2843 S Maple Ave, Fresno
93725, CA, US
t: 559.498.3304 x 9802
m: 510.813.5090
e: Mike.Betts@Betts1868.com

www.betts1868.com

To help protect your privacy, Microsoft Office prevented automatic download of this picture from the Internet.
Banner

August 6, 2019

Dear Ms. Clark,

We write to you as a group of residents who live in and around the area found in the plan known as the South Industrial Specific Plan and have serious concerns about the proposed changes. We care about our neighborhood and are seriously concerned about the proposed changes the City of Fresno is planning in this Specific Plan as it will greatly undermine our quality of life we've enjoyed for years. We've began experiencing these preliminary effects from the development and current operations of the Amazon and Ulta warehouses. We only expect these impacts to worsen with the addition of millions of industrial square footage proposed in the South Industrial Specific plan.

This Specific Plan would impose serious health, environmental, and overall quality of life impacts on the families living in and surrounding the project areas, including those living along Malaga, Britten, and Central Avenues, and in the communities of Calwa, southwest Fresno, and Malaga... Despite all of these neighborhoods identified as some of the most polluted in the state, we don't believe all of the impacts from existing and future development is being adequately assessed. If it were, the City of Fresno would recognized the serious health and environmental risks the proposed increased in industrial facilities would have on our already polluted neighborhoods. As the City of Fresno conducts the required environmental analysis by California law, they should pay a great amount of attention on the cumulative impacts. Every industrial square foot, diesel truck, gas operating machinery, and hazardous chemicals that may be added and used, in addition to what is already there must be thoroughly analyzed as to how this will affect our environment.

Despite our community's severe risk of being impacted by the proposed development, a majority of us have not been engaged in this process. The South Industrial Priority Area Specific Plan is failing in engaging our thoughts, concerns, and solutions. We ask the City of Fresno conduct a meaningful specific planning process we've heard have been completed in the Southwest and Southeast Fresno. A meaningful public process should allow us to propose changes to what can be built and where so we are building a safe and health community that doesn't put another warehouse or something hazardous next to a school or homes. A good public process would also allow us to create good rules and regulations like hiring from our neighborhoods, planting extra trees than the City requires, and so on. We urge the City to allow us, community members, to participate in developing the Specific Plan of our community as we are the ones who will reap the benefits, or live with the burdens.

Additionally, the City should evaluate the following potential impacts and mitigation measures to alleviate the impacts:
Impacts:

- Noise, dust, vibrations, and lights from construction
- Air pollution from construction and operations of industrial sites

- Safety impacts from the additional diesel trucks, shipping vans, and employee vehicles
- Well water level, quality, and potential contamination from more sites using groundwater in the region. Previously wells went dry during the drought and will likely happen in the next drought.
- Septic system failures from construction and increased traffic vibrations that move the underground infrastructure
- Light pollution from parking lots and facilities that operate 24/7 Mitigation Measures:

Mitigation Measures:

- Prohibit certain facilities that could create serious health risks and really impair quality of life such as: slaughterhouses, meat rendering facilities, and chemical, plastic, metal, or glass manufacturing,,
- Rerouting freight trucks away from homes and school
- Reduce speeds
- Creating sidewalks and safe routes to school
- More urban greening
- Providing air monitors and air filters for households and the school

Sincerely,

Rosa DePaz
Gloria Rojas
Emma Cisneros
Maria Molina
Makayla Mccoy
López
Mary L. Rodriguez
Jose
Jose A Navarro
Renato Marroquin — Renato Ma
ARACELI M. PUGLLOR — ARACELI M. PUGLLOR
Marisela Estrada —
Miguel Gómez — Miguel Goméz

6 de agosto de 2019

Querida Sra. Clark:

Le escribimos a usted como un grupo de residentes que viven en y alrededor del área que se encuentra en el plan conocido como el Plan Específico Industrial del Sur y tienen serias preocupaciones sobre los cambios propuestos. Nos preocupamos por nuestro vecindario y estamos seriamente preocupados por los cambios propuestos que la Ciudad de Fresno está planeando en este Plan Específico, ya que debilitará enormemente nuestra calidad de vida que hemos disfrutado durante años. Comenzamos a experimentar estos efectos preliminares del desarrollo y las operaciones actuales de los almacenes de Amazon y Ulta. Solo esperamos que estos impactos empeoren con la adición de millones de pies cuadrados industriales propuestos en el plan específico industrial del sur.

Este Plan Específico impondría serios impactos en la salud, el medio ambiente y la calidad de vida en general en las familias que viven en las áreas del proyecto y sus alrededores, incluidas las que viven en las avenidas Málaga, Britten y Central, y en las comunidades de Calwa, suroeste de Fresno, y Málaga ... A pesar de todos estos vecindarios identificados como algunos de los más contaminados del estado, no creemos que todos los impactos del desarrollo existente y futuro se evalúen adecuadamente. Si así fuera, la Ciudad de Fresno reconocería los graves riesgos para la salud y el medio ambiente que el aumento propuesto en las instalaciones industriales tendría en nuestros vecindarios ya contaminados. A medida que la Ciudad de Fresno realiza el análisis ambiental requerido por la ley de California, deben prestar mucha atención a los impactos acumulativos. Cada pie cuadrado industrial, camión diesel, maquinaria de operación de gas y productos químicos peligrosos que se puedan agregar y usar, además de lo que ya existe, deben analizarse a fondo en cuanto a cómo esto afectará nuestro medio ambiente.

A pesar del grave riesgo de nuestra comunidad de verse afectado por el desarrollo propuesto, la mayoría de nosotros no hemos participado en este proceso. El Plan Específico del Área de Prioridad Industrial del Sur no logra involucrar nuestros pensamientos, preocupaciones y soluciones. Le pedimos a la Ciudad de Fresno que realice un proceso de planificación específico significativo que hemos escuchado que se ha completado en el suroeste y el sudeste de Fresno. Un proceso público significativo debería permitirnos proponer cambios en lo que se puede construir y dónde estamos construyendo una comunidad segura y de salud que no ponga otro almacén o algo peligroso al lado de una escuela u hogares. Un buen proceso público también nos permitiría crear buenas reglas y regulaciones como la contratación de nuestros vecindarios, plantar árboles adicionales de los que la Ciudad requiere, y así sucesivamente. Instamos a la Ciudad a permitirnos a nosotros, miembros de la comunidad, participar en el desarrollo del Plan Específico de nuestra comunidad, ya que somos nosotros quienes cosecharemos los beneficios o viviremos con las cargas.

Además, la Ciudad debe evaluar los siguientes posibles impactos y medidas de mitigación para aliviar los impactos:
Impactos:

- ruido, polvo, vibraciones y luces de la construcción
- Contaminación del aire de la construcción y operaciones de sitios industriales
- Impactos de seguridad de los camiones diesel adicionales, camionetas de transporte, y vehículos de empleados
- Nivel de agua de pozo, calidad y posible contaminación de más sitios que usan agua subterránea en la región. Anteriormente, los pozos se secaron durante la sequía y probablemente ocurrirán en la próxima sequía.
- Fallas del sistema séptico debido a la construcción y el aumento de las vibraciones del tráfico que mueven la infraestructura subterránea
- Contaminación lumínica de estacionamientos e instalaciones que operan 24/7 Medidas de mitigación

Medidas de mitigación:

- prohibir ciertas instalaciones que podrían crear serios riesgos de salud y realmente perjudicar la calidad de vida, tales como: mataderos, plantas de reciclaje, la carne y los productos químicos, plástico, metal o la fabricación de vidrio „
- Reencaminamiento camiones de carga lejos de casas y la escuela
- reducir la velocidad de trafficio
- creación aceras y rutas seguras a la escuela
- Más ecología urbana
- Proporcionar monitores de aire y filtros de aire para los hogares y la escuela

Sinceramente,

____________________ ____________________

____________________ ____________________

____________________ ____________________

August 6, 2019

Dear Ms. Clark,

We write to you as a group of residents who live in and around the area found in the plan known as the South Industrial Specific Plan and have serious concerns about the proposed changes. We care about our neighborhood and are seriously concerned about the proposed changes the City of Fresno is planning in this Specific Plan as it will greatly undermine our quality of life we've enjoyed for years. We've began experiencing these preliminary effects from the development and current operations of the Amazon and Ulta warehouses. We only expect these impacts to worsen with the addition of millions of industrial square footage proposed in the South Industrial Specific plan.

This Specific Plan would impose serious health, environmental, and overall quality of life impacts on the families living in and surrounding the project areas, including those living along Malaga, Britten, and Central Avenues, and in the communities of Calwa, southwest Fresno, and Malaga... Despite all of these neighborhoods identified as some of the most polluted in the state, we don't believe all of the impacts from existing and future development is being adequately assessed. If it were, the City of Fresno would recognized the serious health and environmental risks the proposed increased in industrial facilities would have on our already polluted neighborhoods. As the City of Fresno conducts the required environmental analysis by California law, they should pay a great amount of attention on the cumulative impacts. Every industrial square foot, diesel truck, gas operating machinery, and hazardous chemicals that may be added and used, in addition to what is already there must be thoroughly analyzed as to how this will affect our environment.

Despite our community's severe risk of being impacted by the proposed development, a majority of us have not been engaged in this process. The South Industrial Priority Area Specific Plan is failing in engaging our thoughts, concerns, and solutions. We ask the City of Fresno conduct a meaningful specific planning process we've heard have been completed in the Southwest and Southeast Fresno. A meaningful public process should allow us to propose changes to what can be built and where so we are building a safe and health community that doesn't put another warehouse or something hazardous next to a school or homes. A good public process would also allow us to create good rules and regulations like hiring from our neighborhoods, planting extra trees than the City requires, and so on. We urge the City to allow us, community members, to participate in developing the Specific Plan of our community as we are the ones who will reap the benefits, or live with the burdens.

Additionally, the City should evaluate the following potential impacts and mitigation measures to alleviate the impacts:
Impacts:

- Noise, dust, vibrations, and lights from construction
- Air pollution from construction and operations of industrial sites

- Safety impacts from the additional diesel trucks, shipping vans, and employee vehicles
- Well water level, quality, and potential contamination from more sites using groundwater in the region. Previously wells went dry during the drought and will likely happen in the next drought.
- Septic system failures from construction and increased traffic vibrations that move the underground infrastructure
- Light pollution from parking lots and facilities that operate 24/7 Mitigation Measures:

Mitigation Measures:

- Prohibit certain facilities that could create serious health risks and really impair quality of life such as: slaughterhouses, meat rendering facilities, and chemical, plastic, metal, or glass manufacturing,,
- Rerouting freight trucks away from homes and school
- Reduce speeds
- Creating sidewalks and safe routes to school
- More urban greening
- Providing air monitors and air filters for households and the school

Sincerely,

Linda Calvillo 8/5/2019

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

August 9, 2019

Jennifer Clark
City of Fresno
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721

Project: Notice of Preparation of an Environmental Impact Report for the South Industrial Area Specific Plan project

District CEQA Reference No: 20190910

Dear Ms. Clark:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) for the South Industrial Area Specific Plan project. The proposed project consists of establishing a planning framework to facilitate and guide future development with the 6,150-acre planning area through the year 2040 (Project). The District offers the following comments:

Land Use Planning

1) Nearly all development projects within the San Joaquin Valley Air Basin, from general plans to individual development projects have the potential to generate air pollutants, making it more difficult to attain state and federal ambient air quality standards. Land use decisions are critical to improving air quality within the San Joaquin Valley Air Basin because land use patterns greatly influence transportation needs and motor vehicle emissions are the largest source of air pollution. Land use decisions and project design elements such as preventing urban sprawl, encouraging mix-use development, and project designs that reduce vehicle miles traveled (VMT) have proven benefit for air quality. The District recommends that the South Industrial Area Specific Plan include or incorporate by reference, policies that will reduce or mitigate VMT impacts to the extent feasible. VMT can be reduced through encouragement of mixed-use development, walkable communities, etc. Recommended design elements can be found on the District's website at: http://www.valleyair.org/ISR/ISROnSiteMeasures.htm.

To aid agencies in addressing VMT impacts the District has prepared the following guidance documents: *Air Quality Guidelines for General Plans*, and *AB 170 Requirements for General Plans*. These documents provide general information and recommendations for policies that are effective in reducing impacts from growth and development projects. These documents are available on the District's web site at: http://www.valleyair.org/transportation/Guidelines_for_General_Plans.htm.

Emissions Analysis

2) At the federal level for the National Ambient Air Quality Standards (NAAQS), the District is currently designated as extreme nonattainment for the 8-hour ozone standards; serious nonattainment for the PM2.5 standards; and attainment for PM10 and CO standards. At the state level, the District is currently designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 California Ambient Air Quality Standards (CAAQS). The District recommends that the Air Quality section of an Environmental Impact Report (EIR) include a discussion of the following impacts:

   a) **Criteria Pollutants:** Project related criteria pollutant emissions should be identified and quantified. The discussion should include existing and post-project emissions.

      i) Construction Emissions: Construction emissions are short-term emissions and should be evaluated separately from operational emissions. For reference, the District's annual criteria thresholds of significance for construction are: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5).

         - *Recommended Mitigation Measure if needed:* To reduce impacts from construction related exhaust emissions, the District recommends feasible mitigation for the project to utilize the cleanest reasonably available off-road construction fleets, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. This can be achieved through any combination of uncontrolled engines and engines complying with Tier III and above engine standards.

      ii) Operational Emissions: Permitted (stationary sources) and non-permitted (mobile sources) sources should be analyzed separately. For reference, the annual criteria thresholds of significance for operation of permitted and non-permitted sources each are: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5).

- *Recommended Mitigation Measure if needed:* Project related impacts on air quality can be reduced through incorporation of design elements, for example, that increase energy efficiency, reduce vehicle miles traveled, and reduce construction exhaust related emissions. More information on mitigation measures can be found at: http://www.valleyair.org/transportation/ceqa_idx.htm.

iii) Recommended Model: Project related criteria pollutant emissions from construction and operation non-permitted (limited to equipment not subject to District permits) should be identified and quantified. Emissions analysis should be performed using CalEEMod (**Cal**ifornia **E**mission **E**stimator **Mod**el), which uses the most recent approved version of relevant Air Resources Board (ARB) emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

iv) Future development from the proposed Project could have a significant impact on regional air quality. As such, the District recommends the EIR also include a discussion on the feasibility of implementing a Voluntary Emission Reduction Agreement (VERA) for this project. A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's incentives programs). The funds are disbursed by the District in the form of grants for projects that achieve emission reductions. Thus, project-specific regional impacts on air quality can be fully mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors.

In implementing a VERA, the District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. After the project is mitigated, the District certifies to the lead agency that the mitigation is completed, providing the lead agency with an enforceable mitigation measure demonstrating that project-specific regional emissions have been mitigated to less than significant. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the environmental document includes an assessment of the feasibility of implementing a VERA.

b) **Nuisance Odors:** The Project should be evaluated to determine the likelihood that the Project would result in nuisance odors. Nuisance orders are subjective, thus the District has not established thresholds of significance for nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration of Project design elements and proximity to off-site receptors that potentially would be exposed objectionable odors.

c) **Health Risk Screening/Assessment:** A Health Risk Screening/Assessment identifies potential Toxic Air Contaminants (TAC's) impact on surrounding sensitive receptors such as hospitals, daycare centers, schools, work-sites, and residences. TAC's are air pollutants identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) (https://www.arb.ca.gov/toxics/healthval/healthval.htm) that pose a present or potential hazard to human health. A common source of TACs can be attributed to diesel exhaust emitted from both mobile and stationary sources. Industry specific TACs generated must also be identified and quantified.

The District recommends the Project be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operational and multi-year construction TAC emissions.

i) The District recommends conducting a screening analysis that includes all sources of emissions. A screening analysis is used to identify projects which may have a significant health impact. A prioritization, using CAPCOA's updated methodology, is the recommended screening method. A prioritization score of 10 or greater is considered to be significant and a refined Health Risk Assessment (HRA) should be performed. The prioritization calculator can be found at: http:www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION%20RMR%202016.XLS.

ii) The District recommends a refined HRA for projects that result in a prioritization score of 10 or greater. It is recommended that the Project proponent contact the District to review the proposed modeling protocol. The Project would be considered to have a significant health risk if the HRA demonstrates that the Project related health impacts would exceed the Districts significance threshold of 20 in a million for carcinogenic risk and 1.0 for the Acute and Chronic Hazard Indices, and would trigger all feasible mitigation measures. The District recommends that Projects that result in a significant health risk not be approved.

Please provide the following information electronically to the District for review:

- HRA AERMOD model files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and methodology.

More information on toxic emission factors, prioritizations and HRAs can be obtained by:

- E-Mailing inquiries to: hramodeler@valleyair.org; or
- The District can be contacted at (559) 230-6000 for assistance; or
- Visiting the Districts website (Modeling Guidance) at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

d) **Ambient Air Quality Analysis:** An ambient air quality analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of the ambient air quality standards. The District recommends that an AAQA be performed for the Project if emissions exceed 100 pounds per day of any pollutant.

If an AAQA is performed, the analysis should include emissions from both Project specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis. Specific information for assessing significance, including screening tools and modeling guidance is available online at the District's website at: www.valleyair.org/ceqa.

3) In addition to the discussions on potential impacts identified above, the District recommends the EIR also include the following discussions:

a) A discussion of the methodology, model assumptions, inputs and results used in characterizing the Project's impact on air quality. To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. The District further recommends that the District be provided with an electronic copy of all input and output files for all modeling.

b) A discussion of the components and phases of the Project and the associated emission projections, including ongoing emissions from each previous phase.

c) A discussion of Project design elements and mitigation measures, including characterization of the effectiveness of each mitigation measure incorporated into the Project.

i) The following policies/mitigation measures are recommended to reduce or mitigate impacts from criteria pollutant emissions:

(1) Use of off-road construction fleets that can achieve fleet average emissions equal to or less than the Tier III emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. Therefore, the District recommends incorporating, as a condition of Project approval, a requirement that off-road construction equipment used on site be the cleanest reasonably available as set forth in state and federal regulations. This can be achieved through any combination of uncontrolled engines and engines complying with Tier III and above engine standards.

(2) For projects exceeding the applicability thresholds identified in Section 2.0 of District Rule 9510, a condition of Project approval requiring demonstration of compliance with Rule 9510, prior to the issuance of grading and/or building permits.

(3) For projects subject to District permitting requirements, demonstration of compliance with District Rule 2201, such as a copy of the Authority to Construct (ATC), before issuance of the first building permit, be made a condition of project approval.

ii) The following policies/mitigation measures are recommended to mitigate potential health impacts of individual projects:

(1) Development projects resulting in toxic air contaminant emissions will be located an adequate distance from residential areas and other sensitive receptors in accordance to ARB's *Air Quality and Land Use Handbook: A Community Health Perspective.*

(2) A health risk screening and/or assessment will be performed to assess potential risks to sensitive receptors for the following projects:

(3) Projects whose proposed locations are within the established buffer distances identified in ARB's handbook;

(4) Projects whose land uses are not specifically identified in ARB's handbook (such as shopping centers), but there is sufficient information to reasonably

conclude that sensitive receptors would be exposed to significant sources of toxic air contaminants; and

(5) Projects that would otherwise appear to be exempt from CEQA requirements, but there is sufficient information to reasonably conclude that sensitive receptors would be exposed to significant sources of toxic air contaminants, such as industrial use projects allowed by right.

d) A discussion of whether the Project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. More information on the District's attainment status can be found online by visiting the District's website at: http://valleyair.org/aqinfo/attainment.htm.

e) As required by the recent decision in *Sierra Club v. County of Fresno* (2018) 6 Cal.4th 502, a reasonable effort to discuss relevant specifics regarding the connection between potential adverse air quality impacts from the Project with the likely nature and magnitude of potential health impacts. If the potential health impacts from the Project cannot be specifically correlated, explain what is known and why, given scientific constraints, potential health impacts cannot be translated.

District Rules and Regulations

4) The future development from the proposed Project may be subject to District rules and regulations, including: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the Project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

5) The purpose of District Rule 9510 (Indirect Source Review) is to reduce the growth in both NOx and PM10 emissions associated with development and transportation projects from mobile and area sources associated with construction and operation of development projects. The rule encourages clean air design elements to be incorporated into the development project. In case the proposed project clean air design elements are insufficient to meet the targeted emission reductions, the rule requires developers to pay a fee used to fund projects to achieve off-site emissions reductions.

   Accordingly, future individual development project(s) within the Project would be subject to District Rule 9510 if:

(1) Upon full build-out, the project would receive a project-level discretionary approval from a public agency and would equal or exceed any one of the applicability thresholds below:

- 50 dwelling units
- 2,000 square feet of commercial space;
- 25,000 square feet of light industrial space;
- 100,000 square feet of heavy industrial space;
- 20,000 square feet of medical office space;
- 39,000 square feet of general office space; or
- 9,000 square feet of educational space; or
- 10,000 square feet of government space; or
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above

(2) Or would equal or exceed any of the applicability thresholds in section 2.2 of the rule.

District Rule 9510 also applies to any transportation or transit development projects where construction exhaust emissions equal or exceed two (2.0) tons of NOx or two (2.0) tons of PM10.

In the case the individual development project(s) are subject to District Rule 9510, an Air Impact Assessment (AIA) application is required and the District recommends that demonstration of compliance with District Rule 9510, before issuance of the first building permit, be made a condition of Project approval. Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm.

The AIA application form can be found online at: http://www.valleyair.org/ISR/ISRFormsAndApplications.htm.

District staff is available to provide assistance with determining if future individual development projects will be subject to Rule 9510, and can be reached by phone at (559) 230-6000 or by email at ISR@valleyair.org.

6) Particulate Matter 2.5 microns or less in size (PM2.5) from under-fired charbroilers pose immediate health risk. Since the cooking of meat can release carcinogenic PM2.5 species like polycyclic aromatic hydrocarbons, controlling emissions from under-fired charbroilers will have a substantial positive impact on public health.

Charbroiling emissions occur in populated areas, near schools and residential neighborhoods, resulting in high exposure levels for sensitive Valley residents. The air quality impacts on neighborhoods near restaurants with under-fired charbroilers can be significant on days when meteorological conditions are stable, when dispersion is limited and emissions are trapped near the surface within the surrounding neighborhoods. This potential for neighborhood-level concentration of emissions during evening or multi-day stagnation events raises environmental concerns.

Furthermore, the latest photochemical modeling indicates that reducing commercial charbroiling emissions is critical to achieving attainment of multiple federal PM2.5 standards and associated health benefits in the Valley. Using new survey and registration information, the District is pursuing reductions in commercial underfired charbroiler emissions through an incentive-based approach to fund the installation of new controls for commercial underfired charbroilers within urban boundaries in Fresno, Kern, and Madera counties, with a future year regulatory requirement to encourage participation by Valley businesses.

Therefore, the District strongly recommends new restaurants that will operate under-fired charbroilers contact and work with the District to assess the feasibility of installing charbroiler emission control systems during the construction phase. Installing emissions control systems during construction of new facilities is likely to result in substantial economic benefit compared to costly retrofitting. To ease the financial burden for Valley businesses that wish to install control equipment before it is required by District Rule 4692 (Commercial Charbroiling), the District is currently offering substantial incentive funding that covers the full cost of purchasing, installing, and maintaining the system for up to two years. Please contact the District at (559) 230-5800 or technology@valleyair.org for more information.

7) The Project may be subject to District Rule 9410 (Employer Based Trip Reduction) if the Project would result in employment of 100 or more "eligible" employees. District Rule 9410 requires employers with 100 or more "eligible" employees at a worksite to establish an Employer Trip Reduction Implementation Plan (eTRIP) that encourages employees to reduce single-occupancy vehicle trips, thus reducing pollutant emissions associated with work commutes. Under an eTRIP plan, employers have the flexibility to select the options that work best for their worksites and their employees. Information about how District Rule 9410 can be found online at: www.valleyair.org/tripreduction.htm. For additional information, you can contact the District by phone at 559-230-6000 or by e-mail at etrip@valleyair.org.

8) The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this Project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (661) 392-5665. Current District rules can be found online at the District's website at: www.valleyair.org/rules/1ruleslist.htm.

Assembly Bill 617

9) Assembly Bill 617 (AB 617) requires the California Air Resources Board (CARB) and air districts to develop and implement additional emissions reporting, monitoring, reduction plans and measures in an effort to reduce air pollution exposure in disadvantaged communities. The South Central Fresno area is one of the first Valley communities selected by the CARB for investment of additional resources under AB 617. Please be aware that the proposed Project significantly overlaps with the South Central Fresno Community, and that the AB 617 process provides a platform for public comments, many of which focus on land-use concerns in the area. The District recommends that the City monitor the District's AB 617 process and consider community-suggested opportunities to bring additional resources and emissions mitigation to the area as the city's planning effort progresses.

If you have any questions or require further information, please contact Michael Corder by phone at (559) 230-5818 or by e-mail at michae.corder@valleyair.org.

Sincerely,

Arnaud Marjollet

Arnaud Marjollet
Director of Permit Services

AM: mc

Fresno Business Council

Jennifer Clark, Planning Director
c/o Marty-Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
SIPA@fresno.gov

Dear Ms. Clark:

On behalf of the Fresno Business Council, a business civic group founded in 1993 to work in partnership with other sectors to address critical issues, we would like to offer our strong support for the a 6,500 industrial park under consideration.

As you may know, the Manufacturing Alliance is part of the Fresno Business Council and a number of the leaders have weighed in.

We would like to underscore one of the points many have made—we must approach solutions to concentrated poverty as a whole community, everybody standing together to get the right things done. We are heavily involved in one of critical components of success—developing a strong workforce. Fortunately, our educational leaders have stepped up and are making significant changes.

There have been numerous attempts in the past to develop a world class industrial park but the we could not come into alignment. As we support triple bottom line approaches and this is the direction of business and government are heading, Fresno has an opportunity to come together behind this effort and by doing so, build a collaborative culture where we can do much more.

We appreciate the City's leadership in bringing everyone together and getting this done. Without this critical component of the ecosystem, related efforts will have limited impact.

Please keep us informed of your progress.

Sincerely,

Deborah J. Nankivell

Deborah J. Nankivell
Chief Executive Officer

From: Jennifer Clark <Jennifer.Clark@fresno.gov>
Sent: Monday, August 12, 2019 3:47 PM
To: Chris Mundhenk; SIPA
Subject: FW: South Industrial Priority Area SP (SCH 2019079022)

From: Padilla, Dave@DOT [mailto:dave.padilla@dot.ca.gov]
Sent: Monday, August 12, 2019 1:43 PM
To: Jennifer Clark
Cc: state.clearinghouse (state.clearinghouse@opr.ca.gov)
Subject: South Industrial Priority Area SP (SCH 2019079022)

Hello Jennifer,

I realize this is outside the review window, however we have no comments to provide other than please include us during the scoping of the traffic impact study.

Thank you

DAVID PADILLA
Associate Transportation Planner
Caltrans
Office of Planning & Local Assistance
1352 W. Olive Avenue
Fresno, CA 93778-2616
Office: (559) 444-2493, Fax: (559) 445-5875

CALIFORNIA
AIR RESOURCES BOARD

Mary D. Nichols, Chair
Jared Blumenfeld, CalEPA Secretary
Gavin Newsom, Governor

January 14, 2020

RECEIVED
JAN 22 2020
Name:

Jennifer Clark
c/o Marty Sorge-Jauss, Executive Assistant
Development and Resource Management
City of Fresno
2600 Fresno Street, Room 3065
Fresno, California 93721

Dear Jennifer Clark:

California Air Resources Board (CARB) staff appreciate the opportunity to comment on the Notice of Preparation (NOP) for the South Industrial Priority Area (SIPA) Specific Plan Project (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2019079022. The Project would establish a planning framework to facilitate and guide future development within the 6,150-acre planning area through the year 2040. The Project is located in the City of Fresno (City), California, which is the lead agency for California Environmental Quality Act (CEQA) purposes. Given the size of the industrial development proposed under the Project, CARB staff urges the City and applicant to adequately analyze and mitigate the Project's potential impact on air quality and public health in the DEIR.

The California Supreme Court recently addressed the issue of an EIR's adequacy in analyzing a project's air quality impacts on public health in its landmark ruling in *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (*Friant Ranch*). In *Friant Ranch*, the Court held that an EIR is inadequate as an informational document if it does not make "a reasonable effort to discuss relevant specifics regarding the connection between two segments of information already contained in the EIR, the general health effects associated with a particular pollutant and the estimated amount of that pollutant the project will likely produce." (Id., at p. 521.). Specifically, as it relates to the specific project at issue in the case, the Court held that "[t]he EIR's discussion of health impacts of the named pollutants provide[d] only a general description of symptoms that are associated with exposure to the ozone, particulate matter (PM), carbon monoxide (CO), and nitrogen dioxide (NOx), and the discussion of health impacts regarding each type of pollutant is at most a few sentences of general information. The disclosures of the health effects related to PM, CO, and sulfur dioxide fail[ed] to indicate the concentrations at which such pollutants would trigger the identified symptoms." (Id., at p. 519.) In doing so, the EIR must make "some effort to explain the nature and magnitude of the [project's health] impact." (Ibid.) Therefore, CARB is providing comments urging the City to address potential air quality impacts and

associated public health concerns related to the construction and operation of the Project.
CARB staff is concerned about the air pollution and health risk impacts that may result from the Project. The Project includes freight facilities, such as warehouse and distribution facilities, that may result in high daily volumes of heavy-duty diesel truck traffic and operation of on-site equipment (e.g., forklifts, yard tractors, and transport refrigeration units). This increase in activity could negatively impact local air quality with health-harming emissions, including particulate matter, diesel particulate matter (diesel PM), and other toxic air contaminants, generated during the construction and operation of the Project. These emissions also contribute to regional air pollution by emitting precursors that lead to the formation of secondary air pollutants, like ozone, and contribute to an increase in greenhouse gas (GHG) emissions.

There are residences, schools, and senior centers located within and near the Project. The communities near the Project are surrounded by existing emission sources, which include warehouses, other industrial uses, and vehicular traffic along State Route 41 (SR-41) and State Route 99 (SR-99). Due to the Project's proximity to residences, schools, and senior centers already disproportionately burdened by multiple sources of pollution, CARB staff is concerned with the potential cumulative health impacts associated with the buildout of the Project.

Statutory Considerations

Addressing the disproportionate impacts that air pollution has on disadvantaged communities is a pressing concern across the State, as evidenced by statutory requirements compelling California's public agencies to target these communities for clean air investment, pollution mitigation, and environmental regulation. The following three pieces of legislation need to be considered, and included in the DEIR, when developing a project like this, in this Fresno community.

Senate Bill 535 (De León, 2012) Senate Bill 535 (De León, 2012)

Senate Bill 535 (De León, Chapter 830, 2012)[1] recognizes the potential vulnerability of low-income and disadvantaged communities to poor air quality, and requires funds to be spent to benefit disadvantaged communities. The California Environmental Protection Agency (CalEPA) is charged with the duty to identify disadvantaged communities. CalEPA bases its identification of these communities on geographic, socioeconomic, public health, and environmental hazard criteria (Health and Safety Code, section 39711, subsection (a)). In this capacity, CalEPA currently defines a

---

[1] Senate Bill 535, De León, K., Chapter 800, Statutes of 2012, modified the California Health and Safety Code, adding § 39711, § 39713, § 39715, § 39721and § 39723.

disadvantaged community, from an environmental hazard and socioeconomic standpoint, as a community that scores within the top 25 percent of the census tracts, as analyzed by the California Communities Environmental Health Screening Tool Version 3.0 (CalEnviroScreen).[2] According to CalEnviroScreen, Fresno communities near the Project score within the top 1 percent of California census tracts. Therefore, CARB urges the City to ensure that the Project does not adversely impact neighboring disadvantaged communities.

Senate Bill 1000 (Leyva, 2016)

Senate Bill 1000 (SB 1000) (Leyva, Chapter 587, Statutes of 2016)[3] amended the Planning and Zoning Law. SB 1000 requires local governments that have identified disadvantaged communities to incorporate the addition of an environmental justice element into their general plans upon the adoption or next revision of two or more elements concurrently on or after January 1, 2018. SB 1000 requires environmental justice elements to identify objectives and policies to reduce the unique or compounded health risks in disadvantaged communities. Generally, environmental justice elements will include policies to reduce the community's exposure to pollution through air quality improvement. SB 1000 affirms the need to integrate environmental justice principles into the planning process to prioritize improvements and programs that address the needs of disadvantaged communities, such as the Fresno communities surrounding the Project site.

Assembly Bill 617 (Garcia, 2017)

The State of California has emphasized protecting local communities from the harmful effects of air pollution through the passage of Assembly Bill 617 (AB 617) (Garcia, Chapter 136, Statutes of 2017).[4] AB 617 requires new community-focused and community-driven action to reduce air pollution and improve public health in communities that experience disproportionate burdens from exposure to air pollutants. In response to AB 617, CARB established the Community Air Protection Program with the goal of reducing exposure in communities heavily impacted by air pollution. This Project falls within the boundaries of the South Central Fresno Community, which is one of ten statewide communities chosen for inclusion in the first year of the Community Air Protection Program.

---

[2] "CalEnviroScreen 3.0." Oehha.ca.gov, California Office of Environmental Health Hazard Assessment, June 2018, oehha.ca.gov/calenviroscreen/report/calenviroscreen-30.

[3] Senate Bill 1000, Leyva, S., Chapter 587, Statutes of 2016, amended the California Health and Safety Code, § 65302.

[4] Assembly Bill 617, Garcia, C., Chapter 136, Statutes of 2017, modified the California Health and Safety Code, amending § 40920.6, § 42400, and § 42402, and adding § 39607.1, § 40920.8, § 42411, § 42705.5, and § 44391.2.

South Central Fresno was selected for both community air monitoring and the development of an emissions reduction program due to its high cumulative exposure burden, the presence of a significant number of sensitive populations (children, elderly, and individuals with pre-existing conditions), and the socioeconomic challenges experienced by its residents. The average overall CalEnviroScreen score for the South Central Fresno community is in the top 1 percent, indicating that the area is home to some of the most vulnerable neighborhoods in the State. The air pollution levels in South Central Fresno routinely exceed State and federal air quality standards, and the community was also prioritized by the San Joaquin Valley's AB 617 Environmental Justice Steering Committee.[5]

Health-harming emissions, including particulate matter (PM), toxic air contaminants, and diesel PM generated during the construction and operation of the Project may negatively impact the community, which is already disproportionally impacted by air pollution from existing freight facilities and other stationary sources of air pollution. Part of the AB 617 process required CARB and the San Joaquin Valley Air Pollution Control District (SJVAPCD) to create a highly-resolved inventory of air pollution sources within this community. CARB would be more than happy to share this community emissions inventory with the City and applicant to aid in the DEIR's cumulative impact analysis.

II. Recommended Health Risk Assessment Guidance

The Health Risk Assessment (HRA) prepared in support of the Project should be based on the latest Office of Environmental Health Hazard Assessment (OEHHA) guidance (2015 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments).[6] The HRA should evaluate and present the existing baseline (current conditions), future baseline (full build-out year, without the Project), and future year with the Project. The health risks modeled under both the existing and the future baselines should reflect all applicable federal, State, and local rules and regulations. By evaluating health risks using both baselines, the public and city planners will have a complete understanding of the potential health impacts that would result from the Project. CARB staff is more than willing to share any inventory, air quality, or regulatory data that may assist during the HRA process.

In addition to the health risk associated with operations, construction health risks should be included in the air quality section of the DEIR and the Project's HRA.

---

[5] California Air Resources Board (2018). 2018 Community Recommendations Staff Report. Sacramento, California: Community Air Protection Program. https://ww2.arb.ca.gov/resources/documents/2018-community-recommendations-staff-report

[6] Office of Environmental Health Hazard Assessment (OEHHA). Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February 2015. Accessed at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Construction of the Project would result in short-term emissions from the use of both on-road and off-road diesel equipment. OEHHA's guidance recommends assessing cancer risks for construction projects lasting longer than two months. Since construction would very likely occur over a period lasting longer than two months, the HRA prepared for the Project should include health risks for existing and planned residences near the Project site during construction.

III. The DEIR Should Include Mitigation Measures to Protect Nearby Disadvantaged Communities

To reduce the exposure of emissions in disadvantaged communities already disproportionally impacted by air pollution, the final design of industrial uses proposed under the Project should include all existing and emerging zero-emission technologies to minimize exposure to all neighboring communities, as well as the greenhouse gases that contribute to climate change. CARB encourages the City and applicant to implement the measures listed in Attachment A of this comment letter. During the Project's development, the City and applicant should engage with CARB, SJVAPCD, and community residents to address community concerns and mitigate air quality impacts.

IV. Other Considerations

A. The Project Description Must Explicitly Indicate Whether the Project's Proposed Industrial Uses Include Cold Storage Facilities

The NOP does not state in its project description whether the industrial uses proposed under the Project would include cold storage warehouses. Project descriptions "must include (a) the precise location and boundaries of the proposed project, (b) a statement of the objectives sought by the proposed project, (c) a general description of the project's technical, economic and environmental characteristics, and (d) a statement briefly describing the intended use of the EIR." (*stopthemilleniumhollywood.com v. City of Los Angeles* (2019) 39 Cal.App.5th 1, 16.) "This description of the project is an indispensable element of both a valid draft EIR and final EIR." (Ibid.) Without explicit acknowledgment in the project description that the proposed project will, conclusively, not include cold storage facilities, the current project description fails to meet the bare minimum of describing the project's technical and environmental characteristics and the objectives sought by the proposed project.

The operation of cold storage warehouses would include trucks with transport refrigeration units (TRU)[7] that emit significantly higher emissions of toxic diesel PM, oxides of nitrogen (NO_x), and GHGs than trucks without TRUs. Residences and other sensitive receptors (e.g., daycare facilities, senior care facilities, and schools) located near where these TRUs could be operating would be exposed to diesel exhaust emissions that would result in significant cancer risk. If the Project will not be used for cold storage, CARB staff urges the City to include one of the following design measures in the DEIR:

- A Project design measure requiring contractual language in tenant lease agreements that prohibits tenants from operating TRUs within the Project site; or

- A condition requiring a restrictive covenant over the parcel that prohibits the applicant's use of TRUs on the property unless the applicant seeks and receives an amendment to its conditional use permit allowing such use.

If the City does allow TRUs within the Project site, CARB staff urges the City to model air pollutant emissions from on-site TRUs in the DEIR, as well as prepare a HRA that shows the potential health risks. The DEIR should also include the air pollutant reduction measures listed in Attachment A.

B. Model Mobile Air Pollutant Emissions Should be Estimated Using CARB's 2017 Emission Factor Model (EMFAC2017)

At its core, an EIR must "provide public agencies and the public in general with detailed information about the effect [that] a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project." (Public Resources Code, section 21061; CEQA Guidelines, section 15003, subds. (b)-(e).) "Because the EIR must be certified or rejected by public officials, it is a document of accountability. If CEQA is scrupulously followed, the public will know the basis on which its responsible officials either approve or reject environmentally significant action, and the public, being duly informed, can respond accordingly to action with which it disagrees." (*Laurel Heights Improvement Assn. v. Regents of University of California (Laurel Heights I)* (1988) 47 Cal.3d 376, 392.) The EIR "protects not only the environment but also informed self-government." (Ibid.) Here, the City must adequately inform the public and its decision makers by including a detailed, sufficient assessment of the

---

[7] TRUs are refrigeration systems powered by integral diesel engines that protect perishable goods during transport in an insulated truck and trailer vans, rail cars, and domestic shipping containers.

significance of the project's mobile air pollutant emissions using updated, more accurate modeling. (See, *Id.* at p. 405 [EIRs "must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project."].)

Project-related air pollutant emissions from mobile sources should be modeled using CARB's latest EMFAC2017.[8] One of the many updates made to EMFAC included an update to the model's heavy-duty emission rates and idling emission factors, which results in higher PM emissions as compared to EMFAC2014. Since EMFAC2017 generally shows higher emissions of particulate matter from trucks than EMFAC2014, the Project's mobile source NO_x and diesel PM emissions are likely underestimated. CARB staff urges the City and applicant to model and report the Project's air pollution emissions from mobile sources using emission factors found in CARB's latest EMFAC2017.

CARB staff appreciates the opportunity to comment on the NOP for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. Please include CARB on your State Clearinghouse list of selected State agencies that will receive the DEIR as part of the comment period. If you have questions, please contact Brian Moore of CARB's Community Air Protection Program at (916) 322-8280 or Brian.Moore@arb.ca.gov.

Sincerely,

Karen Magliano, Director
Office of Community Air Protection

Attachment

cc: See next page.

---

[8] ww3.arb.ca.gov. (2018). *Home | EMFAC2017 Web Database*. [online] Available at: https://www.arb.ca.gov/emfac/2017/ [Accessed 17 December. 2019].

cc: Arnaud Marjollet, Director
Permit Services - CEQA Department
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, California 93726

Genevieve Gale, Executive Director
Central Valley Air Quality Coalition
1252 Fulton Street
Fresno, CA 93721

Ivanka Saunders, Policy Coordinator
Leadership Counsel for Justice and Accountability
764 P Street, Suite 012
Fresno, CA 93721

Kevin Hamilton, Chief Executive Officer
Central California Asthma Collaborative
4991 E McKinley Ave #109
Fresno, CA 93727

Kimberly McCoy, Project Director
Fresno Building Healthy Communities
4991 E McKinley Ave #107
Fresno, CA 93727

Nayamin Martinez, Director
Central California Environmental Justice Network
4991 E. McKinley Ave. Ste. 109
Fresno, CA 93727

Sam Molina
Mi Familia Vota, California State Director
5228 E. Pine Ave.
Fresno, CA 93727

Patia Siong
San Joaquin Valley Air Pollution Control District
1990 E. Gettysburg Ave.
Fresno, CA 93726

State Clearinghouse
P.O. Box 3044
Sacramento, California 95812

ATTACHMENT A

Recommended Air Pollution Emission Reduction Measures for Warehouses and Distribution Centers

California Air Resources Board (CARB) staff recommends developers and government planners use all existing and emerging zero to near-zero emission technologies during project construction and operation to minimize public exposure to air pollution. Below are some measures, currently recommend by CARB staff, specific to warehouse and distribution center projects. These recommendations are subject to change as new zero-emission technologies become available.

Recommended Construction Measures

1. Ensure the cleanest possible construction practices and equipment are used. This includes eliminating the idling of diesel-powered equipment and providing the necessary infrastructure (e.g., electrical hookups) to support zero and near-zero equipment and tools.[1]

2. Implement, and plan accordingly for, the necessary infrastructure to support the zero and near-zero emission technology vehicles and equipment that will be operating onsite. Necessary infrastructure may include the physical (e.g., needed footprint), energy, and fueling infrastructure for construction equipment, onsite vehicles and equipment, and medium-heavy and heavy-heavy duty trucks.[2]

3. In construction contracts, include language that requires all off-road diesel-powered equipment used during construction to be equipped with Tier 4 or cleaner engines, except for specialized construction equipment in which Tier 4 engines are not available. In place of Tier 4 engines, off-road equipment can incorporate retrofits such that emission reductions achieved equal or exceed that of a Tier 4 engine.

4. In construction contracts, include language that requires all off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction be battery powered.

---

[1] ww3.arb.ca.gov. (2019). *Home | The Off-Road Zone.* [online] Available at: https://ww3.arb.ca.gov/msprog/offroadzone/offroadzone.htm [Accessed 27 Nov. 2019].

[2] ww2.arb.ca.gov. (2019). *CARB announces more than $200 million in new funding for clean freight transportation | California Air Resources Board.* [online] Available at: https://ww2.arb.ca.gov/news/carb-announces-more-200-million-new-funding-clean-freight-transportation [Accessed 27 Nov. 2019].

5. In construction contracts, include language that requires all heavy-duty trucks entering the construction site, during the grading and building construction phases be model year 2014 or later. All heavy-duty haul trucks should also meet CARB's lowest optional low-NO_x standard starting in the year 2022.[3]

6. In construction contracts, include language that requires all construction equipment and fleets to be in compliance with all current air quality regulations. CARB staff is available to assist in implementing this recommendation.

Recommended Operation Measures

1. Include contractual language in tenant lease agreements that requires tenants to use the cleanest technologies available, and to provide the necessary infrastructure to support zero-emission vehicles and equipment that will be operating onsite.[4]

2. Include contractual language in tenant lease agreements that requires all loading/unloading docks and trailer spaces be equipped with electrical hookups for trucks with transport refrigeration units (TRU) or auxiliary power units. This requirement will substantially decrease the amount of time that a TRU powered by a fossil-fueled internal combustion engine can operate at the project site. Use of zero-emission all-electric plug-in TRUs, hydrogen fuel cell transport refrigeration and cryogenic transport refrigeration are encouraged and can also be included lease agreements.[5]

3. Include contractual language in tenant lease agreements that requires all TRUs entering the project site be plug-in capable.

4. Include contractual language in tenant lease agreements that requires future tenants to exclusively use zero-emission light and medium-duty delivery trucks and vans.

5. Include contractual language in tenant lease agreements requiring all TRUs, trucks, and cars entering the Project site be zero-emission.

---

[3] In 2013, CARB adopted optional low-NO_x emission standards for on-road heavy-duty engines. CARB staff encourages engine manufacturers to introduce new technologies to reduce NO_x emissions below the current mandatory on-road heavy-duty diesel engine emission standards for model years 2010 and later. CARB's optional low-NO_x emission standard is available at https://www.arb.ca.gov/msprog/onroad/optionnox/optionnox.htm.

[4] California Air Resources Board. (2019). Sustainable Freight Transport Initiative. [online] Ww3.arb.ca.gov. Available at: https://ww3.arb.ca.gov/gmp/sfti/sfti.htm [Accessed 27 Nov. 2019]

[5] CARB's Technology Assessment for Transport Refrigerators provides information on the current and projected development of TRUs, including current and anticipated costs. The assessment is available at https://www.arb.ca.gov/msprog/tech/techreport/tru_07292015.pdf.

6. Include contractual language in tenant lease agreements that requires all service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) used within the project site to be zero-emission. This equipment is widely available.

7. Include contractual language in tenant lease agreements that requires all heavy-duty trucks entering or on the project site to be model year 2014 or later today, expedite a transition to zero-emission vehicles, and be fully zero-emission beginning in 2030.

8. Include contractual language in tenant lease agreements that requires the tenant be in, and monitor compliance with, all current air quality regulations for on-road trucks including CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation,[6] Periodic Smoke Inspection Program (PSIP),[7] and the Statewide Truck and Bus Regulation.[8]

9. Include contractual language in tenant lease agreements restricting trucks and support equipment from idling longer than five minutes while onsite.

10. Include contractual language in tenant lease agreements that limits onsite TRU diesel engine runtime to no longer than 15 minutes. If no cold storage operations are planned, include contractual language and permit conditions that prohibit cold storage operations unless a health risk assessment is conducted and the health impacts fully mitigated.

11. Include rooftop solar panels for each proposed warehouse to the extent feasible, with a capacity that matches the maximum allowed for distributed solar connections to the grid.

---

[6] In December 2008, CARB adopted a regulation to reduce greenhouse gas emissions by improving the fuel efficiency of heavy-duty tractors that pull 53-foot or longer box-type trailers. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation is available at https://www.arb.ca.gov/cc/hdghg/hdghg.htm.

[7] The PSIP program requires that diesel and bus fleet owners conduct annual smoke opacity inspections of their vehicles and repair those with excessive smoke emissions to ensure compliance. CARB's PSIP program is available at https://www.arb.ca.gov/enf/hdvip/hdvip.htm.

[8] The regulation requires newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. CARB's Statewide Truck and Bus Regulation is available at https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

Sadocli
Vineyards
Fresno, California

c/o Cliff Jarrard
Sadocli Cedar Vineyards LLC
217 25th Avenue
San Francisco, CA 94121-1224
(415) 317-4120
cliff@cliffjarrard.com

January 15, 2020

City of Fresno Planning and Development Department
2600 Fresno Street
Fresno, CA 93721

SUBJECT: South Central Specific Plan Community Workshop
Assessor's Parcel Number 330-190-01

Dear Representative:

Thank you for the opportunity to participate in this workshop to share my ideas of promoting economic opportunities while improving community livability.

Insofar as the parcel identified above Is included in the area of discussion, it would help if I could be directly notified about future meetings.

Cliff Jarrard
217 25th Avenue
San Francisco, CA 94121-1224

Thank you for your consideration.

Respectfully,

Cliff Jarrard

Cliff Jarrard
Sadocli Cedar Vineyards LLC
co-owner

Attachment

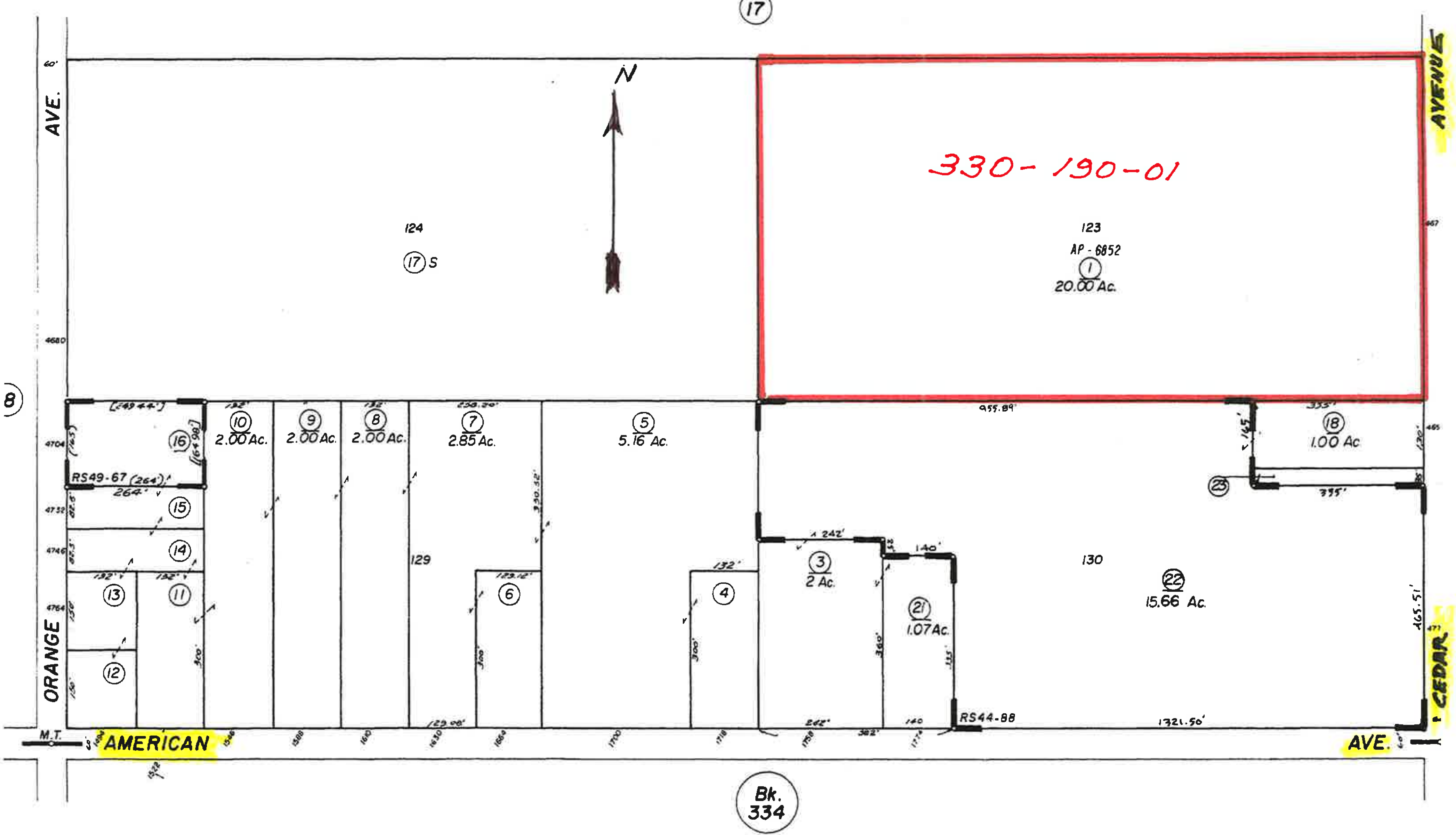
c: files

SUBDIVIDED LAND IN POR. SEC. 35, T. 14 S., R. 20 E., M.D.B. & M.

— NOTE —
his map is for Assessment purposes only.
is not to be construed as portraying legal
wnership or divisions of land for purposes
f zoning or subdivision law.

Tax Area
152-001

3.



Agricultural Preserve
Malaga Tract - Plot Bk. 2, Pg. 17
Record of Survey - Bk. 44, Pg. 88
Record of Survey - Bk. 49, Pg. 67

NOTE - Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.

Assessor's Map Bk. 330 - P
County of Fresno, Calif

c/o Cliff Jarrard
Raco, Jarrard, Munoz
217 25th Avenue
San Francisco, CA 94121-1224
(415) 317-4120
cliff@cliffjarrard.com

January 15, 2020

City of Fresno Planning and Development Department
2600 Fresno Street
Fresno, CA 93721

SUBJECT: South Central Specific Plan Community Workshop
Assessor's Parcel Number 330-211-20

Dear Representative:

Thank you for the opportunity to participate in this workshop to share my ideas of promoting economic opportunities while improving community livability.

Insofar as the parcel identified above Is included in the area of discussion, it would help if I could be directly notified about future meetings.

Cliff Jarrard
217 25th Avenue
San Francisco, CA 94121-1224

Thank you for your consideration.

Respectfully,

Cliff Jarrard

Cliff Jarrard
Raco, Jarrard, Munoz
co-owner

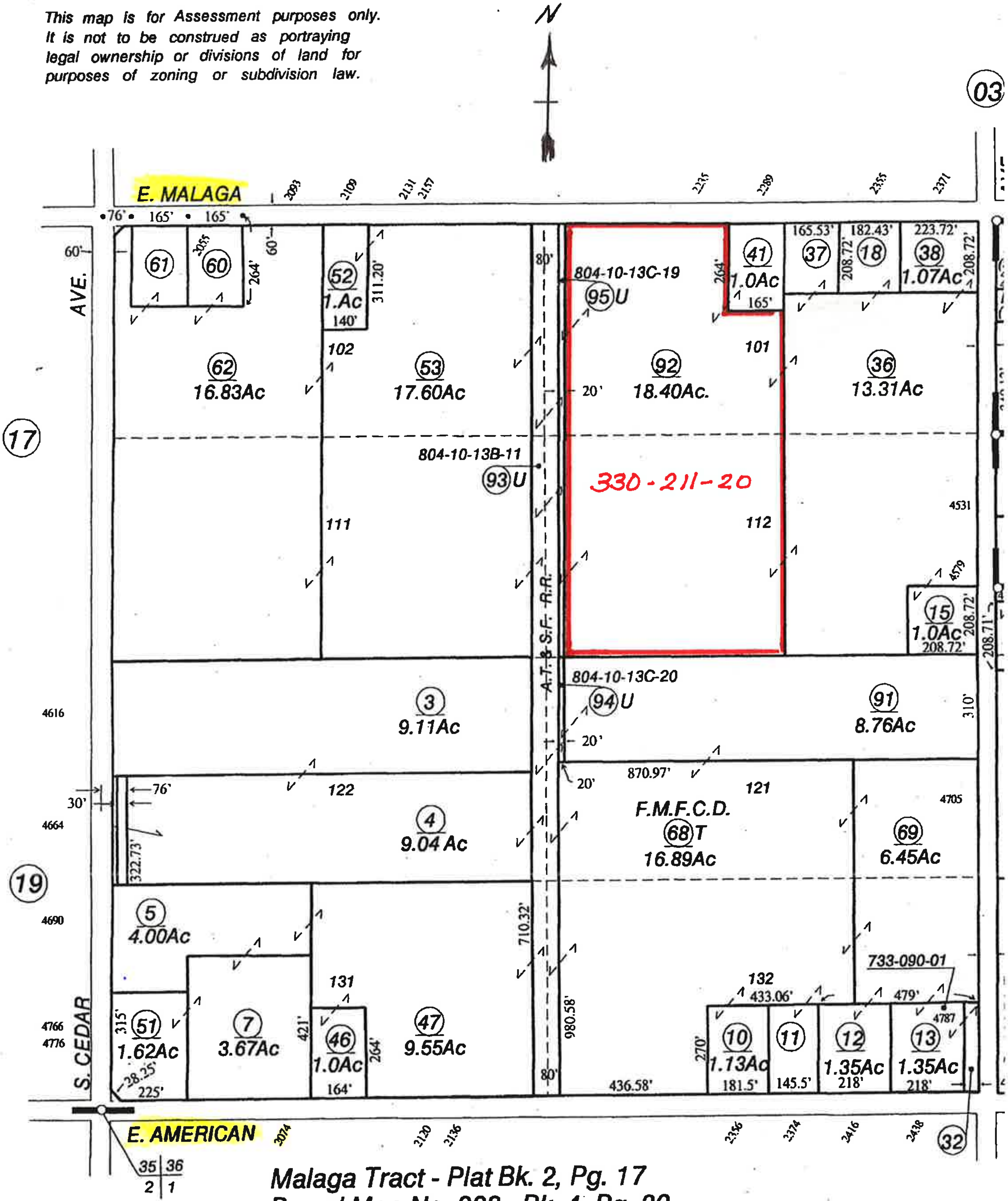
Attachment

c: files

--- NOTE ---

This map is for Assessment purposes only. It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.

SUBDIVIDED LAND IN POR. SEC. 36, T.



Malaga Tract - Plat Bk. 2, Pg. 17
Parcel Map No. 988 - Bk. 4, Pg. 20
Parcel Map No. 2829 - Bk. 18, Pg. 64
Parcel Map No. 6111 - Bk. 39, Pg. 3
Parcel Map No. 7281 - Bk. 49, Pg. 6
Parcel Map No. 7353 - Bk. 51, Pg. 6
Parcel Map No. 7650 - Bk. 56, Pg. 56

Parcel Map N
Record of Su

07-19-04

2021 Notice of Preparation and Comments

NOTICE OF PREPARATION

Date: March 24, 2021

To: Responsible Agencies, Interested Parties, and Organizations

Subject: Notice of Preparation of an Environmental Impact Report for the South Central Specific Plan project, Fresno, California

Lead Agency: City of Fresno

Contact: Jennifer Clark, Director
c/o Cherie Vick, Executive Assistant
Planning and Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
Jennifer.Clark@fresno.gov
Cherie.vick@fresno.gov

Comment Period: March 24, 2021 to April 23, 2021

Note to Reader: The City of Fresno (City) is recirculating this Notice of Preparation (NOP) to reflect revisions to the South Central Specific Plan, formerly referred to as the South Industrial Priority Area Specific Plan. Please refer to subheading, “Project Description,” for more information. All comments previously submitted to the City during the 2019 NOP public review period (July 8 to August 6, 2019) have been retained by the City.

PURPOSE OF NOTICE

The City of Fresno is the lead agency responsible for preparation of an Environmental Impact Report (EIR) for the proposed South Central Specific Plan project (proposed project), located in the City of Fresno. Pursuant to provisions of the California Environmental Quality Act (CEQA), the City has prepared this NOP for the proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

The EIR will provide an evaluation of potential environmental impacts associated with the proposed project. A brief project description, location, and potential environmental issue areas that may be affected by development of the proposed project are described below. The EIR will evaluate the potentially significant environmental impacts of the proposed project, on both a direct and cumulative basis, identify mitigation measures that may be feasible to lessen or avoid such impacts, and identify alternatives to the proposed project.

PUBLIC REVIEW PERIOD

This NOP is being re-circulated for public review and comment for a period of 30 days beginning March 24, 2021. The City will hold a public scoping meeting to inform interested parties about the proposed project and provide agencies and the public with an opportunity to submit comments on the scope and content of the EIR. As a result of the current COVID-19 restrictions in place on in-person gatherings, City of Fresno public meetings will be conducted electronically only. The meeting time, web link, and call-in information is as follows:

Web link: https://zoom.us/j/98637478188
Call-in Information: (669) 900-9128
Webinar ID: 986 3747 8188

Meeting Date: April 6, 2021

Meeting Time: 5:30 to 7:30 PM

Due to COVID-19 restrictions, copies of the NOP may be reviewed at the following locations:

- Online at: https://www.fresno.gov/cityclerk/notices-publications/ or
- www.fresno.gov/SCSP

For information on additional viewing methods, contact Executive Assistant Cherie Vick (contact information below).

Your views and comments on how the project may affect the environment are welcomed. Please contact Jennifer Clark if you have any questions about the environmental review process for the proposed project.

Project Location

The approximately 4,997-acre planning area, located in the southern portion of the City, is largely comprised of land within the City limits. However, as shown in Figures 1 and 2, the planning area also includes land within the City's Sphere of Influence (SOI) to the north, east, and west.

PROJECT DESCRIPTION

The City of Fresno is preparing the South Central Specific Plan to maximize economic benefit and job growth for residents, while reducing impacts on the environment and improving quality of life. The proposed project would designate land uses, establish a planning framework, and development standards to facilitate and guide future development within the 4,997-acre planning area through the year 2040.

The EIR will evaluate potential impacts associated with development of a preferred proposed Specific Plan as well as at two additional development alternatives that may occur within the planning area through the year 2040. The specific plan proposes revised land use and zoning designations, specific design guidelines, and process improvements. See Table 1 for draft estimated acreages for the proposed Specific Plan and plan alternatives. Future development would be required to comply with the proposed specific plan land use designations, development standards, and policy framework. Following adoption of the South Central Specific Plan, subsequent projects that are consistent with the Specific Plan could undergo a streamlined CEQA environmental review and approval process that may consist of completing a conformance checklist demonstrating consistency with the Specific Plan.

Table 1: Proposed Specific Plan and Plan Alternatives Estimated Acreages

Land Use	Existing General Plan Acres (percent)	Proposed Plan Acres (percent)	Alternative 1[a] Acres (percent)	Alternative 2[b] Acres (percent)
Business Park	144 (3%)	655 (13%)	581 (12%)	40 (1%)
General Commercial	10 (<1%)	48 (1%)	2,014 (42%)	13 (<1%)
Regional Business Park	351 (7%)	334 (7%)	247 (5%)	334 (7%)
Heavy Industrial	3,470 (72%)	2,651 (53%)	22 (<1%)	3,043 (63%)
Light Industrial	614 (13%)	714 (14%)	1,495 (31%)	1,076 (22%)
Neighborhood Mixed Use	0.25 (0%)	0.25 (<1%)	0.25 (<1%)	0.25 (<1%)
Open Space - Ponding Basin	157 (3%)	157 (3%)	157 (3%)	157 (3%)
Open Space - Neighborhood Park	2 (0%)	2 (<1%)	2 (<1%)	2 (<1%)
Public	41 (1%)	135 (3%)	29 (1%)	78 (2%)
Rail	32 (1%)	32 (1%)	32 (1%)	32 (1%)
Residential	30 (1%)	270 (5%)	273 (6%)	76 (2%)
Other	NA	0.001 (<1%)	0.001 (<1%)	0.001 (<1%)
SCSP Boundary Change	146	NA	146	146
TOTAL	*4,852*	*4,997*	*4,852*	*4,852*
TOTAL (including SCSP Boundary Change)	*4,997*	*4,997*	*4,997*	*4,997*

* Rounded to the nearest acre. Figures may not sum due to rounding.

NA Not applicable

[a] Alternative 1 tentatively labeled Community Proposed Alternative

[b] Alternative 2 tentatively labeled Business Proposed Alternative

RESPONSIBLE AGENCIES

For the purposes of CEQA, the term “Responsible Agency” includes all public agencies other than the Lead Agency that have discretionary approval power over the project (CEQA Guidelines Section 15381). Discretionary approval may include such actions as issuance of a permit, authorization, or easement needed to complete some aspect of the proposed project. Responsible agencies may include, but are not limited to:

- California Department of Transportation (Caltrans),
- California State Water Resources Control Board (SWRCB),
- California Department of Fish and Wildlife (CDFW),
- Central Valley Regional Water Quality Control Board (CVRWQCB),
- County of Fresno,
- Fresno Local Agency Formation Commission (LAFCo), and
- San Joaquin Valley Air Pollution Control District (SJVAPCD).

AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will analyze the significant environmental effects associated with adoption and implementation of the proposed project. Specific areas of analysis will include the following topics based on Appendix G of the State CEQA Guidelines:

- Aesthetics
- Agricultural and Forestry Services
- Ai Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Cumulative Impacts

The EIR will also include a discussion of environmental justice issues, and identify and evaluate a range of reasonable alternatives to the proposed project, including a No Project Alternative.

SUBMITTING COMMENTS

Comments and suggestions as to the appropriate scope of analysis in the EIR are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the City's environmental project manager at the following address by 5:00 p.m. on April 23, 2021. Please include the commenter's full name and address.

Jennifer Clark , Planning Director
c/o Cherie Vick, Executive Assistant
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
Cherie.vick@fresno.gov

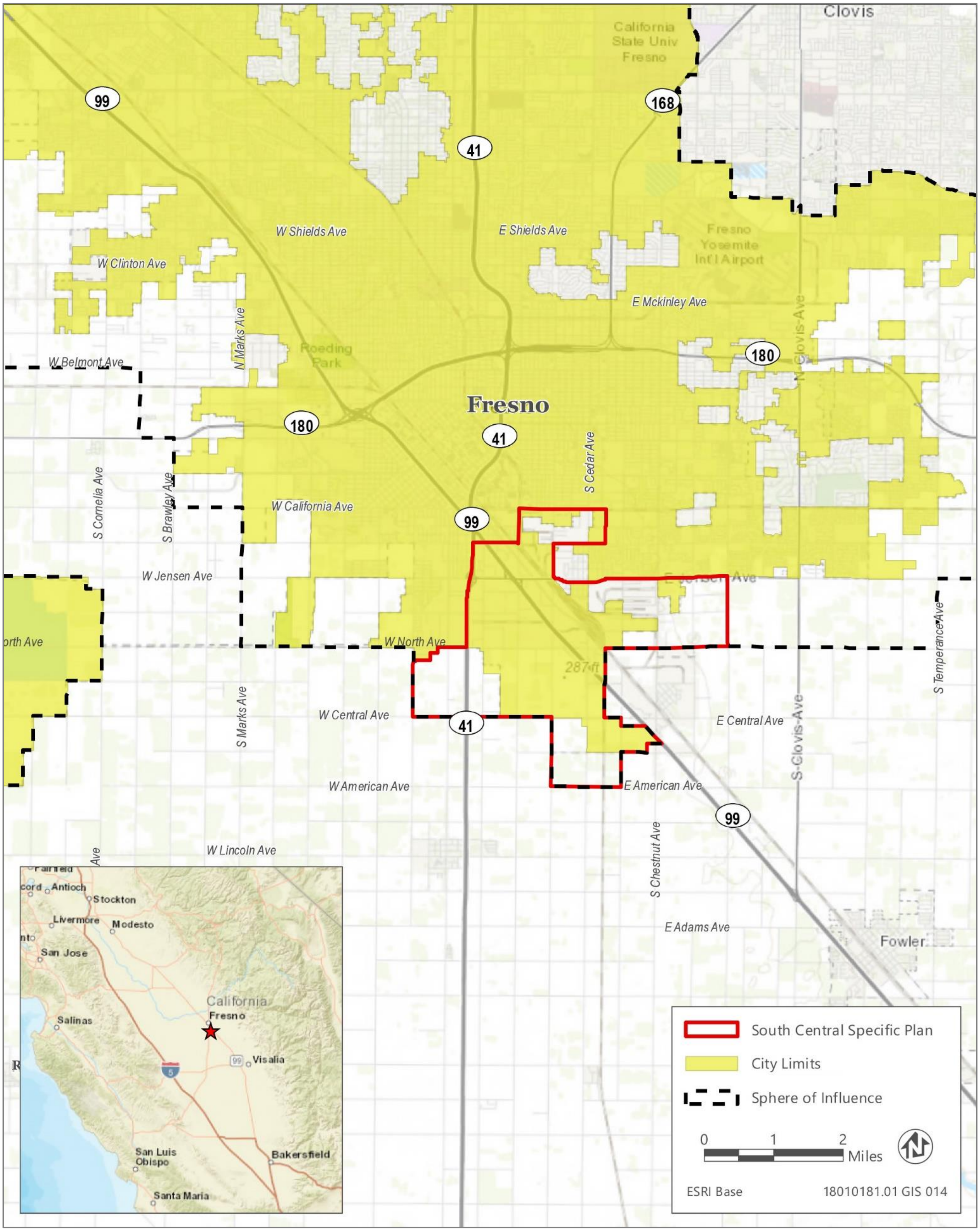


Figure 1 Regional Location

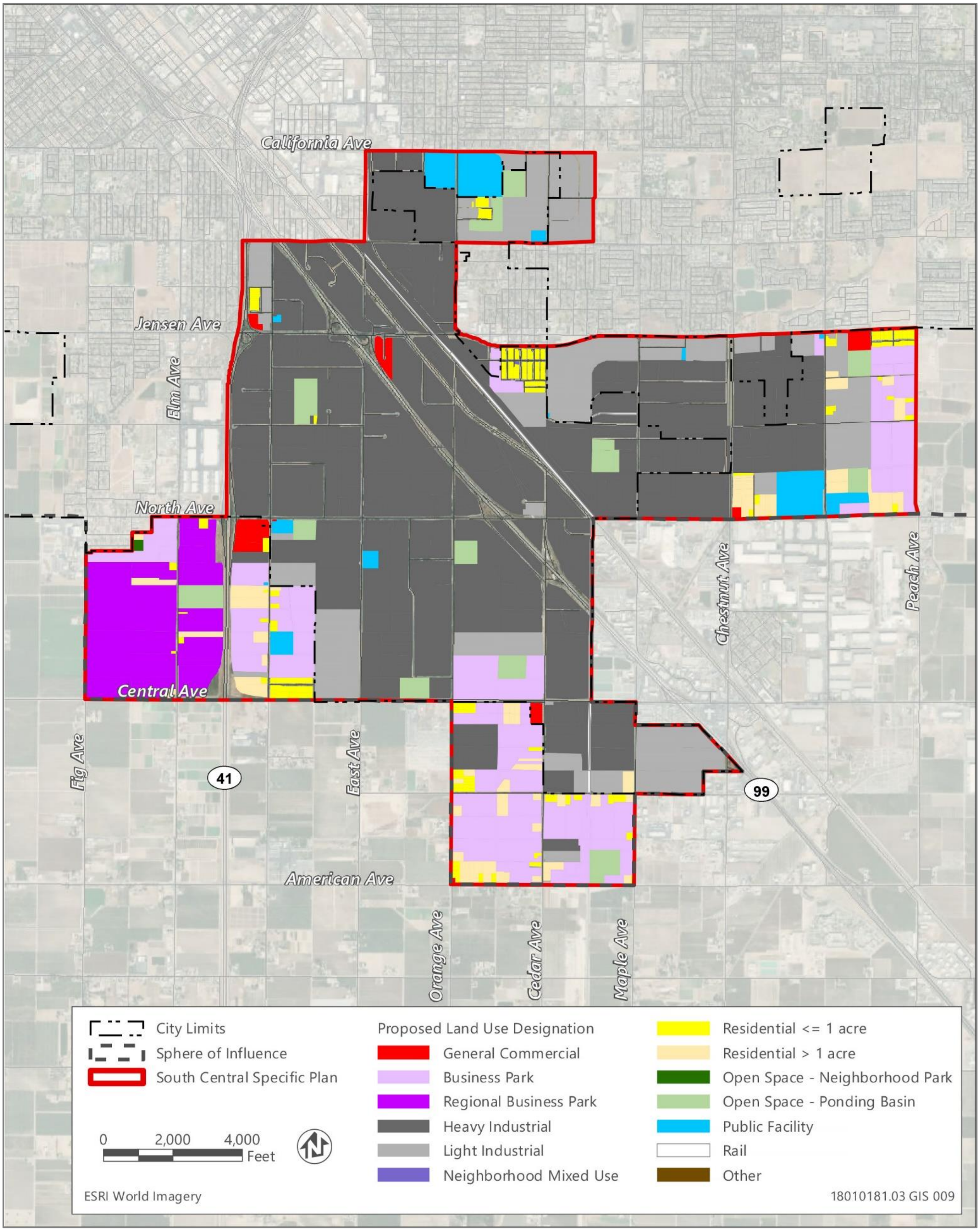


Figure 2 Planning Area

REVISED NOTICE OF PREPARATION

TO EXTEND COMMENT PERIOD

Date: April 14, 2021

To: Responsible Agencies, Interested Parties, and Organizations

Subject: Notice of Preparation of an Environmental Impact Report for the South Central Specific Plan Project, Fresno, California

Lead Agency: City of Fresno

Contact: Jennifer Clark, Director
c/o Cherie Vick, Executive Assistant
Planning and Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
Jennifer.Clark@fresno.gov
Cherie.vick@fresno.gov

Comment Period: March 24, 2021 to May 14, 2021

Note to Reader: The City of Fresno (City) is recirculating this Notice of Preparation (NOP) to reflect revisions to the South Central Specific Plan, formerly referred to as the South Industrial Priority Area Specific Plan and to extend the comment period to May 14, 2021. Please refer to subheading, "Project Description," for more information. All comments previously submitted to the City during the 2019 NOP public review period (July 8 to August 6, 2019) have been retained by the City. **The comment period for this re-circulated Notice of Preparation (NOP) has been extended to May 14, 2021. If you submitted comments previously, they have been retained and do not need to be resubmitted.**

PURPOSE OF NOTICE

The City of Fresno is the lead agency responsible for preparation of an Environmental Impact Report (EIR) for the proposed South Central Specific Plan project (proposed project), located in the City of Fresno. Pursuant to provisions of the California Environmental Quality Act (CEQA), the City has prepared this NOP for the proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

The EIR will provide an evaluation of potential environmental impacts associated with the proposed project. A brief project description, location, and potential environmental issue areas that may be affected by development of the proposed project are described below. The EIR will evaluate the potentially significant environmental impacts of the proposed project, on both a direct and cumulative basis, identify mitigation measures that may be feasible to lessen or avoid such impacts, and identify alternatives to the proposed project.

PUBLIC REVIEW PERIOD

This NOP was re-circulated for public review and comment for a period of 30 days beginning April 14, 2021. This notice is to extend the public review period to May 14, 2021. The City held a public scoping meeting on April 6, 2021 to inform interested parties about the proposed project and provide agencies and the public with an opportunity to submit comments on the scope and content of the EIR. The City will hold **a second public scoping meeting on April 28, 2021.** As a result of the current COVID-19 restrictions in place on in-person gatherings, City of Fresno public meetings will be conducted electronically only. The meeting time, web link, and call-in information is as follows:

Web link: https://zoom.us/j/98373607907
Call-in Information: (669) 900-9128
Webinar ID: 983 7360 7907

Meeting Date: April 28, 2021

Meeting Time: 6:00 to 8:00 PM

Due to COVID-19 restrictions, copies of the NOP may be reviewed at the following locations:

- Online at: https://www.fresno.gov/cityclerk/notices-publications/ or
- www.fresno.gov/SCSP

For information on additional viewing methods, contact Executive Assistant Cherie Vick (contact information below).

Your views and comments on how the project may affect the environment are welcomed. Please contact Jennifer Clark if you have any questions about the environmental review process for the proposed project.

Project Location

The approximately 5,629-acre planning area, located in the southern portion of the City, is largely comprised of land within the City limits. However, as shown in Figures 1 and 2, the planning area also includes land within the City's Sphere of Influence (SOI) to the north, east, and west.

PROJECT DESCRIPTION

The City of Fresno is preparing the South Central Specific Plan to maximize economic benefit and job growth for residents, while reducing impacts on the environment and improving quality of life. The proposed project would designate land uses, establish a planning framework, and development standards to facilitate and guide future development within the planning area through the year 2040.

The EIR will evaluate potential impacts associated with development of a preferred proposed Specific Plan as well as at two additional development alternatives that may occur within the planning area through the year 2040. The specific plan proposes revised land use and zoning designations, specific design guidelines, and process improvements. See Table 1 for draft estimated acreages for the approximately 5,000 acres of land use designations proposed for the Specific Plan and plan alternatives. These acreages do not include existing infrastructure such as roadways included in the 5,629-acre Specific Plan boundary. Future development would be required to comply with the proposed specific plan land use designations, development standards, and policy framework. Following adoption of the South Central Specific Plan, subsequent projects that are consistent with the Specific Plan could undergo a streamlined CEQA environmental review and approval process that may consist of completing a conformance checklist demonstrating consistency with the Specific Plan.

Table 1: Proposed Specific Plan and Plan Alternatives Estimated Land Use Designation Acreages

Land Use	Existing General Plan Acres (percent)	Proposed Plan Acres (percent)	Alternative 1[a] Acres (percent)	Alternative 2[b] Acres (percent)
Business Park	144 (3%)	655 (13%)	581 (12%)	40 (1%)
General Commercial	10 (<1%)	48 (1%)	2,014 (42%)	13 (<1%)
Regional Business Park	351 (7%)	334 (7%)	247 (5%)	334 (7%)
Heavy Industrial	3,470 (72%)	2,651 (53%)	22 (<1%)	3,043 (63%)
Light Industrial	614 (13%)	714 (14%)	1,495 (31%)	1,076 (22%)
Neighborhood Mixed Use	0.25 (0%)	0.25 (<1%)	0.25 (<1%)	0.25 (<1%)
Open Space - Ponding Basin	157 (3%)	157 (3%)	157 (3%)	157 (3%)
Open Space - Neighborhood Park	2 (0%)	2 (<1%)	2 (<1%)	2 (<1%)
Public	41 (1%)	135 (3%)	29 (1%)	78 (2%)
Rail	32 (1%)	32 (1%)	32 (1%)	32 (1%)
Residential	30 (1%)	270 (5%)	273 (6%)	76 (2%)
Other	NA	0.001 (<1%)	0.001 (<1%)	0.001 (<1%)
SCSP Boundary Change	146	NA	146	146
TOTAL	*4,852*	*4,997*	*4,852*	*4,852*
TOTAL (including SCSP Boundary Change)	*4,997*	*4,997*	*4,997*	*4,997*

* Rounded to the nearest acre. Figures may not sum due to rounding.

NA Not applicable

[a] Alternative 1 tentatively labeled Community Proposed Alternative

[b] Alternative 2 tentatively labeled Business Proposed Alternative

RESPONSIBLE AGENCIES

For the purposes of CEQA, the term “Responsible Agency” includes all public agencies other than the Lead Agency that have discretionary approval power over the project (CEQA Guidelines Section 15381). Discretionary approval may include such actions as issuance of a permit, authorization, or easement needed to complete some aspect of the proposed project. Responsible agencies may include, but are not limited to:

- California Department of Transportation (Caltrans),
- California State Water Resources Control Board (SWRCB),
- California Department of Fish and Wildlife (CDFW),

- Central Valley Regional Water Quality Control Board (CVRWQCB),
- County of Fresno,
- Fresno Local Agency Formation Commission (LAFCo), and
- San Joaquin Valley Air Pollution Control District (SJVAPCD).

AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will analyze the significant environmental effects associated with adoption and implementation of the proposed project. Specific areas of analysis will include the following topics based on Appendix G of the State CEQA Guidelines:

- Aesthetics
- Agricultural and Forestry Services
- Ai Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Cumulative Impacts

The EIR will also include a discussion of environmental justice issues, and identify and evaluate a range of reasonable alternatives to the proposed project, including a No Project Alternative.

SUBMITTING COMMENTS

Comments and suggestions as to the appropriate scope of analysis in the EIR are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the City's environmental project manager at the following address by **5:00 p.m. on May 14, 2021**. Please include the commenter's full name and address.

Jennifer Clark , Planning Director
c/o Cherie Vick, Executive Assistant
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
Cherie.vick@fresno.gov

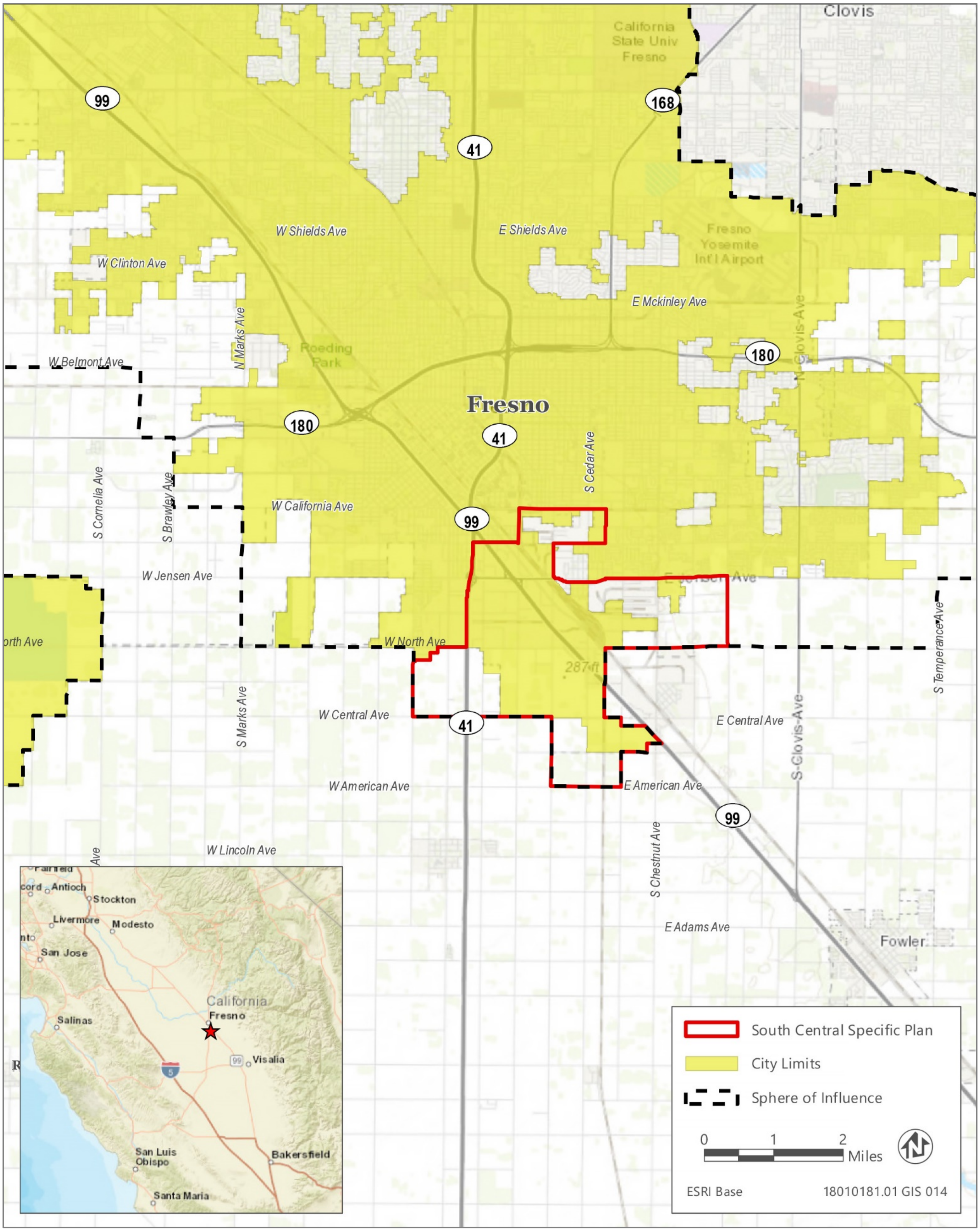


Figure 1 Regional Location

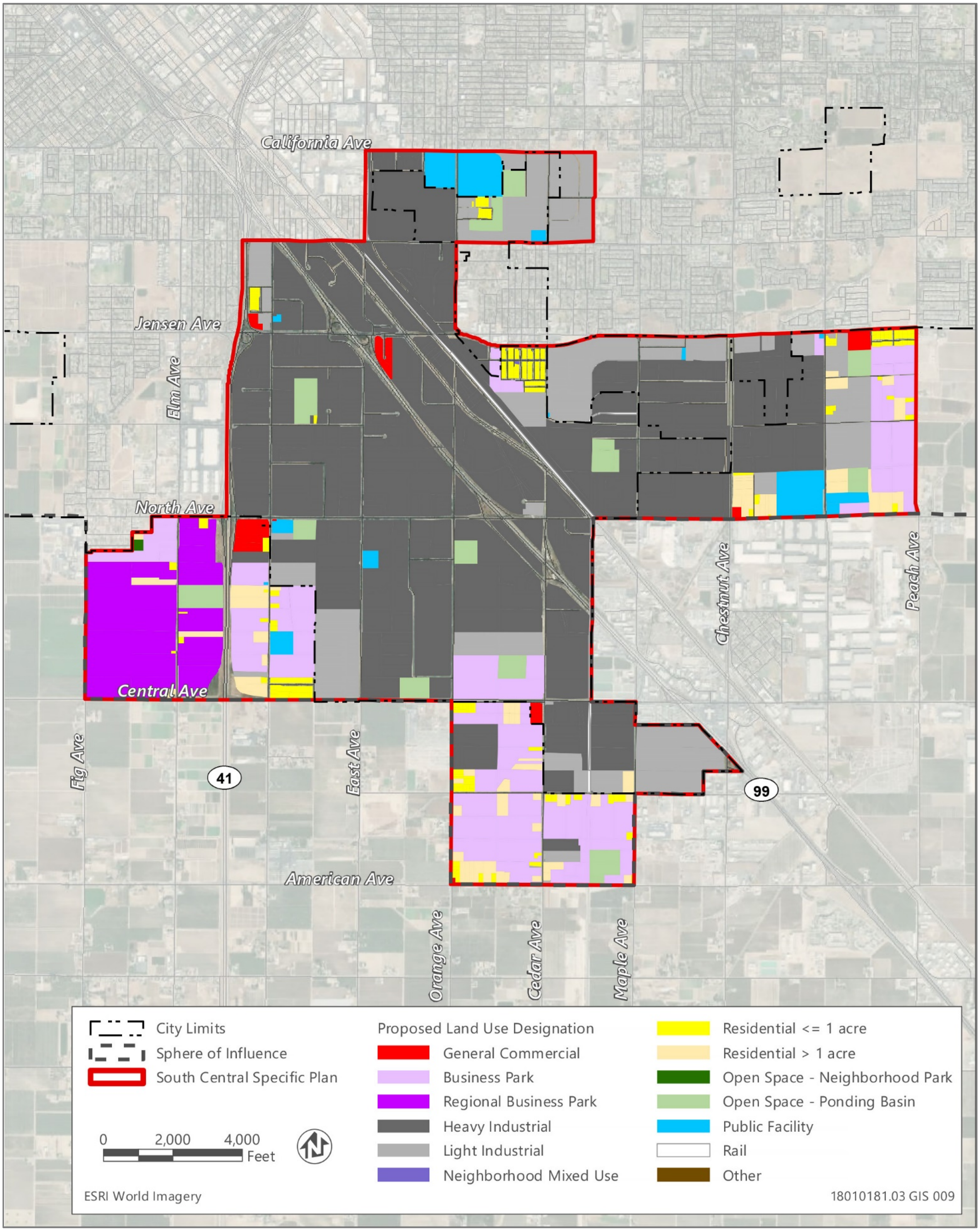


Figure 2 Planning Area

Table 1 NOP Comment Summary

Date	Name	Issue Areas/Attachments
Agency/Organization		
April 2, 2021	Leadership Council for Justice and Accountability ▶ Ivanka Saunders ▶ Grecia Elenes ▶ Nayamin Martinez ▶ Kimberly McCoy	▶ CEQA noticing requirements
April 6, 2021	Orange Center School District ▶ Terry M. Hirschfield	▶ CEQA noticing requirements
April 23, 2021	California Air Resources Board ▶ Deldi Reyes	▶ Air Quality ▶ Greenhouse Gas Emissions ▶ Health Risk Assessment ▶ Attachments ■ A: Recommended Air Pollution Emission Reduction Measure for Warehouse and Distribution Centers
April 2021	State of California Department of Justice ▶ Xavier Becerra	▶ Planning process ■ Community engagement ▶ Aesthetics ▶ Air Quality ▶ Cultural Resources ▶ Energy ▶ Geology and Soils ▶ Greenhouse Gas Emissions ▶ Hazards and Hazardous Materials ▶ Health Risk Assessment ▶ Noise ▶ Transportation
May 14, 2021	Carpenters Local 701 ▶ Travis Alexander	▶ Planning process ■ Local hire policy and apprenticeship mandates would reduce growth inducing impacts related to employment
May 14, 2021	Fowler Packing ▶ Leland D Parnagian	▶ Project details ■ Changes to proposed land use and zoning ▶ Planning Process ■ Request for a market study ▶ Oppose mitigation that requires buffers
May 14, 2021	Fresno Business Council ▶ Deborah J. Nankivell ▶ Genelle Taylor Kumpe	▶ Planning process ■ Career pathways for the community ■ Creation of public industrial park ■ Relocate students and residents away from industrial uses

Table 1 NOP Comment Summary

Date	Name	Issue Areas/Attachments
May 14, 2021	Modern Custom Fabrication ▶ James W. Gray	▶ Project details ■ Zoning updates
May 14, 2021	Leadership Council for Justice and Accountability ▶ Ivanka Saunders ▶ Ana Orozco ▶ Catherine Garoupa White ▶ Naymin Martinez ▶ Kimberly McCoy ▶ Kevin Hamilton ▶ Laura Moreno ▶ Rosa DePew ▶ Panfilo Cerillo	▶ Planning process ■ SCSP lacks policies that reflect community input ■ SCSP conflicts with the City's fair housing requirements ■ SCSP conflicts with the City's duties to avoid discriminatory land use practices ■ SCSP conflicts with AB 617 ■ SCSP conflicts with November 14, 2019 City Council Resolution ▶ Project Description ■ Baseline ▶ Aesthetics ▶ Air Quality ▶ Environmental Justice ■ Disproportionate pollution burden ▶ Housing and Population ▶ Land Use ▶ Utilities and Service Systems ▶ Transportation ▶ Alternatives ▶ Attachments ■ 1: Fresno CalEnviroScreen 3.0 Results ■ 2: CalEnviroScreen Excel Results ■ 3: A Resolution of the Council of the City of Fresno in support for community engagement in the South Industrial Priority Area EIR ■ 4: Comment letter on Fresno General Plan EIR and GHG Reduction Plan (State Clearinghouse No. 2019050005)
May 14, 2021	San Joaquin Valley Air Pollution Control District ▶ John Stagnaro	▶ Air Quality ▶ Health Risk Assessment ▶ Noise ▶ Transportation
May 14, 2021	Orange Center School District ▶ Terry M. Hirschfield	▶ Air Quality ▶ Aesthetics ▶ Noise ▶ Recreation ▶ Transportation
May 17, 2021	Fresno Irrigation District ▶ Laurence Kimura, P.E.	▶ Utilities and Services Systems
Individual		
April 1, 2021	Richard Caglia	▶ No comment on EIR ▶ Requests to be added to the email list

Table 1 NOP Comment Summary

Date	Name	Issue Areas/Attachments
April 10, 2021	No name provided	▶ No comment on EIR ▶ Requests to be added to the email list
April 19, 2021	P. Schneider	▶ Project details ▪ Industrial and manufacturing uses should not be located near sensitive uses such as schools and housing
April 28, 2021	Yonas Paulos	▶ No comment on EIR ▶ Requests to be added to the email list
April 29, 2021	Jonathan Silva	▶ No comment on EIR ▶ Requests to be added to the email list
April 29, 2021	Lucy Cornejo	▶ No comment on EIR ▶ Requests to be added to the email list and involved in the planning process
May 10, 2021	Nicholas Chan	▶ Project details ▪ Lacks financial support for utilities infrastructure ▪ Lacks measures that focus on underserved communities ▪ Should include plan for annexation of the SOI area
May 14, 2021	Amy Fuentes	▶ Population and Housing (job creation)
May 14, 2021	John Kinsey	▶ Project details ▪ Zoning updates ▪ Urban decay ▪ Market analysis ▶ Air Quality (oppose mitigation that would implement buffers) ▶ Greenhouse Gas Emissions ▶ Land Use and Planning ▶ Transportation
May 14, 2021	Richard Caglia	▶ Project details ▪ Zoning updates
May 31, 2021	Lily Contreras	▶ No comment on EIR ▶ Requests to be added to the email list
Scoping Meeting Comments April 6, 2021		
	Lisa Flores	▶ Existing conditions
	Cynthia Pinto-Cabrera	▶ Public Health Analysis
	Ivanka	▶ Planning process ▪ Land use/Zoning map ▪ Community outreach
	Panfilo Cerrillo	▶ Air Quality ▶ Transportation
	Cliff Jarrard	▶ Planning process ▪ Community outreach

Table 1 NOP Comment Summary

Date	Name	Issue Areas/Attachments
	Terry Hirschfield	▶ Air Quality ▶ Transportation ▶ Population and Housing
	Debra Raco	▶ Project details ■ Roadway infrastructure ▶ Transportation
	M. Gutierrez	▶ Air Quality ▶ Transportation
	Scott Lichtig	▶ Planning process ■ Post 2019 scoping comments to the City website
	Cliff Jarrard	▶ Project details ■ Land within the SOI
	Panfilo Cerrillo	▶ Project details ■ Buffer zones ▶ Transportation
	Debra Raco	▶ Transportation
	Ivanka Saunders	▶ Air Quality ▶ Population and Housing ▶ Transportation
Scoping Meeting Comments April 28, 2021		
	Lisa Flores	▶ Air Quality ▶ Environmental Justice
	Ivanka Saunders	▶ Planning process ■ Provide an update and opportunity to review final land use/zoning map ■ Community benefits ▶ Health Risk Assessment ▶ Transportation
	Terry Hirschfield	▶ Planning process ■ Moratorium ■ Green space ■ Food access ▶ Air Quality ▶ Health Risk Assessment ▶ Transportation
	Nicole Briscoe	▶ Planning process ■ Zoning updates

Table 1 NOP Comment Summary

Date	Name	Issue Areas/Attachments
	John Kinsey	▶ Planning details ■ Downzoning ■ Market study ■ Urban decay
	Cliff Gerard	▶ Project details ■ Buffer zones
	Panfillo Cerrillo	▶ Planning process ■ Moratorium ▶ Transportation
	Eric Payne	▶ Affordable Housing ▶ Transportation ▶ MMRP
	Kimberly McCoy	▶ Planning process ■ Community participation ■ AB 617
	Mike Betts	▶ Planning process ■ Job creation
	Alexandra Alvarado	▶ Health Risk Assessment ▶ Transportation

XAVIER BECERRA
Attorney General

State of California
DEPARTMENT OF JUSTICE

Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act

In carrying out its duty to enforce laws across California, the California Attorney General's Bureau of Environmental Justice (Bureau)[1] regularly reviews proposed warehouse projects for compliance with the California Environmental Quality Act (CEQA) and other laws. When necessary, the Bureau submits comment letters to lead agencies, and in rare cases the Bureau has filed litigation to enforce CEQA.[2] This document builds upon the Bureau's comment letters, collecting knowledge gained from the Bureau's review of hundreds of warehouse projects across the state. It is meant to help lead agencies pursue CEQA compliance and promote environmentally-just development as they confront warehouse project proposals.[3] While CEQA analysis is necessarily project-specific, this document provides information on feasible best practices and mitigation measures, the overwhelming majority of which have been adapted from actual warehouse projects in California.

I. Background

In recent years, the proliferation of e-commerce and rising consumer expectations of rapid shipping have contributed to a boom in warehouse development.[4] California, with its ports, population centers, and transportation network, has found itself at the center of this trend. For example, in 2014, 40 percent of national container cargo flowed through Southern California, which was home to nearly 1.2 billion square feet of warehouse facilities.[5] In the Inland Empire alone, 150 million square feet of new industrial space was built over the last decade,[6] and 21 of the largest 100 logistics leases signed in 2019 nationwide were in the Inland

---

[1] https://oag.ca.gov/environment/justice.

[2] https://oag.ca.gov/environment/ceqa/letters; *South Central Neighbors United et al. v. City of Fresno et al.* (Super. Ct. Fresno County, No. 18CECG00690).

[3] Anyone reviewing this document to determine CEQA compliance responsibilities should consult their own attorney for legal advice.

[4] As used in this document, "warehouse" or "logistics facility" is defined as a facility consisting of one or more buildings that stores cargo, goods, or products on a short or long term basis for later distribution to businesses and/or retail customers.

[5] Industrial Warehousing in the SCAG Region, Task 2. Inventory of Warehousing Facilities (April 2018), http://www.scag.ca.gov/Documents/Task2_FacilityInventory.pdf at 1-1, 2-11.

[6] Los Angeles Times, *When your house is surrounded by massive warehouses*, October 27, 2019, https://www.latimes.com/california/story/2019-10-27/fontana-california-warehouses-inland-empire-pollution.

Empire, comprising 17.5 million square feet.[7] This trend has not slowed, even with the economic downturn caused by COVID-19, as e-commerce has continued to grow.[8] Forecasts predict that the Central Valley is where a new wave of warehouse development will go.[9]

When done properly, these activities can contribute to the economy and consumer welfare. However, imprudent warehouse development can harm local communities and the environment. Among other pollutants, diesel trucks visiting warehouses emit nitrogen oxide (NO_x)—a primary precursor to smog formation and a significant factor in the development of respiratory problems like asthma, bronchitis, and lung irritation—and diesel particulate matter (a subset of fine particular matter that is smaller than 2.5 micrometers)—a contributor to cancer, heart disease, respiratory illnesses, and premature death.[10] Trucks and on-site loading activities can also be loud, bringing disruptive noise levels during 24/7 operation that can cause hearing damage after prolonged exposure.[11] The hundreds, and sometimes thousands, of daily truck and passenger car trips that warehouses generate contribute to traffic jams, deterioration of road surfaces, and traffic accidents. These environmental impacts also tend to be concentrated in neighborhoods already suffering from disproportionate health impacts.

---

[7] CBRE, *Dealmakers: E-Commerce & Logistics Firms Drive Demand for Large Warehouses in 2019* (January 23, 2020), https://www.cbre.us/research-and-reports/US-MarketFlash-Dealmakers-E-Commerce-Logistics-Firms-Drive-Demand-for-Large-Warehouses-in-2019; *see also* CBRE, *E-Commerce and Logistics Companies Expand Share Of Largest US Warehouse Leases, CBRE Analysis Finds* (Feb. 25, 2019), https://www.cbre.us/about/media-center/inland-empire-largest-us-warehouse-leases (20 of the largest 100 warehousing leases in 2018 were in the Inland Empire, comprising nearly 20 million square feet).

[8] CBRE, 2021 U.S. Real Estate Market Outlook, Industrial & Logistics, https://www.cbre.us/research-and-reports/2021-US-Real-Estate-Market-Outlook-Industrial-Logistics; Kaleigh Moore, *As Online Sales Grow During COVID-19, Retailers Like Montce Swim Adapt And Find Success*, FORBES (June 24, 2020), *available at* https://www.forbes.com/sites/kaleighmoore/2020/06/24/as-online-sales-grow-during-covid-19-retailers-like-montce-swim-adapt-and-find-success/.

[9] New York Times, *Warehouses Are Headed to the Central Valley, Too* (Jul. 22, 2020), *available* at https://www.nytimes.com/2020/07/22/us/coronavirus-ca-warehouse-workers.html.

[10] California Air Resources Board, Nitrogen Dioxide & Health, https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health (NOx); California Air Resources Board, Summary: Diesel Particular Matter Health Impacts, https://ww2.arb.ca.gov/resources/summary-diesel-particulate-matter-health-impacts; Office of Environmental Health Hazard Assessment and American Lung Association of California, Health Effects of Diesel Exhaust, https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf (DPM).

[11] Noise Sources and Their Effects, https://www.chem.purdue.edu/chemsafety/Training/PPETrain/dblevels.htm (a diesel truck moving 40 miles per hour, 50 feet away, produces 84 decibels of sound).

II. Proactive Planning: General Plans, Local Ordinances, and Good Neighbor Policies

To systematically address warehouse development, we encourage governing bodies to proactively plan for logistics projects in their jurisdictions. Proactive planning allows jurisdictions to prevent land use conflicts before they materialize and guide sustainable development. Benefits also include providing a predictable business environment, protecting residents from environmental harm, and setting consistent expectations jurisdiction-wide.

Proactive planning can take any number of forms. Land use designation and zoning decisions should channel development into appropriate areas. For example, establishing industrial districts near major highway and rail corridors but away from sensitive receptors can help avoid conflicts between warehouse facilities and residential communities.

In addition, general plan policies, local ordinances, and good neighbor policies should set minimum standards for logistics projects. General plan policies can be incorporated into existing economic development, land use, circulation, or other related elements. Many jurisdictions alternatively choose to consolidate policies in a separate environmental justice element. Adopting general plan policies to guide warehouse development may also help jurisdictions comply with their obligations under SB 1000, which requires local government general plans to identify objectives and policies to reduce health risks in disadvantaged communities, promote civil engagement in the public decision making process, and prioritize improvements and programs that address the needs of disadvantaged communities.[12]

The Bureau is aware of four good neighbor policies in California: Riverside County, the City of Riverside, the City of Moreno Valley, and the Western Riverside Council of Governments.[13] These policies provide minimum standards that all warehouses in the jurisdiction must meet. For example, the Western Riverside Council of Governments policy sets a minimum buffer zone of 300 meters between warehouses and sensitive receptors, and it requires a number of design features to reduce truck impacts on nearby sensitive receptors. The Riverside County policy requires vehicles entering sites during both construction and operation to meet certain California Air Resources Board (CARB) guidelines, and it requires community benefits agreements and supplemental funding contributions toward additional pollution offsets.

The Bureau encourages jurisdictions to adopt their own local ordinances and/or good neighbor policies that combine the most robust policies from those models with measures discussed in the remainder of this document.

---

[12] For more information about SB 1000, *see* https://oag.ca.gov/environment/sb1000.

[13] https://www.rivcocob.org/wp-content/uploads/2020/01/Good-Neighbor-Policy-F-3-Final-Adopted.pdf (Riverside County); https://riversideca.gov/planning/pdf/good-neighbor-guidelines.pdf (City of Riverside); http://qcode.us/codes/morenovalley/view.php?topic=9-9_05-9_05_050&frames=on (City of Moreno Valley); http://www.wrcog.cog.ca.us/DocumentCenter/View/318/Good-Neighbor-Guidelines-for-Siting-Warehouse-Distribution-Facilities-PDF?bidId= (Western Riverside Council of Governments).

III. Community Engagement

Early and consistent community engagement is central to establishing good relationships between communities, lead agencies, and warehouse developers and tenants. Robust community engagement can give lead agencies access to community residents' on-the-ground knowledge and information about their concerns, build community support for projects, and develop creative solutions to ensure new logistics facilities are mutually beneficial. Examples of best practices for community engagement include:

- Holding a series of community meetings at times and locations convenient to members of the affected community and incorporating suggestions into the project design.
- Posting information in hard copy in public gathering spaces and on a website about the project. The information should include a complete, accurate project description, maps and drawings of the project design, and information about how the public can provide input and be involved in the project approval process. The information should be in a format that is easy to navigate and understand for members of the affected community.
- Providing notice by mail to residents and schools within a certain radius of the project and along transportation corridors to be used by vehicles visiting the project, and by posting a prominent sign on the project site. The notice should include a brief project description and directions for accessing complete information about the project and for providing input on the project.
- Providing translation or interpretation in residents' native language, where appropriate.
- For public meetings broadcast online or otherwise held remotely, providing for access and public comment by telephone and supplying instructions for access and public comment with ample lead time prior to the meeting.
- Partnering with local community-based organizations to solicit feedback, leverage local networks, co-host meetings, and build support.
- Considering adoption of a community benefits agreement, negotiated with input from affected residents and businesses, by which the developer provides benefits to the community.
- Creating a community advisory board made up of local residents to review and provide feedback on project proposals in early planning stages.
- Identifying a person to act as a community liaison concerning on-site construction activity and operations, and providing contact information for the community relations officer to the surrounding community.

IV. Warehouse Siting and Design Considerations

The most important consideration when planning a logistics facility is its location. Warehouses located in residential neighborhoods or near other sensitive receptors expose community residents and those using or visiting sensitive receptor sites to the air pollution, noise, traffic, and other environmental impacts they generate. Therefore, placing facilities away from sensitive receptors significantly reduces their environmental and quality of life harms on local communities. The suggested best practices for siting and design of warehouse facilities does not relieve lead agencies' responsibility under CEQA to conduct a project-specific analysis of the project's impacts and evaluation of feasible mitigation measures and alternatives; lead agencies' incorporation of the best practices must be part of the impact, mitigation and alternatives analyses to meet the requirements of CEQA. Examples of best practices when siting and designing warehouse facilities include:

- Per CARB guidance, siting warehouse facilities so that their property lines are at least 1,000 feet from the property lines of the nearest sensitive receptors.[14]
- Creating physical, structural, and/or vegetative buffers that adequately prevent or substantially reduce pollutant dispersal between warehouses and any areas where sensitive receptors are likely to be present, such as homes, schools, daycare centers, hospitals, community centers, and parks.
- Providing adequate areas for on-site parking, on-site queuing, and truck check-in that prevent trucks and other vehicles from parking or idling on public streets.
- Placing facility entry and exit points from the public street away from sensitive receptors, e.g., placing these points on the north side of the facility if sensitive receptors are adjacent to the south side of the facility.
- Locating warehouse dock doors and other onsite areas with significant truck traffic and noise away from sensitive receptors, e.g., placing these dock doors on the north side of the facility if sensitive receptors are adjacent to the south side of the facility.
- Screening dock doors and onsite areas with significant truck traffic with physical, structural, and/or vegetative barriers that adequately prevent or substantially reduce pollutant dispersal from the facility towards sensitive receptors.
- Posting signs clearly showing the designated entry and exit points from the public street for trucks and service vehicles.
- Posting signs indicating that all parking and maintenance of trucks must be conducted within designated on-site areas and not within the surrounding community or public streets.

V. Air Quality and Greenhouse Gas Emissions Analysis and Mitigation

Emissions of air pollutants and greenhouse gases are often among the most substantial environmental impacts from new warehouse facilities. CEQA compliance demands a proper accounting of the full air quality and greenhouse gas impacts of logistics facilities and adoption of all feasible mitigation of significant impacts. Although efforts by CARB and other authorities to regulate the heavy-duty truck and off-road diesel fleets have made excellent progress in reducing the air quality impacts of logistics facilities, the opportunity remains for local jurisdictions to further mitigate these impacts at the project level. Lead agencies and developers

---

[14] California Air Resources Board (CARB), Air Quality and Land Use Handbook: A Community Health Perspective (April 2005), at ES-1. CARB staff has released draft updates to this siting and design guidance which suggests a greater distance may be warranted under varying scenarios; this document may be found on CARB's website and is entitled: "California Sustainable Freight Initiative: Concept Paper for the Freight Handbook" (December 2019).

should also consider designing projects with their long-term viability in mind. Constructing the necessary infrastructure to prepare for the zero-emission future of goods movement not only reduces a facility's emissions and local impact now, but it can also save money as regulations tighten and demand for zero-emission infrastructure grows. In planning new logistics facilities, the Bureau strongly encourages developers to consider the local, statewide, and global impacts of their projects' emissions.

Examples of best practices when studying air quality and greenhouse gas impacts include:

- Fully analyzing all reasonably foreseeable project impacts, including cumulative impacts. In general, new warehouse developments are not ministerial under CEQA because they involve public officials' personal judgment as to the wisdom or manner of carrying out the project, even when warehouses are permitted by a site's applicable zoning and/or general plan land use designation. CEQA Guidelines § 15369.
- When analyzing cumulative impacts, thoroughly considering the project's incremental impact in combination with past, present, and reasonably foreseeable future projects, even if the project's individual impacts alone do not exceed the applicable significance thresholds.
- Preparing a quantitative air quality study in accordance with local air district guidelines.
- Preparing a quantitative health risk assessment in accordance with California Office of Environmental Health Hazard Assessment and local air district guidelines.
- Refraining from labeling compliance with CARB or air district regulations as a mitigation measure—compliance with applicable regulations is a baseline expectation.
- Fully analyzing impacts from truck trips. CEQA requires full public disclosure of a project's anticipated truck trips, which entails calculating truck trip length based on likely truck trip destinations, rather than the distance from the facility to the edge of the air basin. Emissions beyond the air basin are not speculative, and, because air pollution is not static, may contribute to air basin pollution. Moreover, any contributions to air pollution outside the local air basin should be quantified and their significance should be considered.
- Accounting for all reasonably foreseeable greenhouse gas emissions from the project, without discounting projected emissions based on participation in California's Cap-and-Trade Program.

Examples of measures to mitigate air quality and greenhouse gas impacts from construction are below. To ensure mitigation measures are enforceable and effective, they should be imposed as permit conditions on the project where applicable.

- Requiring off-road construction equipment to be zero-emission, where available, and all diesel-fueled off-road construction equipment, to be equipped with CARB Tier IV-compliant engines or better, and including this requirement in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant construction equipment for use prior to any ground-disturbing and construction activities.

- Prohibiting off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day.
- Requiring on-road heavy-duty haul trucks to be model year 2010 or newer if diesel-fueled.
- Providing electrical hook ups to the power grid, rather than use of diesel-fueled generators, for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible.
- Limiting the amount of daily grading disturbance area.
- Prohibiting grading on days with an Air Quality Index forecast of greater than 100 for particulates or ozone for the project area.
- Forbidding idling of heavy equipment for more than two minutes.
- Keeping onsite and furnishing to the lead agency or other regulators upon request, all equipment maintenance records and data sheets, including design specifications and emission control tier classifications.
- Conducting an on-site inspection to verify compliance with construction mitigation and to identify other opportunities to further reduce construction impacts.
- Using paints, architectural coatings, and industrial maintenance coatings that have volatile organic compound levels of less than 10 g/L.
- Providing information on transit and ridesharing programs and services to construction employees.
- Providing meal options onsite or shuttles between the facility and nearby meal destinations for construction employees.

Examples of measures to mitigate air quality and greenhouse gas impacts from operation include:

- Requiring that all facility-owned and operated fleet equipment with a gross vehicle weight rating greater than 14,000 pounds accessing the site meet or exceed 2010 model-year emissions equivalent engine standards as currently defined in California Code of Regulations Title 13, Division 3, Chapter 1, Article 4.5, Section 2025. Facility operators shall maintain records on-site demonstrating compliance with this requirement and shall make records available for inspection by the local jurisdiction, air district, and state upon request.
- Requiring all heavy-duty vehicles entering or operated on the project site to be zero-emission beginning in 2030.
- Requiring on-site equipment, such as forklifts and yard trucks, to be electric with the necessary electrical charging stations provided.
- Requiring tenants to use zero-emission light- and medium-duty vehicles as part of business operations.
- Forbidding trucks from idling for more than two minutes and requiring operators to turn off engines when not in use.
- Posting both interior- and exterior-facing signs, including signs directed at all

dock and delivery areas, identifying idling restrictions and contact information to report violations to CARB, the air district, and the building manager.

- Installing and maintaining, at the manufacturer's recommended maintenance intervals, air filtration systems at sensitive receptors within a certain radius of facility for the life of the project.
- Installing and maintaining, at the manufacturer's recommended maintenance intervals, an air monitoring station proximate to sensitive receptors and the facility for the life of the project, and making the resulting data publicly available in real time. While air monitoring does not mitigate the air quality or greenhouse gas impacts of a facility, it nonetheless benefits the affected community by providing information that can be used to improve air quality or avoid exposure to unhealthy air.
- Constructing electric truck charging stations proportional to the number of dock doors at the project.
- Constructing electric plugs for electric transport refrigeration units at every dock door, if the warehouse use could include refrigeration.
- Constructing electric light-duty vehicle charging stations proportional to the number of parking spaces at the project.
- Installing solar photovoltaic systems on the project site of a specified electrical generation capacity, such as equal to the building's projected energy needs.
- Requiring all stand-by emergency generators to be powered by a non-diesel fuel.
- Requiring facility operators to train managers and employees on efficient scheduling and load management to eliminate unnecessary queuing and idling of trucks.
- Requiring operators to establish and promote a rideshare program that discourages single-occupancy vehicle trips and provides financial incentives for alternate modes of transportation, including carpooling, public transit, and biking.
- Meeting CalGreen Tier 2 green building standards, including all provisions related to designated parking for clean air vehicles, electric vehicle charging, and bicycle parking.
- Achieving certification of compliance with LEED green building standards.
- Providing meal options onsite or shuttles between the facility and nearby meal destinations.
- Posting signs at every truck exit driveway providing directional information to the truck route.
- Improving and maintaining vegetation and tree canopy for residents in and around the project area.
- Requiring that every tenant train its staff in charge of keeping vehicle records in diesel technologies and compliance with CARB regulations, by attending CARB-approved courses. Also require facility operators to maintain records on-site demonstrating compliance and make records available for inspection by the local jurisdiction, air district, and state upon request.
- Requiring tenants to enroll in the United States Environmental Protection Agency's SmartWay program, and requiring tenants to use carriers that are SmartWay carriers.

- Providing tenants with information on incentive programs, such as the Carl Moyer Program and Voucher Incentive Program, to upgrade their fleets.

VI. Noise Impacts Analysis and Mitigation

The noise associated with logistics facilities can be among their most intrusive impacts to nearby sensitive receptors. Various sources, such as unloading activity, diesel truck movement, and rooftop air conditioning units, can contribute substantial noise pollution. These impacts are exacerbated by logistics facilities' typical 24-hour, seven-days-per-week operation. Construction noise is often even greater than operational noise, so if a project site is near sensitive receptors, developers and lead agencies should adopt measures to reduce the noise generated by both construction and operation activities.

Examples of best practices when studying noise impacts include:

- Preparing a noise impact analysis that considers all reasonably foreseeable project noise impacts, including to nearby sensitive receptors. All reasonably foreseeable project noise impacts encompasses noise from both construction and operations, including stationary, on-site, and off-site noise sources.
- Adopting a lower significance threshold for incremental noise increases when baseline noise already exceeds total noise significance thresholds, to account for the cumulative impact of additional noise and the fact that, as noise moves up the decibel scale, each decibel increase is a progressively greater increase in sound pressure than the last. For example, 70 dBA is ten times more sound pressure than 60 dBA.

Examples of measures to mitigate noise impacts include:

- Constructing physical, structural, or vegetative noise barriers on and/or off the project site.
- Locating or parking all stationary construction equipment as far from sensitive receptors as possible, and directing emitted noise away from sensitive receptors.
- Verifying that construction equipment has properly operating and maintained mufflers.
- Requiring all combustion-powered construction equipment to be surrounded by a noise protection barrier
- Limiting operation hours to daytime hours on weekdays.
- Paving roads where truck traffic is anticipated with low noise asphalt.
- Orienting any public address systems onsite away from sensitive receptors and setting system volume at a level not readily audible past the property line.

VII. Traffic Impacts Analysis and Mitigation

Warehouse facilities inevitably bring truck and passenger car traffic. Truck traffic can present substantial safety issues. Collisions with heavy-duty trucks are especially dangerous for passenger cars, motorcycles, bicycles, and pedestrians. These concerns can be even greater if truck traffic passes through residential areas, school zones, or other places where pedestrians are common and extra caution is warranted.

Examples of measures to mitigate traffic impacts include:

- Designing, clearly marking, and enforcing truck routes that keep trucks out of residential neighborhoods and away from other sensitive receptors.
- Installing signs in residential areas noting that truck and employee parking is prohibited.
- Constructing new or improved transit stops, sidewalks, bicycle lanes, and crosswalks, with special attention to ensuring safe routes to schools.
- Consulting with the local public transit agency and securing increased public transit service to the project area.
- Designating areas for employee pickup and drop-off.
- Implementing traffic control and safety measures, such as speed bumps, speed limits, or new traffic signs or signals.
- Placing facility entry and exit points on major streets that do not have adjacent sensitive receptors.
- Restricting the turns trucks can make entering and exiting the facility to route trucks away from sensitive receptors.
- Constructing roadway improvements to improve traffic flow.
- Preparing a construction traffic control plan prior to grading, detailing the locations of equipment staging areas, material stockpiles, proposed road closures, and hours of construction operations, and designing the plan to minimize impacts to roads frequented by passenger cars, pedestrians, bicyclists, and other non-truck traffic.

VIII. Other Significant Environmental Impacts Analysis and Mitigation

Warehouse projects may result in significant environmental impacts to other resources, such as to aesthetics, cultural resources, energy, geology, or hazardous materials. All significant adverse environmental impacts must be evaluated, disclosed and mitigated to the extent feasible under CEQA. Examples of best practices and mitigation measures to reduce environmental impacts that do not fall under any of the above categories include:

- Appointing a compliance officer who is responsible for implementing all mitigation measures, and providing contact information for the compliance officer to the lead agency, to be updated annually.
- Creating a fund to mitigate impacts on affected residents, schools, places of worship, and other community institutions by retrofitting their property. For example, retaining a contractor to retrofit/install HVAC and/or air filtration systems, doors, dual-paned windows, and sound- and vibration-deadening insulation and curtains.
- Sweeping surrounding streets on a daily basis during construction to remove any construction-related debris and dirt.
- Directing all lighting at the facility into the interior of the site.

- Using full cut-off light shields and/or anti-glare lighting.
- Using cool pavement to reduce heat island effects.
- Installing climate control in the warehouse facility to promote worker well-being.
- Installing air filtration in the warehouse facility to promote worker well-being.

IX. Conclusion

California's world-class economy, ports, and transportation network position it at the center of the e-commerce and logistics industry boom. At the same time, California is a global leader in environmental protection and environmentally just development. The guidance in this document furthers these dual strengths, ensuring that all can access the benefits of economic development. The Bureau will continue to monitor proposed projects for compliance with CEQA and other laws. Lead agencies, developers, community advocates, and other interested parties should feel free to reach out to us as they consider how to guide warehouse development in their area.

Please do not hesitate to contact the Environmental Justice Bureau at ej@doj.ca.gov if you have any questions.

BuildingHealthyCommunities FRESNO
LEADERSHIP COUNSEL FOR JUSTICE & ACCOUNTABILITY
Central California Environmental Justice Network

April 2, 2021

City of Fresno
Planning Department
Attn: Jennifer Clark
2600 Fresno St.
Fresno, CA 93721

Letter RE: South Central Specific Plan Scoping Meeting and Notice of Preparation

Dear Ms.Clark,

The undersigned organizations have recently become aware of a Notice of Preparation published March 24, 2021, and a Scoping Meeting scheduled for April 6, 2021, for the South Central Specific Plan, via an email sent by the planning staff on the late evening of March 31, 2021. Despite Leadership Counsel's Staff written request to be notified of any notice for this area, we never received the Notice of Preparation referenced above on or after March 24, 2021. The City's failure to provide us with the notice despite our previous written request violates Public Resources Code § 21092.2.

Moreover, at the November 14, 2019 City Council hearing, the Council adopted a resolution in support of a community engagement process for the South Central Specific Plan. The resolution includes language to address the adverse impacts of the current land-use designation including through reductions in zoning intensities near sensitive uses and providing "buffers" to protect sensitive uses. The City also commits to a meaningful and inclusive community engagement process by providing sufficient opportunities for engagement and providing feedback. The City's failure to provide stakeholders with timely notice of the SCSP NOP, and its issuance of an email notice of a scoping meeting less than one week in advance of that meeting deviates from the City's commitment to an inclusive community process that it made in adopting that resolution.

It is unclear to what extent the residents and stakeholders within and near the SCSP Area have been notified of the NOP and scoping meeting, in what form notice was provided, and in what languages the notice was translated. To that end, we ask for responses to the following questions:

1. Did tenants and homeowners within and adjacent to the South Central Specific Plan Area receive separate notices for the Notice of Preparation from March 24, 2021, and the scoping meeting for April 6, 2021?
2. If tenants and homeowners received a notice, how was this notice provided and when was it sent?
3. Were the notices translated into primary languages spoken in the area including Spanish, Hmong, Punjabi, and Thai?
4. Was the information provided on the notice in non-technical terms accessible to the average person unfamiliar with CEQA and land-use terms?

We request that the City reschedule the Aril 6th scoping meeting and hold at least three scoping meetings total in order to ensure adequate notice to community members and sufficient time to conduct meaningful outreach. As the City is aware, residents of the SCSP Area are disproportionately people of color, immigrants, and non-English speakers compared to the City and County as a whole and therefore the City's failure to provide adequate notice to residents of the NOP and scoping meeting is at odds with state and federal civil rights laws, especially given the City's intention as indicated in the NOP to perpetuate industrial land use designations around homes and schools. *E.g.,* Gov. Code Secs. 12955, 11135, 8899.50. We recommend the City use a variety of means to ensure the public receives notice of the NOP and scoping meetings. For instance, the City can work with trusted messengers already in the community, such as religious institutions, schools, and community-based organizations to disperse the information. Meetings should also be accessible to those who may not have access to video conferencing. Information should be presented in a non-paternalistic manner allowing the community to feel informed while actually having their feedback be heard. And the City must ensure that the scoping meetings have interpretation into primary languages spoken in the SCSP Area.

Recommendations referenced above are to ensure the City adheres to the intent in the resolution passed in November 2019 and complies with CEQA and civil rights laws. However, best practices would be to partner with institutions and organizations to ensure notices and materials are all accessible. Lastly, to comply with the Public Resources Code referenced above, the City must recirculate the Notice of Preparation. Additionally, the 30-day comment period must be initiated as this timeline is triggered from the date the notice is received. If any questions arise, do not hesitate to contact our team.

Sincerely,

Ivanka Saunders & Grecia Elenes
Leadership Counsel for Justice and Accountability

Nayamin Martinez
Central California Environmental Justice Network

Kimberly McCoy
Fresno Building Healthy Communities

CC:
Jerry Dyer, Mayor, City of Fresno
Fresno City Councilmembers
Scott Lichtig, California Attorney General’s Office

From: Jennifer Clark
To: Terry Hirschfield
Cc: Scott Lichtig; Thomas Veatch; Jerry Dyer; Thomas Esqueda; Esmeralda Soria; Terry Cox; Mike Karbassi; Miguel Arias; Dolores Barajas; Tyler Maxwell; Laura Garcia; Luis Chavez; Brenda Rapada; Garry Bredefeld; Nelson Esparza; Aida Macedo; Summer Cecil
Subject: RE: Notice of Preparation published March 24, 2021
Date: Tuesday, April 6, 2021 3:51:18 PM

Thank you, Ms. Hirschfield.

Due to issues with the noticing, the project will be renoticed on 4/14 for a 30 day comment period with a Scoping Meeting on 4/28. You will receive the new notice.

Jennifer Clark
jennifer.clark@fresno.gov

From: Terry Hirschfield <thirschfield@orangecenter.org>
Sent: Tuesday, April 06, 2021 3:36 PM
To: Jennifer Clark <Jennifer.Clark@fresno.gov>
Cc: Scott Lichtig <Scott.Lichtig@doj.ca.gov>; Thomas Veatch <Thomas.Veatch@fresno.gov>; Jerry Dyer <Jerry.Dyer@fresno.gov>; Thomas Esqueda <Thomas.Esqueda@fresno.gov>; Esmeralda Soria <Esmeralda.Soria@fresno.gov>; Terry Cox <Terry.Cox@fresno.gov>; Mike Karbassi <Mike.Karbassi@fresno.gov>; Miguel Arias <Miguel.Arias@fresno.gov>; Dolores Barajas <Dolores.Barajas@fresno.gov>; Tyler Maxwell <Tyler.Maxwell@fresno.gov>; Laura Garcia <Laura.Garcia@fresno.gov>; Luis Chavez <Luis.Chavez@fresno.gov>; Brenda Rapada <Brenda.Rapada@fresno.gov>; Garry Bredefeld <Garry.Bredefeld@fresno.gov>; Nelson Esparza <Nelson.Esparza@fresno.gov>; Aida Macedo <Aida.Macedo@fresno.gov>
Subject: Notice of Preparation published March 24, 2021

Dear Ms.Clark,

On January 6th 2020, I sent a written request to receive CEQA notices pertaining to the South Fresno Central area per Public Resources Code § 21092.2. Recently, I became aware of a Notice of Preparation published March 24, 2021, and a Scoping Meeting scheduled for April 6, 2021, for the South Central Specific Plan. Despite my written request to be notified of any notice for this area, Orange Center school District never received the Notice of Preparation, referenced above, on or after March 24, 2021. I believe the City’s failure to provide us with the notice despite our previous written request violates the Public Resources Code referenced above.

As I have communicated with you and other members of the City of Fresno team, It is very important that Orange Center School District is made aware of the projects that are being considered, in and around our District. It is vital to my staff, the Orange Center Community, and students' health and welfare to assure that all projects that are approved, have been properly considered and researched, to mitigate any negative impacts that we may suffer. It is also very important for the community to have the opportunity to justly exercise their right to voice their opinions, since we are not represented on the City Council, due to the fact that we are within the sphere of influence of the city limits but not represented by anyone on the council.

I request the City take immediate corrective action and adequately notice those who have requested notifications and also extend or add additional scoping meetings to ensure meaningful public engagement. Our community is very diverse and is made up of many households who speak various languages and who have different abilities to attain reliable internet. It is my belief that the City needs to ensure the residents have been given the opportunity to be informed and to properly prepare to attend any and all meetings, throughout the decision making process.

Respectfully,

--
Terry M. Hirschfield

Superintendent
Orange Center School District

CALIFORNIA
AIR RESOURCES BOARD

Gavin Newsom, Governor
Jared Blumenfeld, CalEPA Secretary
Liane M. Randolph, Chair

April 23, 2021

Jennifer Clark, Planning Director
c/o Cherie Vick, Executive Assistant
Planning and Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721
Cherie.vick@fresno.gov

Dear Jennifer Clark:

Thank you for providing the California Air Resources Board (CARB) with the opportunity to comment on the Notice of Preparation (NOP) for the South Central Specific Plan Project (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2019079022. The Project would establish a planning framework to facilitate and guide future development within the 4,997-acre planning area through the year 2040. The Project is located in the City of Fresno (City), California, which is the lead agency for California Environmental Quality Act (CEQA) purposes.

Consistent with CARB's letter in response to the first NOP for this Project, dated January 14, 2020, CARB is again providing comments urging the City to address potential air quality impacts and associated public health effects related to the construction and operation of the Project.[1] The Project would result in the development of light and heavy industrial land uses that will result in higher daily volumes of heavy-duty diesel truck traffic and operation of on-site equipment (e.g., forklifts, yard tractors, and transport refrigeration units). This increase in activity will negatively impact local air quality with health-harming emissions, including particulate matter, diesel particulate matter (diesel PM), and other toxic air contaminants, generated during the construction and operation of the Project. These air pollutant emissions also contribute to regional air pollution by emitting precursors that lead to the formation of secondary air pollutants, like ozone, and contribute to an increase in greenhouse gas (GHG) emissions.[2]

Notably, as clearly laid out in the California Attorney General's letter in response to the City's NOP for the first iteration of this project, entitled the South Industrial Priority Area (SIPA) Specific Plan, the Project area sits squarely in and adjacent to several communities already suffering from the highest pollution burdens in Fresno and the State.[3] Indeed, as explained

---

[1] California Air Resources Board. Letter to the City of Fresno. January 14, 2020. Comments on the Notice of Preparation for the South Stockton Commerce Center Project Draft Environmental Report. Accessible at *https://ww2.arb.ca.gov/sites/default/files/classic//toxics/ttdceqalist/southstocktoncommercecenternop.pdf*

[2] With regard to greenhouse gas emissions from this project, CARB has been clear that local governments and project proponents have a responsibility to properly mitigate these impacts. CARB's guidance, set out in detail in the Scoping Plan issued in 2017, makes clear that in CARB's expert view, local mitigation is critical to achieving climate goals and reducing greenhouse gases below levels of significance.

[3] State of California Department of Justice. Letter to the City of Fresno. August 2, 20219. Accessible at: *https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/comments-fresno-south-industrial-priority-area-specific-plan-08-02-2019.pdf*.

below, CARB has selected South Central Fresno Community, which encompasses the Project area[4], as a community that, due to its high pollution burden, requires the development of a community emissions reduction program (CERP), to significantly reduce emissions within the community. Therefore, it is imperative that the City ensure that its land use decisions, including its decision on this Project, are consistent with the South Central Fresno Community CERP, in its entirety.

The Industrial Uses Will Increase Exposure to Air Pollution in Disadvantaged Communities

The proposed heavy and light industrial land uses will undoubtedly expose the nearby disadvantaged communities to increased levels of air pollution. Addressing the disproportionate impacts that air pollution has on disadvantaged communities is a pressing concern across the State, as evidenced by statutory requirements compelling California's public agencies to target these communities for clean air investment, pollution mitigation, and environmental regulation. The following three pieces of legislation need to be considered and included in the DEIR when developing a project like this in a disadvantaged community:

Senate Bill 535 (De León, 2012)

Senate Bill 535 (De León, Chapter 830, 2012)[5] recognizes the potential vulnerability of low-income and disadvantaged communities to poor air quality and requires funds to be spent to benefit disadvantaged communities. The California Environmental Protection Agency (CalEPA) is charged with the duty to identify disadvantaged communities. CalEPA bases its identification of these communities on geographic, socioeconomic, public health, and environmental hazard criteria (Health and Safety Code, section 39711, subsection (a)). In this capacity, CalEPA currently defines a disadvantaged community, from an environmental hazard and socioeconomic standpoint, as a community that scores within the top 25 percent of the census tracts, as analyzed by the California Communities Environmental Health Screening Tool Version 3.0 (CalEnviroScreen).[6] This Project falls within the boundary of the South Central Fresno Community. The maximum CalEnviroScreen score for the South Central Fresno Community is in the top 1 percent, indicating that the area is home to some of the most vulnerable neighborhoods in the State. The air pollution levels in the South Central Fresno Community routinely exceed State and federal air quality standards. CARB urges the City to ensure that the Project does not adversely impact neighboring disadvantaged communities.

---

4 San Joaquin Valley Air Pollution Control District. AB 617 Fresno Community Boundary. Accessible at: *https://sjvapcd.maps.arcgis.com/apps/webappviewer/index.html?id=8ec36b5d4f61474094aacd37ad4f0f95*.

5. Senate Bill 535, De León, K., Chapter 800, Statutes of 2012, modified the California Health and Safety Code, adding § 39711, § 39713, § 39715, § 39721and § 39723.

6. "CalEnviroScreen 3.0." Oehha.ca.gov, California Office of Environmental Health Hazard Assessment, June 2018, *https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30*.

Senate Bill 1000 (Leyva, 2016)

Senate Bill 1000 (SB 1000) (Leyva, Chapter 587, Statutes of 2016)[7] amended California's Planning and Zoning Law. SB 1000 requires local governments that have identified disadvantaged communities to incorporate the addition of an environmental justice element into their general plans upon the adoption or next revision of two or more elements concurrently on or after January 1, 2018. SB 1000 requires environmental justice elements to identify objectives and policies to reduce unique or compounded health risks in disadvantaged communities. Generally, environmental justice elements will include policies to reduce the community's exposure to pollution through air quality improvement. SB 1000 affirms the need to integrate environmental justice principles into the planning process to prioritize improvements and programs that address the needs of disadvantaged communities.

Assembly Bill 617 (Garcia, 2017)

The State of California has emphasized protecting local communities from the harmful effects of air pollution through the passage of Assembly Bill 617 (AB 617) (Garcia, Chapter 136, Statutes of 2017).[8] AB 617 requires CARB to direct the process that creates new community-focused and community-driven action to reduce air pollution and improve public health in communities that experience disproportionate burdens from exposure to air pollutants. In response to AB 617, CARB established the Community Air Protection Program with the goal of reducing exposure in communities heavily impacted by air pollution. As part of its role in implementing AB 617, CARB must annually consider the selection of communities for development and implementation of community air monitoring plans and/or community emission reduction programs for those communities affected by a high cumulative exposure burden. The South Central Fresno Community is one of 15 communities statewide chosen thus far for inclusion in the Community Air Protection Program.

The South Central Fresno Community was selected for both community air monitoring and the development of a CERP due to its high cumulative exposure burden, the presence of a significant number of sensitive populations (children, elderly, and individuals with pre-existing conditions), and the socioeconomic challenges experienced by its residents. On February 13, 2020, CARB approved the community's CERP, making it a legally enforceable emission reduction program. The CERP included several strategies to achieve emission reductions throughout this community, including significantly reducing or eliminating emissions from heavy-duty mobile sources and industrial stationary sources.[9]

Health-harming emissions, including particulate matter (PM), toxic air contaminants, and diesel PM generated from the proposed increase in heavy and light industrial development in the Project area will negatively impact the community, which is already disproportionally

---

[7] Senate Bill 1000, Leyva, S., Chapter 587, Statutes of 2016, amended the California Health and Safety Code, § 65302.

[8] Assembly Bill 617, Garcia, C., Chapter 136, Statutes of 2017, modified the California Health and Safety Code, amending § 40920.6, § 42400, and § 42402, and adding § 39607.1, § 40920.8, § 42411, § 42705.5, and § 44391.2.

[9] San Joaquin Valley Air Pollution Control District. AB 617 Fresno Community Boundary. Accessible at: *https://sjvapcd.maps.arcgis.com/apps/webappviewer/index.html?id=8ec36b5d4f61474094aacd37ad4f0f95*.

impacted by air pollution from existing freight operations as well as stationary sources of air pollution. Part of the AB 617 process required CARB and the San Joaquin Valley Air Pollution Control District (SJVAPCD) to create a highly-resolved inventory of air pollution sources within this community. CARB would be happy to share and discuss this community emissions inventory with the City to aid in the DEIR's cumulative impact analysis.

The DEIR Should Quantify and Discuss the Potential Cancer Risks from Project Operation

Since the light and heavy industrial land uses proposed under the Project are near residential communities that are already burdened by multiple air pollution sources, CARB urges the City to prepare a health risk assessment (HRA) for the Project. The HRA should account for all potential operational health risks from Project-related diesel PM emission sources, including, but not limited to, back-up generators, on-site diesel-powered equipment, and heavy-duty trucks. The City has approved, in a piecemealed manner, over 5 million square feet of industrial warehouse space along East Central Avenue over the past few years without adequately addressing air quality impacts from the approved projects. Going forward, the City must prepare the HRA that accounts for operation of the full buildout of the Project before it can consider approving the Project. Given the past approvals of industrial warehouses and other industrial uses, the HRA should also determine if the operation of the Project in conjunction with the operation of past, present, and reasonably foreseeable future projects or activities would result in a cumulative cancer risk impact on nearby residences. To reduce diesel PM exposure and associated cancer risks, CARB urges the City to include all the air pollution reduction measures listed in Attachment A of this comment letter in the HRA and DEIR.

The project description in the NOP does not state whether the industrial uses proposed under the Project would include cold storage warehouses. Project descriptions "must include (a) the precise location and boundaries of the proposed project, (b) a statement of the objectives sought by the proposed project, (c) a general description of the project's technical, economic and environmental characteristics, and (d) a statement briefly describing the intended use of the EIR." (stopthemilleniumhollywood.com v. City of Los Angeles (2019) 39 Cal.App.5th 1, 16.) "This description of the project is an indispensable element of both a valid draft EIR and final EIR." (Ibid.) Given this mandate to include a complete project description, CARB urges the City to prepare an EIR that addresses the impacts from the full buildout of the Project area.

Since the Project description provided in the NOP does not explicitly state that the proposed industrial land uses would not be used for cold storage, there is a possibility that trucks and trailers visiting the Project-site would be equipped with transport refrigeration units (TRU).[10] TRUs on trucks and trailers can emit large quantities of diesel exhaust while operating within the Project-site. Residences and other sensitive receptors (e.g., daycare facilities, senior care

---

[10] TRUs are refrigeration systems powered by integral diesel engines that protect perishable goods during transport in an insulated truck and trailer vans, rail cars, and domestic shipping containers.

facilities, and schools) located near where these TRUs could be operating, would be exposed to diesel exhaust emissions that would result in a significant cancer risk impact to the nearby community. If the industrial land uses proposed under the Project would be used for cold storage, CARB urges the City to model air pollutant emissions from on-site TRUs in the DEIR, as well as include potential cancer risks from on-site TRUs in the Project's HRA. If the Project will not be used for cold storage, CARB urges the City to include one of the following design measures in the DEIR:

- A Project design measure requiring contractual language in tenant lease agreements that prohibits tenants from operating TRUs within the Project-site; or

- A condition requiring a restrictive covenant over the parcel that prohibits the applicant's use of TRUs on the property unless the applicant seeks and receives an amendment to its conditional use permit allowing such use.

The HRA prepared in support of the Project should be based on the latest Office of Environmental Health Hazard Assessment's (OEHHA) guidance (2015 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments),[11] and CARB's Hot Spots Analysis and Reporting Program (HARP2 model). The Project's mobile diesel PM emissions used to estimate the Project's cancer risk impacts should be based on CARB's latest 2021 Emission Factors model (EMFAC2021). Mobile emission factors can be easily obtained by running the EMFAC2021 Web Database: https://arb.ca.gov/emfac/.

The HRA should evaluate and present the existing baseline (current conditions), future baseline (full build-out year, without the Project), and future year with the Project. The health risks modeled under both the existing and the future baselines should reflect all applicable federal, state, and local rules and regulations. By evaluating health risks using both baselines, the public and planners will have a complete understanding of the potential health impacts that would result from the Project.

The DEIR Should Quantify and Discuss the Potential Cancer Risks from Project Construction

In addition to the health risks associated with operational diesel PM emissions, health risks associated with construction diesel PM emissions should also be included in the air quality section of the DEIR and the Project's HRA. Construction of the Project would result in short-term diesel PM emissions from the use of both on-road and off-road diesel equipment. The OEHHA guidance recommends assessing cancer risks for construction projects lasting longer than two months. Since construction of the Project would very likely occur over a period lasting longer than two months, the HRA prepared for the Project should include health risks for existing residences near the Project-site during construction.

---

[11] Office of Environmental Health Hazard Assessment (OEHHA). Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February 2015. Accessed at: *https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf*.

The HRA should account for all diesel PM emission sources related to Project construction, including, but not limited to, off-road mobile equipment, diesel generators, and on-road heavy-duty trucks. As previously stated in Section II of this letter, the cancer risks evaluated in the construction HRA should be based on the latest OEHHA guidance and CARB's HARP2 model. The cancer risks reported in the HRA should be calculated using the latest emission factors obtained from CARB's latest EMFAC (currently EMFAC 2021) and Off-road models.

Conclusion

To reduce the exposure of toxic diesel PM emissions in disadvantaged communities already impacted by air pollution, the final design of the Project should include all existing and emerging zero-emission technologies to minimize diesel PM and NO_x emissions, as well as the GHGs that contribute to climate change. CARB encourages the City to implement the measures listed in Attachment A of this comment letter to reduce the Project's construction and operational air pollution emissions.

Given the breadth and scope of projects subject to CEQA review throughout California that have air quality and greenhouse gas impacts, coupled with CARB's limited staff resources to substantively respond to all issues associated with a project, CARB must prioritize its substantive comments here based on staff time, resources, and its assessment of impacts. CARB's deliberate decision to substantively comment on some issues does not constitute an admission or concession that it substantively agrees with the lead agency's findings and conclusions on any issues on which CARB does not substantively submit comments.

CARB appreciates the opportunity to comment on the NOP for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. Please include CARB on your State Clearinghouse list of selected State agencies that will receive the DEIR as part of the comment period. If you have questions, please contact Stanley Armstrong, Air Pollution Specialist via email at *stanley.armstrong@arb.ca.gov*.

Sincerely,

Deldi Reyes

Deldi Reyes, Director, Office of Community Air Protection

Attachment

cc: See next page.

cc: State Clearinghouse
state.clearinghouse@opr.ca.gov

Ivanka Saunders, Policy Coordinator, Leadership Counsel for Justice and Accountability
isaunders@leadershipcounsel.org

Samir Sheikh, Executive Director, San Joaquin Valley Air Pollution Control District
samir.sheikh@valleyair.org

Erik de Kok, Program Manager: Planning & Community Development, Governor's Office of Planning and Research
erik.dekok@opr.ca.gov

Kevin Hamilton, Chief Executive Officer, Central California Asthma Collaborative
kevin.hamilton@centralcalasthma.org

Kimberly McCoy, Project Director, Fresno Building Healthy Communities
kmccoy@fresnobhc.org

Miguel Arias, Councilmember, City of Fresno, District 3
district3@fresno.gov

Nayamin Martinez, Director, Central California Environmental Justice Network
nayamin.martinez@ccejn.org

Saharnaz Mirzazad, Program Manager, Transformative Climate Communities
Strategic Growth Council
saharnaz.mirzazad@sgc.ca.gov

Stanley Armstrong, Air Pollution Specialist, Risk Reduction Branch

ATTACHMENT A

ATTACHMENT A

Recommended Air Pollution Emission Reduction Measures for Warehouses and Distribution Centers

The California Air Resources Board (CARB) recommends developers and government planners use all existing and emerging zero to near-zero emission technologies during project construction and operation to minimize public exposure to air pollution. Below are some measures, currently recommended by CARB, specific to warehouse and distribution center projects. These recommendations are subject to change as new zero-emission technologies become available.

Recommended Construction Measures

1. Ensure the cleanest possible construction practices and equipment are used. This includes eliminating the idling of diesel-powered equipment and providing the necessary infrastructure (e.g., electrical hookups) to support zero and near-zero equipment and tools.

2. Implement, and plan accordingly for, the necessary infrastructure to support the zero and near-zero emission technology vehicles and equipment that will be operating on site. Necessary infrastructure may include the physical (e.g., needed footprint), energy, and fueling infrastructure for construction equipment, on-site vehicles and equipment, and medium-heavy and heavy-heavy duty trucks.

3. In construction contracts, include language that requires all off-road diesel-powered equipment used during construction to be equipped with Tier 4 or cleaner engines, except for specialized construction equipment in which Tier 4 engines are not available. In place of Tier 4 engines, off-road equipment can incorporate retrofits, such that, emission reductions achieved equal to or exceed that of a Tier 4 engine.

4. In construction contracts, include language that requires all off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction be battery powered.

5. In construction contracts, include language that requires all heavy-duty trucks entering the construction site, during the grading and building construction phases be model year 2014 or later. All heavy-duty haul trucks should also meet CARB's lowest optional low-oxides of nitrogen (NO_x) standard starting in the year 2022.[1]

---

[1] In 2013, CARB adopted optional low-NO_x emission standards for on-road heavy-duty engines. CARB encourages engine manufacturers to introduce new technologies to reduce NO_x emissions below the current mandatory on-road heavy-duty diesel engine emission standards for model-year 2010 and later. CARB's optional low-NO_x emission standard is available at: *https://ww2.arb.ca.gov/our-work/programs/optional-reduced-nox-standards*.

6. In construction contracts, include language that requires all construction equipment and fleets to be in compliance with all current air quality regulations. CARB is available to assist in implementing this recommendation.

Recommended Operation Measures

1. Include contractual language in tenant lease agreements that requires tenants to use the cleanest technologies available, and to provide the necessary infrastructure to support zero-emission vehicles and equipment that will be operating on site.

2. Include contractual language in tenant lease agreements that requires all loading/unloading docks and trailer spaces be equipped with electrical hookups for trucks with transport refrigeration units (TRU) or auxiliary power units. This requirement will substantially decrease the amount of time that a TRU powered by a fossil-fueled internal combustion engine can operate at the project site. Use of zero-emission all-electric plug-in TRUs, hydrogen fuel cell transport refrigeration, and cryogenic transport refrigeration are encouraged and can also be included in lease agreements.[2]

3. Include contractual language in tenant lease agreements that requires all TRUs entering the project-site be plug-in capable.

4. Include contractual language in tenant lease agreements that requires future tenants to exclusively use zero-emission light and medium-duty delivery trucks and vans.

5. Include contractual language in tenant lease agreements requiring all TRUs, trucks, and cars entering the project site be zero-emission.

6. Include contractual language in tenant lease agreements that requires all service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) used within the project site to be zero-emission. This equipment is widely available.

7. Include contractual language in tenant lease agreements that requires all heavy-duty trucks entering or on the project site to be model year 2014 or later, expedite a transition to zero-emission vehicles, and be fully zero-emission beginning in 2030.
8. Include contractual language in tenant lease agreements that requires the tenant be in, and monitor compliance with, all current air quality regulations for on-road trucks

---

[2] CARB's technology assessment for transport refrigerators provides information on the current and projected development of TRUs, including current and anticipated costs. The assessment is available at: *https://www.arb.ca.gov/msprog/tech/techreport/tru_07292015.pdf*.

including CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation,[3] Periodic Smoke Inspection Program (PSIP),[4] and the Statewide Truck and Bus Regulation.[5]

9. Include contractual language in tenant lease agreements restricting trucks and support equipment from idling longer than five minutes while on site.

10. Include contractual language in tenant lease agreements that limits on-site TRU diesel engine runtime to no longer than 15 minutes. If no cold storage operations are planned, include contractual language and permit conditions that prohibit cold storage operations unless a health risk assessment is conducted, and the health impacts fully mitigated.

11. Include rooftop solar panels for each proposed warehouse to the extent feasible, with a capacity that matches the maximum allowed for distributed solar connections to the grid.

12. Including language in tenant lease agreements, requiring the installing of vegetative walls[6] or other effective barriers that separate loading docks and people living or working nearby.

---

[3] In December 2008, CARB adopted a regulation to reduce greenhouse gas emissions by improving the fuel efficiency of heavy-duty tractors that pull 53-foot or longer box-type trailers. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation is available at: *https://ww2.arb.ca.gov/our-work/programs/ttghg*.

[4] The PSIP program requires that diesel and bus fleet owners conduct annual smoke opacity inspections of their vehicles and repair those with excessive smoke emissions to ensure compliance. CARB's PSIP program is available at: *https://www.arb.ca.gov/enf/hdvip/hdvip.htm*.

[5] The regulation requires that newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model-year engines or equivalent. CARB's Statewide Truck and Bus Regulation is available at: *https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm*.

[6] Effectiveness of Sound Wall-Vegetation Combination Barriers as Near-Roadway Pollutant Mitigation Strategies (2017) is available at: *https://ww2.arb.ca.gov/sites/default/files/classic//research/apr/past/13-306.pdf*.

CARPENTERS
701
FRESNO, CALIFORNIA
United Brotherhood of Carpenters & Joiners of America

May 14, 2021

Ms. Jennifer Clark, Director
Ms. Sherry Vick, Executive Assistant
Planning and Development Department
2600 Fresno Street, Room 3065
Fresno, California 93721
jennifer.clark@fresno.gov
sherry.vick@fresno.gov

Re: Draft Comment on Notice of Preparation of EIR for South Central Specific Plan Project, Fresno, California

Dear Ms. Clark:

Carpenters Local 701 is presenting this comment to request that the City add mandatory local hire and apprenticeship language to the South Central Specific Plan project and the Certified Program Environmental Impact Report. This letter first presents language that prohibits the issuance of building permits absent compliance with mandatory local hire and apprenticeship requirements. The second part of this letter identifies how this language is both consistent and mandated by the 2014 Fresno General Plan and the January 2017 revised public review draft to the housing element. Third, this letter argues that Mandatory local hire and apprenticeship is a very efficient way to meet the policy goals of the General Plan.

In short, this letter argues that mandating a viable construction apprenticeship requirement and a local hire policy on each South Central Specific Plan project above 20,000 square feet is necessary to establish a CEQA Compliant Certified Program Environmental Impact Report. Local hire and apprenticeship mandates will also serve the goals that the General Plan establishes for the City. Those goals boil down into the application of land use policy to stimulate broad economic growth, educating residents to perform the work that will be necessary for that growth, avoiding negative environmental impacts, and improving the damaged neighborhood environment that exists in many places in the South Central portion of the City. This letter argues it is impossible to meet these goals without tying each development project to viable apprenticeship systems and a strong local hire policy.

1. The South Central Area Specific Plan Should Bar Issuance of Building Permits Unless Each Future Development over 20,000 Square Feet has a Viable Apprenticeship Program and Strict Local Hiring Requirements.

The Carpenters propose the following additions to the Municipal Code of the City of Fresno for all projects larger than 20,000 square feet subject to the South Central Specific Plan and the Certified Program Environmental Impact Report.

Perming requirements in the Municipal Code of the City of Fresno, Chapter 11, Article 4 (Sec. 11-408):

> A person, firm, corporation, or other entity applying for a building permit under Sec. 11-408 of the Municipal Code of the City of Fresno, California shall be required to comply with both the apprenticeship and local hire requirements of the South Area Specific Plan. Failure to comply with both the requirements set forth in this section shall be deemed a violation of this article.

Apprenticeship:

> For every apprenticeable craft, each general contractor and each subcontractor (at every tier for the project) will sign a certified statement under penalty of perjury that it participates in a Joint Apprenticeship Program Approved by the State of California, Division of Apprenticeship Standards **OR** in an apprenticeship program approved by the State of California Division of Apprenticeship Standards that has a graduation rate of 50% or higher and has graduated at least thirty (30) apprentices each consecutive year for the five (5) years immediately preceding submission of the pre-qualification documents. The contractor or subcontractor will also maintain at least the ratio of apprentices required by California Labor Code section 1777.5.

Local Hire Policy:

> Contractor will be required to provide documentation that the contractor will hire a minimum of twenty-five percent (25%) of staff for any job classification with more than four (4) employees employed whose primary residence, which is not a post office box, is, and has been, within the Counties of Fresno, Madera, Tulare, Kings within 180 days of the expected date of issuance of the Notice to Proceed for the project.

2. Compliance With the Fresno General Plan Goals, California Law, and Developing a Certified Program EIR.

Mandatory apprenticeship and local hire requirements on every development above 20,000 square feet is a simple and straightforward way to meet the goals of the City of Fresno General Plan and to mitigate the environmental impact of industrial development in the South Central area.

The General Plan identifies several specific policy areas where a better-educated local workforce from the Fresno area rather than out of the area not only contributes to the General Plans' goals but is mandatory to comply with these goals. It is simply impossible to meet these goals if the City of Fresno continues to grant permits to large projects that import workers from outside the Valley and even from out of state. Importing these temporary workers to do the work for very low wages is even worse. This is a waste of local human and economic capital. It also has a substantial environmental and economic impact that is unsustainable. It is prohibitively expensive to mitigate the impact of construction workers from Idaho or Montana, especially when the cheaper and wiser alternative, apprenticeship and local hire, is easily available. A Certified Program EIR that continues these practices would not survive CEQA review.

An area-Specific Plan that allows an unlimited amount of workers to come to Fresno from out of state to work on large projects does not meet the elements of a negative impact declaration under CEQA. Failure to limit the current practice of importing workers from outside the four County area would make any certified program subject to CEQA attack. It is nearly impossible to mitigate the impact of out of state workers. Out of area workers generate huge numbers of car and truck trips. They also create a second domicile in Fresno. This causes the same impacts as a second home. Worse yet, the number of out of state workers wildly fluctuates. Even if mitigation measures were identifiable and economically viable on a particular development, it is impossible to identify the number of imported workers on any given project. Mitigation measures would be speculative and the cure inadequate. This problem is even more prohibitive on a Certified Program EIR. Predicting the number and impact of imported workers over the build out of the South Central Specific Plan is scientifically impossible. Mitigation is therefore legally inadequate. The only way to solve this problem is a mandatory local hire and apprenticeship requirement.

On the other hand, local hire and apprenticeship would develop a stable supply of local workers. This would assist in achieving a Certified Program EIR for the area-Specific Plan. A mandatory apprenticeship requirement on a current development would also contribute to a Negative Impact Declaration because covered large developments would not need to look for workers. Those workers would be here in Fresno, they would not need to travel from out of town or out of state. Thus reducing project-based direct air quality and road use impacts as well as the positive environmental impacts from a more highly educated population.

3. Mandatory Local Hire and Apprenticeship Requirements Meet the Policy Goals of the Fresno General Plan.

The 2014 General Plan and the 2017 Housing Amendment, like all General Plans, is both a legal document and general policy document. Like all General Plans it articulates important social policies that the County is to implement through land use. A mandatory and enforceable local hire and apprenticeship requirement directly meet the core policy goals. This section of the letter argues that a mandatory local hire and apprenticeship requirement is a simple and cheap way to meet the most important of these goals.

Chapter 2 of the General Plan concerns economic development and land use. In particular, the goal of the plan is to increase economic opportunity while dealing with infrastructure and 12 infrastructure and service deficiencies. (2-3)[1] Among the current problems are low education resulting in low income. Fresno has an inadequate labor force to meet the needs of desired development, particularly in manufacturing. (2-4 to 2-8) One of the impediments to job creation is the lack of qualified workers for technical and high skilled jobs. (2-9) In addition to

---

[1] The following references are to the chapter and section of the General Plan.

industries that have traditionally been active in Fresno, such as food processing, the General Plan seeks to increase manufacturing and related research and development work. This strategy for increase of export oriented primary industries includes significant construction. This includes development of industrial land, industrial facilities and industrial infrastructure. The General Plan recognizes that it is necessary to train workers as part of this infrastructure improvement. (2-10, 2-13-2-16)

Requiring these developments to hire Fresno residents and require that the infrastructure development have viable apprenticeship requirements is the best way to meet these goals. Carpenter apprenticeship programs provide the highest level training available to build and maintain sophisticated manufacturing facilities. The General Plan recognizes that one of the major impediments to Fresno's development is the lack of these workers. Making local hire and apprenticeship programs mandatory meets these goals without expending any local public resources whatsoever. Mandatory local hire and apprenticeship requirements therefore meet the fiscal sustainability and job training goals the General Plan establishes. (2-17, 2-25 to 2-26)

Mandatory local hire and apprenticeship also contributes to the General Plan goals of increasing economic opportunity and creating a successful and competitive downtown.

Chapter 3 of the General Plan seeks to increase economic opportunity, reduce sprawl and create a successful downtown. A mandatory local hire and apprenticeship requirement in the Specific Plan would directly meet these goals as well. The General Plan seeks to avoid freeway and car based development. Further, the General Plan directly targets the South Industrial Area for this kind of appropriate development. (3-23, 3-53 to 3-54) Further, part of the South Area Industrial Area is a disadvantaged community. (3-66 to 3-68) Mandatory local hire and apprenticeship requirements would provide employment opportunities for people living in the neighborhoods that currently exist in that area. Mandatory apprenticeship would make those jobs better and more desirable, thereby improving the economic conditions in the adjacent neighborhoods.

Chapters 5, 6 and 7 of the General Plan concern parks and schools, public utilities and services, and resource conservation. Each one specifically concerns what is traditionally referred to as public infrastructure. Mandatory local hire and apprenticeship requirement would serve the policy goals in these chapters. Not importing workers from other locations would avoid unnecessary car trips and avoid the workers maintaining a second domicile in Fresno while their families live elsewhere. Developments would employ Fresno residents into desirable employment that these projects create. Doing so enhances the goals in these three chapters because it would help develop a more permanent and prosperous Fresno community. There is simply no factually supportable countervailing argument.

Chapters 10 and 11 of the General Plan articulate policy goals using planning to develop a healthy community and meet the legal requirements of housing elements in the General Plan. A Mandatory local hire and apprenticeship requirement in the South Central Specific Plan would enhance these goals and meet these legal requirements. Requiring that the projects hire local construction workers creates income for local construction workers which would contribute to healthy communities. This requirement would also contribute to demand for appropriate housing as opposed to cheap subsidized housing. Workers participating in apprenticeship programs will eventually learn one the carpentry crafts and be able to earn a middle class living throughout their lives. It will avoid the need for those individuals and their families to have subsidized housing. They will be able to afford market rate housing. This will cause a demand for housing near the likely industrial projects. The neighborhoods in the South Central Specific Plan area, both in the unincorporated and incorporated portions of the area, would receive an increase in income because of the nearby construction jobs. The foreseeable industrial projects will take decades to build out. A mandatory local hire and apprenticeship requirement would both create jobs and create skilled workers to build the facilities. Those people would need places to live and the neighborhoods immediately adjacent to these areas are a logical option. As workers continue to their careers and became more economically and socially successful they will bring the neighborhoods along with them.

The Union urges the City of Fresno to adopt the Mandatory local hire and apprenticeship requirements proposed. This request would help the City meet the legal requirements of a Certified Program EIR. It is hard to see how continued importation of low wage workers could comply with any EIR. In addition, a Mandatory local hire and apprenticeship requirement would help the City of Fresno use the South Central Specific Plan and the Certified Program EIR to meet the goals in the current Fresno General Plan.

The Carpenters Union looks forward to working with the City and its staff in this very interesting matter. Please contact me if you have any questions or concerns or need any additional information.

Sincerely,
Travis Alexander
Travis Alexander
Senior Field Representative
Carpenters Local 701

FowlerPacking

May 14, 2021

VIA EMAIL & UNITED STATES MAIL
Jennifer Clark, Planning Director
c/o Cherie Vick, Executive Assistant
2600 Fresno Street, Room 3065
Fresno, CA 93721

Re: Notice of Preparation for Proposed South Central Specific Plan

Dear Ms. Clark:

Thank you for providing the opportunity to provide scoping comments on the South Central Specific Plan (the "SCSP"). Fowler Packing Company (or its affiliated entities), owns a number of properties within the SCSP area and has a vested interest in the community. Please consider these comments in connection with the preparation of the environmental impact report for the proposed SCSP (the "SCSP EIR").

Comment 1: Proposed changes to Planned Land Use

APNs:	General Plan Land Use	SCSP Proposed Plan	Alternative 1a	Alternative 2b
329-100-44	Heavy Industrial	Residential	Residential	Heavy Industrial
316-071-42	30 ac Light Industrial/ 10 ac Business Park	Business Park	General Commercial	30 ac Light Industrial/ 10 ac Business Park

The parcels described above are owned by Fowler Packing Company (or its affiliated entities). These properties are currently designated for Industrial Use in the City's General Plan and have been planned for Industrial Use for decades. We are not in agreement with the City's Proposed or Alternative 1a Land Use Plans and would request to retain the existing land use and zoning on these properties. We also are not in agreement with the Alternative 1a Plan as it would have a major impact on our existing developed property at the NorthPointe Industrial Park and we do not believe that it represents a viable alternative.

APN 329-100-44:

It appears that the City took the approach of proposing residential land use on any property that currently has a residential unit, with an assumption that that would be the property owner's preference. We would like to confirm that modifying the land use and zoning to residential, as provided for in the Proposed Plan and the Alternative 1a, is not our preference. Rather, we prefer the property maintains its heavy industrial zoning consistent with the adjacent properties.

APN 316-071-42:

This property has been planned for Light Industrial with the eastern most 10 acres planned for Business Park. The Proposed Plan would designate the parcel as Business Park and Plan 1a would designate the property to a Commercial Use. It is our preference to retain the existing zoning on this site.

Comment 2: Proposed Residential Land Use

The City's SCSP Proposed Plan, if adopted, would change the land use to residential for any parcel that is currently occupied by a residential dwelling unit. There will likely be an economic disadvantage placed on these residential parcels, if converting them to an industrial use in the future would require a GP Amendment and rezoning process at the local level.

The historic and current approved planned land use has been primarily light industrial or heavy industrial in the SCSP area. The growth to date has followed that plan. The City should consider the best overall future use for this area and assess alternatives to achieve the desired objective. These alternatives could include providing more flexibility in the Legal Nonconforming Use Provisions (Grandfathering) of the City Code, or creating an overlay district to ensure existing homes are considered a by right use, even though zoned industrial. This would provide the homeowner with (i) a by-right residential use, and (ii) the flexibility, when it is economically viable to do so, to develop a higher-value industrial uses on the property.

Comment 3: Proposed Mitigation

We believe that mitigation should be addressed on a project by project basis and would propose that blanket mitigation and stringent guidelines not be imposed generally throughout the SCSP area. Most specifically our concern is in regards to the recommendation for "buffers". We strongly oppose any buffers that would eliminate certain land uses within buffer areas or convert "by right" land uses into uses subject to a Conditional Use Permit or other discretionary action.

We strongly believe that industrial and other land uses do not necessarily need to be incompatible, as demonstrated in other areas of the City (Palm Bluffs) and the valley (NW Visalia). The issue is fostering high quality industrial development that can enhance and coexist with residential development.

Comment 4: Market Study

We would also suggest that the City perform a market study to determine what land uses are feasible within the SCSP, and at what volume.

We appreciate your consideration of our comments, and please do not hesitate to contact me with any questions or concerns.

Sincerely,

Leland D Parnagian

Fresno Business Council

May 14, 2021

Jennifer Clark
Department Director
Development and Resource Management Department
City of Fresno
2600 Fresno Street, Room 3065
Fresno, CA 93721

RE: Comments About EIR for the South Central Specific Plan

Dear Ms. Clark:

As a business civic group, committed to advancing economic, equity and environmental goals simultaneously, we offer some background thoughts and specific recommendations regarding the South Central Specific Plan.

The challenge we face is finding a path forward to advance long-term goals while honoring a legacy of harm; a current reality of conflicting short-term agendas; and an opportunity to advance the industry—advanced manufacturing--with the greatest promise for uplifting the entire region and improving social determinants of health. A quality job is considered central as it fuels the opportunities to meet so many essential needs.

Current Reality
Covid has accelerated the understanding of interdependence; the importance of self-reliant communities; the value of essential workers; and the backbone role of manufacturing of durable goods. Covid has also taught the importance of supply chains, access to raw materials and the dangers of dependence on other countries. This presents a window of opportunity for the San Joaquin Valley to diversify and enhance its economy. Capitalizing on the opportunity will vastly increase the number of high quality jobs and career pathways for current residents and attract the talent required to fill any gaps.

Environmental impacts are everyone's concern. Legacy impacts are real. In today's world, high polluting and dangerous work places are unacceptable. A lot of progress has been made. Emissions from stationary sources have been greatly diminished and vehicle emissions are also dropping. Holding the tension between creating a robust economy and improving the quality of life in targeted areas is our shared responsibility.

Concentrated poverty is expensive. Too many youth carry the burden of trauma and neglect and are not prepared or able to live their dreams. Employers across sectors are unable to find workers with the personal and technical skills necessary to sustain and grow their enterprises. Government is forced to spend on social programs and public safety rather than invest in human development, amenities and infrastructure. Everybody loses.

Path Forward

1. Conduct workshops with a blend of economic, equity and environmental champions to learn together how to align efforts to achieve inclusive prosperity. Advanced Manufacturing is considered to be our greatest opportunity.

2. Ensure residents—youth and adults--in the South Central area are connected to career pathways offered through the K-16 Collaborative and Career Nexus.

3. Ensure companies operating in the area are supported, informed and connected. The principle of equitable estoppel prevents down zoning.

4. Explore the creation of a public industrial park targeting manufacturers and their suppliers.

5. Explore moving the students to an adjacent school district and residents to housing further from industrial areas.

6. Support an integrated approach explicitly addressing economic, social and environmental concerns short-term and long-term.

7. Distill lessons learned from the process and replicate with sharp focus on diversifying the economy, innovation and entrepreneurship, and workforce development.

We are writing both on behalf of the Fresno Business Council and San Joaquin Valley Manufacturing Alliance, one of our primary initiatives. We appreciate your consideration of our comments and look forward to working with you and other community members as we move our community forward.

Sincerely,

Deborah J. Nankivell

Deborah J. Nankivell
Chief Executive Officer,
Fresno Business Council
559-284-0838
dnankivell@fresnobc.org

Genelle Taylor Kumpe
Chief Executive Officer,
San Joaquin Valley Manufacturing Alliance
559-250-0453
genelle@sjvma.org

cc: Mayor Jerry Dyer
Fresno City Council Members

modern

modern custom fabrication, inc.
FABRICATORS OF METAL PRODUCTS

May 14, 2021

City of Fresno
Attn: Jennifer Clark

Ref: South Central Specific Plan

Dear Ms. Clark,

My name is James W. Gray and I represent Modern Custom Fabrication, Inc. located at 4922 E. Jensen Ave. We are manufacturers of ASME Code pressure vessels and storage tanks.

This letter to you is to state my opposition to any city plan that would change my land use designation from its Heavy Industrial use as it stands today.

I will give you a brief history on our location.

My original facility was located at 2421 E. California Ave. in Fresno and we were displaced by the Calif. High Speed Rail Project. I was given the opportunity to move my operations out of state which would have cut my operating costs significantly but chose to stay in Fresno based on keeping my employees here with their families and also the City's willingness to work with me to secure property and extend any incentives that were available.
We were fortunate enough to find two adjoining parcels here on Jensen Ave. that fit our needs and are dedicated for Heavy Industrial Use zoning. I was also welcomed into the community by meeting with the local community group at City Hall and all members of the group were excited that we were joining their community to help create jobs and prosper here. I met with city planners on numerous occasions, submitted all required documentation including traffic patterns and all were accepted.
We finalized our land purchase and built our state of the art manufacturing facility unmatched by any other in the industry nationwide, located right here in Fresno.

We have invested over $25,000,000 in this facility which included all of our fees and permitting to the city as well as all allocated taxes to each individual tax base.
Our investment in this location was to provide a base to our on-going operations as well as for future expansion as our manufacturing business continues to grow year by year. Any changes to our zoning will no doubt cripple our efforts moving forward.

modern custom fabrication, inc.
FABRICATORS OF METAL PRODUCTS

We are celebrating our three year anniversary at this location this month and now we are faced with this issue. I think it is a travesty that the city would lure us into this situation, promise the world and then try and re-zone our operations after the fact. I think the common terminology for this move would be "bait and switch".

We will use all legal avenues available to us to protect our investments if the city stands firm on its re-zoning attempts.

I can be reached at my office anytime for discussion on the matter.

Regards,

James W. Gray
VP/Manager

4922 E. Jensen Ave.
Fresno, CA. 93725

Ph. 559-264-4741
Fax. 559-237-3413

CCEJN
Central California Environmental Justice Network

LEADERSHIP COUNSEL FOR JUSTICE & ACCOUNTABILITY

Building Healthy Communities FRESNO

CVAQ

Friends of Calwa INC.

CCAC
CENTRAL CALIFORNIA ASTHMA COLLABORATIVE

May 14, 2021 <sent via email>

Jennifer Clark, Planning Director
℅ Cherie Vick, Executive Assistant
Development and Resource Management Department
City of Fresno
2600 Fresno Street, Room 3065
Fresno, CA 93721

RE: Comments in Response to Notice of Preparation of an Environmental Impact Report for the South Central Specific Plan

Dear Ms. Clark,

The undersigned organizations are writing to provide comments in opposition to the City's preparation of an Environmental Impact Report for the South Central Specific Plan based on a Proposed Land Use Map which would encircle South Fresno communities with industrial development. *See* Notice of Preparation to Extend Comment Period, dated 4/14/2014, p. 6 (Proposed Land Use Designations); Proposed Land Use Map[1]. As explained below, this proposal is at odds with South Fresno residents' unequivocal and repeated requests throughout the SCSP public participation process that the City redesignate land to prevent the further concentration of industrial development surrounding homes, schools, places of worship and other sensitive uses. The proposal is also inconsistent with the City's duties under fair housing and civil rights laws which prohibit the City from engaging in discriminatory land use practices and from actions which are inconsistent with its duty to affirmatively further fair housing. *See e.g.,* Gov. Code §§ 12900, et seq., 8899.50(a)&(b).

The expansive industrial development in the midst of South Fresno neighborhoods envisioned by the SCSP will have devastating consequences on South Fresno communities which rank among the most environmentally burdened in the state and are disproportionately comprised of people of color, immigrants, and households that speak a language other than

---

[1] The City's SCSP webpage provides the Proposed Land Use Map for the SCSP at the following link: https://www.fresno.gov/darm/wp-content/uploads/sites/10/2021/04/Proposed-Plan-Map.pdf

English. See Attachments 1 (California EPA CalEnviroScreen 3.0 Results, Fresno) & 2 (CalEPA CalEnviroScreen 3.0 Excel Spreadsheet Results, Abridged). By continuing to concentrate industrial development up to the property lines of sensitive uses in the West Fresno, South Central, and Southeast Fresno neighborhoods covered by the SCSP area, the SCSP would further degrade environmental quality, exacerbate poor public health outcomes, undermine housing quality and drive displacement in these neighborhoods and widen Fresno's deep and historic racial disparities. The City must not proceed with its efforts to further cement unjust land use patterns in City policy.

Should the City choose to proceed to develop an EIR based on the Proposed Land Use Map, the City of Fresno must thoroughly assess the numerous significant impacts the SCSP will have on the environmental, public health, housing for South Fresno residents and adopt enforceable mitigation measures that will avoid and minimize those impacts to the fullest extent possible. Further, the City must assess alternatives to the proposed project, including with alternative land use designations that protect communities from the development of new industrial land uses near sensitive land uses.

Finally, given the significance of the SCSP to the future development of South Fresno communities, it is of the utmost importance that the City proactively and meaningfully engage residents within and around the planning area as the City continues to develop the SCSP and an EIR. This means that the City must actually incorporate residents' input into the SCSP and EIR by revising land use designations to include land use buffers between new industrial uses and sensitive land uses that allow for community-serving development like grocery stores, health clinics, and retail options; including policies and implementation measures for active investment into South Fresno neighborhoods by businesses and the City alike in essential infrastructure, services, amenities, and community greening; and including policies and implementation measures that create real opportunities for economic mobility that reflect preferences for industry and job types and job benefits. To do less is to perpetuate the long-held City practice of denying South Fresno residents their rights to shape the future of their neighborhoods and access to opportunity on the same terms as other Fresno residents.

I. <u>The Draft SCSP and Proposed Land Use Map are inconsistent with Environmental Justice Principles and Violate Fair Housing and Civil Rights Laws</u>

The City of Fresno's draft SCSP and Proposed Land Use Map fails to comply with principles of environmental justice established in state law and its duties under fair housing and civil rights law. First, the Proposed Land Use Map proposes to encircle homes, schools and other sensitive land uses in South Fresno neighborhoods with industrial development, exacerbating existing racial disparities in access to essential neighborhood amenities and services and exposure to pollution. Second, the draft SCSP strays from City standards for all other specific plans adopted for other Fresno neighborhoods by omitting policies and implementation measures to implement General Plan policies supporting the creation of healthy, thriving, and complete communities. And third, the Draft SCSP and Proposed Land Use Map ignores more than a years' worth of input from the populations and people most affected by the SCSP during the SCSP's development where residents' clearly and repeatedly requested the City adopt balanced land use policies to ensure environmental protections for and investments in their neighborhood. The City should not proceed with an EIR for the SCSP until it corrects these failings.

A. SCSP Neighborhoods and Policies for Expansive Industrial Development

The SCSP area encompassess and extends up to large swaths of Southwest, South Central, and Southeast Fresno which are home to various communities and neighborhoods and thousands of people. These neighborhoods include Calwa, Daleville, the Flamingo Mobile Home Park, the Roy and Almy Avenue neighborhoods in West Fresno, the neighborhood located at Drummond and Jensen Avenues in Southeast Fresno, among others, as well as elementary schools, religious facilities, parks, and other sensitive community locations. These neighborhoods are disproportionately comprised of lower-income households, residents of color, immigrants, and people who speak a language other than English compared to the City and County as a whole. *See* City of Fresno General Plan, p. 1-33.

SCSP neighborhoods and neighborhoods adjacent to the plan's boundaries are also among the most environmentally burdened in the state of California. In fact, according to California EPA's CalEnviroScreen 3.0 tool, the *most* environmentally burdened census tract among California's 8,057 census tracts is located in the heart of the South Central Specific Plan Area, in the Census Tract 6019001100 located in the area between Highways 99 and 41 ("South Central Fresno"). See Attachments 1 (CalEnviroScreen 3.0 Results, identifying Census Tract 6019001100 as the most environmentally burdened census tract in California). Furthermore, each of the other census tracts within the plan area fall within the top 5 percent of the state's most pollution-burdened census tracts. Neighborhoods in these census tracts are exposed daily to unhealthy and disproportionate concentrations of PM2.5, diesel particulate matter, ozone, drinking water contaminants, toxic releases from facilities, hazardous waste generators and solid waste sites compared to the City and County as a whole. See Attachments 1 (showing census tracts in and around the South Central Specific Plan's boundaries as ranking among the worst in the state for environmental and social vulnerability indicators) and 2 (showing South Fresno neighborhoods as ranking among the most pollution-burdened in the state and North Fresno neighborhoods as ranking among the least).

Despite the abundance of empirical and anecdotal data about racial and ethnically concentrated poverty and the disproportionate pollution burdens born by South Fresno residents, the draft SCSP lays the foundation to further entrench and exacerbate these conditions by adding thousands of acres of new industrial development in and around the SCSP neighborhoods. Revised Notice of Preparation, Table 1: Proposed Specific Plan and Plan Alternatives Estimated Land Use Designation Acreages, p. 3; Figure 2, Planning Area, p. 6. The Proposed Land Use Maps's industrial land use designations extend adjacent to and encircling schools, homes, places of worship and other important sensitive receptors and community spaces. These designations would further concentrate industrial development and its associated impacts in neighborhoods already uniquely burdened by facilities running the gamut of meat rendering and packing plants, warehouse distribution centers, truck fueling stations, biomass facilities, landfills, and more. *See* San Joaquin Valley Air Pollution Control District (Air District)'s South Central Fresno Community Emissions Reduction Program, Appendix D, Public Resource: Existing Control of Air Pollution Sources of Concern to the Community; *See* Leadership Counsel and Golden Gate University Environmental Law and Justice Clinic letter to City of Fresno, Re: General Plan PEIR, dated May 10, 2021 (LCJA GP RPEIR comments), Attachment 3, pp. 20-22 (including maps depicting the overlap between the AB 617 South Central Fresno and the SCSP boundaries).[2]

As we have explained in other correspondence to the City, the City's replacement of some Heavy Industrial land use designations with Light Industrial, Business Park and Regional Business Park designations do nothing to address the disproportionate pollution burdens that the SCSP's land use designations would impose on South Fresno communities. *See* Leadership Counsel and Golden Gate University Environmental Law and Justice Clinic letter to City of Fresno, Re: General Plan PEIR, dated May 10, 2021 (LCJA GP RPEIR comments), Attachment 3, p. 23, Footnote 22. The Fresno Municipal Code ("FMC") permits warehouses, freight/truck terminals, and research and development land uses by right, with no public process or further review under CEQA, in the Heavy Industrial, Light Industrial, Regional Business Park, and Business Park zone districts alike. FMC, § 15-1302, Table 15-1302. The City's Fresno General Plan Recirculated Public Review Draft Programmatic Environmental Impact Report acknowledges that warehouse distribution centers, truck stops, and industrial facilities are among the primary sources of emissions of toxic air contaminants at levels associated with increased cancer risks for nearby populations. General Plan Recirculated Draft PEIR, p. 4.3-16.

The FMC allows for a sweeping range of other pollution-generating industrial land uses in Heavy Industrial, Light Industrial, BP and RBP zone districts. These include "General Industrial" land uses, allowed by right in HI and LI districts and with a conditional use permit in BP and RBP districts, which the FMC defines as "operations such as food and beverage processing...; production apparel manufacturing; photographic processing plants; leather and allied product manufacturing; wood product manufacturing; paper manufacturing; plastics and

---

[2] Available at http://community.valleyair.org/media/1505/10scfresnoappd_controlinfopacket.pdf.

rubber products manufacturing; nonmetallic mineral product manufacturing; primary metal manufacturing; fabricated metal product manufacturing; and automotive and heavy equipment manufacturing." FMC §§ 15-1302, Table 15-1302, Land Use Regulations - Employment Districts; 15-6705, 6707. The FMC's permit issuance regulations allow for the issuance of CUPs by the planning director without any public notice or hearing. FMC § 15-4907, Table 15-4907.

B. The Draft SCSP Fails to Include Policies and Planning for Complete, Healthy Neighborhood and Ignores Community Input In Stark Contrast With Other City of Fresno Specific Plans

The Draft SCSP consists of a compilation of policies which are contained in existing city planning documents, including the General Plan, the Roosevelt Community Plan, Southwest Specific Plan, and the North Avenue Industrial Triangle Specific plan.[3] Notably, the draft SCSP policies are almost entirely related to the expansion and operation of industrial land uses for the purpose of advancing the City's economic development objectives. The SCSP excludes the many policies contained in the General Plan and Roosevelt Community Plan aimed at creating healthy, thriving communities and protecting residential neighborhoods from incompatible land uses. Nor does the Draft SCSP include any policies, programs, or implementation measures specifically tailored to input provided by residents during public participation events provided for the SCSP's development. In fact, the Draft SCSP does not even mention or include a description of the communities which exist within the plan area. Further, as mentioned above, the Proposed Land Use Map would entirely encircle homes, schools and other sensitive land uses with industrial development.

These features of the Draft SCSP conflict with and ignore the input provided by South Central Fresno residents who attended SCSP workshops and advisory committee meetings for more than a year. Residents involved in the community engagement process for the SCSP have consistently described the environmental, safety, and health impacts of industrial development in their neighborhoods and asked for the City to ensure that such impacts are avoided and mitigated going forward. To this end, residents emphasized their desire for City planning to create buffer zones between neighborhoods and new industrial land uses and to create opportunities for the development of grocery stores, retail outlets, health clinics and other community-serving amenities, policies to promote neighborhood greening and reduced exposure to pollution. They also highlighted the need for planning for and investment in basic infrastructure and services, including water and sewer infrastructure to serve homes, road infrastructure to promote pedestrian, cyclist, and motorist safety, as well as pollution mitigation and neighborhood investment policies, such as policies to reduce resident exposure to dust, diesel, and particulate matter emissions from ever increasing heavy duty truck traffic; the establishment of alternate truck routes to avoid neighborhoods; community benefits agreements for local hiring and

---

[3] https://www.fresno.gov/darm/wp-content/uploads/sites/10/2019/05/SIPA_doc_v4-pressready-1.pdf

mitigation measures to reduce impacts in sensitive receptors; and urban greening, setbacks and green buffer zones.

The Draft SCSP contrasts with other specific plans prepared and adopted by the City in recent years, which have emphasized resident self-determination in shaping their built environment, planning for complete and healthy communities, smart planning promoting land use compatibility, and investment strategies and implementation measures designed to bring those plans' vision to life. *See* Southwest Specific Plan, Downtown Neighborhoods Specific Plan, Southeast Specific Plan. It stands in stark contrast with long-established plans in place in North Fresno neighborhoods which firmly protect those neighborhoods from industrial encroachment. *See e.g.,* Woodward Park Community Plan, pp. 25-26 (stating, "the Woodward Park Community Plan contains no provisions for the standard light-industrial use, whether it be light-manufacturing or warehousing, and providing that "[i]ndustrial activities shall be permitted only accessory to agricultural uses" in accordance with existing agricultural zoning in the area).[4]

C. State Environmental Justice Policy

Government Code section 65040.12(e) defines environmental justice as, "the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies". Environmental justice includes the "availability of a healthy environment for all", "the deterrence, reduction, and elimination of pollution burdens for populations and communities experiencing the adverse effects of that pollution, so that the effects of the pollution are not disproportionately borne by those populations and communities," and, at a minimum, government entities meaningfully engaging and considering the recommendations from populations and communities most impacted by pollution through all phases of the environmental and land use decision making process." § 65040.12(e)(2). The State of California has prioritized environmental justice as a key principle for observance in policy making by all levels of government, especially with respect to policies relating to land use and investments, through the passage of various laws. *See e.g.*, SB 1000 (2016, Leyva) (requiring cities and counties to conduct analysis and adopt policies relating to environmental justice); AB 1553 (2001, Keeley) (requiring the state Office of Planning and Research to develop guidelines for the placement of industrial facilities in a manner that minimizes exposures to sensitive receptors); SB 535 (2012, de Leon) (directing CalEPA to identify disadvantaged communities subject to disproportionate environmental burdens); AB 1550 (2016, Gomez) (requiring 25% of state Cap-and-Trade proceeds to be spent on projects in disadvantaged communities); *See also*, the Fair Employment and Housing Act, Gov. Code § 12900, *et seq*. (prohibiting public and

---

[4] The Woodward Park Community Plan is available at
https://www.fresno.gov/darm/wp-content/uploads/sites/10/2016/11/WoodwardParkCommunityPlan.pdf

private land use practices which discriminate on the basis of race, ethnicity, or other protected characteristic).

The Draft SCSP not only fails to advance state environmental justice policy but directly counteracts it. Rather than combat existing environmental degradation in the SCSP area, the Draft SCSP precludes compounds existing environmental burdens and precludes the attainment of a healthy environment for households in the SCSP area by allowing for a wide range of polluting industrial land uses adjacent to homes, schools and other sensitive land uses. By ignoring the input of South Fresno residents, the Draft SCSP also runs afoul of environmental justice principles calling for meaningful public engagement and consideration of the input of impacted populations in the land use planning process. § 65040.12(e)(2).

D. <u>The Draft SCSP and Proposed Land Use Map Conflicts with the City's Duty to Affirmatively Further Fair Housing</u>

Government Code section 8899.50(b) requires public agencies in California to affirmatively further fair housing in all policies and programs relating to housing and community development and to "take no action that is materially inconsistent" with this obligation. Affirmatively further fair housing means:

> Taking 'meaningful actions, in addition to combating discrimination, that overcome patterns of segregation and fosters inclusive communities free from barriers that restrict access to opportunity based on a protected characteristic. Specifically, affirmatively furthering fair housing means taking meaningful actions that, taken together, address significant disparities in housing needs and in access to opportunity, replacing segregated living patterns with truly integrated and balanced living patterns, transforming racially and ethnically concentrated areas of poverty into areas of opportunity, and fostering and maintaining compliance with civil rights laws and fair housing laws. Gov. Code § 8899.50(a)

For many years, community residents who live within and near the SCSP are have asking the City to plan for and invest in neighborhood-serving amenities like retail establishments, recreational centers, grocery stores, health clinics, educational centers, and parks and protection from hazardous industrial pollutants. In applying industrial land use designations to thousands of acres within the SCSP area, the City makes land unavailable for the development of the neighborhood-serving amenities which residents have long requested while further exposing residents to environmental hazards. The Draft SCSP, along with other City actions and inactions, would reinforce patterns of economic and racial segregation and widen the vast gaps in access to opportunity between North and South Fresno neighborhoods. As such, it conflicts with the City's duty to avoid actions materially inconsistent with the City's duty to AFFH. *See* California Housing and Community Development's, Affirmatively Furthering Fair Housing: Guidance for

All Public Entities and For Housing Elements, p. 16 (citing "zoning or siting toxic or polluting land uses or projects near a disadvantaged community" and "lack of investment in concentrated areas of poverty" as actions which are materially inconsistent with an agency's duty to AFFH).

E. The Draft SCSP and Proposed Land Use Map Conflict with the City's Duties to Avoid Discriminatory Land Use Practices under the Fair Employment and Housing Act

The California Fair Employment and Housing Act ("FEHA") prohibits discrimination in land use practices, decisions, and authorizations on the bases of race, color, national origin, or other protected characteristics. Gov. Code §§ 12955(l); 12955.8. Unlawful land use practices prohibited under FEHA include but are not limited to those that result in the location of toxic, polluting, and/or hazardous land uses in a manner adversely impacts enjoyment of residence based on protected characteristics, creates or reinforces or perpetuates segregated housing patterns, or provide inadequate inferior, limited, or no governmental infrastructure, facilities, or services. 14 C.C.R. § 12161(b)(11)&(12).

Here, the SCSP's concentration of polluting industrial land uses in communities of color in South Fresno and next to homes would violate FEHA by undermining the quality of housing impacted by light, sound, dust, diesel emissions, and other impacts associated with industrial development and entrenching patterns of racial and economic segregation as a result. The SCSP's total failure to plan for basic infrastructure and services in unincorporated SCSP neighborhoods which currently lack access to City water, wastewater, sidewalks, street lights and other basic infrastructure and amenities, despite its plans to annex and facilitate industrial development on the lands surrounding them, also violates FEHA.

The expenditure of City resources to prepare an EIR based on the Draft SCSP, which would entrench and worsen existing racial and economic segregation and disparities in access to a healthy environment, complete neighborhoods, and opportunity based on race, ethnicity, national origin, and language of SCSP area residents, is at odds with its obligations under environmental justice policies, Government Code Section 8899.50, FEHA, and other state and federal fair housing and civil rights laws. *See e.g.,* §§ 12900, *et seq.*, 8899.50, 11135, 65008. The City must revise the draft SCSP and Proposed Land Use Map to make it consistent with these duties before proceeding with the preparation of an EIR.

II. The Draft SCSP is Inconsistent with AB 617 and the South Central Fresno Community Emissions Reduction Plan

In 2018, the California Air Resources Board (CARB) selected the South Central Fresno

Community for the development of a Community Air Monitoring Plan and Community Emissions Reduction Program (CERP) pursuant to AB 617. AB 617 requires CERPs to reduce cumulative air pollution in disadvantaged communities such as South Central Fresno[5]. Health & Safety Code § 44391.2 (c)(2). South Central Fresno was selected in recognition of its high cumulative air pollution exposure burden, significant number of sensitive receptors, and census tracts which have been designated as disadvantaged communities. After substantial work to develop a plan to reduce emissions in South Central Fresno by community members and Air District staff, in September 2019 CARB approved the CERP under AB 617[6]. The CERP recognizes that the majority of air pollution emissions in South Central Fresno come from mobile and industrial sources. p. 69. As described by CARB, the CERP "focuses on reducing exposure to fine particulate matter (PM2.5), toxic air contaminants (TAC), as well as oxides of nitrogen (NOx).[7]

The CERP is unequivocal that its purpose is to reduce pollution in the designated south Fresno area. While the San Joaquin Valley Air Pollution Control District ("Air District") leads CERP implementation, the City has a critical role in supporting CERP implementation and emission reduction. The Draft SCSP's designation of roughly 5,000 acres of land for industrial use, and it failure to include goals, policies and implementation measures to promote the reduction in air emissions exposures for South Fresno residents, is inapposite to the CERP's goals.

III. The Draft SCSP is Inconsistent with The City Council Resolution Dated November 14, 2019

On November 14, 2019, the Fresno City Council passed resolution directing City staff to develop land use designations, zoning, and policies to protect sensitive uses in the SCSP area from the impacts of industrial development and to engage in other planning activities to ensure the extension of essential infrastructure and services to unincorporated SCSP neighborhoods in the City's development trajectory and engage residents' in crafting economic development strategies and policies reflective of residents' priorities for economic mobility and business investment in local communities. Attachment 4. Specifically, the resolution provides that the City "wishes to obtain input from residents" "to develop a vision, land use changes, and policies that...avoid and minimize impacts to existing sensitive land uses from new development and ensure a decent quality of life and a healthy environment for residents of existing neighborhoods

---

[5] The AB 617 South Central Fresno Community boundaries overlap almost entirely with the SCSP area boundaries. *See* LCJA GP RPEIR comments, pp. 20-22.

[6] The CERP is available on CARB's webpage at the following link: http://community.valleyair.org/media/1516/01finalscfresnocerp-9-19-19.pdf

[7] CARB, South Central Fresno webpage available at https://ww2.arb.ca.gov/our-work/programs/community-airprotection-program/communities/south-central-fresno, accessed on May 6, 2021.

and communities within and near the [SCSP area].” p. 2. The resolution repeatedly emphasizes the City’s intention that SCSP residents inform the SCSP’s policies and land use designations, stating that the plan’s land use policies should be “reflective of community input,” and that residents and stakeholders “shall inform the [SCSP] to the greatest extent feasible, through an inclusive community engagement process.” p. 2. Unfortunately, as described above, the Draft SCSP fails fall short of these standards and the Council’s direction to the administration for the SCSP.

The resolution also calls on the City to “study standards and procedures for annexation of existing neighborhoods and communities in and near the [SCSP]” and “facilitate and promote economic development that advance community priorities relating to industry type, employment opportunities, job quality and community benefits.” p. 2. To date, the City has failed to advance these Council directives. These failures detriment South Central Fresno residents who bear the impacts of increased industrial development in their neighborhoods without receiving investments in basic municipal infrastructure and services, from water, to wastewater, to sidewalks and street lights, and to parks, recreation opportunities, and open space.

The City Council and Administration must take action to align the City’s work on the SCSP with the Council’s November 14, 2019 resolution.

IV. Comments Relating to the Content of the EIR

To the extent that the City decides to continue with the preparation of the EIR at this time, the City must ensure that it satisfies the requirements of the California Environmental Quality Act (“CEQA”). For environmentally burdened communities, such as those encompassed by the SCSP area, CEQA plays an especially critical role in ensuring that local governments accept and consider input from residents in land use decision-making processes; adverse impacts to the environment and people are studied; enforceable mitigation measures are adopted to avoid and reduce harm; and alternatives to the proposed plan area considered in the spirit of the statute’s goal of “preventing environmental damage, while providing a decent home and satisfying living environment for every Californian.” Public Resources Code § 2100(g).

Specifically, the City must ensure that the SCSP EIR:

- Accurately captures and analyzes baseline conditions, and potentially significant project-specific and cumulative impacts within and adjacent to the planning area;
- Identifies plan alternatives, which would mitigate negative impacts of plan implementation on disadvantaged communities and promote positive outcomes aligned with community members’ expressed vision and priorities;
- Identifies and adopts all feasible and enforceable mitigation measures that avoid and reduce negative impacts;

- Analyzes and creates mitigation measures consistent with all applicable laws, including but not limited to state and federal fair housing and civil rights laws and;
- Meaningfully engages the public, and especially residents who live within and near the planning area through a robust, accessible, and responsive process.

A. Baseline Conditions

Establishing an accurate foundation of existing environmental conditions in the SCSP is critical since it will serve as the baseline from which significant impacts are measured and appropriate mitigation measures are identified. Further, we would like to note that the Project's significant impacts may vary based on variations in baseline conditions and land uses in particular locations. C.C.R. § 15064(b) (significance of an activity may vary with the setting); *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718. In other words, a project that will adversely impact a particularly sensitive area already burdened by environmental impacts or sensitive receptors is more likely to significantly impact the environment than in a less sensitive area.[8]

Therefore, the SCSP EIR must not only include a granular analysis of existing baseline conditions in neighborhoods within the boundary lines but also those adjacent to the boundary line, such as the community of Calwa and the neighborhood on North and Fig Avenues. We recommend that the EIR use the following data and resources, among others, to inform its analysis[9]:

- California Environmental Protection Agency and California Office of Environmental Health Hazard Assessment's California Communities Environmental Health Screening Tool (CalEnviroScreen), 3.0, which includes census tract level data on a range of environmental pollution and socio-demographic indicators.[10]
- Documents developed by the San Joaquin Valley Air Pollution Control District as part of its efforts to implement AB 617 in South Central Fresno, including but not limited to mapping of emissions sources and receptors and emissions summaries for District permitted facilities within the South Central Fresno community boundary.[11]

---

[8] See Environmental Justice at the Local and Regional Level, State of California Department of Justice Attorney General, p. 3 available at https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/ej_fact_sheet.pdf?

[9] The CalEnviroScreen map and excel spreadsheet with census tract level data are available at https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

[10] The CalEnviroScreen map and excel spreadsheet with census tract level data are available at https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

[11] Materials available at http://community.valleyair.org/selected-communities/south-central-fresno

- California Housing Partnership reports and data on housing supply and affordability in Fresno County, including but not limited to its paper, "Fresno County's Housing Emergency Update," published in May 2019.
- Fresno County Health Index Prism
- Department of Housing and Urban Development Affirmatively Furthering Fair Housing Data and Mapping Tool

Moreover, the EIR should map the location of existing sensitive uses and consider the unique conditions within and adjacent to the planning boundary that bear on the significance of the project's environmental impacts. For example, the EIR should identify the various neighborhoods, communities, schools, religious institutions, and other community-serving land uses within and adjacent to the planning area, which stand to be impacted by the industrial land use designations in the SCSP. Furthermore, the baseline conditions should note the reliance on groundwater via domestic wells by households on portions of East Central, Malaga, and Britten Avenues, among other residential areas and recent local and state drought declarations in Fresno County; the lack of sidewalks, streetlights, storm water drainage, and on certain streets, even paved roads; and the lack of public and private amenities to serve existing residents and the anticipated growth. These and other conditions have an effect on the significance of the project's impacts, including but not limited to impacts to public health, housing, and the preservation of existing communities.

B. Consistency with South Central Fresno CERP and Other Relevant Plans

______Both the South Central Fresno CERP measures and the input received through the SCSP community engagement process demand the re-routing of truck traffic away from homes and schools, urban greening, the use of buffer zones near sensitive receptors, and air monitoring[12]. The SCSP EIR should include a careful review of the CERP and revisions to land use designations and policies to ensure consistency with its goals and policies to reduce exposure by South Fresno residents to harmful air emissions. The City must also consider other relevant plans and policies, including City policies implementing AB 170 (2004, Reyes) (requiring adoption of analysis and policies to reduce air pollution in cities and counties under the Air District's jurisdiction, including strategies to "plan land uses to minimize exposure to toxic air pollutant emissions from industrial and other sources."), the City's 2015-2023 Housing Element, the City's Analysis of Impediments to Fair Housing, among others.

---

[12] http://community.valleyair.org/media/1516/01finalscfresnocerp-9-19-19.pdf Chapter 4: Heavy Duty Mobile Sources p58; Exposure Reduction Strategies p111-113; Urban Greening p118; Vegetative Barriers p122

C. The EIR Must Consider Alternatives That Reduce Environmental Impacts and Impacts on Disadvantaged Communities

Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects..." Pub. Res. Code § 21002. The SCSP EIR should consider project alternatives that reflect residents' requests for buffer zones and other protections from industrial land uses. Alternatives the EIR should consider include but are not limited to the following alternatives to the current SCSP Specific Plan:

- Modifications to the land use designations and zoning in the planning area to include buffers between sensitive land uses (homes, schools, religious institutions) and industrial and hazardous land uses to reduce impacts and promote the existing quality of life in existing communities and to allow for the development of neighborhood-serving land uses and enhanced access to opportunity in South Fresno neighborhoods;
- Incorporation of policies contained in the Southwest Specific Plan, General Plan, and Roosevelt Community Plan, among other applicable plans, in support of complete and healthy communities;
- Revisions to the circulation map to minimize conflict between planned high-traffic roadways and sensitive uses such as, along East Central and Cherry Avenues and the adoption of policies requiring, incentivizing, and supporting the use of zero-emissions vehicles and equipment associated with the construction and operation of industrial facilities in the SCSP area.

VII. Significant Impacts

The EIR must analyze the Draft SCSP and Proposed Land Use Map's potentially significant impacts and identify feasible and enforceable mitigation measures that avoid and minimize the project's impacts, particularly on vulnerable South Fresno residents. Impacts which the SCSP must consider and mitigate include but are not limited to the following:

1. Aesthetic impacts associated with the plan buildout on currently vacant and/or agricultural parcels in rural and low-density residential areas.
2. Light impacts and glare associated with industrial development on existing residences.
3. Impacts to housing. This includes, but is not limited to, potential economic and physical displacement, negative impacts to housing quality and quality of life, and economic hardship from having property values decrease. This analysis should include an extensive analysis of the impacts which significantly undermine the use and enjoyment of housing and the marketability of housing. For instance, during the construction and operation of

the Amazon warehouse at East Central Avenue and Orange Avenue families nearby experienced temporary physical and health related impairments, and overall decreased quality of life.

4. Impacts on water supply access by homes and institutions located in the unincorporated county that are reliant on groundwater. Analysis should include the water consumption from facilities in the plan area distinguishing between the specific amounts of groundwater and surface water that were used.
5. Traffic safety impacts on pedestrians given existing and projected infrastructure conditions, including in areas adjacent to the plan area which lack sidewalks, streetlights, paved roads and other infrastructure to support pedestrian safety and on routes to school frequented by children and families. Road improvements made to improve access to proposed future facilities will result in more single occupancy vehicles and freight truck traffic that will affect communities within and outside the plan boundaries. Thus, a comprehensive analysis which includes complete streets development beyond typical development code standards must be included in this EIR.
6. Air quality impacts associated with air quality impacts associated with facility construction and operation, including from mobile sources associated with industrial development. The EIR's air quality impacts assessment should consider impacts on nearby sensitive receptors subject to exposure to higher concentrations of pollutants than the City and region as a whole.
7. Public health impacts associated with all environmental impacts and public health impacts that may create environmental impacts, including health impacts associated with sound, vibration, traffic/pedestrian safety, and air quality impacts.
8. Impacts associated with construction, including noise, air quality, light/glare, vibration, and traffic impacts in particular.
9. Utility impacts in the general region of the planning area. This includes analysis of adjacent communities and the residents and institutions who may have increased utility bills as a result of the heat island effect.

VIII. Enforceable Mitigation

Under CEQA, "[m]itigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments." C.C.R. § 15126.4(a)(2). The EIR must meet this requirement for all mitigation measures which it includes. In addition, we note that CEQA does not permit reliance on existing law, codes or regulations as mitigation measures as they are part of the existing environmental setting. The City must consider all feasible mitigation measures to avoid and reduce project impacts. Examples of feasible and effective mitigation measures which the City must consider include:

- the re-designation of industrial land uses near residential land uses, schools, and other sensitive receptors to non-industrial and community-serving uses to create buffer zones, counter the de-stabilizing impact of industrial development on SCSP neighborhoods, and increase access to opportunity for South Fresno residents;
- amendment of the Development Code to incorporate enhanced protections for disadvantaged communities and vulnerable populations, including prohibiting the issuance of permit approvals where facilities would exacerbate poor environmental conditions in these communities; heightened performance standards; and proactive code enforcement and heightened penalities for violations by facilities in disadvantaged communities;
- commitments to take specific actions to work with the Air District to implement policies and measures contained in the South Fresno Community CERP;
- Requirements, incentives, and investments to ensure and promote the use of electric vehicles and equipment for facility construction and operation in the project area;
- Commitment to take all steps necessary to re-route truck traffic away from roads adjoined by sensitive receptors;
- Investment by the City and developers in landscaping throughout the project area to reduce resident exposure to harmful air emissions;
- Investment by the City and developers into the Community Benefits Fund established by the settlement agreement between the South Fresno Community Alliance, Leadership Counsel, and the City for improvements to homes and other sensitive receptors in and near the project area to mitigate the impacts of industrial development.

We also encourage the City to consider the feasible mitigation measures listed in the Attorney General's guidance document titled, "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act."[13] While the document is specifically focused on the mitigation of impacts associated with warehouse distribution facilities, many of the mitigation measures apply to a range of industrial land use types.

In addition, the City should consider the mitigation measures contained in the recent settlement for the World Logistics Center development, entered into by several community organizations and the project developers.[14] The settlement provides for the electrification of logistics equipment from trucks to forklifts, the provision of funds by the develop to aid in purchasing new electric trucks, the delivery of grants for the purchase of electric vehicles by residents impacted by warehouse development, the installation of EV charging infrastructure, the

---

[13] Available at https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/warehouse-best-practices.pdf, accessed on May 7, 2021.

[14] A copy of the settlement is available here:
https://earthjustice.org/sites/default/files/files/wlc_settlement_agreement_executed.pdf

installation of rooftop solar on warehouse facilities, the provision of air filtration and noise mitigation solutions for the most impacted homes near the facility, in addition to building berms, screens, and setbacks around the facility to reduce the warehouse complex's impacts on nearby communities, as well as commitments to protect threatened and endangered wildlife in the project area.

IX. Conclusion

We urge the City of Fresno to incorporate community input received during the SCSP's development to address the environmental justice issues set forth in this letter before moving forward with the development of the SCSP EIR. The City has demonstrated its ability to conduct meaningful public processes in the past and to fairly respond to residents' concerns and priorities for their communities. The City must treat the South Central Fresno communities no differently.

Thank you for your consideration of these comments. Please contact us should you wish to find a time to discuss them.

Sincerely,

Ivanka Saunders
Leadership Counsel for Justice and Accountability

Ana Orozco
Leadership Counsel for Justice and Accountability

Catherine Garoupa White
Central Valley Air Quality Coalition

Naymin Martinez
Central California Environmental Justice Network

Kimberly McCoy
Fresno Building Healthy Communities

Kevin Hamilton
Central California Asthma Collaborative

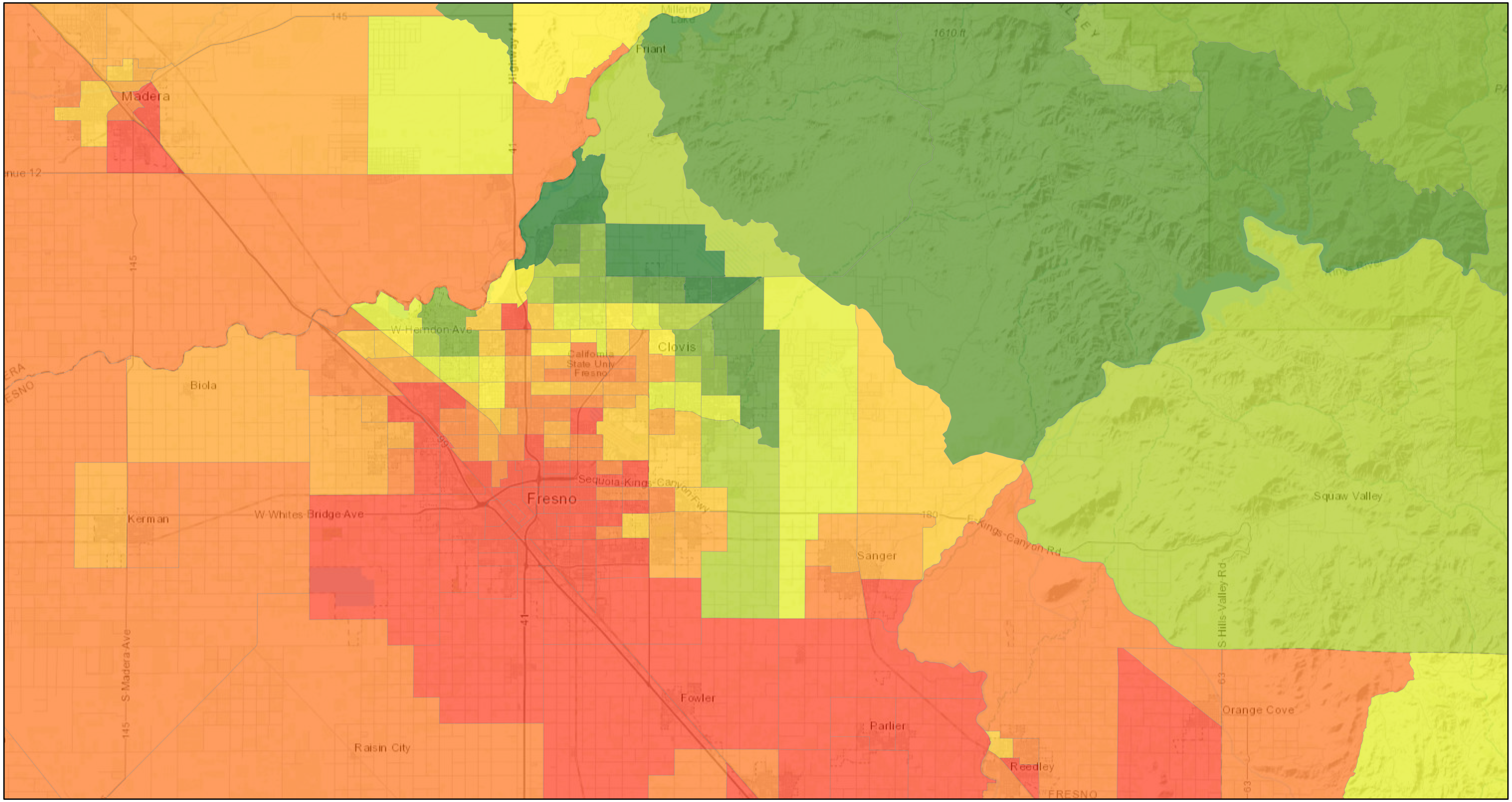
Laura Moreno
Friends of Calwa

Rosa DePew
South Fresno Community Alliance member

Panfilo Cerillo
South Fresno Community Alliance member

Cc: Scott Lichtig, Deputy Attorney General, Bureau of Environmental Justice
Channel Fletcher, Deputy Executive Officer Environmental Justice, California Air Resources Board
Fresno Mayor Jerry Dyer
Fresno City Councilmembers

Fresno CalEnviroScreen 3.0 Results (June 2018 Update)



5/10/2021, 1:51:11 PM

CalEnviroScreen 3.0 Results (June 2018 Update)

- 🟩 1 - 10% (Lowest Scores)
- 🟩 11 - 20%
- 🟩 21 - 30%
- 🟩 31 - 40%
- 🟨 41 - 50%
- 🟨 51 - 60%
- 🟨 61 - 70%
- 🟧 71 - 80%
- 🟧 81 - 90%
- 🟥 91 - 100% (Highest Scores)

1:288,895

0 2.75 5.5 11 mi

0 4.5 9 18 km

Fresno County Dept. PWP, Bureau of Land Management, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS

Web AppBuilder for ArcGIS

Fresno County Dept. PWP, Bureau of Land Management, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS | OEHHA |

Census Tract	Total Population	California County	ZIP	Nearby City (to help approximate location only)	Longitude	Latitude	CES 3.0 Score	CES 3.0 Percentile
6019001100	3174	Fresno	93706	Fresno	-119.7816961	36.7096952	94.09	100.00
6071001600	6133	San Bernardino	91761	Ontario	-117.6180131	34.0577805	90.68	99.99
6019000200	3167	Fresno	93706	Fresno	-119.8055044	36.7354914	85.97	99.97
6077000801	6692	San Joaquin	95203	Stockton	-121.3145235	37.9405169	82.49	99.96
6019001500	2206	Fresno	93725	Fresno	-119.7178427	36.6816	82.03	99.95
6037204920	2598	Los Angeles	90023	Los Angeles	-118.1974975	34.0175004	80.73	99.94
6077000300	2396	San Joaquin	95203	Stockton	-121.3020724	37.952421	80.18	99.92
6019001000	4106	Fresno	93706	Fresno	-119.804314	36.6977507	80.13	99.91
6037206050	2146	Los Angeles	90023	Los Angeles	-118.2244531	34.0299036	79.03	99.90
6019000400	6343	Fresno	93721	Fresno	-119.7762091	36.7276563	78.53	99.89
6099002100	4165	Stanislaus	95354	Modesto	-120.9667385	37.6287607	78.52	99.87
6029002500	9122	Kern	93307	Bakersfield	-118.9920281	35.3372541	78.41	99.86
6019000600	6161	Fresno	93721	Fresno	-119.7933565	36.743063	78.41	99.85
6019001201	5936	Fresno	93725	Fresno	-119.7577716	36.7107523	78.05	99.84
6037205120	3618	Los Angeles	90023	Los Angeles	-118.2117956	34.0187546	78.04	99.82
6019000902	5252	Fresno	93706	Fresno	-119.8042772	36.717769	77.65	99.81
6037291220	3353	Los Angeles	90247	Gardena	-118.286709	33.8771395	77.50	99.80
6019001202	4756	Fresno	93725	Fresno	-119.7410277	36.7026849	77.41	99.79
6019000800	964	Fresno	93706	Fresno	-119.831179	36.7067181	77.40	99.77

CES 3.0 Percentile Range	SB 535 Disadvantaged Community	Ozone	Ozone Pctl	PM2.5	PM2.5 Pctl	Diesel PM	Diesel PM Pctl	Drinking Water
95-100% (highest scores)	Yes	0.065	98.18	15.4	97.22	48.524	95.54	681.20
95-100% (highest scores)	Yes	0.062	91.10	13.31	93.64	38.556	92.12	904.66
95-100% (highest scores)	Yes	0.062	91.10	15.4	97.22	47.445	95.42	681.20
95-100% (highest scores)	Yes	0.046	53.02	12.54	84.02	24.117	73.52	278.76
95-100% (highest scores)	Yes	0.065	98.18	15.4	97.22	18.846	58.22	1000.24
95-100% (highest scores)	Yes	0.046	53.02	12.89	92.89	56.520	96.98	714.48
95-100% (highest scores)	Yes	0.046	53.02	13.44	94.00	21.760	66.48	278.76
95-100% (highest scores)	Yes	0.065	98.18	15.4	97.22	20.848	64.14	788.02
95-100% (highest scores)	Yes	0.046	53.02	12.89	92.89	53.958	96.42	664.07
95-100% (highest scores)	Yes	0.065	98.18	15.4	97.22	54.356	96.74	681.20
95-100% (highest scores)	Yes	0.053	73.93	12.89	92.89	24.585	74.88	826.14
95-100% (highest scores)	Yes	0.065	98.18	19.18	99.86	20.420	62.81	1041.62
95-100% (highest scores)	Yes	0.065	98.18	15.4	97.22	54.243	96.50	681.20
95-100% (highest scores)	Yes	0.065	98.18	15.4	97.22	27.565	81.22	681.20
95-100% (highest scores)	Yes	0.046	53.02	12.89	92.89	50.075	95.97	664.07
95-100% (highest scores)	Yes	0.065	98.18	15.4	97.22	47.943	95.47	681.20
95-100% (highest scores)	Yes	0.044	40.49	12.05	81.66	27.160	80.51	695.72
95-100% (highest scores)	Yes	0.065	98.18	15.4	97.22	27.699	81.38	947.44
95-100% (highest scores)	Yes	0.062	91.10	15.4	97.22	13.163	39.64	784.33

Drinking Water Pctl	Pesticides	Pesticides Pctl	Tox. Release	Tox. Release Pctl	Traffic	Traffic Pctl	Cleanup Sites	Cleanup Sites Pctl
80.92	2.75	47.82	18551.95719	97.46	909.14	62.98	80.5	98.67
96.11	1.37	41.34	7494.236622	89.05	782.26	55.66	66.2	97.68
80.92	3.03	48.75	12454.94841	95.42	576.52	39.00	22	85.13
29.11	12.93	60.56	2387.782922	69.97	1305.01	78.29	50.1	96.10
98.64	3518.41	95.15	21790.70672	98.15	435.16	24.30	60	97.15
83.49	0.00	0.00	39040.17995	99.30	2943.44	97.19	36.7	93.14
29.11	172.49	79.19	707.5361575	56.11	885.52	61.94	89.7	98.89
89.12	1435.93	90.89	6996.962409	88.06	243.54	7.97	15.45	77.60
78.57	0.00	0.00	10378.23648	94.06	2810.82	96.63	36.05	92.96
80.92	114.96	76.84	125383.892	99.93	815.36	57.96	15.95	78.24
91.61	14.38	61.53	1033.797912	60.53	606.03	42.26	30	90.50
99.04	3.47	50.07	49.70815719	19.14	675.16	48.16	42.4	94.86
80.92	88.58	75.45	7030.451231	88.16	591.37	40.59	5.7	46.42
80.92	0.00	0.00	19782.60168	97.68	347.88	16.22	98.65	99.11
78.57	0.00	0.00	19178.66447	97.57	887.21	62.00	49.45	96.04
80.92	683.81	86.95	25476.58305	98.48	170.75	4.17	12.1	69.68
81.93	68.63	73.44	8937.64998	92.07	2467.25	94.72	17.4	80.54
97.19	11.74	59.76	8837.26905	91.92	291.45	11.43	30.5	90.72
89.02	1031.87	89.09	7265.254475	88.61	127.2	2.28	22	85.13

Groundwater Threats	Groundwater Threats Pctl	Haz. Waste	Haz. Waste Pctl	Imp. Water Bodies	Imp. Water Bodies Pctl	Solid Waste	Solid Waste Pctl	Pollution Burden
45.75	89.85	0.795	84.32	0	0.00	21.75	97.81	79.96
36	85.57	1.25	88.77	5	55.01	12	92.17	81.19
30.25	81.93	0.2	60.50	0	0.00	2.5	57.18	71.16
132.1	98.41	0.795	84.32	19	98.63	27	99.10	74.48
54.2	92.09	13.1	99.70	0	0.00	50.8	99.91	80.20
25	77.29	4.93	96.31	7	71.61	3.85	65.67	76.73
149.05	98.74	0.135	50.68	14	94.41	2.3	52.98	68.27
20	71.07	0	0.00	0	0.00	10	89.46	66.88
16.25	63.80	10.025	99.13	7	71.61	22.1	98.02	77.09
13.5	57.60	0.755	83.84	0	0.00	0.5	20.49	73.89
9.55	47.20	2.62	93.66	7	71.61	3.5	64.87	71.92
46.25	90.02	10.26	99.26	0	0.00	13.6	93.66	70.64
8	42.85	0.46	74.59	0	0.00	1.25	36.52	68.31
71.8	95.10	4.275	95.89	0	0.00	20	97.36	70.73
37.25	86.18	17.72	99.89	7	71.61	14.75	94.77	75.61
3	21.88	0.01	8.56	0	0.00	4.25	69.11	64.75
65.55	94.17	0.855	85.08	18	98.32	3.45	63.43	79.99
38.25	86.79	4.28	95.90	0	0.00	23	98.37	75.94
15	61.45	0.1	43.11	0	0.00	7	82.83	65.50

Pollution Burden Score	Pollution Burden Pctl	Asthma	Asthma Pctl	Low Birth Weight	Low Birth Weight Pctl	Cardiovascular Disease	Cardiovascular Disease Pctl
9.85	99.95	131.64	97.67	7.44	93.84	14.13	96.31
10.00	100.00	60.66	69.78	7.04	90.85	12.94	92.66
8.76	99.00	142.12	98.33	10.16	99.78	14.96	97.67
9.17	99.59	142.17	98.34	6.23	80.65	14.72	97.17
9.88	99.99	90.48	89.54	4.5	38.92	12.82	92.36
9.45	99.88	68.74	77.63	7.35	93.21	10.4	77.62
8.41	98.07	169.56	99.36	8.36	97.86	12.7	91.68
8.24	97.35	142.28	98.42	7.83	95.91	14.96	97.67
9.50	99.90	58.03	66.53	6.71	87.50	7.24	40.56
9.10	99.48	107.8	94.23	4.79	46.47	14.75	97.26
8.86	99.15	94.54	91.09	5.37	62.51	13.59	94.75
8.70	98.82	89.83	89.19	6.28	81.62	11.77	87.52
8.41	98.11	118.86	96.21	7.87	96.08	10.12	75.76
8.71	98.86	89.51	89.07	5.28	60.00	12.74	91.90
9.31	99.75	68.74	77.63	5.14	56.27	10.4	77.62
7.98	95.98	142.28	98.42	9.24	99.26	14.96	97.67
9.85	99.96	66.49	75.48	6.54	85.38	8.87	62.00
9.35	99.78	78.61	84.04	4.94	50.72	11.16	83.97
8.07	96.52	142.28	98.42	8.9	98.85	14.96	97.67

Education	Education Pctl	Linguistic Isolation	Linguistic Isolation Pctl	Poverty	Poverty Pctl	Unemployment	Unemployment Pctl
53.3	95.76	16.2	77.51	76.3	97.12	17.6	91.72
53.3	95.76	33.4	96.25	72.5	94.63	12.3	71.82
42.3	89.06	16.7	78.39	86.8	99.56	16.1	87.98
40.8	87.52	15.3	75.14	61.3	85.57	19.6	94.97
45.1	91.13	14.7	73.72	66.4	90.23	18.6	93.65
53.1	95.67	23.7	89.15	66.4	90.23	11.6	67.42
46	91.72	27.1	92.40	76.2	97.03	14.4	82.00
47.4	92.58	15.8	76.58	74.5	95.90	20	95.49
50.4	94.36	35.7	97.12	75.7	96.64	28.5	99.51
52.5	95.32	13.7	71.35	83.4	99.08	23.5	98.27
52.3	95.22	16	77.08	78.3	97.74	19.3	94.64
41.3	87.95	14.9	74.23	73.8	95.55	28.5	99.51
46.9	92.30	11.6	64.63	89.5	99.80	21.7	97.07
52.3	95.22	22.9	88.15	70.7	93.51	20.1	95.58
61.4	98.68	28.4	93.31	78.3	97.74	16.9	90.20
53.8	96.01	27.1	92.40	77.5	97.54	21.8	97.13
31.4	78.12	23.1	88.39	53.4	77.32	8.9	46.86
51.6	94.88	9.2	55.91	77.8	97.60	21.6	96.99
44.3	90.56	13.6	71.12	76.5	97.22	18.5	93.43

Housing Burden	Housing Burden Pctl	Pop. Char.	Pop. Char. Score	Pop. Char. Pctl
26	79.40	92.12	9.55	99.70
34.1	93.75	87.44	9.07	98.11
40.1	97.85	94.58	9.81	99.99
21.1	63.54	86.70	8.99	97.72
28.1	83.98	80.08	8.30	92.76
22	67.03	82.36	8.54	94.89
24.3	74.73	91.94	9.53	99.65
31.8	90.72	93.79	9.73	99.91
31.7	90.56	80.25	8.32	92.96
23.2	71.34	83.20	8.63	95.71
24.8	76.12	85.47	8.86	97.10
26.8	81.19	86.90	9.01	97.84
40.3	97.96	89.85	9.32	99.19
31.2	89.79	86.39	8.96	97.59
24.6	75.53	80.80	8.38	93.44
21.1	63.54	93.89	9.74	99.94
37.3	96.34	75.85	7.87	88.16
30.2	88.06	79.80	8.28	92.53
26.8	81.19	92.51	9.59	99.72

CalEnviroScreen 3.0: Description of Zeros and Missing Values

8035 California Census Tracts are used in the CalEnviroScreen analysis

Indicator	Ozone	PM 2.5	Diesel PM	Pesticides Use	Toxic Releases	Traffic
# of Zeros	0	0	0	5147	17	0
# of NAs	0	19	0	0	0	56

Indicator	Asthma	LBW	CVD	Education	Linguistic isolation	Poverty
# of Zeros	14	10	14	13	292	1
# of NAs	0	222	0	96	242	79

What do indicator raw values of zero and NA mean?

NA or missing raw values:
When an indicator has a missing value ("NA"), it typically means no monitoring or reporting was conducted or
California census tracts because many places do not have an air monitor close enough to reliably estimate air q
There are 11 out of 8035 census tracts that have zero population reported by the U.S. Census. These were assi
educational attainment, linguistic isolation, poverty, and rent-adjusted income indicators were assigned "NA."
Zero raw values:
A value of zero, typically implies that monitoring or reporting was conducted, but no impacts were present. Fo
meters of a populated area of the census tract. For example, 2553 census tracts did not have a Cleanup site wi
a Population Characteristics indicator such as poverty, for example, means people live there but there are no r

What do percentiles of zero and NA mean?

NA or missing percentiles values:
Indicators that include missing values ("NA") are PM 2.5, Traffic, Drinking Water, Low Birth Weight and all soci
contribute to their overall CalEnviroScreen score. For example, if a census tract was missing both and PM2.5 ar
Zero percentile values:
Many census tracts for exposure and environmental effects indicators have a raw value of zero. We do not incl
example, around 64% of census tracts have none of the select pesticides used. If these were used in the perce
percentile value of "0" corresponding to no impact. This means that for the pesticide indicator, 2888 (8035 mi
percentile calculation. The Education indicator has 7926 census tracts in the percentile calculation (8035 minus

Drinking Water	Cleanup sites	Ground-water threats	Hazardous Waste	Impaired Water Bodies	Solid Waste
0	2553	1993	2640	3512	3794
18	0	0	0	0	0

Unemployment	Housing Burden
1	0
155	157

no population was reported within that census tract. For example, ambient air quality measures are
quality in that community.
gned “NA” for all population characteristic indicators. In addition, census tracts with highly unreliabl
These variables are derived from the household data rather than individual level data (see the repor

r many exposure and environmental effects indicators, this means that no facilities or sites were loc
thin 1000 meters of a populated area of the census tract. These census tracts were given a value zer
esidents under the poverty level.

ioeconomic factor indicators. In these cases, missing values were assigned no percentile (given an “N
nd Traffic the denominator of the exposure indicators was adjusted to five instead of seven indicator

lude these census tracts in the percentile calculation, which would give the false impression that an i
ntile calculation, a value of zero would correspond to the 63rd percentile. It is more appropriate to a
nus 5147) census tracts make up the percentile range. Indicators with missing values (“NAs”) are nev
s 13 (zeros values) minus 96 (missing values) = 7926).

e not available for all

e estimates for the
rt for more detail).

ated within 1000
o. Similarly, a zero for

NA”) and did not
rs.

impact is present. For
ssign these places a
ver included in the

RESOLUTION NO. ____________

A RESOLUTION OF THE COUNCIL OF THE CITY OF FRESNO, CALIFORNIA, IN SUPPORT FOR COMMUNITY ENGAGEMENT IN THE SOUTH INDUSTRIAL PRIORITY AREA EIR

WHEREAS, the City has begun work on an Environmental Impact Report (“EIR”) for the development of the South Industrial Priority Area (“SIPA”) Specific Plan (“SP”); and

WHEREAS the SIPA SP’s boundaries are depicted in Figure IM-1 of the 2035 General Plan, a copy of which is attached hereto as Exhibit A; and

WHEREAS, the draft SIPA SP is a compilation of certain policies from existing City plans; and

WHEREAS, the SIPA encompasses and adjoins incorporated and unincorporated residential neighborhoods and communities, as well as elementary schools and religious institutions; and

WHEREAS the neighborhoods and communities within and adjacent to the SIPA are impacted by high levels of poverty and unemployment and a lack of high-quality jobs with opportunities for career advancement; and

WHEREAS, disadvantaged unincorporated communities and neighborhoods located within and adjacent to the SIPA lack basic municipal infrastructure; and

WHEREAS the 2035 General Plan Land Use and Circulation Map applies the Heavy Industrial land use designation to parcels occupied by and adjacent to residential, elementary school, religious, and commercial land uses; and

WHEREAS the City wishes to obtain input from residents who live within and near the SIPA and other key stakeholders to inform development of the specific plan in order to develop a vision, land use changes and policies that: 1) avoid and minimize adverse impacts to existing sensitive land uses from new development and ensure a decent quality of life and a healthy environment for residents of existing neighborhoods and communities within and near the SIPA; 2) As a separate process, study standards and procedures for annexation of existing neighborhoods and communities in and near the SIPA; and 3) facilitate and promote economic development that advances community priorities relating to industry type, employment opportunities, job quality and community benefits.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Fresno as follows:

1. The Mayor and City Council of Fresno desire that the Specific Plan shall strongly consider reductions in the zoning intensity of undeveloped lands near to sensitive uses such as residences, schools and religious institutions; and

2. The Mayor and City Council of Fresno also desire that the plan should consider new land use policies specific to the plan area and environmental mitigation measures reflective of community input; and

3. The City desires that residents and stakeholders in and adjacent to the plan area shall inform the South Industrial Priority Area Specific Plan to the greatest extent feasible, through an inclusive community engagement process including stakeholders and community residents.

* * * * * * * * * * * * * *

STATE OF CALIFORNIA)
COUNTY OF FRESNO) ss.
CITY OF FRESNO)

I, YVONNE SPENCE, City Clerk of the City of Fresno, certify that the foregoing resolution was adopted by the Council of the City of Fresno, at a regular meeting held on the __________ day of ________________ 2019.

AYES :
NOES :
ABSENT :
ABSTAIN :

Mayor Approval: ________________________________, 2019
Mayor Approval/No Return: ________________________, 2019
Mayor Veto: __________________________________, 2019
Council Override Vote: ___________________________, 2019

YVONNE SPENCE, MMC CRM
City Clerk

By: ______________________________
Deputy Date

APPROVED AS TO FORM:
DOUGLAS T. SLOAN
City Attorney

By: ______________________________
Katie Doerr Date
Chief Assistant

LEADERSHIP COUNSEL
FOR
JUSTICE & ACCOUNTABILITY

GOLDEN GATE UNIVERSITY
SCHOOL OF LAW
ENVIRONMENTAL LAW AND JUSTICE CLINIC

May 10, 2021

Sophia Pagoulatos
Planning Manager
Development and Resource Management Department
City of Fresno
2600 Fresno Street, Room 3065
Fresno, CA 93721
Sent via email

RE: City of Fresno General Plan Recirculated Draft Programmatic Environmental Impact Report and Greenhouse Gas Reduction Plan (SCH # 2019050005)

Dear Ms. Pagoulatos:

We are submitting this letter on behalf of South Fresno Community Alliance, Friends of Calwa, and Fresno Building Healthy Communities. Leadership Counsel for Justice and Accountability submitted comments on the Draft PEIR ("DPEIR") on May 5, 2020 ("May 2020 comments"). *See* Fresno General Plan Response to Comments Document, SCH 2019050005, July 2020 ("Response to Comments") at Comment Letter C-3; C-69 to C-123. Shute, Mihaly and Weinberger, LLP submitted additional comments to the City on the DPEIR on Leadership Counsel's behalf on August 19, 2020 ("August 2020 comments"). See Attachment 1, SMW August 2020 Comments. These letters raised serious concerns about the inadequacies of the DPEIR and the consequences of these inadequacies to South Fresno neighborhoods which the General Plan designates for thousands of acres of industrial development.

Despite Leadership Counsel and Shute, Mihaly and Weinberger's efforts to inform the City in detail of the DPEIR's deficiencies and their requests that the City correct these deficiencies and recirculate the corrected DPEIR for public review and comment, the RPEIR makes only minor revisions to three sections of the DPEIR (Air Quality, Greenhouse Gas Emissions, and Transportation) and to DPEIR Appendix G, the Greenhouse Gas Reduction Plan ("GGRP"). These minor revisions fail to correct the DPEIR's deficiencies, including the DPEIR's illegal truncated description of the Project, its inadequate analysis of the Project's significant impacts for a range of impact categories, and its failure to identify enforceable mitigation measures or a reasonable range of alternatives to the Project that will avoid or reduce environmental impacts, among other flaws. As a result, the DPEIR and RPEIR continue to fail to comply with the requirements of the California Environmental Quality Act (CEQA) (Public Resrouces Code sections 2100, *et seq.*), the CEQA Guidelines (California Code of Regulation, title 14 sections 15000, *et seq.*) and the GGRP, which fails to meet the requirements of CEQA Guidelines section 15183.5, cannot be used to support streamlined project-level GHG analysis. Further. the City's continued refusal to disclose and analyze the Project's significant impacts on South Fresno communities and identify mitigation and alternatives that would reduce those impacts conflicts with the City's duties under state and federal fair housing and civil rights laws. *See e.g.,* Government Code §§ 11135, 12900, *et seq.*; 65008, 8899.50; 42 U.S.C. § 2000d, *et seq.*, 3601, *et seq.*, 5304(b)(2)&(s)(7B), & 12075.

This letter describes below the DPEIR and RPEIR's failures to comply with CEQA's requirements and provides the City once again with specific information about revisions the City can make to come into compliance. Leadership Counsel's May 2020 comments and Shute, Mihaly, and Weinberger's August 2020 comments are also hereby incorporated into this letter by reference. Furthermore, we reserve the right to submit additional comments on this matter to the City. We ask that the City revise and recirculate the DPEIR for public review and comment to address the legal deficiencies detailed in this letter. Doing so is both the City's legal obligation and an ethical imperative to ensure that City policy and actions support quality of life, environmental quality, and public health for South Fresno residents.

I. The RPEIR's Flawed Project Description Conflicts with CEQA's Mandate to Review the Impacts of the "Whole of an Action" and Undermines the Entire PEIR

The City's recirculated PEIR fails to correct the PEIR's ill-defined description of the project and its truncated environmental review stemming from that flawed description. As a result, the City has prepared a deficient environmental document that fails to serve its required informational purpose, in violation of CEQA.

An EIR must accurately and consistently describe the project it analyzes. CEQA Guidelines § 15124; Guidelines § 15378 (defining "project"); *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192-3 ("An accurate, stable, and finite project description is the sine qua non of an informative and legally sufficient EIR."). As a result, courts have found that, even if an EIR is adequate in all other respects, the use of a "truncated project concept" violates CEQA and requires the conclusion that the lead agency did not proceed in a manner required by law. *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730. An inaccurate or incomplete project description undermines CEQA's purposes because it thwarts a full analysis of project impacts, thus minimizing the project's effects. *City of Santee v. County of San Diego* (1989) 214 Cal.App.3d 1438, 1454; *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 656. Thus, when an EIR gives "conflicting signals to decision-makers and the public about the nature and scope of the activity being proposed," the courts have found it "fundamentally inadequate and misleading." *San Joaquin Raptor Rescue Center*, 149 Cal.App.4th at 655-56.

As we have critiqued in prior comment letters, the PEIR – and now the RPEIR – has precisely the type of conflicted and confusing project description that CEQA prohibits, and creates uncertainty about the nature of the action under review. Specifically, the RPEIR states that the Project consists of "updating the EIR to include a current baseline for the continued implementation of the General Plan," and that the Project also includes minor edits to the General Plan "to reflect changes in applicable statutes and regulations related to Vehicle Miles Traveled (VMT), . . . changes in City planning documents since adoption of the General Plan in 2014", and "an update to the City's Greenhouse Gas Reduction Plan." RPEIR at 3-2. The RPEIR further explains that in taking these actions "the City is converting the previously-certified MEIR to a PEIR with the goal of extending the life of the environmental document for the General Plan." RPEIR at 3-2.

This description of the Project sows doubt about the scope of environmental impacts, especially those resulting from General Plan implementation, that the RPEIR intends to and does analyze. In describing the RPEIR as a conversion of the General Plan MEIR to a PEIR (RPEIR at 3-2), the City suggests that the RPEIR will serve as a complete, standalone EIR for the City's General Plan. And in explaining why the RPEIR generally uses a 2019 baseline, in contrast to the earlier baseline used in the MEIR, the RPEIR asserts:

> "Baseline conditions other than 2019 would therefore not achieve CEQA's objective of informing the public and decision makers as to the potential impacts of the project compared with the baseline of the physical conditions at the time of publication of the Notice of Preparation. Therefore, if the PEIR used the same baseline as the MEIR, approximately five years of development in physical environmental conditions would not be accounted for and *would not provide an accurate assessment of potential environmental effects that have occurred or would occur through continued implementation of the approved General Plan*." RPEIR at 3-5 (emphasis added).

However, this statement demonstrates the problem in the RPEIR's approach. By including five years of development in the baseline, the RPEIR fails to address these impacts at all—even though that development is part of the General Plan. By characterizing the Project as simply "updating the EIR to include a current baseline for the continued implementation of the General Plan" (RPEIR at 3-2; *see also id.* at 3-5, 4-1) the RPEIR artificially and incorrectly limits the scope of the project subject to environmental review.[1] Given that the City has prepared a new EIR for its General Plan, that EIR must analyze and mitigate all significant environmental impacts associated with the General Plan's implementation. Yet the City takes the position that it need not do so because it adopted the General Plan and because it previously prepared an EIR (i.e. the MEIR) for the General Plan. For example, the RPEIR states:

> "The City is not proposing any land use designation changes as part of the project, and the project will not result in any direct physical changes or new land uses. All previous changes to land use designations since the adoption of the General Plan in 2014 have already been evaluated under CEQA, as applicable, and those changes do not result in any new potential environmental impacts to be considered as part of this project." RDEIR at 3-5.

This position echoes similar statements in the PEIR's Response to Comments that the PEIR need not review impacts from implementation of the General Plan's land use policies, because the City does not propose to amend those policies and because the General Plan has already been adopted. For example, the Response to Comments states:

> "The General Plan, as a whole, is not being considered to be re-adopted. The City is not modifying the City's current land use plan, and the proposed project does not result in any direct physical changes or new land uses. . . . Any previous changes to the land use plan, including General Plan amendments, adoption of Specific Plans, and approval of various projects throughout Fresno, have already been evaluated under CEQA, as applicable, and those changes, by definition do not result in any new potential

---

[1] Notably, the PEIR never clearly defines what "continued implementation of the General Plan" actually means, heightening uncertainty about the EIR's scope.

> environmental impacts to be considered or evaluated as part of the proposed project." Response to Comments at 3-3.

See also Response to Comments, pp. 3-70, 71, 72, 74, 78, 80 (making similar assertions in responding to Leadership Counsel's critiques of the PEIR's failure to adequately analyze or mitigate the General Plan's impacts).

As these statements demonstrate, the City has prepared an EIR that it *admits* does not provide a full portrait of the General Plan's environmental impacts. Moreover, by refusing to consider any changes to the General Plan, the City has undermined one of the key functions of CEQA—to address a project's impacts and determine whether changes or alternatives to the project could reduce those impacts. By taking as a given the level and type of development approved under the General Plan in 2014 and refusing to reconsider any element of the Plan, the RPEIR ignores one of its fundamental purposes under CEQA. The RPEIR then compounds this error with its intention to allow other projects and plans to tier from it for their own environmental review.

In describing the Project as "continued implementation of the approved General Plan," and picking and choosing which impacts of General Plan implementation to review, the RPEIR fails to describe the whole of the action. A fundamental premise of CEQA is that a lead agency must consider the environmental impacts of the whole of the action being approved, not segmented pieces. CEQA Guidelines § 15378(a) (defining "project"). CEQA prohibits segmentation of a project. *See Tuolumne County Citizens for Responsible Growth, Inc. v. City of Sonora* (2007) 155 Cal.App.4th 1214, 1229 ("when one activity is an integral part of another activity, the combined activities are within the scope of the same CEQA project" and must be analyzed together); Guidelines § 15378(a) ("'Project' means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."); *see also* CEQA Guidelines § 15378(c) (term "project" means the whole of the "activity which is being approved"). Because the statute requires study of "the whole of an action," CEQA prohibits public agencies from "subdivid[ing] a single project into smaller individual subprojects in order to avoid the responsibility of considering the environmental impact of the project as a whole." *Orinda Assn. v. Bd. of Supervisors* (1986) 182 Cal.App.3d 1145, 1171. Breaking the project into smaller sub-projects will lead to inadequate environmental review. See, e.g., *City of Santee v. County of San Diego* (1989) 214 Cal.App.3d 1438, 1452 (citation omitted) (CEQA "mandates 'that environmental considerations do not become submerged by chopping a large project into many little ones'" which, individually, may have lesser environmental effects but which together may be "disastrous.").

Here, the "whole of the action" includes all of the development permitted under the General Plan. However, the RPEIR, by proposing to only review the adopted General Plan's "continued implementation," has effectively segmented the review of the General Plan into two projects—the first five years of development under the General Plan, which have now been subsumed into the baseline, and the next 15 years of development that fall under the Plan's planning horizon. At the same time, however, the City refuses to consider any changes to the General Plan itself that could address its significant impacts. Instead, the General Plan will continue to be implemented as previously approved, but the City has truncated its review such that it avoids the obligation to ensure the impacts of the project as a whole are addressed. Nor does the City consider any alternatives that even attempt to reduce any of the significant and unavoidable impacts identified in the RPEIR. For example, the RPEIR evaluates a net zero energy alternative for commercial buildings that would reduce GHG and energy impacts—impacts that the RPEIR already finds (incorrectly) less than significant, but ignores alternatives—such as a low VMT alternative—that would address potentially significant impacts.

This results in an incomplete and inaccurate impacts analysis that significantly underestimates the impacts of General Plan implementation. The RPEIR must be revised to evaluate the full scope of development permitted under the General Plan. If it does not do so, the must define an actual project for review and subject it to the review CEQA requires, including consideration of alternatives and mitigation measures that could reduce the project's impacts, as well as a complete assessment of the impacts of the full scope development permitted by the project.

II. General Comments

The following are our general comments on the legal inadequacies of the PEIR. More specific comments on individual sections of the document follow.

A. The DPEIR and RPEIR Improperly Attempt to Avoid Analysis and Mitigation of the General Plan's Impacts by Concluding That They Are Significant and Unavoidable

Where all available and feasible mitigation measures have been proposed, but are inadequate to reduce an environmental impact to a less-than-significant level, an EIR may conclude that the impact is significant and unavoidable. See CEQA Guidelines § 15126.2. If supported by substantial evidence, the lead agency may make findings of overriding considerations and approve the project in spite of its significant and unavoidable impacts. Id. at §§ 15091, 15093. However, the lead agency cannot simply conclude that an impact is significant and unavoidable and move on. A conclusion of residual significance does not excuse the agency from (1) performing a thorough evaluation and description of the impact and its severity before and after mitigation, and (2) proposing all feasible mitigation to "substantially lessen the significant environmental effect." CEQA Guidelines § 15091(a)(1); *see also id.* § 15126.2(b) (requiring an EIR to discuss "any significant impacts, including those which can be mitigated but not reduced to a level of insignificance" (emphasis added). "A mitigation measure may reduce or minimize a significant impact without avoiding the impact entirely." 1 Stephen Kostka & Michael Zischke, Practice Under the California Environmental Quality Act § 14.6 (2d ed. 2008).

The PEIR finds that the City's plans for future growth and development as set out in the General Plan will result in significant and unavoidable impacts in multiple topic areas. Draft PEIR at 1-9 to 1-46. As detailed below, in numerous instances, the PEIR fails to thoroughly assess impacts deemed to be significant and unavoidable and/or fails to identify all feasible mitigation measures to reduce the severity of the impacts.

B. The PEIR Fails to Analyze the Impacts of All Development That Could Occur as a Result of Buildout under the General Plan.

The General Plan acknowledges the harmful effects of unrestricted growth in the City, including increased reliance on personal automobile use and the inability to provide efficient public transit service to new development, which leads to increased air pollution and greenhouse gas emissions. General Plan, pp. 3-6, 3-7, and 7-7. Yet, the General Plan proposes land use policies that fail to limit development in future growth areas. Specifically, the General Plan includes objectives and policies that address growth by "promoting" development in certain parts of the City. (See, e.g., Objective UF-12 directing the City to locate roughly one half of future residential development in infill areas; and PEIR at 4.3-28 emphasis added.) However, the General Plan is unclear regarding the definitions for terms such as "roughly" and "approximately" as applied in the Plan. Specifically, the General Plan states that use of these terms is intended to be flexible so that depending on context, a reference to "approximately one-half" could vary at least 10 to 15 percent and use of the term "roughly" could include twice that amount or more. General Plan at 1-30. These vague definitions have important implications when applied to planning policy.

For example, General Objective UF-12 directs the City to locate "roughly one half" of future residential development in infill areas. But given the General Plan's flexible definition of the word "roughly," anywhere from 20 percent to over 80 percent of future development could occur in infill areas. General Plan at 1-28 and 1-29. Such "infill" developments in the city have included several sprawl developments, including city islands, east of Highway 180 bordering Clovis and west of Highway 99. However, the DPEIR presents only one set of estimates for the amount of anticipated development at build-out. See DPEIR Table 3-3. Thus, the DPEIR fails to disclose its assumptions for the amount of infill used (i.e., 20 percent, 50 percent, or 80 percent of development in infill areas at build-out) for the analyses of the Project's environmental impacts. Given that the Plan allows a broad range of development to occur outside of infill areas, the PEIR must evaluate potential impacts that would occur if only 20 percent of anticipated future development were to take place in identified infill areas, or better yet, revise General Objective UF-12 to ensure the majority of future development occurs in infill areas and define infill areas with sufficient precision to promote reduced automobile travel. If the majority of Project-related growth takes place outside the identified infill areas, Project impacts related to transportation, air quality and greenhouse gases would be much worse than the DPEIR indicates. These impacts would be even more severe in disadvantaged communities that are already over-burdened with pollution and inadequate access to transit.

C. The DPEIR Ignores Feasible Mitigation, Such as Changes to the Land Use Designations and Densities and Intensities Proposed in the General Plan

For several of the General Plan's significant and unavoidable impacts, notably the Project's significant impacts related to greenhouse gas emissions, the DPEIR fails to consider all feasible mitigation. The DPEIR never considers changes to land use designations or densities and intensities as potential mitigation even though such changes could significantly reduce greenhouse gas emissions and other significant impacts disclosed in the DPEIR. CEQA requires the EIR to consider such mitigation.

The City cannot approve projects with significant environmental impacts if any feasible mitigation measure or alternative is available that will substantially lessen the severity of any impact. Pub. Res. Code § 21002; CEQA Guidelines § 15126(a). The City is legally required to mitigate or avoid the significant impacts of the projects it approves whenever it is feasible to do so. Pub. Res. Code § 21002.1(b). "In the case of the adoption of a plan, policy, regulation, or other public project [such as the General Plan], mitigation measures can be incorporated into the plan, policy, regulation, or project design." CEQA Guidelines § 15126.4(a)(2). Mitigation is defined by CEQA to include "[m]inimizing impacts by limiting the degree or magnitude of the action and its implementation." CEQA Guidelines § 15370(b). In addition to proposing new "policies" as mitigation, mitigation should include changes in where development is planned, what kind is planned, and how dense or intense that development is planned to be, i.e., changes to the land use diagram and land use designations.

There is no indication that the DPEIR considered modifications to land use designations or densities and intensities to mitigate the impacts of the General Plan. This omission is surprising given that those changes are the easiest, most effective, and most obvious ways to lessen or avoid many of the General Plan's impacts. For example, the Plan has resulted, and will continue to result in, locating a substantial amount of new industrial uses in close proximity to existing and proposed residential areas. DPEIR at Figure 3-5 Growth Areas; General Plan Implementation Element Figure IM-2. This will in turn result in increased exposure of sensitive receptors, especially disadvantaged communities, to substantial pollutant concentrations. DPEIR at 4.3-57 and 58. As explained in previous comments, exploring alternative land use scenarios would go a long way toward reducing numerous significant General Plan impacts identified in the DPEIR, and with the MEIR before it, such as air quality, public health, climate change, traffic, and noise.

D. The PEIR Cannot Rely on Unenforceable and Noncommittal General Plan Policies to Mitigate the Project's Significant Impacts

Mitigation measures proposed in an EIR must be "fully enforceable" through permit conditions, agreements, or other legally binding instruments. Pub. Res. Code §

21081.6(b); CEQA Guidelines § 15126.4(a)(2). The PEIR relies on a number of General Plan policies to mitigate significant environmental impacts. See, for example, DPEIR at 4.3-47, 4.3-55, 4.3-59. Many of these General Plan policies and programs are vague, optional, directory, or otherwise unenforceable.

For example, the Plan fails to provide enforceable policies that direct orderly growth. Instead, the Plan includes policies that call for "promoting" development in certain parts of the City. See, e.g., Policy LU-1-a (directing the City to promote development within the existing City Limits and in infill areas); Policy LU-1-c (directing the City to promote order land use development in pace with public facilities and services needed to serve development) (emphasis added). These vague and unenforceable policies fail to describe how the City will promote and enforce an orderly growth process and fail to ensure that infill development will occur prior to development in the Growth Areas. General Plan Implementation Element at 12-30.

A other examples of ineffective mitigation—out of numerous instances—include the following (emphases added):

- Policy RC-8-c: Energy Conservation in New Development. Consider providing an incentive program for new buildings that exceeds California Energy Code requirements by fifteen percent. Draft PEIR at 4.3-33.
- Policy RC-8-j: Alternative Fuel Network. Support the development of a network of integrated charging and alternate fuel stations for both public and private vehicles, and if feasible, open up municipal stations to the public as part of network development. Id. at 4.3-34.
- Policy LU-2-b: Infill Development for Affordable Housing. Consider a priority infill incentive program for residential infill development of existing vacant lots and underutilized sites within the City limits as a strategy to help to meet the affordable housing needs of the community. Id. at 4.6-15.
- Policy LU-6-b: Consider adopting commercial development guidelines to assure high quality design and site planning for large commercial developments, consistent with the Urban Form policies of this Plan. Id. at 4.6-16.
- Policy LU-1-e: Annexation Requirements. Consider implementing policies and requirements that achieve annexations to the City that conform to the General Plan Land Use Designations and open space and park system, and are revenue neutral and cover all costs for public infrastructure, public facilities, and public services on an ongoing basis. *Id.* at 4.10-10.
- Policy LU-2-a: Infill Development and Redevelopment. Promote development of vacant, underdeveloped, and redevelopable land within the City Limits where urban services are available by considering the establishment and implementation of supportive regulations and programs. *Id.* at 4.11-11.
- Policy D-4-b: Incentives for Pedestrian-Oriented Anchor Retail. Consider adopting and implementing incentives for new pedestrian-friendly anchor retail at

intersections within Activity Centers and along corridors to attract retail clientele and maximize foot traffic. Id. at 4.6-17.

- Policy D-4-f: Design Compatibility with Residential Uses. Strive to ensure that all new nonresidential land uses are developed and maintained in a manner complementary to and compatible with adjacent residential land uses, to minimize interface problems with the surrounding environment and to be compatible with public facilities and services. Id. at 4.1-10 and 11.

A general plan's goals and policies are necessarily general and aspirational. The City may rely on such policies to mitigate environmental impacts under CEQA, however, only if they will be implemented through specific implementation programs that represent a firm, enforceable commitment to mitigate. *See Napa Citizens for Honest Gov't v. Napa County Bd. of Supervisors* (2001) 91 Cal.App.4th 342, 358 (citing *Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4th 351, 377). CEQA requires that mitigation measures actually be implemented—not merely adopted and then disregarded. *Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173, 1186-87; *Fed'n of Hillside & Canyon Ass'ns v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261.

Here, the General Plan's vague, unenforceable, and noncommittal policies and programs (and policies for which no implementation programs are identified) allow the City to take no action and thus fail to mitigate impacts. As a result, the PEIR cannot ensure that the policies relied on as mitigation measures will ever in fact be implemented. Therefore, they cannot serve as CEQA mitigation. *See Anderson First,* 130 Cal.App.4th at 1186-87.

III. The RPEIR's Analysis of and Mitigation for the General Plan's Transportation Impacts is Factually and Legally Deficient

Leadership Counsel's May 2020 comments and Shute, Mihaly & Weinberger's August 2020 comments alerted the City to deficiencies in the Draft PEIR's and Final PEIR's analysis of the General Plan's transportation impacts, relating both to VMT and impacts on pedestrians, cyclists, and transit riders. Despite recirculating the transportation section of the EIR, the RPEIR's transportation analysis suffers from many of the same flaws as the earlier documents. The RPEIR must be remedied if the public and decisionmakers are to fully understand the General Plan's potential effects.

A. The RPEIR Fails to Adequately Analyze Impacts Relating to Conflicts with Programs and Policies Addressing Transit, Bicycle and Pedestrian Facilities

The RPEIR relies on CEQA's Appendix G's thresholds of significance. To this end, the RPEIR determines that implementation of the approved General Plan would result in a significant impact related to transportation if it would conflict with a program, plan, ordinance or policy addressing the circulation system including transit, roadway, bicycle and pedestrian facilities. RPEIR at 4.16-36. Unfortunately, the RPEIR fails entirely to analyze how implementation of the General Plan would affect programs, plans, ordinances, and policies pertaining to bicycles, pedestrians and transit.

The RPEIR focuses exclusively on the adopted General Plan's conflict with auto-based policies (i.e., policies intended to ensure efficient operations of roadways and intersections). *See e.g*., RPEIR pp. 4.16-38 through 4.16-41 discussing how General Plan implementation conflicts with the General Plan Mobility and Transportation Element's policies intended to reduce traffic congestion. While the General Plan's Mobility and Transportation Element contains numerous policies and objectives intended to ensure that development does not adversely impact travel by pedestrian and bicycles, the RPEIR makes no attempt to determine whether the growth and development contemplated by implementation of the General Plan would be inconsistent with these policies and objectives.

For example, several General Plan policies and objectives call for planning for "complete streets," improving quality of life, implementing traffic calming measures, redesigning streets to support non-automobile travel modes, prioritizing bikeway improvements, retrofitting streets to improve bicycle and pedestrian safety, and taking measures to minimize vehicular and pedestrian conflicts. *See* RPEIR at 4.16-21 through 4.16-29 (citing Plan policies MT-1-e: Ensure Interconnectivity Across Land Use, MT-1-f: Match Travel Demand with Transportation Facilities, GP Policy MT-1-g: Complete Streets Concept Implementation, Policy MT-1-i: Local Street standards, Policy MT-2-d: Street Redesign where Excess Capacity Exist, Policy MT-2-g: Transportation Demand Management and Transportation System Management; Objective MT-4, MT-4-b: Bikeway Improvements; MT-5-b: Sidewalk Requirements, and Policy MT-2-d: Street Redesign where Excess Capacity Exist). All of these policies and objectives are intended to reduce travel by automobile and promote walking and bicycling. Yet implementation of the General Plan would result in a substantial increase in VMT and traffic congestion (as evidenced by the increase in number of intersections operating at deficient LOS levels) and thus would be directly at odds with these important General Plan policies and objectives. But the RPEIR omits any analysis of these conflicts. Consequently, the City is not only in violation of CEQA for not analyzing these inconsistencies, it is also missing a critical opportunity to promote alternative modes of travel. Moreover, the conflicts that General Plan implementation would create with these General Plan policies and objectives constitutes a significant impact. *See* RPEIR at 4.16-36 (the project would have a significant impact related to transportation if it would "[c]conflict with a program, plan, ordinance or policy addressing the circulation system including transit, roadway, bicycle and pedestrian facilities.")

The RPEIR also fails to acknowledge that General Plan implementation would be clearly inconsistent with policies in the Mobility and Transportation Element that call for reducing VMT. For example, Policy MT-2-b: Reduce Vehicle Miles Traveled and Trips and Policy MT-2-c: Reduce VMT through Infill Development (pp. 4.16-2- through 4.16-24) call for implementing various strategies to reduce VMT including through the provision of incentives for infill development. Because the General Plan would result in a substantial increase in VMT, it would be clearly inconsistent with these policies. The RPEIR's failure to acknowledge the General Plan's inconsistency with these policies is another serious flaw and this inconsistency constitutes a significant impact.

Finally, the RPEIR fails to analyze how General Plan implementation would conflict with applicable transit policies. Here, the RPEIR errs in two ways. First, it does not analyze the General Plan's inconsistency with the multiple policies calling for the City to increase public transit (e.g., General Plan Policy MT-8-b: Transit Serving Residential and Employment Nodes, Policy MT-8-c: New Development Facilitating Transit, and Policy MT-8-j: Transit Services, Policy MT-9-c: Addressing Unmet Transit Needs, Policy MT-9-e: Area Specific Transit Improvements). *See* RPEIR at 4.16-32 through 4.16-35. Here too, the RPEIR focuses exclusively on analyzing how the General Plan may conflict with auto-oriented policies and ignores altogether the General Plan's potential to conflict the transit-oriented General Plan policies and objectives.

Second, the RPEIR omits any analysis of how growth resulting from implementation of the General Plan would affect local and regional transit service. The City operates Fresno Area Express (FAX) which operates 17 fixed-route buses, including paratransit services. RPEIR at 4.16-7. The RPEIR fails to provide any information about existing local and regional transit service and does not disclose how growth resulting from General Plan implementation would affect transit service. Buildout of the General Plan could increase transit demand potentially causing overcrowding of buses and the potential for drivers to pass-up waiting passengers. The addition of vehicle traffic generated by the General Plan could also increase bus delay, reduce the ability of FAX to meet its on-time performance and schedule goals, and increased pedestrian safety risks. This could cause people to switch to using private vehicles, increasing the low-occupancy vehicle share of trips causing secondary safety impacts from the increased number of motor vehicles on city streets.

The RPEIR must be revised to evaluate how growth from General Plan implementation would affect the City's bicycle, pedestrian and transit's plans, programs and policies. The revised document must begin this evaluation by estimating existing mode share (e.g., the number of people walking, biking, taking transit, and driving) and then disclose mode share upon build out under the General Plan. Then the RPEIR must also identify any specific bike, pedestrian and transit projects that would be implemented as a result of the General Plan. Finally, the revised RPEIR must identify mitigation for pedestrian, bicycle and transit related impacts.

B. The RPEIR Fails to Adequately Analyze Impacts Relating to VMT and Lacks Support for Its Conclusion That Impacts Relating to VMT Would Be Less than Significant

The RPEIR's analysis of the General Plan's effect on VMT is deficient because it fails to document its assumptions relating to existing and General Plan-related VMT, and because it lacks support for its conclusion that the General Plan's VMT-related impacts would be less than significant.

The RPEIR identifies existing (2019) VMT and VMT under the General Plan in 2035. *See* Table 4.16-B: County and City of Fresno VMT, Draft PEIR at 4.16-43. However, it is not sufficient to simply identify these numbers without providing information about how the RPEIR arrived at these estimates. Meaningful analysis of impacts effectuates one of CEQA's fundamental purposes: to "inform the public and responsible officials of the environmental consequences of their decisions before they are made." *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1993) 6 Cal.4th 1112, 1123. To accomplish this purpose, an EIR must contain facts and analysis, not just an agency's bare conclusions. *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 568. An EIR's conclusions must be supported by substantial evidence. *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1988) 47 Cal.3d 376, 409.

As transportation engineer Neal Liddicoat with Griffin Cove Transportation Consulting ("GCTC") explained in his comments on the Draft PEIR, the brevity of the VMT discussion in the PEIR is a function of the "black box" analysis procedure involved. *See* GCTC Report, August 7, 2020, Attachment 2, p. 1. The RPEIR employs precisely the same approach as the Draft PEIR, and suffers from precisely the same flaws, and his comments are therefore equally applicable to the RPEIR. The RPEIR's VMT analysis was completed entirely within the Fresno Council of Governments Regional Travel Demand Model (also referred to as the "Activity-Based Model"). As such, the background assumptions and detailed analysis steps are unknown and it is impossible for the public and decisionmakers to determine whether the VMT estimates are accurate. *Id*. This error is particularly serious because Neal Liddicoat also informed the City of this precise problem in his 2014 comments on the MEIR's transportation analysis. *See* Letter from N. Liddicoat, MRO Engineers to C. Borg, Shute, Mihaly & Weinberger, LLP, September 10, 2014, p. 5, Attachment 3 to this letter: "No information is provided in the DMEIR with regard to the specific input parameters that were used in developing the theoretical thresholds applied in the LOS analysis, whether for freeways or any of the other roadway types presented. Consequently, it is impossible to judge whether the analysis is credible and, moreover, whether the LOS results are valid.").

The RPEIR errs further because it fails to identify mitigation for the significant increase in VMT that would result from implementation of the General Plan. Rather than provide meaningful mitigation for this impact, the RPEIR generally refers to VMT mitigation measures and project alternatives purportedly contained within the City's Guidelines for VMT Thresholds. RPEIR at 4.16-44. The RPEIR does not bother to specifically identify these mitigation measures. Instead the RPEIR simply concludes that VMT-related impacts would be significant and unavoidable. RPEIR at 4.16-44. The RPEIR's lackluster approach to impact analysis and mitigation violates CEQA. A lead agency cannot simply conclude that an impact is significant and unavoidable and move on. A conclusion of residual significance does not excuse the agency from (1) performing a thorough evaluation and description of the impact and its severity before and after mitigation, and (2) proposing all feasible mitigation to "substantially lessen the significant environmental effect." CEQA Guidelines § 15091(a)(1); *see also id.* § 15126.2(b) (requiring an EIR to discuss "any significant impacts, including those which can be mitigated but not reduced to a level of insignificance" (emphasis added). Consequently, the City must consider feasible mitigation measures in a revised and recirculated RPEIR.

The City's CEQA Guidelines for VMT thresholds, adopted June 2020, are an important first step as they set forth measures that, if revised to be more specific and enforceable, could potentially reduce vehicular travel associated with buildout of the General Plan. Indeed, the Guidelines concede that the measures provided in the Guidelines are mere summaries of measures. The Guidelines do nothing more than direct the reader to the "original source" for details and subsequent updates to the mitigation measures. Fresno VMT Guidelines at 42. The City must take the general measures identified in the Guidelines and refine them so that they are able to reduce the General Plan's significant VMT impacts. For example, the revised RPEIR must identify feasible, specific, and efficacious mitigation measures for the following categories:

- Public transportation: expand the City's public transportation network, increase capacity on transit lines, and increase the frequency of transit service; require development to subsidize public transit service upgrades; and require development to provide transit passes;

- Shuttle service: require development to implement shuttle service to reduce motor vehicle trips;
- Electric infrastructure: increase electric vehicle infrastructure (e.g., charging equipment) beyond the levels identified in the General Plan;
- Bicycle and pedestrian: improve pedestrian and bicycle networks; require development to provide bike parking in non-residential projects; and,
- Parking management: limit or eliminate parking supply; unbundle parking costs from property costs.

C. The PEIR Fails to Analyze or Mitigate Significant Impacts on Pedestrians, Cyclists, and Transit Riders

The PEIR does not evaluate the significant impacts on pedestrians, cyclists, and public transit riders that will be caused by increased vehicle miles traveled (VMT) under the General Plan. The PEIR concludes that VMT will increase substantially from the General Plan's implementation. *See* PEIR at 4.16-41. The PEIR acknowledges that this VMT increase will "result in a significant impact [under CEQA]." *Id.* at 4.16-44. As transportation engineer Neal Liddicoat with Griffin Cove Transportation Consulting ("GCTC") explains in his comments on the RPEIR, the RPEIR fails to adequately analyze the General Plan's impact on pedestrians, cyclists, and transit riders. *See* GCTC Report, May 7, 2021, Attachment 4, p. 1. Although the General Plan places a heavy emphasis on the on the importance of pedestrian and bicycle travel in Fresno's future, the RPEIR transportation analysis largely ignores these non-motorized travel modes. *Id.* at 3.

The PEIR's failure to analyze impacts on pedestrians, cyclists and transit riders violates CEQA. CEQA requires the City to evaluate the General Plan's traffic safety impacts on pedestrians, cyclists, and transit riders. *See City of Maywood v. Los Angeles Unified Sch. Dist.,* (2012) 208 Cal. App. 4th 362, 392-95 (holding EIR was inadequate because it failed to analyze and mitigate project impacts on pedestrians). The City must also identify and adopt feasible mitigation measures to reduce those impacts if feasible. Pub. Res. Code § 21083(b)(2); CEQA Guidelines § 15064(h)(1)). Here, however, the PEIR states explicitly that it "does not consider potential impacts on walking, biking, and transit. Pedestrians, bicyclists, transit riders are all users of the roadway system but may not be fully recognized in the traffic operations analysis and the calculation of LOS." PEIR at 4.16-4. It is an understatement to say that the impacts on pedestrians and bicyclists "may not be fully recognized" in the LOS analysis. GCTC Report, at 3. In fact, the impacts on those vulnerable transportation system users have been completely ignored in the RPEIR, as well as in the technical report provided in Appendix J. *Id.* Nor does the PEIR identify any feasible mitigation measures to address the potentially significant VMT impacts. The City's failure here "precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." *Ass'n of Irritated Residents v. Cty. of Madera* (2003) 107 Cal. App. 4th 1383, 1391.

The failure to address pedestrian safety is particularly concerning given recent trends in pedestrian fatalities. GCTC Report at 5-6 & Tables 2 & 3. VMT increases are concomitant with increased traffic fatality rates. *See* Hamed Ahangari, et al., *Automobile-dependency as a barrier to vision zero, evidence from the states in the USA*, ACCIDENT ANALYSIS & PREVENTION, Vol.

107 (2017), at 77-85[2]. The fatalities and other negative impacts caused by increased VMT are not limited to motorists; increases in vehicle travel negatively affect pedestrians, cyclists, and many transit users. *See* Governor's Office of Planning and Research, *Technical Advisory: On Evaluating Transportation Impacts in CEQA* (December 2018), at 7.[3] Again, pedestrians and bicyclists are vulnerable users of the transportation system, as they are not protected by thousands of pounds of vehicular structure, airbags, and other such safety devices. GCTC Report at 7. In 2018, 64 percent of deadly vehicle collisions in Fresno involved pedestrians.[4] Pedestrians are 1.5 times more likely than passenger vehicle occupants to be killed in a car crash. GCTC Report at 7. In California, more than one quarter of people killed in motor vehicle collisions are pedestrians, bicyclists, or users of other non-motorized modes. Fang, et al., *Cutting Greenhouse Gas Emissions Is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled*, U.C. DAVIS WHITE PAPER (March 2017).[5]

Although VMT increases are directly related to pedestrian and cyclist deaths and negative impacts on residents that rely on public transportation, the RPEIR does not analyze or attempt to mitigate these impacts. The PEIR lists certain General Plan policies relating to walking, biking, and public transportation. *See* GCTC Report at 4. The RPEIR also discusses the City's Active Transportation Plan—a plan which was adopted after the General Plan and which is not a component thereof. However, the RPEIR does not include any discussion of how the General Plan itself might impact pedestrians, cyclists, or public transit users, and to what extent the policies identified affect the impacts. *See id.* Indeed, the impacts on pedestrians and bicyclists are not addressed within the RPEIR in terms of either system operational capacity (i.e., will the City be able to accommodate the demand for these non-motorized travel modes?) or, more importantly, safety GCTC Report at 4. This failure does not satisfy CEQA's informational mandate.

The RPEIR's failure to address these impacts is particularly concerning because increased VMT raises environmental justice concerns. Increased VMT will cause impacts on residents of lower-income neighborhoods and neighborhoods of color in South Fresno, which disproportionately rely on active transportation and public transit. *See* City of Fresno, Active Transportation Plan, at Figure 37.[6] These neighborhoods also lack basic infrastructure (e.g., sidewalks, streetlights, crosswalks, storm water drainage) to accommodate walking and biking safely. *See, e.g.* General Plan at 4-16 & 3-66 to 3-68. For instance, the route that many schoolchildren take to Orange Center Elementary School lacks sidewalks, stormwater drainage, safety installations and even a crosswalk on East Central Avenue, which is a primary route for truck traffic.

These disproportionate impacts are exacerbated by the General Plan's designation of these same neighborhoods for heavy industrial and warehouse development—which the RPEIR

---

[2] Available at https://blinktag.com/induced-travel-calculator/downloads/20180413-Automobile_dependency_as_a_barrier_to_vision_zero_evidence_from_the_states.pdf

[3] Available at http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

[4] https://www.yourcentralvalley.com/news/64-percent-of-fresnos-deadly-collisions-are-vehicle-vs-pedestrian-ones-police-say/

[5] Available at https://ncst.ucdavis.edu/project/cutting-greenhouse-gas-emissions-only-beginning-literature-review-co-benefits-reducing

[6] Available at https://www.fresno.gov/publicworks/wp-content/uploads/sites/17/2016/09/170022FresnoATPFinal012017.pdf

acknowledges generate significant truck and car traffic. Pedestrians and bicyclists are often vulnerable users of the transportation system. GCTC Report at 4-5. They operate within a system that has traditionally focused on the needs of motor vehicles weighing thousands of pounds, many of which are operated by drivers who are increasingly distracted by cell phones and unnecessarily complicated automotive infotainment systems. *Id.* This vulnerability will be exacerbated by the future warehouse (and other industrial facility) projects contemplated by the General Plan. For instance, a recently approved warehouse in the North Pointe Business Park in South Fresno will generate more than 3,000 vehicle trips a day, or 1.1 million trips a year. *See* Urban Crossroads, *Northpointe Building 31 Trip Generation and Impact Assessment* (November 2020) p. 4, Attachment 5. This is only one of several warehouses generating thousands of trips every day in South Fresno. In fact, the City has approved over more than at least 2.8 million square feet of warehouse development since the General Plan was approval and more than 5 million square feet since 2012. *See* Attorney General Letter to City's Director of Development and Resource Management, *Re: City of Fresno's South Industrial Priority Area Specific Plan* (August 2, 2019) at 10[7]; Footnote 48, p. 63. Pedestrians and cyclists forced to share the road with intensive truck and car traffic will be impacted by the air pollution, noise, and vibration generated by that traffic and the safety hazard of walking and biking on roads shared by trucks without sidewalks, crosswalks, speed bumps, or other protective measures.

Furthermore, the RPEIR incorrectly concludes that there are no feasible mitigation measures for reducing increased VMT impacts. The City cannot approve projects with significant environmental impacts if any feasible mitigation measure or alternative is available that will substantially reduce the project's effects. *See* Pub. Res. Code § 21002; CEQA Guidelines § 15126(a). Significant impacts must be mitigated when it is feasible to do so. Pub. Res. Code § 21002.1(b); *Covington v. Great Basin Unified Air Pollution Control Dist.* (2019) 43 Cal.App.5th 867, 879. A feasible mitigation measure is one that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, legal, and technological factors. Pub. Res. Code § 21061.1; CEQA Guidelines § 15364; *Covington* (2019) 43 Cal.App.5th at 878. The City's conclusion that there are no feasible mitigation measures for VMT impacts is without merit.

The City's determination that there are no feasible mitigation measures is based on the RPEIR's cursory observation that "mitigation would be limited to re-designating the affected arterials to a higher classification, creating a new General Plan LOS goal, widening the roads, or identifying the infeasibility of acquiring the affected right-of-way and implementing road widening." RPEIR at 4.16-41. However, the RPEIR fails to conduct the required feasibility analysis. *See* Pub. Res. Code § 21061.1; CEQA Guidelines § 15364. In fact, there are potentially feasible mitigation measures here. For instance, the California Air Resources Board has made many suggestions for mitigating VMT impacts—such as providing more public transportation options and investing in disadvantaged communities.[8] [9] Similarly, the Governor's Office of Planning and Research has found that "data from the past two decades shows that

---

[7] Available at https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/comments-fresno-south-industrial-priority-area-specific-plan-08-02-2019.pdf.

[8] CARB 2017 Scoping Plan Identified VMT Reductions and Relation to State Climate Goals (January 2019), https://ww2.arb.ca.gov/sites/default/files/2019-01/2017_sp_vmt_reductions_jan19.pdf.

[9] CARB Staff Presentation, Interface Between Air Quality, Climate Change, and Transportation (June 27, 2018), https://ww3.arb.ca.gov/board/books/2018/062718/carbstaffpres.pdf?_ga=2.203024280.884607571.1530222910-1119340360.1463155559.

economic growth is possible without a concomitant increase in VMT." *See* OPR, *Technical Advisory,* at 3. The RPEIR inexplicably disregards these potentially feasible mitigation measures to reduce significant VMT impacts on pedestrians, cyclists, and public transit users.

It is critically important that the potential safety impacts associated with continued implementation of the Fresno General Plan be adequately addressed. GCTC Report at 7. As currently presented, that is not the case. *Id.* The RPEIR should consider, at a minimum, the following potentially feasible mitigation measures:

- Rezoning industrial zoned land on streets where residences are located and on routes to schools to reduce truck traffic;
- Investing in sidewalks, streetlights, crosswalks, transit stops, bicycle lanes, speed bumps and other pedestrian safety infrastructure on heavily travelled routes. (Active transportation infrastructure should be on both sides of the street, not just the side of development projects, which is all the City currently requires.)

IV. The RPEIR Fails to Adequately Analyze and Mitigate the Project's Air Quality Impacts

The City of Fresno and the surrounding San Joaquin Valley Air Basin suffer from some of the nation's worst air pollution. In its 2020 State of the Air Report, the American Lung Association graded the Fresno-Madera-Hanford Metropolitan Area as the city with the worst short-term air pollution (24-hour PM2.5) the nation. pp. 8, 20. The State of the Air Report also ranked the Fresno Metropolitan area the second worst city for annual particle pollution and the fourth most ozone polluted city.[10] ALA, State of the Air Report, pp. 9, 21, 22. All Fresno residents are impacted by the region's poor air quality, but vulnerable populations, including people of color, low-income residents, children, and people with underlying health conditions, face heightened health risks. *Id.* pp. 20, 21, 37, 66. And South Fresno neighborhoods, where the General Plan concentrates industrial and warehouse land uses, are disproportionately exposed to concentrated air emissions generated by these facilities.

It is therefore imperative that the RPEIR provide an accurate assessment of the Project's potential to further degrade air quality and the impact of air emissions on vulnerable residents and identify and adopt all feasible mitigation measures to minimize those impacts. Nevertheless, the RPEIR omits critical information that is necessary to allow the public and decision-makers to understand the nature or magnitude of its impacts and fails to identify enforceable mitigation measures to reduce those impacts.

1. The RPEIR Fails to Adequately Describe the Existing Setting by Failing to Acknowledge the Location of Existing Sensitive Receptors and Their Vulnerability to Air Pollution Exposure

The General Plan designates approximately 5,000 acres of land in Southwest, South Central, and South East Fresno for industrial and warehouse development, including land currently occupied by residences and places of worship and on land surrounding schools and

---

[10] Available at http://www.stateoftheair.org/assets/SOTA-2020.pdf, access on May 6, 2021.

other sensitive receptors. The Plan also allows excessive vehicle traffic serving this planned industrial and warehouse development to use roadways, such as East Central Avenue and Jensen Avenue, which are lined with occupied housing. Despite the General Plan's policies to encircle and replace neighborhoods with development responsible for significant quantities of criteria and toxic air pollutants, the RPEIR includes no description about the location of existing sensitive receptors which may be exposed to air pollution as a result of the Project. In fact, the RPEIR's discussion of sensitive receptors is limited to a definition of the term "sensitive receptors" and the acknowledgement that "There are many sensitive receptors throughout the city of Fresno." RPEIR, p. 4.3-8.

This omission renders the EIR inadequate. An EIR's description of the environmental setting must be contain sufficient information to "permit the significant effects of the project to be considered in the full environmental context." CEQA Guidelines, § 15125(c). "If the description of the environmental setting 'is inaccurate, incomplete or misleading, the EIR does not comply with CEQA.'" *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 17 Cal.App.5th 413, 439. An accurate description of the environmental setting is critical, because the significance of an activity may vary with the setting. CEQA Guidelines, § 15064(b). A "project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718, 721; CEQA Guidelines, § 15300.2(a)). The RPEIR should identify the location of sensitive receptors in relation to areas designated for industrial and warehouse development and other land uses which may be expected to generate substantial quantities of toxic air contaminants as well as to roadways expected to experience high volumes of diesel truck traffic and car traffic as a result of General Plan implementation. The existence of entire communities on land planned or surrounded by land designated for industrial development is a component of the environmental context which the RPEIR must consider for the public and decision-makers to fully understand the nature and scope of the Project's impact on air quality, public health, other environmental impacts.

The RPEIR's failure to include information about the environmental setting in communities vulnerable to the General Plan's industrial development plans also prevents the RPEIR from making accurate determinations about the significance of project-related air emissions and exposure of sensitive populations to toxic air contaminants. "[A]n EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect." *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 514. Here, the RPEIR cannot accurately assess the nature and magnitude of the impact of exposure of sensitive receptors to air emissions without information about existing air pollution levels in vulnerable communities, health factors impacting susceptibility to adverse outcomes due to air pollution exposure, or the location of sensitive receptors.

Although the RPEIR does not disclose it, many South Fresno neighborhoods, including in the South Industrial Priority Area, are heavily impacted by emissions from existing industrial uses, warehouse distribution centers, freeway traffic, fueling stations, and the use of local roadways for heavy diesel truck traffic. These neighborhoods include neighborhoods in Southwest Fresno, South Central Fresno, Calwa, the community located along Drummond and Jensen Avenues, and Southeast Fresno. These and other South Fresno neighborhoods rank among the most pollution burdened in the state according to the California Communities Environmental Health Screening Tool (CalEnviroScreen), 3.0., a tool created by the California

EPA to identify communities by census tract which are disproportionately burdened by and vulnerable to multiple sources of pollution.[11] See Attachment 6, Fresno CalEnviroScreen Results[12]; Attachment 7, CalEnviroScreen 3.0 Excell Results (Abridged)[13]. To rank neighborhoods across the state, CalEnviroScreen 3.0 uses pollution burden and population characteristic indicators. The CalEnviroScreen pollution burden indicators include air pollution exposure indicators for ozone, PM2.5, Diesel, Particulate Matter, pesticide use, toxic releases from facilities, and traffic density.[14] [15]

Ten of the twenty highest ranked census tracts in the state under CalEnviroScreen are located in South Fresno neighborhoods. See Attachment C. Census Tract 601900100 ranks as the most pollution-burdened census tract and encompasses portions of South Central, Southwest, and Southeast Fresno, including the Orange Center Elementary School. In terms of air pollution exposure, Census Tract 601901100 in the 93706 zip code ranks in the 98th percentile for ozone, 97th percentile for toxic releases from facilities, 97th percentile for PM2.5, and 95th percentile for diesel. Census Tract 6019001500, located in the 93725 zip code and which includes incorporated and unincorporated residential neighborhoods in South Central and Southeast Fresno, is listed as the third most pollution burdened neighborhood in the state, ranks as the fifth most pollution burdened census tract and ranks in the 98th percentile for ozone, 98th percentile for toxic releases, 97th percentile for PM2.5, and 95th percentile for pesticides. As another example, Census Tract 601901000 in the 93706 zip code ranks as the eighth most pollution burdened census tract in the state and in the 99th percentile for ozone and toxic releases, 97th percentile for PM2.5, and 96th percentile for diesel and traffic.

These same census tracts, census tracts 601901100, 6019001500, and 601901000, and other top-ranking census tracts in South Fresno, score among the highest in the state for the CalEnviroScreen population indicators for asthma, low-birth weight, and cardiovascular disease.[16] Air pollution exposure is a known cause and contributor to these health issues, and those health issues render individuals even more vulnerable to further health impacts from pollution. See Attachment XX; Update to the California Communities Environmental Health Screening Tool, CalEnviroScreen 3.0 Report, January 2017, pp. 6-7, 11, 27, 33, 60.[17] Therefore,

---

[11] CalEPA's Office of Environmental Health Hazard Assessment (OEHHA)'s webpage on CalEnviroScreen, 3.0 is accessible at this link: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

[12] Downloaded from the California Office of Environmental Health Hazard Assessment's CalEnviroScreen 3.0 website at https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30 on May 10, 2020

[13] Downloaded from the California Office of Environmental Health Hazard Assessment's CalEnviroScreen 3.0 website at https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30 on May 10, 2020.

[14] See OEHHA's CalEnviroScreen 3.0 "Pollution Indicators" webpage, accessible at https://oehha.ca.gov/calenviroscreen/pollution-indicators

[15] The City could also use data from the U.S. EPA's National Air Toxic Assessment which includes data on ambient pollution concentrations, exposures, and health risks for every census tract in the U.S., to illustrate relevant characteristics of the environmental setting.

[16] Census Tract 6019001100 ranks in the 97th percentile for asthma, the 93rd percentile for low-birth weight (LBW), and the 96th percentile for cardiovascular diseases. Census Tract 6019001000 ranks in the 98th percentile for asthma, 80th percentile for LBW, and 97th percentile for cardiovascular disease. Census Tract 6019001000 ranks in the 99th percentile for asthma, the 97th percentile for LBW, and the 91st percentile for cardiovascular disease. See Attachment C.

[17] Available at https://oehha.ca.gov/media/downloads/calenviroscreen/report/ces3report.pdf.

the RPEIR must disclose these existing sensitive receptors and their vulnerability to air pollution exposures.

2. The RPEIR Fails to Accurately Describe Potential Inconsistencies Between the Project and Applicable Air Quality Plans

CEQA requires EIRs to discuss any inconsistencies between the proposed project and applicable air quality plans. *See* CEQA Guidelines § 15125(d). Here, the RPEIR fails to discuss the inconsistencies between the General Plan's implementation and South Central Fresno's Community Emissions Reduction Plan under AB 617 (C. Garcia, Stats. 2017).

3. The RPEIR Fails to Describe the General Plan Implementation's Inconsistencies with South Central Fresno's AB 617 Community Emissions Reduction Plan

In 2018, the California Air Resources Board (CARB) selected the South Central Fresno community, as described in the RPEIR, for the development of a Community Air Monitoring Plan and Community Emissions Reduction Program (CERP) pursuant to AB 617. AB 617 requires CERPs to reduce cumulative air pollution in disadvantaged communities such as South Central Fresno. Health & Safety Code § 44391.2 (c)(2). South Central Fresno was selected in recognition of its high cumulative air pollution exposure burden, significant number of sensitive receptors, and census tracts which have been designated as disadvantaged communities. After substantial work to develop a plan to reduce emissions in South Central Fresno by community members and Air District staff, in September 2019 CARB approved the CERP under AB 617[18]. The CERP recognizes that the majority of air pollution emissions in South Central Fresno come from mobile and industrial sources. p. 69. As described by CARB, the CERP "focuses on reducing exposure to fine particulate matter (PM2.5), toxic air contaminants (TAC), as well as oxides of nitrogen (NOx). [19]

The CERP is unequivocal that its purpose is to reduce pollution in the designated south Fresno area. While the San Joaquin Valley Air Pollution Control District ("Air District") leads CERP implementation, the City has a critical role in supporting CERP implementation and emission reduction. Several policies and commitments in the CERP implicate the City of Fresno's participation, yet none of these policies and commitments have made their way into either the General Plan or the RPEIR. Some of the relevant policies and commitments in the CERP that require municipal coordination include:

- HD.11: Heavy Duty Truck Rerouting

- C.5: Incentive Program for Educational Training for Electric Vehicle Mechanics

- LU.2: Provide Assistance During the California Environmental Quality Act

---

[18] The CERP is available on CARB's webpage at the following link: http://community.valleyair.org/media/1516/01finalscfresnocerp-9-19-19.pdf

[19] CARB, South Central Fresno webpage available at https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/communities/south-central-fresno, accessed on May 6, 2021.

Process

● LU.3: Provide Education and Outreach on Available Tools for Public Information Regrading Land Use Projects

● LU.4: Collaborating to Enhance Community Participation in Land Use Processes

● FD.2: Street Sweeping

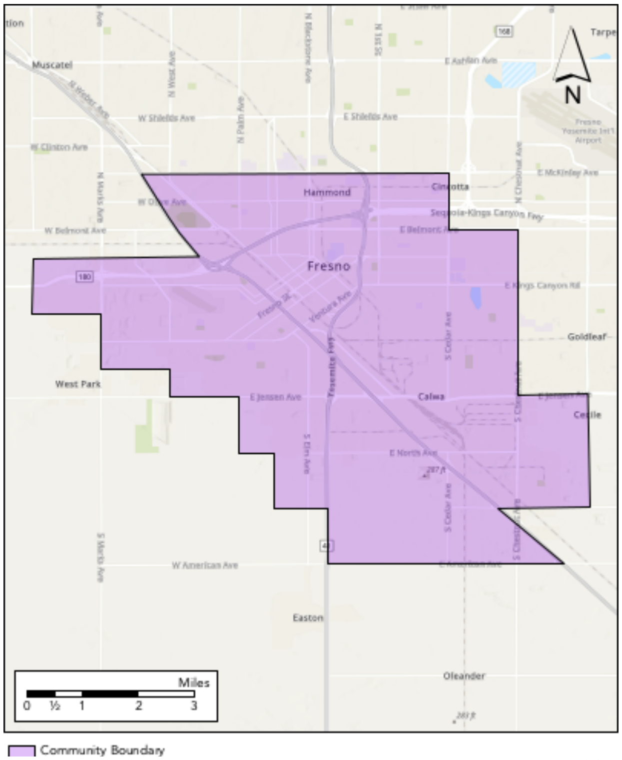
● Strengthened working relationship between the Air District and agencies that have land use and transportation authority in South Central Fresno, including development of a Memorandum of Understanding or other appropriate mechanisms for coordination.

And the Response to Comments also declines, for example, to consider suggestions from the Air District that revisions be made to the General Plan to discuss a heavy-duty truck rerouting study from the adopted CERP, noting that "approved General Plan at this time are limited to specific changes related to VMT and compliance with recent legislative updates." Response to Comments, p. 3-55.

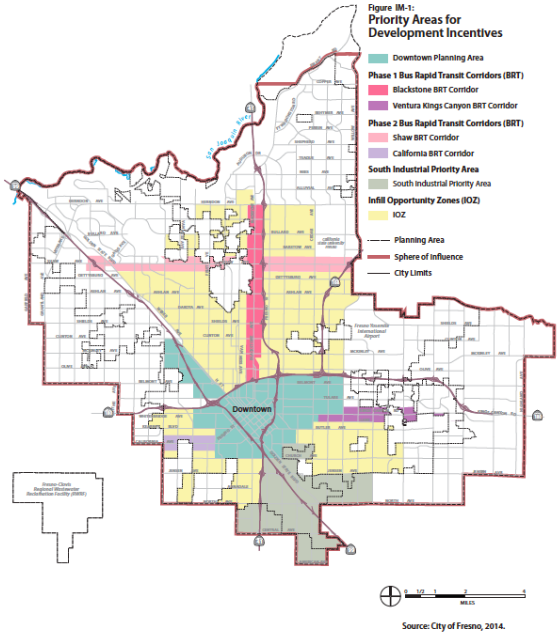
The RPEIR concludes that the Project is consistent with the CERP, because many of the CERP's policies require implementation by the Air District or CARB and because the General Plan contains policies supporting mixed-use development and multi-modal transportation. Yet the RPEIR's analysis fails to acknowledge or discuss the General Plan's South Industrial Priority Area, which designates roughly 5,000 acres of land for heavy industrial use in an area that falls within the AB 617 South Fresno community boundaries. General Plan, pp. 2-13, 12-26, Figure IM-1; See Draft South Industrial Priority Area Specific Plan, March 2019, p. 7[20]. We have provided below copies of the South Central Fresno Community AB 617 Boundaries, as they appear on CARB's South Central Fresno webpage; the SIPA boundaries as displayed in General Plan Firgure IM-1, "Priority Areas for Development Incentives," and an overlay of these boundaries which we created.

---

[20] Available at the City of Fresno's website at https://www.fresno.gov/darm/wp-content/uploads/sites/10/2019/05/SIPA_doc_v4-pressready-1.pdf



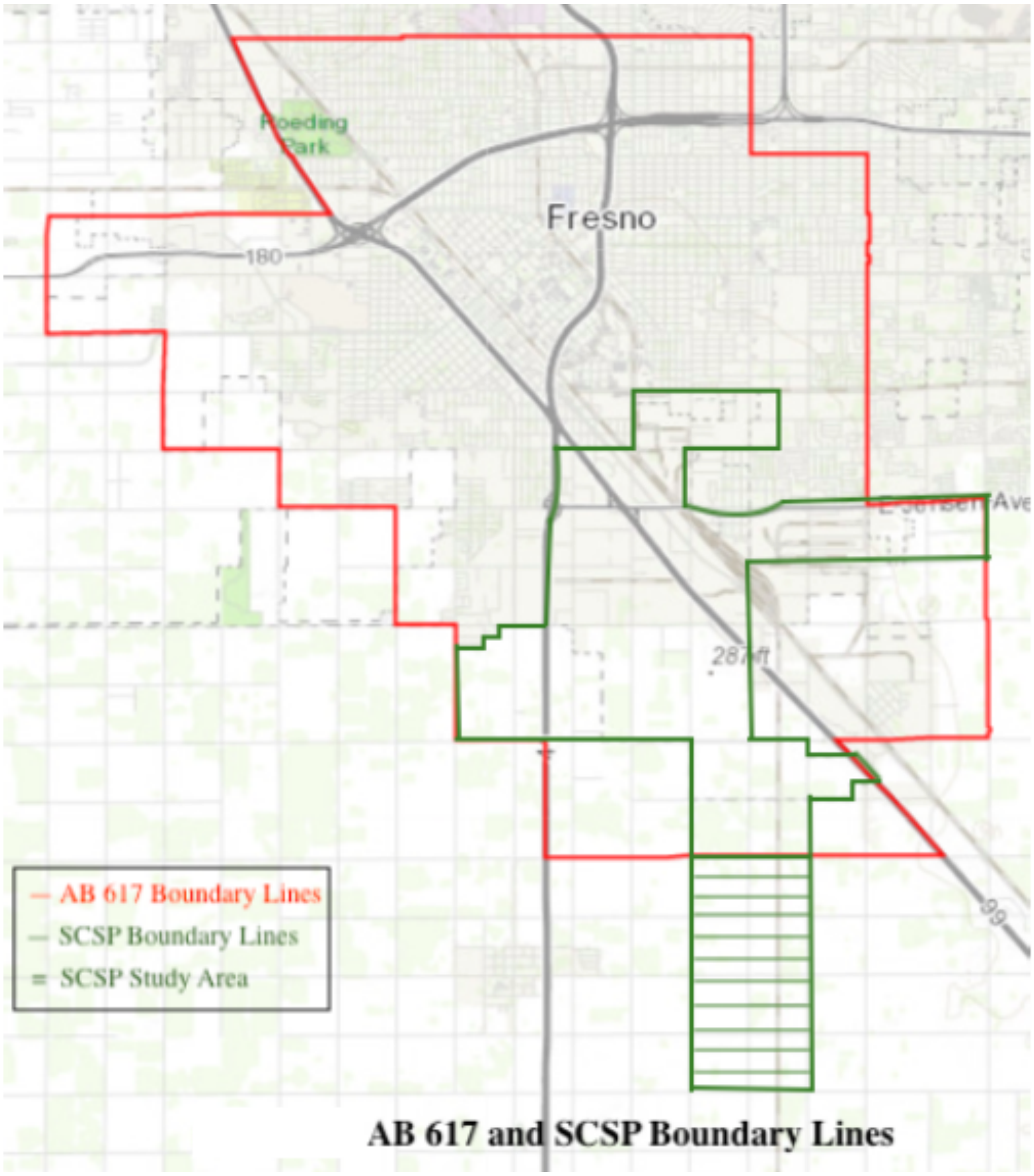
South Central Fresno AB 617 Boundaries[21]



General Plan South Industrial Priority Area
(SIPA designated in grey) (General Plan, Figure IM-1)

---

[21] South Central Fresno AB 617 Boundaries figure copied from CARB's South Central Fresno webpage at https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/communities/south-central-fresno



AB 617 and SCSP Boundary Lines

The RPEIR also fails to disclose General Plan policies intended to promote and expedite industrial business expansion in this and other industrial-designated areas within the General Plan Sphere of Influence. *See* General Plan, pp. 2-13, 14, 22 (Policy ED-1-j, describing permit streamlining and industrial development incentive programs); 12-24 (Policy ED-3-b, providing for targeted marketing efforts to support industrial business expansion; Policy ED-3-c, requiring the development of incentives to attract targeted industries). The General Plan's emphasis on industrial business expansion in the heart of the AB 617 South Central Fresno community, through Plan's land use designations and policies, is antithetical to the CERP's statutory mandate to reduce air emissions exposures by sensitive receptors within that area.

In addition, General Plan and Development Code policies that prioritize and facilitate the streamlined approval of industrial development with little or no public process conflicts with CERP provisions calling for City and Air District collaboration to deepen community engagement in land use decision-making. CERP Policy LU.4 identifies "[e]nsuring more comprehensive opportunities for public input on land-use decisions," "[p]roviding additional public access and education regarding permitting and CEQA processes," and "[b]etter communicating and understanding air quality impacts and potential mitigation" as strategies to pursue to this end. CERP, p. 94. In contrast, the first of the General Plan's 17 goals includes the use of land use and Development Code policies to "streamline permit approval" to stimulate economic development. General Plan, p. 1-5. Goal 13 calls for "efficient processing and permit streamlining." *Id.*, p. 1-7. This potential for exclusion of community engagement in land use decision-making runs afoul of AB 617 and the state-approved CERP.

The Development Code implements the General Plan's development streamlining goals by designating numerous land uses, including a wide range of industrial land uses[22], for ministerial approval, wherein CEQA does not apply and the City must issue permits for the project upon demonstration of compliance with objective design standards and application procedures. Fresno Municipal Code (FMC) § 15-4907, Table 15-4907. The Code provides for no public notice to potentially impacted residents or other members of the public and no public hearing. Development Permit and Conditional Use Permits, which do trigger CEQA review, also may be unilaterally approved by the planning director with no public hearing and the Code does not require any public notice for Development Permit issuance.[23] *Id.* Based on these Development Code procedures, the City has approved millions of square feet of industrial and warehouse development in South Central Fresno since the Code's approval without any advance public notice to or input from surrounding community members.

Thus, the RPEIR fails to discuss the clear inconsistencies of the City of Fresno General Plan and Development Code provisions with the CERP. This violates CEQA. *See* CEQA Guidelines § 15125(d).

4. The RPEIR Relies on Tenuous Reasoning to Arrive at its Conclusion That the Project is Consistent with Air District Attainment Plans

The RPEIR uses two tests to determine if the project would create a potentially significant impact by conflicting with or obstructing applicable air quality plans (AQPs or attainment plans). Pursuant to the first test, if development proposed by the approved General Plan exceeds the growth projections used in an applicable attainment plan, it would produce a potentially significant impact. The RPEIR determines that the project would not result in a potentially significant impact under this test, because "the growth projections used for the approved General Plan assume that growth in population, vehicle use and other source categories

---

[22] The FMC permits warehouses, freight/truck terminals, and research and development land uses by right in the Heavy Industrial, Light Industrial, Regional Business Park, and Business Park zone districts. FMC, § 15-1302, Table 15-1302. In the Light and Heavy Industrial zone districts land uses permitted by right include, among other things, "agricultural processing" and "General Industrial" land uses, which the Code states includes "operations such as food and beverage processing...; production apparel manufacturing; photographic processing plants; leather and allied product manufacturing; wood product manufacturing; paper manufacturing; plastics and rubber products manufacturing; nonmetallic mineral product manufacturing; primary metal manufacturing; fabricated metal product manufacturing; and automotive and heavy equipment manufacturing." FMC §§ 15-6705, 6707.

[23] Individuals may issue a written request for notice in advance of the approval of a Development Permit or Conditional Use Permit in order to receive notice of the director's approval of such requests. After receiving notice of permit approval, individuals have the option to file an appeal of the decision within fifteen days. FMC § 15-5017.

will occur at historically robust rates that are consistent with the rates used to develop the SJVAPCD's attainment plans." However, several attainment plans listed in the RPEIR – the 2013 Plan for the Revoked 1-Hour Ozone Standard, the 2007 PM10 Maintenance Plan, and the 2004 Revision to the California State Implementation Plan for Carbon Monoxide – were adopted prior to the General Plan's approval in December 2014. The RPEIR's reasoning therefore raises the question of how attainment plans adopted prior to the 2014 General Plan would have taken into account the General Plan's growth projections used for the adopted General Plan. Even if population growth and residential vehicle use projections remained the same for the same for the 2014 General Plans and previous City of Fresno General Plans, those projections would not account for land use and policy changes included in the 2014 General Plan which significantly influence the nature and air impacts of growth.

Given the Fresno's notoriously poor air quality, its non-attainment status for several criteria air pollutants, and the health consequences for residents, it is imperative that the RPEIR's discussion of the bases on which it reached its determination that the General Plan is consistent with applicable AQPs is both accurate and transparent. The City must revise the RPEIR to clarify the basis for its determination.

5. The RPEIR's Analysis of Project-Related Criteria Air Pollutants Omits Critical Information and Relies on Unsound Reasoning

The RPEIR's analysis of the impacts of criteria air pollutant that will result from the Project does not allow the public and decision-makers to understand the nature and magnitude of the criteria air pollutants that will result from the Project, because it omits critical information and fails to demonstrate that its conclusions are supported by sound reasoning and evidence. An adequate description of adverse environmental effects is necessary to inform the critical discussion of mitigation measures and project alternatives at the core of the EIR. *Sierra Club v. Fresno County* (2018) 6th Cal.5th 502, 514.The RPEIR must be revised to include an accurate and complete analysis of the project's CAPs and their impacts and to include appropriate mitigation measures to address those impacts.

First, the RPEIR emphasizes that individual projects that occur as a result of the General Plan and that exceed thresholds of significance will be required to adopt mitigation measures that reduce impacts to less than significance or the City would be required to adopt an EIR. RPEIR, 4.3-54. But this statement is inaccurate, because, as mentioned above, under the Development Code dozens of individual project types are permitted by right without further CEQA review or mitigation, including industrial and warehouse projects which are significant emissions sources. Thus, the RPEIR violates CEQA by overstating the degree of mitigation and misrepresenting the magnitude of the adverse impacts from criteria air emissions that will occur as a result of General Plan implementation. *See Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 514.

Second, the RPEIR uses circular and faulty reasoning to support its conclusion that criteria air emissions from construction will not violate Air District attainment plans. In the same way that the RPEIR claims that General Plan growth projects are consistent with AQPs, the RPEIR also claims that emissions related to construction activities are included in emissions forecasts in attainment plans and would therefore not interfere with or obstruct attainment plans. RPEIR, p. 4.3-54. As discussed above, however, several AQPs were adopted before the adoption of the General Plan. The RPEIR does not disclose how construction emissions forecasts for the 2014 General Plan could be accounted for attainment plans adopted before 2014.

Third, the RPEIR fails to support its conclusion that the project's stationary source emissions may be expected to be less than significant. The RPEIR's analysis references emissions from the City's top-three stationary source emitters but does not connect those emissions to a broader analysis of stationary source emissions which may occur as a result of entirety of General Plan implementation. Nor does the RPEIR include any other discussion of the nature or magnitude of stationary source emissions which may occur. However, General Plan implementation represents the potential for extensive new stationary source development, with the General Plan's designation of roughly 5,000 acres of industrial-zoned land in South Central Fresno, and Development Code rules allowing for the streamlined development of numerous stationary sources on a by right basis or otherwise limited process.

In finding stationary source emissions to be less than significant, the RPEIR argues that the Air District regulatory system will result in "continued reductions in stationary source emissions including the continued implementation of the approved General Plan." RPEIR, p. 4.3-57. The RPEIR is not explicit as to whether it anticipates ongoing reductions in stationary source emissions only at the individual project level or whether this expectation extends to the entire air basin, or why such an expectation would be warranted. Even if the RPEIR is correct that Air District rules will ensure ongoing reduction in emissions, the RPEIR does not identify "ongoing emissions reductions" as a threshold for significance and the RPEIR's assertion that ongoing emissions reductions will occur does not justify the finding that stationary source emissions for this Project are less than significant. Accordingly, the RPEIR lacks substantial evidence to support its determination that stationary-source criteria emissions are less than significant, and the RPEIR must be revised. *See California Oak Federation v. Regents Univ. of California* (2010) 188 Cal.App.4th 227, 261-232; CEQA Guidelines § 15384(a).

6. The RPEIR's Determination That Construction-Related Fugitive Dust Emissions Are Less Than Significant Lacks Substantial Evidence

The RPEIR relies heavily on Air District rules and regulations, especially Regulation VIII, to support its conclusion that construction-related fugitive dust impacts are less than significant. RPEIR, p. 4.3-53. In doing so, the RPEIR misrepresents the Air District's assessment of the adequacy of Regulation VIII as a CEQA mitigation measure. The RPEIR reads, "The GAMAQI," the Air District's Guidance for Assessing and Mitigation Air Quality Impacts, "states that compliance with Regulation VIII will normally reduce impacts from fugitive dust to less than significant." RPEIR, p. 4.3-53. Yet the GAMAQI actually states:

> "although compliance with District Regulation VIII substantially reduces project specific fugitive dust emissions, it may not be sufficient to reduce project specific emissions to less than significant levels. Furthermore, District Regulation VIII does not reduce construction exhaust emissions." p. 78[24].

The RPEIR also states that the Air District may "require" the application of certain enhanced control measures to projects which merit them due to their size or proximity to sensitive receptors. Again, the RPEIR's choice of words is misleading. The GAMAQI in fact says that

---

[24] The GAMAQI is available on the Air District's website at the following link: http://www.valleyair.org/transportation/GAMAQI.pdf, accessed on May 10, 2020

District may "recommend" such measures "when conditions warrant," indicating that a project's adoption of such measures is not a requirement but an option. p. 119. A review of Regulation VIII, including Rule 8011 (General Requirements)[25] and Rule 8021 (Construction, Demolition, Excavation, and Other Earthmoving Activities)[26], does not reveal any process for the provision or imposition of enhanced control measures by the Air District nor otherwise mention the topic.

The RPEIR attempts to further emphasize the comprehensive protection against construction-related fugitive dust emissions afforded by Regulation VIII, noting that "[if] measures included in the Dust Control Plan prove inadequate to control fugitive dust, construction contractors must implement additional controls or cease dust generation construction activities." RPEIR, p. 4.3-53. Yet Regulation VIII does not establish any triggering event for a review of the adequacy of fugitive dust control or other oversight mechanism that would ensure compliance.

General Plan implementation to date has shown that fugitive dust impacts as a result of construction are in fact significant, and in the case of warehouse development near sensitive receptors, severe despite Regulation VIII and other Air District rules and regulations. Since the General Plan was adopted, several concrete warehouse buildings, including an Amazon distribution center in 2016, have been constructed in and around the North Pointe Business Park located on South North Pointe Drive. The round-the-clock months-long construction of these buildings resulted in the generation of plumes of dust from the project site which coated nearby residences on East Central Avenue. Residents, including members of South Fresno Community Alliance, a signatory to this letter, were forced to keep their windows shut to reduce the infiltration of dust into their homes during this time. Even with such preventative measures, residents reported that dust accumulated inside their homes as well as adverse health impacts from dust inhalation, including allergies and asthma. See Attachment 8, South Central Neighbors United v. City of Fresno, et al., Petition for Writ of Mandate and Complaint for Injunctive Relief, p. 7, lns. 21-23. Continued build out of vacant industrial-zoned sites in this area may be expected to result in similar significant impacts on nearby residences and community-members in the absence of suitable mitigation.

Simply put, by relying on Regulation VIII and other Air District rules, the RPEIR fails to support its conclusion that fugitive dust emissions are less than significant with substantial evidence and overlooks information provided to the City about the serious impacts that General Plan buildout has resulted in to date.

7. The RPEIR's Analysis or Mitigation of the Health Impacts Associated with the Project's Air Emissions Falls Short of CEQA's Requirements

The RPEIR acknowledges that high-volume roadways, stationary diesel engines, and. "facilities attracting heavy and constant diesel vehicle traffic," including distribution centers and trucks stops, have been identified by CARB as "posing the highest risk to adjacent receptors." RPEIR, 4.3-16. The RPEIR also states that other facilities with increased risk include warehouse distribution centers and large industrial facilities and that "most diesel particulate matter," a carcinogen, "is emitted from mobile sources" including construction and agricultural equipment, truck-mounted refrigeration units, and "trucks and buses traveling on freeways and

---

[25] Available on the Air District's website at https://www.valleyair.org/rules/currntrules/r8011.pdf

[26] Available on the Air District's website at http://www.sjvapcd.dst.ca.us/rules/currntrules/r8021.pdf

local roadways." *Id*. Despite these recognitions, the RPEIR fails to even acknowledge or analyze the impacts of the Project's land use and transportation policies which concentrate industrial and warehouse distribution facilities and generate voluminous diesel truck traffic in some of the most vulnerable communities in Fresno County and the state.

In addition, the RPEIR omits information necessary for a complete and accurate understanding by the public and decision-makers understanding of the Project's air emissions-related health impacts. The RPEIR must be revised to address these flaws.

8. The RPEIR Fails to Use Available Information to Analyze Potential Health Impacts as a Result of Criteria Air Pollutants

The RPEIR briefly acknowledges three groups of people as sensitive to air pollution: children, the elderly, and persons with pre-existing respiratory or cardiovascular illness." Research shows that other population characteristics, including lower educational attainment levels, linguistic isolation, housing-cost burden level, poverty and identification as a person of color, are associated with heightened vulnerability to health impacts from air pollution. *See* CalEPA's Update to the California Communities Environmental Health Screening Tool, CalEnviroScreen, 3.0, January 2017, pp. 12,9 American Lung Association, 2020 State of the Air Report, pp. 20, 21, 37, 66. Many neighborhoods in Fresno, and in South Fresno in particular, rank highly for the percentage of the population the falls into these categories of vulnerability pursuant to the California EPA's CalEnviroScreen, 3.0 tool. To provide a complete analysis, the RPEIR should be revised to consider the health impacts of Project air emissions on this broader range of vulnerable populations.

The Air District's comments on the DPEIR implored the City to include a discussion of how the General Plan "will endeavour to conform to the Court's holding" in S*ierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (Friant Ranch), where the California Supreme Court held that an EIR's overly general discussion of adverse health impacts from air pollution failed to comply with CEQA. Response to Comments B3-5. Despite the Air District's comments, the RPEIR makes no attempt to correlate the project's anticipated emissions of criteria air pollutants and human health. Rather, it claims that an analysis of the correlation between a project's anticipated criteria air pollutants on human health is not possible, relying on statements contained in a 2015 Amicus Curiae brief by the Air District in *Sierra Club, et al. v. Fresno County, et al.* that "currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's air emissions and specific human health impacts." RPEIR, 4.3, 57, 58. Yet, the project studied by the RPEIR is not an individual development project but rather a plan-level project encompassing all development within the General Plan Planning Area through buildout in 2056. The RPEIR's use of project-level significance thresholds for CAPs is not an adequate basis for the RPEIR to fail to assess health impacts associated with the Project's criteria air pollutants.

The RPEIR's analysis of the health impacts associated with criteria air emissions focuses in significant part on the RPEIR's claims that Project emissions are not high enough to use regional modeling to correlate health effects on a Basin-wide level. RPEIR, p. 4.3-58, 59. It also emphasizes that that "emissions of NOx, VOCs, and ozone... have been trending downward" within the San Joaquin Valley Air Basin. RPEIR, p. 4.3-58. Yet in focusing on modeling deficiencies at the regional level and regional level trends, the RPEIR completely ignores abundant research associating serious localized health impacts with concentrated air pollutant exposures. The Office of Planning and Research recommends that "[l]ocal governments should . . . consider localized air pollution resulting from the concentration of various stationary sources in disadvantaged communities, such as freight-handling facilities, manufacturing facilities or other industrial air pollution sources." State of California 2017 General Plan Guidelines, p. 16.[27] The California Air Resources Board's "Technical Advisory: Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways," (CARB Technical Advisory) states that studies show that sensitive populations can experience serious health impacts, including worsening of asthma and cardiovascular disease and adverse birth outcomes because of exposure to traffic-related air pollution.[28] The advisory also states that studies "show that poor and minority communities are more likely to live near busy roadways, and therefore may be more at-risk for the health effects related to exposure to traffic emissions." p. 3. Here, the General Plan's land use designations providing for the extensive co-location of new industrial development and warehouses with existing disadvantaged communities and the use of local roadways for high-volume truck and car traffic serving those projects indicate that the General Plan can be expected to result in significant adverse health impacts associated with localized project air emissions. The RPEIR improperly fails to evaluate these impacts.

The DPEIR also fails to include any discussion of the project's anticipate emissions of criteria air pollutants for which the Air District is currently in attainment, including lead, carbon monoxide, and sulfur dioxide. The City's Response to Comments justifies this exclusion on the basis that Project is "not expected to result in substantial changes to the levels of these pollutants." But this expectation is unsupported. Carbon monoxide is a primary emission from motor vehicles. CARB Technical Advisory, p. 3.

In addition, the DPEIR does not even provide any information about the quantity of ozone that may be expected to result from project implementation. As noted above, in recent case law, the Supreme Court held that inclusion of raw numbers estimating tons of ROG and NOx from a project alone do not provide meaningful information to a reader about how much ozone will be produced and whether that ozone will result in adverse health effects. *Sierra Club v. Fresno County* (2018) 6 Cal.5th 502, 520. The Air District's assertion in a legal brief in 2015 that it lacks models to assess CAP impacts from individual projects on human health does not justify the DPEIR's failure to make any attempt to conduct such an analysis. As the Supreme Court stated in Sierra Club, "technical perfection" or "scientific certainty" are not required of a DPEIR's analysis, but "adequacy, completeness, and a good-faith effort at full disclosure" is. *Sierra Club v. Fresno County* (2018) 6 Cal.5th 502, 515.

9. The RPEIR Fails to Make a Good-Faith Effort to Analyze Health Risks Resulting from Sensitive Populations' Exposures to Toxic Air Contaminants

The RPEIR specifically identifies only four toxic air contaminants, namely, benzene, butadiene, formaldehyde, and hydrogen sulfide, and provides little information about their individual health impacts. However, the California EPA identifies several dozen TACs and

---

[27] Available at https://opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf, accessed on May 6, 2021.

[28] Available at https://ww3.arb.ca.gov/ch/rd_technical_advisory_final.pdf, accessed on May 6, 2021.

provides extensive documentation regarding their unique health impacts.[29] The RPEIR cannot analyze the impacts of toxic air contaminants on sensitive receptors where it has not even identified the air pollutants at issue.

In addition, The DPEIR fails to include any meaningful analysis of potential exposure of sensitive receptors to TACs based on its assertion that it is not possible to calculate the risks, because the City cannot determine the amount of TACs that will be released. The RPEIR fails to make a good-faith effort to provide information that is available regarding potential exposures of sensitive receptors and possible health impacts given General Plan land use designations, land uses permitted within those designations and their potential TAC emissions, their proximity to sensitive receptors, and factors impacting sensitive receptor exposure in those locations.

The City must revise the RPEIR to correct these deficiencies and adopt adequate mitigation measures to address the exposure of sensitive populations to air pollution as identified in the revised DPEIR.

10. The RPEIR Fails to Identify Adequate Mitigation for the Project's Criteria Air Pollutants

The RPEIR finds that the Project will result in significant impacts associated with the release of criteria air pollutants. In response to these impacts, the RPEIR identifies two mitigation measures, AIR-2.1 and AIR-2.2. MM AIR-2.1 states:

> "If construction related air pollutants are determined to have the potential to exceed the SJVAPCD adopted threshold of significance, the Planning and Development Department shall require that applicants for new development projects incorporate mitigation measures into construction plans to reduce air pollutant emissions during construction activities" (p. 2-5)

MM AIR-2.2 states:

> "If operation-related air pollutants are determined to have the potential to exceed the SJVAPCD-adopted thresholds of significance, the Planning and Development Department shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities" (p. 2-6).

As designed, these measures will fail to meaningfully reduce project CAP impacts. First, AIR-2.1 and 2.2 only apply to projects which require discretionary review. Yet, as discussed above, the General Plan and Development Code establish by right permit issuance for numerous projects, including industrial and warehouse projects which the RPEIR acknowledges are associated with significant air emissions. AIR-2.1 and 2.2 will not apply to these projects. The Air District's comments on the DPEIR recognize this problem as well; the Air District recommended that the "the General Plan include language supported by policy requiring

---

[29] CalEPA's Office of Environmental Health Hazard Assessment provides a list of TACs and documents with information specific to each TAC on its website at the following link: https://oehha.ca.gov/air/general- info/toxic-air-contaminant-list-staff-reportsexecutive-summaries

[projects that do not require discretionary review] to prepare a technical assessment in consultation with the District, and recommending that a VERA be considered for development projects determined to have a significant impact on air quality." Response to Comments at B3-12. The City improperly refused to adopt this sensible recommendation. *See id.*

Second, the measures would unlawfully defer formulation of mitigation to future projects without incorporation of specific performance standards the mitigation will achieve. CEQA Guidelines § 15126.4(a)(1)(B). The City may not rely on mitigation measures AIR-2.1 and 2.2 as currently drafted.

The RPEIR is required to identify and consider all feasible mitigation. The City must revise the DPEIR to incorporate mitigation measures which apply to all projects (not only those subject to discretionary review) that contribute to the General Plan's significant CAP emissions impacts and identify enforceable and feasible mitigation at this time. Examples of feasible and effective mitigation measures include but are not limited to:

- the re-designation of industrial land uses near residential land uses, schools, and other sensitive receptors to less intensive and community-serving uses;
- amendment of the Development Code to incorporate enhanced protections for disadvantaged communities and vulnerable populations, including adopting Conditional Use Permit requirements for warehouse facilities and other land uses known for significant air quality impacts;
- heightened standards for acceptable impact levels for permit issuance; heightened performance standards; and specific penalties and enforcement measures to reduce air quality-related violations for projects which would have air quality impacts and are located in or near disadvantaged communities;
- the adoption, funding, and staffing of a program to conduct proactive code enforcement of air quality-related rules, regulations, and mitigation measures applicable to industrial facilities, warehouse and distribution centers, and other facilities which result in significant air impacts on sensitive receptors;
- the creation of a program to dedicate funds for enforcement of air quality-related rules and regulations to programs to reduce the impacts of air pollution exposure on vulnerable populations; and,
- commitments to take specific actions and work with the Air District to implement specific policies and measures contained in the South Fresno Community CERP.

In addition, the Attorney General Xavier Becerra issued a guidance document titled, "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act."[30] The document identifies numerous mitigation measures applicable to air quality and other impacts of warehouse development which have been implemented in warehouse projects across the state and are recommended by the Attorney General's Office. These measures include but are not limited to the following mitigation for construction and operation impacts:

---

[30] Available at https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/warehouse-best-practices.pdf, accessed on May 7, 2021.

- Requiring off-road construction equipment to be zero-emission, where available, and all diesel-fueled off-road construction equipment, to be equipped with CARB Tier IV-compliant engines or better, and including this requirement in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant construction equipment for use prior to any ground-disturbing and construction activities.
- Prohibiting off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day
- Providing electrical hook ups to the power grid, rather than use of diesel-fueled generators, for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible.
- Limiting the amount of daily grading disturbance area.
- Prohibiting grading on days with an Air Quality Index forecast of greater than 100 for particulates or ozone for the project area.
- Forbidding idling of heavy equipment for more than two minutes.
- Requiring that all facility-owned and operated fleet equipment with a gross vehicle weight rating greater than 14,000 pounds accessing the site meet or exceed 2010 model-year emissions equivalent engine standards as currently defined in California Code of Regulations Title 13, Division 3, Chapter 1, Article 4.5, Section 2025. Facility operators shall maintain records on-site demonstrating compliance with this requirement and shall make records available for inspection by the local jurisdiction, air district, and state upon request.
- Requiring all heavy-duty vehicles entering or operated on the project site to be zero-emission beginning in 2030.
- Requiring on-site equipment, such as forklifts and yard trucks, to be electric with the necessary electrical charging stations provided.
- Requiring tenants to use zero-emission light- and medium-duty vehicles as part of business operations.
- Forbidding trucks from idling for more than two minutes and requiring operators to turn off engines when not in use.
- Posting both interior- and exterior-facing signs, including signs directed at all dock and delivery areas, identifying idling restrictions and contact information to report violations to CARB, the air district, and the building manager.
- Installing and maintaining, at the manufacturer's recommended maintenance intervals, air filtration systems at sensitive receptors within a certain radius of facility for the life of the project.
- Installing and maintaining, at the manufacturer's recommended maintenance intervals, an air monitoring station proximate to sensitive receptors and the facility for the life of the project, and making the resulting data publicly available in real time. While air monitoring does not mitigate the air quality or greenhouse gas impacts of a facility, it nonetheless benefits the affected community by providing information that can be used to improve air quality or avoid exposure to unhealthy air.
- Constructing electric truck charging stations proportional to the number of dock doors at the project.
- Constructing electric plugs for electric transport refrigeration units at every dock door, if the warehouse use could include refrigeration.

- Constructing electric light-duty vehicle charging stations proportional to the number of parking spaces at the project.
- Installing solar photovoltaic systems on the project site of a specified electrical generation capacity, such as equal to the building's projected energy needs.
- Requiring facility operators to train managers and employees on efficient scheduling and load management to eliminate unnecessary queuing and idling of trucks.
- Requiring operators to establish and promote a rideshare program that discourages single-occupancy vehicle trips and provides financial incentives for alternate modes of transportation, including carpooling, public transit, and biking.
- Meeting CalGreen Tier 2 green building standards, including all provisions related to designated parking for clean air vehicles, electric vehicle charging, and bicycle parking.
- Achieving certification of compliance with LEED green building standards.
- Providing meal options onsite or shuttles between the facility and nearby meal destinations.
- Posting signs at every truck exit driveway providing directional information to the truck route.
- Improving and maintaining vegetation and tree canopy for residents in and around the project area.
- Requiring that every tenant train its staff in charge of keeping vehicle records in diesel technologies and compliance with CARB regulations, by attending CARBapproved courses. Also require facility operators to maintain records on-site demonstrating compliance and make records available for inspection by the local jurisdiction, air district, and state upon request.
- Requiring tenants to enroll in the United States Environmental Protection Agency's SmartWay program, and requiring tenants to use carriers that are SmartWay carriers.
- Providing tenants with information on incentive programs, such as the Carl Moyer Program and Voucher Incentive Program, to upgrade their fleets.

Given the increasing prevalence of warehouse development in Fresno, we recommend that the City review the mitigation measures contained in the document and incorporate them as appropriate into the RPEIR.

11. The RPEIR Erroneously Fails to Acknowledge or Analyze COVID-19 As Part of the Environmental Setting

Over the past year, the global COVID-19 pandemic has had a devastating toll on San Joaquin Valley and Fresno residents. Fresno County has registered over 100,000 COVID-19 cases and 1,680 deaths as a result of the pandemic.[31] Studies comparing excess deaths in 2020 versus prior years indicate that confirmed U.S. deaths due to the coronavirus are significantly lower than the actual death rate attributable to COVID-19.[32] In December 2020, ICUs of

---

[31] See Fresno County, COVID-19 Data Hub, available at https://covid-19-cofgisonline.hub.arcgis.com/, access on May 6, 2021.

[32] CNBC, Official U.S. coronavirus death toll is "a substantial undercount' of actual tally, Yale study finds," July 1, 2020, available at https://www.cnbc.com/2020/07/01/official-us-coronavirus-death-toll-is-a-substantial-undercount-of-actual-tally-new-yale-study-finds.html, accessed on May 6, 2021

hospitals in the San Joaquin Valley region reached full capacity and zero available beds due to the prevalence of critically-ill COVID-19 patients.[33] COVID-19 has disproportionately infected and killed more Latino and disproportionately killed more Black people in the United States, and has disproportionately killed and infected Latinos in Fresno County. Fresno County COVID-19 Data and Surveillance Dashboard, Covid-19 Deaths Race-Ethnicity, and Cases by Race and Ethnicity; U.S. Center for Disease Control, COVID-19 Racial and Ethnic Health Disparities[34].

Numerous studies published over the past year have documented heightened susceptibility to COVID-19 and other viruses among people who experience greater air pollution exposures, including traffic-related air pollution. A study by researchers at the Harvard T.H Chan School of Public Health found that people who live in U.S. regions with high levels of PM2.5 are more likely to die from COVID-19 than people who live in less polluted regions.[35] Another study found that patients with severe COVID-19 infections requiring intensive care were twice as likely to have had pre-existing diseases, including heart diseases, stroke, chronic lung disease and diabetes, known to be caused by air pollution.[36] Multiple studies have found that living in communities with greater exposure to tailpipe emissions is associated with increased COVID-19 incidence and risk of dying from COVID.[37] Another study found positive associations between short-term PM2.5, PM10, CO, NO2, and O3 exposure with COVID-19 infection.[38] Studies have also found evidence from past outbreaks, including SARS and influenza, that breathing more polluted air increased risks of death.

As a result of vaccine access barriers and vaccine hesitancy, only 26.5% of residents have been fully vaccinated and just 28% of residents who live in the economically and socially disadvantaged South Fresno zip codes have received at least one does of COVID-19 vaccine.[39] Due to low demand for vaccine, Fresno County shipped about 28,000 vaccines to other counties

---

[33] Los Angeles Times, "'I've seen people die.' COVID-19 slams Central Valley hospitals, as many resist lockdowns." December 13, 2020, available at https://www.latimes.com/california/story/2020-12-13/san-joaquin-valley-coronavirus-hospitals-many-resist-lockdown, access on May 6, 2021.

[34] Fresno County's COVID-19 Data and Surveillance Dashboard is accessible at https://covid-19-cofgisonline.hub.arcgis.com/. Accessed on May 10, 2021; the U.S. CDC's COVID-19 Racial and Ethnic Health Disparities webpage is located at the following link: https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/racial-ethnic-disparities/disparities-deaths.html

[35] Wu, X., et al. Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis, *Science Advances,* Nov 4, 2020:
Vol. 6, no. 4., available at https://advances.sciencemag.org/content/6/45/eabd4049/tab-pdf

[36] Yang, J., et al. Prevalence of comorbidities and its effects in patients infected with SARS-CoV-2: a systematic review and meta-analysis, International Journal of Infectious Diseases 94 (2020) 91-95, available at https://www.ijidonline.com/article/S1201-9712(20)30136-3/pdf, accessed on May 6, 2021

[37] Liang, D. et al., Urban Air Pollution May Enhance COVID-19 Case Fatality and Mortality Rates in the United States, The Innovation, Sept. 21, 2020, available at https://www.cell.com/the-innovation/fulltext/S2666-6758(20)30050-3, accessed on May 6, 2021; Lipsitt, J., et al., Spatial analysis of COVID-19 and traffic-related air pollution in Los Angeles, Environment International, Vol. 153, August 2020, available at https://www.sciencedirect.com/science/article/pii/S0160412021001562#!, accessed on May 6, 2021

[38] Zhu, Y., et al. Association between short-term exposure to air pollution and COVID-19 infection: Evidence from China. Science of the Total Environment, Vol. 727, July 20, 2020, available at https://www.sciencedirect.com/science/article/abs/pii/S004896972032221X?via%3Dihub, accessed on May 6, 2021

[39] Fresno Bee, "See Fresno County vaccination rates by ZIP code. How does your neighborhood compare?," April 18, 2021, available at https://www.fresnobee.com/news/local/article250730119.html, accessed on May 6, 2021

and reduced the number of vaccines it ordered in April 2021.[40] In addition, recent uncontrolled COVID-19 outbreaks in India and other nations have led to the spread of dangerous virus variants. Experts expect that vaccine hesitancy and barriers, coupled with ongoing and accelerating outbreaks and the emergence of variants, is likely to prolong the pandemic.[41]

Despite the abundance of information available about the continued prevalence of COVID-19, the virus' grim impacts on people in Fresno, and the heightened susceptibility to COVID and other viruses caused by air pollution exposure, the RPEIR dismisses the relevance of COVID to its analysis. The RPEIR mischaracterizes the nature of the pandemic in relationship to the City's obligations under CEQA, stating that the pandemic "is an impact of the environment on the Project, which is not required to be addressed in a CEQA analysis." RPEIR, p. 1-3. The City is incorrect. The General Plan's impacts, including the nature and severity of its air quality impacts, are affected by and must be considered in light of research and other information demonstrating the heightened vulnerability of residents who are exposed to air pollution to viral illness, including COVID-19 and other viruses. In particular, the pandemic and potential for other viral outbreaks are relevant to the nature and severity of the General Plan's air quality impacts on human beings and must be acknowledged and incorporated into the RPEIR as a component of the environmental setting. CEQA Guidelines, § 15125(c) (requiring "the significant effects of the project to be considered in the full environmental context"); *Friends of the Eel River v. Sonoma County Water Agency* (2003), 108 Cal.App.4th 859, 874 (interpreting CEQA Guidelines § 15125 broadly to afford the fullest possible protection to the environment and ensure the accuracy of the EIR's environmental effects analysis). The disproportionate impacts of COVID-19 on people of color, and the disproportionate share of Latino and Black residents that live in South Fresno neighborhoods with heightened exposures to air pollution raise particular concerns as to the PEIR's failure to assess and mitigate air quality and health impacts, and failure to assess the disproportionate impacts of this failure on people of color, especially in the context of COVID-19.

V. The RPEIR Fails to Adequately Analyze and Mitigate for the General Plan's Greenhouse Gas Emissions, and the Recirculated GHG Plan Cannot Qualify as a CEQA Streamlining Document

Reducing GHG emissions to minimize the harms from climate change is one of the most urgent challenges of our time. Scientific evidence continues to mount that we are not only facing a true climate crisis, but also rapidly running out of time to confront it. The City of Fresno and the surrounding region face mounting risks from climate change, including wildfire, precipitation extremes, and decreased water supply. GHG Plan at 2.7 to 2.8. Moreover, the effects of climate change in California and the San Joaquin Valley in particular – such as extreme heat events, flooding, and drought – disproportionately impact low-income communities and communities of color. See *The climate gap: environmental health and equity implications of climate change and mitigation policies in California-a review of the literature*, S. Shonkoff et al., Climatic Change (2011) at S485-86, Attachment 9; See Climate Change, Public Health, and Policy: A California

---

[40] Fresno Bee, "'Demand isn't there.' As Fresno residents refuse vaccine, doeses shipped to other counties.' April 15, 2021, available at https://www.fresnobee.com/news/local/article250706119.html.

[41] New York Times, "India's outbreak is a danger to the world. Here's why. https://www.nytimes.com/2021/05/02/world/india-covid-variants.html

Case Study, C. Ganesh, *et al.* AJPH Policy (2017).. These communities often have more limited resources to access cooler and safer conditions during heat events and are more likely to suffer from chronic health conditions that heighten risk of death during heat waves and other extreme weather events. See Id. at S486-90. The residents of Fresno therefore have a direct and immediate interest in swift and decisive climate action at all levels of government. Further, the law is clear that lead agencies must thoroughly evaluate a project's impacts on climate change under CEQA, and identify and adopt feasible mitigation measures to address project-specific or cumulative impacts. *See Communities for a Better Env't v. City of Richmond* (2010) 184 Cal.App.4th 70, 89-91; CEQA Guidelines § 15064.4.

The City's preparation of the RPEIR and 2021 Recirculated GHG Plan ("GHG Plan"), included as Appendix G to the RPEIR, offered an important opportunity to aggressively reduce emissions, including from VMT, which contributes significantly to climate disruption in Fresno. GHG Plan at ii. Unfortunately, in preparing these recirculated documents, the City has yet again passed up the opportunity to do so. The RPEIR and 2021 GHG Plan suffer from the same defects as the PEIR and the 2020 GHG Plan before them.

The GHG Plan continues to rely largely on vague, nonbinding policies from the General Plan to reduce GHG emissions, and fails to provide data to support its conclusion that compliance with these policies would be sufficient to meet the state's GHG emission reduction mandates. Further, the GHG Plan applies such a vague approval process for a project to tier off of the GHG Plan that it provides no assurance that tiered projects will reliably reduce GHG emissions though project design. With these deficiencies, the GHG Plan cannot serve as a "qualified" climate action plan under CEQA Guidelines section 15183.5, i.e. one that can be used as a "threshold of significance" for evaluating the climate impacts of future discretionary projects.

The RPEIR likewise relies on implementation of these same vague, optional General Plan policies to mitigate the impacts of greenhouse gas emissions from General Plan implementation. Finding that GHG emissions from implementation might nevertheless have potentially significant climate change impacts, the RPEIR asserts that these emissions can be mitigated to less than significant levels with a single mitigation measure: new development projects subject to discretionary review are to show consistency with the GHG Plan and implement applicable measures from the GHG Plan's CEQA Project Consistency Checklist. *See* Mitigation Measure GHG-1.1, RPEIR at 4.8-47. Efficacy of this measure is unsupported by substantial evidence and cannot be relied upon given the vague framework for project-level GHG reductions laid out in the GHG Plan. The RPEIR also lacks evidence to support its conclusion that the General Plan is consistent with applicable plans, policies, and regulations adopted to reduce GHG emissions. RPEIR at 4.8-47 to 49.

A. The City's Recirculated GHG Plan Fails to Ensure Reduction of GHG Emissions and Cannot be Relied on for Tiering under CEQA Guidelines § 15183.5

Where a public agency's climate action plan meets the requirements in CEQA Guidelines section 15183.5, compliance with that plan may be used to mitigate cumulative levels of GHG emissions within a jurisdiction to a less-than-significant level and allows development project tiering from the plan. CEQA Guidelines § 15185.3. Such plans must do all of the following: (1) make an inventory of greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area; (2) set a reduction target, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable; (3) forecast projected emissions for activities covered by the plan; (4) specify reduction measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the reduction target; and (5) establish a mechanism to monitor the plan's progress toward achieving reduction targets.

The City's GHG Plan fails to meet all of these requirements. In particular, it continues to omit 2050 as a target reduction year, which leaves the City without information on whether adequate reductions, under General Plan and other local policies, will be possible in later years. The Plan also lacks substantial evidence that its reduction measures, taken largely from the General Plan, are capable of achieving reduction targets. Further, it provides only vague direction for how a project tiering off of the GHG Plan would comply with the plan, undermining the GHG Plan's ability to ensure project-level emissions reduction.

1. The Baseline Inventory of GHG Emissions Is Incomplete and Inaccurate

The baseline inventory of City GHG emissions is the foundation of the GHG Plan. Without a complete and accurate inventory, the City cannot accurately project future business-as-usual ("BAU") emissions or measure the effectiveness of reduction measures in meeting identified targets and goals. Effective policies cannot be built on a flawed inventory. Unfortunately, the City's GHG Plan inventory is incomplete and therefore inaccurate.

First, the GHG Plan omits a 1990 inventory of local emissions (GHG Plan at 3-2), even though compliance with AB 32 and California's 2017 Climate Change Scoping Plan require an 80 percent emissions reduction below 1990 levels by 2050. RPEIR at 4.8.50. Because the Plan omits a 1990 inventory, the City will not be able to establish whether it is on track to meet and ultimately does meet, this state-mandated target. The GHG Plan must be revised to include a 1990 emission inventory.

Second, in developing a 2010 inventory – which the GHG Plan uses to the exclusion of a 1990 inventory – the GHG Plan omits certain types of emissions without justification. For example, the GHG Plan states that it did not include emissions sources that comprise less than 3 percent of the emissions inventory. GHG Plan at 3-1. The GHG Plan gives no further details and no explanation or basis for this arbitrary omission.

Similarly, the inventory specifically omits emissions from large industrial sources that are subject to California Air Resources Board's (CARB) reporting regulations and to Cap-and-Trade regulations. *Id*. In other words, only emissions from smaller sources are counted in the baseline inventory, while emissions from larger permitted sources are ignored. However, by subtracting permitted industrial emissions from the baseline inventory, the GHG Plan presents an inaccurate description of existing conditions. CEQA Guidelines § 15125(a).

The City's GHG Plan and PEIR fail to disclose these emissions, analyze their impacts, or identify feasible measures to ensure emission reductions over the life of the Plan. The result is a GHG Plan that presents flawed baseline data of GHG emissions that undermines the entire planning process. Without an accurate baseline inventory, the PEIR presents an inaccurate description of the existing setting and its projected future emissions have no evidentiary basis. Inasmuch as the City permits the activities resulting in emissions, the City has an obligation to disclose these emissions. The failure to do so renders the GHG Plan fatally flawed. A revised Plan must correct this flaw and include a comprehensive inventory of all emissions.

2. The GHG Plan Must Include Substantial Evidence to Support Its BAU Scenarios and Further Explain Its 2020 Emissions Figures

The GHG Plan, as well as the RPEIR, use “Business-as-Usual” (BAU) scenarios as a starting point to calculate the City’s projected GHG emissions in 2020, 2030, and 2035. GHG Plan at 3-4; RPEIR at 4.8-33. Yet those documents fail to explain how these BAU figures were calculated and what assumptions they rely on. While the GHG Plan notes that BAU emissions used “population, households, and employment growth rate from the Fresno County 2050 Growth Projections developed by Fresno County Council of Governments” (GHG Plan at 3-4), it does not disclose what methodology it used to arrive at the BAU figures, and whether, for example, the BAU numbers take into account the surge in warehouse development and associated truck trips allowed for under the City’s General Plan. The GHG Plan and the RPEIR must be revised to include substantial evidence supporting its BAU calculations.

At the same time, it is unclear to what extent the GHG Plan’s 2020 emissions figures represent an emissions inventory versus an emissions projections. *See* GHG Plan at 3-4. The City must revise the Plan to explain how it arrived at these 2020 figures, including whether those figures account for the dramatic increase in warehouse space and truck traffic in Fresno subsequent to adoption of the City’s 2014 General Plan.

3. The GHG Plan’s Emission Forecasts Should Extend to 2050

The GHG Plan states that the “approved General Plan and GHG Plan Update ensure that the City of Fresno will do its part of reducing GHG emissions for the short-term (2020) and the long term (2050).” GHG Plan at 1-9; *see also* RPEIR at 4.8-50. Yet the GHG Plan, as well as the RPEIR, forecast emissions only for the years 2020, 2030, and 2035. The forecast does not go to 2050. GHG Plan at i; RPEIR at 4.8-50. Although the GHG states that “[a] straight-line projection from the 2030 to 2050 goals would result in a reduction goal of 58 percent below baseline levels by 2035” (GHG Plan at 4-4) it is unclear how this figure was determined and the GHG Plan does not include 2050 in its emission forecast charts. (GHG Plan at 4-4, 4-33, 4-34).

The RPEIR asserts that a forecast farther into the future than 2035 is unnecessary. It states that “[a]lthough the General Plan growth rate would result in buildout by the year 2056, given current methods and the State’s goals and targets, 2035 is a reasonable forecast for GHG and is in-line with the State emission reduction targets.” RPEIR at 4.8-47. This approach is inadequate. First, the GHG Plan notes that one of the goals of converting the MEIR to a PEIR is to “extend[] the life of the Fresno General Plan and the accompanying environmental document by up to 10 years.” GHG Plan at 1-2. To the extent that this means extending the lives of these documents 10 years past 2035, until 2045, a forecast farther into the future is essential to establish that the General Plan’s policies are capable of reducing emissions in line with state mandates over the entire life of the General Plan.

Further, because buildout under the General Plan extends to 2056 (GHG Plan at 2-2; RPEIR at 4.8-47) the GHG Plan should have forecast emissions to implement the plan until at least 2050. As drafted, the document considers less than 20 years’ worth of emissions. Twenty year is a small fraction of the time over which General Plan impacts will be felt, a Plan that sets in place land use patterns leading to emissions for decades to come, long after 2035. In particular, the General Plan designated the South Industrial Priority Area, roughly 5,000 acres slated for heavy industrial use in South Fresno. General Plan, pp. 2-13, 12-26, Figure IM-1. Development within this industrial hub will be significant source of GHG emissions far into the future. Only projecting impacts until 2035 fails to provide the public with a meaningful assessment of the Project's long-term impacts. The GHG Plan should have accounted for, and the RPEIR should have analyzed, GHG emissions at least through the year 2050. Only then could the RPEIR analysis determine if implementation of the General Plan and other local GHG reducing policies is consistent with the long-term emissions reductions targets for climate stabilization articulated in AB 32 and California's 2017 Climate Change Scoping Plan. The statewide reduction goals set forth in the Scoping Plan call for reducing emissions levels to 80 percent below 1990 levels by the year 2050. Accordingly, 2050 is the minimum appropriate planning horizon for analyzing annual emissions of a long-term project such as the City's General Plan.

Critically, meeting the statewide 2050 goals requires continuing and steady annual reductions in both total and per capita GHG emissions. *See* California's 2017 Climate Change Scoping Plan, CARB, April 1, 2018 at 18[42]. Because state policy aims to steeply reduce GHG emissions over that same time period, it is imperative that the RPEIR inform the public and decision-makers whether the General Plan implementation directly conflicts with the state's reduction goals. Of course, as mentioned above, that analysis should include the Project's anticipated emissions out to 2050. As the California Supreme Court has held, an agency "abuses its discretion if it exercises it in a manner that causes an EIR's analysis to be misleading or without informational value." *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 457. Here, neither the GHG Plan nor the EIR provide evidence that emissions reductions targets will be met.

4. The GHG Plan Presents Vague Measures That Cannot Produce the Necessary Emission Reductions and Lacks Evidence of the Development of Implementation Programs

The GHG Plan's most fundamental weakness may be its failure to identify a set of GHG reduction measures that comes anywhere close to achieving the City's desired targets and goals. The GHG Plan offers only a vague assurance that the "GHG Plan Update ensures conformity with the mandates of California Supreme Court in the Newhall Ranch case and the State of California's latest GHG regulations" (GHG Plan at i) but fails to comprehensively address how it will "ensure conformity" and does not demonstrate how these policies in the GHG Plan will reduce emissions by the amounts necessary.

Indeed, many of the GHG reduction measures collected in the GHG Plan from various elements of the General Plan represent vague, unenforceable, unquantifiable commitments to "encourage" or "promote" various actions (*see* Section V.B below for specific examples). Although measures of this sort may be appropriate to supplement more concrete requirements, identification of specific, enforceable measures and quantification of resulting emissions reductions are required to demonstrate consistency with quantitative targets and goals.

---

[42] Available on CARB's website at https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf, accessed on May 10, 2021/

Enforceable, concrete commitments to mitigation also are required under CEQA. Neither the GHG Plan nor the RPEIR contain adequate measures of this kind. Such measures are vital here given that the City needs tremendous reductions in emissions by 2035 and even greater reductions in 2050, particularly through reductions in VMT, to achieve state-mandated targets. The City will be unable to achieve these reductions through unenforceable policies.

In addition, although the GHG Plan states conclusions regarding projected levels of GHG emission reductions under the GHG Plan, it fails to provide evidentiary support for those conclusions. For example, that plan indicates that required emissions reductions are met for 2020, but provides no evidence that the GHG Plan policies will be enforceable and effective at meeting emission reduction targets. GHG Plan at 4-4. In addition, the GHG Plan concludes that the reductions will be met for 2030 and 2035, but again provides no evidence to support this conclusion. GHG Plan at 5-34. And although the GHG Plan appears to be relying heavily on VMT reduction to meet these targets (GHG Plan at 5-34; see also RDEIR at 4.8-41), this appears inconsistent with the RDEIR's conclusion that increases in VMT amount to a significant and unavoidable Transportation impact (RDEIR at 4.16-44).

Meanwhile, the approval process and checklist the GHG Plan sets for individual development projects to qualify for CEQA streamlining is too undefined to ensure that projects will achieve necessary GHG reductions. This severely undermines the GHG Plan's ability to reduce emissions. This is especially serious given that the Plan relies largely on reducing emissions from new development because "[r]esidents of new development projects will achieve lower per capita rates than residents of existing development." GHG Plan at 1-8.

The Plan specifies a review process for proposed new developments subject to discretionary approval that are consistent with the underlying land use and zoning designations. Such projects would review the GHG Plan Update Consistency Checklist, and incorporate and implement design features or mitigation measures "as needed to demonstrate consistency." GHG Plan at 6-1, -2. The GHG Plan does not specify what these proposed projects must demonstrate consistency with. For example, if it is consistency with the Checklist itself, what would consistency with the Checklist entail? Adoption of one or more measures included on the Checklist? Adoption of all measures included in the Checklist? This requirement is vague and unclear, even after edits to the Checklist in the most recent GHG Plan update. Furthermore, the Checklist itself contains only a small number of measures, some of which are optional, or appear to already be required by state law or local policy. GHG Plan Checklist at 1-3Appendix B to GHG Plan. Notably, the GHG Plan does not clarify how it will be determined if design features or mitigation measures will be "needed," and does not specify that all possible features or measures will be required. *Id.* It further does not make clear whether a project may still take advantage of CEQA streamlining if it does not comply with all or certain measures on the checklist. *Id*. It is also unclear how the City will determine how a project is consistent with the Checklist given that not all the measures are mandatory. *Id*.

Meanwhile, the approval process for new discretionary industrial projects requiring a general plan amendment inexplicably exempts emissions from stationary sources from consideration in the significance determination. GHG Plan at 6-2. Neither the GHG Plan nor the RPEIR provide any justification for omitting stationary sources from CEQA review for these projects. To ensure that future projects are adequately reviewed, all emissions, including stationary sources must be considered in the CEQA analysis.

5. The GHG Plan Lacks a Reliable Mechanism for Monitoring Compliance

Under CEQA Guidelines section 15183.5, a qualifying plan must establish a mechanism to monitor the plan's progress toward achieving reduction targets. The City's GHG Plan does not meet this requirement. The Plan concedes that its implementation and monitoring steps are "suggested—not required" (GHG Plan at 7-1) even though the Plan states that "successful implementation of the GHG Plan Update will require implementation and monitoring." *Id*. The GHG Plan then states: "presently it would appear that without future State action the City would need to implement the local reduction strategies to reach its reduction targets for 2035." GHG Plan at 7-2. This casts doubt on the City's plans for implementing reduction strategies, yet according to other sections of the GHG Plan, the City must implement local reduction strategies regardless in order to meet reduction targets. GHG Plan at 5-33. This further underscores the need for a reliable monitoring mechanism. Moreover, although the RPEIR, at Mitigation Measure GHG-1, calls for the Director of the City Planning and Development Department to "ensure" that discretionary development projects are consistent with the GHG Plan and implement all measures deemed applicable to the project through the GHG Reduction Plan Update-Project Consistency Checklist, it includes no mechanism to monitor the City's progress in achieving reduction targets.

6. The GHG Plan Does Not Satisfy the Requirements for CEQA Streamlining and Must Be Revised to Indicate That

The GHG Plan allows for streamlined review for new projects subject to discretionary review and that trigger review under CEQA. GHG Plan at iv. As drafted, however, the GHG Plan falls far short of the requirements of CEQA Guidelines section 15183.5. In order to support a determination that climate action plan consistency eliminates significant climate effects, a climate action plan must, among other things, clearly demonstrate that its prescribed measures will actually achieve the reductions necessary to attain the climate action plan's stated goals. CEQA Guidelines § 15183.5(b)(1)(D). As discussed above, the GHG Plan provides no basis for such a conclusion. The GHG Plan and the RPEIR should therefore be revised to make explicit that the GHG Plan does not contain sufficient specific, enforceable GHG reduction measures to support streamlined CEQA review of future projects. Development projects in Fresno are already subject to great discretion regarding the level of applicable environmental review. *See, e.g.* Attorney General's Letter to City's Director of Development and Resource Management, *Re: City of Fresno's South Industrial Priority Area Specific Plan* (August 2, 2019), at 11-12. The City cannot, in addition, allow most projects subject to discretionary review bypass GHG analysis under the GHG Plan.

B. The PEIR Fails to Adequately Analyze and Mitigate for the General Plan's Greenhouse Gas Emissions

The RPEIR, like the GHG Plan, concludes that implementation of the General Plan, along with implementation of other local policies, will enable the City to meet state-mandated GHG reduction targets. RPEIR at 4.8-46, 50. The City therefore relies on implementation of these policies to mitigate GHG emissions resulting from implementation of the General Plan.

Courts have clarified that an EIR is inadequate where proposed mitigation measures are so undefined that it is impossible to evaluate their effectiveness. *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1984) 151 Cal.App.3d 61, 79. Moreover, "[m]itigation measures must be fully enforceable through permit conditions, agreements, or legally binding instruments." CEQA Guidelines § 15126.4(a). The record must also contain substantial evidence of the measures' feasibility and effectiveness. *Sacramento Old City Assn. v. City Council of Sacramento* (1991) 229 Cal.App.3d 1011, 1027.

Unfortunately, the GHG mitigation identified in the PEIR fails to meet these standards. Many of the General Plan's policies and programs relied on to mitigate impacts related to GHG emissions are vague, optional, directory, or otherwise unenforceable, or lack evidence to support their assumptions. Emissions reductions cannot be assumed from such policies. A few examples—out of numerous instances—include the following:

- General Plan Objective UF-12. Directing the City to locate *roughly* one half of future residential development in infill areas (emphasis added). RPEIR at 4.8-19. However, the General Plan provides liberal definitions for terms such as "roughly" and "approximately" as applied in the Plan. It states that use of these terms is intended to be flexible so that depending on context, a reference to "approximately one-half" could vary at least 10 to 15 percent and use of the term "roughly" could include twice that amount or more. General Plan at 1-30. Anywhere from 20 percent to over 80 percent of future development could occur in infill areas.
- General Plan Policy RC-5-c: GHG Reduction through Design and Operations. "*Promote* the expansion of incentive-based programs that involve certification of projects for energy and water efficiency and resiliency. . . . *Promote* appropriate energy and water conservation standards and facilitate mixed-use projects, new incentives for infill development, and the incorporation of mass transit, bicycle and pedestrian amenities into public and private projects." RPEIR at 4.8-28 (emphasis added).
- Building Energy Efficiency. "The City *encourages* developers to achieve the *voluntary* tier levels from the CPUC Energy Efficiency Strategic Plan, which ultimately lead to net zero energy consumption for residential development by 2020 and non-residential development by 2030." RPEIR at 4.8-43.
- General Plan Policy RC-8-b: Energy Reduction Targets. "Strive to reduce per capita residential electricity use to 1,800 kWh per year and non-residential electricity use to 2,700 kWh per year per capita by developing and implementing incentives, design and operation standards, promoting alternative energy sources, and cost-effective savings." RPEIR at 4.8-31.
- General Policy RC-8-c: Energy Conservation in New Development. "*Consider* providing an *incentive* program for new buildings that exceed California Energy Code requirements by fifteen percent." RPEIR at 4.8-31.
- Electric Vehicles. The PEIR states that based upon the historic trends in Electric Vehicle (EV) ownership and the CARB Zero-Emission Vehicles (ZEV) Action Plan, it is assumed that by 2030 EV ownership in the city would reach 8.7%, and by 2035, 13% of the vehicle trips would be made by EVs. RPEIR at 4.8-4@. The

> PEIR offers no evidence to support this assertion. The City's planned launch of an EV charging pilot program does not provide such evidence. *Id.*

Moreover, although the RPEIR purports to analyze impacts of the General Plan's continued implementation (RPEIR at 4-1), it fails to present evidence that the City has acted on these policies. The City has had over six years since General Plan adoption to develop incentive programs and reduction measures, yet it presents no evidence that any programs have been implemented. References to future plans to implement General Plan policies related to transportation demand management and VMT reduction do not provide such evidence. RPEIR at 4.8-41, 42. Nor do references to the EV charging pilot program. RPEIR at 4.8-42. Therefore, the RPEIR cannot conclude that the City will see the substantial emissions reductions from these policies necessary to meet state mandates.

Further, in concluding that General Plan implementation may directly or indirectly generate GHG emissions having significant environmental impacts and would result in significant cumulative GHG impacts, the RPEIR relies entirely on Mitigation Measure GHG-1 to reduce these emissions to less than significant. RPEIR at 4.8-47, 50. Mitigation Measure GHG-1 requires new development projects subject to discretionary review to show consistency with the GHG Plan and its CEQA Project Consistency Checklist. RPEIR at 4.8-47. However, Mitigation Measure GHG-1 relies on consistency with the very policies, described above, from the General Plan and other local programs, that require little apart from consistency with existing regulations, or with vague and unenforceable measures. This approach fails for the same reasons as noted above. Permissible mitigation under CEQA must be binding or fully enforceable. The RPEIR fails to present evidence applying Mitigation Measure GHG-1 will actually allow the City to meet GHG emissions reduction mandates.

There are numerous feasible mitigation measures the City could adopt to reduce the General Plan's GHG impacts. Some examples include:

- Create funding incentives for projects that conform to the General Plan and development approvals to smart growth and infill development standards such as LEED Neighborhood Development standards. Alternatively, the City could adopt a policy that it will not provide or seek future funding for widening roadways to serve sprawl developments but will instead prioritize funding for projects that serve development adjacent to or within already developed areas.
- Require local hiring within the vicinity of new employment centers to reduce VMTs.
- Facilitate the development of affordable housing for lower-income residents near low-wage jobs by zoning for multi-family housing and working with affordable housing developers to assemble financing for deed-restricted affordable housing in those areas.
- Redesignate industrial land use designations on vacant parcels in areas with sensitive receptors to land uses associated with fewer emissions in order to lessen the cumulative impact of GHG emissions in areas already experiencing disproportionate air impacts.
- Adopt any number of policies that apply to new development within the City's jurisdiction. For example, it could:

- Adopt an ordinance requiring payment of indirect source impact fees from development projects, similar to what the San Joaquin Valley Air Pollution Control District requires in order to offset air pollution. The fee could be tailored to address traditional air pollution, toxic air contaminants, and disproportionate impacts on overburdened communities as well as GHG emissions through community-driven processes.
- Adopt a policy conditioning funding of certain transportation projects on a demonstration that the project will reduce vehicle-miles traveled and will not add to cumulative and disproportionate pollution burdens on disadvantaged communities.
- Adopt a policy requiring publicly accessible electric vehicle charging stations to be installed at all new buildings (residential, and commercial, and industrial) with a parking lot larger than 10 parking spots.
- Offer fee reductions, waivers, loans or grants to developers and contractors who commit to verifiable green building practices that exceed state minimum standards and that create co-benefits that reduce cumulative impacts on surrounding disadvantaged communities. *See* Attachment 11, , Exhibit K (Institute for Local Government Sustainability Best Practices) at 9.
- Provide incentives for new development projects to install home or business electric vehicle charging stations, alternative energy systems or energy efficiency upgrades. *See* Attachment 11, Exhibit K (Institute for Local Government Sustainability Best Practices) at 11.

Even if the City cannot feasibly adopt some of these measures as part of its environmental review of the General Plan, it certainly can commit to developing and adopting specific measures in the future, provided it includes proper performance standards that will guide it in developing the measures. *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099.

C. The RPEIR's Conclusion that the Project Will Not Conflict with an Applicable Plan to Reduce GHG Emissions is Not Supported by Substantial Evidence

The RPEIR recognizes that the Project will have significant GHG-related impacts if it will conflict with an applicable plan, policy, or regulation that was adopted for the purpose of reducing the emissions of GHGs. RPEIR at 4.8-47. However, the RPEIR concludes that the Project will not conflict with any such plan, and therefore will not have a significant impact. *Id*. at 4.8-47 to 49. The RPEIR's analysis on this point is flawed.

First, the RPEIR concludes that the Project is consistent with state GHG reduction goals and with the CARB Scoping Plan, and asserts that implementation of the GHG Plan will allow the City to meet the state's reduction targets. *Id*. Yet it appears to omit data supporting this conclusion. An EIR's conclusions must be supported by substantial evidence. *Laurel Heights Improvement Ass'n*, 47 Cal.3d at 409. And without presenting such evidence, the RPEIR cannot ensure that the Project is consistent with state climate mandates.

Second, the RPEIR fails to analyze the Project's consistency with the San Joaquin Valley Air Pollution Control District Climate Change Action Plan. Goal 3 of that plan, referenced in the RPEIR, states: "Ensure that climate protection measures do not cause increases in toxic or criteria pollutants that adversely impact public health or environmental justice communities." RPEIR at 4.8-16. The Project is inconsistent with this goal, and therefore with the District's plan, because it results in increases of both toxic and criteria pollutants in close proximity to, and in some cases directly within, low income communities and communities of color in Fresno already overburdened by pollution – environmental justice communities.

Finally, the RPEIR fails to examine the Project's consistency with the San Joaquin Valley Air Pollution Control District's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. The Project, however, is inconsistent with this Guidance as well, where the Guidance finds that project-specific emissions are cumulative, and "that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions" RPEIR at 4.8-17. The RPEIR does not generally "require" such project-specific reductions, and therefore could not be found consistent with the Guidance.

VI. The PEIR Fails to Analyze and Mitigate the General Plan's Significant Energy Impacts in Violation of CEQA

Leadership Counsel's May 2020 comments discussed the PEIR's deficient analysis of the General Plan's energy impacts. The City's responses to Leadership Counsel's comments, and the RPEIR, do not remedy the deficiencies. The PEIR must be revised to fully disclose the General Plan's energy impacts and evaluate feasible mitigation measures.

A. The PEIR's Restriction of the Study Area for Energy Impacts to the Planning Area Artificially Excludes the Project's Energy Impacts

The City must revise and broaden the Study Area for energy impacts so that the energy impacts associated with all phases of project implementation are included in the impact analysis. 14 C.C.R. § 1516.2(b). An EIR's analysis must include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. *Id.*; CEQA Guidelines Appendix F. Here, the PEIR's description of the Project Area for energy impacts is the City of Fresno Planning Area. 4.6-2. However, this Project Area artificially excludes analysis of project impacts from certain phases and components of the project, including transportation-related and operational energy impacts which extend beyond the Planning Area. For example, the project designates land for industrial development and warehouse distribution centers in South Fresno. Distribution facilities will increase VMTs from trucks that travel to and from facilities along Highway 99 and other high-volume freeways and roadways. These thousands of additional truck trips will require fuel throughout their journeys and will therefore impact energy usage well beyond the Planning Area.

With respect to operations resulting from the project, the General Plan plans for extensive industrial and warehouse distribution center development in close proximity to residential areas located just outside of the Planning Area. One example is the disadvantaged unincorporated community of Malaga, which is located less than a quarter mile to the east of the Planning Area. The development and operation of industrial and warehouse distribution facilities on land that is currently vacant or used for farming may be expected to result in ambient temperature increases for nearby land uses, including existing residential, commercial, and public facilities just outside of the Planning Area.

The City failed to substantively respond to Leadership Counsel's May 2020 comments on the Draft PEIR concerning the inadequate Study Area. *See* Response to Comments, p. C3-25. The City argued that the project "would not result in any physical improvements that would require the construction of new energy generating facilities within the Planning Area," does "not change the distribution or intensity of land uses," and does "not result in any physical impacts that would affect energy." *Id.* The City is mistaken. The General Plan's implementation will foreseeably result in development that will impact energy use. These foreseeable impacts must therefore be studied in the PEIR. *See* 14 C.C.R. § 15152. Moreover, the PEIR's discussion of unenforceable and non-binding "policies and implementation programs that are focused on improving the sustainability of the city" (*id.* C3-25) does not remedy the failure to fully disclose and mitigate the General Plan's impacts.

B. The PEIR's Project Setting Description Fails to Identify Diesel Fuel and Renewable Energy Supplies and Use Patterns in the Planning Area

An EIR's description of the environmental setting must include existing energy supplies and energy use patterns in order to permit a complete and accurate assessment of the project's energy impacts. *See* CEQA Guidelines Appendix F(II)(B). Here, the PEIR's environmental setting discussion contains just one reference to renewable energy sources—a statement of the percentage that renewable sources comprise among all energy sources generated in California. The PEIR's environmental setting discussion includes no information about existing renewable energy supplies and energy use patterns in Fresno. The PEIR must be revised to include information about supplies and usage of wind, solar, hydrogen and other renewable sources.

The PEIR's cursory discussion of existing fuel usage focuses on gasoline use by light-duty vehicles. The PEIR provides an estimate of diesel usage from trips in Fresno County in 2018 but does not state anything about the basis for that usage or provide any information about diesel and gasoline usage for trips that extend beyond Fresno County. Fresno is located in the heart of inland California, hundreds of miles from California's heavily-populated coastal cities and ports, and is home to warehouse distribution centers, agricultural processing, and other industries that rely on shipping and transportation. Thus, the PEIR's environmental setting discussion should disclose the patterns of diesel-energy usage from truck traffic to and from Fresno, including trips both within and beyond Fresno County.

Although Leadership Counsel's May 2020 comment informed the City of the Draft PEIR's failure to fully disclose energy supplies and use patterns, the City did not substantively respond. *See* Response to Comments, p. C3-26. The City's response to the Leadership Counsel's comment merely references the PEIR's cursory energy supply discussion—which Leadership Counsel already identified as deficient. *Id.* The RPEIR similarly does not attempt to address the deficiencies.

C. The PEIR Fails to Include Information Necessary to Describe the Project and Support the City's Conclusion That the Project Will Not Have Significant Energy Impacts

CEQA requires an EIR's analysis to include "the project's energy use for all project phases and components, including transportation-related energy, during construction and operation." 14 C.C.R. § 1516.2(b). The analysis should consider not only building code compliance, but also other relevant factors such as "the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project." CEQA Guidelines Appendix F describes five topics that an EIR's project description and five topics which an EIR's energy impacts analysis must include where relevant. Appendix F(II)(A)(1-5) & (II)(C)(1- 5). Here, the PEIR fails to describe and analyze several aspects of the project's energy usage which are both relevant to the project and identified in Appendix F as important components of an EIR's energy impact analysis. The PEIR further fails to support its findings that the project's energy-related impacts are less than significant with facts and analysis.

1. The PEIR Fails to Describe Construction-Related Energy Impacts or Support Its Conclusion That Such Impacts Are Less Than Significant Without Mitigation

The PEIR concludes that "[p]otential construction impacts would be less than significant, and no mitigation is required." The PEIR arrives at this conclusion based on only two sentences of analysis that respectively state:

> "Energy would be required during construction for the transportation of building materials, manufacturing of building materials, and the actual construction of buildings and infrastructure." PEIR, 4.6-29, and;
>
> "Energy use during construction of future development facilitated by the approved General Plan would primarily involve gasoline and diesel fuel and would represent a short-term use of readily available resources." PEIR, 4.6-30.

Other than a general assertion regarding the primary construction-related fuel sources, this analysis contains no information about the project's construction-related energy use requirements. The PEIR does not provide any information about the amount of energy from different sources that may be expected to be used; the energy consuming equipment and processes; or the energy intensiveness of materials and equipment that may be expected for construction-related activities, as required by Appendix F. The PEIR provides no factual basis for its conclusion that construction-related energy use would be derived from "readily available resources" nor does this conclusion support a finding that the project avoids the "inefficient, wasteful, and unnecessary consumption of energy" (PEIR, 4.6-30) from construction-related activities.

The project plans for thousands of acres of new residential, commercial, and industrial development. Yet the PEIR contains no discussion of any policies or implementation measures included in the General Plan that would reduce energy consumption associated with construction. Therefore, it is likely that, without mitigation, the project will have significant energy-related construction impacts that require the identification and adoption of mitigation measures to avoid and reduce those impacts.

2. The PEIR Fails to Support Its Conclusion That Project Operational Energy Impacts Are Less Than Significant Without Mitigation

The PEIR states that project operational energy demand "includes natural gas and electricity" and indicates that the project's operational energy requirements and use efficiencies by amount and fuel type are less than significant.[43] The PEIR's conclusion is unfounded and its analysis fails to include the information required by CEQA. The PEIR does not provide any information about the energy consuming equipment or processes which may be used or the energy intensiveness of activities which may occur during operation of buildings and facilities developed as a result of General Plan implementation. See Appendix F(II)(A)(1) & (II)(C)(1). The PEIR also makes no effort to quantify the project's potential energy impacts or to explain why that is not possible. *See Ukiah Citizens for Safety First v. City of Ukiah* (2016) 248 Cal.App.4th 256. Without adequate information about the project's operational energy impacts, the PEIR provides no factual basis for its finding that those impacts are less than significant.

In addition, the factors that the PEIR relies on to support its conclusion that the project's operational energy impacts are less than significant and do not require mitigation do not in fact demonstrate that the project will not result in wasteful, inefficient, or unnecessary consumption of energy and that the project's energy impacts are less than significant. The General Plan policies which the PEIR's analysis of the project's operational energy impacts cites – Policies RC-8-a through k and Policy HC-3-d – contain no clear or enforceable requirements or commitments that ensure the reduction or avoidance of unnecessary energy consumption. PEIR, 4.6-30, 33. Rather, those policies use discretionary and vague terms and descriptions without guarantees, enforcement mechanisms or timelines to ensure implementation. In most cases, the policies fail to identify specific actions to be taken and lack quantified targets relating to the amount of energy to be saved.

For example, Policy RC-8-b calls on the City to "*[s]trive* to reduce per capita residential electricity consumption," Policy RC-8-c directs the City to "*[c]onsider* providing an incentive program for new buildings that exceed California Energy Code requirements," and Policy RC-8-I states, "[a]dopt and implement a program to increase the use of renewable energy to meet a *given percentage* of the city's peak electrical load in a *given timeframe*." Italics added. Policy HC-3-d in turn states, "[p]rovide *appropriate* incentives for affordable housing providers, agencies, non-profit, and market-rate developers to use LEED and CalGreen Tier 1 or Tier 2 standards." PEIR, 4.3-34. Policy HC-3- d includes a commentary that the "City will publicize the health, environmental, and long term economic and maintenance benefits of applying LEED, CalGreen [or] third party equivalents to projects in Fresno." These and the other policies cited by the PEIR do not demonstrate that any reduction in project energy emissions will occur compared to emissions levels that would occur without those policies nor do they show that the project's energy impacts will be less than significant and that mitigation is not required.

The PEIR bases its conclusion that the operational impacts would be less than significant in part on its assertion that "potential improvements" to energy and natural gas "facilities" for future projects, which have not yet been proposed, would be identified at the time such projects are considered. PEIR 4.6-31. The use of the term "facilities" in this sentence is unclear, and we assume it refers to all use of energy and natural gas in future projects which have yet to be proposed. That said, the PEIR provides no information about the nature or impact of such improvements as they relate to project operational energy usage nor does it provide a factual

---

[43] The PEIR actually states that "continued implementation of the approved General Plan is consistent with this item," referring to a paraphrased statement the impact category contained in Appendix F, Section II(C)(1). We assume that by "consistent with" the authors of the PEIR mean that the impact in this category is less than significant. PEIR, 4.6-30.

basis for this assertion. An EIR must contain facts and analysis, not just an agency's bare conclusions or opinions. *Sierra Club v. County of Fresno* (2018) 6C5th 502, 522. Here, the PEIR's conclusion that future projects that result from General Plan implementation will reflect unidentified "potential improvements" to energy usage does not support the PEIR's finding that project operational energy impacts are less than significant.

In addition, the PEIR contends that General Plan implementation's energy impacts will be less than significant because future projects will be required to meet California Energy Code building efficiency standards and the CalGreen Code. However, a requirement that a project comply with the Building Code does not, by itself, constitute an adequate assessment of mitigation measures that can be taken to address the energy impacts that occur during construction and operation of a project. *California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173. Likewise, a statement that a project will be required to comply with Energy Code requirements does not in itself mean that project impacts are less than significant. And in this case, the PEIR does not provide support for its assertion that future projects will be required to comply with the Energy Code. Indeed, the PEIR does not identify any policies or mitigation measures that require compliance with the Energy Code. Nor does it describe how and at what stage the City will ensure such compliance. In fact, future projects that qualify for "by right" under the City's Development Code will not be required to undergo further environmental review under CEQA and will not be subject to additional mitigation measures to require compliance with Energy Code building efficiency standards.

The City did not adequately respond to Leadership Counsel's May 2020 comments concerning these issues. Again, the City argues incorrectly that the General Plan's implementation "would not result in any physical impacts that would affect energy." Response to Comment C3-28. To the contrary, the General Plan will foreseeably result in development that causes significant energy impacts, including approximately 6,000 acres of energy-intensive industrial and warehouse development in and around South Fresno neighborhoods. Moreover, the City's reference to General Plan policies "encouraging alternative energy sources and affordable housing (*id.* C3-29), for example, does not address the PEIR's failure to identify enforceable mitigation measures for significant energy impacts.

D. The PEIR Fails to Acknowledge or Mitigate Significant Indirect Energy-Related Impacts Resulting from New Construction

The PEIR does not disclose or attempt to mitigate the energy impacts caused by new construction that will take place under the General Plan. As discussed above, the General Plan's implementation stands to significantly increase energy demand within existing residential, commercial, mixed-use and public facilities buildings due to the construction of structures on parcels that are currently vacant or are used for agriculture. New development and, in particular, the construction of large concrete distribution facilities in the Southern portion of the planning area, will, without mitigation, radiate heat into surrounding areas and increases ambient air temperatures and contribute to higher temperatures during the evenings. The increase in air temperatures means that air conditioning units in nearby structures used by people will need to consume more energy to cool the structures to desired temperatures. Because temperatures in Fresno routinely reach highs of well over 100 degrees in the summer, energy demand from air conditioners is already high in the Planning Area compared to other parts of the state and further increases in energy demand are likely to be significant. Given this and the fact that the General

Plan plans for approximately 6,000 acres of industrial and warehouse development in and surrounding South Fresno neighborhoods that are occupied by thousands of residents and are home to schools, utility districts, commercial, and employment centers, the project's impact on increased energy usage due to AC units will likely be significant. Thus, under CEQA, the PEIR should evaluate these potentially significant energy impacts and adopt feasible mitigation measures.

Yet again, the City did not substantively respond to Leadership Counsel's May 2020 comments addressing increased energy demand caused by new construction. The City contended that the Draft PEIR was not required to address these potentially significant impacts because the review is "programmatic in nature." Response to Comments, C3-30. The City is mistaken. The use of a programmatic EIR "does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration." 14 C.C.R. § 15152. Here, the significant energy impacts from new development under the General Plan are foreseeable. The PEIR must therefore evaluate these impacts and mitigate them.

E. The DPEIR's Analysis of the Project's Transportation-Related Energy Impacts is Inadequate

CEQA Guidelines Appendix F requires that an EIR's energy impact analysis include the "project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project," as well as the project's "project transportation energy use requirements and its overall use of efficient transportation alternatives." Appendix F(II)(C)(1)&(6). The DPEIR however makes no attempt to meet these requirements. Instead, it states only, "[t]he project would result in energy usage associated with gasoline to fuel project-related trips (i.e., the use of motor vehicles). When evaluating a long-range planning project, forecasting future travel methods and gasoline use is too speculative and not appropriate or feasible." DPEIR, 4.6-33. The DPEIR provides no explanation for why any assessment of future travel methods and/or gasoline use is too speculative and not feasible or why the DPEIR cannot otherwise comply with the energy impacts analysis requirements set forth in Appendix F. This failure violates CEQA. See *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm'rs* (2001) 91 CA.4th 1344, 1370.

The project-related VMT forecasts the DPEIR provides have limited value in assisting the reader in understanding the nature and the significance of the Project's transportation-related impacts. In support of its conclusion that the project will not result in wasteful, inefficient, or unnecessary use of energy, the DPEIR states:

> "Although the measures of VMT in per capita terms increase from existing conditions with the City's General Plan Update, the city's VMT is below that of the regional average and the propose project would not result in a significant impact on gasoline demand."

The fact that the DPEIR's forecasts show average VMT per capita in the City of Fresno as less than the average VMT per capita for Fresno County does not support the conclusion that project implementation would not result in the wasteful use of energy. The City and County of Fresno have distinct residential and employment land use patterns and transportation options available to residents and workers. For instance, many residents in rural Fresno employed in the agricultural sector must travel significant distances each day to and from work on farms which are widely dispersed across the region as well as to meet their everyday household needs, as many rural communities, including disadvantaged unincorporated communities, lack grocery stores, health clinics, libraries, and other locations to obtain essential goods and services. Residents in the City of Fresno on average need to drive significantly shorter distances in order to reach their place of employment and/or obtain essential goods and services. In addition, the limited operations of Fresno County's Rural Transit Service, which reach many communities once or twice a day, makes using public transit infeasible for many residents, whereas residents in the City of Fresno have greater access to more frequent service to meet their mobility needs. Therefore, whether a given VMT level may be indicate "efficient" energy usage differs based on context and comparison of the City and County of Fresno's average VMT levels does not provide useful guidance to assess the project's energy impacts.

The DPEIR's general discussion of the General Plan's support for active transportation also does not demonstrate that the project will not result in the wasteful or unnecessary consumption of energy. The discussion only mentions one specific policy, Policy RC-8-j, which provides that the City will "[s]upport the development of a network of integrated charging and alternate fuel stations for both public and private vehicles, and if feasible, open up municipal stations to the public as part of network development." DPEIR, 4.6-12, italics added. Like other policies that the DPEIR relies on to support its findings that impacts will be less than significant, Policy RC-8-j provides no details about what "support" the city will provide for the charging network; when that support will be provided; any specifics about the extent of that network or the nature of charging infrastructure, including whether the network will serve trucks as well as passenger vehicles; and how the City will determine whether to open municipal stations to the public as part of the network. The DPEIR's general description of the General Plan's support for alternative transportation apart from motor vehicles also lacks the specificity to show that General Plan implementation will not result in energy waste. This general description also does not address if and how general plan policies ensure efficient transportation-related energy use for truck and car trips associated with industrial development in South Fresno.

And, as discussed above, while Table 4.16-2 includes forecasts for total employment VMT, the DPEIR does not state whether this figure includes VMT resulting from truck and car trips made by employees during the course of work (rather than just commute trips); truck trips made to and from commercial and industrial facilities, such as warehouse distribution centers and agricultural processing facilities, by individuals who do not reside in and/or are not employed within the Planning Area; and VMT portions of truck and car trips that extend outside of Fresno. DPEIR, 4.6-33.

The DPEIR also makes no attempt to discuss transportation energy use requirements that may be expected (for instance, projections relating to project-related VMT attributable to cars, trucks, and/or public transit and their respective projected energy requirements) nor does it discuss the use of "efficient transportation alternatives." Efficient transportation alternatives relevant to General Plan implementation that should be discussed include the extent to which clean energy vehicles, such as electric or hydrogen fuel cell vehicles may be utilized as opposed to vehicles reliant upon diesel or gasoline. The Attorney General's guidance document, "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California

Environmental Quality Act[44]," discussed elsewhere in this letter, provides numerous examples of feasible measures to reduce unnecessary fuel usage by vehicles serving warehouse projects. These examples include but are not limited to the following:

- requirements that facility-owned and operated fleet equipment with vehicle weight rating greater than 14,000 pounds meet or exceed 2010 model-year emissions equivalent engine standards, requiring all heavy duty vehicles entering the project site to be zero-emission beginning in 2030
- prohibitions on truck idling for more than two minutes
- construction of electric truck and light-duty vehicle charging stations proportional to the number of dock doors and parking spaces respectively at the project. The City must consider incorporation into the General Plan and Development Code of these and other requirements listed in the Attorney General's guidance that would reduce unnecessary transportation-related energy consumption.
- construction of electric plugs for electric transport refrigeration units at every dock door, if the warehouse use could include refrigeration
- requirements that operators to establish and promote a rideshare program that discourages single-occupancy vehicle trips and provides financial incentives for alternate modes of transportation, including carpooling, public transit, and biking

While the Attorney General's guidance is designed to reduce the impacts of warehouse projects, the measures listed above and others included in the guidance are applicable to a wide range of industrial and commercial projects which generate significant traffic. The City must consider incorporating these and other measures into the General Plan and Development Code in order to reduce unnecessary transportation-related energy-consumption associated with the Project.

In addition, the DPEIR's discussion of the project's energy impacts, as well as its discussion of the environmental setting, completely omits any discussion of impacts associated with the use of freight. As the DPEIR notes elsewhere, both the Union Pacific and BNSF rail lines in Fresno carry freight traffic, with the Union Pacific line carrying exclusively freight. 4.13-8. The U.S. Department of Transportation's Bureau of Transportation indicates that rail freight service was responsible for the consumption of 507 trillion BTU of distillate/diesel fuel nationwide.[45] The DPEIR must disclose the project's anticipated impacts on the use of freight, in addition to underlying energy demand associated with freight in Fresno. The presence of two freight-carrying rail lines and a BNSF intermodal hub center in Fresno and the General Plan's dedication of extensive land for industrial development, including agricultural processing and warehouse distribution uses, indicate that the project's freight-related energy impacts are potentially significant.

The City must revise the DPEIR to accurately and completely describe the project's likely energy impacts and must provide factual bases justifying its conclusions regarding the energy impact significance levels. Given the regional scope and multi-decade nature of this

---

[44] Available at https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/warehouse-best-practices.pdf, access on May 8, 2021.

[45] See Bureau of Transportation Statistics, Energy Consumption by Mode of Transportation, Table 4-6, available at https://www.bts.gov/content/energy-consumption-mode-transportation

project; the extensive development it contemplates; and the lack of clear and enforceable requirements that will ensure the reduction and avoidance of unnecessary and wasteful energy usage, the project will likely result in significant energy impacts which require mitigation. Pub. Res. Code § 21100(b)(3); 14 C.C.R. § 1516.2(b) ("If analysis of the project's energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use"). Mitigation measures identified must comply with the specific mitigation requirements set forth in Public Resources Code Section 21000(b)(3), CEQA Guidelines Section 15126.4(a)(1), and Appendix F(II)(D)(1-5). See also *People v. County of Kern* (1976) 62 CA.3d 761, 774 (finding an EIR deficient that failed to include a detailed statement setting forth the mitigation measures proposed to reduce wasteful, inefficient, and unnecessary consumption of energy as required by section 21100(c) and CEQA Guidelines section 15143).

F. The PEIR Fails to Consider Electrification of Buildings as a Potentially Feasible Mitigation Measure for Reducing the General Plan's Significant Energy, Air Quality, and GHG Impacts

The PEIR errs by failing to analyze building electrification as a potentially feasible mitigation measure for reducing energy use, GHG emissions, and air pollution. The California Energy Commission recently found that "[t]here is a growing consensus that building electrification is the most viable and predictable path to zero-emissions buildings" and is "essential to California's strategy to meet its [greenhouse gas] reduction goals for 2030 and 2050.[46] Given the General Plan's significant GHG and air quality impacts, the PEIR should evaluate building electrification as a potentially feasible mitigation measure.

Building electrification substantially reduces GHG emissions. Energy use by buildings is a major source of GHG emissions, much of which comes from gas end uses, such as space and water heating. Electrification can "reduce total greenhouse gas emissions in single family homes by approximately 30 to 60 percent in 2020, relative to a natural gas-fueled home."[9] In addition, as "the carbon intensity of the grid decreases over time, these savings are estimated to increase to approximately 80 to 90 percent by 2050, including the impacts of upstream methane leakage and refrigerant gas leakage from air conditioners and heat pumps."[10]

Building electrification also reduces air pollution. Gas appliances in buildings make up a quarter of California's nitrogen oxide (NO_x) emissions from natural gas. NO_x is a precursor to ozone and particulate matter, which are key pollutants to curb in order to comply with state and federal ambient air quality standards. All-electric buildings reduce NO_x and ground level ozone, improving outdoor air quality and benefiting public health. A recent study from the UCLA Fielding School of Public Health found that immediate replacement of all residential gas appliances with clean electric alternatives would result in 354 fewer deaths, 596 fewer cases of acute bronchitis, and 304 fewer cases of chronic bronchitis annually in California due to

---

[46] Docket No. 18-IEPR-01, 2018 IEPR Update Volume II, at 28, 32 (Mar. 21, 2019), https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2018-integrated-energy-policy-report-update.

improvements in outdoor air quality alone—the monetized equivalent of $3.5 billion in health benefits per year.[47]

In addition, given the disproportionately high asthma rates in low-income communities in Fresno, it is essential that the PEIR evaluate all-electric development as a potentially feasible mitigation measure.[48] Children from low-income households who have asthma often experience greater exposure to outdoor air pollution and are more susceptible to the health effects of pollution than asthmatic children from higher-income families.[49]

Requiring electrified buildings is a potentially feasible mitigation measure for reducing the significant air quality and GHG impacts identified in the DPEIR. All-electric residences can be less costly to build due to avoided gas infrastructure costs. Industry leaders have shown that all-electric construction is feasible for all building types, from single-family residences to large, commercial buildings.[50] For example, PG&E records demonstrate the average cost of gas infrastructure to serve a single-family home in an existing subdivision may be $8,700 or more. Moreover, while electric rates are expected to have long-run stability due to increased sales from electrification of vehicle and gas end uses, gas rates are likely to rise substantially as gas throughput decreases, particularly in an unmanaged scenario where avoidable capital investments in the gas system continue. Thus, the DPEIR improperly fails to consider building electrification as a potentially feasible mitigation measure.

VII. The DPEIR Fails to Adequately Analyze or Mitigate Significant Noise and Groundborne Vibration Impacts

The DPEIR does not analyze potentially feasible mitigation measures to reduce or avoid the significant noise impacts caused by implementation of the General Plan. The DPEIR concludes that the General Plan's implementation will result in a significant increase in noise levels that cannot be mitigated. NOI-1 at 1-36. However, the DPEIR does not meaningfully evaluate ways to minimize the impact of noise on residents through noise reduction and suppression techniques, or through appropriate land use policies.

As discussed above, the City has approved millions of square feet of warehouse projects in South Fresno. The California Attorney General recently observed that the noise from the construction of these warehouses causes "intrusive impacts to nearby sensitive receptors." *See* Attorney General, *Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act*, at 9.[51] In addition, the Attorney General notes that trucks and on-site loading activities at warehouses can also be loud, bringing disruptive noise levels during 24/7 operation that can cause hearing damage after prolonged exposure. *Id.* (citing

---

[47] Zhu, *et al., Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California*, UCLA Fielding School of Public Health (April 2020), available at https://ucla.app.box.com/s/xyzt8jc1ixnetiv0269qe704wu0ihif7.

[48] Brady Seals and Andee Krasner, *Health Effects from Gas Stove Pollution*, Rocky Mountain Institute, Physicians for Social Responsibility, and Sierra Club, 2020, at 13, https://rmi.org/insight/gasstoves-pollution-health.

[49] *Id.*

[50] Redwood Energy, *Zero Carbon Commercial Construction: An Electrification Guide for Large Commercial Buildings and Campuses* (2019), *available at* https://www.redwoodenergy.tech/wp-content/uploads/2019/09/Pocket-Guide-to-Zero-Carbon-Commercial-Buildings-2nd-Edition.pdf

[51] Available at https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/warehouse-best-practices.pdf

Noise Sources and Their Effects (a diesel truck moving 40 miles per hour, 50 feet away, produces 84 decibels of sound).[52] Therefore, the Attorney General implores "developers and lead agencies [to] adopt measures to reduce the noise generated by both construction and operation activities." *Id.*

Although the DPEIR notes several examples of possible measures to reduce noise from new development—such as providing setbacks and regulating hours of operation—it fails to impose any such requirements on construction or new development to reduce noise. *See* DPEIR 4.13-13. In fact, the DPEIR asserts that all construction activity is exempt from noise controls so long as the activity is conducted pursuant to an applicable construction permit and occurs between 7:00 a.m. and 10:00 p.m. 4.13-9. DPEIR at 4.13-19. The DPEIR then contends that "short-term construction impacts associated with the exposure of persons to or the generation of noise levels . . . would be less than significant" because construction noise is exempt from the City's noise ordinance. *Id.* That is not how CEQA works. The City ordinance's exemption of construction noise does not authorize a finding that construction noise will be less than significant. To the contrary, the lack of any applicable local regulation controlling construction noise impacts indicates the need for mitigation to address noise impacts. CEQA provides no exemption for mitigating construction noise impacts simply because a local ordinance does not apply to such impacts.

The City must analyze potentially feasible mitigation measures for the significant construction noise impacts caused by the Project, which the DPEIR acknowledges could be approximately 90 decibels (dB) at 50 feet. 4.13-18. That level is known to cause hearing damage. DPEIR at 4.13-5. In fact, construction noise impacts are known to occur at over 90 dB at 100 feet from the source, and over 80 dB at 200 feet from the source. *See* Kimley Horn, *Acoustical Assessment of Sierra Avenue and Casa Grande Warehouse Project City of Fontana, California* (June 2020), at 20, Table 6.[53] Although the DPEIR acknowledges that activities anticipated by the General Plan will expose sensitive populations to excessive groundborne vibration and groundborne noise levels (DPEIR 4.13-24), the PEIR fails to discuss any potential feasible mitigation measures. The DPEIR observes that disturbance due to groundborne vibration and groundborne noise are "usually contained to areas within about 100 feet of the vibration source" and as far as 200 feet. PEIR at 4.13-6. Despite identifying this 100 to 200-foot impact area, the DPEIR asserts that requiring a 25-foot buffer between heavy construction equipment and existing structures would mitigate groundborne vibration impacts to less than significant. DPEIR 4.13-24 (Mitigation Measure NOI-2); Table 1-1 at 1-36. The DPEIR provides no analysis for this conclusion that a 25-foot buffer will mitigate noise that the DPEIR itself admits is significant within a 100 to 200-foot area.

Instead of attempting to mitigate noise impacts, the DPEIR improperly proposes to relax noise limits. For instance, the DPEIR proposes to increase the maximum allowable noise exposure level for noise-sensitive land uses such as residential, transient lodging, hospitals/nursing homes, and churches/meeting halls from 60 to 65 dB. DPEIR at 4.13-22. This increase is not supported by any rational analysis or evidence. The DPEIR merely states that the increase is justified considering the "intensification of land uses in the city" and the "continuing

---

[52] Available at https://www.chem.purdue.edu/chemsafety/Training/PPETrain/dblevels.htm

[53] Available at https://www.fontana.org/DocumentCenter/View/32906/Sierra-and-Casa-Grande-Appendix-G---Noise

urbanization of the city." *Id*. This is not a legitimate reason to allow development to expose sensitive populations to unmitigated noise pollution.

Likewise, the DPEIR proposes a 3 dB increase from ambient levels as a significance threshold for noise impacts (Policy NS-1-j). Again, the DPEIR does not explain why this 3 dB threshold was selected or is appropriate for determining the significance of noise impacts. In any case, the DPEIR fails to acknowledge that noise thresholds set in General Plans and ordinances are not determinative of whether noise impacts are significant. *See Keep Our Mountains Quiet v. County of Santa Clara* (2015) 236 Cal.App.4th 714, 732. Accordingly, the City's reliance on this arbitrary 3 dB significance threshold is misplaced and may not be used to analyze the noise impacts of future development. Thus, the DPEIR fails to analyze and mitigate significant noise impacts in violation of CEQA.

It is critical for the DPEIR to evaluate potential mitigation of the significant noise impacts that will foreseeably occur from General Plan implementation. The City should consider, at a minimum, the following potentially feasible mitigation measures identified by the Attorney General's *Warehouse Best Practices* guide:

- Siting warehouse facilities so that their property lines are at least 1,000 feet from the property lines of the nearest sensitive receptors;

- Providing adequate areas for on-site parking, on-site queuing, and truck check-in that prevent trucks and other vehicles from parking or idling on public streets;

- Placing facility entry and exit points from the public street away from sensitive receptors, e.g., placing these points on the north side of the facility if sensitive receptors are adjacent to the south side of the facility;

- Locating warehouse dock doors and other onsite areas with significant truck traffic and noise away from sensitive receptors, e.g., placing these dock doors on the north side of the facility if sensitive receptors are adjacent to the south side of the facility;

- Posting signs clearly showing the designated entry and exit points from the public street for trucks and service vehicles.

- Posting signs indicating that all parking and maintenance of trucks must be conducted within designated on-site areas and not within the surrounding community or public streets.

See Attorney General, *Warehouse Best Practices*, at 5. In addition, the City should consider limiting construction to daytime hours, e.g., 9:00 a.m. to 5:00 p.m.

VIII. The DPEIR Fails to Adequately Analyze and Mitigate the Project's Aesthetic Impacts Resulting From Industrial Development in Rural Settings and Residential Areas

The General Plan's designation of nearly the entire South Industrial Priority Area for industrial development would result in the visual transformation of this area, which includes scenic semi-rural and agricultural landscapes, low-density residential neighborhoods, and cultural and architectural landmarks like Wat Brahmacariyakaram, to a sprawling industrial center. The aesthetic, light, and glare impacts resulting from buildout of the South Industrial Priority Area are clearly significant and require thorough analysis and consideration and adoption of all feasible mitigation measures. Indeed, the implementation of the General Plan and Development Code since their adoption in 2014 has already wrought significant aesthetic impacts in the area. The approval and development of millions of square feet of towering warehouse distribution centers has replaced farmland, blocked scenic vistas of the Sierra Nevada mountains, directed light glare into residents' homes at night, and filled roadways with heavy-duty trucks, vans, and car traffic.

Leadership Counsel detailed for the City the potential for and occurrence of significant aesthetic impacts associated with the Project in its May 2020 comments on the DPEIR. Unfortunately, both the DPEIR and the RPEIR fail to address these issues. The RPEIR includes no revisions to address the comments regarding aesthetic impacts that Leadership Counsel previously raised. In its Response to Comments, the City claims that the "the proposed project does not include any land use changes" that would result in aesthetic impacts, "because the current land uses have already been adopted." Response to Comments, p. 3-78. But as discussed elsewhere in this letter, the City cannot evade a holistic review of the General Plan's impacts by narrowly defining the project as "continued implementation of the General Plan." The City's Response to Comments also asserts that analysis is not required at this time, because future development would be subject to CEQA analysis. Yet, CEQA does not permit the City to defer analysis and mitigation of reasonably foreseeable impacts because of possible CEQA review of subsequent projects. Further, the City's response ignores the fact that the Development Code provides for the approval of dozens of land use types without project-level discretionary review. As discussed further below, the DPEIR's analysis of the Project's aesthetic impacts and its failure to identify suitable mitigation to reduce those impacts fails to comply with CEQA.

A. Substantial Adverse Impacts on Scenic Vistas in Rural and Residential Areas

The DPEIR concludes that the project would not have a substantial adverse effect on a scenic vista and that no mitigation is required to achieve this result. The analysis supporting the DPEIR's conclusion fails to acknowledge or describe the impacts on scenic vistas of the Sierra Nevada Mountain Ranges and semi-rural agricultural landscapes that implementation of the General Plan has had and will continue to have on South Fresno neighborhoods which are designated by the General Plan Land Use Map for industrial development.

The DPEIR states that:

> "scenic vistas may be impacted in two ways: a development project can have visual impacts by either directly diminishing the scenic quality of the vista or by blocking the view corridors or "vista" of the scenic resource. Important factors in determining whether a proposed project would block scenic vistas include the project's proposed height, mass, and location relative to surrounding land uses and travel corridors. Typical scenic vistas are locations where views of rivers, hillsides, and open spaces are accessible from public vantage points." (4.1-3)

The General Plan's designation of about 5,000 acres of land for industrial development

South Industrial Priority Area has and will continue to directly diminish the area's scenic quality and block the view of scenic vistas. These impacts result from large industrial warehouses and other industrial buildings constructed on vacant land and land occupied by agricultural or low-density residential uses and heavy truck and car traffic on local roadways generated by these industrial facilities. The height, mass, and location of industrial development permitted by the General Plan and Development Code and of the truck and car traffic which this development generates has and will continue to have a substantial adverse impact on scenic vistas.6 Since the General Plan's adoption, more than two million square feet of warehouse distribution facilities have been developed and permitted in the area.

The Development Code permits buildings in all industrial zone districts, including the Heavy Industrial, Light Industrial, Regional Business Park, and Business Park zone districts, to stand up to 60 feet tall (or up to 30 or 40 feet when the building is within 40 or 50 feet of a residential property line) and requires buildings in those zone districts to be set back just 15 feet from the property line. FMC § 15-303, Tables 15-302-1 & 15-302-2. The construction of these buildings mars the scenic vista of the rural agricultural setting, as low-lying vineyards, agricultural lands, and small residential communities become interspersed with expansive and towering buildings in relation to the setting. The industrial buildings and other features of industrial sites, like retaining walls and berms, also substantially or completely block views of the Sierra Nevada Mountain Ranges from both public and private spaces depending on the location of the observer. For instance, since the General Plan's adoption, the construction of the Ulta Beauty distribution facility and retaining walls along the facility's perimeter at 850 East Central Avenue has blocked the previously open view of the Sierra Nevada mountain range from the community of Daleville on E Daleville and S Mary Avenues, which is adjacent to the facility.

In addition, constant truck and car traffic associated with these projects blocks and interferes with scenic vistas in the Southern portion of the Planning Area. Pursuant to the California Vehicle Code, trucks may be up to 14 feet in height, and the average car is five to six feet tall. For just one warehouse project alone, an expansion of the existing Amazon warehouse in the North Pointe Business Park which was approved in 2021, the project's Traffic Impact Analysis estimated that the project would generate 3,274 daily vehicle trips into the neighborhood or 1,195,010 vehicle trips per year. Northpoint Building 31 Trip Generation and Impact Assessment, p. 4, Attachment 5. The continuous passage of trucks, vans, and cars on local roadways to and from this and other projects which have been approved since the General Plan's adoption and future projects which will occur with continued implementation of the General Plan substantially diminishes the quality and blocks the view of both the Sierra Nevadas and agricultural lands for pedestrians and users of private property throughout the area.

Because the DPEIR fails to study these significant impacts on aesthetics, despite our previous comments describing these impacts to the City, the DPEIR fails to live up to its role as an informational document. Further, given the clearly significant impacts which have and will continue to result from General Plan and Development Code implementation, the DPEIR must consider and identify feasible and legally enforceable mitigation measures to reduce the project's impacts to scenic vistas on rural and residential areas. We recommend that the City consider the following measures to reduce these impacts:

- Revise the General Plan land use designations for the SIPA to non-industrial land

use designations that establish smaller height and building size limitations (i.e, designations other than Heavy Industrial, Light Industrial, Regional Business Park, and Business Park) around schools, places of worship, neighborhoods, residences, and public parks.
- Revise the Development Code to reduce the maximum building height allowed in Employment Districts where buildings would block the view of a scenic vista.
- Require enhanced set backs, installation of mature evergreen trees, and adoption of other design features for industrial development in areas that are near residential neighborhoods to mitigate adverse impacts on scenic vistas.
- Re-route truck traffic from roadways lined with residences in industrial-designated areas.

B. Significant Adverse Impacts on the Visual Character and Quality of Rural and Residential Neighborhoods

The DPEIR recognizes that the land uses proposed by the General Plan would replace existing rural, agricultural, and open space uses and that as a result, continued implementation of the General Plan will substantially alter the visual character within the Planning Area. Yet the DPEIR's analysis fails to describe the magnitude and severity of this impact, including in communities and neighborhoods located in these areas, and the DPEIR fails to identify feasible mitigation measures that would effectively reduce the projects impacts on visual character and quality. The City must revise the DPEIR to address these flaws and recirculate it for public review and comment. *Sierra Club v. County of Fresno* (2018) 6 C5th 502, 514 ([A]n EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect.); *City of Long Beach v. City of Los Angeles* (2018) 19 CA5th 465, 486.

Buildout of the General Plan has and will continue to dramatically adversely impact the visual character and quality of these areas due to the replacement of agricultural land uses, low-density residential housing, and cultural and architectural landmarks like Wat Brahmacariyakaram with industrial development pursuant to the General Plan land use map. features of the area. Vineyards, single-family farm residences, and single-family residences and neighborhoods would be replaced with concrete warehouses and other industrial facilities up to 60 feet tall pursuant to Development Code standards for industrial zone districts. These changes would significantly alter and degrade the visual character or quality of views of the area, including from streets, sidewalks, schools, places of worship, and residences.

We note that the DPEIR's significance criteria for impacts to visual character and quality do not include impacts to views from privately-owned spaces. While the project would have significant impacts on the visual character of the area from both public and private spaces, The DPEIR provides no explanation for its exclusion of privately owned spaces. CEQA does not limit an EIR's impacts analysis only to impacts that affect spaces within the public domain. The DPEIR must be revised and recirculated to address the Project's impacts to visual character and the quality of views on privately-owned spaces, including from the residences and other privately-owned property in the neighborhoods and communities located in and near the South Industrial Priority Area. The DPEIR must identify and adopt suitable mitigation to address these impacts too.

Furthermore, while DPEIR acknowledges that the project will result in a potentially significant impact on visual character and quality of public views, it states that no feasible mitigation measures are available without even considering any measures at all. The DPEIR is incorrect. Many feasible mitigation measures exist to avoid and reduce the Project's impacts of visual characters and the quality of public views. These include the same mitigation measures identified sub-section (A) of this section of this letter above. In addition, the City could adopt mitigation measures that would establish a commitment by the City to invest in the visual character of the area, including through the installation of landscaping, the modification of Development Code design standards to ensure compatibility of new development with the existing rural residential character of the area, and investment in aesthetically pleasing public spaces, such as trails and parks, which could be used by residents and workers.

IX. The DPEIR Fails to Acknowledge the Project's Significant Land Use Impacts Resulting from the General Plan's Division of Established Communities

The DPEIR finds that the Project "would not physically divide an established community," and therefore would have a less than significant impact in this impact category. In reaching this conclusion, the DPEIR fails to consider the impacts of the General Plan's application of industrial land use designations to entire residential neighborhoods in South Fresno and policies promoting shovel ready development. The City failed to correct this serious omission in its RPEIR and in doing so, dismissed comments by Leadership Counsel in its May 2020 comments in which it raised these issues. As the City did for other portions of Leadership Counsel's May 2020 comments, the City based its dismissal of our comments on its description of the Project as only the "continued implementation of the General Plan" rather than the General Plan in its entirety, including its land use designations. Response to Comments, p. 3-115. The City's reliance on an inaccurate and segmented project description does not excuse it from analyzing, acknowledging, and mitigating the Project's significant impacts from its designation of entire neighborhoods for industrial development.

The DPEIR's brief analysis of this impact category states that "future development could create established communities within rural communities that are located in the outer areas of the Planning Area," and that "[i]t is anticipated that as future development in accordance with the approved General Plan expands within the rural areas, there could be continuing conflicts between existing and new land uses, which could create a division of existing rural communities." DPEIR, 4.11-28. The DPEIR then goes on to state that objectives and policies contained within the General Plan would "lessen the impact of dividing established communities by increasing or maintaining connectivity to the surrounding area." Id. This analysis does not acknowledge that in addition to new residential development in and around existing rural communities, the General Plan also plans for industrial development where residential neighborhoods are currently located. The General Plan Land Use Map designates entire neighborhoods and communities, as well as the land surrounding these communities, for industrial development. Residential neighborhoods and communities designated for industrial development include but are not limited to the following:

- the community of Daleville
- the community bounded by East Central, South Orange, and East Cedar Avenues
- the portion of the community of Calwa located to the South of East Jensen Avenue
- the community bounded by South Peach Avenue on the East and East Jensen Avenue on the North

- the community bounded by South Rose, East Kaviland, and East Grove Avenue
- a mobile home park located in the Jane Addams neighborhood of the City of Fresno

The General Plan's designation of these and other communities for industrial land uses is designed not only to divide established residential communities, as industrial development projects occur in the midst of those communities, but ultimately to replace those communities with industrial development. General Plan, p. 3-31, Figure IM-1. In addition, the designation of homes and other community-serving land uses for industrial development may impair residential property owners' ability to successfully obtain credit for home maintenance and permits for home improvements and reduce their ability to sell their homes for residential use. The DPEIR's designation of residential neighborhoods for industrial land use requires analysis, mitigation and a finding of significance. It is critical that the City acknowledge and assess these impacts in order for the public and decision-makers to have accurate information about the nature and severity of the Project's land use impacts. The DPEIR's lack of such analysis renders it deficient under CEQA.

Moreover, the DPEIR fails to identify and acknowledge General Plan policies facilitating investment in shovel ready development opportunities and permit streamlining for areas designated for industrial uses (which the General Plan calls "employment" land uses) . See e.g., General Plan, Ch. 2-3, 22 (Policies ED-1-e & j), 24 (ED-3-b), 27 (ED-5-c). By planning for and supporting industrial development surrounding residential communities, the General Plan results in negative impacts on housing quality and on schools, places of worship, corner stores, and other neighborhood-serving institutions and destabilizes the long-term viability of the community. General Plan Policy MT-1-c, "Plan Line Adoption," (General Plan, 4-26) furthers the City's objectives to transform residential neighborhoods to industrial centers by providing for the adoption of Official Plan Lines "for transportation corridors, roadways, and bicycle/pedestrian paths/trails, as necessary to preserve and/or obtain right-of-way needed for planned circulation improvements." General Plan, p. 4-26. Since the General Plan's adoption, the City has implemented Policy MT-1-c by adopting OPLs for East Central Avenue which plan to widen East Central Avenue in a manner that would encroach into residential property and allow for higher traffic volumes in closer proximity to homes in the SIPA. MT-1-c therefore accelerates the decline of SIPA neighborhoods and their ultimate division and elimination. But the DPEIR does not acknowledge or analyze the impacts of these policies on existing communities.

The DPEIR lists certain General Plan objectives and policies as evidence that project impacts associated with the division of existing communities will not be significant. But the DPEIR provides no analysis of those objectives and policies to explain why they support that conclusion or how they would counteract policies aimed at the division of existing communities. The DPEIR simply states that they would "reduce the potential to physically divide an established community to a less than significant level," and that "[n]o mitigation is required." DPEIR, 4.11-28. These policies appear to do nothing to reduce the likelihood that the General Plan's industrial land use designations and policies will result in the division and replacement of existing communities with industrial land uses. For example, Objective UF-8 states, "Develop each of Downtown's neighborhoods and districts, according to its unique character,"; Policy UF-12-a provides, "[d]esign land uses and integrate development site plans along BRT corridors, with transit-oriented development that supports transit ridership"[54]; and Policy UF-12-g directs the City to establish design standards for mixed-used activity centers (none of which are located within the areas designated purely for industrial development listed in this section above). Policy LU-1-b calls for the creation of "appropriate transitions or buffers between new development with existing uses," yet the General Plan Land Use Map, as explained above, provide for no buffers or transition zones between areas designated for heavy industrial land use and existing residential and community-serving land uses. And as explained above in this this letter, the Development Code also lacks standards to create buffers and ensure that existing residential neighborhoods are protected from new industrial and warehouse development.

For these reasons, the DPEIR fails to support its conclusion that the division of existing communities is a less than significant impact with substantial evidence, and the City ignores crucial information provided by Leadership Counsel and evident from a review of the General Plan land use map and policies that demonstrate that these impacts will be significant. The City must revise and recirculate the DPEIR to correct these deficiencies in order to comply with CEQA.

X. The DPEIR's Analysis of Project Impacts to Population and Housing is Deficient Because it Fails to Acknowledge the Project's Potential to Displace Substantial Numbers of People

The DPEIR must consider the project's potential impact on population and housing, and specifically, whether the project would "[d]isplace substantial numbers of existing people or housing." 14 C.C.R. § 15000 *et seq.*, appen. G, § XIV; *cf. Hollywoodians Encouraging Rental Opportunities v. City of Los Angeles* (2019) 37 Cal. App. 5th 768, 774. The DPEIR does not adequately do so here.

The DPEIR's analysis of the Project's potential to displace existing people or housing fails to acknowledge or discuss the potential for displacement associated with planned industrial development and fails to provide facts to support its assertions that General Plan policies will mitigate any displacement impacts to less than significant levels. DPEIR, 4.14-14, 15. As discussed above, the General Plan designates entire residential communities (both within and outside of current City limits) and land up to and surrounding housing for industrial development. As a result of the designation of residential uses for industrial development, the project anticipates the conversion of hundreds of units of housing to industrial land uses. And, as also discussed above in this letter, the designation of land adjacent to housing for industrial uses and the use of local roadways where housing is located for heavy truck and car traffic serving those industrial uses will contribute to the significant deterioration of housing quality and the relocation of neighborhood residents to more suitable housing. The elimination of housing stock and the relocation of residents from neighborhoods designated for industrial development will put pressure on the housing supply. These housing supply impacts may be expected to occur not only in the City of Fresno but also elsewhere in Fresno County and beyond, given that most of the housing stock impacted by the General Plan's industrial land use designations are located outside of City limits and near the edge of the Planning Area and residents who relocate will not necessarily move to an area within the Planning Area. Notably, the Study Area that the DPEIR

---

[54] None of the residential communities listed in this letter as designated by the General Plan for industrial development are located along a designated BRT corridor.

adopts for this analysis – the Planning Area – fails to allow for the consideration of the impacts of that displacement outside of the Planning Area in Fresno County and beyond. See DPEIR, 4.14-2.

The DPEIR dismisses the project's potential displacement impacts by stating that the General Plan implementation "would also result in the development of a net increase in units when compared to the existing inventory" and that the housing units available as replacement units for those that could be removed as a result of General Plan implementation would be increased. DPEIR, 4.14-15, 15. However, the DPEIR fails to state how many units may be expected to be developed with General Plan implementation and how this compares to the number of units which may be lost due to displacement coupled with the demand for housing among existing and future residents. In addition, the DPEIR says nothing of the expected price levels of new housing development and how that compares to price levels which displaced residents can afford. According to the City of Fresno's 2019 and 2018 Housing Element Annual Progress Reports, new residential development in the City of Fresno has primarily served above-moderate income households. On the other hand, South Fresno neighborhoods which the General Plan designates for heavy industrial development have high poverty rates, meaning that many residents in these neighborhoods are unlikely to be able to afford new residential development that occurs as a result of General Plan implementation.

In addition, the DPEIR's statement that a relocation analysis would be required to be prepared "[p]rior to any displacement" is inaccurate and misleading. First, a displacement study will not be required prior to relocation of residents who move to avoid the impacts of new industrial development and roadway expansion or for residents who chose to sell their homes to a buyer that develops the land for industrial uses. Second, pursuant to General Plan policies promoting permit streamlining for "employment" land uses, much new industrial development occurs by right under the Development Code and is not subject to CEQA or a displacement analysis that the law might otherwise trigger.

Finally, the DPEIR also states that several Housing Element policies and objectives would "reduce housing impacts," and "avoid the need for construction of replacement housing due to the development of a net increase of new housing units" and that therefore "[n]o mitigation would be required." DPEIR, 4.14-15. This analysis fails to contain facts necessary to support its conclusion. First, the DPEIR does not make the connection between the housing element policies to which it cites and the conclusion that the General Plan's displacement required. The DPEIR does not explain or demonstrate (1) how or why the specific policies cited would lead to an actual reduction in impacts, (2) the nature and scope of the reduction in housing impacts which may be expected to occur and/or the nature and number of new housing units which may be developed, or (3) how the DPEIR determined that the reduction in housing impacts and/or the development of new units as a result of the housing element objectives and policies would reduce housing and population displacement impacts to a less than significant level. The analysis also does not explain why implementation of housing element policy and objectives in and of themselves will reduce potential displacement impacts to less than significant levels, taking into consideration existing lower-income housing needs in Fresno, which include the need for more than 15,000 units for lower-income households; increasing employee to housing ratios identified by the DPEIR, and the very low levels of lower-income housing production compared to the need that has occurred as a result of Housing Element implementation to date. DPEIR, 4.14-3, 7 (identifying the City's current lower-income RHNA of 8,955 units and the City's carry-over RHNA of 6,476 units);

The City must revise the DPEIR to accurately and completely acknowledge and disclose the project's potential to displace substantial numbers of existing people and units of housing in existing residential neighborhoods that are planned for industrial development. *See* 4 C.C.R. § 15000 *et seq.*, appen. G, § XIV. Given the apparent significance of these impacts, the revised DPEIR must include feasible and enforceable mitigation measures to reduce and avoid these impacts.

XI. The DPEIR Fails to Disclose & Identify Adequate Mitigation to Minimize the Project's Groundwater Impacts

A. The DPEIR Fails to Disclose or Adopt Adequate Mitigation to Minimize the Project's Groundwater Supply Impacts on Neighborhoods Reliant on Well Water

The Planning Area is located in the Kings Groundwater Subbasin which is designated by the State Water Resources Control Department as a "critically over-drafted high priority basin." North Fork Kings Groundwater Sustainability Agency "Groundwater Sustainability Plan in Compliance with the Sustainable Groundwater Management Act," (2019), p. 1-1&2.[55] The subbasin was given its high-priority status as a result of the removal of millions of acre-feet of groundwater from subsurface storage as a result of groundwater pumping exceeding recharge. Id., p. 1-2. The DPEIR acknowledges that "the City is creating an overdraft of the Kings Groundwater Subbasin." 4.10-21. The adopted 2019 Groundwater Sustainability Plan (GSP) for the Kings Subbasin notes that the "trend of groundwater overdraft was accelerated in recent years by increased groundwater pumping as[56] a result of significantly reduced surface water deliveries" during the drought from 2012 and 2016. *Id.* Given this reality, CEQA requires the DPEIR to include a thorough discussion of the project's potentially significant impacts on groundwater and propose robust mitigation measures to reduce groundwater impacts however feasible. *San Joaquin Raptor Rescue Ctr. v. Cty. of Merced* (2007) 149 Cal. App. 4th 645, 661–62. An adequate evaluation is particularly important in light of the current local drought, which the City Board of Supervisors recently declared an emergency. *See* Fresno Bee, *Fresno County leaders declare local drought emergency. One says drought is 'man-made'* (May 4, 2021). This DPEIR does not do so.

First, the DPEIR contains no discussion about the current groundwater availability for residential communities and households which rely on domestic wells for their everyday water needs and the project's potential groundwater impacts on these communities and households. The DPEIR provides some data from City wells about groundwater level decline rates since 1990 in certain areas within the City that range from .5 to three feet per year. 4.10-3. This data does not include unincorporated areas within the Planning Area and the DPEIR does not indicate the range of years which the data represents and how reflective the decline rates are of recent trends. Between 2012 and 2016, numerous households and entire neighborhoods located in unincorporated County in the Southcentral and Southwestern portions of the Planning Area lost access to water in their homes as their wells ran dry. These households were forced to buy bottled water, rely on emergency connections to neighbors, seek emergency assistance such as the installation of water tanks from the state and non-profit organizations like Self-Help

---

[55] Available at http://northforkkings.org/webpages/wp-content/uploads/2020/01/NFKGSA_GSP_Final_Adopted.pdf

[56] Available at https://www.fresnobee.com/news/local/water-and-drought/article251156669.html.

Enterprises, and in the case of households with the financial resources to do so, spend thousands of dollars to drill deeper wells. The DPEIR asserts that the City's continued participation in the North Kings Groundwater Sustainability Agency (GSA) and compliance with the Subbasin GSP will result in balanced water demand by 2040. 4.10-21, 22. Yet a balanced water demand in 2040 does not address significant impacts on households and communities impacted by groundwater depletion that occur within the next twenty years. For homes with shallow domestic wells, reductions in groundwater levels by just a few feet can mean the difference between flowing and dry taps. A potentially balanced water demand in 20 years will not alleviate the significant impact that occurs should households lose access to water supply in the present.

The South Fresno neighborhoods reliant upon domestic groundwater are disproportionately lower-income and disproportionately comprised of people of color, immigrants, and people who speak languages other than English compared to other parts of the Planning Area. The DPEIR's failure to disclose, analyze, and adopt feasible and enforceable mitigation measures to address the project's potentially significant impacts on groundwater supply in households that rely on domestic wells disproportionately adversely impacts protected classes and potentially violates civil rights and fair housing laws.

Second, while the GSP recognizes that recent severe and prolonged drought accelerated groundwater pumping in the Kings Subbasin, the DPEIR does not mention this in its discussion of the environmental setting nor does it disclose or discuss the likelihood of future drought conditions, water supply reductions, and increased groundwater demand that will occur as a result of climate change.[57] Without information relating to the impacts of climate change on groundwater supply between the present and the potential attainment of balanced water demand in 2040, the DPEIR fails to accurately inform decision-makers of the nature and magnitude of the project's significant impacts on groundwater supplies in the Kings Subbasin and the Planning Area as a whole and on domestic well users who are the most vulnerable to groundwater depletion.

Third, the DPEIR's calculations of the amount of water that will be available to the City of Fresno as buildout occurs do not appear to take into account groundwater depletion that occurs outside of City limits. The GSP does not contain measures to limit groundwater pumping and pumping that occurs outside of City limits may negatively impact subsurface inflow from neighboring areas and recharge supplies. The DPEIR relies on estimates of subsurface inflow and recharge supplies for its calculations of the water supply available to the City and the amount of groundwater that may be necessary. The DPEIR's failure to account for groundwater pumping outside of City limits therefore has the result of potentially inflating the DPEIR's calculation of available water supplies and understating future groundwater demand in the Planning Area. These calculation errors would artificially lessen the apparent significance of the project's impacts on groundwater supplies. The City must revise the DPEIR to its calculations with respect to groundwater pumping outside of City limits and its effects on subsurface inflow and recharge supplies and correct the DPEIR's calculations and analysis if they failed to account for the pumping.

---

[57] See Michael E. Mann & Peter H. Gleick, "Commentary: Climate change and California drought in the 21st century," March 31, 2015, discussing study results showing that the climate change is influencing the frequency, magnitude, and duration of drought in California and that the co-occurrence of dry years with warm years raises the risk of drought. Published on the Proceedings of the National Academy of Science of the United States of America's website and available at https://www.pnas.org/content/pnas/112/13/3858.full.pdf

Fourth and finally, the one mitigation measure that the DPEIR proposes, Mitigation Measure HYHD-2.1, will not minimize the project's impact on groundwater supplies and will not address impacts to households on domestic wells over the next twenty years. The measure provides only that the City will "continue to be an active participant in the North Fork Kings [GSA] and the implementation of the North Fork Kings [GSP]..." The commitment for the City to be an "active participant" in the GSA and GSP implementation is undefined and lacks clear actions that the City will take that will actually reduce groundwater supply depletion. Numerous feasible and effective mitigation options to minimize this impact exist, including commitments by the City to decrease groundwater pumping, switch to other sources of water, and ensure the City does not exceed the amount it can consume within the GSA boundaries while not depleting supplies (as it is currently doing). The DPEIR must consider each of these mitigation options and incorporate them as enforceable mitigation measures which specify the actions that the City will take to ensure that the project's groundwater impacts are minimized. Pub. Res. Code §§ 21002.1(a), 21100(b)(2), 21081.6(b); 14 C.C.R. § 15126.4.(a)(2). Further, the DPEIR also must identify specific mitigation measures to minimize groundwater supply depletion impacts on households on domestic wells. Such measures may include but are not limited to the following:

- a commitment to work proactively to facilitate the connection by such households to City water supplies, including by seeking and offering financial assistance and waiving and/or reducing fees to make it financially feasible for lower-income households to connect;
- the incorporation of households on domestic wells into City planning for infrastructure extension projects serving new development and/or requirements that new development which will contribute to the City's overall water demand pay a fee to support the connection of households on domestic wells.

XI. The RPEIR Fails to Adequately Analyze or Mitigate the General Plan's Cumulative Impacts

An EIR must discuss significant "cumulative impacts." CEQA Guidelines § 15130(a). "Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." CEQA Guidelines § 15355(a). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects." CEQA Guidelines § 15355(a). A legally adequate "cumulative impacts analysis" views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable future projects whose impacts might compound or interrelate with those of the project at hand. CEQA Guidelines § 15065(a)(3). "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guidelines § 15355(b). The cumulative impacts concept recognizes that "[t]he full environmental impact of a proposed . . . action cannot be gauged in a vacuum." *Whitman v. Board of Supervisors* (1979) 88 Cal.App.3d 397, 408. Here, the RPEIR's analysis of cumulative impacts is incomplete, cursory and superficial.

The CEQA Guidelines provide that an agency can take two approaches to its cumulative impacts analysis. It may identify a list of past, present, and probable future projects producing related or cumulative impacts or identify a summary of projections contained in an adopted plan that describes or evaluates cumulative conditions. CEQA Guidelines § 15130(b)(1). The RPEIR purports to use both the list of projects approach and the summary of projections approach for analyzing cumulative impacts, and the RPEIR's approach varies by impact chapter. RPEIR at 4-3. Yet a review of the impact chapters reveals that the RPEIR generally fails to disclose which approach is being used. In those few instances in which the RPEIR states that it is using the list of projects approach, it never identifies the projects that are purportedly being evaluated.

Nor is there any evidentiary support that the RPEIR's cumulative impacts analysis takes into account past projects and future projects, as CEQA requires. CEQA Guidelines § 15065(a)(3). In order for the public and decisionmakers to fully understand which projects have and have not been included in the RPEIR's cumulative impacts analysis, the RPEIR must first explicitly identify the following and then describe how the RPEIR's cumulative impacts analysis included this information:

- the change in light industrial and heavy industrial land use acreage between 2014 and 2019;
- the number of light industrial and heavy industrial projects that were approved between 2014 and 2019;
- a description of these 2014-2019 light industrial and heavy industrial projects, including the nature of the projects and whether their approval required general plan amendments and/or rezonings;
- an identification of the general plan amendments and/or rezonings to "light industrial" and/or "heavy industrial" land uses since 2019;
- an identification of the light industrial and heavy industrial projects approved since 2019;
- a list of proposed applications for general plan amendments or rezonings to "light industrial" and/or "heavy industrial" land uses; and,
- a list of proposed applications for light industrial and heavy industrial projects.

Information regarding this development is critical to understanding the impacts of the Project. Since the 2014 General Plan was adopted, the City approved over 2.8 million square feet of industrial development, particularly warehouse projects in the South Central area of Fresno, including Amazon and Ulta warehouse projects.[58] These projects, which were approved with minimal notice to the public and little to no mitigation, have had substantial impacts on the

---

[58] This figure includes the following developments: three warehouse buildings located at 3455, 3523, and 3611 South North Pointe Drive, approved pursuant to Development Permit No. 17-175, and consisting of 804,045 square feet of industrial warehouse space; an Amazon distribution center also located at 3575 South Orange Avenue, and consisting of 856,000 square feet; an Ulta Beauty distribution center located at 850 East Central Avenue, approved pursuant to Development Permit No. D-16-150, and consisting of 871,020 square feet, and a warehouse located at 3608 East East Avenue, approved pursuant to Development Permit, No. P18-03577. These are only a few examples of warehouse development approved in this area since the General Plan's adoption, and we understand that at least several other projects have been approved during this time.

surrounding community. The RPEIR must analyze the impacts of these projects in combination with the development permitted under the General Plan.

Set forth below are examples of deficiencies within each of the cumulative impacts analyses.

A. Agricultural Resources Impacts

The RPEIR's cumulative impacts section pertaining to impacts to agricultural resources purports to rely on the summary of projections approach (at 4.2-17), yet we can find no indication that the document actually used this approach. Moreover, the RPEIR fails to conduct the required cumulative impact analysis. While the RPEIR generally refers to cumulative development occurring within the city of Clovis, the county of Fresno, and the county of Madera, the RPEIR never actually identifies the nature or amount of the development in these other jurisdictions. Nor does the RPEIR identify the amount of agricultural land that would be converted to development within these jurisdictions. In addition, the RPEIR makes no attempt to determine how much agricultural land would be lost as a result of the development contemplated by the Fresno General Plan, together with the development contemplated by the city of Clovis, the county of Fresno, and the county of Madera. Notwithstanding the fact that the RPEIR provides no actual analysis, it nonetheless concludes that cumulative impacts to agricultural resources would bs be significant and unavoidable. RPEIR at 4.2-18. In further violation of CEQA, the EIR fails to provide any mitigation for this significant impact. CEQA Guidelines § 15126.4. Such mitigation should include limits on the conversion of agricultural land, requirements for restoration of agricultural lands, and the use of conservation easements to offset agricultural land conversions.

B. Air Quality Impacts

A thorough evaluation of the General Plan's cumulative effect on air quality is particularly important because the San Joaquin Valley Air Basin is designated as "nonattainment" of the ozone, PM_{10} and $PM_{2.5}$ state ambient air quality standards. The RPEIR purports to assess the General Plan's cumulative air quality impacts by evaluating development within the San Joaquin Valley Air Basin. RPEIR at 4.3-68. However, the RPEIR fails to conduct any actual analysis of how buildout of the General Plan, together with other growth in the air basin, will affect air quality. Instead, the document offers vague statements such as "[f]uture development that may occur with the continued implementation of the approved General Plan would contribute criteria pollutants to the area during project construction and operation." RPEIR at 4.3-68. "To facilitate CEQA's informational role, an EIR must contain facts and analysis, not just the agency's bare conclusions or opinions." *Habitat & Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1303. At a minimum, the RPEIR could have evaluated whether growth from the Fresno General Plan together with growth from the other jurisdictions within the San Joaquin Valley Air Basin is consistent with the projections identified in the San Joaquin Valley APCD's air quality plan.

C. Biological Resources Impacts

The RPEIR's discussion of cumulative biological resources fails to disclose whether it relies on a summary of projections or a list of projects approach. Regardless, it fails to undertake the analysis of cumulative impacts CEQA requires. For example, the RPEIR makes no attempt to evaluate the cumulative loss of habitat for special-status species that would result from buildout of the General Plan and other development in the area (e.g., development contemplated by city of Clovis, the county of Fresno, and the county of Madera). Nor does the RPEIR disclose how cumulative development would affect riparian habitat habitats and wetland habitats. The document lacks any substantive analysis and instead offers self-evident assertions such as "cumulative development near the San Joaquin River corridor *could* result in potential impacts on riparian habitat" and "[t]he conversion of grassland and undeveloped areas to cumulative development, within the San Joaquin Valley, *may* increase effects on protected wetland habitats." RPEIR at 4.4-33 and 4.4-34 (emphasis added). Here too, in direct violation of CEQA, the RPEIR fails to provide any specific analysis as to the effect that cumulative development would have on habitat loss for special-status species, or riparian or wetland habitats, yet concludes such impacts would be significant. RPEIR at 4.4-33.

The RPEIR includes a laundry list of mitigation measures (Mitigation Measures BIO-1.1 through BIO-1.4, Mitigation Measures BIO-2.1 through BIO-2.3, and Mitigation Measures BIO-3.1 through BIO-3.2) and concludes that cumulative impacts to biological resources would be less than significant. But here too, the RPEIR makes no attempt to explain how these mitigation measures would reduce the General Plan's cumulative effects. To conclude, as the RPEIR does, that an impact is less than significant, substantial evidence must demonstrate that mitigation measures will reduce an impact to a less-than-significant level. Substantial evidence consists of "facts, a reasonable presumption predicated on fact, or expert opinion supported by fact," not "argument, speculation, unsubstantiated opinion or narrative." Pub. Res. Code § 21080(e)(1)-(2). Because the RPEIR's conclusion of insignificance is premised on unsupported assumptions, it fails far short of this threshold.

D. Energy Impacts

The RPEIR purports to assess the General Plan's cumulative energy impacts by evaluating development within the PG&E service area, which encompasses 70,000 square miles. RPEIR at 4.6-36. However, the RPEIR fails to conduct any actual analysis. Instead, the RPEIR asserts that development within the General Plan Planning Area would be required to adhere to policies in the General Plan and concludes that future development in the Planning Area would not contribute to cumulative impacts. RPEIR at 4.6-36. This approach fails. As an initial matter, the RPEIR only refers to impacts from the General Plan itself; it makes no attempt to evaluate cumulative energy impacts from the General Plan together with cumulative development.

Second, the RPEIR concludes that the General Plan's energy impacts would be less than significant asserting that the City would comply with General Plan policies. But once again, the RPEIR fails to provide the evidentiary support that such policies would effectively reduce impacts. For example, the RPEIR refers to one policy—Policy RC-8-b—which, "includes targets for reducing residential and non-residential electricity use." RPEIR at 4.6-36. However, this Policy does not actually require that any action be taken. Rather, it calls for the city to "strive" to reduce per capita electricity use by developing and implementing incentives and promoting alternative energy sources. RPEIR at 4.3-33. A policy calling for the City to strive to reduce electricity use is meaningless as it does not provide a firm commitment to take action. Nor does the policy include any type of performance standards that would provide concrete criteria for success. Thus the RPEIR may not rely on this policy to conclude that the General Plan's cumulative energy impacts would be less than significant.

Third, the RPEIR's analysis does not comply with CEQA's requirement that agencies first determine whether cumulative impacts to a resource are significant, and then determine whether a project's impacts are cumulatively considerable (i.e., significant when considered in conjunction with other past, present and reasonably foreseeable projects). CEQA Guidelines § 15064(h)(1). The RPEIR skips the first step and focuses only on the second. This error causes the document to underestimate the significance of the Project's cumulative impacts because it focuses on the significance of the Project's impacts on their own as opposed to considering them in the context of the cumulative problem. It is wholly inappropriate to end a cumulative analysis on account of a determination that a project's individual contribution would be less than significant. Rather, this should constitute the beginning of the analysis.

E. Hydrology and Water Quality Impacts

The RPEIR's discussion of cumulative hydrology and groundwater impacts gives the impression that it assesses cumulative effects from other projects in the area. RPEIR at 4.10-35. Yet, the document never identifies those projects. Consequently, although the RPEIR asserts that operations of these (unidentified) other projects would increase impervious surfaces and increase stormwater runoff rates, it fails to provide any factual analysis to allow for a determination as to whether this runoff would degrade water quality in the area.

In addition, the RPEIR does not adequately analyze cumulative impacts due to groundwater pumping. The RPEIR acknowledges that Kings Subbasin is in overdraft condition and that if the City does not continue to implement programs, a significant impact would occur. RPEIR at 4.10-36. Yet, the RPEIR never does the hard work of identifying the other projects that are contributing to the overdraft condition. Nor does it analyze the specific consequences to the Kings Subbasin of this overdraft (e.g., severity of localized cones of depression, the effects of changes in groundwater flow direction, the potential for increased concentrations of contaminants, and the specific effects of land subsidence). Here too, the RPEIR lists several mitigation measures (HYD-2.1, HYD-3.1, HYD-3.2, HYD-3.3, HYD-3.4, and HYD-3.5) and concludes that cumulative hydrology and water quality impacts would be less than significant. RPEIR at 4.10-36. Yet, the document fails to describe the nature of these measures or explain how these measures would protect against overdraft. Therefore, the RPEIR lacks support that the measures would reduce impacts to a less than significant level.

F. Water Supply Impacts

Similar to the RPEIR's analysis of cumulative energy impacts, the RPEIR determines that the General Plan's cumulative water supply impacts would be less than significant because water supplies would be adequate to serve buildout of the General Plan. The RPEIR fails to even mention, let alone identify, water demand from cumulative development and fails to provide any information about the adequacy of water supplies in the region, including for domestic well users impacted by City and regional groundwater usage. Consequently, the RPEIR lacks support for its conclusion that cumulative water supply impacts would be less than significant.

XII. The EIR Fails to Identify a Reasonable Range of Potentially Feasible Alternatives

An EIR must consider a reasonable range of potentially feasible alternatives that would avoid or lessen a project's potentially significant effects.14 C.C.R. § 15126.6(a). "The core of an EIR is the mitigation and alternatives section." *Watsonville Pilots Association v. City of Watsonville* (2010), 183 Cal.App.4th 1059, 1089. Alternatives must be able to implement most project objectives, though they need not implement all of them. 14 C.C.R. § 15126.6; *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 CA4th 477, 489. The range of alternatives required in an EIR are those that are necessary to permit a reasoned choice. 14 C.C.R. § 15126.6(f). The scope of alternatives reviewed must be considered in light of the nature of the project, the project's impacts, relevant agency policies and other material facts. *Rancho Palos Verdes v. City Council* (1976) 59 Cal. App. 3d 869, 891. The "purpose of an alternatives analysis is to allow the decision maker to determine whether there is an environmentally superior alternative that will meet most of the project's objectives." *Watsonville Pilots Ass'n*, 183 Cal.App.4th at 1089.

In evaluating only the "No Project Alternative" and the Net Zero Energy Consumption Alternative, the City has failed to meet CEQA's standards for its alternatives analysis. Courts have made clear that the "No Project Alternative" is not in fact an "alternative" pursuant to the CEQA Guidelines, since the No Project Alternative by default does not advance the Project's objectives. The City therefore effectively evaluates only one alternative, the Net Zero Energy Consumption Alternative, despite the fact that the Project will guide all development in Fresno through 2056 and will have far reaching environmental impacts long beyond that time. For a project of this scale and impact, the evaluation of just one alternative is unreasonable.

Further, the one alternative the City does analyze does not meet CEQA's requirements for a legally adequate alternative. First, the Net Zero Energy Consumption Alternative is not feasible or reasonable, because it consists of a requirement with a deadline which has already passed – the achievement of net zero energy consumption by both residential and non-residential development by 2020. DPEIR, 6.5.1; Pub. Res. Code § 21061.1 (defining "feasible" as "capable of being accomplished in a successful manner..."). Second, the Net Zero Energy Alternative fails to reduce or avoid significant environmental effects based on the DPEIR's own findings. The DPEIR finds that the Project would not result in potentially significant impacts related to energy or Greenhouse Gas Emissions. DPEIR, 6.5.2. Nevertheless, the DPEIR identified the Net Zero Energy Consumption Alternative as the Environmentally Superior Alternative since it "has the least impact to the environment because it would result in few impacts related to energy and greenhouse gas emissions". *See* DPEIR, 6.6. The selection and consideration of the Net Zero Energy Consumption Alternative is inconsistent with CEQA, since it will not reduce a significant impact, as acknowledged by the City. Thus, the City must identify other alternatives that potentially will avoid or lessen a significant effect of the project.

The City's failure to analyze a reduced development alternative compounds the inadequacy of the DPEIR's alternatives analysis. The Net Zero Energy Consumption Alternative is explicit that, other than the requirement that all development achieve zero net energy by 2020, "[all other components of the approved General Plan would remain in effect." DPEIR, p. 6-6. The alternative specifies that "new development would occur using new development practices," but that "development would still occur consistent with the policies of the approved General

Plan. DPEIR, p. 6-7. The Net Zero Energy Alternative and therefore the DPEIR's alternatives analysis does not include a reduced development component. And the RPEIR does not include an alternatives analysis, because the City did not modify the DPEIR's alternatives analysis. Moreover, the DPEIR does not consider or propose any changes to its Development Code lessen the severity of the impacts of new industrial development, including on vulnerable disadvantaged communities and sensitive receptors. Such changes considered in an alternative could include the reduction in the intensity of land use types allowed within certain zone districts or near sensitive receptors or the addition of discretionary permit requirements for certain industrial uses likely to have significant environmental impacts.

The City's failure to include a reduced development alternatives analysis is particularly significant, because Leadership Counsel requested that the City consider such an alternative in its May 2020 comments. Leadership Counsel May 2020 comments, pp. 3, 4, 21. Specifically, the letter requested that the City analyze alternatives to industrial land use designations avoid and minimize significant environmental and public health impacts on South Fresno neighborhoods. Leadership Counsel even included a map as an attachment to its letter that provided sample alternative land use designations in South Fresno which would achieve this objective.[59] The City's preparation and consideration of such an alternative would be consistent with guidance by the Attorney General Xavier Becerra's encouraging proactive planning to avoid conflicts between industrial districts and residential communities. "Land use designation and zoning decisions should channel development into appropriate areas," including away from sensitive receptors. Attorney General Xavier Becerra, Stat of California Department of Justice, Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act, p. 3.[60]

An EIR is required to consider those alternatives that will "attain most of the basic objectives" while avoiding or substantially reducing the environmental impacts of the project. A reduced development alternative may be required where it is capable of avoiding or substantially lessening any significant effects of the project," even if it "would impede to some degree the attainment of the project objectives. *Watsonville Pilots Assn. v. City of Watsonville* (2010) 183 Cal.App.4th 1058, 1088-1089 (General Plan EIR was inadequate where it failed to consider a reduced development alternative that would have met most general plan objectives and would have reduced environmental impacts attributable primarily to growth itself). A reduced development alternative which replaces heavy industrial land use designations with less intensive, non-industrial designations with land use designations that meet community needs directly surrounding existing residential and other sensitive neighborhood uses would achieve the CEQA requirement that alternatives considered avoid or substantially reduce the project's significant environmental impacts. In particular, the enactment of buffers between residential neighborhoods and industrial development could substantially reduce a variety of significant

---

[59] That map is available on the City's webpage for the South Central Specific Plan at the following link: https://www.fresno.gov/darm/wp-content/uploads/sites/10/2020/06/Community-Revision-Map.pdf, accessed on May 10, 2021.

[60] Available at https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/warehouse-best-practices.pdf, access on May 8, 2021.

impacts identified in the DPEIR, including but not limited to aesthetic, light, noise, air pollution, public health, traffic, and greenhouse gas emissions, among others. Importantly, such a reduced development alternative would reduce health impacts on vulnerable populations in pollution-burdened South Fresno neighborhoods who would be subjected to fewer environmental impacts.

Additionally, a reduced development alternative that creates buffer zones around sensitive land uses while leaving remaining industrial land use designations in place would achieve all of the Project's goals and objectives and further many of them more than the General Plan with its existing land use designations. Among the General Plan's seventeen goals, some of the goals that this alternative would actively further include the following (discussion by author is in italics):

> Goal 3. Emphasize conservation, successful adaptation to climate and changing resource conditions, and performance effectiveness in the use of energy, water, land, buildings, natural resources, and fiscal resources required for the longterm sustainability of Fresno. (General Plan, p. 1-6)
>
> *Creating buffer zones between residences and other sensitive land uses will stabilize neighborhoods and promote their long-term sustainability by reducing adverse impacts from industrial land uses. By preserving the quality and long-term viability of existing housing, the alternative promotes resource conservation. The alternative also supports climate adaptation by reducing heat impacts from large warehouse and industrial development on sensitive land uses.*
>
> Goal 4. Emphasize achieving healthy air quality and reduced greenhouse gas emissions. (General Plan, p. 1-6)
>
> *The RPEIR acknowledges that industrial development is a leading source of air pollution in Fresno. By reducing the scale of planned industrial development, the alternative promotes the achievement of both healthy air quality and reduced GHG emissions.*
>
> Goal 6. Protect, preserve, and enhance natural, historic, and cultural resources.
>
> [This includes both designated historic structures and neighborhoods, but also "urban artifacts" and neighborhoods that create the character of Fresno. (General Plan, p. 1-6)
>
> *The General Plan currently designates entire neighborhoods and unique and culturally-important places of worship for industrial development. A few examples include the disadvantaged unincorporated community of Daleville, neighborhoods on East Central Avenue and East Malaga Avenue, the Sikh Gurdwaras Nanaksar Sahib, and the Thai Buddhist Temple Wat Brahmacariyakaram, all located in South Central Fresno. By planning for the elimination of these places, the General Plan undermines*

Goal 6. The reduced development alternative proposed by Leadership Counsel, on the other hand, would actively promote this goal.

Goal 8. Develop Complete Neighborhoods and districts with an efficient and diverse mix of residential densities, building types, and affordability which are designed to be healthy, attractive, and centered by schools, parks, and public and commercial services to provide a sense of place and that provide as many services as possible within walking distance. (General Plan, p. 1-6)

The land use map proposed by Leadership Counsel replaces industrial land use designations around sensitive uses with commercial and office space. These designations respond to resident priorities articulated at workshops held by the City for the development of the South Central Specific Plan, where residents requested that the City plan for uses to meet basic community needs, including fresh food, retail, health services, and green space. These land use types would also meet the needs of the thousands of workers already employed within the SCSP area, allowing both residents and workers to meet day-to-day needs without reliance on car travel.

Goal 9. Promote a city of healthy communities and improve quality of life in established neighborhoods. (General Plan, p. 1-6)

The further concentration of industrial land uses in and around South Fresno neighborhoods, as proposed by the General Plan, will undermine public health and quality of life in neighborhoods which bare the brunt of their environmental impacts. Alternatively, a reduced development alternative with buffer zones which facilitate commercial, retail, health care and other establishments that meet community needs promotes healthy communities and would improve quality of life in South Fresno neighborhoods which lack basic services and amenities.

Goal 11. Emphasize and plan for all modes of travel on local and Major Streets in Fresno. [Facilitate travel by walking, biking, transit, and motor vehicle with interconnected and linked neighborhoods, districts,...shopping centers and other service centers...] (General Plan, p. 1-7)

Planning for neighborhood-serving land uses in South Fresno residential areas will reduce residents' dependence on travel by car. By redesignating industrial land use designations around sensitive uses, it will also promote walking and biking by reducing truck traffic in the area and improving pedestrian and cyclist safety.

Goal 13. Emphasize the City as a role model for good growth management planning,...effective urban development policies, environmental qualities, and a strong economy...

By balancing industrial growth with the safeguarding of existing residential communities and cultural resources, the alternative would advance Goal 13.

Goal 16. Protect and improve public health and safety.

Goal 17. Recognize, respect, and plan for Fresno's cultural, social, and ethnic diversity, and foster an informed and engaged citizenry.

South Fresno neighborhoods which the General Plan designates for industrial development are disproportionately comprised of Latino, Black, Asian American residents, households which speak languages other than English, and immigrants compared to the City as a whole. A reduced development alternative which plans for the continuation of these neighborhoods, not their elimination, and for the basic resources they need to thrive better aligns with Goal 17's directive that the City "[r]ecgonize, respect, and plan for Fresno's cultural, social, and ethnic diversity".

In addition, a reduced development alternative that creates buffer zones while still including significant industrial land use designation aligns with Goal 1 ("Increase opportunity, economic development, business, and job creation) by creating a range of job development opportunities with industrial employers as well as commercial, retail and other employers which could serve both community and industrial worker needs. Furthermore, a land use redesignation alternative is clearly feasible as it can be accomplished through the City's legal authority to do so.[61]

Finally, the DPEIR fails to "identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination" as required by Section 15126.6(c). The only explanation the City provided for selecting only two alternatives is that "given the set of specific changes that the project is proposing for the approved General Plan, a reasonable range of alternatives is limited". *See* DPEIR, 6.2. As explained elsewhere in this letter, an accurate description of the Project includes the General Plan and the entire duration of its implementation, not only the revisions to the General Plan to which the City wishes to limit its environmental review. Regardless, the DPEIR's explanation neither discloses whether other alternatives were in

---

[61] Our proposed alternatives would not constitute a "taking" pursuant to U.S. Constitutional law, an issue the City has raised in the past. The land use map we have proposed includes re-designation of certain land in the SIPA from industrial to commercial and office space uses, which allow parcels to retain at least some economic value.

fact considered, such as the reduced development alternative proposed in Leadership Counsel's May 2020 comments, or why the specific changes of the project limit the alternatives.

As such, the City must revise and recirculate the DPEIR to comply with CEQA's requirements for its selection and analysis of project alternatives.

XIII. The DPEIR's and RPEIR's Inadequacies Together With the General Plan's Policies Promoting Industrial Development in South Fresno Neighborhoods Render Them Inconsistent with Fair Housing and Civil Rights Laws

As noted in all previous correspondence on the matter, the RPEIR's deficiencies violate state and federal fair housing and civil rights laws as codified in Cal. Gov. Code §§ 12900, et. seq., 11135, 65008, 8899.50; 42 U.S.C. § 2000d, et seq., 3601, et seq., 5304(b)(2)&(s)(7B), & 12075), and other applicable law. These deficiencies include the RPEIR's failure to acknowledge and fully analyze impacts which uniquely, acutely, and / or disproportionately burden lower income communities of color and non-English speaking populations; the RPEIR's failure to analyze project alternatives that would reduce or eliminate impacts that disproportionately impact lower income communities of color and non-English speaking populations; and the RPEIR's failure to identify and include adequate mitigation measures for the same. Thus, the DPEIR not only violates CEQA but results in violations of state and federal fair housing and civil rights laws which require the City to both avoid discrimination and to affirmatively further fair housing.

XIV. Conclusion

For the foregoing reasons, we request that the City revise the DPEIR and RPEIR to correct the errors identified in this letter and recirculate the revised PEIR for public review and comment. The revised PEIR must thoroughly review the impacts from the entire lifetime of the General Plan and Development Code and consider all feasible mitigation measures and a reasonable range of alternatives to avoid and mitigate those impacts. In addition, we request that the City revise its GHG Reduction Plan to indicate that it does not meet the requirements for CEQA streamlining.

Please contact Ashley Werner at awerner@leadershipcounsel.org or (415) 686-1368 if you would like to set up a time to discuss these comments.

Sincerely,

awerner

Ashley Werner
Directing Attorney
Leadership Counsel for
Justice Accountability

Lucas Williams
Visiting Associate Professor of Law /Staff Attorney
Golden Gate University
Environmental Law and Justice Clinic

cc: Jennifer Clark, AICP, Director, Development and Resources Management Department
Mayor Jerry Dyer
Councilmember Esmeralda Soria, District 1
Councilmember Mike Karbassi, District 2
Councilmember Miguel Arias, District 3,
Councilmember Tyler Maxwell, District 4
City Council President Luis Chavez, District 5
Councilmember Gary Bredefeld, District 6
City Council Vice-President Nelson Esparza, District 7
Terry Hirschfield, Principle, Orange Center Elementary School
Samir Sheikh, Executive Director/APCO, San Joaquin Valley Air Pollution Control District
Scott Lichtig, Deputy Attorney General, California Department of Justice

ATTACHMENTS

Attachment 1: Shute, Mihaly, and Weinberger Comments on the City of Fresno General Plan FPEIR and GGRP, dated August 19, 2020

Attachment 2: Neal Liddicoat, Griffin Cover Transportation Consulting, PLLC, Comments on FPEIR, Fresno General Plan, dated August 7, 2020

Attachment 3: Neal Liddicoat, MRO Engineers, Review of "Transportation and Traffic" Analysis, DMEIR, General Plan and Development Code Update dated September 10, 2014

Attachment 4: Neal Liddicoat, Griffin Cover Transportation Consulting, PLLC, Comments on Recirculated Public Review DPEIR, Fresno General Plan, dated May 7, 2021

Attachment 5: Haseeb Qureshi, Urban Crossroads, Inc., Northpointe Building 31 Trip Generation and Impact Assessment

Attachment 6: Fresno CalEnviroScreen 3.0 Results

Attachment 7: CalEnviroScreen 3.0 Excel Results (Abridged)

Attachment 8: South Central Neighbors United v. City of Fresno, et al. (2018), Petition for Writ of Mandate

Attachment 9: Seth Shonkoff, et al, The Climate Gap: Environmental health and equity implications of climate change and mitigation policies in California - a review of the literature 2011

Attachment 10:	Chandrakala Ganesh, PhD, et al., Climate Change, Public Health, and Policy: A California Case Study, AJPH Policy, 2017
Attachment 11:	Shute, Mihaly, and Weinberger Comments on the Draft MEIR for the Draft General Plan and Development Code Update for the City of Fresno, dated October 8, 2014

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

May 14, 2021

Jennifer Clark
City of Fresno
Planning and Development Department
2600 Fresno Street, Room 3065
Fresno, CA, 93721

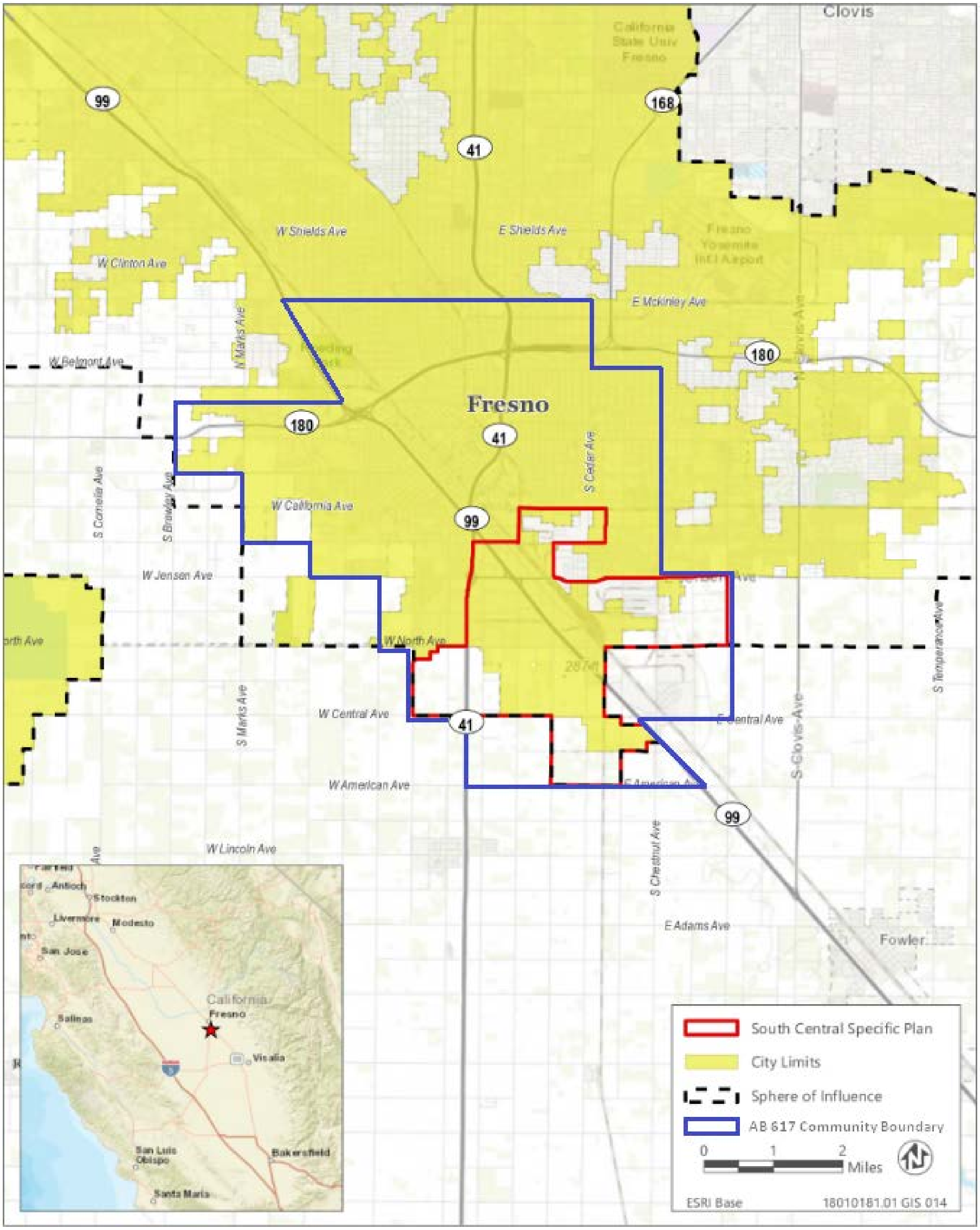
Project: Recirculated Notice of Preparation of an Environmental Impact Report for Revisions to the Fresno South Central Specific Plan (SCSP)

District CEQA Reference No: 20210313

Dear Ms. Clark:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the City of Fresno's (City) Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the South Central Specific Plan in Fresno (Project). Per the NOP, the proposed Project would designate land uses, establish a planning framework, and development standards to facilitate and guide future development within the approximately 5,600-acre planning area through the year 2040. The Project is located in the southern portion of Fresno and includes land outside of Fresno but within the City's sphere of influence. The EIR will evaluate potential impacts associated with development of a preferred proposed specific plan as well as additional development alternatives. The specific plan proposes revised land use and zoning designations, specific design guidelines, and process improvements. Future development would be required to comply with the proposed specific plan land use designations, development standards, and policy framework. The project area is contained with one of the communities in the state selected by the California Air Resources Board (CARB) for investment of additional air quality resources and attention under Assembly Bill (AB) 617 (Garcia) in an effort to reduce air pollution exposure in impacted disadvantaged communities (see Figure 1 below).

Figure 1: Boundaries of the South Central Fresno AB 617 Community and South Central Specific Plan (SCSP)



The District offers the following comments regarding the Project:

1) Land Use Planning

Nearly all development projects within the San Joaquin Valley Air Basin, from general plans to individual projects have the potential to generate air pollutants, making it more difficult to attain state and federal ambient air quality standards. Land use decisions are critical to improving air quality within the San Joaquin Valley Air Basin because land use patterns greatly influence transportation needs, and motor vehicle emissions are the largest source of air pollution in the Valley. Land use decisions and project design elements such as preventing urban sprawl, encouraging mix-use development, and project design elements that reduce vehicle miles traveled (VMT) have proven to be beneficial for air quality. The District recommends that the EIR incorporate strategies that reduce VMTs and require the cleanest available heavy duty trucks and vehicles, including zero and near-zero technologies. VMTs can be reduced through encouragement of mix-use development, walkable communities, etc. Additional design element options can be found at: http://www.valleyair.org/transportation/Mitigation-Measures.pdf

In addition, the District recommends that the EIR incorporate strategies that will advance implementation of the best practices listed in Tables 5 and 6 of CARB’s Freight Handbook Concept Paper, to the extent feasible. This document compiles best practices designed to address air pollution impacts as “practices” which may apply to the siting, design, construction, and operation of freight facilities to minimize health impacts on nearby communities. The concept paper is available at: https://ww2.arb.ca.gov/sites/default/files/2020-03/2019.12.12%20-%20Concept%20Paper%20for%20the%20Freight%20Handbook_1.pdf

2) Project Siting

The SCSP is the blueprint for future growth and provides guidance for the community’s development. Without appropriate mitigation and associated policy, future development projects within the City may contribute to negative impacts on air quality due to increased traffic and ongoing operational emissions. Appropriate project siting helps ensure there is adequate distance between differing land uses, which can prevent or reduce localized and cumulative air pollution impacts from business operations that are in close proximity to receptors (e.g. residences, schools, health care facilities, etc.). SCSP siting-related goals, policies, and objectives should include measures and concepts outlined in the following resources:

- CARB’s Air Quality and Land Use Handbook: A Community Health Perspective. The document includes tables with recommended buffer distances associated with various types of common sources (e.g. distribution centers, chrome platers, gasoline dispensing facilities, etc.), and can be found at: https://ww3.arb.ca.gov/ch/handbook.pdf

- CARB's Freight Handbook Concept Paper: This document compiles best practices designed to address air pollution impacts, which may apply to the siting, design, construction, and operation of freight facilities to minimize health impacts on nearby communities, and can be found at: https://ww2.arb.ca.gov/sites/default/files/2020-03/2019.12.12%20-%20Concept%20Paper%20for%20the%20Freight%20Handbook_1.pdf

3) Assembly Bill 617

Assembly Bill 617 requires CARB and air districts to develop and implement Community Emission Reduction Programs (CERPs) in an effort to reduce air pollution exposure in impacted disadvantaged communities, like those in which the Project is located. The South Central Fresno AB 617 community is one of 14 statewide communities selected by CARB for development and implementation of a Community Emission Reduction Program.

Following a year of extensive community engagement and collaboration with South Central Fresno's Community Steering Committee, the Community Emission Reduction Program for the South Central Fresno Community was adopted by the District's Governing Board in September 2019 and by CARB in February 2020. The CERP identifies a wide range of measures designed to reduce air pollution and exposure, including a number of strategies to be implemented in partnership between agencies and local organizations. The Community Steering Committee has developed a series of emission and exposure reduction strategies with the goal to improve community health by reducing exposure to air pollutants. Such emission reduction strategies include, but are not limited to, enhanced community participation in land use processes, the deployment of zero and near-zero emission Heavy-Heavy Duty (HHD) trucks, HHD truck rerouting analyses, reducing HHD truck idling, and incorporating vegetative barriers and urban greening.

During the development of the CERP, the Community Steering Committee expressed concerns regarding the proximity of emission sources to nearby sensitive receptors like schools, homes, day care centers, and hospitals, and the potential future industrial development within the community that may exacerbate the cumulative exposure burden for community residents. The Community Steering Committee also expressed the desire for more meaningful avenues of engagement surrounding the land-use decisions in the area. As these issues can most effectively be addressed through strong partnerships between community members and local land-use agencies, the District appreciates the City of Fresno's participation and partnership in developing the Community Emission Reduction Program. The District is committed to strengthening our working relationship with the City of Fresno to implement the land-use focused air pollution and exposure reduction strategies included in the Community Emission Reduction Program. Furthermore, the District recommends the City assess the emission reductions measures and strategies included in the CERP and address them in the EIR, as appropriate, to align the City of Fresno's work with the air pollution and exposure reduction strategies and measures outlined in the Community Emission Reduction Program.

For more information regarding the CERP approved for South Central Fresno, please visit the District's website at:
http://community.valleyair.org/selected-communities/south-central-fresno

4) Criteria Pollutant Emissions

At the federal level under the National Ambient Air Quality Standards (NAAQS), the District is designated as extreme nonattainment for the 8-hour ozone standards and serious nonattainment for the particulate matter less than 2.5 microns in size (PM2.5) standards. At the state level under California Ambient Air Quality Standards (CAAQS), the District is designated as nonattainment for the 8-hour ozone, PM10, PM2.5 standards.

As such, the District recommends that the EIR stipulate that future development projects within the SCSP identify and characterize project construction and operational air emissions. The District recommends the air emissions be compared to the following California Environmental Quality Act (CEQA) significance thresholds for annual emissions of criteria pollutants: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter with an aerodynamic diameter less than or equal to a nominal 10 or 2.5 microns (PM10 or PM2.5). The District recommends that future proposed projects be mitigated to the extent feasible, and that future proposed projects with air emissions above the aforementioned thresholds be mitigated to below these thresholds.

The District understands that the SCSP is a program-level Project where future individual project-specific data may not be available at this time. As such, the EIR should include a discussion of policies, which when implemented, will require assessment and characterization of project-level emissions, and subsequently require mitigation of air quality impacts to the extent feasible at the individual project-specific level. Environmental reviews of potential impacts on air quality should incorporate the following items:

4a) Construction Emissions

Construction air emissions are short-term emissions generated from construction activities such as mobile heavy-duty diesel off-road equipment, and should be evaluated separately from operational emissions. If air emissions from ongoing operational activities occur within the same year as construction emissions, those emissions should be combined.

Recommended Measure: To reduce impacts from construction-related diesel exhaust emissions, the project should utilize the cleanest available off-road construction fleets, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations.

4b) Operational Emissions

Operational (ongoing) air emissions from mobile sources and stationary sources should be analyzed separately. For reference, the District's annual criteria thresholds of significance are listed above.

Recommended Mitigation Measure: At a minimum, project related impacts on air quality should be reduced to levels of significance through incorporation of design elements such as the use of cleaner heavy-duty trucks and vehicles, measures that reduce VMTs, and measures that increase energy efficiency. More information on transportation mitigation measures can be found at: http://www.valleyair.org/transportation/Mitigation-Measures.pdf.

4c) Recommended Model for Quantifying Air Emissions

Project-related criteria pollutant emissions from construction and operational sources should be identified and quantified. Emissions analysis should be performed using the California Emission Estimator Model (CalEEMod), which uses the most recent CARB-approved version of relevant emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

5) Health Risk Screening/Assessment

To determine potential health impacts on surrounding receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) a Prioritization and/or a health risk assessment (HRA) should be performed for future projects within the SCSP. These health risk determinations should quantify and characterize potential Toxic Air Contaminant (TAC) air pollutants identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) that pose a present or potential hazard to human health.

Health risk analyses should include all potential air emissions from the project, which include emissions from construction of the facility, including multi-year construction, as well as ongoing operational activities of the facility. Note, two common sources of TACs can be attributed to diesel exhaust emitted from heavy-duty off-road earth moving equipment during construction, and from ongoing operation of heavy-duty on-road trucks. A list of TACs identified by OEHHA/CARB can be found at: https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants

Prioritization (Screening Health Risk Assessment):
A "Prioritization" is the recommended method for a conservative screening-level health risk assessment. The Prioritization should be performed using the California Air Pollution Control Officers Association's (CAPCOA) methodology. The District recommends that a more refined analysis, in the form of an HRA, be performed for any project resulting in a Prioritization score of 10 or greater. This is because the prioritization results are a conservative health risk representation, while the detailed HRA provides a more accurate health risk evaluation.

To assist land use agencies and project proponents with Prioritization analyses, the District has created a prioritization calculator based on the aforementioned CAPCOA guidelines, which can be found here: http:www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION%20RMR%202016.XLS

Health Risk Assessment:
Prior to performing an HRA, it is strongly recommended that land use agencies/development project proponents contact the District to review the proposed health risk modeling protocol. A development project would be considered to have a potentially significant health risk if the HRA demonstrates that the project-related health impacts would exceed the Districts significance threshold of 20 in a million for carcinogenic risk, or 1.0 for either the Acute or Chronic Hazard Indices. A project with a significant health risk would trigger all feasible mitigation measures. The District strongly recommends that development projects that result in a significant health risk not be approved by the land use agency.

The District is available to review HRA protocols and analyses. For HRA submittals please provide the following information electronically to the District for review:

- HRA AERMOD model files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and methodology.

For assistance, please contact the District's Technical Services Department by:

- E-Mailing inquiries to: hramodeler@valleyair.org
- Calling (559) 230-5900

- Visiting the Districts modeling guidance website at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

Recommended Measure: Development projects resulting in toxic air contaminant emissions should be located an adequate distance from residential areas and other sensitive receptors in accordance to CARB's Air Quality and Land Use Handbook: A Community Health Perspective.

Recommended Measure: A health risk screening and/or assessment should be performed to assess potential risks to sensitive receptors for all of the following projects:

- Projects whose proposed locations are within the established buffer distances identified in CARB's handbook located at https://ww3.arb.ca.gov/ch/handbook.pdf

- Projects whose land uses are not specifically identified in ARB's handbook (such as shopping centers), but there is sufficient information to reasonably conclude that sensitive receptors would be exposed to significant sources of toxic air contaminants; and

- Projects that would otherwise appear to be exempt from CEQA requirements, but there is sufficient information to reasonably conclude that sensitive receptors would be exposed to significant sources of toxic air contaminants, such as industrial use projects allowed by right.

6) Ambient Air Quality Analysis

An Ambient Air Quality Analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of State or National Ambient Air Quality Standards. The District recommends that the EIR requires an AAQA to be performed for any future development project with emissions that exceed 100 pounds per day of any pollutant.

An acceptable analysis would include emissions from both project-specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance, is available online at the District’s website: www.valleyair.org/ceqa.

7) Voluntary Emission Reduction Agreement (VERA)

Future development projects within the SCSP could have a significant impact on air quality. The District recommends the EIR include a feasibility discussion on implementing a Voluntary Emission Reduction Agreement (VERA) as a mitigation measure for future development projects that are determined to exceed the District's CEQA significance thresholds.

A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's incentives programs. The funds are disbursed by the District in the form of grants for projects that achieve emission reductions. Thus, project-related impacts on air quality can be fully mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors.

In implementing a VERA, the District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project-related emissions have been mitigated to less than significant. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the Draft EIR includes an assessment of the feasibility of implementing a VERA.

8) Truck Routing

Truck routing involves the assessment of which roads heavy-duty trucks take to and from their destination, and the emissions impact that the trucks may have on residential communities and sensitive receptors.

The District recommends the City evaluate heavy-duty truck routing patterns as they consider the detailed zoning changes within the scope of the Project, with the aim of limiting emission exposure to residential communities and sensitive receptors. This evaluation would consider the current truck routes, the quantity and type of each truck (MHD, HHD, etc), the destination and origin of each trip, traffic volume correlation with the time of day or the day of the week, overall VMT, and associated exhaust emissions. The truck routing evaluation would also identify alternative truck routes and their impacts on VMT, GHG emissions, and air quality.

9) Cleanest Available Heavy Duty Trucks

The San Joaquin Valley will not be able to attain stringent health-based federal air quality standards without significant reductions in emissions from HHD trucks, the single largest source of NOx emissions in the San Joaquin Valley. The District's ARB-approved 2018 PM2.5 Plan includes significant new reductions from HHD Trucks, including emissions reductions by 2023 through the implementation of CARB's Statewide Truck and Bus Regulation, which requires truck fleets operating in California to meet the 2010 standard of 0.2 g-NOx/bhp-hr by 2023. Additionally, to meet federal air quality attainment standards, the District's Plan relies on a significant and immediate transition of heavy duty truck fleets to zero or near-zero emissions technologies, including the near-zero truck standard of 0.02 g/bhp-hr NOx established by CARB.

For future development projects which typically generate a high volume of heavy-duty truck traffic (e.g. "high-cube" warehouses or distribution centers), there are heavy duty trucks traveling to-and-from from the project location at longer distribution trip length distances. Since these projects may exceed the District significance thresholds, the District recommends that the following mitigation measures be included in the EIR for project-related operational emissions:

- *Recommended Measure*: Fleets associated with operational activities utilize the cleanest available HHD trucks, including zero and near-zero (0.02 g/bhp-hr NOx) technologies.

- *Recommended Measure*: All on-site service equipment (cargo handling, yard hostlers, forklifts, pallet jacks, etc.) utilize zero-emissions technologies.

10) Reduce Idling of Heavy Duty Trucks

The goal of this strategy is to limit the potential for localized PM2.5 and toxic air contaminant impacts associated with failure to comply with the state's Heavy Duty anti-idling regulation (e.g. limiting vehicle idling to specific time limits). The diesel exhaust from excessive idling has the potential to impose significant adverse health and environmental impacts. Therefore, the EIR should deploy strategies to ensure compliance of the anti-idling regulation, especially near sensitive receptors, and discuss the importance of limiting the amount of idling within the SCSP.

Recommended Measure: Construction and operational fleets based within the SCSP area limit vehicle idling pursuant to 13 CCR § 2485 and 13 CCR § 2480.

11) Electric On-Site Off-Road and On-Road Equipment

Since the future development projects may include Heavy Industrial and Light Industrial uses, they may have the potential to result in increased use of off-road equipment (i.e. forklifts) and on-road equipment (i.e. mobile yard trucks with the ability to move materials). The District recommends that the EIR stipulate requirements for future project proponents to utilize electric or zero emission off-road and on-road equipment.

12) Under-fired Charbroilers

Future development project(s) for restaurants with under-fired charbroilers may pose the potential for immediate health risk, particularly when located in densely populated areas or near sensitive receptors. Since the cooking of meat can release carcinogenic PM2.5 species, such as polycyclic aromatic hydrocarbons, controlling emissions from new under-fired charbroilers will have a substantial positive impact on public health. The air quality impacts on neighborhoods near restaurants with under-fired charbroilers can be significant on days when meteorological conditions are stable, when dispersion is limited and emissions are trapped near the surface within the surrounding neighborhoods. This potential for neighborhood-level concentration of emissions during evening or multi-day stagnation events raises air quality concerns.

Furthermore, reducing commercial charbroiling emissions is essential to achieving attainment of multiple federal PM2.5 standards and their associated health benefits in the SCSP. Therefore, the District recommends that the EIR include a measure requiring the assessment and potential installation, as technologically feasible, of particulate matter emission control systems for new large restaurants operating under-fired charbroilers. The District is available to assist the City and project proponents with this assessment. Additionally, the District is currently offering substantial incentive funding that covers the full cost of purchasing, installing, and maintaining the system during a demonstration period covering two years of operation. Please contact the District at (559) 230-5800 or technology@valleyair.org for more information, or visit: http://valleyair.org/grants/rctp.htm

13) Vegetative Barriers and Urban Greening

For future development projects within in the SCSP, and at strategic locations throughout the SCSP in general, the District suggests the City consider incorporating vegetative barriers and urban greening as a measure to further reduce air pollution exposure on sensitive receptors (e.g. residences, schools, healthcare facilities).

While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, vegetative barriers have been shown to be an additional measure to potentially reduce a population's exposure to air pollution through the interception of airborne particles and the update of gaseous pollutants. Examples of vegetative barriers include, but are not limited to the following: trees, bushes, shrubs, or a mix of these. Generally, a higher and thicker vegetative barrier with full coverage will result in greater reductions in downwind pollutant concentrations. In the same manner, urban greening is also a way to help improve air quality and public health in addition to enhancing the overall beautification of a community with drought tolerant, low-maintenance greenery.

14) Solar Deployment in the Community

It is the policy of the State of California that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045. While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, the production of solar energy is contributing to improving air quality and public health. The District suggests that the City consider incorporating solar power systems as an emission reduction strategy for future development projects within the SCSP.

15) Electric Vehicle Chargers

To support and accelerate the installation of electric vehicle charging equipment and development of required infrastructure, the District offers incentives to public agencies, businesses, and property owners of multi-unit dwellings to install electric charging infrastructure (Level 2 and 3 chargers). The purpose of the District's Charge Up! Incentive program is to promote clean air alternative-fuel technologies and the use of low or zero-emission vehicles. The District recommends that the City and project proponents install electric vehicle chargers at project sites, and at strategic locations throughout the SCSP.

Please visit www.valleyair.org/grants/chargeup.htm for more information.

16) Nuisance Odors

While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often resulting in citizen complaints.

The City should consider all available pertinent information to determine if future development projects could have a significant impact related to nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration the proposed business or industry type and its potential to create odors, as well as proximity to off-site receptors that potentially would be exposed to objectionable odors. The intensity of an odor source's operations and its proximity to receptors influences the potential significance of malodorous emissions. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact.

According to the District Guidance for Assessing and Mitigating air Quality Impacts (GAMAQI), a significant odor impact is defined as more than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period. An unconfirmed complaint means that either the odor or air contaminant release could not be detected, or the source of the odor could not be determined.

As the future development projects that will fall within the SCSP do not yet exist and cannot be evaluated against the above complaint-driven odor significance criteria, the City should determine which business or industry types have historically triggered the significance criteria, and stipulate odor mitigation measures in the EIR as conditions of approval for those business and industry types. The District recommends that any project proponent whose project is determined to have a potentially significant odor impact should be required to draft and maintain an Odor Management Plan (OMP) as a mitigation measure in the EIR.

17) District Rules and Regulations

The District issues permits for many types of air pollution sources, and regulates some activities that do not require permits. A project subject to District rules and regulations would reduce its impacts on air quality through compliance with the District's regulatory framework. In general, a regulation is a collection of individual rules, each of which deals with a specific topic. As an example, Regulation II (Permits) includes District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 2520 (Federally Mandated Operating Permits), and several other rules pertaining to District permitting requirements and processes.

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm. To identify other District rules or regulations that apply to future projects, or to obtain information about District permit requirements, the project proponents are strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

17a) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources

Stationary Source emissions include any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a fugitive emission. District Rule 2010 (Permits Required) requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule 2201 (New and Modified Stationary Source Review) requires that new and modified stationary sources of emissions mitigate their emissions using Best Available Control Technology (BACT).

Future development project(s) may be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and may require District permits. Prior to construction, the project proponents should submit to the District an application for an ATC.

Recommended Mitigation Measure: For projects subject to permitting by the San Joaquin Valley Air Pollution Control District, demonstration of compliance with District Rule 2201 shall be provided to the City before issuance of the first building permit.

For further information or assistance, project proponents may contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

17b) District Rule 9510 (Indirect Source Review)

The purpose of District Rule 9510 is to reduce the growth in both NOx and PM emissions associated with development and transportation projects from mobile and area sources; specifically, the emissions associated with the construction and subsequent operation of development projects. The Rule requires developers to mitigate their NOx and PM emissions by incorporating clean air design elements into their projects. Should the proposed development project clean air design elements be insufficient to meet the required emission reductions, developers must pay a fee that ultimately funds incentive projects to achieve off-site emissions reductions.

Accordingly, a future development project within the SCSP may be subject to District Rule 9510 if upon full buildout, the project would equal or exceed any of the applicability thresholds in the table below, depending on the type of development and public agency approval mechanism:

Table 1: ISR Applicability Thresholds

Development Type	Discretionary Approval Threshold	Ministerial Approval / Allowed Use / By Right Thresholds
Residential	50 dwelling units	250 dwelling units
Commercial	2,000 square feet	10,000 square feet
Light Industrial	25,000 square feet	125,000 square feet
Heavy Industrial	100,000 square feet	500,000 square feet
Medical Office	20,000 square feet	100,000 square feet
General Office	39,000 square feet	195,000 square feet
Educational Office	9,000 square feet	45,000 square feet
Government	10,00 square feet	50,000 square feet
Recreational	20,000 square feet	100,000 square feet
Other	9,000 square feet	45,000 square feet

District Rule 9510 also applies to any transportation or transit development projects where construction exhaust emissions equal or exceed two tons of NOx or two tons of PM.

In the case the individual development project is subject to Rule 9510, an Air Impact Assessment (AIA) application is required, and the District recommends that demonstration of compliance with the rule prior to issuance of the first building permit, be made a condition of project approval.

Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm.

The AIA application form can be found online at: http://www.valleyair.org/ISR/ISRFormsAndApplications.htm.

District staff is available to provide assistance with determining if future development projects will be subject to Rule 9510, and can be reached by phone at (559) 230-5900 or by email at ISR@valleyair.org.

17c) District Rule 9410 (Employer Based Trip Reduction)

Future development projects may be subject to District Rule 9410 (Employer Based Trip Reduction) if the project would result in employment of 100 or more “eligible” employees. District Rule 9410 requires employers with 100 or more “eligible” employees at a worksite to establish an Employer Trip Reduction Implementation Plan (eTRIP) that encourages employees to reduce single-occupancy vehicle trips, thus reducing pollutant emissions associated with work commutes. Under an eTRIP plan, employers have the flexibility to select options that work best for their worksites and employees.

Information about District Rule 9410 can be found online at: www.valleyair.org/tripreduction.htm.

For additional information, you can contact the District by phone at 559-230-6000 or by e-mail at etrip@valleyair.org

17d) District Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters)

The purpose of this rule is to limit emissions of carbon monoxide and particulate matter from wood burning fireplaces, wood burning heaters, and outdoor wood burning devices. This rule establishes limitations on the installation of new wood burning fireplaces and wood burning heaters. Specifically, at elevations below 3,000 feet in areas with natural gas service, no person shall install a wood burning fireplace, low mass fireplace, masonry heater, or wood burning heater.

Information about District Rule 4901 can be found online at: http://valleyair.org/rule4901/

17e) Other District Rules and Regulations

Future development projects may also be subject to the following District rules: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

18) Additional Air Quality Evaluation and Discussion to Include in the EIR

18a) A discussion of the methodology, model assumptions, inputs and results used in characterizing the Project's impact on air quality. To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. The District further recommends that the District be provided with an electronic copy of all input and output files for all modeling.

18b) A discussion of the components and phases of the Project and the associated air emissions projections, including ongoing emissions from each previous phase.

18c) A discussion of whether the Project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. For reference and guidance, more information can be found in the District's Guidance for Assessing and Mitigating Air Quality Impacts at: https://www.valleyair.org/transportation/GAMAQI.pdf

18d) As required by the decision in Sierra Club v. County of Fresno (2018) 6 Cal.41h 502, a reasonable effort to discuss relevant specifics regarding the connection between potential adverse air quality impacts from the Project with the likely nature and magnitude of potential health impacts. If the potential health impacts from the Project cannot be specifically correlated, explain what is known and why, given scientific constraints, potential health impacts cannot be translated.

Therefore, the District recommends that the EIR include a discussion of how the Project, or Plan, particularly future projects developed under the Plan will conform to the Court's holding.

19) Future Projects / Land Use Agency Referral Documents

Future development projects may require an environmental review and air emissions mitigation. Referral documents and environmental review documents for these projects should include a project summary, the land use designation, project size, air emissions quantifications and impacts, and proximity to sensitive receptors and existing emission sources, and air emissions mitigation measures. For reference and guidance, more information can be found in the District's Guidance for Assessing and Mitigating Air Quality Impacts at: https://www.valleyair.org/transportation/GAMAQI.pdf

If you have any questions or require further information, please contact Eric McLaughlin by e-mail at Eric.McLaughlin@valleyair.org or by phone at (559) 230-5808.

Sincerely,

Brian Clements
Director of Permit Services

John Stagnaro
Program Manager

Orange Center School District

3530 S. Cherry Ave • Fresno, California 93706 • (559)237-0437 • Fax (559)237-9380

Terry M. Hirschfield, Superintendent

May 14, 2021

Jennifer Clark
Department Director
Development and Resource Management Department
City of Fresno 2600 Fresno Street, Room 3065
Fresno, CA 93721

RE: Comments in Response to Notice of Preparation of an Environmental Impact Report for the South Central Specific Plan

Dear Ms. Clark,

I am writing to provide comments regarding the City's preparation of an Environmental Impact Report for the South Central Specific Plan, based on 3 Proposed Land Use Maps, one of which would encircle South Fresno communities with industrial development. I wish to give input to the City on significant areas, which the City must study, should it choose to develop an EIR for the 3 land use maps included in the NOP.

The expansive industrial development envisioned by some of the elements in the SCSP will have devastating consequences on communities which rank among the most environmentally burdened in the state. The City must not proceed with an EIR that would destabilize housing, undermine public health, and further degrade environmental quality in and around the SCSP Area, which is disproportionately composed of residents of color, immigrants, and households that speak a language other than English.

Should the City choose to proceed to develop an EIR, based on all of the Proposed Land Use Maps, the City of Fresno must thoroughly assess the SCSP's numerous potentially significant impacts on public health, housing stability, community well-being, and access to opportunity for South Fresno residents and identify robust mitigation measures to avoid and minimize those impacts to the fullest extent. The EIR should investigate:

- Air pollution and health risks associated with pollution
- Light and noise pollution
- Greenspace availability (per child), as it compares to other locations in Fresno
- Availability of affordable housing
- Basic infrastructure and how resources compare to other areas in Fresno
- Traffic patterns, at various times throughout the week
- Access to fresh fruits and vegetables, as it compares to other locations in Fresno (grocery stores)

Finally, it is of the utmost importance that the City not only proactively and meaningfully engage the public within and around this planning area, as it proceeds with development of the SCSP and EIR, but actually incorporate the community's noted concerns into the EIR that will result in land use designation and zoning changes of the SCSP mapped area.

Thank you for your consideration of these comments. Please contact me if any questions arise.

Sincerely,

Terry Hirschfield

Principal

2907 S. Maple Avenue
Fresno, California 93725-2208
Telephone: (559) 233-7161
Fax: (559) 233-8227

CONVEYANCE. COMMITMENT. CUSTOMER SERVICE.

May 17, 2021

Jennifer Clark
Development and Resource Management Department
City of Fresno
2600 Fresno Street, Room 3065
Fresno, CA 93721

RE: City of Fresno Revised Notice of Preparation for the South Central Specific Plan Project
FID Facilities: Various

Dear Ms. Clark:

The Fresno Irrigation District (FID) has reviewed the Revised Notice of Preparation for the South Central Specific Plan Project for the City of Fresno. FID has the following comments:

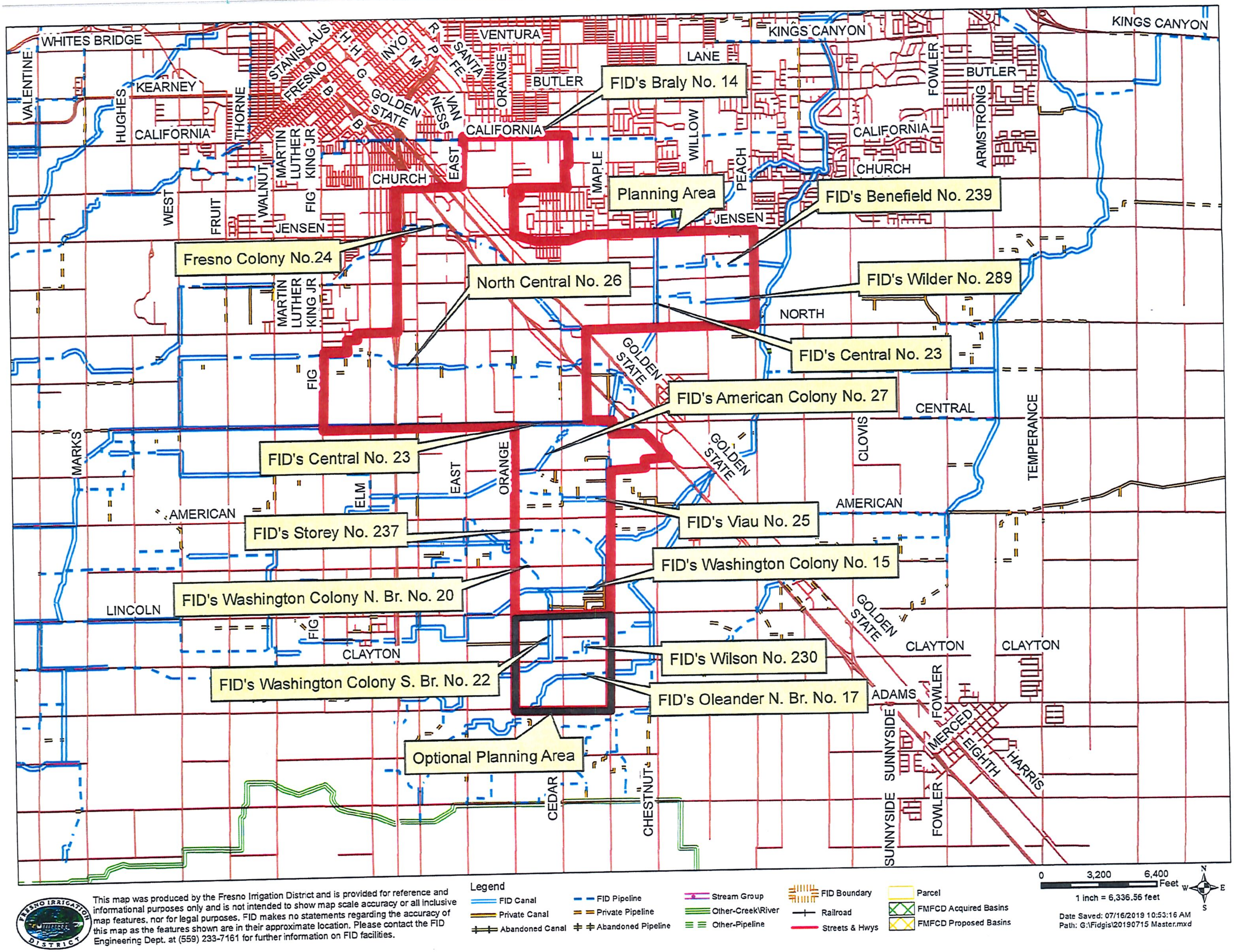
1. FID previously reviewed and commented on the Notice of Preparation of an Environmental Impact report on July 26, 2019 as City of Fresno South Industrial Priority Area Specific Plan Notice of Preparation. Those comments and conditions still apply and a copy has been attached for your review.

Thank you for providing to us the Revised Notice of Preparation for the City of Fresno's South Central Specific Plan Notice of Preparation for our review and allowing us the opportunity to provide comments. We appreciate the opportunity to review and comment on the subject documents for this project. FID reserves the right to provide additional comments when more detailed information becomes available. If you have any questions please feel free to contact Jeremy Landrith at (559) 233-7161 extension 7407 or jlandrith@fresnoirrigation.com.

Sincerely,

Laurence Kimura, P.E.
Chief Engineer

Attachments



This map was produced by the Fresno Irrigation District and is provided for reference and informational purposes only and is not intended to show map scale accuracy or all inclusive map features, nor for legal purposes. FID makes no statements regarding the accuracy of this map as the features shown are in their approximate location. Please contact the FID Engineering Dept. at (559) 233-7161 for further information on FID facilities.

Date Saved: 07/16/2019 10:53:16 AM
Path: G:\Fidgis\20190715 Master.mxd

From: Summer Cecil <Summer.Cecil@fresno.gov>
Sent: Wednesday, April 14, 2021 7:49 AM
To: SCSP
Subject: [NOTICE] REVISED - Notice of Preparation SCSP EIR
Attachments: Recirculated NOP_SCSP EIR - REVISED.pdf

Good morning—

Please be advised of the recirculated Revised Notice of Preparation (NOP) of the South Central Specific Plan Environmental Impact Report (EIR) [attached].

The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of the information to be included in the EIR. **This notice extends the public review period to May 14, 2021.**

The City invites you to provide your comment at the next scoping meeting, via Zoom:
April 28, 2021 from 6:00-8:00PM
https://zoom.us/j/98373607907
or dial: 1-669-900-9128
Meeting ID: 983 7360 7907

Feel free to also provide comment:

- By clicking here (link to surveymonkey);
- By sending an email to SCSP@fresno.gov; or
- Sending a letter to:
  Planning and Development Department
  2600 Fresno Street, Suite 3065
  Fresno, CA 93721

Thank you,

Summer Cecil
Project Manager | Planning and Development
559-621-8166
Summer.Cecil@fresno.gov
Planning ▪ Preserving ▪ Promoting | Quality Neighborhoods
City of Fresno

REVISED NOTICE OF PREPARATION

TO EXTEND COMMENT PERIOD

Date:	April 14, 2021
To:	Responsible Agencies, Interested Parties, and Organizations
Subject:	Notice of Preparation of an Environmental Impact Report for the South Central Specific Plan Project, Fresno, California
Lead Agency:	City of Fresno
Contact:	Jennifer Clark, Director c/o Cherie Vick, Executive Assistant Planning and Development Department 2600 Fresno Street, Room 3065 Fresno, CA 93721 (559) 621-8003 Jennifer.Clark@fresno.gov Cherie.vick@fresno.gov
Comment Period:	March 24, 2021 to May 14, 2021
Note to Reader:	The City of Fresno (City) is recirculating this Notice of Preparation (NOP) to reflect revisions to the South Central Specific Plan, formerly referred to as the South Industrial Priority Area Specific Plan and to extend the comment period to May 14, 2021. Please refer to subheading, "Project Description," for more information. All comments previously submitted to the City during the 2019 NOP public review period (July 8 to August 6, 2019) have been retained by the City. **The comment period for this re-circulated Notice of Preparation (NOP) has been extended to May 14, 2021. If you submitted comments previously, they have been retained and do not need to be resubmitted.**

PURPOSE OF NOTICE

The City of Fresno is the lead agency responsible for preparation of an Environmental Impact Report (EIR) for the proposed South Central Specific Plan project (proposed project), located in the City of Fresno. Pursuant to provisions of the California Environmental Quality Act (CEQA), the City has prepared this NOP for the proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

The EIR will provide an evaluation of potential environmental impacts associated with the proposed project. A brief project description, location, and potential environmental issue areas that may be affected by development of the proposed project are described below. The EIR will evaluate the potentially significant environmental impacts of the proposed project, on both a direct and cumulative basis, identify mitigation measures that may be feasible to lessen or avoid such impacts, and identify alternatives to the proposed project.

PUBLIC REVIEW PERIOD

This NOP was re-circulated for public review and comment for a period of 30 days beginning April 14, 2021. This notice is to extend the public review period to May 14, 2021. The City held a public scoping meeting on April 6, 2021 to inform interested parties about the proposed project and provide agencies and the public with an opportunity to submit comments on the scope and content of the EIR. The City will hold **a second public scoping meeting on April 28, 2021.** As a result of the current COVID-19 restrictions in place on in-person gatherings, City of Fresno public meetings will be conducted electronically only. The meeting time, web link, and call-in information is as follows:

Web link: https://zoom.us/j/98373607907
Call-in Information: (669) 900-9128
Webinar ID: 983 7360 7907

Meeting Date: April 28, 2021

Meeting Time: 6:00 to 8:00 PM

Due to COVID-19 restrictions, copies of the NOP may be reviewed at the following locations:

- Online at: https://www.fresno.gov/cityclerk/notices-publications/ or
- www.fresno.gov/SCSP

For information on additional viewing methods, contact Executive Assistant Cherie Vick (contact information below).

Your views and comments on how the project may affect the environment are welcomed. Please contact Jennifer Clark if you have any questions about the environmental review process for the proposed project.

Project Location

The approximately 5,629-acre planning area, located in the southern portion of the City, is largely comprised of land within the City limits. However, as shown in Figures 1 and 2, the planning area also includes land within the City's Sphere of Influence (SOI) to the north, east, and west.

PROJECT DESCRIPTION

The City of Fresno is preparing the South Central Specific Plan to maximize economic benefit and job growth for residents, while reducing impacts on the environment and improving quality of life. The proposed project would designate land uses, establish a planning framework, and development standards to facilitate and guide future development within the planning area through the year 2040.

The EIR will evaluate potential impacts associated with development of a preferred proposed Specific Plan as well as at two additional development alternatives that may occur within the planning area through the year 2040. The specific plan proposes revised land use and zoning designations, specific design guidelines, and process improvements. See Table 1 for draft estimated acreages for the approximately 5,000 acres of land use designations proposed for the Specific Plan and plan alternatives. These acreages do not include existing infrastructure such as roadways included in the 5,629-acre Specific Plan boundary. Future development would be required to comply with the proposed specific plan land use designations, development standards, and policy framework. Following adoption of the South Central Specific Plan, subsequent projects that are consistent with the Specific Plan could undergo a streamlined CEQA environmental review and approval process that may consist of completing a conformance checklist demonstrating consistency with the Specific Plan.

Table 1: Proposed Specific Plan and Plan Alternatives Estimated Land Use Designation Acreages

Land Use	Existing General Plan Acres (percent)	Proposed Plan Acres (percent)	Alternative 1[a] Acres (percent)	Alternative 2[b] Acres (percent)
Business Park	144 (3%)	655 (13%)	581 (12%)	40 (1%)
General Commercial	10 (<1%)	48 (1%)	2,014 (42%)	13 (<1%)
Regional Business Park	351 (7%)	334 (7%)	247 (5%)	334 (7%)
Heavy Industrial	3,470 (72%)	2,651 (53%)	22 (<1%)	3,043 (63%)
Light Industrial	614 (13%)	714 (14%)	1,495 (31%)	1,076 (22%)
Neighborhood Mixed Use	0.25 (0%)	0.25 (<1%)	0.25 (<1%)	0.25 (<1%)
Open Space - Ponding Basin	157 (3%)	157 (3%)	157 (3%)	157 (3%)
Open Space - Neighborhood Park	2 (0%)	2 (<1%)	2 (<1%)	2 (<1%)
Public	41 (1%)	135 (3%)	29 (1%)	78 (2%)
Rail	32 (1%)	32 (1%)	32 (1%)	32 (1%)
Residential	30 (1%)	270 (5%)	273 (6%)	76 (2%)
Other	NA	0.001 (<1%)	0.001 (<1%)	0.001 (<1%)
SCSP Boundary Change	146	NA	146	146
TOTAL	*4,852*	*4,997*	*4,852*	*4,852*
TOTAL (including SCSP Boundary Change)	*4,997*	*4,997*	*4,997*	*4,997*

* Rounded to the nearest acre. Figures may not sum due to rounding.

NA Not applicable

[a] Alternative 1 tentatively labeled Community Proposed Alternative

[b] Alternative 2 tentatively labeled Business Proposed Alternative

RESPONSIBLE AGENCIES

For the purposes of CEQA, the term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the project (CEQA Guidelines Section 15381). Discretionary approval may include such actions as issuance of a permit, authorization, or easement needed to complete some aspect of the proposed project. Responsible agencies may include, but are not limited to:

- California Department of Transportation (Caltrans),
- California State Water Resources Control Board (SWRCB),
- California Department of Fish and Wildlife (CDFW),

- Central Valley Regional Water Quality Control Board (CVRWQCB),
- County of Fresno,
- Fresno Local Agency Formation Commission (LAFCo), and
- San Joaquin Valley Air Pollution Control District (SJVAPCD).

AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will analyze the significant environmental effects associated with adoption and implementation of the proposed project. Specific areas of analysis will include the following topics based on Appendix G of the State CEQA Guidelines:

- Aesthetics
- Agricultural and Forestry Services
- Ai Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Cumulative Impacts

The EIR will also include a discussion of environmental justice issues, and identify and evaluate a range of reasonable alternatives to the proposed project, including a No Project Alternative.

SUBMITTING COMMENTS

Comments and suggestions as to the appropriate scope of analysis in the EIR are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the City's environmental project manager at the following address by **5:00 p.m. on May 14, 2021**. Please include the commenter's full name and address.

Jennifer Clark , Planning Director
c/o Cherie Vick, Executive Assistant
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
Cherie.vick@fresno.gov

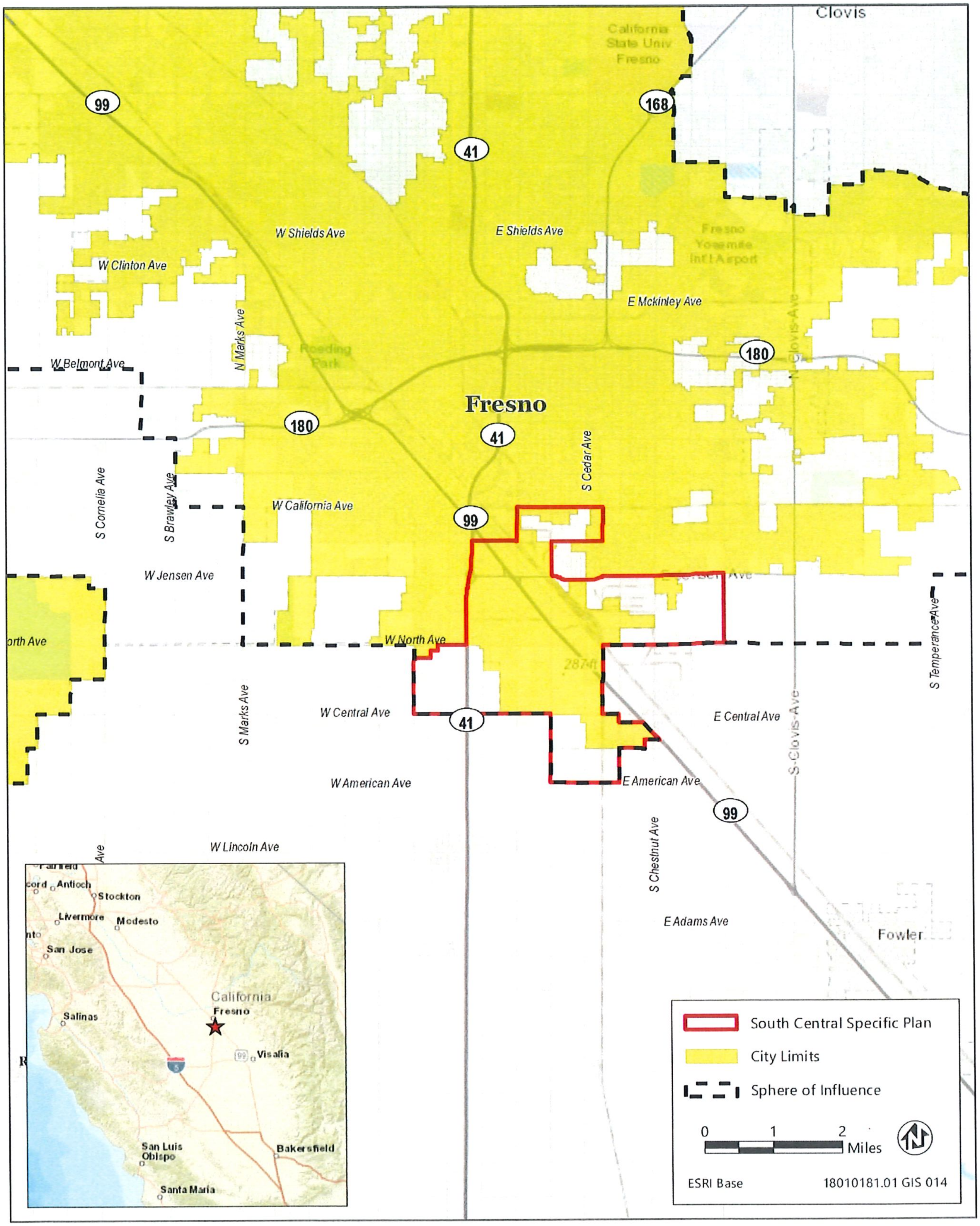


Figure 1 Regional Location

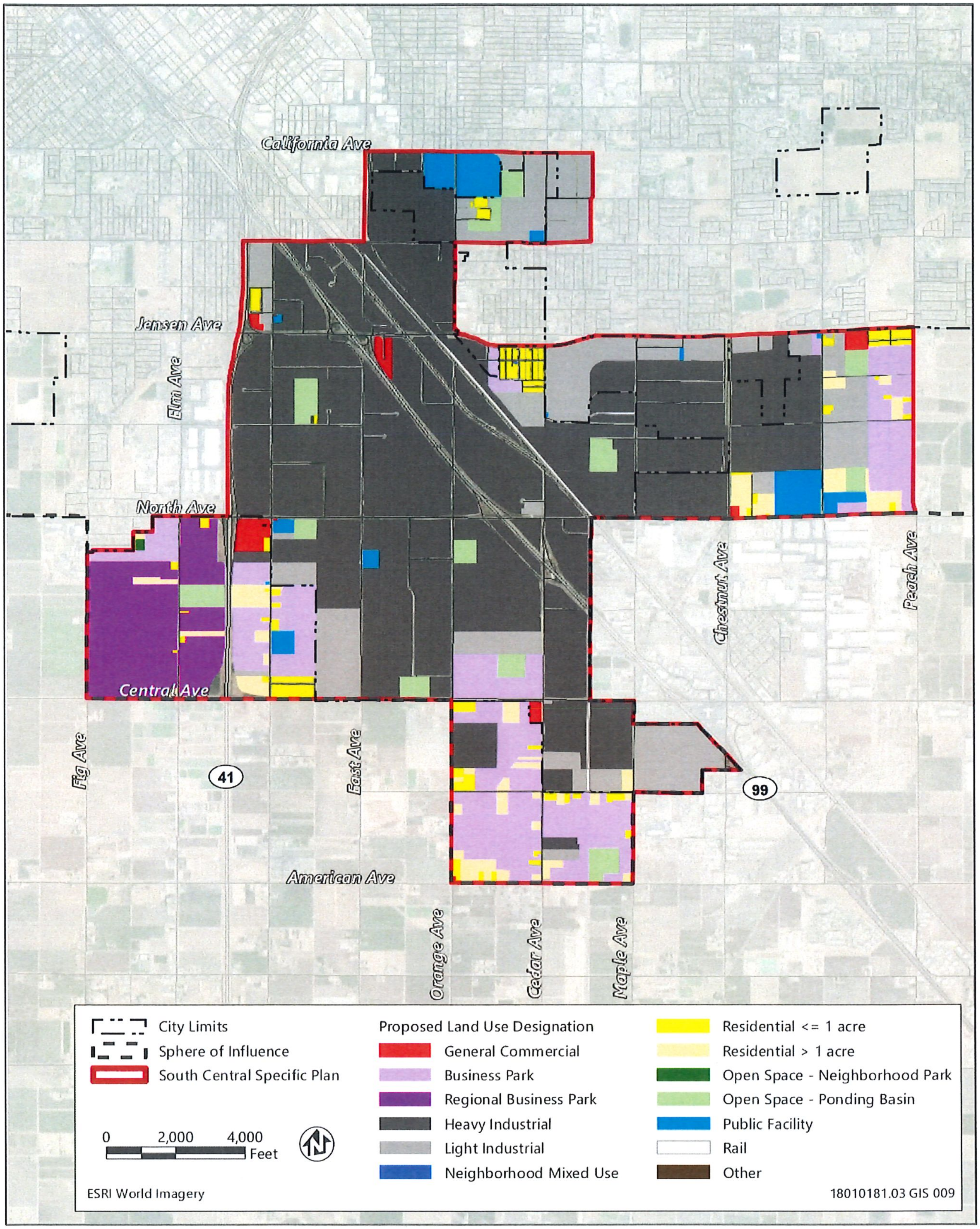
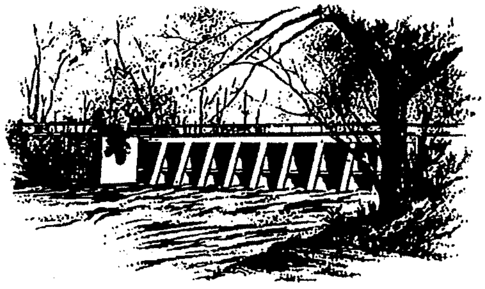


Figure 2 Planning Area



YOUR MOST VALUABLE RESOURCE - WATER

OFFICE OF
FRESNO
IRRIGATION DISTRICT

TELEPHONE (559) 233-7161
FAX (559) 233-8227
2907 S. MAPLE AVENUE
FRESNO, CALIFORNIA 93725-2208

July 26, 2019

Jennifer Clark
Development and Resource Management Department
City of Fresno
2600 Fresno Street, Room 3065
Fresno, CA 93721

RE: City of Fresno South Industrial Priority Area Specific Plan Notice of Preparation
FID Facilities: Various

Dear Ms. Clark:

The Fresno Irrigation District (FID) has reviewed the South Industrial Priority Area Specific Plan Notice of Preparation for the City of Fresno (Project). The Planning Area is approximately 6,150 acres, located in the southern portion of the City. The Planning Area includes lands within the City of Fresno's sphere of influence (SOI), and as an option, outside the City's SOI. Your proposed project is a significant development and requires thorough and careful consideration of potential impacts. FID has the following comments:

Impacted Facilities

1. FID has many canals within the Planning Area as shown on the attached FID exhibit map. The facilities include: Braly No. 14, Washington Colony No. 15, Oleander N. Br. No. 17, Washington Colony N, Br, No. 20, Washington Colony S. Br. No. 22, Central No. 23, Fresno Colony No. 24, Viau No. 25, North Central No. 26, American Colony No. 27, Wilson No. 230, Storey No. 237, Benefield No. 239, and Wilder No. 289. Most, if not all of these facilities precede the City, development, and/or roads. FID's canals range from smaller diameter pipelines to large open canals. In most cases, the existing facilities will need to be upgraded to meet current urban standards or relocated by the developer to accommodate new urban developments and provide for public safety which will require new pipelines and new exclusive easements. FID will impose the same conditions on future projects as it would with any other project located within the common boundary of the City of Fresno and FID including, but not limited to requirements from FID specified exclusive easements, access points, and drive

approaches at all road crossings. Additionally, FID will also require all impacted open channel drive banks, to be built out to FID specified widths, heights, and overlaid with all-weather road. FID will require that it review and approve all maps and plans which impact FID canals and easements.

a. Small/Medium Canal Crossings – The majority of the proposed Planning Area will impact existing pipelines and small open channel canals. FID will require all open channels and existing pipelines impacted by the project area development be upgraded to meet FID's then current standards for urban, rural, industrial areas. The majority of FID's facilities that lie within the proposed Planning Area do not meet FID's urban specifications, including road or highway crossings. The majority of the existing pipelines are monolithic cast-in-place concrete pipe (CIPCP), low head/thin wall PVC, and non-reinforced mortar jointed concrete pipeline. These pipelines were designed for a rural environment and must be replaced as development occurs.
b. Large Canal Crossing – There are large canals called the Washington Colony No. 15 and the Central Canal No. 23 that will more than likely be too large to be contained within a pipeline. Development impacts to this facility shall require designs that protect the canal's integrity for an urban setting including the need for access and full right-of-way widths for FID's operations and maintenance needs.

2. FID's facilities that are within the Planning Area carry irrigation water for FID users, recharge water for the City of Fresno, and storm and flood waters during the winter months. In addition to FID's facilities, private facilities also traverse the Planning Area.

Water Supply Impact

1. The Planning Area is located both outside of and within Growth Areas 1 and 2 of the Cooperative Water Utilization and Conveyance Agreement between the City of Fresno and FID. Should any developments receive water through any Extraterritorial Agreements, FID requires it review and approve all Agreements. Areas that are outside of the said Conveyance Agreement or within Growth Area 2 are not entitled to waters from FID.

2. California enacted landmark legislation in 2014 known as the Sustainable Groundwater Management Act (SGMA). The act requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans. FID and the City of Fresno are members of the North Kings Groundwater Sustainability Agency which will manage the groundwater basin within the FID service area. This area is heavily reliant on groundwater pumping and SGMA will impact all users of

groundwater and those who rely on it. The City of Fresno should consider the potential impacts of the development on the City's ability to comply with requirements of SGMA.

3. The proposed developments may negatively impact local groundwater supplies. A large portion of the planned area is currently being used for agricultural purposes. Under current circumstances the project area is experiencing a modest, but continuing groundwater overdraft. Should the proposed developments result in a greater consumption of groundwater, this deficit will increase. FID suggests the City of Fresno require balancing anticipated groundwater use with sufficient recharge of imported surface water to preclude increasing the area's existing groundwater overdraft and require the use of reclaimed water or other conservation methods.

4. It should be noted that without the use of surface water, continued dependence on solely a groundwater supply will do nothing to reverse or correct the existing overdraft of the groundwater supply beneath the City of Fresno and FID service area. As additional development within the Planning Area will "harden" or make firmer the need for water, the long-term correction of the groundwater overdraft should be considered as any requirements for developments.

Thank you for providing to us the Notice of Preparation for the City of Fresno's South Industrial Priority Area Specific Plan Notice of Preparation for our review and allowing us the opportunity to provide comments. We appreciate the opportunity to review and comment on the subject documents for this project. FID reserves the right to provide additional comments when more detailed information becomes available. If you have any questions please feel free to contact Jeremy Landrith at (559) 233-7161 extension 7407 or jlandrith@fresnoirrigation.com.

Sincerely,

Laurence Kimura, P.E.
Chief Engineer

Attachments

Notice of Preparation

Date: July 8, 2019

To: Responsible Agencies, Interested Parties, and Organizations

Subject: Notice of Preparation of an Environmental Impact Report for the South Industrial Priority Area Specific Plan project, Fresno, California

Lead Agency: City of Fresno

Contact:
Jennifer Clark, Director
c/o Marty Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
Jennifer.Clark@fresno.gov
Marty.Sorge-Jauss@fresno.gov

Comment Period: July 8, 2019 to August 6, 2019

PURPOSE OF NOTICE

The City of Fresno is the lead agency responsible for preparation of an Environmental Impact Report (EIR) for the proposed South Industrial Priority Area Specific Plan project (proposed project), located in the City of Fresno. Pursuant to provisions of the California Environmental Quality Act (CEQA), the City has prepared this Notice of Preparation (NOP) for the proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

The EIR will provide an evaluation of potential environmental impacts associated with the proposed project. A brief project description, location, and potential environmental issue areas that may be affected by development of the proposed project are described below. The EIR will evaluate the potentially significant environmental impacts of the proposed project, on both a direct and cumulative basis, identify mitigation measures that may be feasible to lessen or avoid such impacts, and identify alternatives to the proposed project.

PUBLIC REVIEW PERIOD

This NOP is being circulated for public review and comment for a period of 30 days beginning July 8, 2019. The City will hold a public scoping meeting to inform interested parties about the proposed project and to provide agencies and the public with an opportunity to provide comments on the scope and content of the EIR. The meeting time and location is as follows:

City of Fresno, City Council Chambers
2600 Fresno Street
Fresno, CA 93721
Monday, July 15, 2019
Time: 5:30 to 7:30 PM

Copies of the NOP may be reviewed at the following locations:

- Fresno County Public Library during library hours;
- City of Fresno, 2600 Fresno St, Room 3065 between 7:00 a.m. and 6:00 p.m.; or
- Online at: https://www.fresno.gov/cityclerk/notices-publications/

Your views and comments on how the project may affect the environment are welcomed. Please contact Jennifer Clark if you have any questions about the environmental review process for the proposed project.

PROJECT LOCATION

The approximately 6,150-acre planning area, located in the southern portion of the City, is largely comprised of land within the City limits. However, as shown in Figures 1 and 2, the planning area also includes land within the City's Sphere of Influence (SOI) to the north, east, and west, and (as an option) land outside of the City's SOI to the south. Pursuant to General Plan Policy LU-1-g, the City's SOI boundary can be expanded to include land located proximate to and south of the SOI boundary between State Route 41 and State Route 99 for the purposes of siting a maintenance yard for the California High Speed Train project and related industrial and employment priority areas.

PROJECT DESCRIPTION

The City of Fresno is preparing the South Industrial Priority Area Specific Plan to facilitate opportunities for economic growth, job creation, and promote development of underutilized lands within the planning area. The proposed project would establish a planning framework to facilitate and guide future development within the 6,150-acre planning area through the year 2040. The planning framework is comprised of previously adopted goals and policies from the following City planning documents:

- Roosevelt Community Plan (1992),
- City of Fresno General Plan (2014), and
- Southwest Fresno Specific Plan (2017).

As noted above, the EIR will evaluate potential impacts associated with development within the plan area, consistent with the proposed specific plan, that may occur within the planning area through the year 2040. No land use/zoning designation changes or specific development projects are currently proposed as part of this EIR. Future development would be required to comply with the proposed specific plan, as well as existing General Plan Land Use designations and Zoning Districts within the planning area.

RESPONSIBLE AGENCIES

For the purposes of CEQA, the term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the project (CEQA Guidelines Section 15381). Discretionary approval may include such actions as issuance of a permit, authorization, or easement needed to complete some aspect of the proposed project. Responsible agencies may include, but are not limited to:

- California Department of Transportation (Caltrans),
- California State Water Resources Control Board (SWRCB),
- California Department of Fish and Wildlife (CDFW),
- Central Valley Regional Water Quality Control Board (CVRWQCB),
- County of Fresno,
- Fresno Local Agency Formation Commission (LAFCo), and
- San Joaquin Valley Air Pollution Control District (SJVAPCD).

AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will analyze the significant environmental effects associated with adoption and implementation of the proposed project. Specific areas of analysis will include the following topics based on Appendix G of the 2019 State CEQA Guidelines:

- Aesthetics
- Agricultural and Forestry Services
- Ai Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems

- Wildfire
- Cumulative Impacts

The EIR will also include a discussion of environmental justice issues, and identify and evaluate a range of reasonable alternatives to the proposed project.

SUBMITTING COMMENTS

Comments and suggestions as to the appropriate scope of analysis in the EIR are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the City's environmental project manager at the following address by 5:00 p.m. on August 6, 2019. Please include the commenter's full name and address.

Jennifer Clark, Planning Director
c/o Marty-Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
SIPA@fresno.gov

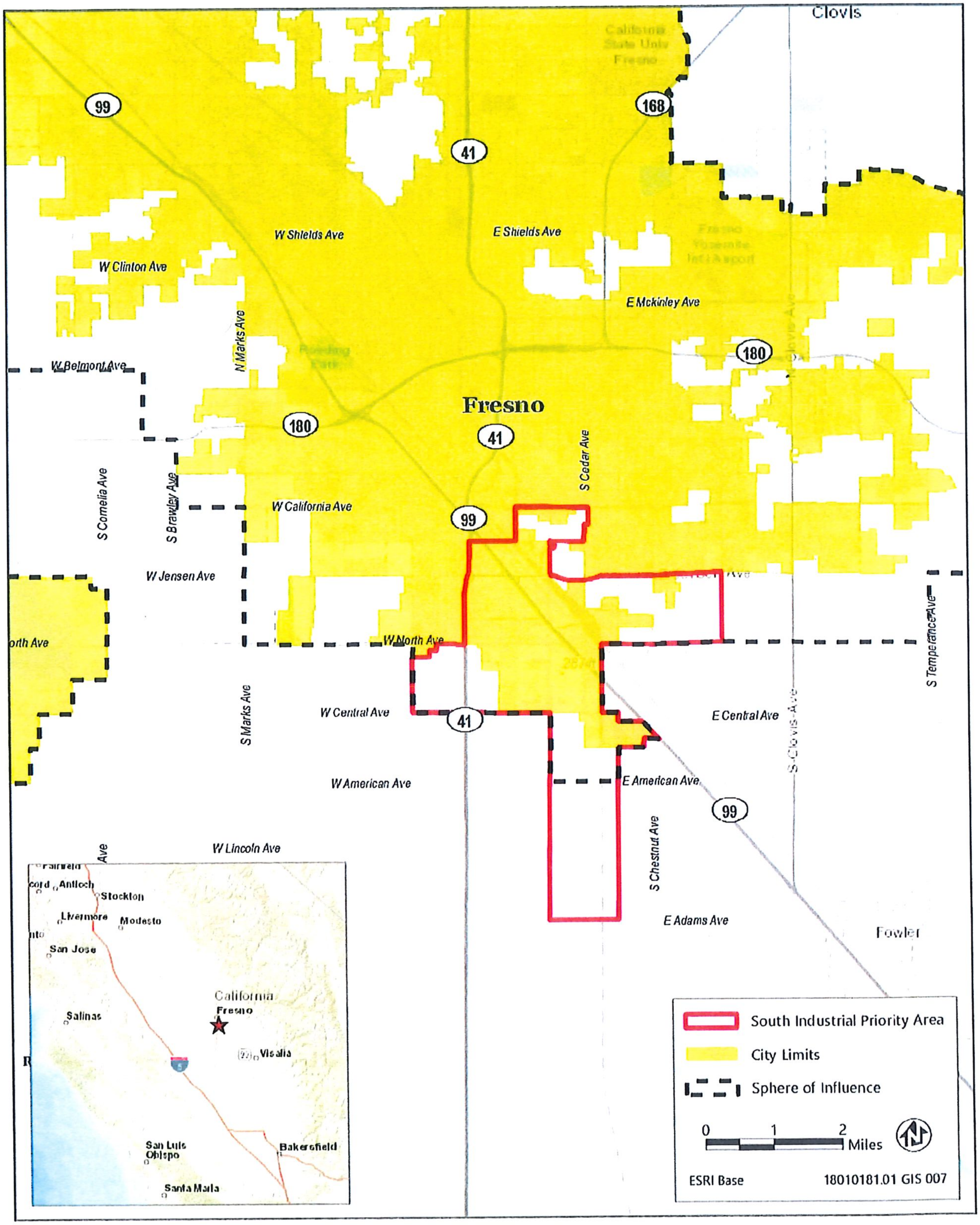


Figure 1 **Regional Location**

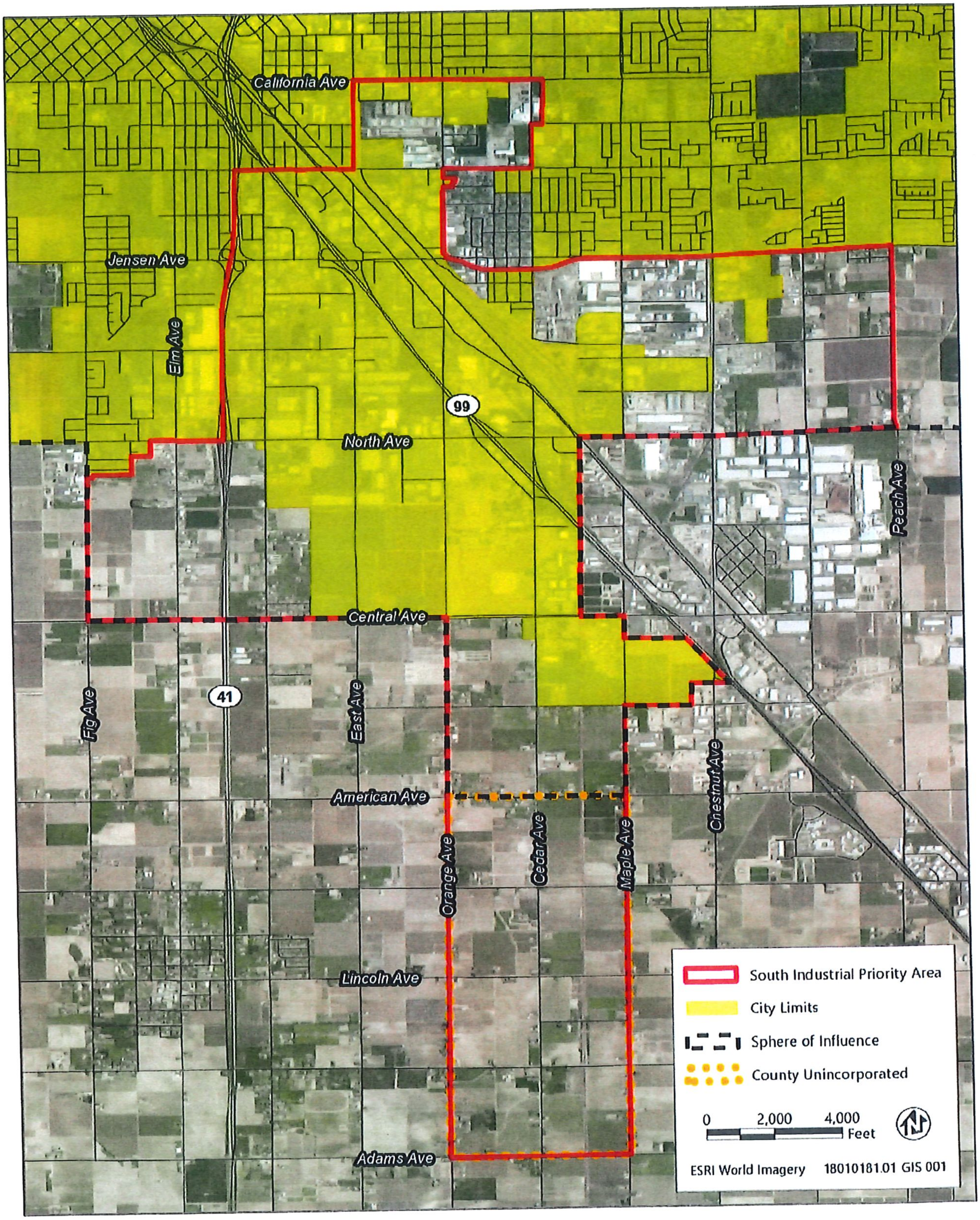


Figure 2 **Planning Area**

Notice of Preparation

Date:	July 8, 2019
To:	Responsible Agencies, Interested Parties, and Organizations
Subject:	Notice of Preparation of an Environmental Impact Report for the South Industrial Priority Area Specific Plan project, Fresno, California
Lead Agency:	City of Fresno
Contact:	Jennifer Clark, Director c/o Marty Sorge-Jauss, Executive Assistant Development and Resource Management 2600 Fresno Street, Room 3065 Fresno, CA 93721 (559) 621-8003 Jennifer.Clark@fresno.gov Marty.Sorge-Jauss@fresno.gov
Comment Period:	July 8, 2019 to August 6, 2019

PURPOSE OF NOTICE

The City of Fresno is the lead agency responsible for preparation of an Environmental Impact Report (EIR) for the proposed South Industrial Priority Area Specific Plan project (proposed project), located in the City of Fresno. Pursuant to provisions of the California Environmental Quality Act (CEQA), the City has prepared this Notice of Preparation (NOP) for the proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

The EIR will provide an evaluation of potential environmental impacts associated with the proposed project. A brief project description, location, and potential environmental issue areas that may be affected by development of the proposed project are described below. The EIR will evaluate the potentially significant environmental impacts of the proposed project, on both a direct and cumulative basis, identify mitigation measures that may be feasible to lessen or avoid such impacts, and identify alternatives to the proposed project.

PUBLIC REVIEW PERIOD

This NOP is being circulated for public review and comment for a period of 30 days beginning July 8, 2019. The City will hold a public scoping meeting to inform interested parties about the proposed project and to provide agencies and the public with an opportunity to provide comments on the scope and content of the EIR. The meeting time and location is as follows:

> City of Fresno, City Council Chambers
> 2600 Fresno Street
> Fresno, CA 93721
> Monday, July 15, 2019
> Time: 5:30 to 7:30 PM

AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will analyze the significant environmental effects associated with adoption and implementation of the proposed project. Specific areas of analysis will include the following topics based on Appendix G of the 2019 State CEQA Guidelines:

- Aesthetics
- Agricultural and Forestry Services
- Ai Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems

- Wildfire
- Cumulative Impacts

The EIR will also include a discussion of environmental justice issues, and identify and evaluate a range of reasonable alternatives to the proposed project.

SUBMITTING COMMENTS

Comments and suggestions as to the appropriate scope of analysis in the EIR are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the City's environmental project manager at the following address by 5:00 p.m. on August 6, 2019. Please include the commenter's full name and address.

Jennifer Clark, Planning Director
c/o Marty-Sorge-Jauss, Executive Assistant
Development and Resource Management
2600 Fresno Street, Room 3065
Fresno, CA 93721
(559) 621-8003
SIPA@fresno.gov

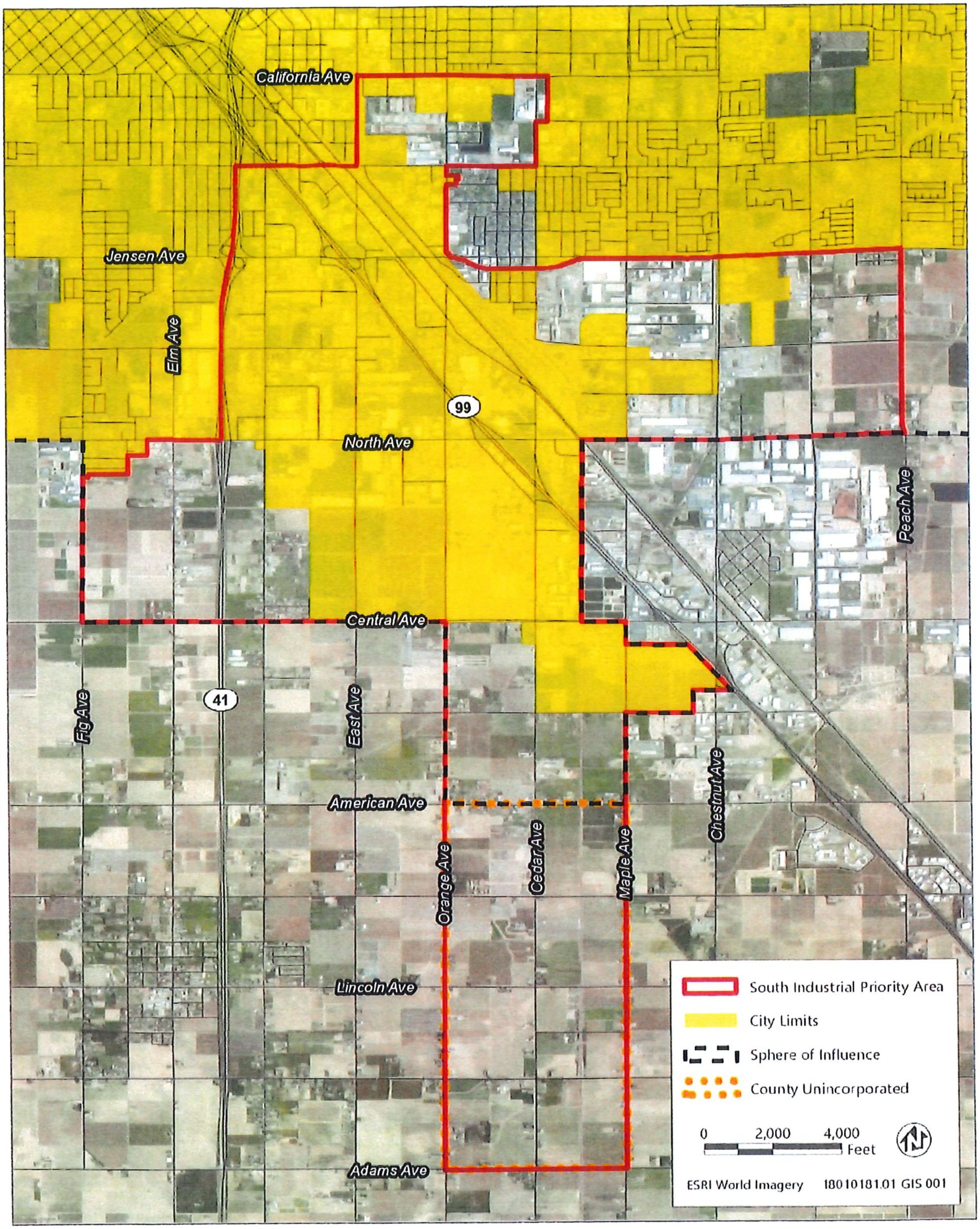


Figure 2 **Planning Area**

#2

COMPLETE

Collector:	Web Link 3 (Web Link)
Started:	Thursday, April 01, 2021 10:03:55 AM
Last Modified:	Thursday, April 01, 2021 10:05:09 AM
Time Spent:	00:01:13
IP Address:	209.218.131.10

Page 1

Q1

Which best describes you? (select all that apply)

SCSP Business Owner

Q2

Please enter your input or comment to the South Central Environmental Impact Report.

I have none at this time

Q3

Would you like to sign up for email updates from the City of Fresno Planning and Development Department?

Yes

Q4

(OPTIONAL) Please provide your email address.

richard@caglia.com

Q5

(OPTIONAL) Name

Richard Caglia

Q6

(OPTIONAL) Organization/Affiliation

Caglia Diversified Managment

#3

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Saturday, April 10, 2021 2:01:49 PM
Last Modified:	Saturday, April 10, 2021 2:02:37 PM
Time Spent:	00:00:48
IP Address:	98.255.229.107

Page 1

Q1 Which best describes you? (select all that apply)	**SCSP Resident**

Q2

Please enter your input or comment to the South Central Environmental Impact Report.

Opposesd

Q3 Would you like to sign up for email updates from the City of Fresno Planning and Development Department?	**No**
Q4 (OPTIONAL) Please provide your email address.	**Respondent skipped this question**
Q5 (OPTIONAL) Name	**Respondent skipped this question**
Q6 (OPTIONAL) Organization/Affiliation	**Respondent skipped this question**

#4

COMPLETE

Collector:	Web Link 3 (Web Link)
Started:	Monday, April 19, 2021 3:39:04 PM
Last Modified:	Monday, April 19, 2021 5:01:30 PM
Time Spent:	01:22:26
IP Address:	50.203.164.86

Page 1

Q1

Which best describes you? (select all that apply)

SCSP Business Owner

Q2

Please enter your input or comment to the South Central Environmental Impact Report.

The SCSP should have a business side, separate and apart from the resident side. We have completely different views and opinions. One is not better than the other, but they are different because we have different goals. We should be able to work and live in harmony, but in my past experiences working on this, the neighborhood receive a lot more attention then the businesses. It should be equal. The city of Fresno needs an area for industrial and manufacturing development, and it shouldn't be next to a school or housing.

Q3

Would you like to sign up for email updates from the City of Fresno Planning and Development Department?

Yes

Q4

(OPTIONAL) Please provide your email address.

pschneider@tgstrans.com

Q5

(OPTIONAL) Name

Respondent skipped this question

Q6

(OPTIONAL) Organization/Affiliation

T.G.S. Transportation, Inc.

#5

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Wednesday, April 28, 2021 7:43:49 AM
Last Modified: Wednesday, April 28, 2021 7:46:09 AM
Time Spent: 00:02:20
IP Address: 172.58.35.148

Page 1

Q1 Which best describes you? (select all that apply)	**Resident of Greater Fresno area (more than 5 miles from plan area)**

Q2

Please enter your input or comment to the South Central Environmental Impact Report.

Please stop polluting our city

Q3 Would you like to sign up for email updates from the City of Fresno Planning and Development Department?	**Yes**

Q4

(OPTIONAL) Please provide your email address.

ypaulos2@hotmail.com

Q5

(OPTIONAL) Name

Yonas Paulos

Q6

(OPTIONAL) Organization/Affiliation

Homeless veterans advocate

#7

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Thursday, April 29, 2021 12:12:31 AM
Last Modified:	Thursday, April 29, 2021 12:13:40 AM
Time Spent:	00:01:09
IP Address:	98.224.79.223

Page 1

Q1 Which best describes you? (select all that apply)	**SCSP Resident**

Q2

Please enter your input or comment to the South Central Environmental Impact Report.

Interested in more information

Q3 Would you like to sign up for email updates from the City of Fresno Planning and Development Department?	**Yes**

Q4

(OPTIONAL) Please provide your email address.

Jonathanusilva@outlook.com

Q5

(OPTIONAL) Name

Jonathan Silva

Q6

(OPTIONAL) Organization/Affiliation

Resident

#6

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Thursday, April 29, 2021 12:10:16 AM
Last Modified:	Thursday, April 29, 2021 12:11:28 AM
Time Spent:	00:01:12
IP Address:	98.224.79.223

Page 1

Q1 Which best describes you? (select all that apply)	**SCSP Resident**

Q2

Please enter your input or comment to the South Central Environmental Impact Report.

Would like to be involved in any plans

Q3 Would you like to sign up for email updates from the City of Fresno Planning and Development Department?	**Yes**

Q4

(OPTIONAL) Please provide your email address.

Lcornejo@centralusd.k12.ca.us

Q5

(OPTIONAL) Name

Lucy Cornejo

Q6

(OPTIONAL) Organization/Affiliation

Resident

From:	nicholas chan
To:	SCSP; Summer Rooks
Subject:	Re: [NOTICE] REVISED - Notice of Preparation SCSP EIR
Date:	Monday, May 10, 2021 2:41:31 PM
Attachments:	Recirculated NOP SCSP EIR - REVISED.pdf

I am writing to respond to the SCSP Proposed EIR. The proposed SCSP has good intention to promote economic benefit and job growth for residents in the desinated Sphere of Influenc (SOI) boundary but lack the necessary City of Fresno and County financial participation such as utilities infrastruture to make the plan a sucessful plan to attarct businesses to invest in the area. The plan also did not provide Equity measures to improve underdeserved communities such as the area between Elm Ave and Central Ave where the current Sphere of Influence designation.
Previously the area that my property is located, it was zoned Medium Dense Residential in the 2020 Fresno General Plan and now it is zoned Regional Business Park under the revise 2025 General Plan. The SCSP will be a failure plan for this area same as the proposed 2020 Plan if the above mentioned deficiencies are not addressed. My recommendation are the followings:

The City Sphere of Influence was developed more than 20 years ago. Why is it still not part of the City of Fresno Boundary? The annexation process needs to be revamped to make the SOI to be icluded in the city limit in the SCSP boundary.

With the President Biden massive infrastructure fundings to the States and locals, this is the time to prioritize infrastructure fundings in this underserved segmented community in the area that i am living now. Invest the necessary funds to construct the sewer and water line, and storm water draining system at the SOI boundary. With the infrastructure constructed it will attarct business investors to build at the area. Previous General Plan was a failure and this proposed SCSP will be a failure because of lack of infrastructure.

Equity - The SCSP did not address Equity
Growth expansion is happening in the privilege north and north east area. To avoid further neglection to this underserved community
an Equity Plan is needed to be inplaced such as the City fundings to beautify this blighted area and crime prevention. Have the city/county considered this area(north of Central and Elm)a Enterprise Zone to attract investors.

I would be greatful if you can response to my concern listed above and include my recommedations in the SCSP EIR. Please contact me at 559-304.8839 if you have any questions. Thank you.

Nicholas Chan
3593 S. Elm Ave
Fresno, Ca 93706

On Wednesday, April 14, 2021, 07:49:32 AM PDT, Summer Cecil <summer.cecil@fresno.gov> wrote:

Good morning—

Please be advised of the recirculated Revised Notice of Preparation (NOP) of the South Central Specific Plan Environmental Impact Report (EIR) [attached].

The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of the information to be included in the EIR. **This notice extends the public review period to May 14, 2021.**

The City invites you to provide your comment at the next scoping meeting, via Zoom:

April 28, 2021 from 6:00-8:00PM

https://zoom.us/j/98373607907

or dial: 1-669-900-9128

Meeting ID: 983 7360 7907

Feel free to also provide comment:

- By clicking here (link to surveymonkey);
- By sending an email to SCSP@fresno.gov; or
- Sending a letter to:

  Planning and Development Department
  2600 Fresno Street, Suite 3065
  Fresno, CA 93721

Thank you,

Summer Cecil

Project Manager | Planning and Development

559-621-8166

Summer.Cecil@fresno.gov

Planning ▪ Preserving ▪ Promoting | Quality Neighborhoods

City of Fresno

CAGLIA FAMILY

P O Box 1111

Fresno, Ca. 93714

VIA EMAIL & UNITED STATES MAIL **May 14, 2021**

Jennifer Clark, Planning Director
c/o Cherie Vick, Executive Assistant
2600 Fresno Street, Room 3065
Fresno, CA 93721

Re: South Central Specific Plan

Dear Ms. Clark:

Caglia Environmental appreciates the opportunity to submit comments on the Notice of Preparation for the City's proposed South Central Specific Plan (the "SCSP"). Caglia Environmental and its related entities have been a part of the SCSP area since 1939, when the Caglia family bought the old city landfill from Rossi Disposal Service. Early on, the Caglia family championed environmentally-sound practices, such as recycling and green energy projects, a philosophy that has continued to this day.

The SCSP area has historically been designated as heavy industrial, and for good reason. The area is sparsely populated, located on the southern edge of the City, and consists of numerous businesses that have operated industrial facilities since the early 1900s. The area is an ideal transportation hub; it is conveniently served by rail, crossed by two state highways, and is easily accessible to existing infrastructure.

The City should not downzone industrial properties to commercial or residential zoning. Maintaining the industrial character of the SCSP is critical to the City's continued economic and financial development. Although there is a high demand for industrial property within the Central San Joaquin Valley, developable industrial property is scarce. No other part of the City includes sufficient industrial-zoned land to accommodate new development. If the City does not accommodate this demand, it will go elsewhere. Other municipalities that is! Such a decision would adversely affect the City and its residents financially because new and existing jobs would go to nearby jurisdictions, such as Visalia, Madera, and Fresno County. It would also result in longer commutes for City residents seeking employment.

There is no reasonable dispute that there is significant demand for industrial development within the SCSP area. If the City finds it desirable to explore changing the zoning of industrial properties to commercial or residential, however, the City should first determine whether there is likewise demand for commercial or residential development sufficient to attract private investment. It does the City and its residents no good if the zoning of a property is changed on paper, but that zoning will not result in private investment in new development. In fact, the more the SCSP includes zoning districts that will not result in private investment and/or redevelopment, the greater the likelihood the SCSP will negatively affect the local community.

The City should likewise determine where unmet industrial demand will seek to locate if the City adopts the proposed SCSP land use map or the community's alternative. This is of course important from a policymaking standpoint; the City's leadership deserves to understand whether the SCSP will reduce the City's competitiveness for jobs. But it is also important to understand the regional effects of the SCSP as currently envisioned.

In short, the City should preserve the industrial zoning districts within the SCSP. And if the City seeks to consider creating a greater inventory of residential or commercial zoning districts within the SCSP, it should first determine whether such development is likely to occur.

We look forward to working with the City and the community in the spirit of maintaining our industrial areas.

Richard Caglia
Caglia Environmental
3457 S. Cedar
Fresno, Ca. 93725

559-451-1117
richard@caglia.com

#8

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Friday, May 14, 2021 4:15:30 PM
Last Modified:	Friday, May 14, 2021 4:16:15 PM
Time Spent:	00:00:45
IP Address:	70.89.145.33

Page 1

Q1 Which best describes you? (select all that apply)	**SCSP Business Owner,** **Resident of Greater Fresno area (more than 5 miles from plan area)**

Q2

Please enter your input or comment to the South Central Environmental Impact Report.

May 14, 2021

Jennifer Clark, Department Director,
Development & Resource Management Department
City of Fresno
2600 Fresno Street, Room 3065
Fresno, CA. 93721

RE: Comments in Response to the Notice of Preparation of an Environmental Impact Report for the South Central Specific Plan

Dear Ms. Clark,

On behalf of the Fresno Chamber of Commerce, we would like to submit the following public comments for consideration in response to the Notice of Preparation of an Environmental Impact Report for the South Central Specific Plan.

Please note that while our process for developing these comments was in large part through the lens of Strategic Economic Development Policy & Job Creation, we are not in any way opposed to a true community led process where all sides are welcome to the table, and the goal is to identify the plan that will be the most advantageous for our entire City.

GENERAL COMMENTS:
1. Has there been any pre-analysis done to determine if doing three complete EIR's is necessary? Does our community, specifically in the South Central Specific Plan area, have the market capacity to support the desired uses identified in all three maps? Will there be an independent expert analysis to determine such market feasibility?

COMMENTS SPECIFIC TO THE SCOPE OF THE EIR:
1. Since the original South Industrial Priority Area and subsequently South Central Specific Plan Area process has started, membership has expressed that growth and development has stymied as a result. Therefore, we request a quantifiable snapshot of the opportunities that our City has not been able to take advantage of since the process began. Opportunities quantified can include, but are not limited to:
a. Number of prospective jobs lost; and
b. Number of new prospective businesses in Fresno lost; and
c. Number of current businesses not being able to expand and/or are planning to move; and
d. Property and sales tax value revenues lost as a result of not being able to compete for such projects.

2. Are the jobs that would be created by the uses in each of the proposed maps equal in number and/or quality? If not, which map provides the best economic outcomes for all Fresno residents using the following data points:
a. Wages
b. Sales Tax
c. Property Tax
d. Career Track Jobs for various educational attainment levels

IN SUPPORT OF OUR PARTNERS IN THE ECONOMIC DEVELOPMENT & BUSINESS COMMUNITY
In this process we have been able to gain valuable insight by working with other business organizations in the community, and are equally supportive of their goals in this process, including, but not limited to:
1. Encouraging the City to work towards developing a plan for future growth as it relates to businesses in the manufacturing and

distribution industries.

2. An integrated approach explicitly addressing economic, social and environmental concerns short-term and long-term, through increased community dialogue, such as workshops, that aim to align efforts to achieve inclusive prosperity.

We realize the importance of extending well-paying job opportunities to residents while also supporting our diverse business constituency, many of whom have been in operation for several decades, have generously invested in the community and are impacted by decisions as a result of this process. We appreciate the opportunity to provide comments to this process and look forward to working with the City of Fresno in helping to achieve the prosperous outcomes for our City.

With Regards,

Scott Miller, President & CEO,
Fresno Chamber of Commerce

CC: Mayor Jerry Dyer
Thomas Esqueda, City Manager
City Council President, Luis Chavez

Q3 Would you like to sign up for email updates from the City of Fresno Planning and Development Department?	**Yes**

Q4

(OPTIONAL) Please provide your email address.

afuentes@fresnochamber.com

Q5

(OPTIONAL) Name

Amy Fuentes, Chief Operating Officer

Q6

(OPTIONAL) Organization/Affiliation

Fresno Chamber of Commerce

WANGER JONES HELSLEY PC
ATTORNEYS

OLIVER W. WANGER
TIMOTHY JONES*
MICHAEL S. HELSLEY
RILEY C. WALTER
PATRICK D. TOOLE
SCOTT D. LAIRD
JOHN P. KINSEY
KURT F. VOTE
TROY T. EWELL
JAY A. CHRISTOFFERSON
MARISA L. BALCH
AMANDA G. HEBESHA**
PETER M. JONES†
MICHAEL L. WILHELM†
STEVEN M. CRASS†
DEBORAH K. BOYETT
STEVEN K. VOTE
GIULIO A. SANCHEZ
CHRISTOPHER A. LISIESKI***
BENJAMIN C. WEST
HUNTER C. CASTRO
STEPHANIE M. HOSMAN
DANIELLE M. PATTERSON‡
AMBER N. LES
GARRETT R. LEATHAM††
HEIDI G. WEINRICH

* Also admitted in Washington
** Also admitted in Idaho
*** Also admitted in Virginia
†† Also admitted in Utah
† Of Counsel
‡ Provisionally licensed per California State Bar

265 E. RIVER PARK CIRCLE, SUITE 310
FRESNO, CALIFORNIA 93720

MAILING ADDRESS
POST OFFICE BOX 28340
FRESNO, CALIFORNIA 93729

TELEPHONE
(559) 233-4800

FAX
(559) 233-9330

WJH

OFFICE ADMINISTRATOR
LYNN M. HOFFMAN

Writer's E-Mail Address:
jkinsey@wjhattorneys.com

Website:
www.wjhattorneys.com

May 14, 2021

VIA EMAIL & UNITED STATES MAIL

Jennifer Clark, Planning Director
c/o Cherie Vick, Executive Assistant
2600 Fresno Street, Room 3065
Fresno, CA 93721

Re: Notice of Preparation for Proposed South Central Specific Plan

Dear Ms. Clark:

Thank you the opportunity to provide scoping comments on the Notice of Preparation for the City's proposed South Central Specific Plan (the "SCSP"). As you are aware, my law firm represents several landowners with existing businesses within the SCSP plan area. Please consider these comments in connection with the preparation of the environmental impact report for the proposed SCSP (the "SCSP EIR").

A. Overview of Landowner Concerns Regarding the SCSP

One issue of significant controversy is the potential for the SCSP to change the zoning and land use designations for properties that are already developed. These landowners have invested—and continue to invest—millions of dollars in the City, provide employment to Fresno residents, and contribute significantly to the City's tax base. Even with the legal non-conforming use provisions of the City's Development Code, the downzoning of industrial properties used by existing businesses has the potential to wipe out 30-50% of the value of those properties, cause loan defaults, and jeopardize the ability of landowners to further invest in the City by upgrading their facilities.

There is likewise significant concern regarding the proposed reduction in industrial land uses within the SCSP area compared to the General Plan, diminishing the opportunity for further economic development within the SCSP. This is particularly troubling in light of the 2017 Southwest Specific Plan's elimination of all industrial land uses within the plan area. Likewise, we understand the forthcoming Central Southeast Specific Plan does not contemplate any industrial development within the plan area. In addition, with the exception of three small properties with existing businesses, the proposed land use map for the West Area Specific Plan does not contemplate any industrial zoned properties. And aside from a small handful of properties along the S.R. 180 corridor in West Fresno, along Golden State Boulevard in Northwest Fresno, and within the Palm Bluffs area, there are no undeveloped industrial-zoned properties elsewhere in the City. In short, there is currently little room for industrial growth or expansion within the City's jurisdictional boundaries, which will ultimately inhibit further investment in the City, and result in new and existing employers locating to other nearby communities, many outside Fresno County.

B. The SCSP EIR Should Carefully Examine the Potential Environmental Effects Associated with Inhibiting Employment-Generating Land Uses Within the City

As explained above, the SCSP has the potential to result in some industrial land uses outside the SCSP, the City, and Fresno County. In fact, we understand the objective of many local advocates seeking to reduce the amount of land dedicated to industrial land uses within the SCSP is to move industrial land elsewhere. The landowners understand the primary local alternatives to the City of Fresno for industrial development include out-of-county areas such as Madera County and the City of Visalia.

To understand the effect this would have on the location of employers, the City should retain a real estate expert who specializes in industrial properties in the San Joaquin Valley to determine the extent to which the SCSP (and the project alternatives) would result in new or existing industrial employers to locate or relocate outside the City and also Fresno County. Using this data, the City's traffic consultants should evaluate potential environmental effects associated with the migration of industrial land uses outside the City, including migration caused by the SCSP as well as the cumulative effects associated with the reduction of industrial-zoned properties in other recent or future plan-level documents.

For example, the migration of industrial employers outside the City has the potential to result in increased Vehicle Miles Traveled ("VMT") for City residents commuting to employers located elsewhere in Fresno County or across county lines. The City's existing CEQA Guidelines for VMT are insufficient to examine the potential effects of this issue. Specifically, the VMT criteria for land use plans are based on a region that is limited to Fresno County, based on the assumption that only four percent of trips "originate and are destined outside Fresno County." (VMT Guidelines at 5-6, 38.) The VMT Guidelines recognize this limitation may have the effect of understating environmental impacts for projects with regional impacts. This "project-related VMT profile may go beyond the county boundary and not be truncated by a jurisdictional boundary." In such cases, it is the "responsibility of the applicant"—here, the City—"and their traffic study preparer to include the project VMT regardless of geographical limit," and compare the "project-related VMT profile . . . against the County of Fresno regional average." (VMT Guidelines at 6-7.)

Increased vehicle miles traveled has the potential to result in increased greenhouse gas ("GHG") and criteria pollutant emissions. As such, the City's air quality specialist should evaluate the potential of the SCSP, at the project level and cumulatively with other recent and future land uses plans, to result in increased emissions.

The City should also evaluate the SCSP in light of the goals and objectives of the 2014 General Plan, including the goals and objectives concerning economic development that were articulated in the Economic Development and Fiscal Sustainability element.[1]

C. The City Should Evaluate the Impacts Associated with Converting Existing Businesses into Legal Nonconforming Uses

The SCSP seeks to change the land use and zoning of many existing businesses from industrial to a residential or other land uses. Although the Legal Non-Conforming Use provisions of the City's Development Code would provide some protections for legal non-conforming uses, those protections are exceptionally limited for industrial landowners. For example, if an industrial legal non-conforming use ceases for more than 90-days, the use is no longer legal. This period of time is entirely insufficient to allow a landowner to change tenants even under the best of circumstances; during an economic downturn, this period would virtually ensure the legal non-conforming status would be lost. (City of Fresno, Development Code, § 15-404(F)(2).) Similarly, a landowner cannot change from one legal non-conforming use to another (such as converting manufacturing space to warehouse space). (*Id.* § 15-404(D).) Further, enlargement of a legal non-conforming use can only occur subject to a CUP, which will eliminate the ability to attract reputable, national industrial tenants and further diminish the ability to re-let industrial properties. (*Id.* § 15-404(B).)

---

[1] *Available at* https://www.fresno.gov/darm/wp-content/uploads/sites/10/2019/07/General-Plan-2-Economic-Development-7-19.pdf

We understand some commenting parties have expressed a desire to see increased residential, commercial, or mixed-use zoning within the SCSP area. Before considering whether to rezone those properties, however, the City should first determine whether a conversion to any such zoning district is financially feasible. This is critical to understanding the potential environmental effects of the SCSP. For instance, if the zoning of a landowner's existing industrial facility is changed to residential, there is a significant danger the use will become unlawful over time, including as a result of an inability to re-let the property within 90-days. (See City of Fresno, Development Code, § 15-404(F)(2).) If this is the case, the landowner would have no choice but to either permanently abandon the industrial use or develop the property as a residential land use. Such development, however, *assumes* the underlying land use is financially and practically viable. If it is not, abandoning the facility would be the only option. And if this occurs to a wide swath of industrial properties, the resulting effect will be urban decay, which is defined as:

> [The] physical deterioration of properties or structures that is so prevalent, substantial, and lasting a significant period of time that it impairs the proper utilization of the properties and the structures, and the health, safety, and welfare of the surrounding community. Physical deterioration includes abnormally high business vacancies, abandoned buildings, boarded doors and windows, parked trucks and long-term unauthorized use of the properties and parking lots, extensive or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees and shrubbery, and uncontrolled weed growth or homeless encampments.

(*Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184.)

To fully understand whether the SCSP—both individually and in combination with other City actions—has the potential to result in urban decay, the City should first perform a market analysis to determine whether a viable market exists within the SCSP for the land uses that are contemplated to replace existing industrial land uses. The City should then evaluate the Project's potential to result in urban decay, and identify mitigation measures and/or project alternatives that would avoid potentially significant environmental effects associated with urban decay.

Further, as part of the scoping process, the City should engage in outreach to all industrial landowners whose land use designation may change so they can alert the City to the potential environmental and economic ramifications concerning their property that should be evaluated in the EIR.

///

///

D. The SCSP EIR Should Evaluate the Potential Environmental Effects Associated with Relocating Industrial Uses to Areas Not Served by Existing Petroleum Pipelines

Industrial land uses in South Central Fresno are conveniently served by two petroleum pipelines operated by Kinder Morgan Energy Partners. The first pipeline was developed in 1967. The two Kinder Morgan pipelines include (i) the “Bakersfield Line,” an 8-inch diameter pipeline serving industrial landowners in Fresno from Bakersfield, and (ii) the “North Line,” which is an 864-mile trunk line that delivers product directly from refineries in the San Francisco Bay Area.[2]

The North Line and the Bakersfield Line transport millions of barrels of gasoline, jet fuel, diesel, natural gas liquids and condensate annually to businesses located along the pipeline in the City of Fresno. Transport of petroleum and other products through these pipelines displaces hundreds of truck trips per day, which would otherwise be required to travel from the San Francisco Bay Area or Bakersfield to Fresno.

Heavy industrial land uses—particularly petroleum wholesalers or industrial uses with extensive petroleum usage—should be located as close to existing terminals and petroleum lines as possible, to reduce the vehicle miles traveled between the terminal and their businesses. The City’s proposed land use map, however, instead seeks to rezone properties near existing petroleum conveyance infrastructure to residential or business park land uses. Because of the significant demand for industrial land uses in the San Joaquin Valley—and in particular the Fresno region—the proposed SCSP land use has the potential to encourage development away from existing petroleum pipelines and terminals, which in turn has the potential to increase truck trip lengths (and VMTs) and corresponding GHG and criteria pollutant emissions.

As a result, the SCSP EIR should identify the properties that can be served by existing petroleum pipeline facilities and terminals—such as the Kinder Morgan facilities—and assess the impacts associated with discouraging further industrial development on any such properties. The SCSP EIR should also evaluate the effects of causing industrial land uses to move to locations further from such existing infrastructure.

E. The SCSP EIR Should Not Employ “Buffers” that Would Prohibit Land Uses as Recommended Mitigation Measures

Although the NOP does not reference “buffers” between industrial land uses and other land uses, the concept of buffers featured prominently in prior meetings and workshops concerning the SCSP. My clients strongly oppose any buffers that would eliminate certain land uses within buffer areas or convert “by right” land uses into uses subject to a Conditional Use Permit or other discretionary action. The Palm Bluffs development demonstrates that residential

---

[2] https://www.kindermorgan.com/WWWKM/media/Documents/2019-March-Pacific-Ops-brochure.pdf

and industrial land uses can be compatible, even when located adjacent to each other.[3] The key, of course, is ensuring the City attracts high quality industrial development that is respectful of surrounding land uses. As such, to ensure industrial uses are compatible with other land uses, the City should focus on promoting high quality industrial development, and adopt mitigation based on objective development standards, such as landscaping and visual screening, as opposed to buffers that arbitrarily prohibit certain land uses.

F. The City Should Confirm that Residential Property Owners Truly Want their Land Use Changed from Industrial to Residential

The proposed land use map contemplates rezoning several properties from industrial to residential. In most instances, these properties are not heavily concentrated, creating small pockets of residential properties that would be surrounded by other zone districts. I understand these proposed changes were the result of complaints by some area residents whose properties were zoned industrial. I understand those residents have had significant issues receiving permits for their residential structures due to the limitations of the Legal Non-Conforming Use Provisions in the City's Development Code, and strict interpretations of the code by staff. In the proposed SCSP, the solution to this concern is to rezone all properties with residential structures on them from industrial to residential, regardless of the intent of the landowners or whether the structures are actually occupied.

This raises several concerns. As an initial matter, the City's attempt to rezone the above properties to residential is a tacit recognition that the Development Code provides insufficient leeway to property owners seeking to continue legal non-conforming uses. In light of this, it is unclear why the City is concurrently seeking to downzone currently-developed properties, which will result in many more landowners being subject to the Legal Non-Conforming Use provisions of the Development Code. This is particularly troubling for industrial landowners, as those provisions of the Development Code are far more stringent for industrial land uses than other land uses.

The SCSP's approach also shows a need for additional outreach to commercial and industrial landowners in the SCSP process. Instead of simply proposing to rezone each and every parcel with a residential structure to low-density residential, the City should instead ask the landowners whether they truly want residential zoning. This is particularly true given that many of the proposed residential properties are in small clusters surrounded by non-residential land uses, creating a patchwork of land uses.

Finally, there are less burdensome means to resolve the concerns expressed by the residential landowners those properties are zoned industrial. For instance, the City could

---

[3] Another notable example is the City of Visalia, where high-end residential development is located adjacent to the rapidly-developing industrial areas in the northwest portion of the City. In fact, several homes valued at over $1,000,000 directly abut warehouse development on the southeast corner of W. Goshen Avenue and Road 92.

substantially relax the legal non-conforming use provisions of the Development Code. The City could likewise create an overlay district to ensure residential landowners who seek to retain their residential land uses are able to maintain their land uses without undue restriction, while at the same time preserving the ability to develop the property to other land uses in the future. Either solution would be preferable to creating isolated pockets of low-density residential development.

G. Conclusion

Thank you for your consideration of these comments. Should you have any questions, please do not hesitate to contact me.

Respectfully submitted,

John P. Kinsey

#1

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Wednesday, March 31, 2021 12:22:42 PM
Last Modified:	Wednesday, March 31, 2021 12:27:45 PM
Time Spent:	00:05:02
IP Address:	73.2.37.205

Page 1

Q1

Which best describes you? (select all that apply)

SCSP Resident

Q2

Please enter your input or comment to the South Central Environmental Impact Report.

Anything that helps our environment is good

Q3

Would you like to sign up for email updates from the City of Fresno Planning and Development Department?

Yes

Q4

(OPTIONAL) Please provide your email address.

Lilycontreras2@yahoo.com

Q5

(OPTIONAL) Name

Respondent skipped this question

Q6

(OPTIONAL) Organization/Affiliation

Respondent skipped this question

SCSP SCOPING MEETING ON APRIL 6 + 28, 2021
PUBLIC COMMENTS

April 6 Comments:

1. **Lisa Flores**: How will our EIR take into account the physical and health damages that have occurred, and what is the cost of life? She also mentioned the North Ave Triangle Specific Plan I thought.
2. **Cynthia Pinto-Cabrera**, Central Valley Clean Air Coalition: wants to see public health analysis and costs of public health; hospitalizations, etc; requests 3 scoping meetings
3. **Ivanka**: thanks for re-evaluating the notice and pushing it out; still concerned that the new Admin may still be moving forward with a map that hasn't been fully vetted or seen by communities; still should be a space where we pick up from where we left off due to COVID and make sure that community and developers know where we stopped. People still need to know more about the map
4. **Panfilo Cerrillo**: Where is there another school that is directly surrounded by industrial properties? The school was there first, and arrived in the '60's.
   a. In the new traffic study, please don't throw out the traffic that occurs on Tuesdays and Saturdays (Cherry Auction)-needs to be part of the study – factories operate 24/7.
   b. How are you going to compare before and after for air quality? How do we know if our control measures are effective?
   c. Will there be a study of how the industrial sites will impact the Orange Center students?
5. **Cliff Jarrard**: I attended many meetings when this project got underway in 2019; now I'm wondering if I can go to a website to see what has been decided? Reference to plans that I haven't seen; what has taken place since the meetings I attended. We, as the residents, gave lots of input on the environmental report. Jennifer provided website
6. **Terry Hirschfield**, Principal, Orange Center School; thanks for revisiting noticing and response period; I wanted to ensure we are given the opportunity to review the information and properly respond. Not just traffic, air quality, but also current and future housing, and buffer zones. Are all maps going to be compared? Ie resident, business and city maps? Wanted to reiterate that we are able to have a good indicator on how Orange Center students will be impacted by this plan.
7. **Debra Raco**: my concern is infrastructure; we already have issues; dust creating more pollution. This plan is putting cart before the horse. I have noticed lots of trucks and truck businesses. There's one on Central/Cedar; Malaga/Orange, and Maple/American, plus more on American by juvenile center. There's no blacktop; there's lots of dust created. Lacking infrastructure—need more before more development occurs. I don't mind people making a living, but there is a huge influx of trucking companies, no curb, gutter, sidewalks, and they leave their junk all over the place. I worked for UPS, but before we do much more, we need to look at impact on infrastructure and people who live in this area. The only way I can see making this part of the city is to move all of the residents out. Thinks trucking companies are not being monitored, since they are in a fringe area.
8. **M. Gutierrez**: The environmental issues and air pollution are very much a concern, but I want to let you know that there have been deaths in this area, directly related to the dust, the air quality, etc. My mother just passed away last month from a lung disease. Problems are large: from morning to evening, with the second Amazon going up, dump trucks are flying by. Posted speed is 45 mph, but no one is following it. People race out at 3:00 am when they leave their jobs. They are also street racing. The companies need to address. It's not necessarily Ulta, but

it's the Ulta and Amazon employees—they are burning rubber. This is an issue for me. The last map we had at Orange Center we were residential; now we are light industrial. That means everyone in this area will be relocated and our homes will be gone. We need to know not 3 months before, but 9-12 months in advance, so they can sell their homes and move. I have not seen any improvement at Orange Center school, but I have seen it at the Ivy Schools. People have left the area, so I think Orange Center School is not going to be around.

9. **Scott Lichtig:** question about the website; will the City make available the scoping comments from the initial scoping period in 2019? He suggest that they do.
10. **Cliff Jarrard**: Soundn't the area bounded by Maple, Malaga, Orange and American be an "influential area" and isn't that area outside city limits? Does this EIR have an effect on those areas? There is work going on now in those areas which would be an anomaly because it's not within the City.
11. **Panfilo Cerrillo**: Buffer zones; in light of recent shootings at schools, are there plans for keeping schools safe? Who will be hired by these companies? City instructed Larry Westerlund to let us know if any new developments were coming in; new second Amazon just happened overnight. Also another major development on NEC of Central and East. But they have already brought massive truckloads of dirt and a pipeline – pvc pipe with vulcanized ends – there's construction going on. How can we trust the City if this kind of stuff is going on and we are not aware of it? It creates a bad atmosphere.
12. **Debra Raco**: Agree w Mr. Cerrillo & Ms. Guteirrez about speeding and racing. Every intersection has donut marks (spinning brodies). Overall traffic control…lack of control by the businesses and law enforcement. American & Maple needs better traffic control; there's poor visibility with brush, etc. two accidents per week. How are we going to enforce traffic control?
13. **Invanka**: Agrees with what Debra says, and hopes we are including a safety plan for this area? Concerned about residents that already feel they need to leave? Should also study businesses that serve the locals. Everyone who lives here needs to leave the area to get their daily necessities. Should look at commercial uses and uses that serves the residents. While Admin may want jobs and runs over the people in the area, we want development without displacement. We have cancer and toxic air hotspots, either by glass melting, plastics, etc. What are the impacts of the businesses that are there and the toxicity that is being pushed on this community.

April 28, 2021 Comments

Fran gave a ppt presentation

Lisa Flores: Does this EIR meet the EJ standards? Are you going to include a chapter on EJ? How will this document regard air quality? Example: if you are in the 617 area, the way the AQMD calculates AQ, they use a regional average. I implore you to use area numbers within the plan area. Mentioned $4M the City recently paid for a police killing, so wants a health impact assessment.

Ivanka Saunders, Policy Advocate for LCJA: 3 points:

1. We need a report back to community about their impact & zoning. Community didn't get to see the maps and how community concerns were incorporated. Community is clear on what they want.

2. Env impacts: need health impact study; include the truck study health impact study in this EIR; Safety impacts: what order things are done; congestions of heavy duty trucks; close Central and Cherry Avenues and support of EVs and how residents can obtain them; health impact on residents
3. Community Benefits and Mitigation Measures: CBAs are important for any incoming development or expansion. Urban Greening needs to be fully reported on and incorporated as a mitigation measure, as well as the attraction of businesses that actually benefit the residents.

Terry Hirschfield: concerned about air quality and traffic safety around truck circulation; wants a study about cancer clusters, respiratory illnesses and other health related anomalies that might exist; also wants a comparison of health indicators in other areas of Fresno; also want the traffic data compared to other areas in Fresno. Also want a comparative study of green space and healthy food access in SCSP vs all of Fresno. Since this will take quite a bit of time, could a moratorium be considered during the planning process?

Noel Briscoe, Valley Iron, business on Cherry just south of North; also own land on SWC of North and Cherry – curious about zoning – how can we request zoning changes?

John Kinsey, Wanger, Johns, Helsey – most of the property is already developed; most of the alternatives contemplate downzoning of developed property. City should do a market study to see which land uses are economically viable in order to be a good steward? What is an existing business needs to shut down? Then you will have vacant buildings which is not good. If there is demand for industrial zoning, it's going to go somewhere nearby. He has heard the suggestion that all industrial should be out in the County, which is a political decision, but will increase environmental impacts. Could generate urban decay, which is an environmental impact. Summary: City should not downzone existing businesses, and should commission a market study on the vacant land, so that the plan and alternatives can be accurately assessed.

Cliff Gerard: Wants to make sure that criteria for buffer zones is strongly written between residential areas and business parks or light industrial.

Panfilo Cerrillo, resident: Agrees with Ms. Hirschfield, especially re: moratorium. The City continues to issue permits without conducting a real traffic study. Not sure when the streets were first built, but after having lived in area for 50 years, the streets are still the same. He wants to know what traffic capacity the roads were built for and what the existing traffic counts are. He distrusts city because projects keep getting approved without noticing local residents, and had the chance to notify but didn't.

Eric Payne, Urban Institute: Re: buffers and zones, that the City clearly define what their mitigation monitoring plan is going to be. In their feasibility study, should look at multi-modal transit, and affordable housing relative to the City's RHNA. Also look at attracting green industry to the City, and consider a PBID.

Kimberly McCoy, BHC, agrees with a lot of comments from previous community residents. About a year ago, there was a community map that was put together by the community; I think that map should be honored. Doesn't think the maps that the city created reflect the community's map. Also, this is an AB 617 community and the area cannot handle more impacts. Intend to submit more comments by May 14.

JC: Procedural Questions:

- The NOP states that the EIR will review a combined map, the community map, and a business map
- Land uses are proposed at this point; City won't decide until it sees results of analysis
- All comments and recording of meetings will be available on our website, including NOP comments.

Mike Betts, Member of the SJV Manufacturing Alliance**,** we have been meeting for two years; we met with community members to develop a map; during their process, the community agreed that much needed to be done on that map, so didn't want to imply that they don't support community needs. We have an opportunity to accommodate 5,000 more jobs, but there have been false narratives about the impact manufacturers will have. We have the most stringent AQ regulations in the world in the SJV. Everything is moving in a much cleaner direction, and soon you won't be able to get a vehicle registration unless they meet AQ rules. We need the experts from the APCD come to speak to the group. There is also a multiplier affect for every manufacturing job of 3x. Average wage is $27.24/hr. Dollars are spent here in Fresno. So $5,000 more manufacturing jobs, will bring an additional 1.5 B dollars to the community, plus $59M of tax revenue. To help our community prosper, we need to keep these jobs, and don't recommend down zoning to bus park or commercial, as we don't have enough today.

Alexandra Alvarado, Community Organizer with FIV, Fresno – the City continues to put in heavy industrial and warehouse centers; concerned that City is proceeding even knowing the community's concerns. Truck and traffic concerns and health concerns. Talking to people who work for these industries, the jobs aren't sustainable-they don't feel respected or feel that they can stay long term. I ask the City to reconsider the needs for this area.

Appendix B

Air Quality, Energy, and Greenhouse Gases Emissions Modeling Data

Fresno_SCSP_2024 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fresno_SCSP_2024
Construction Start Date	1/1/2024
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	25.4
Location	36.711511, -119.776006
County	Fresno
City	Fresno
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2482
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.19

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	23.0	Dwelling Unit	7.47	44,850	269,396	—	74.0	—

Supermarket	217	1000sqft	4.97	216,700	0.00	—	—	—
Office Park	145	1000sqft	3.32	144,700	0.00	—	—	—
Industrial Park	1,082	1000sqft	24.8	1,081,700	0.00	—	—	—
General Heavy Industry	1,563	1000sqft	35.9	1,562,500	0.00	—	—	—
General Office Building	100	1000sqft	2.30	100,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.39	102	26.3	79.9	0.07	0.59	9.98	10.6	0.55	2.41	2.96	—	18,675	18,675	0.83	1.40	55.2	19,170
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	23.5	106	499	162	2.27	9.19	117	127	8.95	37.7	46.7	—	345,753	345,753	7.66	53.6	21.0	361,930
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.30	44.9	27.6	41.6	0.09	0.62	8.22	8.84	0.58	2.22	2.80	—	17,501	17,501	0.64	1.93	20.1	18,111
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.97	8.20	5.04	7.59	0.02	0.11	1.50	1.61	0.11	0.41	0.51	—	2,898	2,898	0.11	0.32	3.33	2,999

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	9.39	102	26.3	79.9	0.07	0.59	9.98	10.6	0.55	2.41	2.96	—	18,675	18,675	0.83	1.40	55.2	19,170
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	23.5	106	499	162	2.27	9.19	117	127	8.95	37.7	46.7	—	345,753	345,753	7.66	53.6	21.0	361,930
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.30	44.9	27.6	41.6	0.09	0.62	8.22	8.84	0.58	2.22	2.80	—	17,501	17,501	0.64	1.93	20.1	18,111
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.97	8.20	5.04	7.59	0.02	0.11	1.50	1.61	0.11	0.41	0.51	—	2,898	2,898	0.11	0.32	3.33	2,999

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.12	2.62	24.9	21.7	0.03	1.06	—	1.06	0.98	—	0.98	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	6.44	6.44	—	0.97	0.97	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.89	0.77	< 0.005	0.04	—	0.04	0.03	—	0.03	—	122	122	< 0.005	< 0.005	—	122
Demolition	—	—	—	—	—	—	0.23	0.23	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	20.2	20.2	< 0.005	< 0.005	—	20.3
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.49	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.4	82.4	< 0.005	< 0.005	0.01	83.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.24	0.12	6.83	1.55	0.03	0.10	1.37	1.47	0.10	0.38	0.47	—	5,286	5,286	0.11	0.84	0.33	5,539
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.04	3.04	< 0.005	< 0.005	0.01	3.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.24	0.05	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	188	188	< 0.005	0.03	0.19	197
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.03	32.7

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	21.8	21.8	—	10.4	10.4	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.79	0.72	< 0.005	0.04	—	0.04	0.03	—	0.03	—	116	116	< 0.005	< 0.005	—	116

Dust From Material Movemen	—	—	—	—	—	—	0.48	0.48	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.14	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.2	19.2	< 0.005	< 0.005	—	19.3
Dust From Material Movemen	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.57	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	96.2	96.2	< 0.005	< 0.005	0.01	97.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	14.9	7.38	428	97.4	2.15	6.15	86.1	92.3	6.15	23.6	29.7	—	331,567	331,567	7.17	52.7	20.7	347,458
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.18	2.18	< 0.005	< 0.005	< 0.005	2.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.33	0.17	9.20	2.11	0.05	0.13	1.86	2.00	0.13	0.51	0.65	—	7,265	7,265	0.16	1.15	7.51	7,619
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.06	0.03	1.68	0.39	0.01	0.02	0.34	0.36	0.02	0.09	0.12	—	1,203	1,203	0.03	0.19	1.24	1,261

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movemen	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.88	1.65	< 0.005	0.08	—	0.08	0.07	—	0.07	—	362	362	0.01	< 0.005	—	363
Dust From Material Movemen	—	—	—	—	—	—	0.50	0.50	—	0.20	0.20	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.34	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.9	59.9	< 0.005	< 0.005	—	60.1

Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	0.66	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	110	110	0.01	0.01	0.01	112
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.24	6.24	< 0.005	< 0.005	0.01	6.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.64	5.96	6.97	0.01	0.26	—	0.26	0.24	—	0.24	—	1,274	1,274	0.05	0.01	—	1,279
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.09	1.27	< 0.005	0.05	—	0.05	0.04	—	0.04	—	211	211	0.01	< 0.005	—	212
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	6.12	5.79	3.16	51.4	0.00	0.00	6.89	6.89	0.00	1.62	1.62	—	7,846	7,846	0.47	0.33	31.4	7,986
Vendor	0.60	0.36	11.2	5.03	0.05	0.09	1.72	1.81	0.09	0.47	0.56	—	6,851	6,851	0.17	0.99	17.5	7,169
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.42	5.04	4.00	41.6	0.00	0.00	6.89	6.89	0.00	1.62	1.62	—	6,960	6,960	0.34	0.33	0.81	7,067
Vendor	0.56	0.33	11.9	5.22	0.05	0.09	1.72	1.81	0.09	0.47	0.56	—	6,863	6,863	0.16	0.99	0.45	7,163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.93	2.74	1.84	22.4	0.00	0.00	3.60	3.60	0.00	0.84	0.84	—	3,832	3,832	0.26	0.17	7.22	3,898
Vendor	0.31	0.18	6.18	2.70	0.02	0.05	0.90	0.95	0.05	0.25	0.30	—	3,644	3,644	0.09	0.53	4.01	3,808
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.50	0.34	4.10	0.00	0.00	0.66	0.66	0.00	0.15	0.15	—	634	634	0.04	0.03	1.20	645
Vendor	0.06	0.03	1.13	0.49	< 0.005	0.01	0.16	0.17	0.01	0.05	0.05	—	603	603	0.01	0.09	0.66	630
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	3.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	58.0	58.0	< 0.005	< 0.005	—	58.2
Paving	—	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.60	9.60	< 0.005	< 0.005	—	9.63
Paving	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.49	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.4	82.4	< 0.005	< 0.005	0.01	83.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.28	3.28	< 0.005	< 0.005	0.01	3.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.55

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	11.9
Architectural Coatings	—	93.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	11.9
Architectural Coatings	—	93.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.12	5.12	< 0.005	< 0.005	—	5.14

Architectural Coatings	—	40.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.85	0.85	< 0.005	< 0.005	—	0.85
Architectural Coatings	—	7.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.22	1.16	0.63	10.3	0.00	0.00	1.38	1.38	0.00	0.32	0.32	—	1,569	1,569	0.09	0.07	6.27	1,597
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.08	1.01	0.80	8.32	0.00	0.00	1.38	1.38	0.00	0.32	0.32	—	1,392	1,392	0.07	0.07	0.16	1,413
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.47	0.44	0.30	3.63	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	620	620	0.04	0.03	1.17	631
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.09	0.08	0.05	0.66	0.00	0.00	0.11	0.11	0.00	0.02	0.02	—	103	103	0.01	< 0.005	0.19	104
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2024	1/17/2024	5.00	13.0	—
Site Preparation	Site Preparation	1/17/2024	1/26/2024	5.00	8.00	—
Grading	Grading	1/26/2024	2/22/2024	5.00	20.0	—
Building Construction	Building Construction	2/22/2024	11/19/2024	5.00	194	—
Paving	Paving	11/19/2024	12/6/2024	5.00	14.0	—
Architectural Coating	Architectural Coating	5/21/2024	12/25/2024	5.00	157	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	0.54	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Demolition	—	—	—	—
Demolition	Worker	15.0	7.70	LDA,LDT1,LDT2
Demolition	Vendor	—	4.00	HHDT,MHDT
Demolition	Hauling	74.1	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	4.00	HHDT,MHDT
Site Preparation	Hauling	4,647	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	4.00	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1,266	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	511	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	4.00	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	253	7.70	LDA,LDT1,LDT2

Architectural Coating	Vendor	—	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	90,821	30,274	4,658,400	1,552,800	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	83,709	—
Site Preparation	—	297,384	12.0	0.00	—
Grading	—	—	60.0	0.00	—
Paving	0.00	0.00	0.00	0.00	19.5

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt

Single Family Housing	0.25	0%
Supermarket	1.24	100%
Office Park	0.83	100%
Industrial Park	6.21	100%
General Heavy Industry	8.97	100%
General Office Building	2.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	24.3	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A

Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	82.5
AQ-PM	97.7
AQ-DPM	98.7
Drinking Water	84.4
Lead Risk Housing	96.5
Pesticides	42.9
Toxic Releases	92.2
Traffic	60.4
Effect Indicators	—
CleanUp Sites	98.2
Groundwater	91.2
Haz Waste Facilities/Generators	96.3
Impaired Water Bodies	0.00
Solid Waste	80.0
Sensitive Population	—
Asthma	97.2
Cardio-vascular	92.2
Low Birth Weights	95.6
Socioeconomic Factor Indicators	—
Education	93.2
Housing	91.0
Linguistic	79.4
Poverty	98.9
Unemployment	93.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	2.75888618
Employed	4.709354549
Median HI	5.273963814
Education	—
Bachelor's or higher	9.547029385
High school enrollment	6.108045682
Preschool enrollment	17.00243809
Transportation	—
Auto Access	5.915565251
Active commuting	28.28179135
Social	—
2-parent households	31.82343128
Voting	0.936738098
Neighborhood	—
Alcohol availability	36.78942641
Park access	21.85294495
Retail density	40.81868343
Supermarket access	11.86962659
Tree canopy	46.63159245
Housing	—
Homeownership	31.38714231
Housing habitability	12.42140382
Low-inc homeowner severe housing cost burden	21.429488

Low-inc renter severe housing cost burden	32.77300141
Uncrowded housing	14.69267291
Health Outcomes	—
Insured adults	10.18863082
Arthritis	14.6
Asthma ER Admissions	2.3
High Blood Pressure	5.0
Cancer (excluding skin)	77.2
Asthma	1.3
Coronary Heart Disease	5.2
Chronic Obstructive Pulmonary Disease	2.6
Diagnosed Diabetes	1.8
Life Expectancy at Birth	11.9
Cognitively Disabled	7.6
Physically Disabled	8.5
Heart Attack ER Admissions	3.7
Mental Health Not Good	2.2
Chronic Kidney Disease	2.7
Obesity	1.5
Pedestrian Injuries	97.2
Physical Health Not Good	2.0
Stroke	1.8
Health Risk Behaviors	—
Binge Drinking	84.3
Current Smoker	4.4
No Leisure Time for Physical Activity	1.0
Climate Change Exposures	—

Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	7.3
Elderly	70.0
English Speaking	21.6
Foreign-born	58.6
Outdoor Workers	2.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	50.0
Traffic Density	62.8
Traffic Access	0.0
Other Indices	—
Hardship	96.8
Other Decision Support	—
2016 Voting	1.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	100
Healthy Places Index Score for Project Location (b)	0.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	Central Fresno

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Fresno SCSP: Table 4-4 development capacities for the plan area. Assuming 25% built out on Year 1. Added 100,000 sqft general office building to account for unaccounted constructions.
Construction: Construction Phases	Work days are proportionally compressed from default value to fit in one year. Architectural Coating schedule is modified based on compressed CalEEMod default schedule so that its work days equals to on 2/3 building days plus paving and arch coating days. Architectural Coating days =2/3*194+14+14 = 157 days. Accordingly, the equipment work hours per day is adjusted by ratio of 14/157.
Construction: Paving	Residential paving use default. Other paving assume 25% of the acreage and 100% asphalt
Construction: Off-Road Equipment	The equipment Hours/Day is adjusted to 0.535 Hours/Day = (6 Hours/day) * (14days/157days), according to the adjustment in Architectural Coating.

Fresno_SCSP_2025-2040 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fresno_SCSP_2025-2040
Construction Start Date	1/1/2025
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	25.4
Location	36.711511, -119.776006
County	Fresno
City	Fresno
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2482
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.19

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	68.0	Dwelling Unit	22.1	132,600	796,474	—	218	—

Supermarket	650	1000sqft	14.9	650,010	0.00	—	—	—
Office Park	434	1000sqft	9.97	434,100	0.00	—	—	—
Industrial Park	3,245	1000sqft	74.5	3,245,000	0.00	—	—	—
General Heavy Industry	4,687	1000sqft	108	4,687,300	0.00	—	—	—
General Office Building	100	1000sqft	2.30	100,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	23.3	296	52.5	194	0.16	0.70	29.4	30.1	0.66	7.11	7.77	—	49,333	49,333	1.38	4.09	153	50,739
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	42.1	293	1,278	322	6.50	19.8	284	304	19.7	81.8	101	—	979,920	979,920	21.7	151	61.3	1,025,646
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	12.3	129	59.7	95.2	0.23	0.93	22.5	23.4	0.90	5.74	6.64	—	47,217	47,217	1.32	5.56	57.3	48,965
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	2.24	23.6	10.9	17.4	0.04	0.17	4.11	4.28	0.16	1.05	1.21	—	7,817	7,817	0.22	0.92	9.49	8,107

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	23.3	296	52.5	194	0.16	0.70	29.4	30.1	0.66	7.11	7.77	—	49,333	49,333	1.38	4.09	153	50,739
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	42.1	293	1,278	322	6.50	19.8	284	304	19.7	81.8	101	—	979,920	979,920	21.7	151	61.3	1,025,646
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	12.3	129	59.7	95.2	0.23	0.93	22.5	23.4	0.90	5.74	6.64	—	47,217	47,217	1.32	5.56	57.3	48,965
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.24	23.6	10.9	17.4	0.04	0.17	4.11	4.28	0.16	1.05	1.21	—	7,817	7,817	0.22	0.92	9.49	8,107

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	19.3	19.3	—	2.92	2.92	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.79	0.71	< 0.005	0.03	—	0.03	0.03	—	0.03	—	122	122	< 0.005	< 0.005	—	122
Demolition	—	—	—	—	—	—	0.69	0.69	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	20.2	20.2	< 0.005	< 0.005	—	20.3
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.01	82.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.61	0.25	19.9	4.65	0.10	0.29	4.12	4.41	0.29	1.13	1.42	—	15,545	15,545	0.34	2.41	0.98	16,274
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.98	2.98	< 0.005	< 0.005	0.01	3.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.69	0.16	< 0.005	0.01	0.14	0.16	0.01	0.04	0.05	—	553	553	0.01	0.09	0.58	580
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.13	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	91.6	91.6	< 0.005	0.01	0.10	96.0

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	26.1	26.1	—	11.1	11.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.09	0.07	0.69	0.66	< 0.005	0.03	—	0.03	0.03	—	0.03	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movemen	—	—	—	—	—	—	0.57	0.57	—	0.24	0.24	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.2	19.2	< 0.005	< 0.005	—	19.3
Dust From Material Movemen	—	—	—	—	—	—	0.10	0.10	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.53	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	94.2	94.2	< 0.005	< 0.005	0.01	95.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	38.1	15.7	1,246	291	6.45	18.4	258	277	18.4	70.7	89.1	—	974,531	974,531	21.5	151	61.3	1,020,237
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.14	2.14	< 0.005	< 0.005	< 0.005	2.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.85	0.36	26.7	6.32	0.14	0.40	5.59	5.99	0.40	1.53	1.94	—	21,352	21,352	0.47	3.32	22.3	22,374

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.16	0.07	4.88	1.15	0.03	0.07	1.02	1.09	0.07	0.28	0.35	—	3,535	3,535	0.08	0.55	3.70	3,704

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movemen	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.63	1.55	< 0.005	0.07	—	0.07	0.06	—	0.06	—	362	362	0.01	< 0.005	—	363
Dust From Material Movemen	—	—	—	—	—	—	0.50	0.50	—	0.20	0.20	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.9	59.9	< 0.005	< 0.005	—	60.1
Dust From Material Movemen	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.60	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	108	108	< 0.005	0.01	0.01	109
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.11	6.11	< 0.005	< 0.005	0.01	6.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.01	1.01	< 0.005	< 0.005	< 0.005	1.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.60	5.55	6.93	0.01	0.23	—	0.23	0.21	—	0.21	—	1,274	1,274	0.05	0.01	—	1,279
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.01	1.26	< 0.005	0.04	—	0.04	0.04	—	0.04	—	211	211	0.01	< 0.005	—	212
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	17.0	16.0	8.51	139	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	22,644	22,644	0.66	0.96	84.8	23,032
Vendor	1.62	1.06	31.8	14.1	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	19,751	19,751	0.50	2.91	51.3	20,683

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	15.2	14.0	10.3	113	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	20,096	20,096	0.91	0.96	2.19	20,408
Vendor	1.49	0.96	33.9	14.8	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	19,788	19,788	0.46	2.91	1.33	20,669
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.10	7.59	4.95	60.9	0.00	0.00	10.6	10.6	0.00	2.49	2.49	—	11,064	11,064	0.44	0.51	19.5	11,247
Vendor	0.83	0.53	17.5	7.65	0.07	0.14	2.64	2.78	0.14	0.73	0.87	—	10,506	10,506	0.25	1.55	11.8	10,985
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.48	1.38	0.90	11.1	0.00	0.00	1.94	1.94	0.00	0.45	0.45	—	1,832	1,832	0.07	0.08	3.22	1,862
Vendor	0.15	0.10	3.19	1.40	0.01	0.03	0.48	0.51	0.03	0.13	0.16	—	1,739	1,739	0.04	0.26	1.95	1,819
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	9.80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.29	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	58.0	58.0	< 0.005	< 0.005	—	58.2
Paving	—	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.60	9.60	< 0.005	< 0.005	—	9.63
Paving	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.01	82.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.21	3.21	< 0.005	< 0.005	0.01	3.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	11.9
Architectural Coatings	—	275	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	11.9
Architectural Coatings	—	275	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.12	5.12	< 0.005	< 0.005	—	5.14

Architectural Coatings	—	118	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.85	0.85	< 0.005	< 0.005	—	0.85
Architectural Coatings	—	21.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.39	3.20	1.70	27.8	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	4,529	4,529	0.13	0.19	17.0	4,606
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.03	2.81	2.05	22.5	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	4,019	4,019	0.18	0.19	0.44	4,082
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.31	1.23	0.80	9.85	0.00	0.00	1.72	1.72	0.00	0.40	0.40	—	1,791	1,791	0.07	0.08	3.15	1,820
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.24	0.22	0.15	1.80	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	296	296	0.01	0.01	0.52	301
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2025	1/17/2025	5.00	13.0	—
Site Preparation	Site Preparation	1/21/2025	1/30/2025	5.00	8.00	—
Grading	Grading	1/31/2025	2/27/2025	5.00	20.0	—
Building Construction	Building Construction	2/28/2025	11/26/2025	5.00	194	—
Paving	Paving	11/27/2025	12/16/2025	5.00	14.0	—
Architectural Coating	Architectural Coating	5/27/2025	12/31/2025	5.00	157	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	0.54	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Demolition	—	—	—	—
Demolition	Worker	15.0	7.70	LDA,LDT1,LDT2
Demolition	Vendor	—	4.00	HHDT,MHDT
Demolition	Hauling	222	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	4.00	HHDT,MHDT
Site Preparation	Hauling	13,927	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	4.00	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	3,735	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	1,501	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	4.00	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	747	7.70	LDA,LDT1,LDT2

Architectural Coating	Vendor	—	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	268,515	89,505	13,674,615	4,558,205	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	251,127	—
Site Preparation	—	891,321	192	0.00	—
Grading	—	—	60.0	0.00	—
Paving	0.00	0.00	0.00	0.00	53.1

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt

Single Family Housing	0.75	0%
Supermarket	3.73	100%
Office Park	2.49	100%
Industrial Park	18.6	100%
General Heavy Industry	26.9	100%
General Office Building	0.60	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	24.3	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A

Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	82.5
AQ-PM	97.7
AQ-DPM	98.7
Drinking Water	84.4
Lead Risk Housing	96.5
Pesticides	42.9
Toxic Releases	92.2
Traffic	60.4
Effect Indicators	—
CleanUp Sites	98.2
Groundwater	91.2
Haz Waste Facilities/Generators	96.3
Impaired Water Bodies	0.00
Solid Waste	80.0
Sensitive Population	—
Asthma	97.2
Cardio-vascular	92.2
Low Birth Weights	95.6
Socioeconomic Factor Indicators	—
Education	93.2
Housing	91.0
Linguistic	79.4
Poverty	98.9
Unemployment	93.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	2.75888618
Employed	4.709354549
Median HI	5.273963814
Education	—
Bachelor's or higher	9.547029385
High school enrollment	6.108045682
Preschool enrollment	17.00243809
Transportation	—
Auto Access	5.915565251
Active commuting	28.28179135
Social	—
2-parent households	31.82343128
Voting	0.936738098
Neighborhood	—
Alcohol availability	36.78942641
Park access	21.85294495
Retail density	40.81868343
Supermarket access	11.86962659
Tree canopy	46.63159245
Housing	—
Homeownership	31.38714231
Housing habitability	12.42140382
Low-inc homeowner severe housing cost burden	21.429488

Low-inc renter severe housing cost burden	32.77300141
Uncrowded housing	14.69267291
Health Outcomes	—
Insured adults	10.18863082
Arthritis	14.6
Asthma ER Admissions	2.3
High Blood Pressure	5.0
Cancer (excluding skin)	77.2
Asthma	1.3
Coronary Heart Disease	5.2
Chronic Obstructive Pulmonary Disease	2.6
Diagnosed Diabetes	1.8
Life Expectancy at Birth	11.9
Cognitively Disabled	7.6
Physically Disabled	8.5
Heart Attack ER Admissions	3.7
Mental Health Not Good	2.2
Chronic Kidney Disease	2.7
Obesity	1.5
Pedestrian Injuries	97.2
Physical Health Not Good	2.0
Stroke	1.8
Health Risk Behaviors	—
Binge Drinking	84.3
Current Smoker	4.4
No Leisure Time for Physical Activity	1.0
Climate Change Exposures	—

Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	7.3
Elderly	70.0
English Speaking	21.6
Foreign-born	58.6
Outdoor Workers	2.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	50.0
Traffic Density	62.8
Traffic Access	0.0
Other Indices	—
Hardship	96.8
Other Decision Support	—
2016 Voting	1.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	100
Healthy Places Index Score for Project Location (b)	0.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	Central Fresno

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Fresno SCSP: Table 4-4 development capacities for the plan area, assuming 75% built out in the rest of the years. Added 100,000 sqft general office building to account for extra construction.
Construction: Construction Phases	Work days are proportionally compressed from default value to fit in one year. Architectural Coating schedule is modified based on compressed CalEEMod default schedule so that its work days equals to on 2/3 building days plus paving and arch coating days. Architectural Coating days =2/3*194+14+14 = 157 days. Accordingly, the equipment work hours per day is adjusted by ratio of 14/157.
Construction: Paving	Residential paved area is CalEEMod default. For other land uses, 25% of lot acreage is assumed to be paved with 100% asphalt.
Construction: Dust From Material Movement	client data
Construction: Off-Road Equipment	The equipment Hours/Day is adjusted to 0.5265 Hours/Day = 6 Hours/Day * 14 Days/157 Days, according to the adjustment in Architectural Coating.

Fresno-SCSP-2040-operation Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fresno-SCSP-2040-operation
Operational Year	2040
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	25.4
Location	36.711511, -119.776006
County	Fresno
City	Fresno
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2482
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.19

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	91.0	Dwelling Unit	29.5	177,450	1,065,870	—	291	—

Supermarket	867	1000sqft	19.9	866,700	0.00	—	—	—
Office Park	579	1000sqft	13.3	578,800	0.00	—	—	—
Industrial Park	4,327	1000sqft	99.3	4,326,700	0.00	—	—	—
General Heavy Industry	6,250	1000sqft	143	6,249,700	0.00	—	—	—
General Office Building	200	1000sqft	4.59	200,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	312	559	360	3,028	8.62	17.8	798	816	17.3	202	219	15,795	1,092,388	1,108,183	1,599	47.0	182,878	1,345,039
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	205	458	386	1,948	7.91	16.9	798	815	16.6	202	219	15,795	1,021,266	1,037,061	1,600	48.9	182,451	1,274,085
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	249	501	374	2,302	8.06	15.0	785	800	14.7	199	214	15,411	1,041,241	1,056,653	1,597	48.0	182,629	1,293,511

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	45.5	91.5	68.2	420	1.47	2.74	143	146	2.68	36.3	39.0	2,551	172,389	174,941	264	7.94	30,236	214,156

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	198	180	223	2,360	7.72	3.84	798	802	3.63	202	206	—	788,235	788,235	16.5	31.3	439	798,418
Area	99.8	371	5.61	558	0.10	3.94	—	3.94	3.60	—	3.60	495	3,158	3,652	2.42	0.02	—	3,719
Energy	14.5	7.27	132	111	0.79	10.1	—	10.1	10.1	—	10.1	—	295,039	295,039	36.2	2.99	—	296,834
Water	—	—	—	—	—	—	—	—	—	—	—	5,164	5,956	11,120	530	12.7	—	28,165
Waste	—	—	—	—	—	—	—	—	—	—	—	10,136	0.00	10,136	1,013	0.00	—	35,464
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	182,440	182,440
Total	312	559	360	3,028	8.62	17.8	798	816	17.3	202	219	15,795	1,092,388	1,108,183	1,599	47.0	182,878	1,345,039
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	185	168	253	1,817	7.04	3.85	798	802	3.63	202	206	—	719,313	719,313	17.6	33.2	11.4	729,672
Area	4.66	283	1.09	20.9	0.07	2.99	—	2.99	2.88	—	2.88	495	958	1,453	2.33	< 0.005	—	1,511
Energy	14.5	7.27	132	111	0.79	10.1	—	10.1	10.1	—	10.1	—	295,039	295,039	36.2	2.99	—	296,834
Water	—	—	—	—	—	—	—	—	—	—	—	5,164	5,956	11,120	530	12.7	—	28,165
Waste	—	—	—	—	—	—	—	—	—	—	—	10,136	0.00	10,136	1,013	0.00	—	35,464
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	182,440	182,440
Total	205	458	386	1,948	7.91	16.9	798	815	16.6	202	219	15,795	1,021,266	1,037,061	1,600	48.9	182,451	1,274,085

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	187	169	239	1,922	7.24	3.84	785	789	3.63	199	203	—	738,946	738,946	17.0	32.3	189	749,181
Area	48.0	325	2.47	269	0.03	1.14	—	1.14	1.00	—	1.00	111	1,300	1,411	0.57	0.01	—	1,428
Energy	14.5	7.27	132	111	0.79	10.1	—	10.1	10.1	—	10.1	—	295,039	295,039	36.2	2.99	—	296,834
Water	—	—	—	—	—	—	—	—	—	—	—	5,164	5,956	11,120	530	12.7	—	28,165
Waste	—	—	—	—	—	—	—	—	—	—	—	10,136	0.00	10,136	1,013	0.00	—	35,464
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	182,440	182,440
Total	249	501	374	2,302	8.06	15.0	785	800	14.7	199	214	15,411	1,041,241	1,056,653	1,597	48.0	182,629	1,293,511
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	34.1	30.8	43.6	351	1.32	0.70	143	144	0.66	36.3	37.0	—	122,341	122,341	2.81	5.35	31.3	124,035
Area	8.75	59.3	0.45	49.2	0.01	0.21	—	0.21	0.18	—	0.18	18.4	215	234	0.09	< 0.005	—	236
Energy	2.66	1.33	24.1	20.2	0.14	1.83	—	1.83	1.83	—	1.83	—	48,847	48,847	5.99	0.49	—	49,144
Water	—	—	—	—	—	—	—	—	—	—	—	855	986	1,841	87.8	2.10	—	4,663
Waste	—	—	—	—	—	—	—	—	—	—	—	1,678	0.00	1,678	168	0.00	—	5,871
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30,205	30,205
Total	45.5	91.5	68.2	420	1.47	2.74	143	146	2.68	36.3	39.0	2,551	172,389	174,941	264	7.94	30,236	214,156

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	475	475	0.08	0.01	—	480
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	28,412	28,412	4.60	0.56	—	28,693
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	7,584	7,584	1.23	0.15	—	7,659
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	56,694	56,694	9.17	1.11	—	57,254
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	—	41,438	41,438	6.70	0.81	—	41,848
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	2,621	2,621	0.42	0.05	—	2,647
Total	—	—	—	—	—	—	—	—	—	—	—	—	137,224	137,224	22.2	2.69	—	138,580
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	475	475	0.08	0.01	—	480
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	28,412	28,412	4.60	0.56	—	28,693
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	7,584	7,584	1.23	0.15	—	7,659
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	56,694	56,694	9.17	1.11	—	57,254

General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	—	41,438	41,438	6.70	0.81	—	41,848
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	2,621	2,621	0.42	0.05	—	2,647
Total	—	—	—	—	—	—	—	—	—	—	—	—	137,224	137,224	22.2	2.69	—	138,580
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	78.7	78.7	0.01	< 0.005	—	79.5
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	4,704	4,704	0.76	0.09	—	4,750
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	1,256	1,256	0.20	0.02	—	1,268
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	9,386	9,386	1.52	0.18	—	9,479
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	—	6,860	6,860	1.11	0.13	—	6,928
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	434	434	0.07	0.01	—	438
Total	—	—	—	—	—	—	—	—	—	—	—	—	22,719	22,719	3.68	0.45	—	22,944

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.10	0.05	0.89	0.38	0.01	0.07	—	0.07	0.07	—	0.07	—	1,135	1,135	0.10	< 0.005	—	1,138
Supermarket	0.85	0.43	7.77	6.52	0.05	0.59	—	0.59	0.59	—	0.59	—	9,266	9,266	0.82	0.02	—	9,292
Office Park	0.68	0.34	6.21	5.22	0.04	0.47	—	0.47	0.47	—	0.47	—	7,409	7,409	0.66	0.01	—	7,429
Industrial Park	5.11	2.55	46.4	39.0	0.28	3.53	—	3.53	3.53	—	3.53	—	55,381	55,381	4.90	0.10	—	55,535
General Heavy Industry	7.57	3.78	68.8	57.8	0.41	5.23	—	5.23	5.23	—	5.23	—	82,065	82,065	7.26	0.15	—	82,293
General Office Building	0.24	0.12	2.15	1.80	0.01	0.16	—	0.16	0.16	—	0.16	—	2,560	2,560	0.23	< 0.005	—	2,567
Total	14.5	7.27	132	111	0.79	10.1	—	10.1	10.1	—	10.1	—	157,816	157,816	14.0	0.30	—	158,253
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.10	0.05	0.89	0.38	0.01	0.07	—	0.07	0.07	—	0.07	—	1,135	1,135	0.10	< 0.005	—	1,138
Supermarket	0.85	0.43	7.77	6.52	0.05	0.59	—	0.59	0.59	—	0.59	—	9,266	9,266	0.82	0.02	—	9,292
Office Park	0.68	0.34	6.21	5.22	0.04	0.47	—	0.47	0.47	—	0.47	—	7,409	7,409	0.66	0.01	—	7,429
Industrial Park	5.11	2.55	46.4	39.0	0.28	3.53	—	3.53	3.53	—	3.53	—	55,381	55,381	4.90	0.10	—	55,535
General Heavy Industry	7.57	3.78	68.8	57.8	0.41	5.23	—	5.23	5.23	—	5.23	—	82,065	82,065	7.26	0.15	—	82,293
General Office Building	0.24	0.12	2.15	1.80	0.01	0.16	—	0.16	0.16	—	0.16	—	2,560	2,560	0.23	< 0.005	—	2,567
Total	14.5	7.27	132	111	0.79	10.1	—	10.1	10.1	—	10.1	—	157,816	157,816	14.0	0.30	—	158,253

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.02	0.01	0.16	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	188	188	0.02	< 0.005	—	188
Supermarket	0.16	0.08	1.42	1.19	0.01	0.11	—	0.11	0.11	—	0.11	—	1,534	1,534	0.14	< 0.005	—	1,538
Office Park	0.12	0.06	1.13	0.95	0.01	0.09	—	0.09	0.09	—	0.09	—	1,227	1,227	0.11	< 0.005	—	1,230
Industrial Park	0.93	0.47	8.47	7.12	0.05	0.64	—	0.64	0.64	—	0.64	—	9,169	9,169	0.81	0.02	—	9,194
General Heavy Industry	1.38	0.69	12.6	10.5	0.08	0.95	—	0.95	0.95	—	0.95	—	13,587	13,587	1.20	0.03	—	13,624
General Office Building	0.04	0.02	0.39	0.33	< 0.005	0.03	—	0.03	0.03	—	0.03	—	424	424	0.04	< 0.005	—	425
Total	2.66	1.33	24.1	20.2	0.14	1.83	—	1.83	1.83	—	1.83	—	26,128	26,128	2.31	0.05	—	26,201

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	4.66	2.31	1.09	20.9	0.07	2.99	—	2.99	2.88	—	2.88	495	958	1,453	2.33	< 0.005	—	1,511
Consumer Products	—	265	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	15.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipment	95.1	87.8	4.52	537	0.03	0.95	—	0.95	0.72	—	0.72	—	2,200	2,200	0.09	0.02	—	2,208
Total	99.8	371	5.61	558	0.10	3.94	—	3.94	3.60	—	3.60	495	3,158	3,652	2.42	0.02	—	3,719
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	4.66	2.31	1.09	20.9	0.07	2.99	—	2.99	2.88	—	2.88	495	958	1,453	2.33	< 0.005	—	1,511
Consumer Products	—	265	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	15.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	4.66	283	1.09	20.9	0.07	2.99	—	2.99	2.88	—	2.88	495	958	1,453	2.33	< 0.005	—	1,511
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.19	0.09	0.04	0.86	< 0.005	0.12	—	0.12	0.12	—	0.12	18.4	35.6	54.0	0.09	< 0.005	—	56.2
Consumer Products	—	48.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	2.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	8.56	7.90	0.41	48.3	< 0.005	0.09	—	0.09	0.06	—	0.06	—	180	180	0.01	< 0.005	—	180
Total	8.75	59.3	0.45	49.2	0.01	0.21	—	0.21	0.18	—	0.18	18.4	215	234	0.09	< 0.005	—	236

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.03	32.3	39.3	0.73	0.02	—	62.7
Supermarket	—	—	—	—	—	—	—	—	—	—	—	205	235	440	21.0	0.50	—	1,116
Office Park	—	—	—	—	—	—	—	—	—	—	—	197	226	424	20.2	0.48	—	1,074
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	1,917	2,203	4,120	197	4.71	—	10,449
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	2,769	3,182	5,951	284	6.81	—	15,092
General Office Building	—	—	—	—	—	—	—	—	—	—	—	68.1	78.3	146	7.00	0.17	—	371
Total	—	—	—	—	—	—	—	—	—	—	—	5,164	5,956	11,120	530	12.7	—	28,165
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.03	32.3	39.3	0.73	0.02	—	62.7
Supermarket	—	—	—	—	—	—	—	—	—	—	—	205	235	440	21.0	0.50	—	1,116
Office Park	—	—	—	—	—	—	—	—	—	—	—	197	226	424	20.2	0.48	—	1,074
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	1,917	2,203	4,120	197	4.71	—	10,449

General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	2,769	3,182	5,951	284	6.81	—	15,092
General Office Building	—	—	—	—	—	—	—	—	—	—	—	68.1	78.3	146	7.00	0.17	—	371
Total	—	—	—	—	—	—	—	—	—	—	—	5,164	5,956	11,120	530	12.7	—	28,165
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.16	5.34	6.50	0.12	< 0.005	—	10.4
Supermarket	—	—	—	—	—	—	—	—	—	—	—	33.9	38.9	72.8	3.48	0.08	—	185
Office Park	—	—	—	—	—	—	—	—	—	—	—	32.6	37.5	70.1	3.35	0.08	—	178
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	317	365	682	32.6	0.78	—	1,730
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	459	527	985	47.1	1.13	—	2,499
General Office Building	—	—	—	—	—	—	—	—	—	—	—	11.3	13.0	24.2	1.16	0.03	—	61.5
Total	—	—	—	—	—	—	—	—	—	—	—	855	986	1,841	87.8	2.10	—	4,663

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152
Supermarket	—	—	—	—	—	—	—	—	—	—	—	2,634	0.00	2,634	263	0.00	—	9,217
Office Park	—	—	—	—	—	—	—	—	—	—	—	290	0.00	290	29.0	0.00	—	1,015
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	2,891	0.00	2,891	289	0.00	—	10,116
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	4,177	0.00	4,177	417	0.00	—	14,612
General Office Building	—	—	—	—	—	—	—	—	—	—	—	100	0.00	100	10.0	0.00	—	351
Total	—	—	—	—	—	—	—	—	—	—	—	10,136	0.00	10,136	1,013	0.00	—	35,464
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152
Supermarket	—	—	—	—	—	—	—	—	—	—	—	2,634	0.00	2,634	263	0.00	—	9,217
Office Park	—	—	—	—	—	—	—	—	—	—	—	290	0.00	290	29.0	0.00	—	1,015
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	2,891	0.00	2,891	289	0.00	—	10,116
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	4,177	0.00	4,177	417	0.00	—	14,612

General Office Building	—	—	—	—	—	—	—	—	—	—	—	100	0.00	100	10.0	0.00	—	351
Total	—	—	—	—	—	—	—	—	—	—	—	10,136	0.00	10,136	1,013	0.00	—	35,464
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.21	0.00	7.21	0.72	0.00	—	25.2
Supermarket	—	—	—	—	—	—	—	—	—	—	—	436	0.00	436	43.6	0.00	—	1,526
Office Park	—	—	—	—	—	—	—	—	—	—	—	48.0	0.00	48.0	4.80	0.00	—	168
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	479	0.00	479	47.8	0.00	—	1,675
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	691	0.00	691	69.1	0.00	—	2,419
General Office Building	—	—	—	—	—	—	—	—	—	—	—	16.6	0.00	16.6	1.66	0.00	—	58.1
Total	—	—	—	—	—	—	—	—	—	—	—	1,678	0.00	1,678	168	0.00	—	5,871

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.27	1.27
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	179,684	179,684
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.41	1.41
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,126	1,126
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,627	1,627
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.49	0.49
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	182,440	182,440
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.27	1.27
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	179,684	179,684
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.41	1.41
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,126	1,126
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,627	1,627
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.49	0.49
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	182,440	182,440

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.21	0.21
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29,749	29,749
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	186	186
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	269	269
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30,205	30,205

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	72,241	72,241	72,241	26,367,965	1,130,444	1,130,444	1,130,444	412,612,060

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	46
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	46
Conventional Wood Stoves	0
Catalytic Wood Stoves	5
Non-Catalytic Wood Stoves	5
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
359336.25	119,779	18,332,850	6,110,950	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	850,539	204	0.0330	0.0040	3,541,021
Supermarket	50,839,625	204	0.0330	0.0040	28,912,644
Office Park	13,570,764	204	0.0330	0.0040	23,116,744
Industrial Park	101,445,448	204	0.0330	0.0040	172,804,453
General Heavy Industry	74,147,271	204	0.0330	0.0040	256,064,703
General Office Building	4,689,276	204	0.0330	0.0040	7,987,818

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	3,666,936	17,882,850
Supermarket	106,836,562	0.00
Office Park	102,872,293	0.00
Industrial Park	1,000,549,375	0.00
General Heavy Industry	1,445,243,125	0.00
General Office Building	35,546,750	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	80.8	—
Supermarket	4,888	—
Office Park	538	—

Industrial Park	5,365	—
General Heavy Industry	7,750	—
General Office Building	186	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Supermarket	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Supermarket	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0
Office Park	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Office Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0
General Heavy Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	24.3	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	82.5
AQ-PM	97.7
AQ-DPM	98.7
Drinking Water	84.4
Lead Risk Housing	96.5
Pesticides	42.9
Toxic Releases	92.2
Traffic	60.4
Effect Indicators	—
CleanUp Sites	98.2
Groundwater	91.2
Haz Waste Facilities/Generators	96.3
Impaired Water Bodies	0.00
Solid Waste	80.0
Sensitive Population	—
Asthma	97.2
Cardio-vascular	92.2

Low Birth Weights	95.6
Socioeconomic Factor Indicators	—
Education	93.2
Housing	91.0
Linguistic	79.4
Poverty	98.9
Unemployment	93.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	2.75888618
Employed	4.709354549
Median HI	5.273963814
Education	—
Bachelor's or higher	9.547029385
High school enrollment	6.108045682
Preschool enrollment	17.00243809
Transportation	—
Auto Access	5.915565251
Active commuting	28.28179135
Social	—
2-parent households	31.82343128
Voting	0.936738098
Neighborhood	—
Alcohol availability	36.78942641

Park access	21.85294495
Retail density	40.81868343
Supermarket access	11.86962659
Tree canopy	46.63159245
Housing	—
Homeownership	31.38714231
Housing habitability	12.42140382
Low-inc homeowner severe housing cost burden	21.429488
Low-inc renter severe housing cost burden	32.77300141
Uncrowded housing	14.69267291
Health Outcomes	—
Insured adults	10.18863082
Arthritis	14.6
Asthma ER Admissions	2.3
High Blood Pressure	5.0
Cancer (excluding skin)	77.2
Asthma	1.3
Coronary Heart Disease	5.2
Chronic Obstructive Pulmonary Disease	2.6
Diagnosed Diabetes	1.8
Life Expectancy at Birth	11.9
Cognitively Disabled	7.6
Physically Disabled	8.5
Heart Attack ER Admissions	3.7
Mental Health Not Good	2.2
Chronic Kidney Disease	2.7
Obesity	1.5

Pedestrian Injuries	97.2
Physical Health Not Good	2.0
Stroke	1.8
Health Risk Behaviors	—
Binge Drinking	84.3
Current Smoker	4.4
No Leisure Time for Physical Activity	1.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	7.3
Elderly	70.0
English Speaking	21.6
Foreign-born	58.6
Outdoor Workers	2.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	50.0
Traffic Density	62.8
Traffic Access	0.0
Other Indices	—
Hardship	96.8
Other Decision Support	—
2016 Voting	1.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	100

Healthy Places Index Score for Project Location (b)	0.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	Central Fresno

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Fresno SCSP: Table 4-4 development capacities for the plan area. Assuming 25% built out on Year 1. Added 100,000 sqft general office building to account for unaccounted constructions.
Construction: Construction Phases	Work days are proportionally compressed from default value to fit in one year.
Operations: Vehicle Data	Single Family Housing, Supermarket, Office Park and Industry Park use traffic analysis trip rates, General Heavy Industry trip rates uses CalEEmod default. Trip lengths use CalEEMod default. Trip purpose and percentages are CalEEMod defaults.

Fresno-SCSP-phase2 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fresno-SCSP-phase2
Construction Start Date	1/1/2025
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	25.4
Location	36.711511, -119.776006
County	Fresno
City	Fresno
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2482
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.19

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	68.0	Dwelling Unit	22.1	132,600	796,474	—	218	—

Supermarket	650	1000sqft	14.9	650,010	0.00	—	—	—
Office Park	434	1000sqft	9.97	434,100	0.00	—	—	—
Industrial Park	3,245	1000sqft	74.5	3,245,000	0.00	—	—	—
General Heavy Industry	4,687	1000sqft	108	4,687,300	0.00	—	—	—
General Office Building	100	1000sqft	2.30	100,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	19.2	30.7	46.1	159	0.16	1.12	29.4	30.0	1.03	7.11	7.66	—	46,582	46,582	1.26	3.86	110	47,873
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.3	28.8	115	134	0.48	2.59	37.4	40.0	2.48	14.9	17.4	—	70,358	70,358	1.65	10.1	4.10	73,425
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.9	19.9	33.6	91.4	0.11	1.02	20.7	21.1	0.95	5.01	5.40	—	31,162	31,162	0.93	2.70	32.2	32,008
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.17	3.64	6.13	16.7	0.02	0.19	3.78	3.85	0.17	0.91	0.98	—	5,159	5,159	0.15	0.45	5.34	5,299

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.97	2.48	23.4	20.8	0.04	0.94	1.60	2.54	0.86	0.28	1.15	—	4,526	4,526	0.16	0.19	2.79	4,589
2026	3.71	3.12	27.3	28.3	0.06	1.12	9.31	10.4	1.03	3.68	4.71	—	6,717	6,717	0.27	0.06	0.41	6,742
2027	17.2	16.1	46.1	145	0.16	1.04	25.4	26.0	0.96	6.15	6.73	—	43,073	43,073	1.14	3.68	109	44,307
2028	19.2	30.7	46.0	159	0.16	0.58	29.4	30.0	0.56	7.11	7.66	—	46,582	46,582	1.26	3.86	110	47,873
2029	18.1	29.5	43.7	150	0.16	0.55	29.4	30.0	0.53	7.11	7.64	—	45,616	45,616	1.16	3.73	97.9	46,853
2030	17.3	28.7	42.5	141	0.16	0.54	29.4	30.0	0.51	7.11	7.62	—	44,653	44,653	1.03	2.93	86.5	45,639
2031	15.6	27.8	40.6	134	0.16	0.52	29.4	29.9	0.36	7.11	7.47	—	43,714	43,714	0.93	2.80	76.2	44,647
2032	14.7	26.9	39.5	127	0.16	0.50	29.4	29.9	0.35	7.11	7.45	—	42,818	42,818	0.93	2.80	66.4	43,742
2033	14.0	26.4	37.7	121	0.16	0.34	29.4	29.8	0.33	7.11	7.43	—	41,995	41,995	0.93	2.67	57.6	42,871
2034	13.3	25.7	36.9	117	0.16	0.33	29.4	29.8	0.32	7.11	7.42	—	41,232	41,232	0.93	2.67	49.4	42,099
2035	13.0	25.5	36.1	112	0.16	0.32	29.4	29.7	0.30	7.11	7.41	—	40,530	40,530	0.83	2.53	42.2	41,348
2036	12.6	25.1	35.4	108	0.16	0.31	29.4	29.7	0.29	7.11	7.40	—	39,898	39,898	0.83	2.53	35.6	40,710
2037	12.0	24.5	34.0	104	0.16	0.29	29.4	29.7	0.28	7.11	7.39	—	39,338	39,338	0.83	2.53	29.9	40,144
2038	11.5	23.2	33.5	102	0.16	0.29	29.4	29.7	0.28	7.11	7.38	—	38,831	38,831	0.83	2.40	25.0	39,592
2039	11.1	22.8	32.9	99.9	0.16	0.28	29.4	29.7	0.27	7.11	7.38	—	38,391	38,391	0.80	2.40	20.7	39,148
2040	1.49	14.5	1.29	13.2	< 0.005	< 0.005	4.06	4.07	< 0.005	0.95	0.96	—	3,796	3,796	0.05	0.05	2.19	3,815
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.55	4.42	115	50.1	0.48	2.59	37.4	40.0	2.48	14.9	17.4	—	70,358	70,358	1.65	10.1	4.10	73,425
2026	6.34	4.25	110	48.3	0.48	2.47	37.4	39.9	2.37	14.9	17.3	—	69,026	69,026	1.63	10.1	3.86	72,092
2027	15.5	13.8	49.7	123	0.16	1.04	25.4	26.0	0.96	6.15	6.73	—	40,681	40,681	1.38	3.76	2.84	41,840

2028	17.3	28.8	49.8	134	0.16	0.58	29.4	30.0	0.56	7.11	7.66	—	43,765	43,765	1.46	3.96	2.86	44,983
2029	16.5	27.8	47.5	127	0.16	0.55	29.4	30.0	0.53	7.11	7.64	—	42,858	42,858	1.46	3.82	2.54	44,036
2030	14.9	26.9	45.4	120	0.16	0.54	29.4	30.0	0.51	7.11	7.62	—	41,949	41,949	1.22	3.73	2.24	43,092
2031	14.2	26.4	43.5	113	0.16	0.52	29.4	29.9	0.36	7.11	7.47	—	41,059	41,059	1.13	3.59	1.98	42,160
2032	13.5	25.7	42.4	107	0.16	0.50	29.4	29.9	0.35	7.11	7.45	—	40,209	40,209	1.13	2.80	1.72	41,073
2033	12.8	25.2	40.6	103	0.16	0.34	29.4	29.8	0.33	7.11	7.43	—	39,424	39,424	1.13	2.67	1.49	40,249
2034	12.3	24.6	39.8	98.4	0.16	0.33	29.4	29.8	0.32	7.11	7.42	—	38,696	38,696	1.03	2.67	1.28	39,517
2035	12.0	24.3	38.9	94.9	0.16	0.32	29.4	29.7	0.30	7.11	7.41	—	38,025	38,025	1.03	2.53	1.09	38,807
2036	11.7	24.2	37.3	91.7	0.16	0.31	29.4	29.7	0.29	7.11	7.40	—	37,421	37,421	1.03	2.53	0.93	38,203
2037	11.3	23.0	36.7	88.5	0.16	0.29	29.4	29.7	0.28	7.11	7.39	—	36,885	36,885	0.89	2.53	0.78	37,664
2038	11.0	22.7	36.2	85.9	0.16	0.29	29.4	29.7	0.28	7.11	7.38	—	36,400	36,400	0.89	2.40	0.65	37,139
2039	10.6	22.3	35.6	84.1	0.16	0.28	29.4	29.7	0.27	7.11	7.38	—	35,980	35,980	0.89	2.40	0.54	36,718
2040	2.04	15.6	6.76	20.5	0.02	0.11	4.15	4.26	0.10	0.97	1.07	—	4,966	4,966	0.15	0.06	0.06	4,989
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.72	2.10	31.7	19.6	0.10	0.94	7.06	8.01	0.89	2.62	3.51	—	14,176	14,176	0.36	1.79	12.0	14,730
2026	3.08	2.42	32.6	23.3	0.11	1.02	11.2	12.2	0.95	4.44	5.40	—	14,910	14,910	0.42	1.68	10.6	15,431
2027	7.61	7.00	27.6	59.9	0.08	0.56	13.2	13.7	0.52	3.62	4.14	—	19,229	19,229	0.59	1.59	19.7	19,736
2028	11.7	15.5	33.6	90.9	0.11	0.41	19.4	19.8	0.39	4.69	5.08	—	30,538	30,538	0.93	2.70	32.2	31,399
2029	11.9	19.9	32.6	91.4	0.11	0.40	20.7	21.1	0.38	4.99	5.37	—	31,162	31,162	0.90	2.66	30.2	32,008
2030	11.3	19.5	31.3	86.2	0.11	0.38	20.7	21.1	0.37	4.99	5.36	—	30,503	30,503	0.80	2.64	26.7	31,336
2031	10.3	19.0	30.3	81.8	0.11	0.37	20.7	21.1	0.26	4.99	5.25	—	29,857	29,857	0.73	2.00	23.5	30,495
2032	9.75	18.5	29.0	78.2	0.11	0.36	20.7	21.1	0.25	5.01	5.25	—	29,321	29,321	0.74	2.01	20.5	29,958
2033	9.26	18.2	28.2	74.5	0.11	0.25	20.7	20.9	0.23	4.99	5.23	—	28,673	28,673	0.73	1.91	17.8	29,276
2034	8.82	17.7	27.6	71.6	0.11	0.24	20.7	20.9	0.23	4.99	5.22	—	28,146	28,146	0.66	1.91	15.2	28,746
2035	8.67	17.5	26.6	68.8	0.11	0.23	20.7	20.9	0.22	4.99	5.21	—	27,661	27,661	0.66	1.81	13.0	28,230
2036	8.53	17.5	26.1	66.3	0.11	0.22	20.7	21.0	0.21	5.01	5.22	—	27,298	27,298	0.66	1.82	11.1	27,867
2037	8.05	16.5	25.5	64.1	0.11	0.21	20.7	20.9	0.20	4.99	5.19	—	26,836	26,836	0.66	1.81	9.22	27,401

2038	7.91	16.3	25.1	62.4	0.11	0.21	20.7	20.9	0.20	4.99	5.19	—	26,485	26,485	0.57	1.72	7.70	27,018
2039	3.31	12.6	10.6	28.9	0.04	0.12	8.22	8.34	0.11	1.97	2.08	—	10,376	10,376	0.24	0.54	2.48	10,547
2040	1.07	10.3	1.46	8.71	< 0.005	0.01	2.82	2.84	0.01	0.66	0.67	—	2,630	2,630	0.06	0.04	0.67	2,643
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.50	0.38	5.78	3.58	0.02	0.17	1.29	1.46	0.16	0.48	0.64	—	2,347	2,347	0.06	0.30	1.98	2,439
2026	0.56	0.44	5.95	4.26	0.02	0.19	2.04	2.23	0.17	0.81	0.98	—	2,469	2,469	0.07	0.28	1.75	2,555
2027	1.39	1.28	5.05	10.9	0.02	0.10	2.40	2.51	0.10	0.66	0.76	—	3,184	3,184	0.10	0.26	3.26	3,267
2028	2.14	2.83	6.13	16.6	0.02	0.07	3.54	3.61	0.07	0.86	0.93	—	5,056	5,056	0.15	0.45	5.34	5,198
2029	2.17	3.64	5.95	16.7	0.02	0.07	3.77	3.85	0.07	0.91	0.98	—	5,159	5,159	0.15	0.44	4.99	5,299
2030	2.07	3.56	5.70	15.7	0.02	0.07	3.77	3.84	0.07	0.91	0.98	—	5,050	5,050	0.13	0.44	4.43	5,188
2031	1.87	3.46	5.54	14.9	0.02	0.07	3.77	3.84	0.05	0.91	0.96	—	4,943	4,943	0.12	0.33	3.88	5,049
2032	1.78	3.38	5.30	14.3	0.02	0.06	3.78	3.85	0.05	0.91	0.96	—	4,854	4,854	0.12	0.33	3.40	4,960
2033	1.69	3.31	5.15	13.6	0.02	0.04	3.77	3.82	0.04	0.91	0.95	—	4,747	4,747	0.12	0.32	2.94	4,847
2034	1.61	3.23	5.04	13.1	0.02	0.04	3.77	3.82	0.04	0.91	0.95	—	4,660	4,660	0.11	0.32	2.52	4,759
2035	1.58	3.19	4.85	12.6	0.02	0.04	3.77	3.82	0.04	0.91	0.95	—	4,580	4,580	0.11	0.30	2.15	4,674
2036	1.56	3.19	4.76	12.1	0.02	0.04	3.78	3.82	0.04	0.91	0.95	—	4,519	4,519	0.11	0.30	1.83	4,614
2037	1.47	3.01	4.65	11.7	0.02	0.04	3.77	3.81	0.04	0.91	0.95	—	4,443	4,443	0.11	0.30	1.53	4,537
2038	1.44	2.97	4.58	11.4	0.02	0.04	3.77	3.81	0.04	0.91	0.95	—	4,385	4,385	0.09	0.28	1.28	4,473
2039	0.60	2.30	1.93	5.27	0.01	0.02	1.50	1.52	0.02	0.36	0.38	—	1,718	1,718	0.04	0.09	0.41	1,746
2040	0.20	1.88	0.27	1.59	< 0.005	< 0.005	0.52	0.52	< 0.005	0.12	0.12	—	435	435	0.01	0.01	0.11	438

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	1.26	1.26	—	0.19	0.19	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	1.26	1.26	—	0.19	0.19	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.57	1.31	12.2	10.9	0.02	0.50	—	0.50	0.46	—	0.46	—	1,877	1,877	0.08	0.02	—	1,883
Demolition	—	—	—	—	—	—	0.69	0.69	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	0.24	2.22	1.99	< 0.005	0.09	—	0.09	0.08	—	0.08	—	311	311	0.01	< 0.005	—	312
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.03	0.56	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	90.9	90.9	< 0.005	< 0.005	0.34	92.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	0.02	1.21	0.30	0.01	0.02	0.27	0.29	0.02	0.07	0.09	—	1,010	1,010	0.02	0.16	2.45	1,060
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.01	82.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	0.02	1.29	0.30	0.01	0.02	0.27	0.29	0.02	0.07	0.09	—	1,010	1,010	0.02	0.16	0.06	1,058
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.25	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	45.8	45.8	< 0.005	< 0.005	0.08	46.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.69	0.16	< 0.005	0.01	0.14	0.16	0.01	0.04	0.05	—	553	553	0.01	0.09	0.58	580
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.58	7.58	< 0.005	< 0.005	0.01	7.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.13	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	91.6	91.6	< 0.005	0.01	0.10	96.0

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movemen	—	—	—	—	—	—	20.1	20.1	—	10.2	10.2	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.55	5.26	5.02	0.01	0.23	—	0.23	0.21	—	0.21	—	881	881	0.04	0.01	—	884
Dust From Material Movemen	—	—	—	—	—	—	3.34	3.34	—	1.69	1.69	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.96	0.92	< 0.005	0.04	—	0.04	0.04	—	0.04	—	146	146	0.01	< 0.005	—	146
Dust From Material Movemen	—	—	—	—	—	—	0.61	0.61	—	0.31	0.31	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.53	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	94.2	94.2	< 0.005	< 0.005	0.01	95.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	2.54	1.04	83.1	19.4	0.43	1.23	17.2	18.4	1.23	4.71	5.94	—	64,969	64,969	1.43	10.1	4.09	68,016
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.2	16.2	< 0.005	< 0.005	0.03	16.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.43	0.18	13.5	3.20	0.07	0.20	2.83	3.03	0.20	0.78	0.98	—	10,803	10,803	0.24	1.68	11.3	11,320
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.69	2.69	< 0.005	< 0.005	< 0.005	2.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.03	2.47	0.58	0.01	0.04	0.52	0.55	0.04	0.14	0.18	—	1,789	1,789	0.04	0.28	1.87	1,874

3.5. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	—	5,298	5,298	0.21	0.04	—	5,316

Dust From Material Movemen	—	—	—	—	—	—	20.1	20.1	—	10.2	10.2	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	0.51	4.74	4.68	0.01	0.20	—	0.20	0.19	—	0.19	—	861	861	0.03	0.01	—	863
Dust From Material Movemen	—	—	—	—	—	—	3.26	3.26	—	1.65	1.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.86	0.85	< 0.005	0.04	—	0.04	0.03	—	0.03	—	142	142	0.01	< 0.005	—	143
Dust From Material Movemen	—	—	—	—	—	—	0.60	0.60	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.48	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	92.2	92.2	< 0.005	< 0.005	0.01	93.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	2.54	1.04	80.5	19.0	0.43	1.23	17.2	18.4	1.23	4.71	5.94	—	63,635	63,635	1.41	10.1	3.85	66,682

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.5	15.5	< 0.005	< 0.005	0.03	15.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.42	0.18	12.8	3.05	0.07	0.20	2.76	2.96	0.20	0.76	0.96	—	10,332	10,332	0.23	1.64	10.5	10,837
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.57	2.57	< 0.005	< 0.005	< 0.005	2.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.03	2.33	0.56	0.01	0.04	0.50	0.54	0.04	0.14	0.17	—	1,711	1,711	0.04	0.27	1.73	1,794

3.7. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.00	1.68	15.0	15.2	0.03	0.62	—	0.62	0.57	—	0.57	—	3,641	3,641	0.15	0.03	—	3,654
Dust From Material Movement	—	—	—	—	—	—	5.08	5.08	—	2.02	2.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.31	2.74	2.78	0.01	0.11	—	0.11	0.10	—	0.10	—	603	603	0.02	< 0.005	—	605
Dust From Material Movement	—	—	—	—	—	—	0.93	0.93	—	0.37	0.37	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.04	0.68	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	119	119	< 0.005	0.01	0.41	121
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.07	0.07	0.05	0.55	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	105	105	< 0.005	0.01	0.01	107
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.31	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.2	60.2	< 0.005	< 0.005	0.10	61.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.97	9.97	< 0.005	< 0.005	0.02	10.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.51	2.95	25.6	27.3	0.06	1.04	—	1.04	0.96	—	0.96	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.51	2.95	25.6	27.3	0.06	1.04	—	1.04	0.96	—	0.96	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movemen	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.88	7.61	8.12	0.02	0.31	—	0.31	0.29	—	0.29	—	1,963	1,963	0.08	0.02	—	1,969
Dust From Material Movemen	—	—	—	—	—	—	2.74	2.74	—	1.09	1.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.39	1.48	< 0.005	0.06	—	0.06	0.05	—	0.05	—	325	325	0.01	< 0.005	—	326
Dust From Material Movemen	—	—	—	—	—	—	0.50	0.50	—	0.20	0.20	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.04	0.63	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	116	116	< 0.005	< 0.005	0.37	118
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.51	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	103	103	< 0.005	0.01	0.01	105
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.8	31.8	< 0.005	< 0.005	0.05	32.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.27	5.27	< 0.005	< 0.005	0.01	5.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	0.43	3.91	5.39	0.01	0.14	—	0.14	0.13	—	0.13	—	999	999	0.04	0.01	—	1,003
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.71	0.98	< 0.005	0.03	—	0.03	0.02	—	0.02	—	165	165	0.01	< 0.005	—	166
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	14.4	14.0	6.91	118	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	21,710	21,710	0.58	0.88	69.5	22,057
Vendor	1.59	1.06	29.8	13.4	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	18,965	18,965	0.46	2.78	39.8	19,845
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	12.8	11.8	8.59	95.9	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	19,280	19,280	0.82	0.96	1.80	19,590
Vendor	1.49	0.96	31.7	13.9	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	19,004	19,004	0.46	2.78	1.03	19,845
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.40	5.27	3.21	40.5	0.00	0.00	8.33	8.33	0.00	1.95	1.95	—	8,323	8,323	0.27	0.40	12.5	8,462
Vendor	0.63	0.41	12.9	5.67	0.06	0.11	2.07	2.18	0.11	0.57	0.68	—	7,912	7,912	0.19	1.16	7.16	8,269

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.99	0.96	0.59	7.40	0.00	0.00	1.52	1.52	0.00	0.36	0.36	—	1,378	1,378	0.05	0.07	2.07	1,401
Vendor	0.12	0.08	2.35	1.03	0.01	0.02	0.38	0.40	0.02	0.10	0.12	—	1,310	1,310	0.03	0.19	1.19	1,369
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	0.71	6.39	9.26	0.02	0.22	—	0.22	0.20	—	0.20	—	1,717	1,717	0.07	0.01	—	1,723
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.15	0.13	1.17	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	284	284	0.01	< 0.005	—	285
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	13.7	12.8	6.11	110	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	21,291	21,291	0.58	0.88	62.6	21,631
Vendor	1.42	0.99	28.9	13.0	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	18,501	18,501	0.46	2.78	35.0	19,377
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	12.2	11.3	7.79	88.8	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	18,911	18,911	0.74	0.96	1.62	19,219
Vendor	1.32	0.96	30.7	13.6	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	18,540	18,540	0.46	2.78	0.91	19,381
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.87	8.18	4.95	64.9	0.00	0.00	14.3	14.3	0.00	3.35	3.35	—	14,027	14,027	0.47	0.63	19.4	14,247
Vendor	1.00	0.71	21.4	9.48	0.09	0.19	3.56	3.75	0.19	0.98	1.17	—	13,263	13,263	0.33	1.99	10.8	13,876
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.62	1.49	0.90	11.8	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,322	2,322	0.08	0.10	3.20	2,359
Vendor	0.18	0.13	3.91	1.73	0.02	0.03	0.65	0.68	0.03	0.18	0.21	—	2,196	2,196	0.05	0.33	1.79	2,297
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Building Construction (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.58	12.9	0.02	0.28	—	0.28	0.25	—	0.25	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.58	12.9	0.02	0.28	—	0.28	0.25	—	0.25	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	0.69	6.13	9.22	0.02	0.20	—	0.20	0.18	—	0.18	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.12	1.68	< 0.005	0.04	—	0.04	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	12.9	12.0	5.39	103	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	20,898	20,898	0.49	0.88	55.9	21,228
Vendor	1.39	0.86	27.8	12.8	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	18,009	18,009	0.46	2.65	30.9	18,840
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	11.6	10.6	7.07	83.0	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	18,566	18,566	0.74	0.96	1.45	18,873
Vendor	1.32	0.79	29.6	13.3	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	18,048	18,048	0.46	2.65	0.80	18,849
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.32	7.63	4.42	60.0	0.00	0.00	14.3	14.3	0.00	3.34	3.34	—	13,733	13,733	0.41	0.63	17.2	13,948
Vendor	0.99	0.59	20.6	9.29	0.09	0.19	3.55	3.74	0.19	0.98	1.17	—	12,875	12,875	0.33	1.89	9.49	13,456
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.52	1.39	0.81	11.0	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,274	2,274	0.07	0.10	2.85	2,309
Vendor	0.18	0.11	3.76	1.70	0.02	0.03	0.65	0.68	0.03	0.18	0.21	—	2,132	2,132	0.05	0.31	1.57	2,228
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Building Construction (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	0.94	8.39	12.9	0.02	0.26	—	0.26	0.24	—	0.24	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.12	0.94	8.39	12.9	0.02	0.26	—	0.26	0.24	—	0.24	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.67	5.99	9.20	0.02	0.19	—	0.19	0.17	—	0.17	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.09	1.68	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	12.2	11.3	5.23	95.4	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	20,526	20,526	0.49	0.25	49.7	20,662
Vendor	1.39	0.86	27.1	12.6	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	17,491	17,491	0.33	2.62	26.9	18,305
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	10.3	9.94	6.27	77.4	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	18,240	18,240	0.66	0.88	1.29	18,521
Vendor	1.32	0.76	28.7	13.1	0.13	0.26	5.04	5.30	0.26	1.39	1.66	—	17,530	17,530	0.33	2.65	0.70	18,329
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	7.90	7.28	3.85	55.9	0.00	0.00	14.3	14.3	0.00	3.34	3.34	—	13,492	13,492	0.41	0.63	15.3	13,705
Vendor	0.97	0.59	20.1	9.15	0.09	0.19	3.55	3.74	0.19	0.98	1.17	—	12,505	12,505	0.24	1.87	8.32	13,076

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.44	1.33	0.70	10.2	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,234	2,234	0.07	0.10	2.54	2,269
Vendor	0.18	0.11	3.66	1.67	0.02	0.03	0.65	0.68	0.03	0.18	0.21	—	2,070	2,070	0.04	0.31	1.38	2,165
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Building Construction (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.10	0.92	8.12	12.8	0.02	0.24	—	0.24	0.22	—	0.22	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.10	0.92	8.12	12.8	0.02	0.24	—	0.24	0.22	—	0.22	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.66	5.80	9.18	0.02	0.17	—	0.17	0.16	—	0.16	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.14	0.12	1.06	1.67	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	10.8	10.6	4.51	89.5	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	20,187	20,187	0.41	0.25	44.0	20,315
Vendor	1.39	0.86	26.3	12.4	0.13	0.26	5.04	5.30	0.13	1.39	1.52	—	16,959	16,959	0.33	2.48	23.5	17,731
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	9.77	9.53	5.48	72.0	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	17,941	17,941	0.58	0.88	1.14	18,219
Vendor	1.26	0.73	28.0	12.9	0.13	0.26	5.04	5.30	0.13	1.39	1.52	—	16,999	16,999	0.33	2.52	0.61	17,757
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	7.04	6.86	3.79	52.4	0.00	0.00	14.3	14.3	0.00	3.34	3.34	—	13,270	13,270	0.35	0.18	13.5	13,345
Vendor	0.95	0.57	19.4	8.98	0.09	0.19	3.55	3.74	0.09	0.98	1.08	—	12,126	12,126	0.24	1.77	7.21	12,667
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.28	1.25	0.69	9.56	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,197	2,197	0.06	0.03	2.24	2,209
Vendor	0.17	0.10	3.55	1.64	0.02	0.03	0.65	0.68	0.02	0.18	0.20	—	2,008	2,008	0.04	0.29	1.19	2,097
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Building Construction (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.64	5.64	9.16	0.02	0.16	—	0.16	0.15	—	0.15	—	1,717	1,717	0.07	0.01	—	1,723
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.03	1.67	< 0.005	0.03	—	0.03	0.03	—	0.03	—	284	284	0.01	< 0.005	—	285
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	10.1	9.94	4.43	84.3	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	19,871	19,871	0.41	0.25	38.6	19,994
Vendor	1.36	0.83	25.6	12.2	0.13	0.26	5.04	5.30	0.13	1.39	1.52	—	16,442	16,442	0.33	2.48	20.1	17,211
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	9.20	8.95	5.39	67.4	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	17,663	17,663	0.58	0.25	1.00	17,752
Vendor	1.26	0.73	27.2	12.7	0.13	0.26	5.04	5.30	0.13	1.39	1.52	—	16,483	16,483	0.33	2.48	0.52	17,231
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	6.65	6.47	3.23	49.5	0.00	0.00	14.3	14.3	0.00	3.35	3.35	—	13,100	13,100	0.35	0.18	11.9	13,173
Vendor	0.92	0.57	19.0	8.89	0.09	0.19	3.56	3.75	0.09	0.98	1.08	—	11,789	11,789	0.24	1.78	6.21	12,331
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.21	1.18	0.59	9.03	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,169	2,169	0.06	0.03	1.98	2,181
Vendor	0.17	0.10	3.46	1.62	0.02	0.03	0.65	0.68	0.02	0.18	0.20	—	1,952	1,952	0.04	0.29	1.03	2,042
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.23. Building Construction (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	0.88	7.67	12.8	0.02	0.20	—	0.20	0.19	—	0.19	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.05	0.88	7.67	12.8	0.02	0.20	—	0.20	0.19	—	0.19	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.75	0.63	5.48	9.13	0.02	0.15	—	0.15	0.13	—	0.13	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	1.00	1.67	< 0.005	0.03	—	0.03	0.02	—	0.02	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	9.69	9.53	3.71	79.3	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	19,594	19,594	0.41	0.25	33.7	19,712
Vendor	1.19	0.83	24.8	12.0	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	15,952	15,952	0.33	2.35	17.1	16,678
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.79	8.62	4.68	63.7	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	17,418	17,418	0.58	0.25	0.87	17,507
Vendor	1.13	0.73	26.5	12.5	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	15,992	15,992	0.33	2.35	0.44	16,702
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	6.33	6.22	3.16	46.6	0.00	0.00	14.3	14.3	0.00	3.34	3.34	—	12,882	12,882	0.35	0.18	10.4	12,954
Vendor	0.83	0.57	18.4	8.75	0.09	0.09	3.55	3.64	0.09	0.98	1.08	—	11,406	11,406	0.24	1.68	5.27	11,918

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.16	1.13	0.58	8.50	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,133	2,133	0.06	0.03	1.73	2,145
Vendor	0.15	0.10	3.36	1.60	0.02	0.02	0.65	0.66	0.02	0.18	0.20	—	1,888	1,888	0.04	0.28	0.87	1,973
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.25. Building Construction (2034) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	0.86	7.52	12.8	0.02	0.19	—	0.19	0.18	—	0.18	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	0.86	7.52	12.8	0.02	0.19	—	0.19	0.18	—	0.18	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.37	9.12	0.02	0.14	—	0.14	0.13	—	0.13	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	0.11	0.98	1.66	< 0.005	0.03	—	0.03	0.02	—	0.02	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	9.12	8.95	3.63	75.7	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	19,342	19,342	0.41	0.25	29.2	19,455
Vendor	1.19	0.83	24.3	11.9	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	15,491	15,491	0.33	2.35	14.4	16,214
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.37	8.13	4.59	60.2	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	17,195	17,195	0.49	0.25	0.76	17,281
Vendor	1.13	0.73	26.0	12.3	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	15,532	15,532	0.33	2.35	0.37	16,241
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.98	5.86	3.11	44.2	0.00	0.00	14.3	14.3	0.00	3.34	3.34	—	12,718	12,718	0.29	0.18	9.00	12,787
Vendor	0.83	0.57	18.0	8.63	0.09	0.09	3.55	3.64	0.09	0.98	1.08	—	11,077	11,077	0.24	1.68	4.44	11,588
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.09	1.07	0.57	8.07	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,106	2,106	0.05	0.03	1.49	2,117
Vendor	0.15	0.10	3.28	1.57	0.02	0.02	0.65	0.66	0.02	0.18	0.20	—	1,834	1,834	0.04	0.28	0.73	1,918
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.27. Building Construction (2035) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.34	12.7	0.02	0.18	—	0.18	0.17	—	0.17	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.34	12.7	0.02	0.18	—	0.18	0.17	—	0.17	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.61	5.24	9.06	0.02	0.13	—	0.13	0.12	—	0.12	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.96	1.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.87	8.79	3.55	72.2	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	19,116	19,116	0.33	0.25	25.2	19,223
Vendor	1.19	0.83	23.7	11.9	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	15,060	15,060	0.33	2.22	11.9	15,741
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.13	7.88	4.51	57.5	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	16,995	16,995	0.49	0.25	0.65	17,082
Vendor	1.09	0.70	25.4	12.2	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	15,100	15,100	0.33	2.22	0.31	15,770
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.86	5.69	2.65	42.0	0.00	0.00	14.3	14.3	0.00	3.34	3.34	—	12,570	12,570	0.29	0.18	7.77	12,638
Vendor	0.83	0.57	17.6	8.51	0.09	0.09	3.55	3.64	0.09	0.98	1.08	—	10,769	10,769	0.24	1.58	3.68	11,251
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.07	1.04	0.48	7.67	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,081	2,081	0.05	0.03	1.29	2,092
Vendor	0.15	0.10	3.21	1.55	0.02	0.02	0.65	0.66	0.02	0.18	0.20	—	1,783	1,783	0.04	0.26	0.61	1,863
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.29. Building Construction (2036) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	0.83	7.12	12.6	0.02	0.17	—	0.17	0.16	—	0.16	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.99	0.83	7.12	12.6	0.02	0.17	—	0.17	0.16	—	0.16	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.10	9.03	0.02	0.12	—	0.12	0.11	—	0.11	—	1,717	1,717	0.07	0.01	—	1,723
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.93	1.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	284	284	0.01	< 0.005	—	285
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.62	8.46	3.55	68.7	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	18,913	18,913	0.33	0.25	21.5	19,017
Vendor	1.19	0.83	23.3	11.7	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	14,672	14,672	0.33	2.22	9.83	15,351
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	7.96	7.80	3.80	54.8	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	16,815	16,815	0.49	0.25	0.56	16,902
Vendor	1.09	0.70	24.9	12.2	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	14,713	14,713	0.33	2.22	0.26	15,382
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.76	5.64	2.60	40.0	0.00	0.00	14.3	14.3	0.00	3.35	3.35	—	12,471	12,471	0.29	0.18	6.69	12,537
Vendor	0.83	0.57	17.3	8.51	0.09	0.09	3.56	3.65	0.09	0.98	1.08	—	10,521	10,521	0.24	1.59	3.04	11,003

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.05	1.03	0.47	7.30	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,065	2,065	0.05	0.03	1.11	2,076
Vendor	0.15	0.10	3.16	1.55	0.02	0.02	0.65	0.67	0.02	0.18	0.20	—	1,742	1,742	0.04	0.26	0.50	1,822
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.31. Building Construction (2037) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.98	0.82	6.99	12.5	0.02	0.16	—	0.16	0.14	—	0.14	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.98	0.82	6.99	12.5	0.02	0.16	—	0.16	0.14	—	0.14	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.58	4.99	8.93	0.02	0.11	—	0.11	0.10	—	0.10	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	0.11	0.91	1.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	8.13	7.96	2.83	66.1	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	18,735	18,735	0.33	0.25	18.3	18,835
Vendor	1.19	0.83	22.9	11.6	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	14,325	14,325	0.33	2.22	7.95	15,003
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	7.63	6.83	3.71	52.5	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	16,657	16,657	0.41	0.25	0.48	16,741
Vendor	1.09	0.70	24.5	12.0	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	14,367	14,367	0.30	2.22	0.21	15,035
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.39	4.88	2.53	38.3	0.00	0.00	14.3	14.3	0.00	3.34	3.34	—	12,320	12,320	0.29	0.18	5.65	12,385
Vendor	0.80	0.54	16.9	8.39	0.09	0.09	3.55	3.64	0.09	0.98	1.08	—	10,245	10,245	0.24	1.58	2.45	10,725
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.98	0.89	0.46	7.00	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,040	2,040	0.05	0.03	0.93	2,051
Vendor	0.15	0.10	3.09	1.53	0.02	0.02	0.65	0.66	0.02	0.18	0.20	—	1,696	1,696	0.04	0.26	0.41	1,776
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.33. Building Construction (2038) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.97	0.81	6.89	12.5	0.02	0.15	—	0.15	0.14	—	0.14	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.97	0.81	6.89	12.5	0.02	0.15	—	0.15	0.14	—	0.14	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	4.92	8.90	0.02	0.11	—	0.11	0.10	—	0.10	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.90	1.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	7.72	6.92	2.83	64.3	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	18,569	18,569	0.33	0.25	15.5	18,666
Vendor	1.19	0.83	22.5	11.6	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	14,017	14,017	0.33	2.09	6.36	14,653
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	7.39	6.59	3.71	50.3	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	16,510	16,510	0.41	0.25	0.40	16,594
Vendor	1.06	0.73	24.1	12.0	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	14,058	14,058	0.30	2.09	0.17	14,687
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.28	4.71	2.53	36.9	0.00	0.00	14.3	14.3	0.00	3.34	3.34	—	12,211	12,211	0.24	0.18	4.79	12,274
Vendor	0.80	0.54	16.6	8.39	0.09	0.09	3.55	3.64	0.09	0.98	1.08	—	10,025	10,025	0.21	1.49	1.96	10,476
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.96	0.86	0.46	6.74	0.00	0.00	2.61	2.61	0.00	0.61	0.61	—	2,022	2,022	0.04	0.03	0.79	2,032
Vendor	0.15	0.10	3.03	1.53	0.02	0.02	0.65	0.66	0.02	0.18	0.20	—	1,660	1,660	0.04	0.25	0.32	1,734
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.35. Building Construction (2039) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.96	0.80	6.78	12.4	0.02	0.15	—	0.15	0.13	—	0.13	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.96	0.80	6.78	12.4	0.02	0.15	—	0.15	0.13	—	0.13	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.45	2.65	< 0.005	0.03	—	0.03	0.03	—	0.03	—	511	511	0.02	< 0.005	—	513
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.26	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.6	84.6	< 0.005	< 0.005	—	84.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	7.39	6.59	2.75	62.4	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	18,432	18,432	0.33	0.25	13.1	18,527
Vendor	1.19	0.83	22.1	11.6	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	13,742	13,742	0.30	2.09	5.04	14,376
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	7.06	6.26	3.63	48.8	0.00	0.00	20.3	20.3	0.00	4.76	4.76	—	16,388	16,388	0.41	0.25	0.34	16,472
Vendor	1.06	0.73	23.7	12.0	0.13	0.13	5.04	5.17	0.13	1.39	1.52	—	13,784	13,784	0.30	2.09	0.13	14,413
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.49	1.32	0.60	10.7	0.00	0.00	4.26	4.26	0.00	1.00	1.00	—	3,620	3,620	0.07	0.05	1.20	3,638
Vendor	0.24	0.16	4.91	2.51	0.03	0.03	1.06	1.09	0.03	0.29	0.32	—	2,935	2,935	0.06	0.44	0.46	3,070

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.24	0.11	1.96	0.00	0.00	0.78	0.78	0.00	0.18	0.18	—	599	599	0.01	0.01	0.20	602
Vendor	0.04	0.03	0.90	0.46	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	486	486	0.01	0.07	0.08	508
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.37. Paving (2039) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.49	5.31	9.75	0.01	0.11	—	0.11	0.10	—	0.10	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.49	5.31	9.75	0.01	0.11	—	0.11	0.10	—	0.10	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	0.25	2.66	4.89	0.01	0.06	—	0.06	0.05	—	0.05	—	757	757	0.03	0.01	—	759
Paving	—	0.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.49	0.89	< 0.005	0.01	—	0.01	0.01	—	0.01	—	125	125	0.01	< 0.005	—	126
Paving	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.25	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	74.0	74.0	< 0.005	< 0.005	0.05	74.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.20	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	65.8	65.8	< 0.005	< 0.005	< 0.005	66.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.01	34.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.65	5.65	< 0.005	< 0.005	< 0.005	5.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.39. Paving (2040) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.49	5.27	9.75	0.01	0.11	—	0.11	0.10	—	0.10	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.54	0.99	< 0.005	0.01	—	0.01	0.01	—	0.01	—	154	154	0.01	< 0.005	—	154
Paving	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.5	25.5	< 0.005	< 0.005	—	25.5
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.01	0.19	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	65.4	65.4	< 0.005	< 0.005	< 0.005	65.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.89	6.89	< 0.005	< 0.005	< 0.005	6.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.41. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.31	0.42	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.4	50.4	< 0.005	< 0.005	—	50.6
Architectural Coatings	—	4.99	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.35	8.35	< 0.005	< 0.005	—	8.38
Architectural Coatings	—	0.91	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.74	2.56	1.22	22.0	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	4,258	4,258	0.12	0.18	12.5	4,326
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.44	2.25	1.56	17.8	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,782	3,782	0.15	0.19	0.32	3,844
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.94	0.86	0.52	6.84	0.00	0.00	1.51	1.51	0.00	0.35	0.35	—	1,479	1,479	0.05	0.07	2.04	1,503
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.10	1.25	0.00	0.00	0.28	0.28	0.00	0.06	0.06	—	245	245	0.01	0.01	0.34	249
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.43. Architectural Coating (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.57	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	—	9.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.58	2.40	1.08	20.5	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	4,180	4,180	0.10	0.18	11.2	4,246
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.31	2.12	1.41	16.6	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,713	3,713	0.15	0.19	0.29	3,775
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.66	1.53	0.88	12.0	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,747	2,747	0.08	0.13	3.45	2,790
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.30	0.28	0.16	2.19	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	455	455	0.01	0.02	0.57	462
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.45. Architectural Coating (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.56	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	—	9.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.44	2.27	1.05	19.1	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	4,105	4,105	0.10	0.05	9.94	4,132
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.05	1.99	1.25	15.5	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,648	3,648	0.13	0.18	0.26	3,704
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.58	1.46	0.77	11.2	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,698	2,698	0.08	0.13	3.07	2,741
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.27	0.14	2.04	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	447	447	0.01	0.02	0.51	454
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.47. Architectural Coating (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	—	9.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.17	2.12	0.90	17.9	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	4,037	4,037	0.08	0.05	8.79	4,063
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.95	1.91	1.10	14.4	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,588	3,588	0.12	0.18	0.23	3,644
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.41	1.37	0.76	10.5	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,654	2,654	0.07	0.04	2.71	2,669
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.25	0.14	1.91	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	439	439	0.01	0.01	0.45	442
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.49. Architectural Coating (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.77	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.77	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.6	95.6	< 0.005	< 0.005	—	95.9
Architectural Coatings	—	9.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.9
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.02	1.99	0.89	16.9	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,974	3,974	0.08	0.05	7.72	3,999
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.84	1.79	1.08	13.5	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,533	3,533	0.12	0.05	0.20	3,550
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.33	1.29	0.65	9.90	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,620	2,620	0.07	0.04	2.39	2,635
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.24	0.12	1.81	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	434	434	0.01	0.01	0.40	436
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.51. Architectural Coating (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.79	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	—	9.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.94	1.91	0.74	15.9	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,919	3,919	0.08	0.05	6.75	3,942
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.76	1.72	0.94	12.7	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,484	3,484	0.12	0.05	0.17	3,501
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.27	1.24	0.63	9.31	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,576	2,576	0.07	0.04	2.09	2,591
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.23	0.12	1.70	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	427	427	0.01	0.01	0.35	429
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.53. Architectural Coating (2034) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.54	0.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	—	9.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.82	1.79	0.73	15.1	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,868	3,868	0.08	0.05	5.84	3,891
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.67	1.63	0.92	12.0	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,439	3,439	0.10	0.05	0.15	3,456
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.20	1.17	0.62	8.84	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,544	2,544	0.06	0.04	1.80	2,557
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.21	0.11	1.61	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	421	421	0.01	0.01	0.30	423
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.55. Architectural Coating (2035) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.54	0.78	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	—	9.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.77	1.76	0.71	14.4	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,823	3,823	0.07	0.05	5.04	3,845
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.63	1.58	0.90	11.5	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,399	3,399	0.10	0.05	0.13	3,416
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.17	1.14	0.53	8.40	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,514	2,514	0.06	0.04	1.55	2,528
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.21	0.10	1.53	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	416	416	0.01	0.01	0.26	418
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.57. Architectural Coating (2036) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.75	1.10	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.75	1.10	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.54	0.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	95.6	95.6	< 0.005	< 0.005	—	96.0
Architectural Coatings	—	9.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.9
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.72	1.69	0.71	13.7	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,783	3,783	0.07	0.05	4.30	3,803
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.59	1.56	0.76	11.0	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,363	3,363	0.10	0.05	0.11	3,380
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.15	1.13	0.52	8.00	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,494	2,494	0.06	0.04	1.34	2,507
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.21	0.09	1.46	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	413	413	0.01	0.01	0.22	415
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.59. Architectural Coating (2037) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.75	1.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.75	1.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.53	0.78	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	—	9.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.63	1.59	0.57	13.2	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,747	3,747	0.07	0.05	3.66	3,767
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.53	1.37	0.74	10.5	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,331	3,331	0.08	0.05	0.10	3,348
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.08	0.98	0.51	7.67	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,464	2,464	0.06	0.04	1.13	2,477
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.09	1.40	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	408	408	0.01	0.01	0.19	410
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.61. Architectural Coating (2038) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.75	1.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.75	1.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.53	0.78	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	—	9.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.54	1.38	0.57	12.9	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,714	3,714	0.07	0.05	3.10	3,733
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.48	1.32	0.74	10.1	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,302	3,302	0.08	0.05	0.08	3,319
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.06	0.94	0.51	7.38	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,442	2,442	0.05	0.04	0.96	2,455
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.09	1.35	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	404	404	0.01	0.01	0.16	406
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.63. Architectural Coating (2039) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.74	1.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.74	1.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.53	0.78	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	—	9.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.48	1.32	0.55	12.5	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,686	3,686	0.07	0.05	2.61	3,705
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.41	1.25	0.73	9.77	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,278	3,278	0.08	0.05	0.07	3,294
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.00	0.88	0.40	7.20	0.00	0.00	2.86	2.86	0.00	0.67	0.67	—	2,424	2,424	0.05	0.04	0.80	2,437
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.07	1.31	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	401	401	0.01	0.01	0.13	403
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.65. Architectural Coating (2040) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.74	1.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.74	1.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.52	0.77	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	94.1	94.1	< 0.005	< 0.005	—	94.4
Architectural Coatings	—	9.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.6	15.6	< 0.005	< 0.005	—	15.6
Architectural Coatings	—	1.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.38	1.24	0.55	12.1	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,662	3,662	0.05	0.05	2.19	3,681
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.33	1.17	0.73	9.49	0.00	0.00	4.06	4.06	0.00	0.95	0.95	—	3,256	3,256	0.08	0.05	0.06	3,273
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.94	0.82	0.40	6.93	0.00	0.00	2.82	2.82	0.00	0.66	0.66	—	2,375	2,375	0.05	0.03	0.67	2,388
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.07	1.26	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	393	393	0.01	0.01	0.11	395
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2025	10/7/2025	5.00	200	—
Site Preparation	Site Preparation	10/8/2025	3/24/2026	5.00	120	—
Grading	Grading	3/25/2026	6/1/2027	5.00	310	—
Building Construction	Building Construction	6/2/2027	4/19/2039	5.00	3,100	—
Paving	Paving	4/20/2039	2/21/2040	5.00	220	—
Architectural Coating	Architectural Coating	6/22/2028	12/25/2040	5.00	3,264	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	7.70	LDA,LDT1,LDT2
Demolition	Vendor	—	4.00	HHDT,MHDT
Demolition	Hauling	14.4	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	4.00	HHDT,MHDT
Site Preparation	Hauling	928	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	4.00	HHDT,MHDT

Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	3,735	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	1,501	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	4.00	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	747	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	268,515	89,505	13,674,615	4,558,205	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	251,127	—
Site Preparation	—	891,321	192	0.00	—
Grading	—	—	930	0.00	—
Paving	0.00	0.00	0.00	0.00	53.1

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.75	0%
Supermarket	3.73	100%
Office Park	2.49	100%
Industrial Park	18.6	100%
General Heavy Industry	26.9	100%
General Office Building	0.60	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005
2029	0.00	204	0.03	< 0.005
2030	0.00	204	0.03	< 0.005
2031	0.00	204	0.03	< 0.005
2032	0.00	204	0.03	< 0.005
2033	0.00	204	0.03	< 0.005
2034	0.00	204	0.03	< 0.005
2035	0.00	204	0.03	< 0.005
2036	0.00	204	0.03	< 0.005
2037	0.00	204	0.03	< 0.005
2038	0.00	204	0.03	< 0.005
2039	0.00	204	0.03	< 0.005
2040	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	24.3	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	0	0	N/A

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	82.5
AQ-PM	97.7
AQ-DPM	98.7
Drinking Water	84.4
Lead Risk Housing	96.5
Pesticides	42.9
Toxic Releases	92.2
Traffic	60.4
Effect Indicators	—
CleanUp Sites	98.2
Groundwater	91.2
Haz Waste Facilities/Generators	96.3
Impaired Water Bodies	0.00
Solid Waste	80.0
Sensitive Population	—
Asthma	97.2
Cardio-vascular	92.2
Low Birth Weights	95.6
Socioeconomic Factor Indicators	—
Education	93.2
Housing	91.0

Linguistic	79.4
Poverty	98.9
Unemployment	93.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	2.75888618
Employed	4.709354549
Median HI	5.273963814
Education	—
Bachelor's or higher	9.547029385
High school enrollment	6.108045682
Preschool enrollment	17.00243809
Transportation	—
Auto Access	5.915565251
Active commuting	28.28179135
Social	—
2-parent households	31.82343128
Voting	0.936738098
Neighborhood	—
Alcohol availability	36.78942641
Park access	21.85294495
Retail density	40.81868343
Supermarket access	11.86962659
Tree canopy	46.63159245

Housing	—
Homeownership	31.38714231
Housing habitability	12.42140382
Low-inc homeowner severe housing cost burden	21.429488
Low-inc renter severe housing cost burden	32.77300141
Uncrowded housing	14.69267291
Health Outcomes	—
Insured adults	10.18863082
Arthritis	14.6
Asthma ER Admissions	2.3
High Blood Pressure	5.0
Cancer (excluding skin)	77.2
Asthma	1.3
Coronary Heart Disease	5.2
Chronic Obstructive Pulmonary Disease	2.6
Diagnosed Diabetes	1.8
Life Expectancy at Birth	11.9
Cognitively Disabled	7.6
Physically Disabled	8.5
Heart Attack ER Admissions	3.7
Mental Health Not Good	2.2
Chronic Kidney Disease	2.7
Obesity	1.5
Pedestrian Injuries	97.2
Physical Health Not Good	2.0
Stroke	1.8
Health Risk Behaviors	—

Binge Drinking	84.3
Current Smoker	4.4
No Leisure Time for Physical Activity	1.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	7.3
Elderly	70.0
English Speaking	21.6
Foreign-born	58.6
Outdoor Workers	2.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	50.0
Traffic Density	62.8
Traffic Access	0.0
Other Indices	—
Hardship	96.8
Other Decision Support	—
2016 Voting	1.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	100
Healthy Places Index Score for Project Location (b)	0.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	Central Fresno

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Fresno SCSP: Table 4-4 development capacities for the plan area, assuming 75% built out in the rest of the years. Added 100,000 sqft general office building to account for extra construction.
Construction: Construction Phases	The work days per phase were proportionally adjusted from CalEEMod's default work days to fit into Phase 2 (Year 2025 to Year 2040). Architectural Coating is assumed to start one year after the Building Construction and spread evenly during the rest of the phase.
Construction: Paving	Residential paved area is CalEEMod default. For other land uses, 25% of lot acreage is assumed to be paved with 100% asphalt.
Construction: Dust From Material Movement	client data

Construction equipment fuel efficiency estimated from EMFAC 2021 satewide data aggregated over all equipment types

Calendar Year	Diesel (gallons/hp-hr)	Gasoline (gallons/hp-hr)	Nat Gas (gallons/hp-hr)
2024	0.043668187	0.060691345	0.071347016
2025	0.043720519	0.060767195	0.071364608
2026	0.043835476	0.060815497	0.071349138
2027	0.043880168	0.060808338	0.071344087
2028	0.044384849	0.060814751	0.071388498
2029	0.044398302	0.060788088	0.071404343
2030	0.044642982	0.060805318	0.071426367
2031	0.044664376	0.060799165	0.071404302
2032	0.044895656	0.060785322	0.071416034
2033	0.044881884	0.060852072	0.071377026
2034	0.044885021	0.060905035	0.071366787
2035	0.044890679	0.060983226	0.071336943
2036	0.044940806	0.060979943	0.071353821
2037	0.044952181	0.060957666	0.071352957
2038	0.044959541	0.061028823	0.071334017
2039	0.044957944	0.061027211	0.071341045
2040	0.044958228	0.06102937	0.071335748

EMFAC data processed
Construction start year 2024

Fleet Mix	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
LDA,LDT1,LDT2		25.0%	50.0%	25.0%									
HHDT,MHDT	50.0%									50.0%			
HHDT	100.0%												
EMFAC Fleet Mix	1.1%	48.9%	4.6%	22.0%	3.2%	0.8%	2.4%	15.1%	0.4%	1.2%	0.1%	0.1%	0.1%

Vehicle MPG or MPKWh from EMFAC output on the first year of construction

Energy Effciency	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Diesel	5.6	41.8	23.7	31.9	17.4	14.5	0	23.9	9.7	8.8	8.9	8	8.3
Gasoline	3.8	29.3	24.3	23.8	11	9.9	40.8	19.4	4.6	5	4.9	9.5	6.5
Electricity	0.5	2.6	2.6	2.6	1.7	1.7	0	2.6	0	0.9	0.9	0.9	0.5
Natural Gas	5.7	0	0	0	0	0	0	0	0	7.9	8.2	4.5	3.7
PHEV_Gasoline	0	28.8	28.6	28.5	0	0	0	28.3	0	0	0	0	0
PHEV_Electricity	0	3.3	3.3	3.3	0	0	0	3.3	0	0	0	0	0

VMT Allocated to Various Energy Sources from EMFAC output on the first year of construction

VMT	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Diesel	1.34E+10	4.84E+08	3333702	3.13E+08	0	0	0	0	0	3.8E+09	0	0	0
Gasoline	3070320	1.76E+11	1.55E+10	8.57E+10	0	0	0	0	0	8.66E+08	0	0	0
Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Gas	3.69E+08	0	0	0	0	0	0	0	0	46268781	0	0	0
PHEV_Gasoline	0	2.84E+09	12400629	3.79E+08	0	0	0	0	0	0	0	0	0
PHEV_Electricity	0	2.9E+09	15357422	4.32E+08	0	0	0	0	0	0	0	0	0

Energy makeup fr	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Percent of VMT	0.973055	0.002649	0.000214	0.0036	0	0	0	0	0	0.806422	0	0	0
Diesel	0.000222	0.965924	0.998004	0.987061	0	0	0	0	0	0.183756	0	0	0
Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	0
Electricity	0.026722	0	0	0	0	0	0	0	0	0.009822	0	0	0
Natural Gas	0	0.01554	0.000796	0.004361	0	0	0	0	0	0	0	0	0
PHEV_Gasoline	0	0.015886	0.000986	0.004977	0	0	0	0	0	0	0	0	0
PHEV_Electricity	1	1	1	1	0	0	0	0	0	1	0	0	0

Default Fleet Mix	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
	328186.1	14030122	1322009	6300720	922103.2	227645.6	694600.9	4331579	120268.9	330780.3	21842.05	30225.13	14469.63
Population	0.011445	0.489288	0.046104	0.219732	0.032158	0.007939	0.024224	0.15106	0.004194	0.011536	0.000762	0.001054	0.000505
EMFAC Fleet Mix													

Construction Offroad Calculations

Construction Start Year **2024**

Construction On-site Equipment Energy Consumption

Phase	Gallons of Diesel	Gallons of Gasoline	Gallons of CNG
Demolition	8,334	1,794	335
Site Preparation	10,231	0	0
Grading	25,743	0	0
Building Construction	207,007	0	0
Paving	5,231	0	0
Architectural Coating	283	0	0
Total	256,829	0	335

CNG: compressed natural gas

OffRoad Equipment Activity Schedule

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor	Gallons per hp-hr	Num Days per Phase	Gallons of Fuel
Demolition	Rubber Tired Dozers	Diesel	Average	2	8	367	0.4	0.044	13	8,344
Demolition	Excavators	Gasoline	Average	3	8	36	0.38	0.061	13	1,794
Demolition	Concrete/Industrial Saws	CNG	Average	1	8	33	0.73	0.071	13	336
Site Preparation	Rubber Tired Dozers	Diesel	Average	3	8	367	0.4	0.044	8	7,702
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4	8	84	0.37	0.044	8	2,541
Grading	Graders	Diesel	Average	1	8	148	0.41	0.044	20	2,525
Grading	Excavators	Diesel	Average	2	8	36	0.38	0.044	20	1,325
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2	8	84	0.37	0.044	20	3,176
Grading	Scrapers	Diesel	Average	2	8	423	0.48	0.044	20	12,329
Grading	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4	0.044	20	6,418
Building Construction	Forklifts	Diesel	Average	3	8	82	0.2	0.044	194	83,461
Building Construction	Generator Sets	Diesel	Average	1	8	14	0.74	0.044	194	1,284
Building Construction	Cranes	Diesel	Average	1	7	367	0.29	0.044	194	75,137
Building Construction	Welders	Diesel	Average	1	8	46	0.45	0.044	194	6,936
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3	7	84	0.37	0.044	194	40,437
Paving	Pavers	Diesel	Average	2	8	81	0.42	0.044	14	1,889
Paving	Paving Equipment	Diesel	Average	2	8	89	0.36	0.044	14	2,421
Paving	Rollers	Diesel	Average	2	8	36	0.38	0.044	14	928
Architectural Coating	Air Compressors	Diesel	Average	1	0.535	37	0.48	0.044	157	283

Construction Onroad Emission Estimate

Applicable Vehicle Type and Energy Sources

HHDT	LDA	LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1	LDT2
Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural (	Natural (	PHEV_Ga	PHEV_Ga	PHEV_Ga	PHEV_El	PHEV_El	PHEV_Electricity

Calculation

						Vehicle Mix Percentage*Energy Makeup																
						HHDT	LDA	LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1
Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix	Work Days per	Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline	PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity
Demolition	Worker	15	7.7	LDA,LDT1,LDT2	13	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	24.1%	49.9%	24.7%	0.0%	0.0%	0.0%	0.4%	0.0%	0.1%	0.4%	0.0%
Demolition	Vendor		4	HHDT, MHDT	13	48.7%	0.0%	0.0%	0.0%	40.3%	0.0%	0.0%	0.0%	0.0%	9.2%	1.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Demolition	Hauling	74.0769231	20	HHDT	13	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Demolition	Onsite truck			HHDT	13	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Site Preparation	Worker	17.5	7.7	LDA,LDT1,LDT2	8	0%	0%	0%	0%	0%	0%	24%	50%	25%	0%	0%	0%	0%	0%	0%	0%	0%
Site Preparation	Vendor		4	HHDT, MHDT	8	49%	0%	0%	0%	40%	0%	0%	0%	0%	9%	1%	0%	0%	0%	0%	0%	0%
Site Preparation	Hauling	4646.625	20	HHDT	8	97%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%
Site Preparation	Onsite tr			HHDT	8	97%	0%	0%	0%	0	0	0	0	0	0	3%	0%	0%	0%	0%	0%	0%
Grading	Worker	20	7.7	LDA,LDT	20	0%	0%	0%	0%	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
Grading	Vendor		4	HHDT,M	20	0.4865	0	0	0	0	0	0	0	0	0.0919	0.0134	0.0049	0	0	0	0	0
Grading	Hauling	0	20	HHDT	20	0.9731	0	0	0	0	0	0	0	0	0	0.0267	0	0	0	0	0	0
Grading	Onsite tr			HHDT	20	0.9731	0	0	0	0	0	0	0	0	0	0.0267	0	0	0	0	0	0
Building Construction	Worker	1266.492	7.7	LDA,LDT	194	0	0.0007	0.0001	0.0009	0	0	0.2415	0.499	0.2468	0	0	0	0.0039	0.0004	0.0011	0.004	0.0005
Building Construction	Vendor	511.46654	4	HHDT, MHDT	194	0.4865	0	0	0	0.4032	0.0001	0	0	0	0.0919	0.0134	0.0049	0	0	0	0	0
Building Construction	Hauling	0	20	HHDT	194	0.9731	0	0	0	0	0.0002	0	0	0	0	0.0267	0	0	0	0	0	0
Building Construction	Onsite truck			HHDT	194	0.9731	0	0	0	0	0.0002	0	0	0	0	0.0267	0	0	0	0	0	0
Paving	Worker	15	7.7	LDA,LDT	14	0	0.0007	0.0001	0.0009	0	0	0.2415	0.499	0.2468	0	0	0	0.0039	0.0004	0.0011	0.004	0.0005
Paving	Vendor		4	HHDT,M	14	0.4865	0	0	0	0.4032	0.0001	0	0	0	0.0919	0.0134	0.0049	0	0	0	0	0
Paving	Hauling	0	20	HHDT	14	0.9731	0	0	0	0	0.0002	0	0	0	0	0.0267	0	0	0	0	0	0
Paving	Onsite tr			HHDT	14	0.9731	0	0	0	0	0.0002	0	0	0	0	0.0267	0	0	0	0	0	0
Architectural Coa	Worker	253.2984	7.7	LDA,LDT	157	0	0.0007	0.0001	0.0009	0	0	0.2415	0.499	0.2468	0	0	0	0.0039	0.0004	0.0011	0.004	0.0005
Architectural Coa	Vendor		4	HHDT,M	157	0.4865	0	0	0	0.4032	0.0001	0	0	0	0.0919	0.0134	0.0049	0	0	0	0	0
Architectural Coa	Hauling	0	20	HHDT	157	0.9731	0	0	0	0	0.0002	0	0	0	0	0.0267	0	0	0	0	0	0
Architectural Coa	Onsite tr			HHDT	157	0.9731	0	0	0	0	0.0002	0	0	0	0	0.0267	0	0	0	0	0	0

	VMT																							
LDT2	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1	LDT2	HHDT	LDA	LDT1	LDT2	MHDT	HHDT
PHEV_Electricity	Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline	PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity	PHEV_Electricity	Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline
0.1%		0	1	0	1	0	0	363	749	371	0	0	0	6	1	2	6	1	2		0	0	0	0
0.0%																								
0.0%		18741	0	0	0	0	4	0	0	0	0	515	0	0	0	0	0	0	0		3347	0	0	0
0.0%																								
0%		0	1	0	1	0	0	260	538	266	0	0	0	4	0	1	4	1	1		0	0	0	0
0%																								
0%		723428	0	0	0	0	165	0	0	0	0	19867	0	0	0	0	0	0	0		129184	0	0	0
0%																								
0%		0	2	0	3	0	0	744	1537	760	0	0	0	12	1	3	12	2	3.8322		0	0.0488	0.0139	0.0869
0																								
0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
0																								
0.0012		0	1253	202	1703	0	0	456855	944055	466852	0	0	0	7350	753	2063	7514	933	2353.9		0	29.976	8.543	53.38
0		193102	0	0	0	160034	44	0	0	0	36466	5303	1949	0	0	0	0	0	0		34482	0	0	0
0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
0																								
0.0012		0	1	0	1	0	0	390	807	399	0	0	0	6	1	2	6	1	2.0119		0	0.0256	0.0073	0.0456
0																								
0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
0																								
0.0012		0	203	33	276	0	0	73945	152801	75563	0	0	0	1190	122	334	1216	151	380.99		0	4.8517	1.3827	8.6399
0																								
0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
0																								

	Energy Consumption (Gallon or KWh)														
LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1	LDT2	Gallon or KWh (sum over all vehicles)			
Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline	PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity	PHEV_Electricity	Diesel	Gasoline	Electricity	Natural Gas
0	0	12	31	16	0	0	0	0	0	0	2	0.2243	0.5661		0
															0
0	1	0	0	0	0	90	0	0	0	0	0	0	0		3347
															0
0	0	8.8845	22.137	11.177	0	0	0	0.1454	0.015	0.0412	1.2974	0.161	0.4064		0
															0
0	44	0	0	0	0	3485.4	0	0	0	0	0	0	0		129184
															0
0	0	25.384	63.248	31.934	0	0	0	0.4155	0.0429	0.1178	3.7068	0.4601	1.1613		0
															0
0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
															0
0	0	15592	38850	19616	0	0	0	255.21	26.333	72.379	2276.9	282.64	713.31		92
18186	11.614	0	0	0	7293.3	930.35	246.72	0	0	0	0	0	0		52668
0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
															0
0	0	13.327	33.205	16.766	0	0	0	0.2181	0.0225	0.0619	1.9461	0.2416	0.6097		0
															0
0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
															0
0	0	2523.7	6288.1	3174.9	0	0	0	41.307	4.2622	11.715	368.53	45.747	115.45		15
															0
0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
															0

Construction on-road energy consumption (Gallon or

Phase Name	Diesel	Gasoline	Electricit	Natural Gas
Demolition	3347	60	3	90
Site Preparation	129184	86	2	3485
Grading	0	121	5	0
Building Construc	52760	81717	3273	1177
Paving	0	64	3	0
Architectural Coa	15	12044	530	0

Construction On-road Energy Consumption (Gallon or KWh) per Trip Type

Trip Type	Diesel	Gasoline	Electricit	Natural Gas
Worker	107	86742	3816	0
Vendor	52668	7305	0	1177
Hauling	132531	45	0	3575
Onsite truck	0	0	0	0
total	185306	94092	3816	4752

Energy Calculations Summary

Summarized Energy Consumption for Project Construction (Year 2024)

Phase	Diesel (gallons)	Gasoline (gallons)	CNG (gallons)	Electricity (kWh)
Demolition	11,681	1,854	338	3
Site Preparation	139,415	12,875	2	2
Grading	25,743	42,908	5	5
Building Construction	259,767	419,012	3,273	3,273
Paving	5,231	7,473	3	3
Architectural Coating	298	27,941	530	530
Total	442,135	7,320,510	4,151	3,816

EMFAC data processed
Construction start year 2025

Fleet Mix	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
LDA,LDT1,LDT2		0	1	0									
HHDT,MHDT	0.5									0.5			
HHDT	1												
EMFAC Fleet Mix	0.0117564	0.487461	0.044756	0.223154	0.031776	0.00795	0.024184	0.150938	0.004024	0.01169	0.00075	0.001055	0.000505

Vehicle MPG or MPKWh from EMFAC output on the first year of construction

Energy Effciency	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Diesel	5.7	42.2	23.8	32.6	17.5	14.7	0	24.3	9.7	8.9	8.9	8	8.3
Gasoline	3.9	30	24.8	24.4	11.2	10.1	40.9	19.8	4.6	5	4.9	9.5	6.5
Electricity	0.5	2.6	2.6	2.6	1.7	1.7	0	2.6	0	0.9	0.9	0.9	0.5
Natural Gas	5.7	0	0	0	0	0	0	0	0	7.9	8.4	4.5	3.7
PHEV_Gasoline	0	28.8	28.6	28.5	0	0	0	28.2	0	0	0	0	0
PHEV_Electricity	0	3.3	3.3	3.3	0	0	0	3.3	0	0	0	0	0

VMT Allocated to Various Energy Sources from EMFAC output on the first year of construction

VMT	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Diesel	1.365E+10	4.4E+08	2934858	3.21E+08	0	0	0	0	0	3.83E+09	0	0	0
Gasoline	2856125.3	1.75E+11	1.52E+10	8.72E+10	0	0	0	0	0	8.47E+08	0	0	0
Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Gas	380438381	0	0	0	0	0	0	0	0	48227573	0	0	0
PHEV_Gasoline	0	2.98E+09	17215936	4.38E+08	0	0	0	0	0	0	0	0	0
PHEV_Electricity	0	3.2E+09	22473985	5.24E+08	0	0	0	0	0	0	0	0	0

Energy makeup from EMFAC output on the first year of construction

Percent of VMT	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Diesel	0.9726852	0.002423	0.000193	0.003633	0	0	0	0	0	0.810548	0	0	0
Gasoline	0.0002035	0.963509	0.997197	0.985493	0	0	0	0	0	0.179243	0	0	0
Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Gas	0.0271113	0	0	0	0	0	0	0	0	0.010209	0	0	0
PHEV_Gasoline	0	0.016439	0.001132	0.004948	0	0	0	0	0	0	0	0	0
PHEV_Electricity	0	0.01763	0.001478	0.005925	0	0	0	0	0	0	0	0	0

Default Fleet Mix as EMFAC output on the first year of construction

	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Population	339005.87	14056305	1290561	6434810	916297.1	229236.4	697353.7	4352397	116041.6	337097.9	21623.49	30432.77	14574.07
EMFAC Fleet Mix	0.0117564	0.487461	0.044756	0.223154	0.031776	0.00795	0.024184	0.150938	0.004024	0.01169	0.00075	0.001055	0.000505

Construction Offroad Calculations

Construction Start Year **2025**

Construction On-site Equipment Energy Consumption

Phase	Gallons of Diesel	Gallons of Gasoline	Gallons of CNG
Demolition	8,334	1,796	335
Site Preparation	10,231	0	0
Grading	25,743	0	0
Building Construction	207,007	0	0
Paving	5,231	0	0
Architectural Coating	283	0	0
Total	256,829	0	335

CNG: compressed natural gas

OffRoad Equipment Activity Schedule

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor	Gallons per hp-hr	Num Days per Phase	Gallons of Fuel
Demolition	Rubber Tired Dozers	Diesel	Average	2	8	367	0.4	0.044	13	8,344
Demolition	Excavators	Gasoline	Average	3	8	36	0.38	0.061	13	1,796
Demolition	Concrete/Industrial Saws	CNG	Average	1	8	33	0.73	0.071	13	336
Site Preparation	Rubber Tired Dozers	Diesel	Average	3	8	367	0.4	0.044	8	7,702
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4	8	84	0.37	0.044	8	2,541
Grading	Graders	Diesel	Average	1	8	148	0.41	0.044	20	2,525
Grading	Excavators	Diesel	Average	2	8	36	0.38	0.044	20	1,325
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2	8	84	0.37	0.044	20	3,176
Grading	Scrapers	Diesel	Average	2	8	423	0.48	0.044	20	12,329
Grading	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4	0.044	20	6,418
Building Construction	Forklifts	Diesel	Average	3	8	82	0.2	0.044	194	83,461
Building Construction	Generator Sets	Diesel	Average	1	8	14	0.74	0.044	194	1,284
Building Construction	Cranes	Diesel	Average	1	7	367	0.29	0.044	194	75,137
Building Construction	Welders	Diesel	Average	1	8	46	0.45	0.044	194	6,936
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3	7	84	0.37	0.044	194	40,437
Paving	Pavers	Diesel	Average	2	8	81	0.42	0.044	14	1,889
Paving	Paving Equipment	Diesel	Average	2	8	89	0.36	0.044	14	2,421
Paving	Rollers	Diesel	Average	2	8	36	0.38	0.044	14	928
Architectural Coating	Air Compressors	Diesel	Average	1	0.535	37	0.48	0.044	157	283

Construction Onroad Emission Estimate

Applicable Vehicle Type and Energy Sources

HHDT	LDA	LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1	LDT2
Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline	PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity	PHEV_Electricity

Calculation 2025-2040

Vehicle Mix Percentage*Energy Makeup

						HHDT	LDA	LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA
Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix	Days per Phase	Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline
Demolition	Worker	15	7.7	LDA,LDT1,LDT2	13	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	24.1%	49.9%	24.6%	0.0%	0.0%	0.0%	0.4%
Demolition	Vendor		4	HHDT,MHDT	13	48.6%	0.0%	0.0%	0.0%	40.5%	0.0%	0.0%	0.0%	0.0%	9.0%	1.4%	0.5%	0.0%
Demolition	Hauling	222.15385	20	HHDT	13	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Demolition	Onsite truck			HHDT	13	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Site Preparation	Worker	17.5	7.7	LDA,LDT1,LDT2	8	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	24.1%	49.9%	24.6%	0.0%	0.0%	0.0%	0.4%
Site Preparation	Vendor		4	HHDT,MHDT	8	48.6%	0.0%	0.0%	0.0%	40.5%	0.0%	0.0%	0.0%	0.0%	9.0%	1.4%	0.5%	0.0%
Site Preparation	Hauling	13927	20	HHDT	8	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Site Preparation	Onsite truck			HHDT	8	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Grading	Worker	20	7.7	LDA,LDT1,LDT2	20	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	24.1%	49.9%	24.6%	0.0%	0.0%	0.0%	0.4%
Grading	Vendor		4	HHDT,MHDT	20	48.6%	0.0%	0.0%	0.0%	40.5%	0.0%	0.0%	0.0%	0.0%	9.0%	1.4%	0.5%	0.0%
Grading	Hauling	0	20	HHDT	20	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Grading	Onsite truck			HHDT	20	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Building Construction	Worker	3734.9612	7.7	LDA,LDT1,LDT2	194	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	24.1%	49.9%	24.6%	0.0%	0.0%	0.0%	0.4%
Building Construction	Vendor	1501.4488	4	HHDT,MHDT	194	48.6%	0.0%	0.0%	0.0%	40.5%	0.0%	0.0%	0.0%	0.0%	9.0%	1.4%	0.5%	0.0%
Building Construction	Hauling	0	20	HHDT	194	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Building Construction	Onsite truck			HHDT	194	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%

Paving	Worker	15	7.7	LDA,LDT1,LDT2	14	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	24.1%	49.9%	24.6%	0.0%	0.0%	0.0%	0.4%
Paving	Vendor		4	HHDT,MHDT	14	48.6%	0.0%	0.0%	0.0%	40.5%	0.0%	0.0%	0.0%	0.0%	9.0%	1.4%	0.5%	0.0%
Paving	Hauling	0	20	HHDT	14	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Paving	Onsite truck			HHDT	14	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Architectural Coating	Worker	746.99224	7.7	LDA,LDT1,LDT2	157	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	24.1%	49.9%	24.6%	0.0%	0.0%	0.0%	0.4%
Architectural Coating	Vendor		4	HHDT,MHDT	157	48.6%	0.0%	0.0%	0.0%	40.5%	0.0%	0.0%	0.0%	0.0%	9.0%	1.4%	0.5%	0.0%
Architectural Coating	Hauling	0	20	HHDT	157	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Architectural Coating	Onsite truck			HHDT	157	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%

Construction on-road energy consumption (Gallon or KWh) per construciton phase for Year 2025-2040

Phase Name	Diesel	Gasoline	Electricity	Natural Gas
Demolition	9857	61	3	275
Site Preparation	380255	157	2	10599
Grading	0	118	6	0
Building Construction	152726	235366	11205	3524
Paving	0	62	3	0
Architectural Coating	42	34710	1814	0

Construction On-road Energy Consumption (Gallon or KWh) per Trip Type for Year 2025-2040

Trip Type	Diesel	Gasoline	Electricity	Natural Gas
Worker	300	249441	13033	0
Vendor	152468	20914	0	3524
Hauling	390112	119	0	10874
Onsite truck	0	0	0	0

					VMT																		Energy Consump	
LDT1	LDT2	LDA	LDT1	LDT2	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1	LDT2	HHDT	LDA
PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity	PHEV_Electricity	Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline	PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity	PHEV_Electricity	Diesel	Diesel
0.1%	0.1%	0.4%	0.1%	0.1%	0	1	0	1	0	0	362	749	370	0	0	0	6	1	2	7	1	2	0	0
0.0%	0.0%	0.0%	0.0%	0.0%																				
0.0%	0.0%	0.0%	0.0%	0.0%	56182	0	0	0	0	12	0	0	0	0	1566	0	0	0	0	0	0	0	9857	0
0.0%	0.0%	0.0%	0.0%	0.0%																				
0.1%	0.1%	0.4%	0.1%	0.1%	0	1	0	1	0	0	260	537	266	0	0	0	4	1	1	5	1	2	0	0
0.0%	0.0%	0.0%	0.0%	0.0%																				
0.0%	0.0%	0.0%	0.0%	0.0%	2167454	0	0	0	0	454	0	0	0	0	60413	0	0	0	0	0	0	0	#####	0
0.0%	0.0%	0.0%	0.0%	0.0%																				
0.1%	0.1%	0.4%	0.1%	0.1%	0	2	0	3	0	0	742	1536	759	0	0	0	13	2	4	14	2	5	0	0
0.0%	0.0%	0.0%	0.0%	0.0%																				
0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0%	0.0%	0.0%	0.0%	0.0%																				
0.1%	0.1%	0.4%	0.1%	0.1%	0	3379	538	5068	0	0	1343922	2781824	1374587	0	0	0	22929	3158	6902	24590	4122	8264	0	80
0.0%	0.0%	0.0%	0.0%	0.0%	566650	0	0	0	472195	119	0	0	0	104420	15794	5948	0	0	0	0	0	0	99412	0
0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0%	0.0%	0.0%	0.0%	0.0%																				

0.1%	0.1%	0.4%	0.1%	0.1%	0	1	0	1	0	0	389	806	398	0	0	0	7	1	2	7	1	2	0	0
0.0%	0.0%	0.0%	0.0%	0.0%																				
0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0%	0.0%	0.0%	0.0%	0.0%																				
0.1%	0.1%	0.4%	0.1%	0.1%	0	547	87	820	0	0	217521	450254	222485	0	0	0	3711	511	1117	3980	667	1338	0	13
0.0%	0.0%	0.0%	0.0%	0.0%																				
0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ption (Gallon or KWh)

LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1	LDT2	Gallon or KWh (sum over all vehicles)			
Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline	PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity	PHEV_Electricity	Diesel	Gasoline	Electricity	Natural Gas
0	0	0	0	12	30	15	0	0	0	0	0	0	2	0	1	0	58	3	0
																0	0	0	0
0	0	0	3	0	0	0	0	275	0	0	0	0	0	0	0	9857	3	0	275
																0	0	0	0
0	0	0	0	9	22	11	0	0	0	0	0	0	1	0	0	0	41	2	0
																0	0	0	0
0	0	0	116	0	0	0	0	10599	0	0	0	0	0	0	0	380255	116	0	10599
																0	0	0	0
0	0	0	0	25	62	31	0	0	0	0	0	0	4	1	1	0	118	6	0
																0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
																0	0	0	0
23	155	0	0	44797	112170	56336	0	0	0	796	110	242	7452	1249	2504	258	214452	11205	0
0	0	53056	30	0	0	0	20884	2771	753	0	0	0	0	0	0	152468	20914	0	3524
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
																0	0	0	0

0	0	0	0	13	33	16	0	0	0	0	0	0	2	0	1	0	62	3	0
																0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
																0	0	0	0
4	25	0	0	7251	18155	9118	0	0	0	129	18	39	1206	202	405	42	34710	1814	0
																0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Energy Calculations Summary

Summarized Energy Consumption for Project Construction (Year 2025-2040)

Phase	Diesel (gallons)	Gasoline (gallons)	CNG (gallons)	Electricity (kWh)
Demolition	8,344	1,796	336	0
Site Preparation	390,498	157	2	2
Grading	25,774	118	6	6
Building Construction	359,981	235,366	11,205	11,205
Paving	5,238	62	3	3
Architectural Coating	283	0	0	0
Total	790,117	237,499	11,552	11,216

Divide to 16 years to get annual emission for Year 2025-2040

Annual Energy Consumption for Project Construction (Year 2025-2040)

Phase	Diesel (gallons)	Gasoline (gallons)	CNG (gallons)	Electricity (kWh)
Demolition	521	112	21	0
Site Preparation	24,406	10	0	0
Grading	1,611	7	0	0
Building Construction	22,499	14,710	700	700
Paving	327	4	0	0
Architectural Coating	18	0	0	0
Total	49,382	14,844	722	701

EMFAC data process

Operation start year 2040

Default Fleet Mix as EMFAC output on the first year of operation

	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Population	479082	14797694	1045660	7941680	925366	249124	744785	4826449	80753	434276	20003	31146	17369

Fleet Mix	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
LDA,LDT1,LDT2		25.0%	50.0%	25.0%									
HHDT,MHDT	50.0%									50.0%			
HHDT	100.0%												
EMFAC Fleet Mix	1.5%	46.8%	3.3%	25.1%	2.9%	0.8%	2.4%	15.3%	0.3%	1.4%	0.1%	0.1%	0.1%
Customized Fleet Mix 1	2.7%	47.9%	3.0%	24.2%	2.5%	0.6%	1.9%	15.4%	0.2%	1.5%	0.0%	0.2%	0.0%

Vehicle MPG or MPKWh from EMFAC output on the first year of operation

	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Diesel	6.5	52.6	29.1	39.2	18.6	15.9	0	29.5	9.7	9.8	9.9	8.6	9
Gasoline	4.9	36.1	30.4	29.9	13.1	11.8	42.2	24.5	4.6	5.6	5.5	10.1	12.2
Electricity	0.5	2.6	2.6	2.6	1.6	1.7	0	2.6	0	0.9	0.9	0.9	0.5
Natural Gas	6.2	0	0	0	0	0	0	0	0	8.1	9.2	4.7	4.2
PHEV_Gasoline	0	28.5	28.3	28.2	0	0	0	27.8	0	0	0	0	0
PHEV_Electricity	0	3.3	3.3	3.3	0	0	0	3.3	0	0	0	0	0

VMT Allocated to Various Energy Sources from EMFAC output on the first year of operation

VMT	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Diesel	1.74E+10	1.14E+8	1.32E+5	3.74E+8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.19E+9	0.00E+0	0.00E+0	0.00E+0
Gasoline	1.52E+6	1.71E+11	1.23E+10	9.84E+10	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.52E+8	0.00E+0	0.00E+0	0.00E+0
Electricity	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Natural Gas	3.99E+8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.94E+7	0.00E+0	0.00E+0	0.00E+0
PHEV_Gasoline	0.00E+0	3.36E+9	1.02E+8	1.04E+9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PHEV_Electricity	0.00E+0	4.77E+9	1.48E+8	1.50E+9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0

Energy Makeup based on VMT from EMFAC output on the first year of operation

Percent of VMT	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Diesel	97.7%	0.1%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	86.4%	0.0%	0.0%	0.0%
Gasoline	0.0%	95.4%	98.0%	97.1%	0.0%	0.0%	0.0%	0.0%	0.0%	12.3%	0.0%	0.0%	0.0%
Electricity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Natural Gas	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%
PHEV_Gasoline	0.0%	1.9%	0.8%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PHEV_Electricity	0.0%	2.7%	1.2%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
sum check	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%

Operational Onroad Emission Estimate

Applicable Vehicle Type and Energy Sources

HHDT	LDA	LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1	LDT2
Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline	PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity	PHEV_Electricity

Calculation

				Vehicle percentage * VMT percentage																
				HHDT	LDA	LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1
Land Use Type	Trips/Year	VMT/Year	Vehicle mix	Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline	PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity
Total all Land Uses	2.64E+7	4.13E+8	Customized Fleet Mix 1	2.64E-2	3.05E-4	3.16E-7	8.91E-4	1.26E-2	2.31E-6	4.57E-1	2.94E-2	2.35E-1	1.79E-3	6.06E-4	1.96E-4	8.97E-3	2.43E-4	2.49E-3	1.27E-2	3.52E-4

Annual Mobile Energy Consumption for Operation Year 2040

Diesel (gallon)	Gasoline (gallon)	Electricity (kWh)	Natural Gas (gallon)
2,218,171	9,158,521	2,084,761	50,301

	Energy consumption																		
LDT2	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	LDA	LDT1	LDT2	MHDT	HHDT	MHDT	LDA	LDT1	LDT2	LDA	LDT1	LDT2
PHEV_Electricity	Diesel	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Natural Gas	Natural Gas	PHEV_Gasoline	PHEV_Gasoline	PHEV_Gasoline	PHEV_Electricity	PHEV_Electricity	PHEV_Electricity
3.58E-3	1.68E+6	2.39E+3	4.48E+0	9.38E+3	5.31E+5	1.95E+2	5.22E+6	3.99E+5	3.24E+6	1.32E+5	4.03E+4	9.96E+3	1.30E+5	3.54E+3	3.64E+4	1.59E+6	4.41E+4	4.47E+5

Energy Calculations Summary Page

Summarized Energy Consumption for Annual Project Operation

Sectors	Diesel (MG)	Gasoline (MG)	CNG (MG)	Electricity (MWh)	Natural Gas (MBTU)
Mobile	2,218,171	9,158,521	50,301	2,085	
Building				2,940,258	492,427
On-site Equipment					
Water				8,843	
Stationary Source					
Total	2,218,171	9,158,521	50,301	2,951,186	492,427

Operational Annual Building Energy Consumption

Land Use	Electricity (MWh)	Natural Gas (MBTU)
Single Family Housing	851	3,541
Supermarket	50,840	28,913
Office Park	13,571	23,117
Industrial Park	101,445	172,804
General Heavy Industry	74,147	256,065
General Office Building	4,689	7,988

Operational Water and Waste Water Energy Consumption

Land Use	Indoor Water (MG)	Outdoor Water (MG)	Electricity (MWh)
Single Family Housing	4	18	8,843
Supermarket	107	0	
Office Park	103	0	
Industrial Park	1,001	0	
General Heavy Industry	1,445	0	
General Office Building	36	0	

Appendix C

Noise Modeling Data

Building Construction (Leq)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	3,936	45.0
Center		
Staging Area		

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Compactor (ground)	83	0.2
Generator	81	0.5
Crane	81	0.16
Dump Truck	76	0.4
Front End Loader	79	0.4
Backhoe	78	0.4

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Compactor (ground)	76.0
Generator	78.0
Crane	73.0
Dump Truck	72.0
Front End Loader	75.0
Backhoe	74.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
82.9

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Building Construction(Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	1,259	60.0
Center		
Staging Area		

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Compactor (ground)	83	1
Generator	81	1
Crane	81	1
Dump Truck	76	1
Front End Loader	79	1
Backhoe	78	1

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Compactor (ground)	83.0
Generator	81.0
Crane	81.0
Dump Truck	76.0
Front End Loader	79.0
Backhoe	78.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)

88.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS signs)	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jack	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer (hoe ram)	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle)	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-truck)	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0
chipper		75							

Source:
FHWA Roadway Construction Noise Model, January 2006. Table 9.1
U.S. Department of Transportation
CA/T Construction Spec. 721.560

Distance Propagation Calculations for
Stationary Sources of Ground Vibration

KEY:	
	Orange cells are for input.
	Grey cells are intermediate calculations performed by the model.
	Green cells are data to present in a written analysis (output).

STEP 1: Determine units in which to perform calculation.

— If vibration decibels (VdB), then use Table A and proceed to Steps 2A and 3A.
— If peak particle velocity (PPV), then use Table B and proceed to Steps 2B and 3B.

STEP 2A: Identify the vibration source and enter the reference vibration level (VdB) and distance.

STEP 3A: Select the distance to the receiver.

Table A. Propagation of vibration decibels (VdB) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (VdB)	@	distance (ft)	vibration level (VdB)	@	distance (ft)
Impact pile driver	112	@	25	71.7	@	550

The Lv metric (VdB) is used to assess the likelihood for vibration to result in human annoyance.

STEP 2B: Identify the vibration source and enter the reference peak particle velocity (PPV) and distance.

STEP 3B: Select the distance to the receiver.

Table B. Propagation of peak particle velocity (PPV) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (PPV)	@	distance (ft)	vibration level (PPV)	@	distance (ft)
Impact pile driver	1.518	@	25	0.190	@	100

The PPV metric (in/sec) is used for assessing the likelihood for the potential of structural damage.

Notes:

Computation of propagated vibration levels is based on the equations presented on pg. 185 of FTA 2018. Estimates of attenuated vibration levels do not account for reductions from intervening underground barriers or other underground structures of any type, or changes in soil type.

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123. Washington, D.C. Accessed: December 20, 2020. Page Available:

https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

ASCENT ENVIRONMENTAL

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
Corona Noise	49.6	@	18	hard	12	5	0.00	44.9	@	31
Loading Dock Activity Leq (day)	59.3	@	100	hard	6	5	0.00	49.8	@	300
Loading Dock Activity Leq (night)	59.3	@	100	hard	6	5	0.00	44.9	@	522
HVAC leq (day)	70.0	@	50	hard	6	5	0.00	50.0	@	500
HVAC Leq (night)	70.0	@	50	hard	6	5	0.00	45.0	@	890
Generators	73.0	@	45	hard	6	5	0.00	49.8	@	650
Generators	73.0	@	45	hard	6	5	0.00	44.9	@	1150
parking lot leq (day)	59.8	@	15	hard	6	5	0.00	49.3	@	50
parking lot leq (night)	59.8	@	15	hard	6	5	0.00	45.0	@	82

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5, 2020.

Traffic Noise Spreadsheet Calculator

Existing Conditions

Project: **Fresno South Central SP**

Noise Level Descriptor: CNEL
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

				Input										Output				
	Segment Description and Location					Distance to Directional Centerline, (feet)$_4$		Traffic Distribution Characteristics							Distance to Contour, (feet)$_3$			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)$_{5,6,7}$	75 dBA	70 dBA	65 dBA	60 dBA
1	Jenson Avenue Bypass	Cherry Avenue	East Avenue	28,039	40	55	90	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	74.6	65	205	648	2051
2	Jenson Avenue Bypass	Sunset Avenue	Cedar Avenue	18,566	50	55	90	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	75.0	71	224	708	2238
3	North Avenue	Hayston Avenue	Maple Avenue	2,495	45	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	67.3	8	25	79	249
4	Central Avenue	Cherry Avenue	East Avenue	3,101	50	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	69.4	13	40	125	396
5	American Avenue	Orange Avenue	Cedar Avenue	1,782	45	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	65.9	6	18	56	178
6	Cherry Avenue	Church Avenue	Byrd Avenue	5,372	40	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	69.6	13	42	132	416
7	Cherry Avenue	Central Avenue	North Avenue	2,935	45	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	68.1	9	29	93	293
8	East Avenue	Central Avenue	North Avenue	608	50	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	62.3	2	8	25	78
9	Cedar Avenue	Central Avenue	Parkway Drive	1,992	50	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	67.4	8	25	80	254
10	Maple Avenue	North Avenue	Annadale Ave	996	40	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	62.3	2	8	24	77
11	Willow Avenue	Jensen Parkway	Annadale Ave	3,277	40	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	67.4	8	25	80	254
12	Elm Avenue	Central Avenue	North Avenue	4,422	45	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	69.8	14	44	139	441

Traffic Noise Spreadsheet Calculator

Existing Plus Project Conditions

Project: **West Broadway Specific Plan**

Noise Level Descriptor: CNEL
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

				Input										Output				
Segment Description and Location						Distance to Directional Centerline, (feet)$_4$		Traffic Distribution Characteristics							Distance to Contour, (feet)$_3$			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)$_{5,6,7}$	70 dBA	65 dBA	60 dBA	55 dBA
#######																		
1	Jenson Avenue Bypass	Cherry Avenue	East Avenue	43,140	40	55	90	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	76.5	316	998	3155	9978
2	Jenson Avenue Bypass	Sunset Avenue	Cedar Avenue	29,081	50	55	90	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	77.0	351	1108	3505	11085
3	North Avenue	Hayston Avenue	Maple Avenue	3,037	45	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	68.2	30	96	303	958
4	Central Avenue	Cherry Avenue	East Avenue	6,660	50	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	72.7	85	269	850	2688
5	American Avenue	Orange Avenue	Cedar Avenue	1,782	45	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	65.9	18	56	178	562
6	Cherry Avenue	Church Avenue	Byrd Avenue	6,365	40	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	70.3	49	156	493	1559
7	Cherry Avenue	Central Avenue	North Avenue	3,981	45	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	69.4	40	126	397	1255
8	East Avenue	Central Avenue	North Avenue	3,167	50	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	69.5	40	128	404	1278
9	Cedar Avenue	Central Avenue	Parkway Drive	2,975	50	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	69.2	38	120	380	1201
10	Maple Avenue	North Avenue	Annadale Ave	1,641	40	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	64.4	13	40	127	402
11	Willow Avenue	Jensen Parkway	Annadale Ave	7,492	40	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	71.0	58	183	580	1835
12	Elm Avenue	Central Avenue	North Avenue	4,968	45	30	70	82.0%	5.0%	13.0%	81.0%	4.8%	14.3%	70.3	50	157	495	1566

Increase in Noise

#	Segment	From	To	Exist	Plus Project	Change
1	nson Avenue Bypa	Cherry Avenue	East Avenue	74.6	76.5	1.9
2	nson Avenue Bypa	Sunset Avenue	Cedar Avenue	75.0	77.0	1.9
3	North Avenue	Hayston Avenue	Maple Avenue	67.3	68.2	0.9
4	Central Avenue	Cherry Avenue	East Avenue	69.4	72.7	3.3
5	American Avenue	Orange Avenue	Cedar Avenue	65.9	65.9	0.0
6	Cherry Avenue	Church Avenue	Byrd Avenue	69.6	70.3	0.7
7	Cherry Avenue	Central Avenue	North Avenue	68.1	69.4	1.3
8	East Avenue	Central Avenue	North Avenue	62.3	69.5	7.2
9	Cedar Avenue	Central Avenue	Parkway Drive	67.4	69.2	1.7
10	Maple Avenue	North Avenue	Annadale Avenue	62.3	64.4	2.2
11	Willow Avenue	Jensen Parkway	Annadale Avenue	67.4	71.0	3.6
12	Elm Avenue	Central Avenue	North Avenue	69.8	70.3	0.5

Total Volume	9,227,622	100%	Day	Evening	Night
Passenger Vehicles	7,566,983	82%	81%	0.0475	0.1425
Medium Trucks	466,232	5%			
Heavy Trucks	1,194,407	13%			
AM Period	1,782,147	19%			
MD Period	3,475,983	38%			
PM Period	2,172,557	24%			
Evening Period	1,796,936	19%			

Citation #	Citations	
1	Caltrans Technical Noise Supplement. 2009 (November). Table (5-11), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Table (4-2), Pg 4-17.
2	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-26), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Equation (4-5), Pg 4-17.
3	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-16), Pg 2-32.	FHWA 2004 TNM Version 2.5
4	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-11), Pg 5-47, 48.	FHWA 2004 TNM Version 2.5
5	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-26), Pg 2-55, 56.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-23), Pg 2-51, 52.
6	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-27), Pg 2-57.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-24), Pg 2-53.
7	Caltrans Technical Noise Supplement. 2009 (November). Pg 2-53.	Caltrans Technical Noise Supplement. 2013 (September). Pg 2-57.
8	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-7), Pg 5-45.	FHWA 2004 TNM Version 2.5
9	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-8), Pg 5-45.	FHWA 2004 TNM Version 2.5
10	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-9), Pg 5-45.	FHWA 2004 TNM Version 2.5
11	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-13), Pg 5-49.	FHWA 2004 TNM Version 2.5
12	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-14), Pg 5-49.	FHWA 2004 TNM Version 2.5
13	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (16), Pg 67	
14	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (20), Pg 69	
15	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (18), Pg 69	

References

California Department of Transportation (Caltrans). 2009 (November). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed August 17, 2017.

California Department of Transportation (Caltrans). 2013 (September). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf. Accessed August 17, 2017.

Federal Highway Administration. 2004. Traffic Noise Model Version 2.5. Available: https://www.fhwa.dot.gov/environment/noise/traffic_noise_model/tnm_v25/. Accessed August 17, 2017.

Summary

File Name on Meter	LxT_Data.141.s
File Name on PC	LxT_0003285-20230420 055417-LxT_Data.141.ldbin
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	Warehouse Facility (Santa Fe Springs
Job Description	
Note	

Measurement

Description	
Start	2023-04-20 05:54:17
Stop	2023-04-20 06:55:40
Duration	01:01:22.8
Run Time	01:01:20.9
Pause	00:00:01.9
Pre-Calibration	2023-04-20 05:53:11
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
Overload	121.8 dB

	A	**C**	**Z**	
Under Range Peak	**78.1**	75.1	80.1	dB
Under Range Limit	**26.1**	25.9	31.0	dB
Noise Floor	16.5	16.8	21.9	dB
	First	**Second**	**Third**	
Instrument Identification				

Results

LAeq	59.3 dB	
LAE	95.0 dB	
EA	348.106 µPa²h	
EA8	2.724 mPa²h	
EA40	13.618 mPa²h	
LApeak (max)	2023-04-20 06:41:29	96.5 dB
LASmax	2023-04-20 06:41:29	79.6 dB
LASmin	2023-04-20 06:32:45	48.8 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

LCeq	68.8 dB
LAeq	59.3 dB
LCeq - LAeq	9.5 dB
LAIeq	61.9 dB
LAeq	59.3 dB
LAIeq - LAeq	2.6 dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	59.3		68.8			
LS(max)	79.6	2023/04/20 6:41:29				
LS(min)	48.8	2023/04/20 6:32:45				
LPeak(max)	96.5	2023/04/20 6:41:29				

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	3	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	0.14	0.01	%
Projected Dose	1.12	0.09	%
TWA (Projected)	57.6	59.3	dB
TWA (t)	42.8	50.4	dB
Lep (t)	50.4	50.4	dB

Statistics

LA 3.00	64.2	dB
LA 8.00	63.4	dB
LA 16.00	61.3	dB
LA 25.00	58.8	dB
LA 50.00	54.7	dB
LA 90.00	50.4	dB

Appendix D

Transportation Impact Analysis

Transportation Impact Analysis

South Central Specific Plan

City of Fresno, California

August 11, 2023

TJKM

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

The purpose of this Transportation Impact Analysis ("TIA") is to assess the potential environmental and operational impacts on the transportation system from future development under the proposed South Central Specific Plan ("SCSP") located in the southern portion of Fresno, California. This assessment includes the evaluation of vehicle miles traveled ("VMT") and level of service ("LOS") along key roadway segments and intersections to determine the adequacy of the planned future road network.

This TIA was conducted consistent with State, City of Fresno, and County of Fresno guidelines and standards. This document was prepared in accordance with best professional practices and standards that assess the impacts of a proposed development on the transportation system and, as appropriate, recommends improvements to lessen or negate those impacts. Transportation analyses, as presented in this TIA, involve the evaluation of existing and anticipated future roadway conditions, including with and without the proposed SCSP, and recommend transportation improvements to offset both the impacts of increased traffic volumes and the changes in traffic operations due to the plan.

To evaluate the impacts on the transportation infrastructure due to the addition of traffic from the proposed project, 12 roadway segments and 15 study intersections were evaluated during the weekday morning (a.m.) and afternoon (p.m.) peak hours. The study segments and intersections were evaluated under three scenarios: 2023 *Existing Conditions*, *2040 Baseline (No Project) Conditions*, and *2040 Future (With Project) Conditions*. For the purposes of this analysis, potential traffic operational effects from the proposed project are identified based on established operational thresholds described in the report.

Project Overview

The SCSP aims to maximize economic benefits by creating additional jobs for residents and improving quality of life while reducing environmental impacts. The proposed Plan would designate land uses within the plan area and establish a planning framework and development standards to facilitate and guide future development through the year 2040.

The SCSP includes approximately 5,000 acres of land, south and southeast of Downtown Fresno. The plan area is generally located south of California Avenue, north of American Avenue, east of Fig Avenue, and west of Peach Avenue. The area consists of a multitude of uses, including residential, places of worship, institutional, public, and industrial. In total, the SCSP would account for 91 housing units planned for 300 residents and approximately 14,300 employees (including 10,500 industrial employees, 2,000 office employees, 1,600 retail employees, and 200 restaurant employees).

2023 Existing Conditions

Existing volumes for the SCSP area for a.m. and p.m. peak hours and daily timeframes are relatively low due to the rural nature of a large portion of the project area. Peak daily volumes on area roadways were estimated to be less than 5,500 vehicles per day on the 12 study segments with the exception of the two Jensen Avenue Bypass segments. The a.m. and p.m peak hour volumes were estimated to be less than 600 vehicles per hour with the exception of the two Jensen Parkway segments. Of the 15 study intersections, all but one operate within jurisdictional standards (Level of Service (LOS) D or better) during both peak hours. The intersection of S. Pullman Avenue and E. Jensen Avenue (Study Intersection 12) operates at LOS F during both peak hours. All 12 of the roadway segments operates at LOS C or better during both peak hours.

2040 Baseline (No Project) Conditions

2040 future conditions without the SCSP were estimated using the delta method from data extracted from the Fresno Council of Governments Travel Demand Model (Fresno ABM). Due to the proposed uses in the area accounting for minimal growth, roadway conditions were comparable to existing conditions. Of the 15 study intersections, only the intersection of S. Pullman Avenue and E. Jensen Avenue (Study Intersection 12) is expected to continue to operate outside of jurisdictional standards during both peak hours. All 12 of the roadway segments are expected to continue to operate at LOS C or better during both peak hours.

2040 Future (With Project) Conditions

2040 future conditions with the SCSP were estimated using the delta method from data extracted from the Fresno ABM with SCSP project land uses coded into the model. Higher growth rates resulted due to the increased land use density.

Of the 15 study intersections, four intersections would operate or begin to operate outside of jurisdictional standards during both peak hours. The following recommended improvement would resolve these inconsistencies:

- Intersection 8: S. Cedar Avenue & W. Central Avenue – construct a westbound left turn lane.
- Intersection 9: S. Maple Avenue & W. Central Avenue – convert to all-way stop control.
- Intersection 10: S. Maple Avenue & E. North Avenue – convert to all-way stop control.
- Intersection 12: S. Pullman Avenue & E. Jensen Avenue – signalize, with protected left turns on Jensen Avenue.

All 12 of the roadway segments are expected to continue to operate at LOS C or better during both peak hours. With the above improvements, the 2040 Future (with Project) Conditions would operate comparable or better than 2040 Baseline (no Project) Conditions.

Vehicle Miles Traveled

The project is expected to increase the total VMT in the area but will not have a significant impact. The project lowers the VMT per service population metric for the SCSP area when compared to the no project scenario.

In addition, it should be noted that the project would benefit from the following VMT reducing components:

- The construction of additional sidewalks, other walkways, and bicycle facilities to encourage walking and biking within the plan area.
- The mixed-use nature of the project would promote shorter trips by reducing the distances between trip generators (homes) and trip attractors (retails, offices, etc.).
- Future transit is anticipated to be provided within the project area. This promotes alternative operations which are anticipated for the SCSP project area, further reducing its VMT impacts.

Overall Conclusions

The proposed South Central Specific Plan is anticipated to reduce VMT per service population within the plan area. In terms of traffic operations, roadway segments are anticipated to operate with sufficient capacity during the peak hours. With some improvements, key intersections would also operate with sufficient capacity during the peak hours.

1.0 INTRODUCTION

This report summarizes the results of the Transportation Impact Analysis ("TIA") for the proposed South Central Specific Plan ("SCSP") in Fresno, California. The following sections discuss project details and the purpose of this TIA and provide information on key study segments, intersections, and analysis scenarios.

1.1 Project Description

The SCSP includes approximately 5,000 acres of land, south and southeast of Downtown Fresno. The plan area is generally located south of California Avenue, north of American Avenue, and east of Fig Avenue, and west of Peach Avenue The area consists of a multitude of uses, including residential, places of worship, institutional, public, and industrial. In total, the SCSP would account for 91 new housing units planned for 300 residents and approximately 14,200 employees (including 10,500 industrial employees, 2,000 office employees, 1,600 retail employees, and 200 restaurant employees).

The SCSP area will be primarily serviced by two major highways: State Route ("SR") 41 and SR 99. The SCSP will also be serviced by two freight rail lines: Burlington Northern Santa Fe ("BNSF") and Union Pacific ("UP"). Some land within the plan area has been dedicated for the proposed California High-Speed Rail network, but no stations are planned in the project area.

Figure 1 illustrates the proposed South Central Specific Plan land uses.

1.2 Project Purpose

The purpose of this TIA is to evaluate the impacts on the transportation infrastructure due to the addition of traffic from the proposed SCSP project. The report includes evaluations of key study segments and intersections and assesses impacts on VMT.

1.3 Study Segments

TJKM evaluated traffic conditions at 12 study segments during the a.m. and p.m. peak hours and for a typical weekday. The study segments are located on key streets and were selected based on the availability of count data from both the City and County of Fresno count databases.

The study segments selected are as follows. Note that the location of each segment is also denoted (as either inside the City or inside the County). **Figure 2** illustrates the locations of the study segments.

1. Jensen Avenue Bypass from Cherry Avenue to East Avenue (City)
2. Jensen Avenue Bypass from Sunset Avenue to Cedar Avenue (City)
3. North Avenue from Hayston Avenue to Maple Avenue (City)
4. Central Avenue from Cherry Avenue to East Avenue (City)

5.	American Avenue from Orange Avenue to Cedar Avenue	(County)
6.	Cherry Avenue from Church Avenue to Byrd Avenue	(City)
7.	Cherry Avenue from Central Avenue to North Avenue	(City)
8.	East Avenue from Central Avenue to North Avenue	(City)
9.	Cedar Avenue from Central Avenue to Parkway Drive	(City)
10.	Maple Avenue from North Avenue to Annadale Avenue	(City)
11.	Willow Avenue from Jensen Parkway to Annadale Avenue	(County)
12.	Elm Avenue from Central Avenue to North Avenue	(County)

1.4 Study Intersections

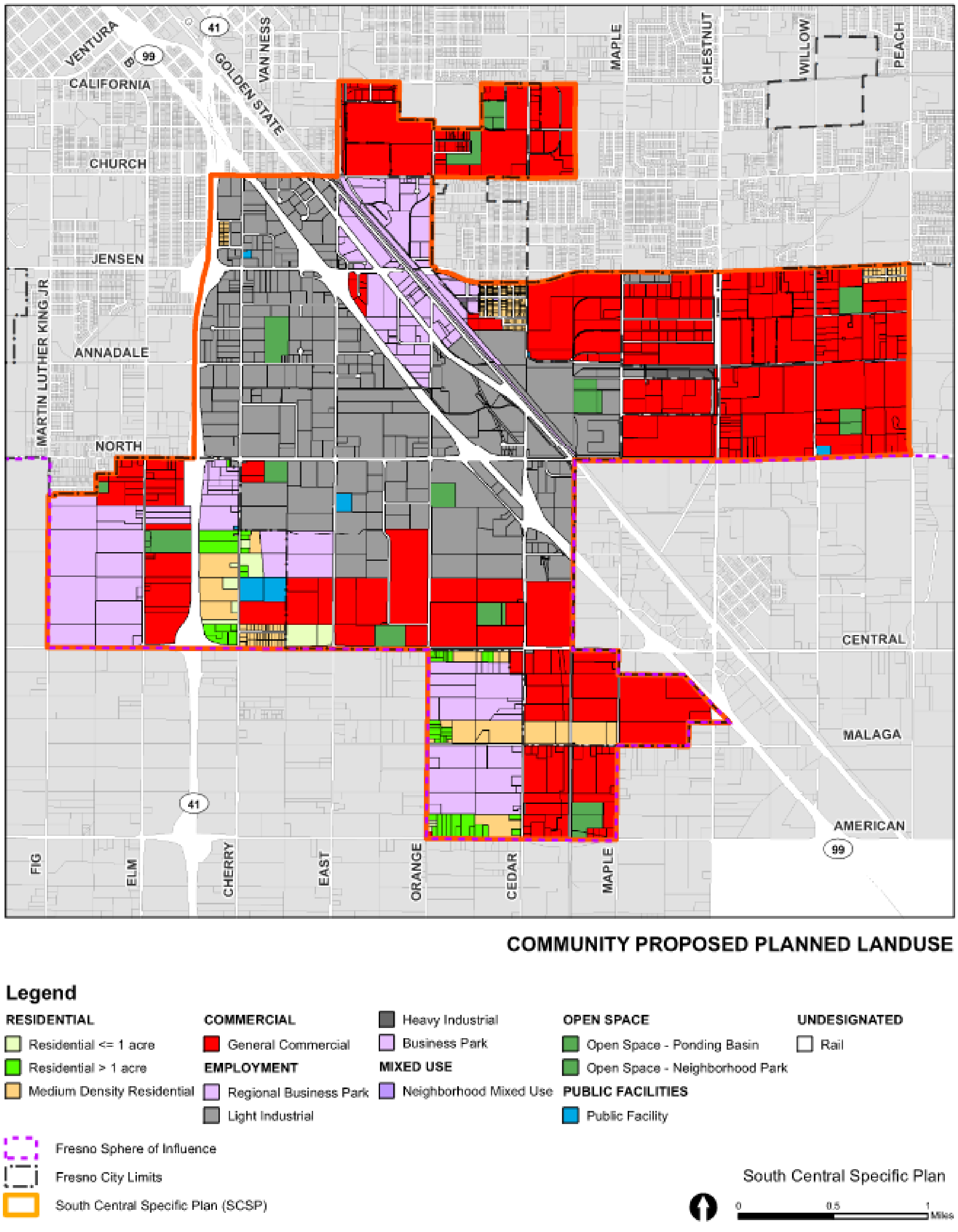
TJKM evaluated traffic conditions at 15 study intersections during the a.m. and p.m. peak hours and daily conditions for a typical weekday. The study intersections were selected in coordination with City staff. The weekday peak periods were between 6:30 to 8:30 a.m. and 4:30 to 6:30 p.m.

The study intersections and their respective control types are as follows. **Figure 3** illustrates the location of the study intersections.

1.	S. Orange Avenue & E. American Avenue	(Two-Way Stop)	(County)
2.	S. Cedar Avenue & E. American Avenue	(All-Way Stop)	(County)
3.	S. Maple Avenue & E. American Avenue	(Two-Way Stop)	(County)
4.	S. Fig Avenue & W. Central Avenue	(Two-Way Stop)	(County)
5.	S. Elm Avenue & W. Central Avenue	(Two-Way Stop)	(County)
6.	S. Cherry Avenue & W. Central Avenue	(All-Way Stop)*	(County)
7.	S. East Avenue & W. Central Avenue	(Two-Way Stop)*	(City)
8.	S. Cedar Avenue & W. Central Avenue	(All-Way Stop)*	(City)
9.	S. Maple Avenue & W. Central Avenue	(Two-Way Stop)	(City)
10.	S. Maple Avenue & E. North Avenue	(Two-Way Stop)	(City)
11.	S. Peach Avenue & E. North Avenue	(All-Way Stop)	(City)
12.	S. Pullman Avenue & E. Jensen Avenue	(Two-Way Stop)	(County)
13.	S. Willow Avenue & E. Jensen Avenue	(Signal)	(City)
14.	S. Peach Avenue & E. Jensen Avenue	(Signal)	(City)
15.	S. Cherry Avenue & E. Church Avenue	(Two-Way Stop)	(City)

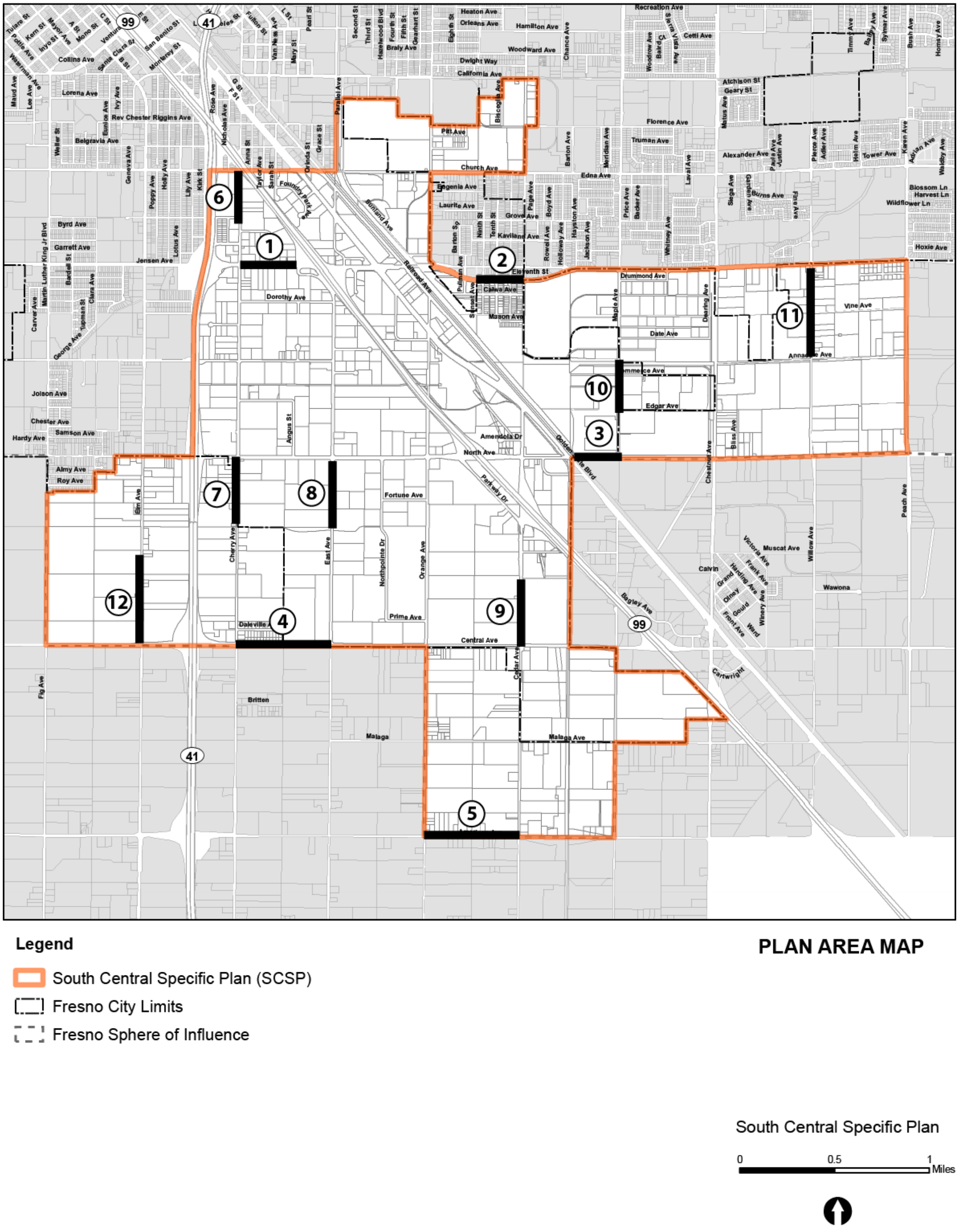
** Indicates historical counts were used*

Figure 1: SCSP Proposed Land Use



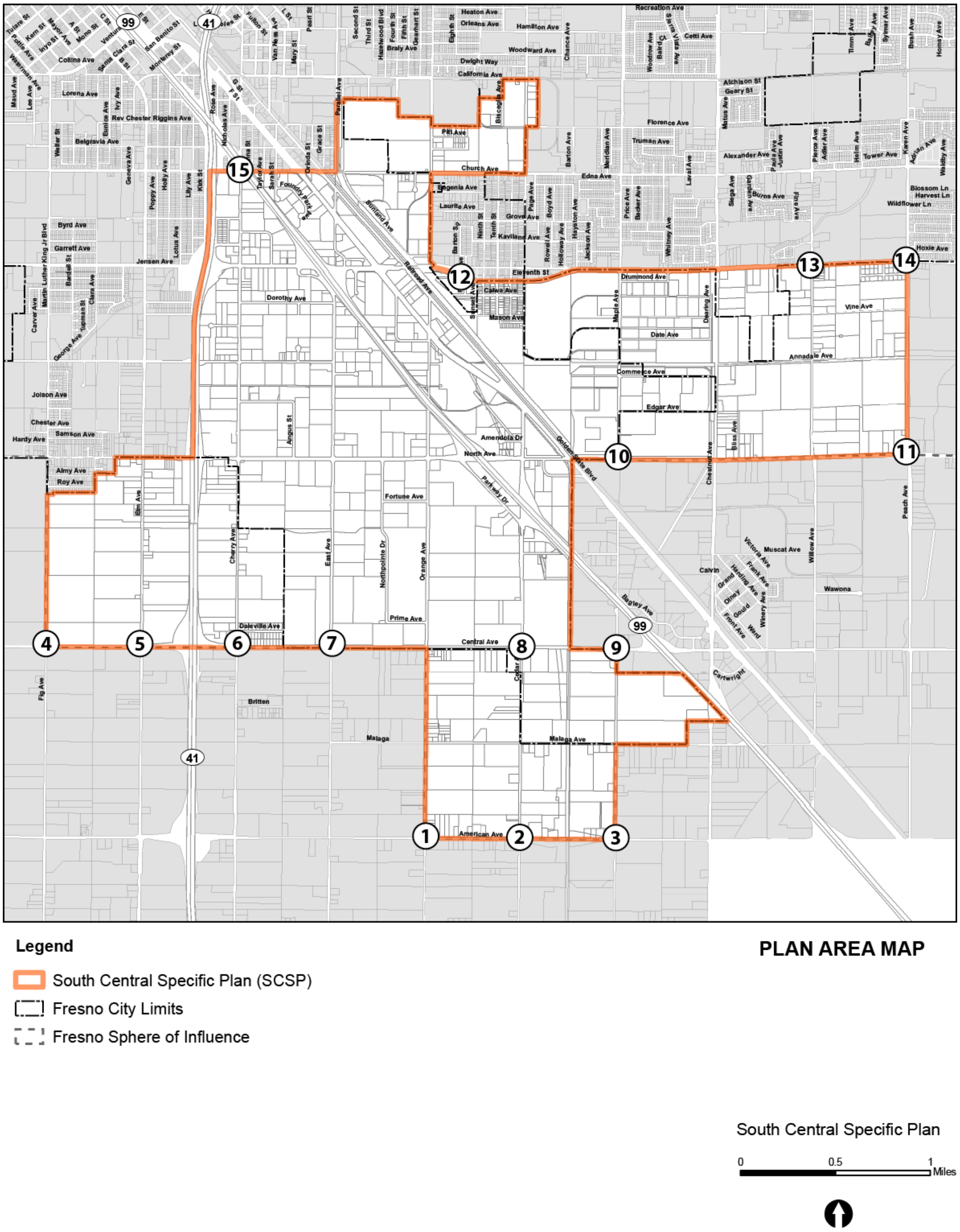
Source: City of Fresno GIS Data
Prepared by the Planning and Development Department

Figure 2: Study Segments Location Map



. 2016 Census Designated Places.

Figure 3: Study Intersections Location Map



. 2016 Census Designated Places.

1.5 Analysis Scenarios

This study addresses the following three traffic scenarios:

- **2023 Existing Conditions** – This scenario evaluates the study segments and intersections based on existing traffic volumes, lane geometry, and traffic controls.
- **2040 Baseline (No Project) Conditions** – This scenario evaluates study segments and intersections for the year 2040, based on the City of Fresno's current *General Plan*.
- **2040 Future (with Project) Conditions** – This scenario evaluates study segments and intersections for the year 2040, based on the proposed SCSP.

1.6 Fresno Council of Governments Activity Based Model (Fresno ABM)

The latest approved version of the Fresno Activity Based Travel Demand Model (Fresno ABM) was obtained for use in travel demand forecasting and VMT analysis for this project. All traffic volume forecasts were adjusted, using the difference (delta) method, to account for the difference between existing counts and base year model forecasts. The Fresno ABM has a base year of 2015 and a forecast year of 2035, while the count data collected from the Fresno City count database were from the year 2018.

Of note, for the purposes of this study, the VMT analysis herein uses the 2035 forecast year as opposed to the 2040 build-out of the specific plan. This was done given that the model was calibrated and validated specifically for 2035 conditions. This is consistent with the Governor's Office of Planning and Research (OPR) guidelines on the California Environmental Quality Act (CEQA).

2.0 STUDY METHODOLOGY

Traffic impacts related to the proposed plan were evaluated for both compliance with applicable regulatory documents and environmental significance as defined in the California Environmental Quality Act (CEQA). In accordance with the *Technical Advisory* published by the Governor's Office of Planning and Research (OPR), a quantitative Vehicle Miles Traveled (VMT) assessment forms the basis of the CEQA analysis for the proposed project. Effective as of July 1, 2020, intersection Level of Service (LOS) can no longer be used to determine significant impacts for CEQA purposes. However, the CEQA guidelines do not preclude the use of LOS analyses when determining consistency with plans and standards for jurisdictions or agencies, such as the City of Fresno.

2.1 Vehicle Miles Traveled (VMT) Methodology

Senate Bill ("SB") 743, which was signed into law by Governor Brown in 2013 and codified in Public Resources Code § 21099, tasked OPR with establishing new criteria for determining the significance of transportation impacts under CEQA. SB 743 requires the new criteria to "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."

SB 743 changed the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (see Pub. Resource Code, § 21099, subd. (b)(2)).

In December 2018, OPR circulated its most recent *Technical Advisory on Evaluating Transportation Impacts in CEQA* provides recommendations and describes various options for assessing VMT for transportation analysis purposes. "Vehicle miles traveled" refers to the amount and distance of automobile travel "attributable to a project". Other relevant considerations may include the effects of the project on transit or non-motorized travel. The VMT analysis options described by OPR are primarily tailored towards single-use development residential, office or office projects, not mixed-use projects and not athletic facility projects. OPR recommends the following methodology and criteria for specific land uses:

- For residential projects, OPR recommends that VMT impacts be considered potentially significant if a residential project is expected to generate VMT per Capita (i.e., VMT per resident) at a rate that exceeds 85 percent of a regional average.
- For office projects, OPR recommends that VMT impacts be considered potentially significant if an office project is expected to generate VMT per Employee at a rate that exceeds 85 percent of a regional average.
- For retail projects, OPR recommends that VMT impacts be considered potentially significant if a project results in a net increase in total VMT. This approach takes into account the likelihood that retail developments may lead to increases or decreases in VMT, depending on previously existing retail travel patterns. This approach may also be used for other types of projects with customer components.

- OPR also indicates that local serving retail (projects smaller than 50,000 square feet) may be presumed to have a less than significant VMT impact.
- OPR does not provide specific guidance on evaluating other land use types, except to say that other land uses could choose to use the method applicable to the land use with the most similarity to the proposed project.
- For mixed-use projects, OPR describes several options that include (1) evaluating each land use separately; or (2) evaluating mixed-use projects based on the method applicable to the dominant land use. Evaluating each land use separately would potentially fail to measure the positive effects of mixed-use projects in reducing VMT.

OPR also recommends exempting some project types from VMT analysis based on the likelihood that such projects will generate low rates of VMT:

- OPR recommends that projects generating less than 110 trips per day generally may be assumed to cause a less than significant transportation impact.
- OPR notes that residential and office projects that are located in areas with low VMT, and that incorporate similar features, will tend to exhibit similar low VMT, and can be screened out.
- OPR states that residential, retail, office, and mixed-use projects near transit stations or major transit stops should be screened out based on the likelihood that such projects will have a less than significant impact on VMT.

Pursuant to the intent of SB 743 and OPR's *Technical Advisory*, the City of Fresno has adopted its own guidelines for VMT analysis: *CEQA Guidelines for Vehicle Miles Traveled Thresholds* in June 2020.

2.1.1 VMT Screening Criteria

The City of Fresno guidelines include the following screening criteria for identifying projects that can be presumed to have a less-than-significant impact:

- Projects that generate or attract fewer than 110 daily vehicle trips.
- Projects of 10,000 square feet or less of non-residential space.
- Residential, retail, office projects, or mixed-use projects proposed within a ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor.
- Residential projects (home-based VMT) at 13 percent or below the baseline County-wide home-based average VMT per capita, or employment projects (employee VMT) at 13 percent or below the baseline Fresno average commute VMT per employee in areas with low VMT that incorporate similar VMT reducing features (i.e., density, mix of uses, transit accessibility).
- Public facilities (e.g. emergency services, passive parks (low-intensity recreation, open space, libraries, community centers, public utilities), and government buildings.
- Land use plans should compare existing VMT over a project area to the expected future year VMT. If there is a net increase, than the VMT impacts are deemed significant.

2.2 Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The operational LOS are given letter designations from A to F, with A representing the free-flow operating conditions and F representing the severely congested flow with high delays. Typically, LOS C is considered an ideal condition as it represents stable flow and efficient use of the transportation facility. Intersections generally are the capacity-controlling locations concerning traffic operations on arterial and collector streets. The following sections provide a detailed study methodology for roadway segments and intersections (signalized and stop-controlled).

2.2.1 Roadway Segment Level of Service Analysis Standards

Roadway segments are typically analyzed for overall usage and congestion during the weekday commuter peak hours. Consistent with the analysis methodology used in the *City of Fresno General Plan and Development Code Update*, 2014 Master Environmental Impact Report (MEIR), roadway segment LOS were assessed in terms of volume-to-capacity (v/c) ratio. Volumes represent the future traffic expected on the study roadway segments, and roadway capacities were categorized based on functional classification, presence of medians, and the number of travel lanes. The road segment LOS thresholds are shown in **Table 1**.

LOS grades are generally defined as follows:

- **LOS A** represents free-flow travel with excellent levels of comfort and convenience and the freedom to maneuver.
- **LOS B** represents stable operating conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience, and maneuvering freedom.
- **LOS C** represents stable operating conditions, but the operation of individual users is substantially affected by the interaction with others in the traffic stream.
- **LOS D** represents high density, but stable flow. Users experience severe restrictions in speed and freedom to maneuver, with poor levels of comfort and convenience.
- **LOS E** represents operating conditions at or near capacity. Speeds are reduced to a low but relatively uniform value. Freedom to maneuver is difficult with users experiencing frustration and poor comfort and convenience. Unstable operation is frequent, and minor disturbances in traffic flow can cause breakdown conditions.
- **LOS F** represents forced or breakdown conditions. These conditions exist when the volume of traffic exceeds the capacity of the roadway. Long queues can form behind these bottleneck points with queued traffic traveling in a stop-and-go fashion.

Table 1: Roadway Functional Class and Peak Hour LOS Thresholds

			Peak Hour Level of Service Capacity Thresholds				
Functional Class	**Median**	**Lanes**	**A**	**B**	**C**	**D**	**D**
Freeway	N/A	4	2,720	4,460	6,630	7,720	8,630
		3+Aux	2,360	3,860	5,640	6,730	7,530
		3	2,000	3,270	4,660	5,740	6,430
		2+Aux	1,650	2,700	3,850	4,760	5,340
		2	1,300	2,130	3,050	3,790	4,260
State Expressway	Divided	6		3,960	5,730	7,450	8,450
		4		2,650	3,810	4,960	5,630
		2		1,340	1,890	2,470	2,810
City Expressway	Raised Median	6			1,860	6,170	6,520
		5			1,520	5,110	5,430
		4			1,180	4,050	4,340
		2			520	1,910	2,160
Super Arterial	Raised Median	6				4,910	6,240
		5				4,040	5,195
		4				3,170	4,150
Arterial	Raised Median	8			2,120	7,070	7,490
		6			1,560	5,270	5,610
		5			1,280	4,370	4,670
		4			1,000	3,470	3,730
		3			720	2,555	2,795
		2			440	1,640	1,860
	TWLTL	4			940	3,290	3,550
		2			420	1,550	1,760
	Undivided	4			770	2,740	2,980
		2			340	1,270	1,480
Collector	TWLTL	4			940	3,290	3,550
		2			420	1,550	1,760
	Undivided	4			770	2,740	2,980
		2			340	1,270	1,480
One-Way	Undivided	3		1,960	2,240	2,430	2,640
		2		1,250	1,490	1,620	1,740
		1		550	740	800	870
Rural State Highway	Undivided	2	310	570	1,020	1,730	2,470
Rural Arterial	Divided	4			19,520	3,580	3,780
	Undivided	2			570	1,230	1,310
Rural Collector/Local	Undivided	2			700	930	1,000

Source: LSA's City of Fresno General Plan and Development Code Update, 2014 MEIR

2.2.2 Signalized Intersections

The study intersections under traffic signal control are analyzed using the HCM 6 methodology described in Chapter 19. This methodology determines LOS based on average control delay per vehicle for the overall intersection and by approach and a combination of control delay per vehicle and volume-to-capacity (v/c) for lane groups during the peak hour operating conditions.

Delay quantifies the increase in travel time due to traffic signal control; it is also a surrogate measure of driver discomfort and fuel consumption. The v/c ratio quantifies the degree to which a phase's capacity is utilized by a lane group. A v/c ratio of 1.0 or more indicates cycle capacity is fully utilized and represents failure from a capacity perspective (just as a delay in excess of 80 seconds per vehicle represents failure from a delay perspective).

Table 2 summarizes the relationship between the control delay and LOS for signalized intersections. The LOS assessments under all scenarios are based on current traffic controls and signal timings unless otherwise noted. For the purposes of this report, intersection LOS was analyzed using *Synchro* version 11 software.

Table 2: Level of Service Definitions for Signalized Intersections

LOS	Definition	Control Delay Range (s/veh)	v/c Range
A	Very low control delay. This level is typically assigned when the v/c ratio is low and either progression is exceptionally favorable or the cycle length is short. Most vehicles arrive during the green phase. Many vehicles do not stop at all.	≤ 10	≤ 1.0
B	The v/c ratio is low. There is good progression, short cycle lengths, or both. More vehicles stop, causing higher levels of delay.	≤ 20	≤ 1.0
C	Higher delays occur in favorable progression or a due to a moderate cycle length, or both. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during a given cycle) may begin to appear. The number of vehicles stopping is still considered low-to-moderate, though many vehicles still pass through the intersection without stopping.	≤ 35	≤ 1.0
D	The influence of congestion becomes more apparent. Longer delays may result from some combination of a high v/c ratio, ineffective progression, long cycle length, or high volumes. Many vehicles stop; the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	≤ 55	≤ 1.0
E	Typically considered the limit of unacceptable delay. High delays usually indicate a very high v/c ratio, poor progression, long cycle lengths, and high volumes. Most cycles fail to clear the queue.	≤ 80	≤ 1.0
F	Delays are unacceptable to most drivers. Conditions are considered oversaturated. Arrival flow rates exceed the capacity of the intersection (v/c in excess of 1.0). Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.	> 80	> 1.0

Source: Transportation Research Board's (TRB) Highway Capacity Manual, 6th Edition

2.2.3 Stop-Controlled Intersections

The study intersections under one-/two-way stop control (OWSC / TWSC) and all-way stop control (AWSC) are analyzed using the HCM 6 methodology described in Chapters 20 and 21, respectively. LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At one- or two-way stop-controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The weighted average delay for the entire intersection is presented for all-way stop-controlled intersections.

Table 3 summarizes the relationship between delay and LOS for stop-controlled intersections. The delay ranges for stop-controlled intersections are lower than for signalized intersections, as drivers expect less delay at stop-controlled intersections. For the purposes of this report, intersection LOS was analyzed using *Synchro* version 11 software.

Table 3: Level of Service Definitions for Stop-Controlled Intersections

LOS	Definition	Control Delay Range (s/veh)	v/c Range
A	Usually no conflicting traffic. Drivers can easily find gaps in traffic to maneuver. v/c is low.	≤ 10	≤ 1.0
B	Occasionally some delays due to conflicting traffic. Drivers can find gaps in traffic. v/c is low.	≤ 15	≤ 1.0
C	There is some noticeable delay due to conflicting traffic. Drivers are still able to find gaps in traffic.	≤ 25	≤ 1.0
D	Drivers experience delays due to fewer gaps in traffic to maneuver. Lane group v/c creeps closer to 1.0.	≤ 35	≤ 1.0
E	Delay approaches driver tolerance levels. Drivers will occasionally find gaps in traffic to maneuver. Lane group v/c approaches 1.0.	≤ 50	≤ 1.0
F	Delay exceeds driver tolerance levels or v/c exceeds 1.0 or both.	> 50	> 1.0

Source: Transportation Research Board's (TRB) Highway Capacity Manual, 6th Edition

2.2.4 Level of Service Standards

Although level of service is no longer used for identifying impacts under CEQA, level of service analysis is still used for determining consistency with adopted agency plans and standards. Where standards refer to significant environmental impacts, this analysis instead identifies these as substantial inconsistencies with adopted plans.

The City of Fresno discusses its specific standards in the Mobility and Transportation Section within the *Fresno General Plan* (adopted December 18, 2014). As specified on Page 4-28 (MT-1-k):

> *"Develop and use a tiered system of flexible, multi-modal Level of Service standards for streets designated by the Circulation Diagram (Figure MT-1). Strive to accommodate a peak hour vehicle LOS of D or better on street segments and at intersections, except where Policies MT-1-m through MT-1-p provide greater specificity. Establish minimum acceptable service levels for other modes and use them in the development review process."*

The County of Fresno discusses its specific standards in the Transportation and Circulation Element within the *Fresno General Plan* (adopted December 18, 2014). As specified on Page 3-9 (Policy TR-A.2):

> *"The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county…*
>
> *The County may, in programming capacity-increasing projects, allow exceptions to the level of service standards in this policy where it finds that the improvements or other measures required to achieve the LOS policy are unacceptable based on established criteria. In addition to consideration of the total overall needs of the roadway system, the County shall consider the following factors:*
>
> > *a. The right-of-way needs and the physical impacts on surrounding properties;*
> >
> > *b. Construction and right-of-way acquisition costs;*
> >
> > *c. The number of hours that the roadway would operate at conditions below the standard;*
> >
> > *d. The ability of the required improvement to significantly reduce delay and improve traffic operations; and*
> >
> > *e. Environmental impacts upon which the County may base findings to allow an exceedance of the standards.*
>
> *In no case should the County plan for worse than LOS D on rural County roadways, worse than LOS E on urban roadways within the spheres of influence of the cities of Fresno and Clovis, or in cooperation with Caltrans and the Council of Fresno County Governments, plan for worse than LOS E on State highways in the county."*

Given the location of the study intersections and segments (all within the City's sphere of influence and planning area), the applicable LOS standard assumed for the purposes of this report is LOS D or better for study segments and intersections.

3.0 EXISTING CONDITIONS

This section describes existing conditions in the immediate project site vicinity, including roadway, bicycle, and pedestrian facilities, and available transit service. In addition, existing traffic volumes and operations are presented for the study segments and intersections.

3.1 Existing Setting and Roadway System

Regional access to the SCSP area is generally provided by SR 41 and SR 99. Local access to and within the SCSP area is provided by various arterials and connectors.

Relevant roadways in the plan vicinity are discussed below:

> ***State Route 99*** is a 6 lane freeway that runs from the northern end of the SCSP at Church Avenue to the southern end at Central Avenue. It is the main thoroughfare for the Central Valley region and has high volumes of passenger vehicles and truck traffic. The speed limit is 65 mph in the urban area and 65 mph in the rural area.
>
> ***State Route 41*** is a 4 lane freeway that runs on the western portion of the SCSP from Church Avnue to Central Avenue. It is a spur freeway that connects Fresno to the Pacific Ocean at Morro Bay. The speed limit is 65 mph in the SCSP area.
>
> ***Church Avenue*** is a two- to four-lane, east-west collector. The roadway runs through the northern portion of the SCSP area and has a 45 mile per hour (mph) speed limit within the study area.
>
> ***Jensen Avenue*** is a two- to six-lane roadway that runs east-west. The roadway is classified as an arterial west of SR 99 and as a super arterial east of SR 99. The speed limit along the roadway ranges from 40 mph to 55 mph within the study area.
>
> ***Annadale Avenue*** is a two-lane, east-west collector in the center of the SCSP area. It has a speed limit of 40 mph within the study area.
>
> ***North Avenue*** is a four-lane, east-west arterial running through the center of the SCSP area and has an interchange junction with SR 99. It has a speed limit of 45 mph within the study area.
>
> ***Central Avenue*** is a two-lane, east-west arterial on the south end of the SCSP area and has an interchange junction with SR 99. It has a speed limit of 45 mph within the study area.
>
> ***American Avenue*** is a two-lane, east-west arterial on the southern border of the SCSP area with an interchange to SR 99. It has a speed limit of 45 mph within the study area.
>
> ***Fig Avenue/Martin Luther King Jr. Boulevard*** is a two-lane, north-south collector that runs on the western border of the SCSP area. It has a speed limit of 40 mph within the study area.
>
> ***Elm Avenue*** is a four lane arterial that runs north-south on the western portion of the SCSP. It has a speed limit of 45 mph in the study area.

State Route 41 is a four-lane, north-south freeway that runs on the western portion of the SCSP area. It connects to SR 99 near downtown Fresno and serves as a major connection for this project. It has a speed limit of 50 mph within the study area.

Cherry Avenue is a two-lane, north-south collector that goes through the center of the SCSP area. It has a speed limit of 45 mph within the study area.

East Avenue is a two-lane, north-south collector that goes through the center of the SCSP area. It has a two-way left turn lane (TWLTL) south of North Avenue. It is truncated by SR 99 at its northern end. It has a speed limit of 45 mph within the study area.

Orange Avenue is a two-lane, north-south arterial that goes through the center of the SCSP area. It connects Central Avenue and North Avenue near SR 99. It has a TWLTL between Central and North. It has a speed limit of 45 mph within the study area.

Cedar Avenue is a two-lane, north-south arterial that has an interchange with SR 99 in the center of the SCSP area. It has a speed limit of 45 mph within the study area.

Maple Avenue is a four-lane, north-south collector that has two sections, north of SR 99 and south of SR 99. It has a speed limit of 45 mph within the study area.

Chestnut Avenue is a two-lane, north south collector on the eastern portion of the SCSP. It has a speed limit of 45 mph within the study area.

Willow Avenue is a two-lane, north south collector in the central portion of the SCSP. It has a speed limit of 45 mph within the study area.

Peach Avenue is a two-lane, north south collector in the eastern portion of the SCSP. It has a speed limit of 45 mph within the study area.

3.2 Existing Pedestrian Facilities

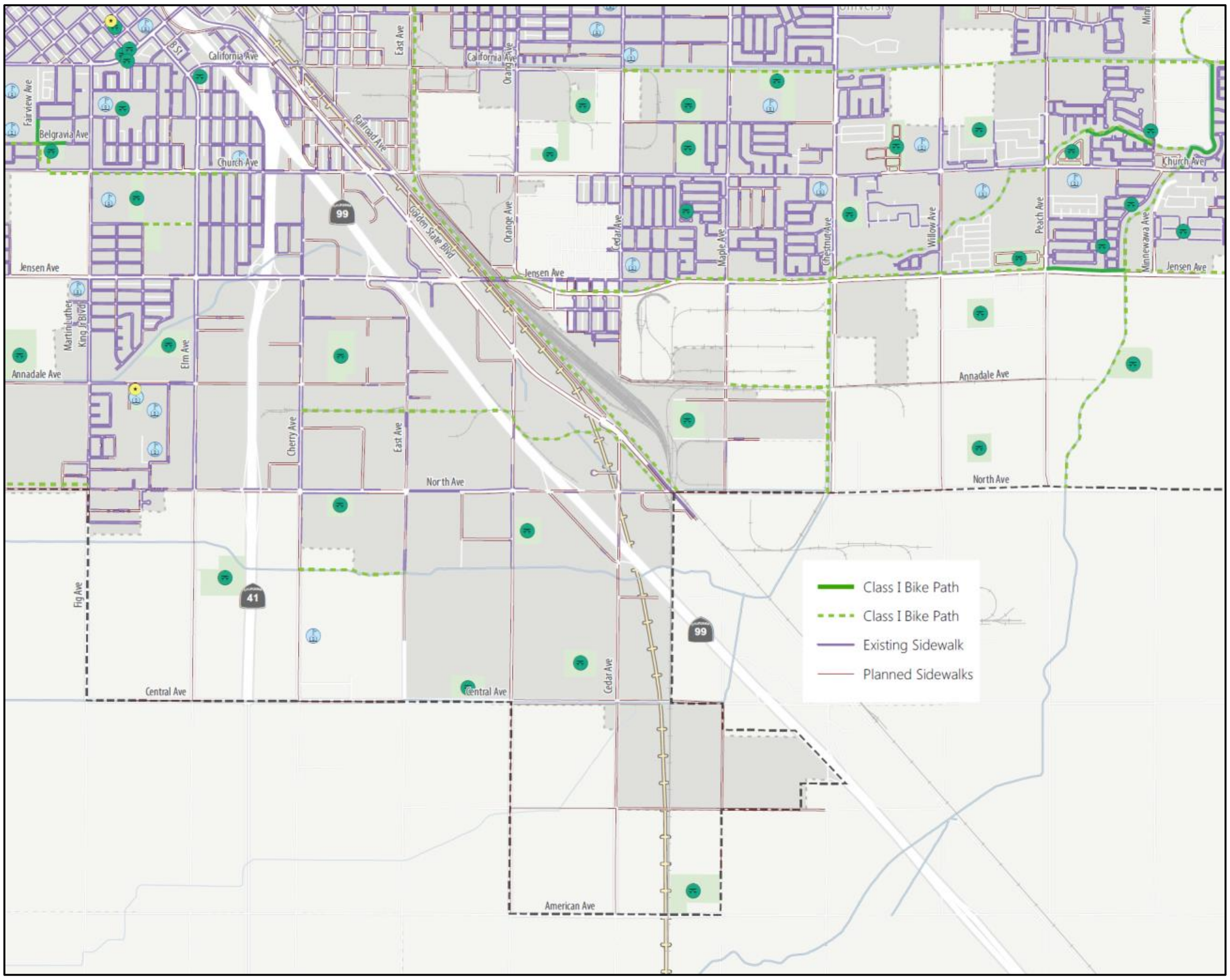
Walkability is defined as the ability to travel easily and safely between various origins and destinations without having to rely on automobiles or other motorized travel. The ideal "walkable" community includes wide sidewalks, a mix of land uses such as residential, employment, and shopping opportunities, a limited number of conflict points with vehicle traffic, and easy access to transit facilities and services.

Pedestrian facilities are comprised of crosswalks, sidewalks, pedestrian signals, and off-street paths, which provide safe and convenient routes for pedestrians to access the destinations such as institutions, businesses, public transportation, and recreation facilities.

As this project is a Specific Plan for a rural area, currently there are very limited pedestrian facilities in the project vicinity. Sidewalks do exist on portions of East Avenue, North Avenue, Central Avenue, Church Avenue, and Jensen Avenue but are disconnected from one another or are disjointed.

Figure 4 illustrates existing and planned pedestrian facilities within the SCSP area.

Figure 4: Existing and Planned Pedestrian Facilities



Source: 2017 Fresno Active Transportation Plan

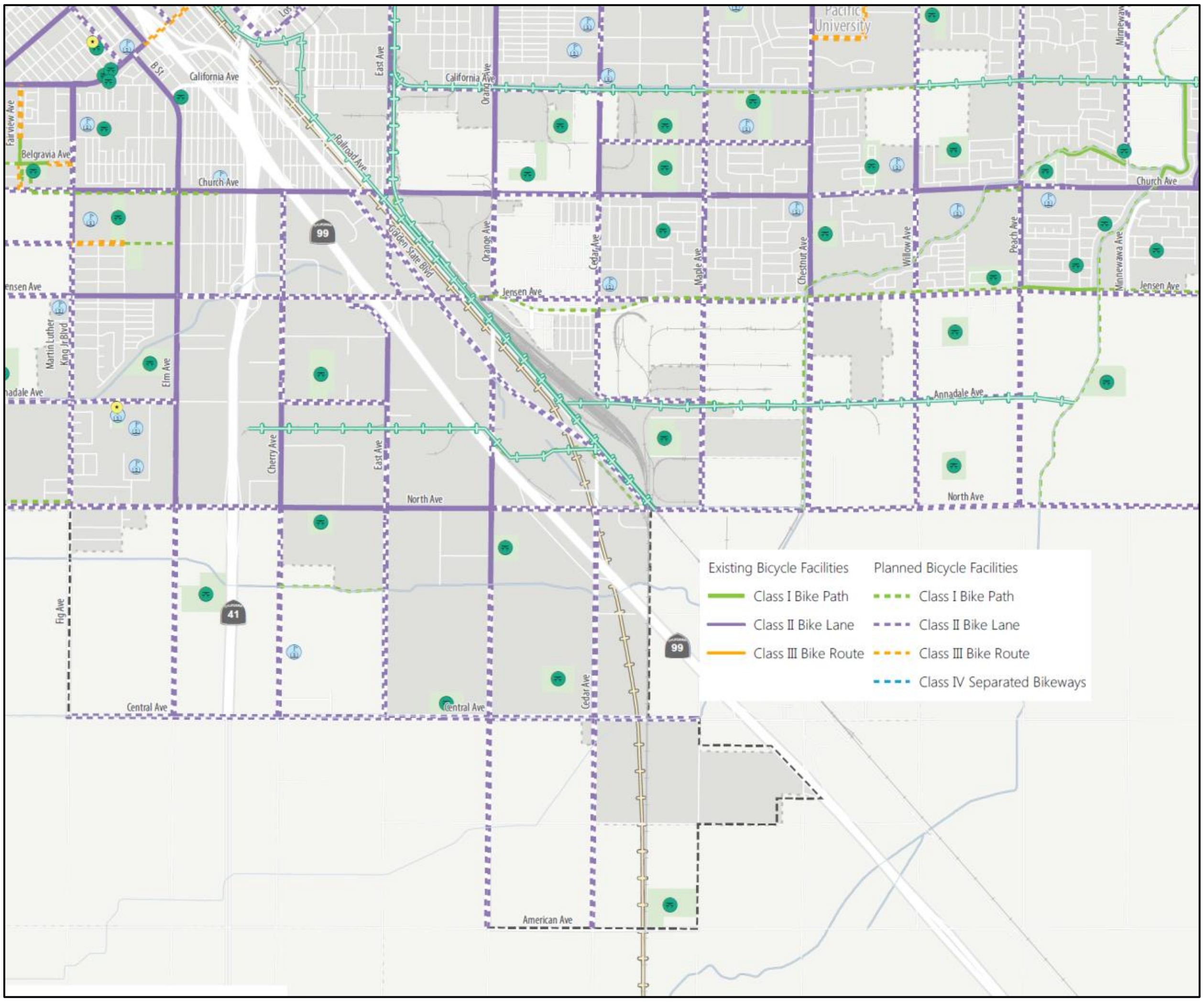
3.3 Existing Bicycle Facilities

The *2016 City of Fresno Active Transportation Plan* outlines policies and objectives to improve the current active transportation system that includes walking and biking. The various bicycle facilities throughout the county are described below.

- **Class I (Bike Paths)**: Class I bike paths, often referred to as shared-use paths, are completely separate right-of-way designed for the exclusive use of cyclists and pedestrians, with minimal crossings for motorists. These paths are often located along creeks, canals, and rail lines. There are no existing Class I facilities in the SCSP area.
- **Class II (Bike Lanes)**: Class II bike lanes are on-street facilities that use special lane markings, pavement legends, and signage. Bike lanes provide designated street space for bicyclists, typically adjacent to outer vehicle travel lanes. Buffered bike lanes increase separation through painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (e.g., driveways or intersections). Class II facilities currently exist on portions of Church Avenue, Jensen Avenue, Elm Avenue, Cherry Avenue, East Avenue, and North Ave. There are also many planned facilities in the Fresno Active Transportation Plan within the SCSP project area.
- **Class III (Bike Routes)**: Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, shared arrow (sharrow) striping, and/or traffic calming treatments and provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes or along low-volume, low-speed streets. Bicycle boulevards further enhance bike routes by encouraging slower speeds and discouraging non-local vehicle traffic using traffic diverters, chicanes, traffic circles, and speed tables. There are no existing Class III facilities in the project area, but there are many planned in the SCSP for the project area.
- **Class (IV Bikeway)**: Bikeways, also known as cycle tracks or separated bikeways, are set aside for the exclusive use of bicycles and physically separated from vehicle traffic. Separated bikeways were adopted by Caltrans in 2015. Separation may include grade separation, flexible posts, physical barriers, or on-street parking. There are no existing or planned Class IV bikeways in the project area.

Figure 5 illustrates existing and planned bicycle facilities within the SCSP area.

Figure 5: Existing and Planned Bicycle Facilities

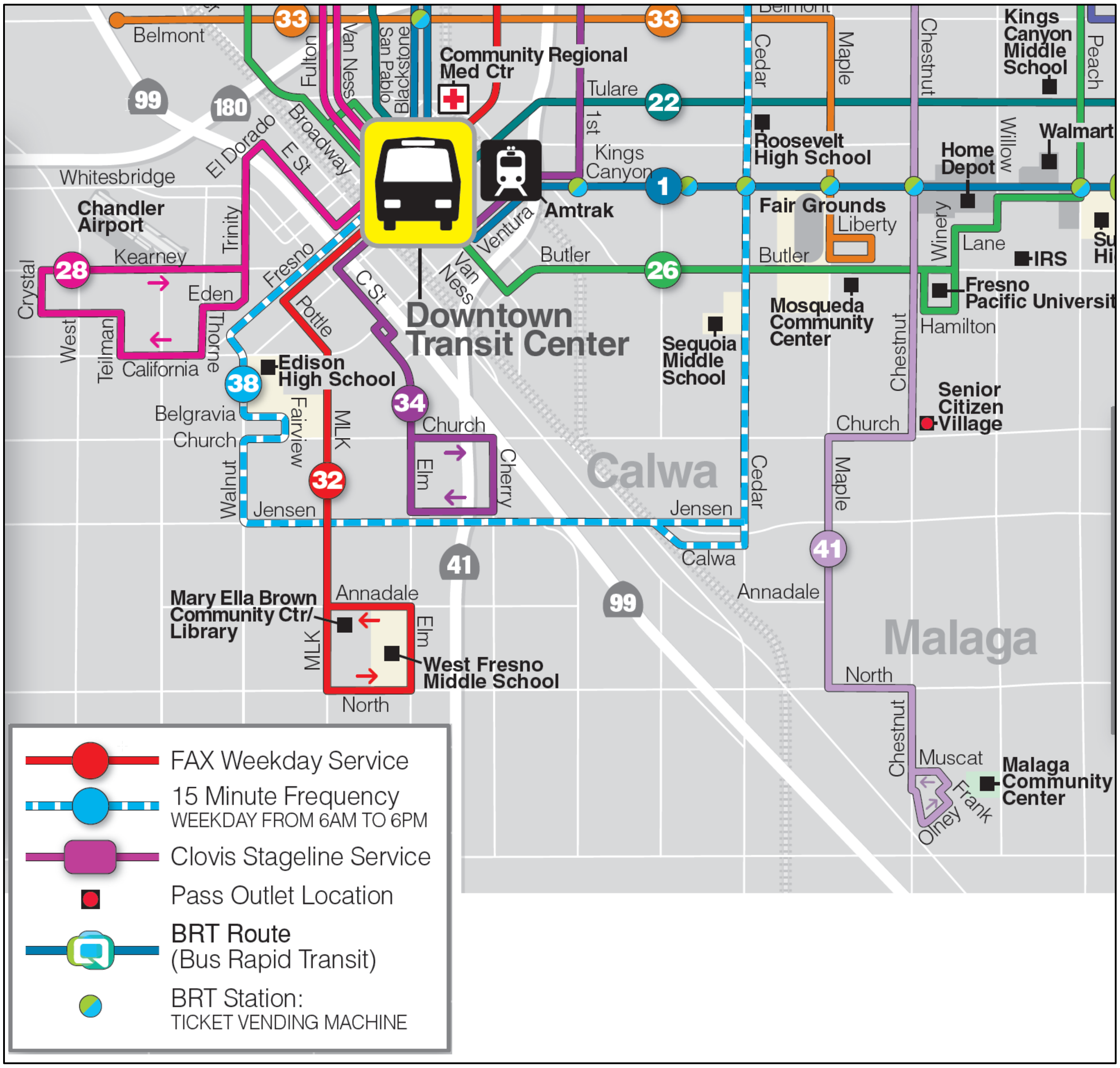


Source: 2017 Fresno Active Transportation Plan

3.4 Existing Transit Facilities

Transit service within the SCSP area is provided by the Fresno Area Express (FAX). Currently, there are three bus routes provided by Fresno Area Express (FAX) that are located immediately adjacent to and within the Plan Area. These bus routes are Route 32 (North Avenue), 38 (Jensen Avenue), and 41 (Maple and North Avenues). FAX also provides a door-to-door service called FAX Handy Ride. FAX also has funding secured for the operation of electric buses in the area for the 2023 service year.

Figure 6: SCSP Area Fresno Area Express (FAX) Map



Source: Fresno FAX System Map - https://www.fresno.gov/transportation/fax/maps-and-guides/

3.5 Existing Traffic Volumes

Per discussion with City staff, peak hour capacity analyses were conducted at key study intersections and segments. In order to conduct these analyses, existing peak hour traffic volumes were utilized.

3.5.1 Existing Peak Hour Traffic Volumes for Study Intersections

In order to determine the weekday morning (a.m.) and the weekday afternoon (p.m.) turning movement traffic volumes at the study intersections, intersection turning movement counts (TMC) of vehicles, bicycles, and pedestrians were collected at nine of the study intersections on April 25, 2023, during the weekday morning and weekday afternoon peak periods (7:00 – 9:00 a.m. and 4:00 – 6:00 p.m., respectively). For the remaining study intersections, recent traffic counts, ranging from 2019 to 2021, were provided by City staff. Peak hour volumes from these intersections were increased from count conditions to 2023 conditions by applying a growth factor based on the Fresno Council of Governments Activity-Based Travel Demand Model (Fresno COG model). The growth factors were applied on a by-intersection basis by peak hour. Annual growth rates at these intersections varied from 0.52 percent per year to 3.11 percent per year.

The raw turning movement count data are included in the **Appendix.**

The existing lane geometries and traffic control at each study intersection are illustrated in **Figure 7**, and intersection turning movement volumes at each study intersection are illustrated in **Figure 8**.

Figure 7: Study Intersections Lane Geometry and Traffic Control

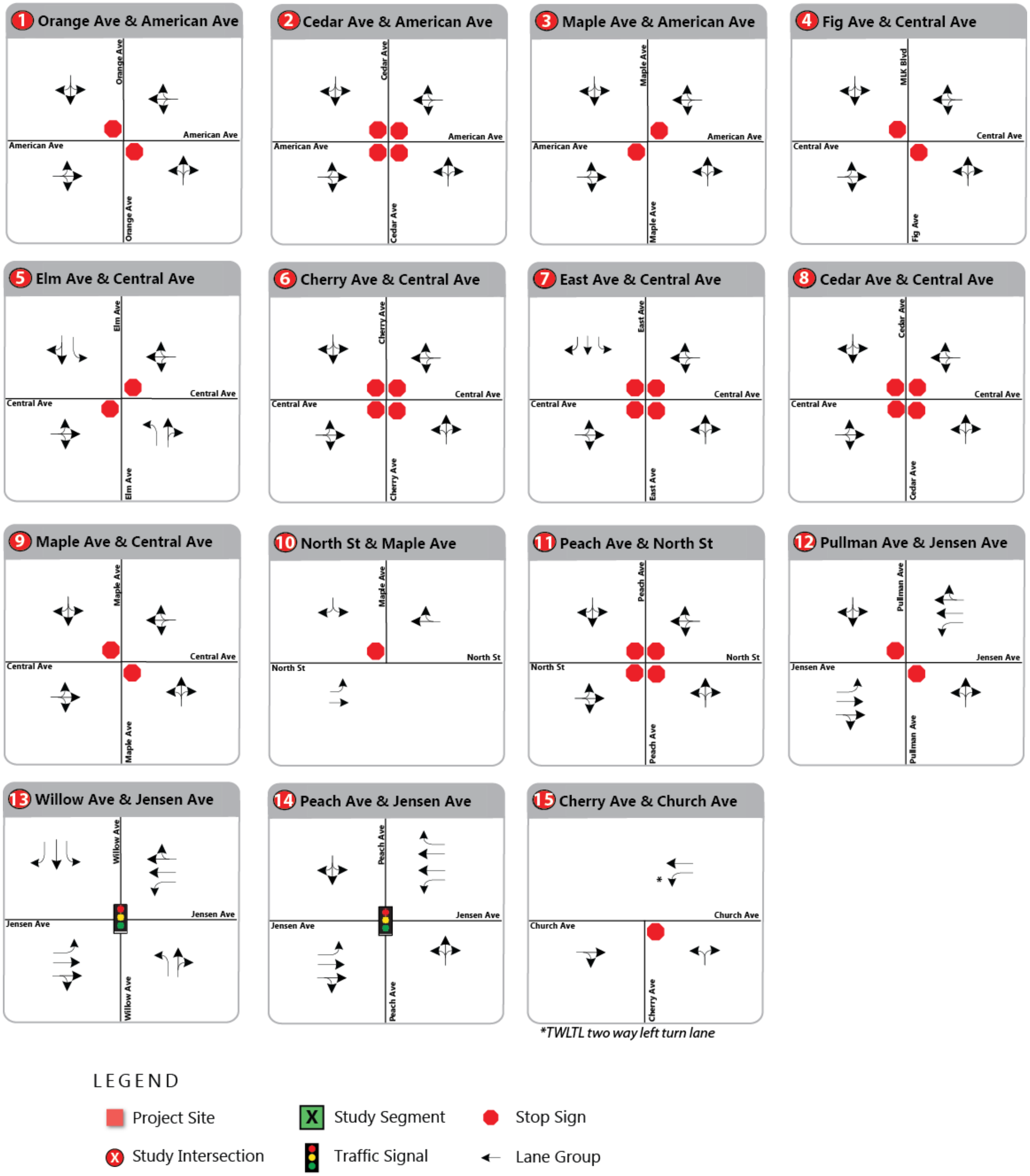
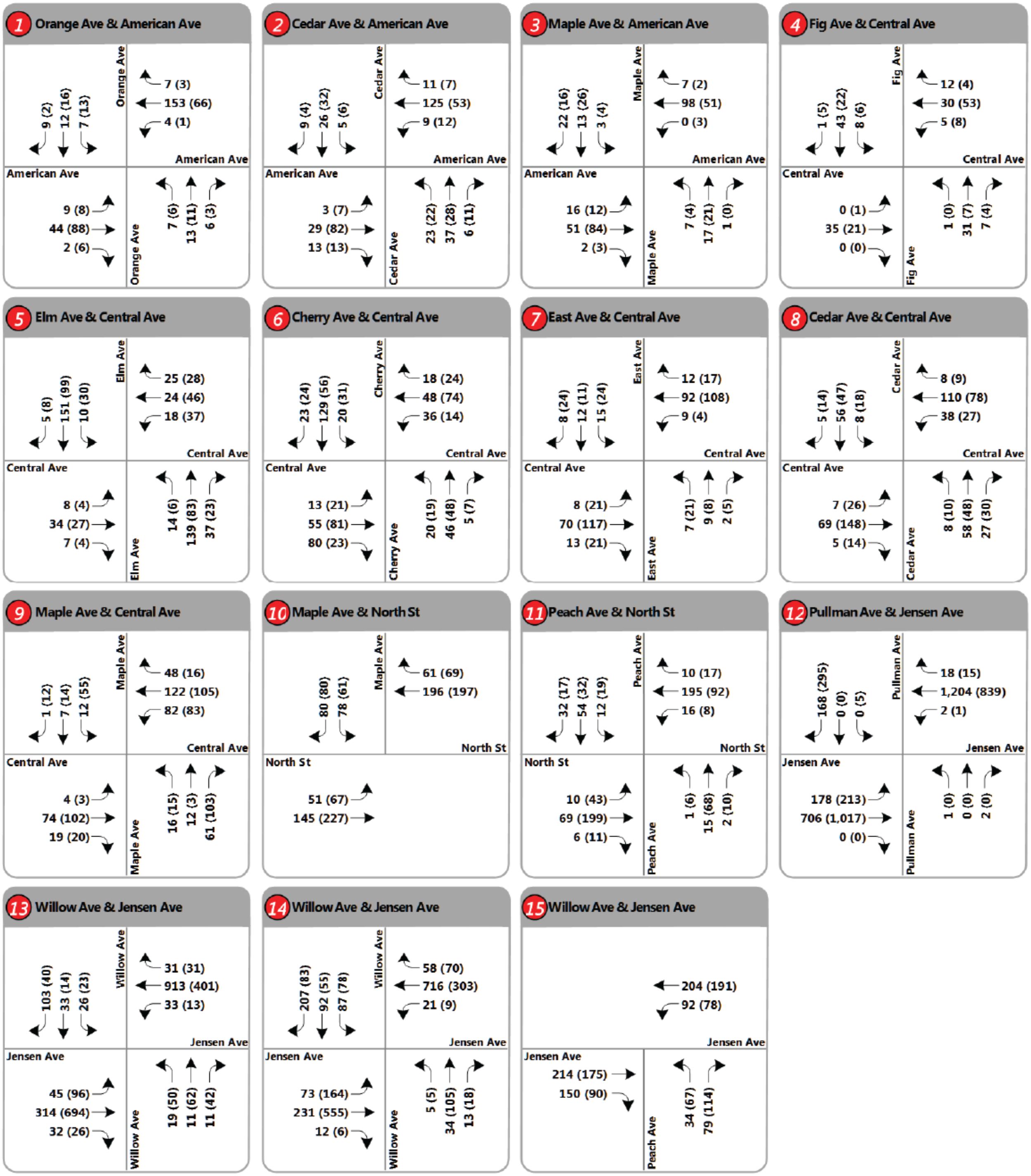


Figure 8: Existing Study Intersections Turning Movement Volumes



3.5.2 Existing Peak Hour Traffic Volumes for Study Segments

In order to determine the a.m. and p.m. as well as daily segment volumes, available of count data from both the City and County of Fresno count databases were utilized. Segment analysis volumes are illustrated in **Table 4**.

Table 4: 2023 Existing Conditions – Study Segment Traffic Volumes

#	Segment Name	a.m. Peak	p.m. Peak	Daily
1	Jensen Avenue Bypass from Cherry Avenue to East Avenue	2,085	2,160	28,039
2	Jensen Avenue Bypass from Sunset Avenue to Cedar Avenue	1,231	1,022	18,566
3	North Avenue from Hayston Avenue to Maple Avenue	450	568	2,495
4	Central Avenue from Cherry Avenue to East Avenue	110	159	3,101
5	American Avenue from Orange Avenue to Cedar Avenue	219	172	1,782
6	Cherry Avenue from Church Avenue to Byrd Avenue	242	108	5,372
7	Cherry Avenue from Central Avenue to North Avenue	124	144	2,935
8	East Avenue from Central Avenue to North Avenue	58	94	608
9	Cedar Avenue from Central Avenue to Parkway Drive	99	126	1,992
10	Maple Avenue from North Avenue to Annadale Avenue	112	137	996
11	Willow Avenue from Jensen Parkway to Annadale Avenue	164	207	3,277
12	Elm Avenue from Central Avenue to North Avenue	266	527	4,422

3.6 Existing Level of Service Analyses

3.6.1 Existing Intersections Analysis

Existing intersection lane configurations and turning movement volumes were used to calculate the level of service for the study intersections during each peak hour. Existing signal timings were obtained from the City. The results of the level of service analysis for Existing Conditions are summarized in **Table 5**. Intersections that operated at unacceptable LOS are shown in red. Detailed calculation sheets for the Existing Conditions scenario are contained in **Appendix.**

Under Existing Conditions, all but one of the 15 study intersections would operate at acceptable LOS D or better. The intersection of S. Pullman Avenue & E. Jensen Avenue (Intersection 12) would operate at LOS F during both peak hours. This represents an existing inconsistency with current standards.

Table 5: Existing Conditions – Intersection Level of Service Analysis Results

#	Intersection	Control Type[1]	Peak Hour[2]	Delay[2]	Delay-Based Level of Service[4]
1	S. Orange Ave. & E. American Ave.	TWSC	a.m. p.m.	10.5 10.3	B B
2	S. Cedar Ave. & E. American Ave.	AWSC	a.m. p.m.	7.9 7.9	A A
3	S. Maple Ave. & E. American Ave.	TWSC	a.m. p.m.	10.1 10.2	B B
4	S. Fig Ave. & W. Central Ave.	TWSC	a.m. p.m.	10.2 9.8	B A
5	S. Elm Ave. & W. Central Ave.	TWSC	a.m. p.m.	13.3 11.7	B B
6	S. Cherry Ave. & W. Central Ave.	AWSC	a.m. p.m.	8.7 8.3	A A
7	S. East Ave. & W. Central Ave.	AWSC	a.m. p.m.	8.2 8.8	A A
8	S. Cedar Ave. & W. Central Ave.	AWSC	a.m. p.m.	8.3 8.7	A A
9	S. Maple Ave. & W. Central Ave.	TWSC	a.m. p.m.	13.9 15.8	B C
10	S. Maple Ave. & E. North Ave.	TWSC	a.m. p.m.	16.4 16.6	C C
11	S. Peach Ave. & E. North Ave.	AWSC	a.m. p.m.	9.1 9.1	A A
12	S. Pullman Ave. & E. Jensen Ave.	TWSC	a.m. p.m.	80.4 50.3	F F
13	S. Willow Ave. & E. Jensen Ave.	SIGNAL	a.m. p.m.	20.4 19.0	C B
14	S. Peach Ave. & E. Jensen Ave.	SIGNAL	a.m. p.m.	25.2 15.9	C B
15	S. Cherry Ave. & E. Church Ave.	TWSC	a.m. p.m.	12.1 12.7	B B

Notes:
1. Signal = Signalized; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control
2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour
3. Delay measured in seconds per vehicle. For signalized and all-way stop-controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service
Red indicates unacceptable LOS.

3.6.2 Existing Segment Analysis

The study segment level of analysis for the existing conditions is presented in **Table 6**. All of the study segments for the year 2040 no project conditions are forecasted to perform at LOS C or better.

Table 6: Existing Conditions – Segment Level of Service Analysis Results

#	Segment Name	a.m. Peak	p.m. Peak
1	Jensen Avenue Bypass from Cherry Avenue to East Avenue	C	C
2	Jensen Avenue Bypass from Sunset Avenue to Cedar Avenue	C	C
3	North Avenue from Hayston Avenue to Maple Avenue	B	B
4	Central Avenue from Cherry Avenue to East Avenue	A	A
5	American Avenue from Orange Avenue to Cedar Avenue	A	A
6	Cherry Avenue from Church Avenue to Byrd Avenue	A	A
7	Cherry Avenue from Central Avenue to North Avenue	A	A
8	East Avenue from Central Avenue to North Avenue	A	A
9	Cedar Avenue from Central Avenue to Parkway Drive	A	A
10	Maple Avenue from North Avenue to Annadale Avenue	A	A
11	Willow Avenue from Jensen Parkway to Annadale Avenue	A	A
12	Elm Avenue from Central Avenue to North Avenue	A	B

3.7 Existing Vehicle Miles Travelled

For existing conditions VMT, the SCSP project area was overlaid on the Fresno ABM loaded vehicle assignment network and the total VMT for the SCSP project area was calculated by multiplying daily volumes by distance traveled. In addition, VMT per service population (the sum of population and employees) was calculated.

Table 4 summarizes the existing VMT from the Fresno ABM for the SCSP project area.

Table 7: Existing Conditions – VMT Analysis Results

	2015 Base Year Model
Existing VMT	841,653
Population	2,515
Employment	16,240
Existing VMT per Service Population	44.88

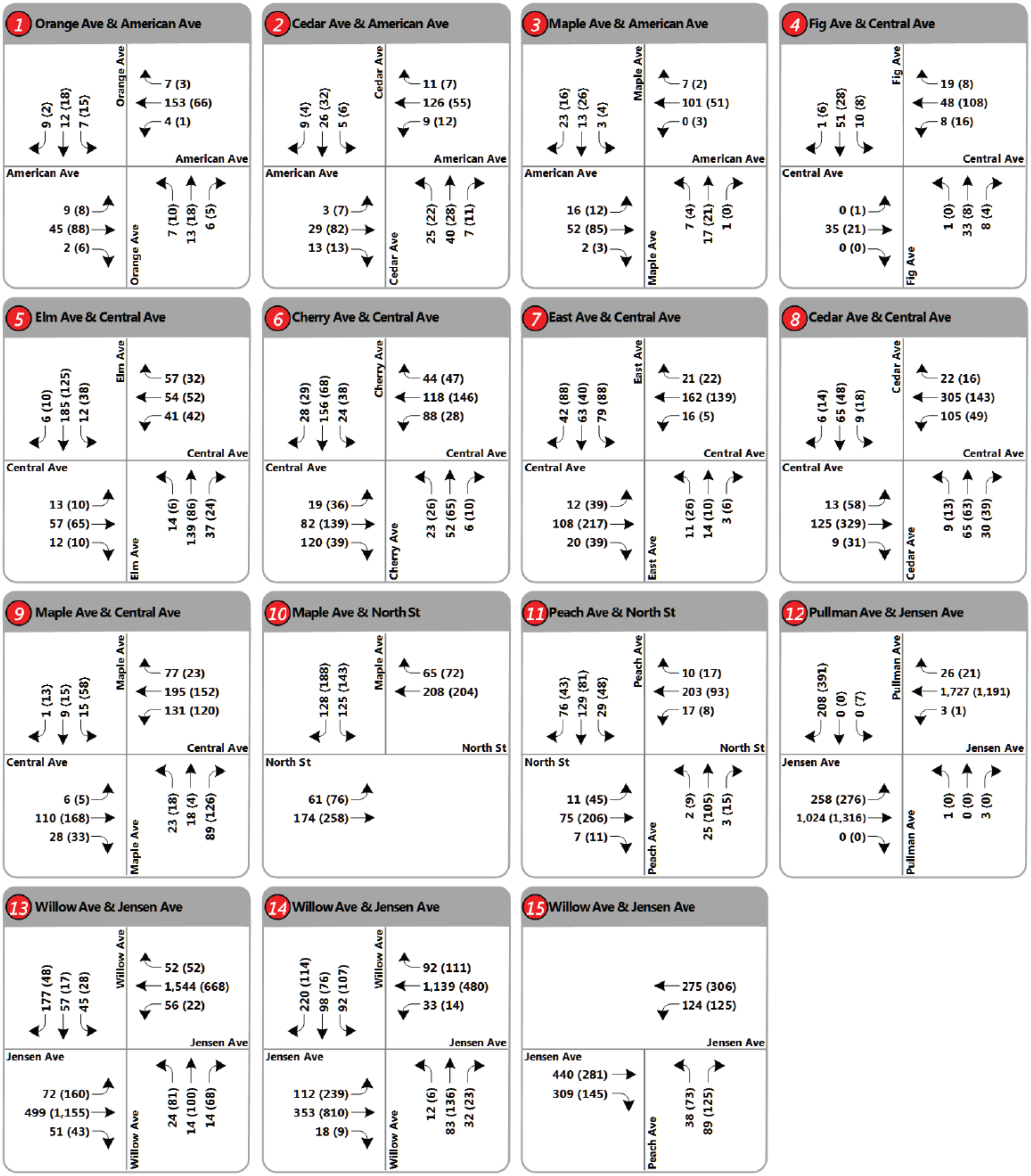
4.0 2040 BASELINE (NO PROJECT) CONDITIONS

This section presents the results of the level of service and VMT calculations under 2040 Baseline Conditions (i.e., as per the current General Plan and without the proposed changes to the planning area with the SCSP). VMT and level of service analyses at the study intersections and segments were evaluated under 2040 no project conditions to establish a baseline to assess potential impacts due to the changes in density with the incorporation of the SCSP.

4.0.1 Baseline Peak Hour Traffic Volumes for Study Intersections

To grow 2023 conditions to 2040 Baseline Conditions, the Fresno ABM was used to derive annual growth factors by intersection approach. These growth factors were applied to 2023 volumes to project 2040 Baseline conditions. The 2040 Baseline intersection traffic volumes are illustrated in **Figure 9**. Note, other parameters such as peak hour factors, and pedestrian and bicycle volumes were kept consistent with existing conditions due to the rural nature of the study area.

Figure 9: 2040 Baseline No Project Turning Movement Volumes



4.0.2 Baseline Peak Hour Traffic Volumes for Study Segments

Study segment volumes were forecasted using the Fresno ABM delta method, which takes growth rates from the model and applies them on top of existing count data. **Table 8** shows the forecasted study segment volumes for the 2040 Baseline Conditions.

Table 8: 2040 Baseline Conditions – Study Segment Traffic Volumes

#	Segment Name	a.m. Peak	p.m. Peak	Daily
1	Jensen Avenue Bypass from Cherry Avenue to East Avenue	2,901	2,861	38,229
2	Jensen Avenue Bypass from Sunset Avenue to Cedar Avenue	1,821	1,444	27,337
3	North Avenue from Hayston Avenue to Maple Avenue	463	613	2,495
4	Central Avenue from Cherry Avenue to East Avenue	244	347	5,313
5	American Avenue from Orange Avenue to Cedar Avenue	219	172	1,782
6	Cherry Avenue from Church Avenue to Byrd Avenue	284	133	5,771
7	Cherry Avenue from Central Avenue to North Avenue	130	159	3,157
8	East Avenue from Central Avenue to North Avenue	369	560	2,578
9	Cedar Avenue from Central Avenue to Parkway Drive	111	130	2,497
10	Maple Avenue from North Avenue to Annadale Avenue	177	252	1,386
11	Willow Avenue from Jensen Parkway to Annadale Avenue	302	354	5,386
12	Elm Avenue from Central Avenue to North Avenue	314	527	4,422

4.1 Baseline Level of Service Analysis

4.1.1 Baseline Intersections Analysis

The results of the level of service analysis for Baseline Conditions are summarized in **Table 9**. Intersections that operated at unacceptable LOS are shown in red. Detailed calculation sheets for the Baseline Conditions scenario are contained in the **Appendix.**

Under Baseline Conditions, all but one of the 15 study intersections would operate at acceptable LOS D or better. The intersection of S. Pullman Avenue & E. Jensen Avenue (Intersection 12) would continue to operate at LOS F during both peak hours. This represents an existing inconsistency with current standards.

Table 9: Baseline Conditions – Intersection Level of Service Analysis Results

#	Intersection	Control Type[1]	Peak Hour[2]	Delay[2]	Delay-Based Level of Service[4]
1	S. Orange Ave. & E. American Ave.	TWSC	a.m.	10.5	B
			p.m.	10.4	B
2	S. Cedar Ave. & E. American Ave.	AWSC	a.m.	8.0	A
			p.m.	7.9	A
3	S. Maple Ave. & E. American Ave.	TWSC	a.m.	10.1	B
			p.m.	10.2	B
4	S. Fig Ave. & W. Central Ave.	TWSC	a.m.	10.7	B
			p.m.	10.6	B
5	S. Elm Ave. & W. Central Ave.	TWSC	a.m.	16.3	C
			p.m.	12.9	B
6	S. Cherry Ave. & W. Central Ave.	AWSC	a.m.	10.7	B
			p.m.	9.9	A
7	S. East Ave. & W. Central Ave.	AWSC	a.m.	9.7	A
			p.m.	11.6	B
8	S. Cedar Ave. & W. Central Ave.	AWSC	a.m.	12.7	B
			p.m.	12.9	B
9	S. Maple Ave. & W. Central Ave.	TWSC	a.m.	21.2	C
			p.m.	25.4	D
10	S. Maple Ave. & E. North Ave.	TWSC	a.m.	21.9	C
			p.m.	32.3	D
11	S. Peach Ave. & E. North Ave.	AWSC	a.m.	10.7	B
			p.m.	10.2	B
12	S. Pullman Ave. & E. Jensen Ave.	TWSC	a.m.	74.8	F
			p.m.	1028.7	F
13	S. Willow Ave. & E. Jensen Ave.	SIGNAL	a.m.	28.0	C
			p.m.	20.1	C
14	S. Peach Ave. & E. Jensen Ave.	SIGNAL	a.m.	37.4	D
			p.m.	19.6	B
15	S. Cherry Ave. & E. Church Ave.	TWSC	a.m.	18.5	C
			p.m.	17.2	C

Notes:
1. Signal = Signalized; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control
2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour
3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service
Red indicates unacceptable LOS.

4.1.1 Baseline Segment Analysis

The study segment level of analysis for the forecasted volumes is presented in **Table 6.** All of the study segments for the year 2040 Baseline Conditions are forecasted to perform at LOS C or better.

Table 10: Baseline Conditions – Segment Level of Service Analysis Results

#	Segment Name	a.m. Peak	p.m. Peak
1	Jensen Parkway from Cherry Avenue to East Avenue	C	C
2	Jensen Parkway from Sunset Avenue to Cedar Avenue	C	C
3	North Avenue from Hayston Avenue to Maple Avenue	B	B
4	Central Avenue from Cherry Avenue to East Avenue	A	B
5	American Avenue from Orange Avenue to Cedar Avenue	A	A
6	Cherry Avenue from Church Avenue to Byrd Avenue	A	A
7	Cherry Avenue from Central Avenue to North Avenue	A	A
8	East Avenue from Central Avenue to North Avenue	B	C
9	Cedar Avenue from Central Avenue to Parkway Drive	A	A
10	Maple Avenue from North Avenue to Annadale Avenue	A	A
11	Willow Avenue from Jensen Parkway to Annadale Avenue	A	B
12	Elm Avenue from Central Avenue to North Avenue	A	B

4.2 Baseline Conditions Vehicle Miles Traveled

For Baseline Conditions VMT, the SCSP project area was overlaid on top of the Fresno ABM loaded vehicle assignment network and the total VMT of the SCSP project area was calculated by multiplying daily volumes by distance traveled. In addition, VMT per service population (which is the sum of population and employees) was calculated.

Table 11 summarizes the 2035 baseline no project VMT from the Fresno ABM for the SCSP project area. Under Baseline Conditions, VMT per service population increases slightly when compared to Existing Conditions due to increased employment in the area.

Table 11: Baseline Conditions – VMT Analysis Results

	2035 Forecast Year Model (No Project)
General Plan VMT	1,079,983
Population	2,461
Employment	20,796
General Plan VMT per Service Population	46.44

5.0 2040 FUTURE (WITH PROJECT) CONDITIONS

This section presents the results of the level of service and VMT calculations under 2040 with Project Conditions (i.e., with the proposed changes to the planning area with the SCSP). VMT and level of service analyses at the study intersections and segments were evaluated under 2040 with project conditions to assess potential impacts due to the changes in density with the incorporation of the SCSP.

5.1 SCSP Project Trip Generation and Future Traffic Volumes

The SCSP includes approximately 5,000 acres of land, south and southeast of Downtown Fresno. The area consists of a multitude of uses, including residential, places of worship, institutional, public, and industrial. In total, the SCSP would account for 91 new housing units planned for 300 residents and approximately 14,300 employees.

In order to estimate trips generated by the proposed development for the weekday morning (a.m.) and weekday afternoon (p.m.) peak periods as well as for weekday daily trips, TJKM utilized the published trip generation rates from the Institute of Transportation Engineers' (ITE) Trip Generation Manual (TGM), 11th Edition. **Table 12** summarizes the project's trip generation. Note that the table below does not take into account reductions due to pass-bys or internal capture. Internal captures were accounted for through the use of the Fresno ABM to assign trips inside and outside the planning area.

Table 12: SCSP Trip Generation

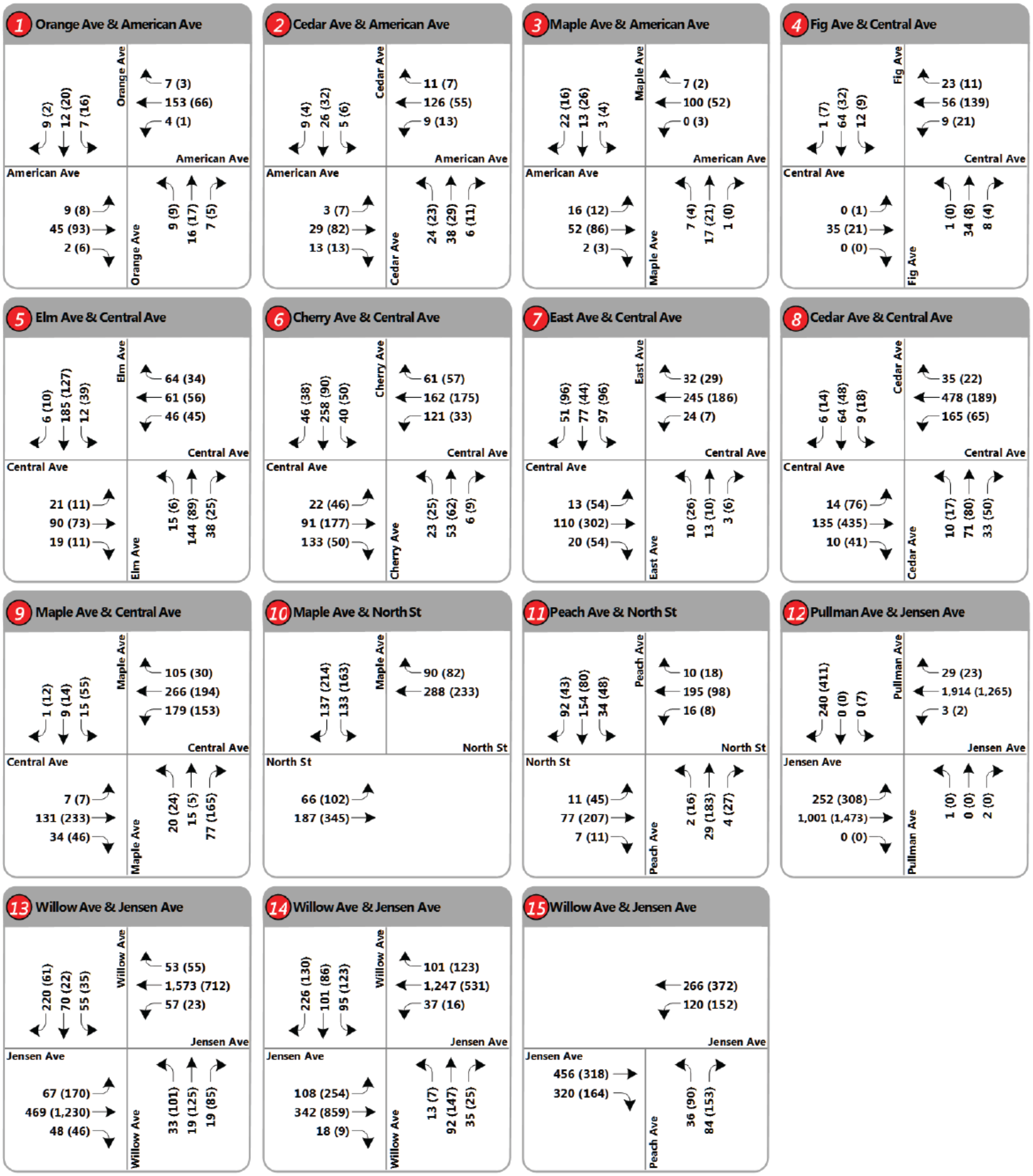
Land Use (Units)	***Size***		***Daily***		***a.m. Peak***		***p.m. Peak***	
			Rate	***Trips***	***Rate***	***Trips***	***Rate***	***Trips***
Housing (Dwelling Units)	91	Dwelling Units	9.43	858	0.70	64	0.94	86
Restaurants (Employees)	183	Employees	21.26	3,891	2.97	544	1.95	357
Retail / Commercial (Employees)	1,624	Employees	17.42	28,290	0.65	1,056	1.8	2,923
General Light Industrial (Employees)	10,576	Employees	3.10	32,786	0.53	5,605	0.49	5,182
Office (Employees)	1,927	Employees	3.33	6,417	0.49	944	0.45	867
Total Trips (Without Reductions)				**72,241**		**8,212**		**9,415**

In total, the SCSP project is expected to generate 72,241 total daily trips, 8,212 AM peak hour trips and 9,415 PM peak hour trips from 91 total dwelling units and 14,310 total employees.

5.1.1 Future with Project Peak Hour Traffic Volumes for Study Intersections

To grow 2023 conditions to 2040 Future (with Project) Conditions, the Fresno ABM (in combination with changes to the model to include the SCSP) was used to derive annual growth factors by intersection approach. These growth factors were applied to 2023 volumes to project 2040 Future conditions. The 2040 Future intersection traffic volumes are illustrated in **Figure 10.** Note, other parameters such as peak hour factors, and pedestrian and bicycle volumes were kept consistent with existing conditions due to the rural nature of the study area.

Figure 10: 2040 With Project Study Intersection Turning Movement Volumes



5.1.2 Future with Project Peak Hour Traffic Volumes for Study Segments

Study segment volumes were forecasted using the Fresno ABM delta method, which takes growth rates from the model (in combination with changes to the model to include the SCSP) and applies them on top of existing count data. **Table 13** shows the forecasted study segment volumes for the 2040 Future (With Project) Conditions.

Table 13: 2040 With Project Future Conditions – Study Segment Traffic Volumes

#	Segment Name	a.m. Peak	p.m.Peak	Daily
1	Jensen Parkway from Cherry Avenue to East Avenue	3,238	3,149	43,140
2	Jensen Parkway from Sunset Avenue to Cedar Avenue	1,950	1,574	29,081
3	North Avenue from Hayston Avenue to Maple Avenue	623	769	3,037
4	Central Avenue from Cherry Avenue to East Avenue	295	432	6,660
5	American Avenue from Orange Avenue to Cedar Avenue	219	172	1,782
6	Cherry Avenue from Church Avenue to Byrd Avenue	289	157	6,365
7	Cherry Avenue from Central Avenue to North Avenue	199	196	3,981
8	East Avenue from Central Avenue to North Avenue	411	619	3,167
9	Cedar Avenue from Central Avenue to Parkway Drive	115	159	2,975
10	Maple Avenue from North Avenue to Annadale Avenue	185	300	1,641
11	Willow Avenue from Jensen Parkway to Annadale Avenue	379	448	7,492
12	Elm Avenue from Central Avenue to North Avenue	361	677	4,968

5.2 Future Level of Service Analysis

5.2.1 Future with Project Intersections Analysis

The results of the level of service analysis for Future Conditions are summarized in **Table 14**. The results for 2040 Baseline Conditions are included for comparison purposes. Intersections that operated at unacceptable thresholds are shown in red, and intersections that degraded between "No Project" conditions to "Plus Project" conditions per the applicable thresholds are likewise shown in red. Detailed calculation sheets for the Future Conditions scenario are contained in the **Appendix.**

Under Future Conditions, all but four of the 15 study intersections would operate at acceptable LOS D or better. The following intersections would operate at unacceptable LOS E or F:

- Intersection 8: S. Cedar Avenue & W. Central Avenue would operate at LOS E in the a.m. peak hour, a *significant inconsistency*.
- Intersection 9: S. Maple Avenue & W. Central Avenue would operate at LOS F in the p.m. peak hour, a *significant inconsistency*.
- Intersection 10: S. Maple Avenue & E. North Avenue would operate at LOS E in the a.m. peak hour and LOS F in the p.m. peak hour, a *significant inconsistency*.
- Intersection 12: S. Pullman Avenue & E. Jensen Avenue would operate at LOS F during both peak hours, with substantially more delay than experienced under Existing Conditions or General Plan (No Build) Conditions. During the a.m. peak hour, Synchro was unable to calculate the delay, indicating an estimated delay above 2,000 seconds. With Project Conditions, delay would increase substantially over General Plan (No Build) conditions, a *significant inconsistency*.

Table 14: Future Conditions – Intersection Level of Service Analysis Results

#	Intersection Name	Control Type[1]	Peak Hour[2]	General Plan No Build		SCSP With Project		Change in Delay
				Delay[3]	Level of Service[4]	Delay[3]	Level of Service[4]	
1	S. Orange Ave. & E. American Ave.	TWSC	a.m.	10.5	B	10.6	B	0.1
			p.m.	10.4	B	10.4	B	0.0
2	S. Cedar Ave. & E. American Ave.	AWSC	a.m.	8.0	A	7.9	A	-0.1
			p.m.	7.9	A	7.9	A	0.0
3	S. Maple Ave. & E. American Ave.	TWSC	a.m.	10.1	B	10.1	B	0.0
			p.m.	10.2	B	10.2	B	0.0
4	S. Fig Ave. & W. Central Ave.	TWSC	a.m.	10.7	B	11.0	B	0.3
			p.m.	10.6	B	11.1	B	0.5
5	S. Elm Ave. & W. Central Ave.	TWSC	a.m.	16.3	C	18.8	C	2.5
			p.m.	12.9	B	13.4	B	0.5
6	S. Cherry Ave. & W. Central Ave.	AWSC	a.m.	10.7	B	16.3	C	5.6
			p.m.	9.9	A	11.4	B	1.5
7	S. East Ave. & W. Central Ave.	TWSC	a.m.	9.7	A	11.4	B	1.7
			p.m.	11.6	B	16.3	C	4.7
8	S. Cedar Ave. & W. Central Ave.	AWSC	a.m.	12.7	B	40.4	E	27.7
			p.m.	12.9	B	22.9	C	10.0
	Mitigation: add a westbound left turn lane	*AWSC*	a.m.	-	-	*19.7*	*C*	*7.0*
			p.m.	-	-	*24.0*	*C*	*11.1*
9	S. Maple Ave. & W. Central Ave.	TWSC	a.m.	21.2	C	31.9	D	10.7
			p.m.	25.4	D	51.3	F	25.9
	Mitigation: all-way stop control	*AWSC*	a.m.	-	-	*19.8*	*C*	*-1.4*
			p.m.	-	-	*15.4*	*C*	*-10.0*
10	S. Maple Ave. & E. North Ave.	TWSC	a.m.	21.9	C	38.6	E	16.7
			p.m.	32.3	D	102.7	F	70.4
	Mitigation: all-way stop control	*AWSC*	a.m.	-	-	*17.5*	*C*	*-4.4*
			p.m.	-	-	*26.4*	*D*	*-5.9*
11	S. Peach Ave. & E. North Ave.	AWSC	a.m.	10.7	B	11.5	B	0.8
			p.m.	10.2	B	11.2	B	1.0
12	S. Pullman Ave. & E. Jensen Ave.	TWSC	a.m.	74.8	F	ERROR	ERROR	-
			p.m.	1028.7	F	2018.1	F	989.4
	Mitigation: Signalize	*SIGNAL*	a.m.	-	-	*51.4*	*D*	*-23.4*
			p.m.	-	-	*48.5*	*D*	*-980.2*
13	S. Willow Ave. & E. Jensen Ave.	SIGNAL	a.m.	28.0	C	33.8	C	5.8
			p.m.	20.1	C	21.5	C	1.4
14	S. Peach Ave. & E. Jensen Ave.	SIGNAL	a.m.	37.4	D	45.4	D	8.0
			p.m.	19.6	B	22.2	C	2.6
15	S. Cherry Ave. & E. Church Ave.	TWSC	a.m.	18.5	C	18.5	C	0.0
			p.m.	17.2	C	24.4	C	7.2

Notes:

1. Signal = Signalized; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control

2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop-controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop-controlled intersections, the delay represents the worse average control delay for a given approach.

4. LOS = Level of Service

Red indicates unacceptable LOS.

"-" indicates not applicable.

5.2.2 Intersection Mitigation Measures

In order to mitigate the significant inconsistencies noted above, the following mitigations are recommended:

- Intersection 8: construct a westbound left turn lane.
- Intersection 9: convert to all-way stop control.
- Intersection 10: convert to all-way stop control.
- Intersection 12: signalize, with protected left turns on Jensen Avenue.

Intersections 9 and 10 were evaluated for all-way stop control based on the guidelines in the California Manual on Uniform Traffic Control Devices (CA-MUTCD). Peak hour volumes are sufficiently high to suggest that a more robust stop sign warrant analysis should be conducted, reviewing hourly volumes for at least eight hours of the day (projected to Future Conditions) as well as crash history. With all-way stop control, Intersection 9 would operate at LOS C during both peak hours, and Intersection 10 would operate at LOS C in the a.m. peak hour and LOS D in the p.m. peak hour.

The intersection of S. Pullman Avenue & E. Jensen Avenue (Intersection 12) was evaluated for signalization. Cross-traffic volumes are sufficiently high that geometric changes would be insufficient to fully mitigate the identified inconsistency by lowering side street delay. The preliminary evaluation was based on the Four-Hour (Warrant 2) and Peak Hour (Warrant 3) from the CA-MUTCD. A more robust signal warrant study would be required before signalization, reviewing hourly volumes for at least eight hours of the day (projected to Future conditions) as well as crash history. With signalization, operations at this intersection would improve to LOS C in the a.m. peak hour and LOS D in the p.m. peak hour.

With the proposed mitigation measures, the study intersections would operate within jurisdictional standards and would operate comparable to 2040 Baseline Conditions.

5.2.3 Future with Project Segment Analysis

The study segment level of analysis for the forecasted volumes is presented in **Table 15**. The results for 2040 Baseline Conditions are included for comparison purposes. Intersections that operated at unacceptable thresholds are shown in red, and intersections that degraded between “No Project” conditions to “Plus Project” conditions per the applicable thresholds are likewise shown in red.

All of the study segments for the year 2040 with project conditions are forecasted to perform at LOS C or better.

Table 15: Future Conditions – Segment Level of Service Analysis Results

#	Segment Name	General Plan No Build		SCSP With Project	
		AM Peak	PM Peak	AM Peak	PM Peak
1	Jensen Parkway from Cherry Avenue to East Avenue	C	C	C	C
2	Jensen Parkway from Sunset Avenue to Cedar Avenue	C	C	B	C
3	North Avenue from Hayston Avenue to Maple Avenue	B	B	B	C
4	Central Avenue from Cherry Avenue to East Avenue	A	B	A	B
5	American Avenue from Orange Avenue to Cedar Avenue	A	A	A	A
6	Cherry Avenue from Church Avenue to Byrd Avenue	A	A	A	A
7	Cherry Avenue from Central Avenue to North Avenue	A	A	A	A
8	East Avenue from Central Avenue to North Avenue	B	C	B	C
9	Cedar Avenue from Central Avenue to Parkway Drive	A	A	A	A
10	Maple Avenue from North Avenue to Annadale Avenue	A	A	A	A
11	Willow Avenue from Jensen Parkway to Annadale Avenue	A	B	A	B
12	Elm Avenue from Central Avenue to North Avenue	A	B	A	C

5.3 Future Conditions Vehicle Miles Traveled

For 2035 Future with Project Conditions VMT, the SCSP project area was overlaid on the Fresno ABM loaded vehicle assignment network and the total VMT of the SCSP project area was calculated by multiplying daily volumes by distance traveled. In addition, VMT per service population (which is the sum of population and employees) was calculated.

Table 16 summarizes the future conditions with project VMT from the Fresno ABM for the SCSP project area. The results for existing baseline conditions are included for comparison purposes.

As illustrated, VMT per service population decreases when compared to the Existing Conditions and Baseline Conditions due to increased residential and employment densities that facilitate internal interaction within the SCSP project area.

Table 16: Future Conditions – VMT Analysis Results

	Existing Baseline Scenario	SCSP Scenario	Delta
SCSP VMT	841,653	1,130,444	+288,791
Population	2,515	2,740	+225
Employment	16,240	35,108	+18,868
SCSP VMT per Service Population	44.88	29.87	-15.01

Appendix A – Existing Turning Movement Counts

Prepared by National Data & Surveying Services

S Orange Ave & E American Ave

Peak Hour Turning Movement Count

ID: 23-090047-001
City: Fresno

Day: Tuesday
Date: 4/25/2023

PEAK HOURS		COUNT PERIODS
07:45 AM - 08:45 AM	AM	7:00 AM - 09:00 AM
NONE	NOON	NONE
04:00 PM - 05:00 PM	PM	4:00 PM - 06:00 PM

S Orange Ave

SOUTHBOUND

	↲	↓	↳	↶	⇧
AM	9	12	7	0	29
NOON	0	0	0	0	0
PM	2	16	13	0	22
	0	1	0	0	

E American Ave

EASTBOUND

	AM	NOON	PM	
⇦	169	0	74	
↶	0	0	0	0
↰	9	0	8	0
→	44	0	88	1
↴	2	0	6	0

E American Ave

WESTBOUND

		PM	NOON	AM
0	↰	3	0	7
1	←	66	0	153
0	↙	1	0	4
0	↶	0	0	0
	⇨	104	0	57

S Orange Ave

NORTHBOUND

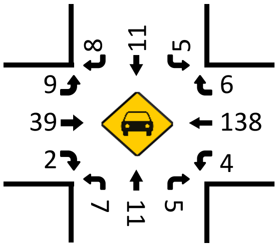
	⇩	↶	↰	↑	↱
		0	0	1	0
PM	23	0	6	11	3
NOON	0	0	0	0	0
AM	18	0	7	13	6

CONTROL

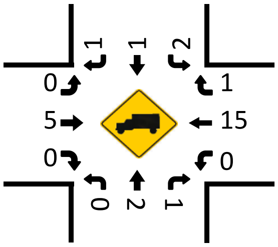
2-Way Stop(NB/SB)

	AM	NOON	PM
TEV	273	0	223
PHF	0.84		0.88

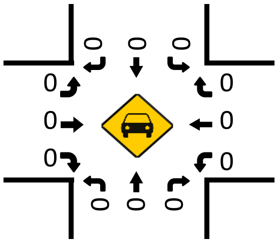
Cars (AM)



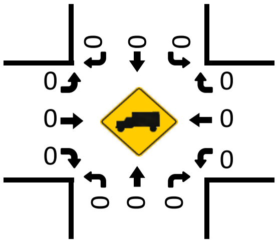
HT (AM)



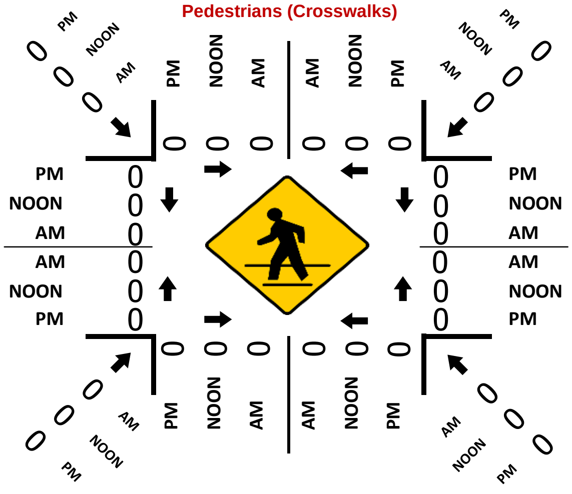
Cars (NOON)



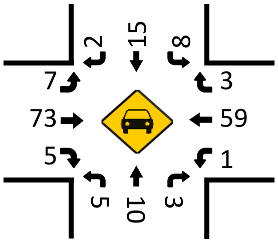
HT (NOON)



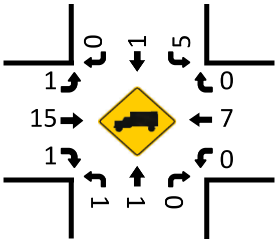
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



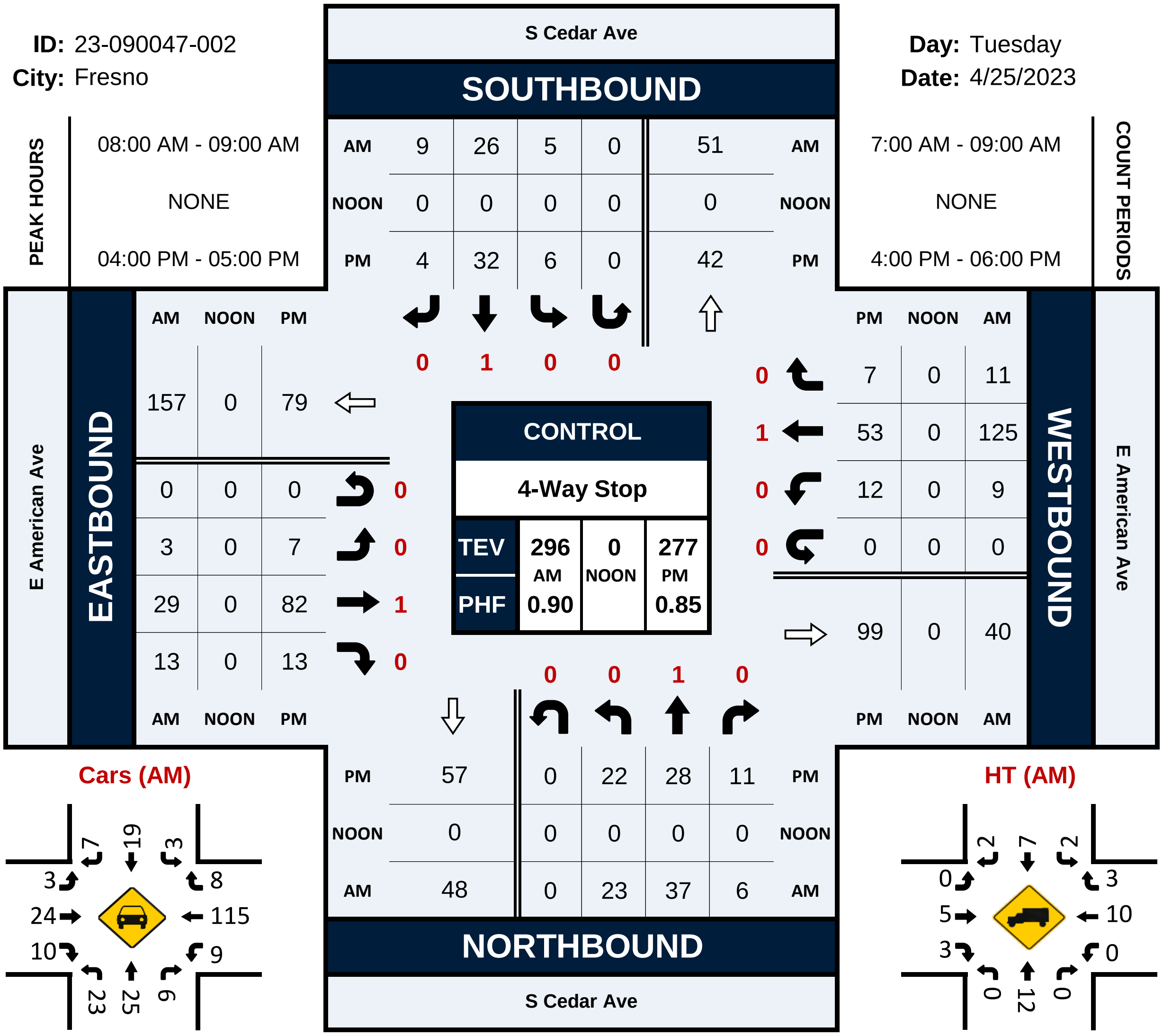
Prepared by National Data & Surveying Services

S Cedar Ave & E American Ave

Peak Hour Turning Movement Count

ID: 23-090047-002
City: Fresno

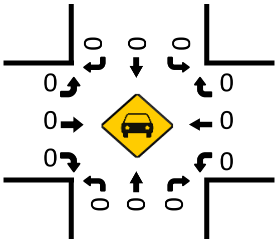
Day: Tuesday
Date: 4/25/2023



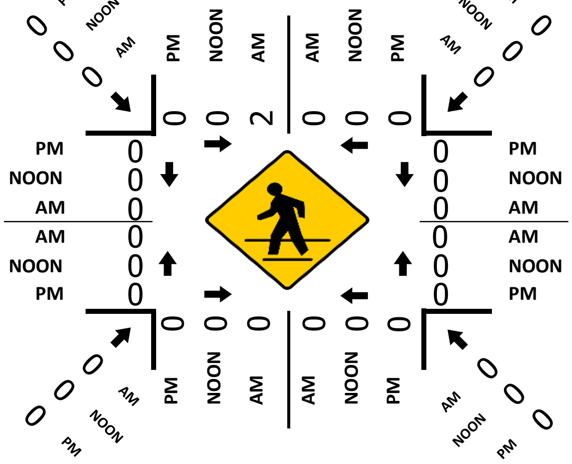
Cars (AM)

HT (AM)

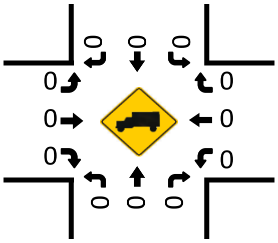
Cars (NOON)



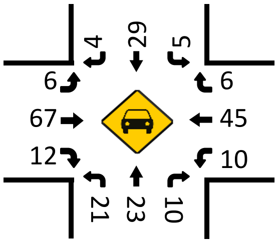
Pedestrians (Crosswalks)



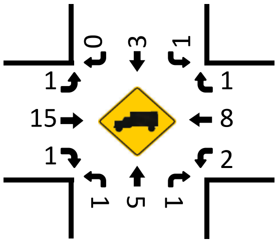
HT (NOON)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

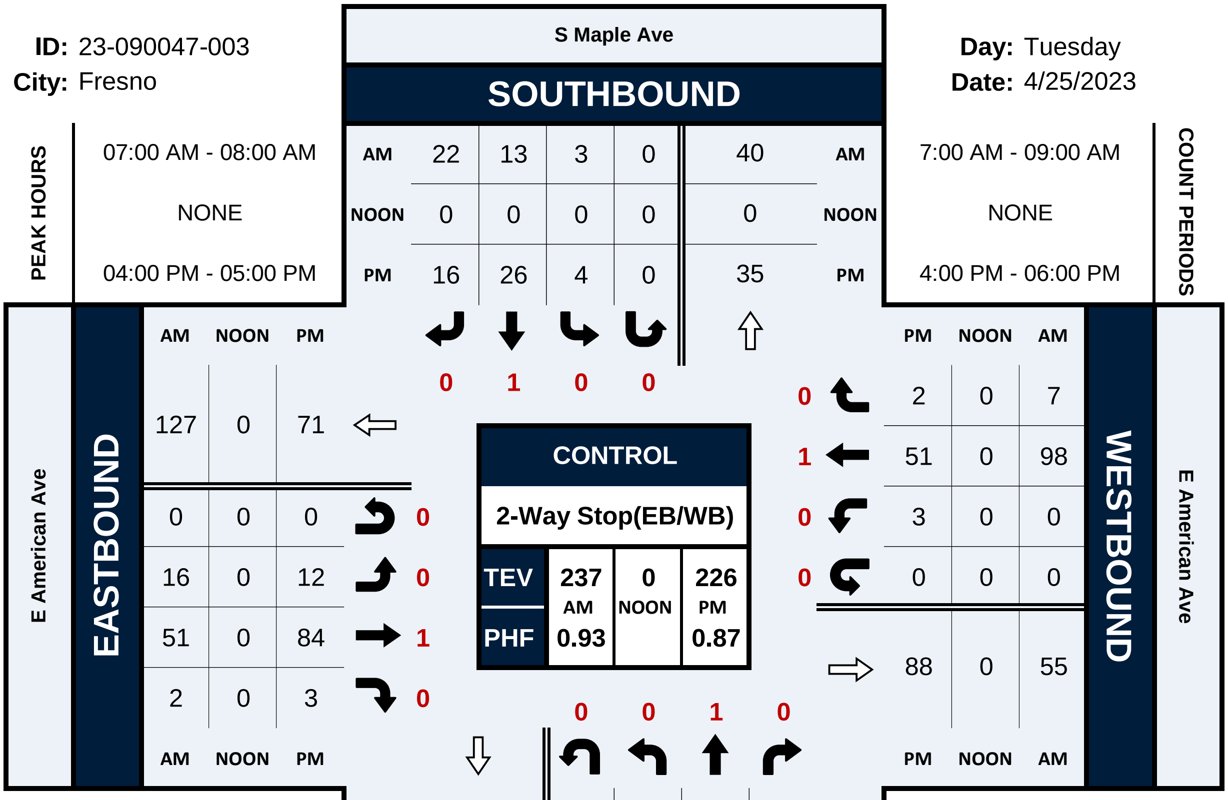
S Maple Ave & E American Ave

Peak Hour Turning Movement Count

ID: 23-090047-003
City: Fresno

Day: Tuesday
Date: 4/25/2023

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	4:00 PM - 06:00 PM



S Maple Ave — SOUTHBOUND

	↲	↓	↳	U	⇧
AM	22	13	3	0	40
NOON	0	0	0	0	0
PM	16	26	4	0	35
	0	1	0	0	

E American Ave — EASTBOUND

	AM	NOON	PM	
⇦	127	0	71	
U	0	0	0	0
↰	16	0	12	0
→	51	0	84	1
↱	2	0	3	0

E American Ave — WESTBOUND

		PM	NOON	AM
↰	0	2	0	7
←	1	51	0	98
↲	0	3	0	0
U	0	0	0	0
⇨		88	0	55

S Maple Ave — NORTHBOUND

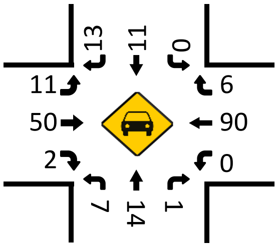
	⇩	U	↰	↑	↱
		0	0	1	0
PM	32	0	4	21	0
NOON	0	0	0	0	0
AM	15	0	7	17	1

CONTROL

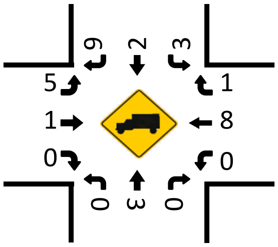
2-Way Stop(EB/WB)

	AM	NOON	PM
TEV	237	0	226
PHF	0.93		0.87

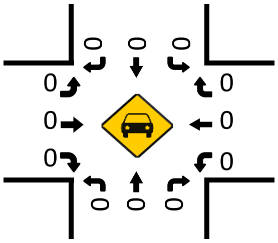
Cars (AM)



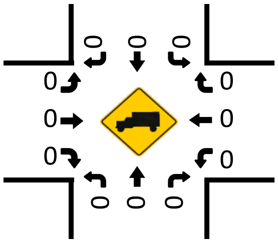
HT (AM)



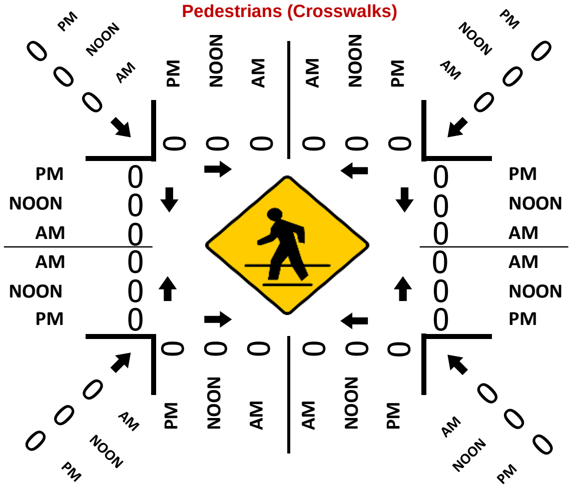
Cars (NOON)



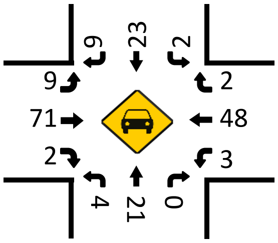
HT (NOON)



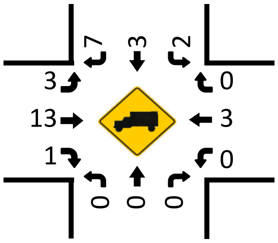
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

S Fig Ave & W Central Ave

Peak Hour Turning Movement Count

ID: 23-090047-004
City: Fresno

Day: Tuesday
Date: 4/25/2023

PEAK HOURS	
AM	07:15 AM - 08:15 AM
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS	
AM	7:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 06:00 PM

S Fig Ave

SOUTHBOUND

AM	1	43	8	0	43	AM
NOON	0	0	0	0	0	NOON
PM	5	22	6	0	12	PM
	↲	↓	↳	↶	⇧	
	0	1	0	0		

W Central Ave

EASTBOUND

AM	NOON	PM		
32	0	58	⇦	
0	0	0	↶	0
0	0	1	↱	0
35	0	21	→	1
0	0	0	↴	0
AM	NOON	PM		

WESTBOUND

W Central Ave

		PM	NOON	AM
0	↰	4	0	12
1	←	53	0	30
0	↲	8	0	5
0	↷	0	0	0
	⇨	31	0	50
		PM	NOON	AM

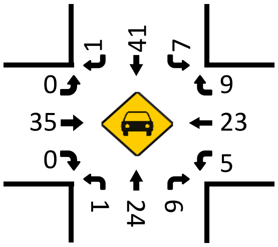
CONTROL			
2-Way Stop(NB/SB)			
TEV	173 AM	0 NOON	131 PM
PHF	0.68		0.76

		0	0	1	0	
	⇩	↷	↰	↑	↱	
PM	30	0	0	7	4	PM
NOON	0	0	0	0	0	NOON
AM	48	0	1	31	7	AM

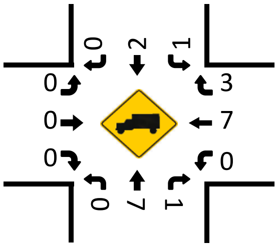
NORTHBOUND

S Fig Ave

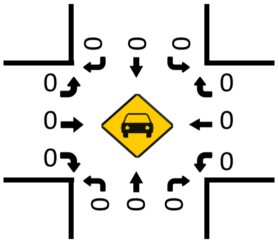
Cars (AM)



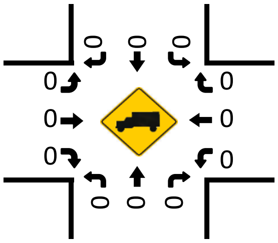
HT (AM)



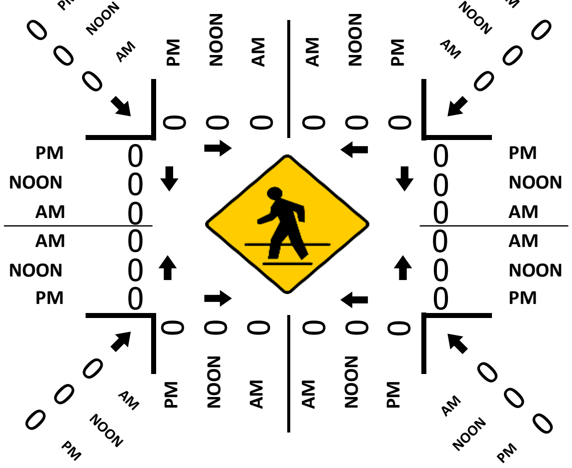
Cars (NOON)



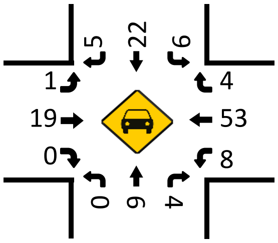
HT (NOON)



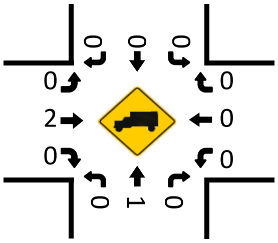
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

S Elm Ave & W Central Ave

Peak Hour Turning Movement Count

ID: 23-090047-005
City: Fresno

Day: Tuesday
Date: 4/25/2023

PEAK HOURS	
AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS	
AM	7:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 06:00 PM

S Elm Ave

SOUTHBOUND

AM	5	151	10	0	172	AM
NOON	0	0	0	0	0	NOON
PM	8	99	30	0	115	PM
	0	1	1	0		

W Central Ave

EASTBOUND

AM	NOON	PM	
43	0	59	
0	0	0	0
8	0	4	0
34	0	27	1
7	0	4	0
AM	NOON	PM	

CONTROL

2-Way Stop(EB/WB)

	AM	NOON	PM
TEV	472	0	395
PHF	0.78		0.91

WESTBOUND

W Central Ave

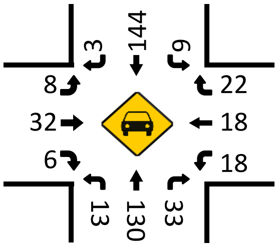
	PM	NOON	AM
0	28	0	25
1	46	0	24
0	37	0	18
0	0	0	0
	80	0	81
	PM	NOON	AM

		0	1	1	0	
PM	141	1	5	83	23	PM
NOON	0	0	0	0	0	NOON
AM	176	0	14	139	37	AM

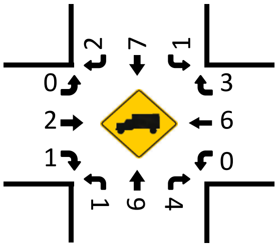
NORTHBOUND

S Elm Ave

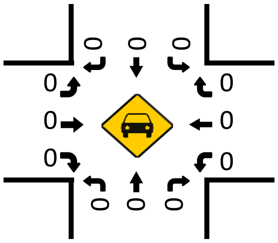
Cars (AM)



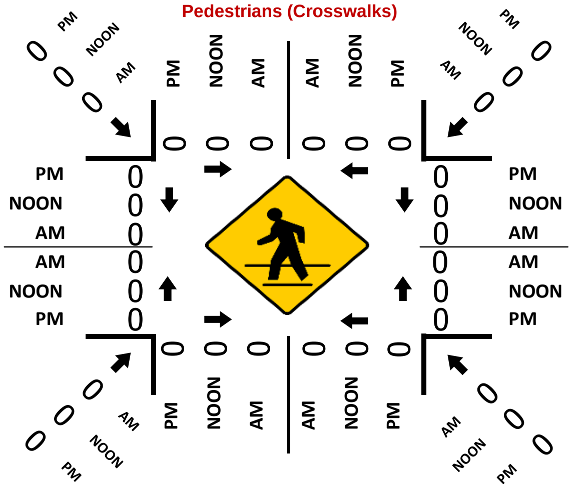
HT (AM)



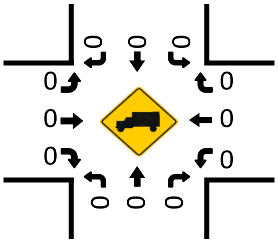
Cars (NOON)



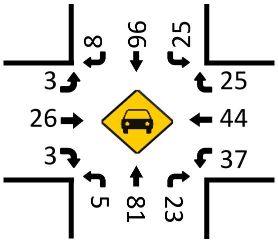
Pedestrians (Crosswalks)



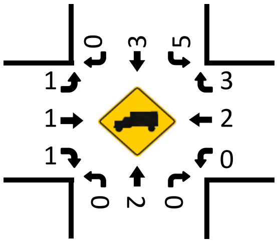
HT (NOON)



Cars (PM)



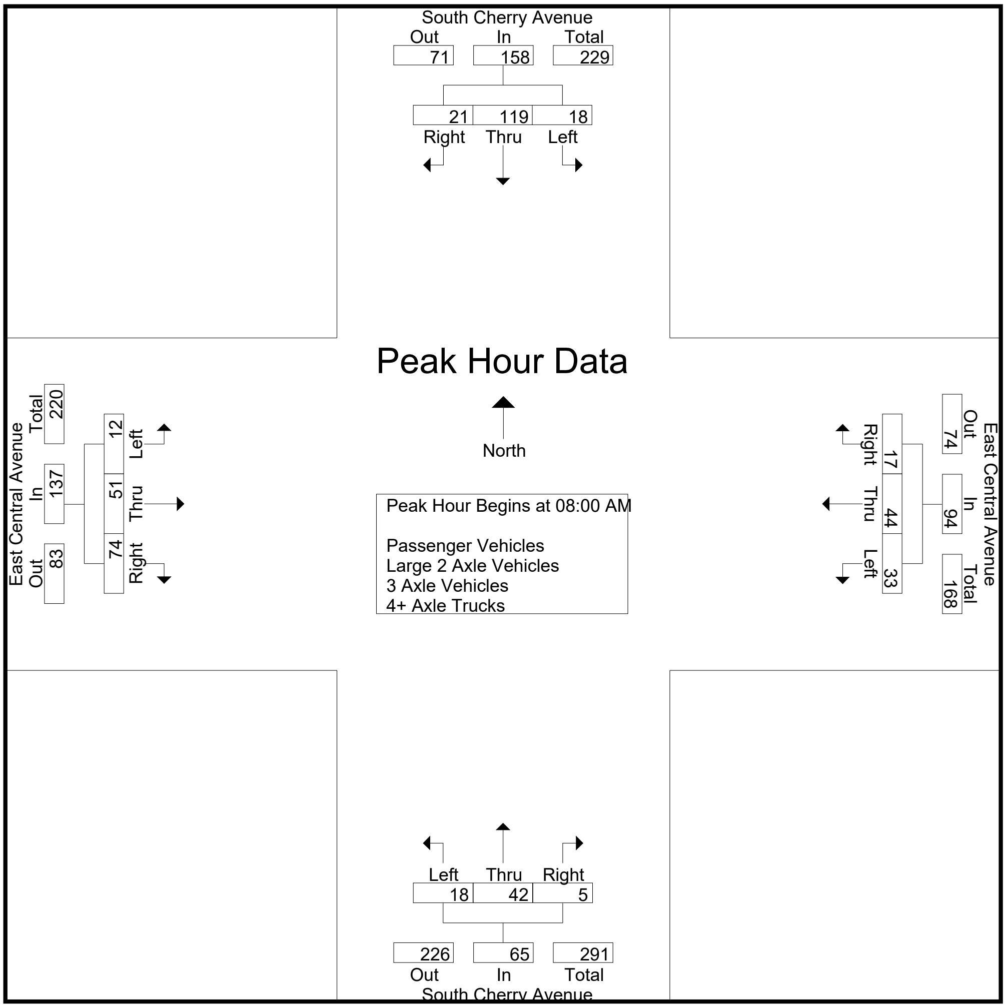
HT (PM)



Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fresno
N/S: South Cherry Avenue
E/W: East Central Avenue
Weather: Clear

File Name : 07_FSO_S Cherry_E Central AM
Site Code : 05119121
Start Date : 2/26/2019
Page No : 2

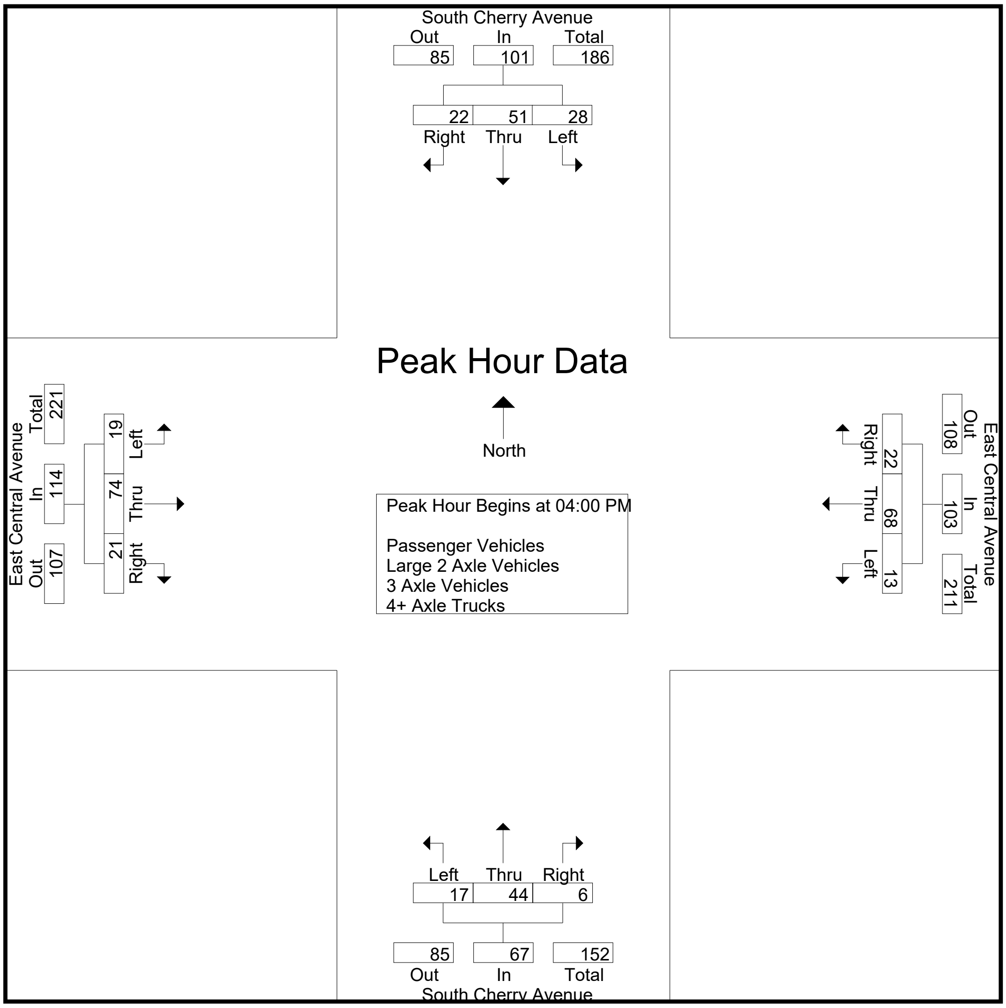


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:45 AM				07:45 AM				07:15 AM			
+0 mins.	**6**	26	3	35	10	6	**8**	24	5	13	2	20	6	14	15	35
+15 mins.	4	25	**7**	36	10	11	5	26	4	**21**	0	**25**	4	11	15	30
+30 mins.	4	33	4	41	8	10	5	23	5	7	1	13	6	9	**20**	35
+45 mins.	4	**35**	7	**46**	**12**	**13**	4	**29**	**6**	6	**4**	16	**7**	**16**	16	**39**
Total Volume	18	119	21	158	40	40	22	102	20	47	7	74	23	50	66	139
% App. Total	11.4	75.3	13.3		39.2	39.2	21.6		27	63.5	9.5		16.5	36	47.5	
PHF	.750	.850	.750	.859	.833	.769	.688	.879	.833	.560	.438	.740	.821	.781	.825	.891

City of Fresno
N/S: South Cherry Avenue
E/W: East Central Avenue
Weather: Clear

File Name : 07_FSO_S Cherry_E Central PM
Site Code : 05119121
Start Date : 2/26/2019
Page No : 2

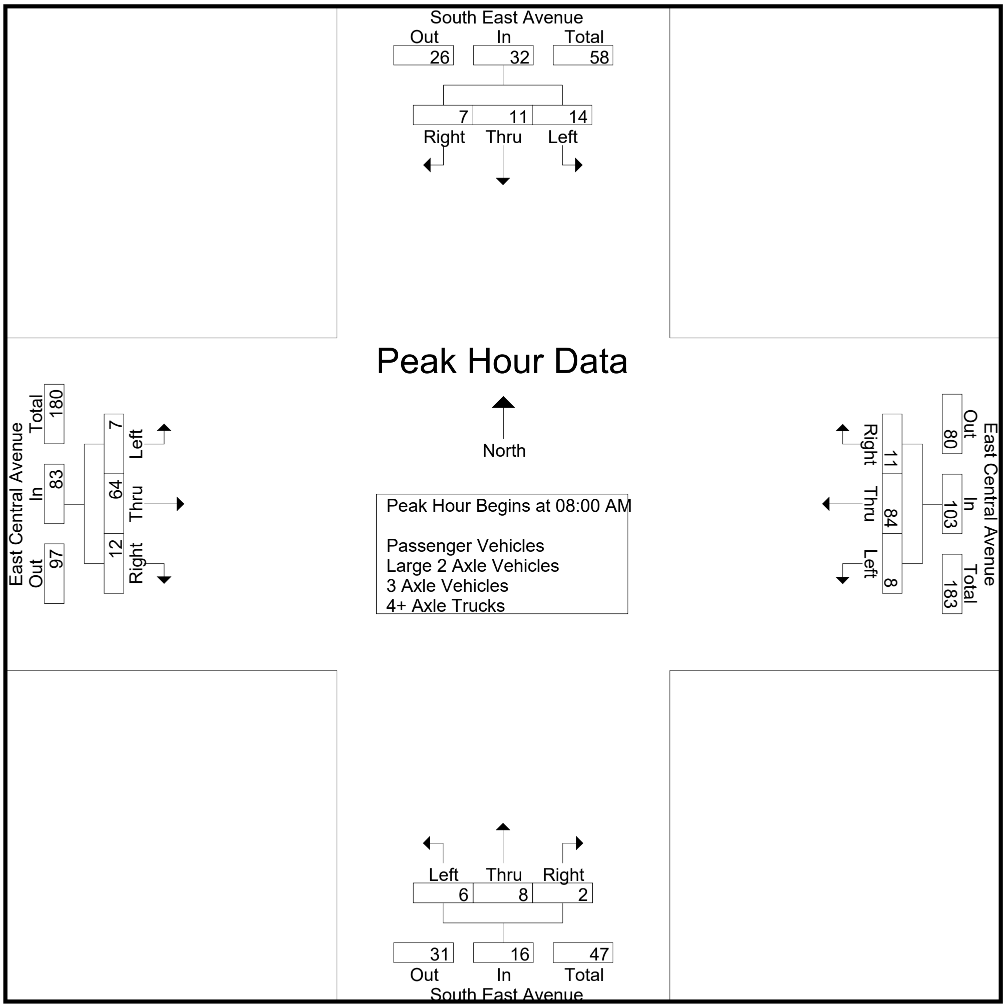


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:45 PM				04:00 PM				05:00 PM			
+0 mins.	**12**	12	2	26	1	13	5	19	**6**	**14**	**4**	**24**	6	19	2	27
+15 mins.	6	13	6	25	0	12	**6**	18	4	10	2	16	9	22	2	33
+30 mins.	5	10	**8**	23	**2**	25	4	31	1	8	0	9	6	**30**	**5**	**41**
+45 mins.	5	**16**	6	**27**	1	**34**	3	**38**	6	12	0	18	**13**	25	3	41
Total Volume	28	51	22	101	4	84	18	106	17	44	6	67	34	96	12	142
% App. Total	27.7	50.5	21.8		3.8	79.2	17		25.4	65.7	9		23.9	67.6	8.5	
PHF	.583	.797	.688	.935	.500	.618	.750	.697	.708	.786	.375	.698	.654	.800	.600	.866

City of Fresno
N/S: South East Avenue
E/W: East Central Avenue
Weather: Clear

File Name : 08_FSO_S E Ave_E Central AM
Site Code : 05119121
Start Date : 2/26/2019
Page No : 2



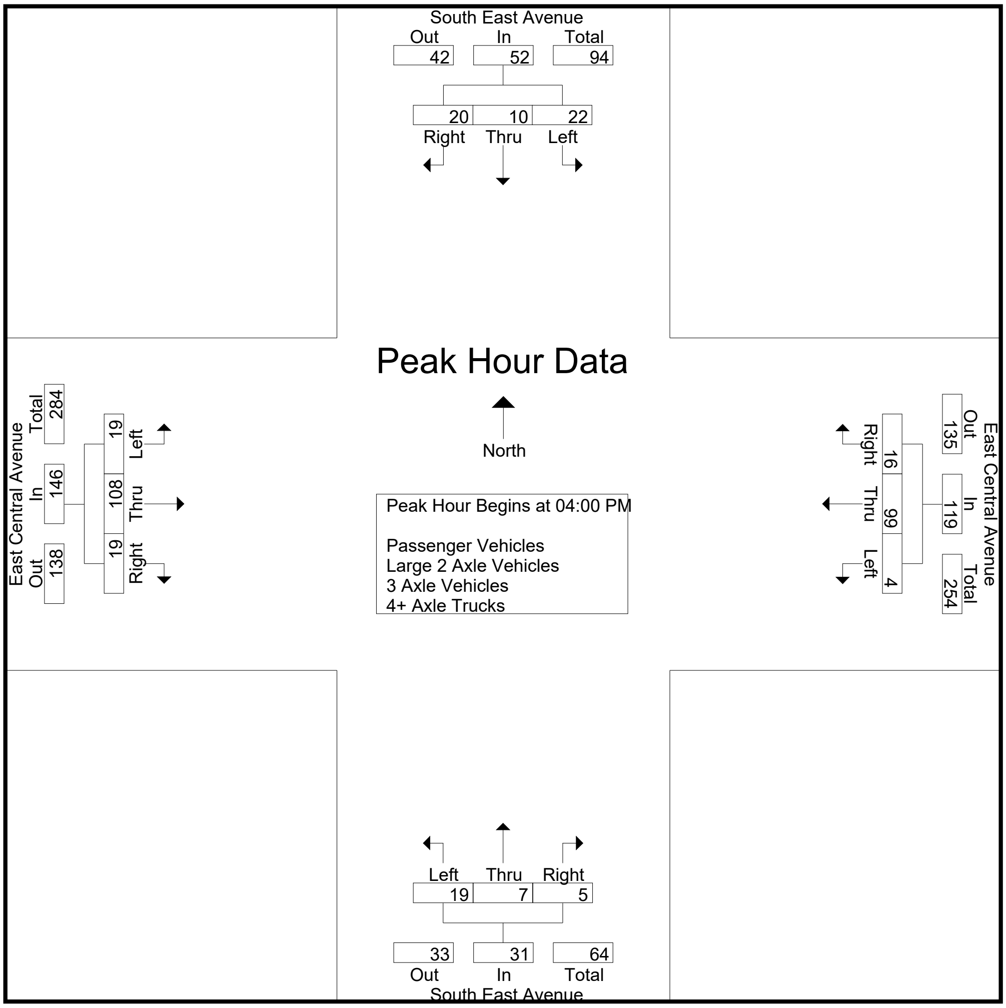
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:45 AM				07:30 AM				08:00 AM			
+0 mins.	4	1	1	6	1	21	**6**	28	**4**	**3**	1	**8**	2	**19**	3	**24**
+15 mins.	3	2	1	6	**2**	24	3	**29**	2	3	0	5	1	16	2	19
+30 mins.	**6**	**5**	2	**13**	2	18	4	24	2	1	0	3	**3**	13	**5**	21
+45 mins.	1	3	**3**	7	1	**27**	1	29	2	2	**2**	6	1	16	2	19
Total Volume	14	11	7	32	6	90	14	110	10	9	3	22	7	64	12	83
% App. Total	43.8	34.4	21.9		5.5	81.8	12.7		45.5	40.9	13.6		8.4	77.1	14.5	
PHF	.583	.550	.583	.615	.750	.833	.583	.948	.625	.750	.375	.688	.583	.842	.600	.865

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fresno
N/S: South East Avenue
E/W: East Central Avenue
Weather: Clear

File Name : 08_FSO_S E Ave_E Central PM
Site Code : 05119121
Start Date : 2/26/2019
Page No : 2



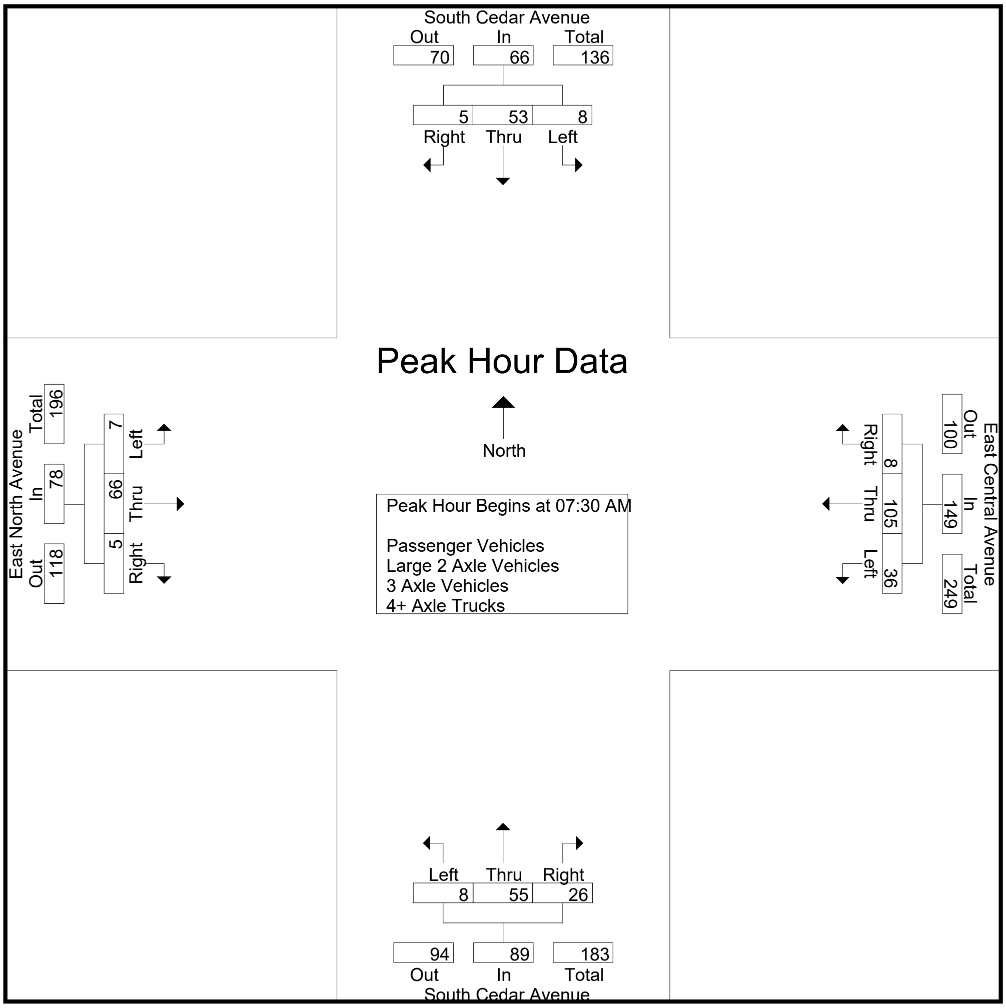
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:30 PM				04:30 PM			
+0 mins.	3	0	**8**	11	0	**37**	2	**39**	6	1	0	7	**15**	**62**	**8**	**85**
+15 mins.	3	**5**	5	13	0	26	**5**	31	6	1	**2**	9	2	15	4	21
+30 mins.	7	2	3	12	**3**	19	4	26	**7**	1	1	9	0	20	7	27
+45 mins.	**9**	3	4	**16**	1	17	5	23	7	**2**	2	**11**	2	15	4	21
Total Volume	22	10	20	52	4	99	16	119	26	5	5	36	19	112	23	154
% App. Total	42.3	19.2	38.5		3.4	83.2	13.4		72.2	13.9	13.9		12.3	72.7	14.9	
PHF	.611	.500	.625	.813	.333	.669	.800	.763	.929	.625	.625	.818	.317	.452	.719	.453

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fresno
N/S: South Cedar Avenue
E/W: East Central Avenue
Weather: Clear

File Name : 10_FSO_S Cedar_E Central AM
Site Code : 05119121
Start Date : 2/26/2019
Page No : 2

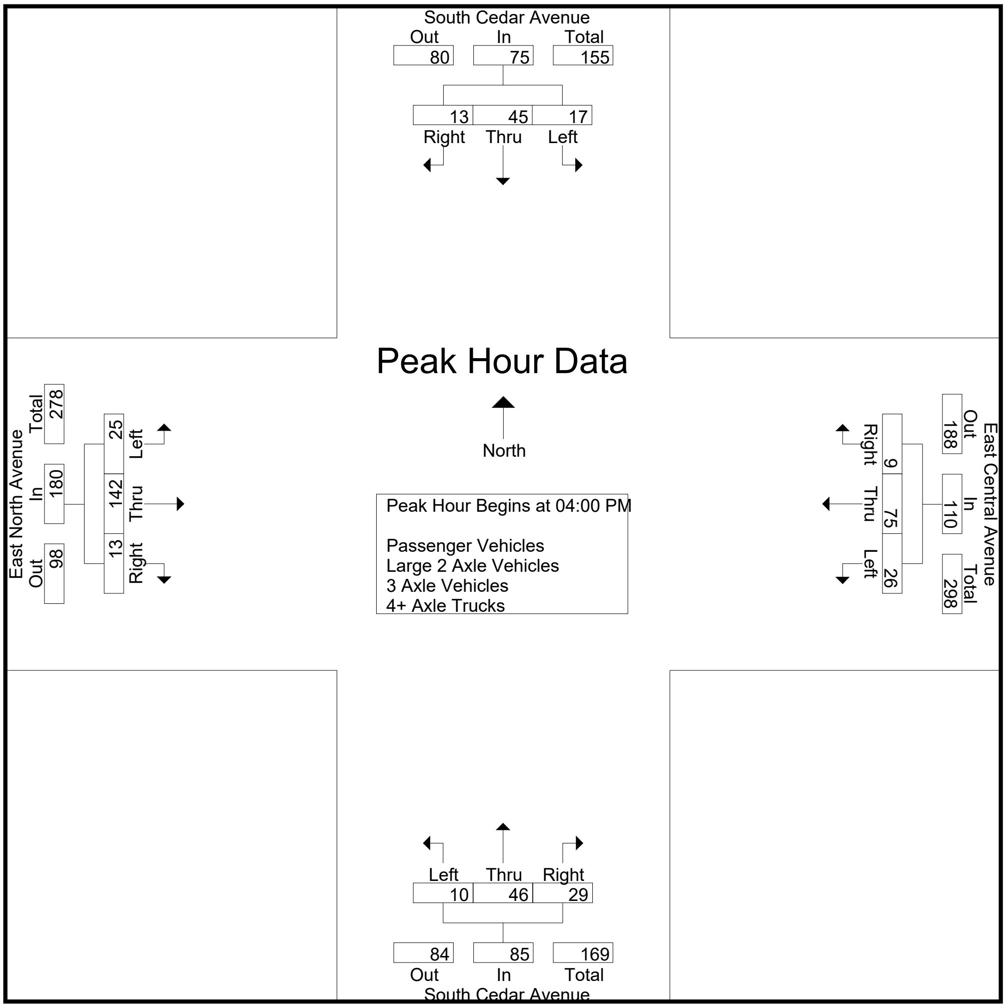


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:30 AM			
+0 mins.	**3**	10	**2**	15	4	22	4	30	0	13	8	21	1	16	0	17
+15 mins.	2	9	2	13	9	**28**	2	39	**2**	11	8	21	2	11	1	14
+30 mins.	3	**18**	0	**21**	**12**	28	**5**	**45**	2	**17**	**9**	**28**	0	18	**2**	20
+45 mins.	2	17	2	21	9	26	1	36	2	13	4	19	**4**	**21**	2	**27**
Total Volume	10	54	6	70	34	104	12	150	6	54	29	89	7	66	5	78
% App. Total	14.3	77.1	8.6		22.7	69.3	8		6.7	60.7	32.6		9	84.6	6.4	
PHF	.833	.750	.750	.833	.708	.929	.600	.833	.750	.794	.806	.795	.438	.786	.625	.722

City of Fresno
N/S: South Cedar Avenue
E/W: East Central Avenue
Weather: Clear

File Name : 10_FSO_S Cedar_E Central PM
Site Code : 05119121
Start Date : 2/26/2019
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:30 PM				04:15 PM			
+0 mins.	5	**16**	**8**	**29**	5	**24**	**2**	**31**	**3**	**19**	**11**	**33**	2	21	3	26
+15 mins.	2	12	3	17	7	22	2	31	2	6	6	14	**18**	**68**	**6**	**92**
+30 mins.	**7**	15	1	23	6	13	2	21	2	8	9	19	4	27	2	33
+45 mins.	3	2	1	6	**11**	18	0	29	1	15	8	24	1	27	2	30
Total Volume	17	45	13	75	29	77	6	112	8	48	34	90	25	143	13	181
% App. Total	22.7	60	17.3		25.9	68.8	5.4		8.9	53.3	37.8		13.8	79	7.2	
PHF	.607	.703	.406	.647	.659	.802	.750	.903	.667	.632	.773	.682	.347	.526	.542	.492

Prepared by National Data & Surveying Services

S Maple Ave & E Central Ave

Peak Hour Turning Movement Count

ID: 23-090047-006
City: Fresno

Day: Tuesday
Date: 4/25/2023

PEAK HOURS	
AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS	
AM	7:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 06:00 PM

S Maple Ave

SOUTHBOUND

	↲	↓	↳	⮍	⇧	
AM	1	7	12	0	64	AM
NOON	0	0	0	0	0	NOON
PM	12	14	55	0	22	PM
	0	1	0	0		

E Central Ave

EASTBOUND

	AM	NOON	PM		
⇦	139	0	132		
⮌	0	0	0	0	
⮥	4	0	3	0	
→	74	0	102	1	
⮧	19	0	20	0	
	AM	NOON	PM		

CONTROL

2-Way Stop(NB/SB)

	AM	NOON	PM
TEV	458	0	531
PHF	0.85		0.86

E Central Ave

WESTBOUND

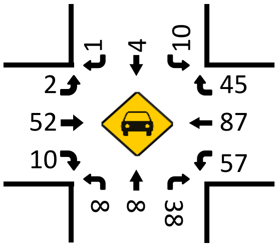
		PM	NOON	AM
0	⮤	16	0	48
1	←	105	0	122
0	⮦	83	0	82
0	⮎	0	0	0
	⇨	260	0	147
		PM	NOON	AM

	⇩	⮏	⮢	↑	⮣	
		0	0	1	0	
PM	117	0	15	3	103	PM
NOON	0	0	0	0	0	NOON
AM	108	0	16	12	61	AM

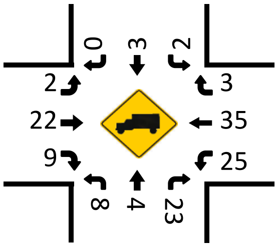
NORTHBOUND

S Maple Ave

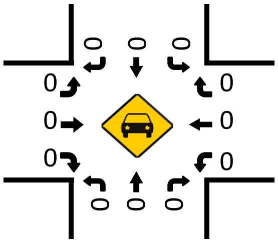
Cars (AM)



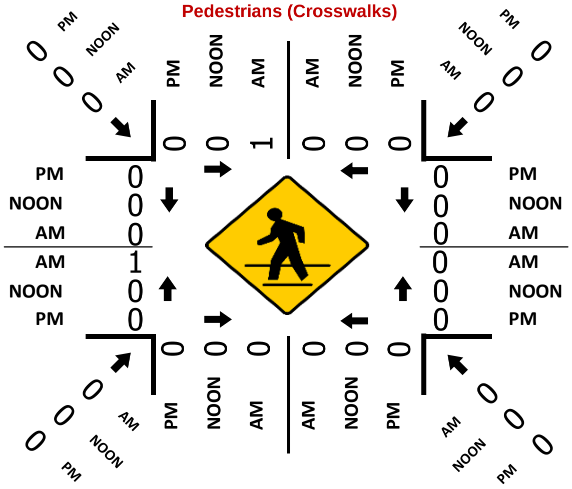
HT (AM)



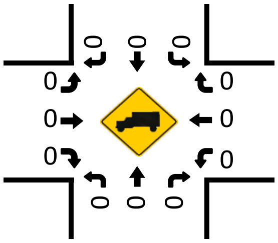
Cars (NOON)



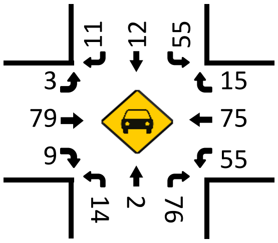
Pedestrians (Crosswalks)



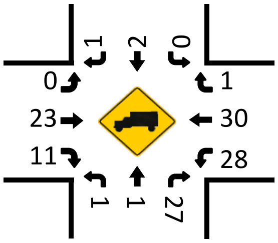
HT (NOON)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

S Maple Ave & E North Ave

Peak Hour Turning Movement Count

ID: 23-090047-007
City: Fresno

Day: Tuesday
Date: 4/25/2023

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	4:00 PM - 06:00 PM

S Maple Ave

SOUTHBOUND

	↲	↓	↳	U	⇧
AM	80	1	78	0	112
NOON	0	0	0	0	0
PM	80	1	61	0	137
	0	1	0	0	

E North Ave

EASTBOUND

	AM	NOON	PM	
⇦	277	0	279	
U	0	0	0	0
↱	51	0	67	1
→	145	0	227	1
↴	0	0	1	0

E North Ave

WESTBOUND

		PM	NOON	AM
↰	0	69	0	61
←	1	197	0	196
↙	0	0	0	0
U	0	0	0	0
⇨		289	0	223

S Maple Ave

NORTHBOUND

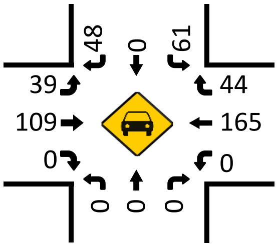
	⇩	U	↰	↑	↱
		0	0	1	0
PM	2	0	2	1	1
NOON	0	0	0	0	0
AM	1	0	1	0	0

CONTROL

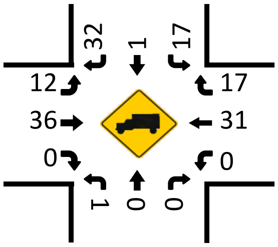
1-Way Stop(SB)

	AM	NOON	PM
TEV	613	0	707
PHF	0.79		0.83

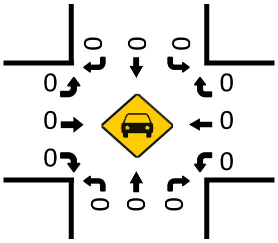
Cars (AM)



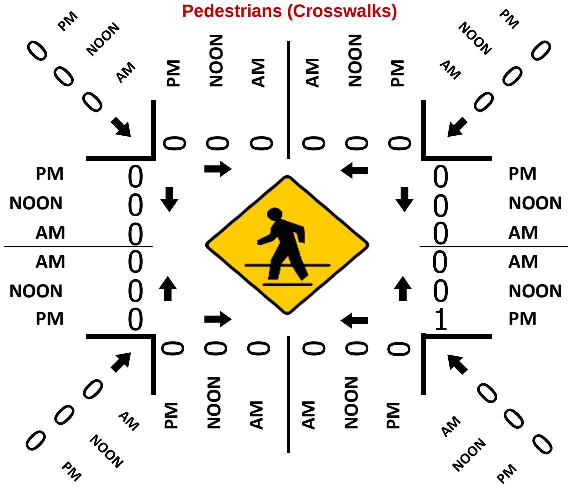
HT (AM)



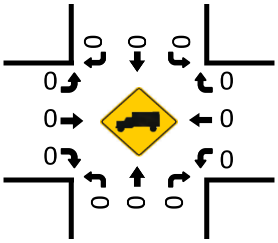
Cars (NOON)



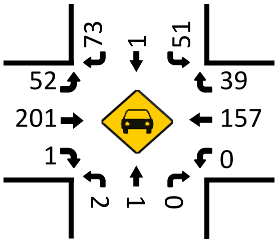
Pedestrians (Crosswalks)



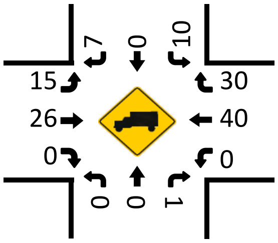
HT (NOON)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

S Peach Ave & E North Ave

Peak Hour Turning Movement Count

ID: 21-090071-005
City: Fresno

Day: Wednesday
Date: 9/1/2021

PEAK HOURS	
AM	07:15 AM - 08:15 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS	
AM	7:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 06:00 PM

S Peach Ave

SOUTHBOUND

	↲	↓	↳	↶	⇧
AM	32	54	12	0	35
NOON	0	0	0	0	0
PM	17	32	19	0	128
	0	1	0	0	

E North Ave

EASTBOUND

	AM	NOON	PM	
⇦	227	0	115	
U-turn	0	0	0	0
↱	10	0	43	0
→	69	0	198	1
↴	6	0	11	0

CONTROL

4-Way Stop

	AM	NOON	PM
TEV	421	0	521
PHF	0.79		0.93

E North Ave

WESTBOUND

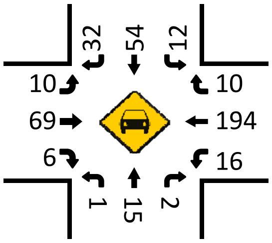
		PM	NOON	AM
0	↰	17	0	10
1	←	92	0	194
0	↙	8	0	16
0	U-turn	0	0	0
	⇨	227	0	83

NORTHBOUND

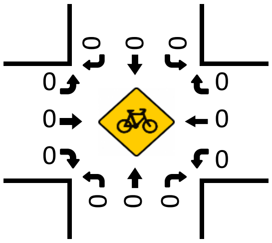
S Peach Ave

	⇩	↶	↰	↑	↱
		0	0	1	0
PM	51	0	6	68	10
NOON	0	0	0	0	0
AM	76	0	1	15	2

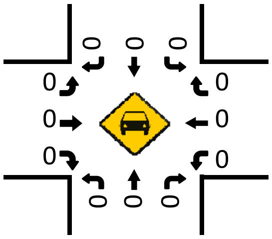
Totals (AM)



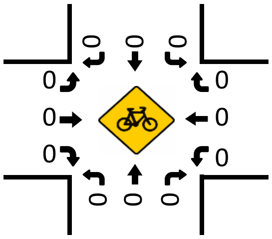
Total Bikes (AM)



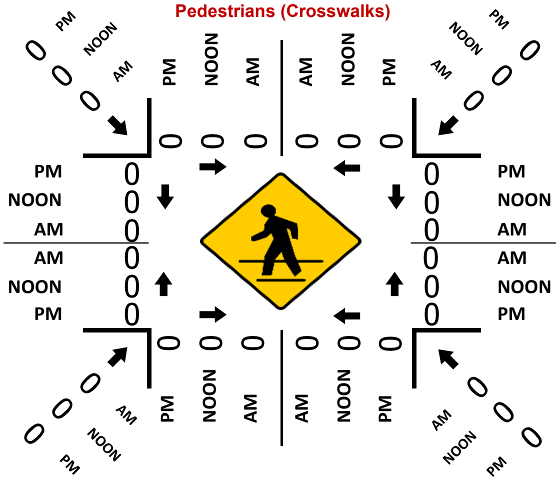
Totals (NOON)



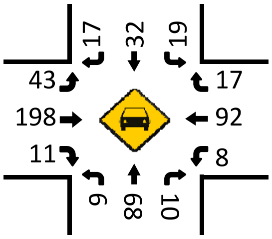
Total Bikes (NOON)



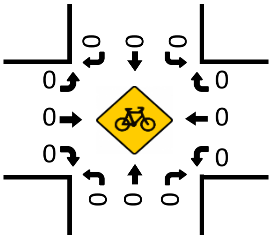
Pedestrians (Crosswalks)



Totals (PM)



Total Bikes (PM)



Prepared by National Data & Surveying Services

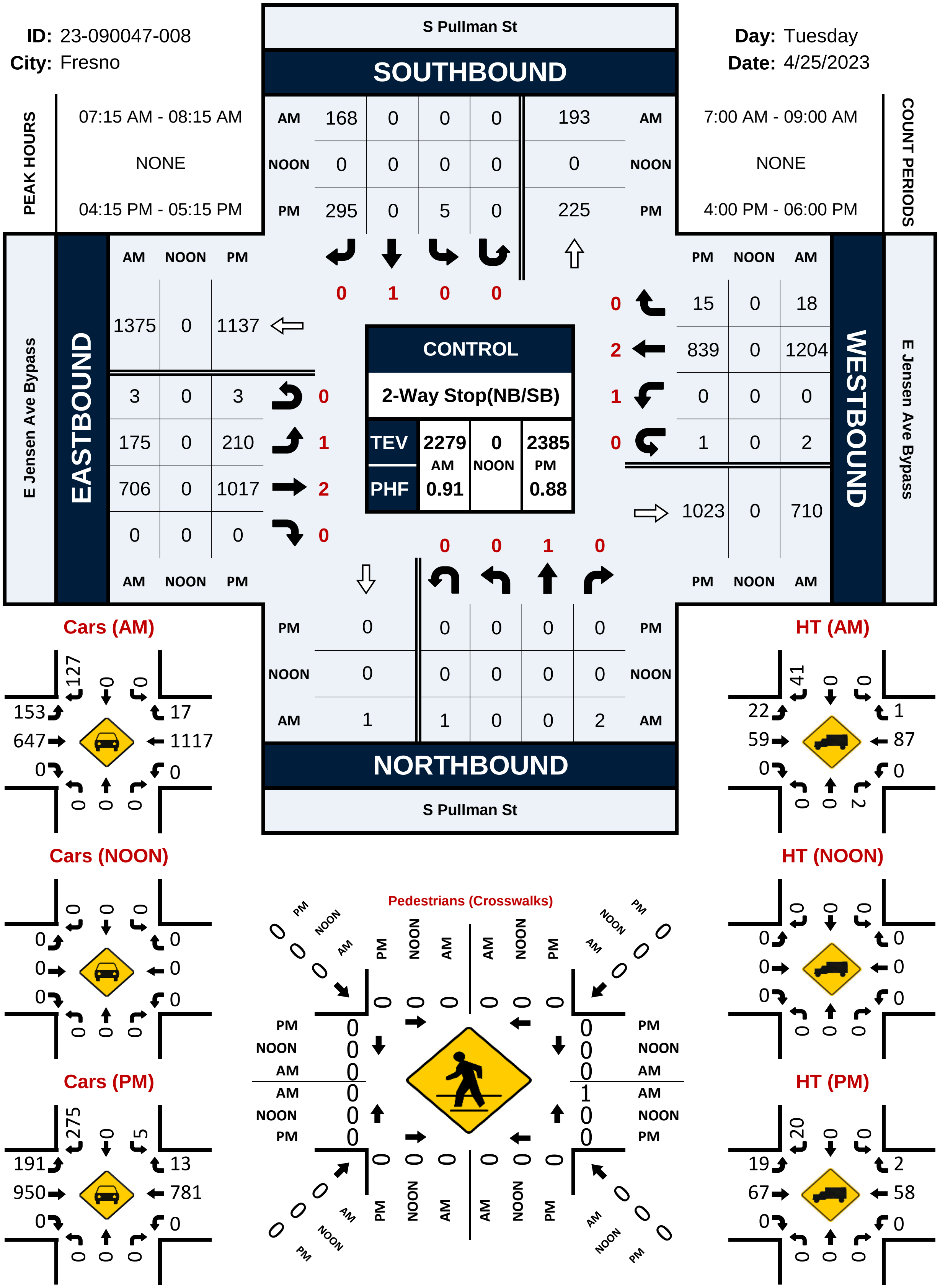
S Pullman St & E Jensen Ave Bypass

Peak Hour Turning Movement Count

ID: 23-090047-008
City: Fresno

Day: Tuesday
Date: 4/25/2023

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:15 PM - 05:15 PM	4:00 PM - 06:00 PM



S Pullman St

SOUTHBOUND

	Right	Through	Left	U-turn	Exit
AM	168	0	0	0	193
NOON	0	0	0	0	0
PM	295	0	5	0	225
Lanes	0	1	0	0	

E Jensen Ave Bypass

EASTBOUND

	AM	NOON	PM	Lanes
Exit	1375	0	1137	
U-turn	3	0	3	0
Left	175	0	210	1
Through	706	0	1017	2
Right	0	0	0	0

E Jensen Ave Bypass

WESTBOUND

	PM	NOON	AM	Lanes
Right	15	0	18	0
Through	839	0	1204	2
Left	0	0	0	1
U-turn	1	0	2	0
Exit	1023	0	710	

NORTHBOUND

S Pullman St

	Exit	U-turn	Left	Through	Right
Lanes		0	0	1	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	1	1	0	0	2

CONTROL

2-Way Stop(NB/SB)

	AM	NOON	PM
TEV	2279	0	2385
PHF	0.91		0.88

	Cars (AM)	HT (AM)	Cars (NOON)	HT (NOON)	Cars (PM)	HT (PM)
SB Right	127	41	0	0	275	20
SB Through	0	0	0	0	0	0
SB Left	0	0	0	0	5	0
EB Left	153	22	0	0	191	19
EB Through	647	59	0	0	950	67
EB Right	0	0	0	0	0	0
WB Right	17	1	0	0	13	2
WB Through	1117	87	0	0	781	58
WB Left	0	0	0	0	0	0
NB Left	0	0	0	0	0	0
NB Through	0	0	0	0	0	0
NB Right	0	2	0	0	0	0

Pedestrians (Crosswalks)

	AM	NOON	PM
North crosswalk	0	0	0
South crosswalk	0	0	0
West crosswalk	0	0	0
West crosswalk	0	0	0
East crosswalk	0	0	0
East crosswalk	1	0	0
NW corner	0	0	0
NE corner	0	0	0
SW corner	0	0	0
SE corner	0	0	0

National Data & Surveying Services Intersection Turning Movement Count

Location: S Willow Ave & E Jensen Ave
City: Fresno
Control: Signalized

Project ID: 21-090096-003
Date: 10/5/2021

Data - Totals

NS/EW Streets:	S Willow Ave				S Willow Ave				E Jensen Ave				E Jensen Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	1	4	0	2	6	19	0	2	53	8	0	5	187	2	0	290
7:15 AM	3	1	1	0	4	8	23	0	8	67	4	0	7	186	10	1	323
7:30 AM	7	5	6	0	12	6	35	0	14	103	5	2	8	260	10	0	473
7:45 AM	7	4	0	0	7	12	23	0	18	82	14	0	11	255	8	0	441
8:00 AM	4	1	4	0	11	2	17	0	8	70	4	1	13	138	13	0	286
8:15 AM	4	2	3	0	4	3	12	0	7	65	10	0	12	136	5	0	263
8:30 AM	6	6	3	0	3	1	11	0	4	54	6	1	8	106	5	1	215
8:45 AM	4	5	4	0	1	3	16	0	6	57	7	0	6	87	3	0	199
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	36	25	25	0	44	41	156	0	67	551	58	4	70	1355	56	2	2490
APPROACH %'s :	41.86%	29.07%	29.07%	0.00%	18.26%	17.01%	64.73%	0.00%	9.85%	81.03%	8.53%	0.59%	4.72%	91.37%	3.78%	0.13%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	18	11	11	0	25	32	100	0	42	305	31	2	31	888	30	1	1527
PEAK HR FACTOR :	0.643	0.550	0.458	0.000	0.521	0.667	0.714	0.000	0.583	0.740	0.554	0.250	0.705	0.854	0.750	0.250	0.807
	0.556				0.741				0.766				0.854				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	12	6	0	7	6	10	0	14	150	6	2	3	99	6	0	330
4:15 PM	9	11	7	0	7	4	15	0	13	188	11	6	0	97	9	1	378
4:30 PM	11	19	8	0	7	2	4	0	26	172	6	6	4	107	5	0	377
4:45 PM	9	10	12	0	7	5	8	0	12	124	2	5	3	119	10	0	326
5:00 PM	20	20	14	0	1	3	12	0	21	191	6	4	5	67	6	0	370
5:15 PM	10	8	11	0	5	3	12	0	10	162	6	2	0	90	8	0	327
5:30 PM	11	6	4	0	9	4	12	0	26	145	4	2	3	92	7	0	325
5:45 PM	6	12	9	0	4	1	11	0	18	109	3	2	2	113	5	0	295
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	85	98	71	0	47	28	84	0	140	1241	44	29	20	784	56	1	2728
APPROACH %'s :	33.46%	38.58%	27.95%	0.00%	29.56%	17.61%	52.83%	0.00%	9.63%	85.35%	3.03%	1.99%	2.32%	91.06%	6.50%	0.12%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	49	60	41	0	22	14	39	0	72	675	25	21	12	390	30	1	1451
PEAK HR FACTOR :	0.613	0.750	0.732	0.000	0.786	0.700	0.650	0.000	0.692	0.884	0.568	0.875	0.600	0.819	0.750	0.250	0.960
	0.694				0.721				0.893				0.820				

Prepared by National Data & Surveying Services

S Peach Ave & E Jensen Ave

Peak Hour Turning Movement Count

ID: 21-090071-007
City: Fresno

Day: Wednesday
Date: 9/1/2021

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

S Peach Ave

SOUTHBOUND

	↲	↓	↳	↶	⇧	
AM	202	90	85	0	161	AM
NOON	0	0	0	0	0	NOON
PM	81	54	76	0	332	PM
	0	1	0	0		

E Jensen Ave

EASTBOUND

	AM	NOON	PM	
⇦	907	0	384	
⤺	0	0	1	0
↰	71	0	160	1
→	226	0	544	2
↴	12	0	6	0

E Jensen Ave

WESTBOUND

		PM	NOON	AM
1	↰	69	0	57
2	←	297	0	700
1	↲	9	0	21
0	⤻	0	0	0
	⇨	638	0	324

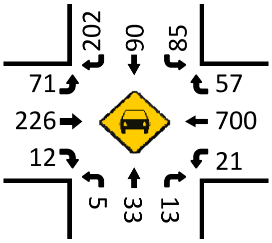
CONTROL			
Signalized			
TEV	1515 AM	0 NOON	1423 PM
PHF	0.86		0.95

S Peach Ave

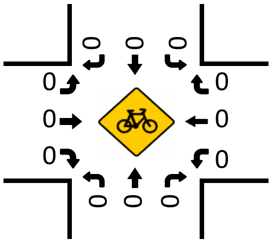
NORTHBOUND

	⇩	↶	↰	↑	↱	
		0	0	1	0	
PM	69	0	5	103	18	PM
NOON	0	0	0	0	0	NOON
AM	123	0	5	33	13	AM

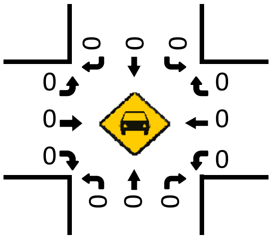
Totals (AM)



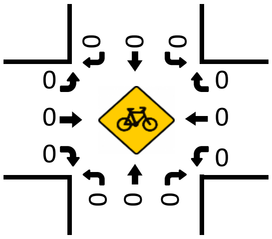
Total Bikes (AM)



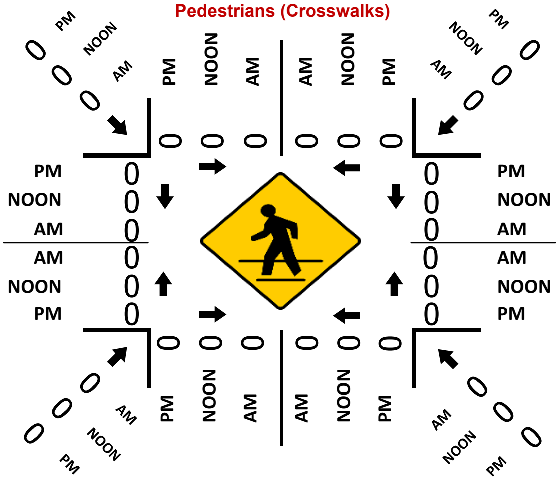
Totals (NOON)



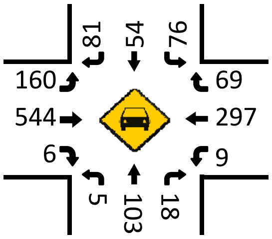
Total Bikes (NOON)



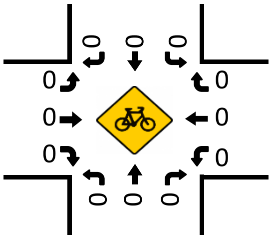
Pedestrians (Crosswalks)



Totals (PM)



Total Bikes (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: S Willow Ave & E Jensen Ave
City: Fresno
Control: Signalized

Project ID: 21-090096-003
Date: 10/5/2021

Data - Totals

NS/EW Streets:	S Willow Ave				S Willow Ave				E Jensen Ave				E Jensen Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	1	4	0	2	6	19	0	2	53	8	0	5	187	2	0	290
7:15 AM	3	1	1	0	4	8	23	0	8	67	4	0	7	186	10	1	323
7:30 AM	7	5	6	0	12	6	35	0	14	103	5	2	8	260	10	0	473
7:45 AM	7	4	0	0	7	12	23	0	18	82	14	0	11	255	8	0	441
8:00 AM	4	1	4	0	11	2	17	0	8	70	4	1	13	138	13	0	286
8:15 AM	4	2	3	0	4	3	12	0	7	65	10	0	12	136	5	0	263
8:30 AM	6	6	3	0	3	1	11	0	4	54	6	1	8	106	5	1	215
8:45 AM	4	5	4	0	1	3	16	0	6	57	7	0	6	87	3	0	199
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	36	25	25	0	44	41	156	0	67	551	58	4	70	1355	56	2	2490
APPROACH %'s :	41.86%	29.07%	29.07%	0.00%	18.26%	17.01%	64.73%	0.00%	9.85%	81.03%	8.53%	0.59%	4.72%	91.37%	3.78%	0.13%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	18	11	11	0	25	32	100	0	42	305	31	2	31	888	30	1	1527
PEAK HR FACTOR :	0.643	0.550	0.458	0.000	0.521	0.667	0.714	0.000	0.583	0.740	0.554	0.250	0.705	0.854	0.750	0.250	0.807
		0.556				0.741				0.766				0.854			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	12	6	0	7	6	10	0	14	150	6	2	3	99	6	0	330
4:15 PM	9	11	7	0	7	4	15	0	13	188	11	6	0	97	9	1	378
4:30 PM	11	19	8	0	7	2	4	0	26	172	6	6	4	107	5	0	377
4:45 PM	9	10	12	0	7	5	8	0	12	124	2	5	3	119	10	0	326
5:00 PM	20	20	14	0	1	3	12	0	21	191	6	4	5	67	6	0	370
5:15 PM	10	8	11	0	5	3	12	0	10	162	6	2	0	90	8	0	327
5:30 PM	11	6	4	0	9	4	12	0	26	145	4	2	3	92	7	0	325
5:45 PM	6	12	9	0	4	1	11	0	18	109	3	2	2	113	5	0	295
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	85	98	71	0	47	28	84	0	140	1241	44	29	20	784	56	1	2728
APPROACH %'s :	33.46%	38.58%	27.95%	0.00%	29.56%	17.61%	52.83%	0.00%	9.63%	85.35%	3.03%	1.99%	2.32%	91.06%	6.50%	0.12%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	49	60	41	0	22	14	39	0	72	675	25	21	12	390	30	1	1451
PEAK HR FACTOR :	0.613	0.750	0.732	0.000	0.786	0.700	0.650	0.000	0.692	0.884	0.568	0.875	0.600	0.819	0.750	0.250	0.960
		0.694				0.721				0.893				0.820			

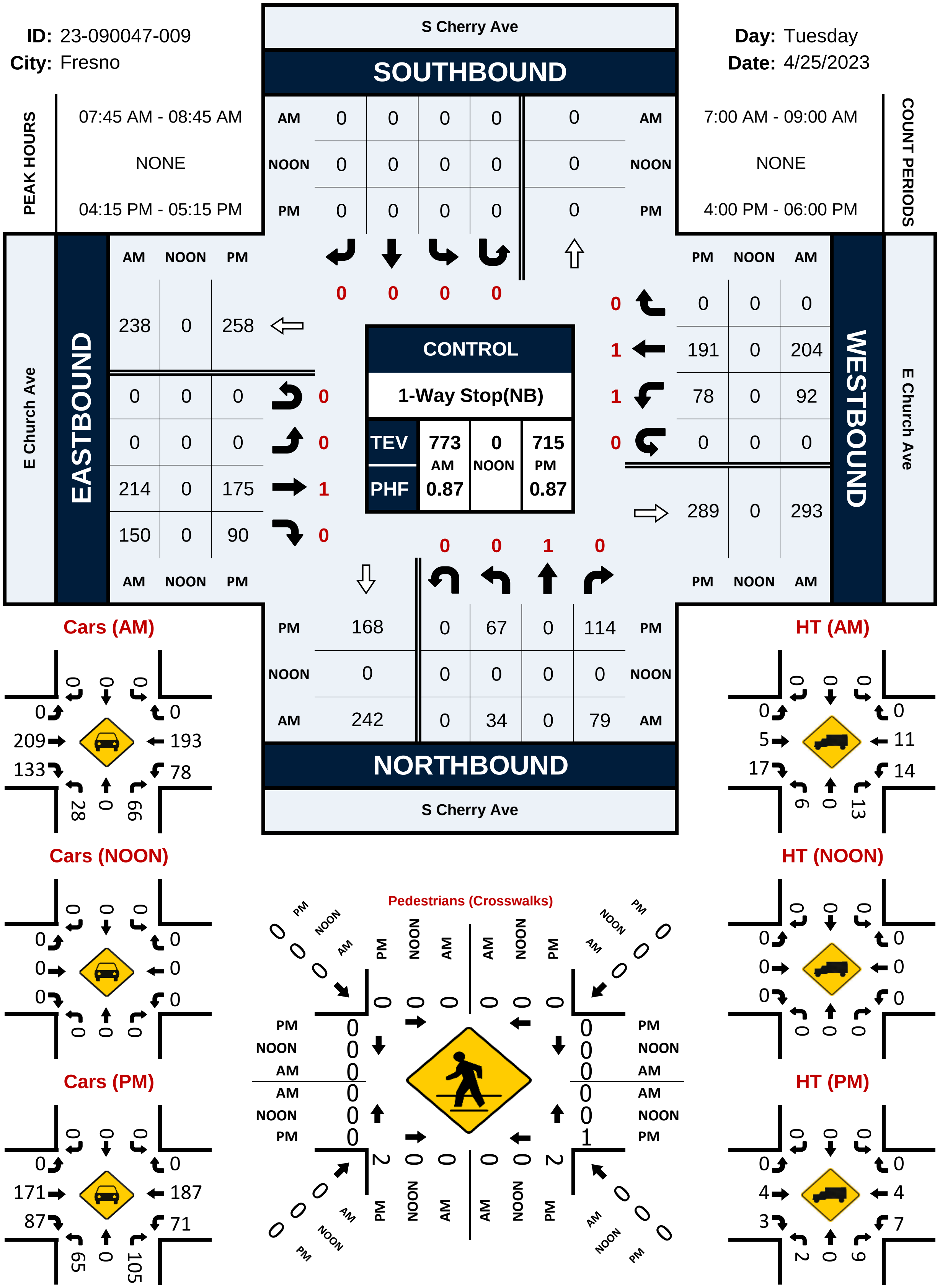
Prepared by National Data & Surveying Services

S Cherry Ave & E Church Ave

Peak Hour Turning Movement Count

ID: 23-090047-009
City: Fresno

Day: Tuesday
Date: 4/25/2023



	PEAK HOURS	COUNT PERIODS
AM	07:45 AM - 08:45 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:15 PM - 05:15 PM	4:00 PM - 06:00 PM

SOUTHBOUND (S Cherry Ave)

	↲	↓	↳	⮌	⇧
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
Lanes	0	0	0	0	

EASTBOUND (E Church Ave)

	AM	NOON	PM	Lanes
⇦	238	0	258	
U-turn	0	0	0	0
Left	0	0	0	0
Through	214	0	175	1
Right	150	0	90	0

WESTBOUND (E Church Ave)

Lanes		PM	NOON	AM
0	Right	0	0	0
1	Through	191	0	204
1	Left	78	0	92
0	U-turn	0	0	0
	⇨	289	0	293

NORTHBOUND (S Cherry Ave)

	⇩	U-turn	Left	Through	Right
Lanes		0	0	1	0
PM	168	0	67	0	114
NOON	0	0	0	0	0
AM	242	0	34	0	79

CONTROL
1-Way Stop(NB)

	AM	NOON	PM
TEV	773	0	715
PHF	0.87		0.87

Cars (AM) / **HT (AM)** / **Cars (NOON)** / **HT (NOON)** / **Cars (PM)** / **HT (PM)**

	Cars (AM)	HT (AM)	Cars (NOON)	HT (NOON)	Cars (PM)	HT (PM)
SB	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
EB Left	0	0	0	0	0	0
EB Through	209	5	0	0	171	4
EB Right	133	17	0	0	87	3
WB Right	0	0	0	0	0	0
WB Through	193	11	0	0	187	4
WB Left	78	14	0	0	71	7
NB Left	28	6	0	0	65	2
NB Through	0	0	0	0	0	0
NB Right	66	13	0	0	105	9

Pedestrians (Crosswalks)

		PM	NOON	AM	AM	NOON	PM
North	← / →	0	0	0	0	0	0
West	↓ / ↑	0	0	0	0	0	0
East	↓ / ↑	0	0	0	0	0	1
South	→ / ←	2	0	0	0	0	2
NW diagonal		0	0	0			
NE diagonal		0	0	0			
SW diagonal		0	0	0			
SE diagonal		0	0	0			

Appendix B – Existing Conditions Synchro Output

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	9	44	2	4	153	7	7	13	6	7	12	9
Future Vol, veh/h	9	44	2	4	153	7	7	13	6	7	12	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	52	2	5	182	8	8	15	7	8	14	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	54	0	0	284	275	53	282	272	186
Stage 1	-	-	-	-	-	-	75	75	-	196	196	-
Stage 2	-	-	-	-	-	-	209	200	-	86	76	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1384	-	-	1551	-	-	668	632	1014	670	635	856
Stage 1	-	-	-	-	-	-	934	833	-	806	739	-
Stage 2	-	-	-	-	-	-	793	736	-	922	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1384	-	-	1551	-	-	642	624	1014	647	627	856
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	624	-	647	627	-
Stage 1	-	-	-	-	-	-	927	826	-	800	736	-
Stage 2	-	-	-	-	-	-	765	733	-	891	825	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.2	10.5	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	690	1384	-	-	1551	-	-	692
HCM Lane V/C Ratio	0.045	0.008	-	-	0.003	-	-	0.048
HCM Control Delay (s)	10.5	7.6	0	-	7.3	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	3	29	13	9	125	11	23	37	6	5	26	9
Future Vol, veh/h	3	29	13	9	125	11	23	37	6	5	26	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	32	14	10	139	12	26	41	7	6	29	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	7.5			8.2			7.9			7.6		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	7%	6%	12%
Vol Thru, %	56%	64%	86%	65%
Vol Right, %	9%	29%	8%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	45	145	40
LT Vol	23	3	9	5
Through Vol	37	29	125	26
RT Vol	6	13	11	9
Lane Flow Rate	73	50	161	44
Geometry Grp	1	1	1	1
Degree of Util (X)	0.091	0.059	0.185	0.054
Departure Headway (Hd)	4.466	4.213	4.144	4.375
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	806	854	852	822
Service Time	2.471	2.221	2.235	2.381
HCM Lane V/C Ratio	0.091	0.059	0.189	0.054
HCM Control Delay	7.9	7.5	8.2	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.7	0.2

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	16	51	2	0	98	7	7	17	1	3	13	22
Future Vol, veh/h	16	51	2	0	98	7	7	17	1	3	13	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	55	2	0	105	8	8	18	1	3	14	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	123	67	26	96	79	19	38	0	0	19	0	0
Stage 1	32	32	-	35	35	-	-	-	-	-	-	-
Stage 2	91	35	-	61	44	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	852	824	1050	887	811	1059	1572	-	-	1597	-	-
Stage 1	984	868	-	981	866	-	-	-	-	-	-	-
Stage 2	916	866	-	950	858	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	757	818	1050	836	805	1059	1572	-	-	1597	-	-
Mov Cap-2 Maneuver	757	818	-	836	805	-	-	-	-	-	-	-
Stage 1	979	866	-	976	862	-	-	-	-	-	-	-
Stage 2	794	862	-	886	856	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10.1	2	0.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	808	818	1597	-	-
HCM Lane V/C Ratio	0.005	-	-	0.092	0.138	0.002	-	-
HCM Control Delay (s)	7.3	0	-	9.9	10.1	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.5	0	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	0	35	0	5	30	12	1	31	7	8	43	1
Future Vol, veh/h	0	35	0	5	30	12	1	31	7	8	43	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	0	7	44	18	1	46	10	12	63	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	62	0	0	51	0	0	150	127	51	146	118	53
Stage 1	-	-	-	-	-	-	51	51	-	67	67	-
Stage 2	-	-	-	-	-	-	99	76	-	79	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1541	-	-	1555	-	-	818	764	1017	823	772	1014
Stage 1	-	-	-	-	-	-	962	852	-	943	839	-
Stage 2	-	-	-	-	-	-	907	832	-	930	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1541	-	-	1555	-	-	762	760	1017	774	768	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	762	760	-	774	768	-
Stage 1	-	-	-	-	-	-	962	852	-	943	835	-
Stage 2	-	-	-	-	-	-	833	828	-	871	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	9.9	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	796	1541	-	-	1555	-	-	773
HCM Lane V/C Ratio	0.072	-	-	-	0.005	-	-	0.099
HCM Control Delay (s)	9.9	0	-	-	7.3	0	-	10.2
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	8	34	7	18	24	25	14	139	37	10	151	5
Future Vol, veh/h	8	34	7	18	24	25	14	139	37	10	151	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	44	9	23	31	32	18	178	47	13	194	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	492	484	197	488	464	202	200	0	0	225	0	0
Stage 1	223	223	-	238	238	-	-	-	-	-	-	-
Stage 2	269	261	-	250	226	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	487	483	844	490	495	839	1372	-	-	1344	-	-
Stage 1	780	719	-	765	708	-	-	-	-	-	-	-
Stage 2	737	692	-	754	717	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	438	472	844	443	484	839	1372	-	-	1344	-	-
Mov Cap-2 Maneuver	438	472	-	443	484	-	-	-	-	-	-	-
Stage 1	770	712	-	755	699	-	-	-	-	-	-	-
Stage 2	669	683	-	694	710	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	12.6	0.6	0.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1372	-	-	497	558	1344	-	-
HCM Lane V/C Ratio	0.013	-	-	0.126	0.154	0.01	-	-
HCM Control Delay (s)	7.7	-	-	13.3	12.6	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5	0	-	-

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	13	55	80	36	48	18	20	46	5	20	129	23
Future Vol, veh/h	13	55	80	36	48	18	20	46	5	20	129	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	60	87	39	52	20	22	50	5	22	140	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	8.6	8.4	9.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	9%	35%	12%
Vol Thru, %	65%	37%	47%	75%
Vol Right, %	7%	54%	18%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	71	148	102	172
LT Vol	20	13	36	20
Through Vol	46	55	48	129
RT Vol	5	80	18	23
Lane Flow Rate	77	161	111	187
Geometry Grp	1	1	1	1
Degree of Util (X)	0.103	0.196	0.145	0.238
Departure Headway (Hd)	4.794	4.388	4.71	4.592
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	745	817	761	780
Service Time	2.837	2.422	2.747	2.629
HCM Lane V/C Ratio	0.103	0.197	0.146	0.24
HCM Control Delay	8.4	8.5	8.6	9.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.7	0.5	0.9

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥		↰	↑	↱
Traffic Vol, veh/h	8	70	13	9	92	12	7	9	2	15	12	8
Future Vol, veh/h	8	70	13	9	92	12	7	9	2	15	12	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	76	14	10	100	13	8	10	2	16	13	9
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	8.1	8.3	8.1	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	39%	9%	8%	100%	0%	0%
Vol Thru, %	50%	77%	81%	0%	100%	0%
Vol Right, %	11%	14%	11%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	91	113	15	12	8
LT Vol	7	8	9	15	0	0
Through Vol	9	70	92	0	12	0
RT Vol	2	13	12	0	0	8
Lane Flow Rate	20	99	123	16	13	9
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.029	0.127	0.159	0.025	0.018	0.011
Departure Headway (Hd)	5.253	4.636	4.646	5.607	5.105	4.401
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	686	763	763	642	705	818
Service Time	2.954	2.428	2.431	3.308	2.805	2.102
HCM Lane V/C Ratio	0.029	0.13	0.161	0.025	0.018	0.011
HCM Control Delay	8.1	8.1	8.3	8.5	7.9	7.2
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.6	0.1	0.1	0

8: S Cedar Ave & W Central Ave

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	7	69	5	38	110	8	8	58	27	8	56	5
Future Vol, veh/h	7	69	5	38	110	8	8	58	27	8	56	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	75	5	41	120	9	9	63	29	9	61	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8.7	8.1	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	9%	24%	12%
Vol Thru, %	62%	85%	71%	81%
Vol Right, %	29%	6%	5%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	81	156	69
LT Vol	8	7	38	8
Through Vol	58	69	110	56
RT Vol	27	5	8	5
Lane Flow Rate	101	88	170	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.125	0.11	0.21	0.096
Departure Headway (Hd)	4.462	4.513	4.46	4.627
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	805	795	805	776
Service Time	2.483	2.537	2.481	2.649
HCM Lane V/C Ratio	0.125	0.111	0.211	0.097
HCM Control Delay	8.1	8.1	8.7	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.4	0.8	0.3

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	4	74	19	82	122	48	16	12	61	12	7	1
Future Vol, veh/h	4	74	19	82	122	48	16	12	61	12	7	1
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	87	22	96	144	56	19	14	72	14	8	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	201	0	0	109	0	0	478	501	98	516	484	174
Stage 1	-	-	-	-	-	-	108	108	-	365	365	-
Stage 2	-	-	-	-	-	-	370	393	-	151	119	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1371	-	-	1481	-	-	498	472	958	470	483	869
Stage 1	-	-	-	-	-	-	897	806	-	654	623	-
Stage 2	-	-	-	-	-	-	650	606	-	851	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1370	-	-	1481	-	-	461	435	958	399	445	867
Mov Cap-2 Maneuver	-	-	-	-	-	-	461	435	-	399	445	-
Stage 1	-	-	-	-	-	-	893	803	-	651	577	-
Stage 2	-	-	-	-	-	-	593	561	-	770	794	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.5	11	13.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	707	1370	-	-	1481	-	-	426
HCM Lane V/C Ratio	0.148	0.003	-	-	0.065	-	-	0.055
HCM Control Delay (s)	11	7.6	0	-	7.6	0	-	13.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.2	-	-	0.2

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱			✥			✥			✥	
Traffic Vol, veh/h	51	145	0	0	196	61	1	0	0	78	1	80
Future Vol, veh/h	51	145	0	0	196	61	1	0	0	78	1	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	184	0	0	248	77	1	0	0	99	1	101

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	325	0	0	184	0	0	652	639	184	601	601	287
Stage 1	-	-	-	-	-	-	314	314	-	287	287	-
Stage 2	-	-	-	-	-	-	338	325	-	314	314	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1235	-	-	1391	-	-	381	394	858	412	414	752
Stage 1	-	-	-	-	-	-	697	656	-	720	674	-
Stage 2	-	-	-	-	-	-	676	649	-	697	656	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1235	-	-	1391	-	-	316	373	858	396	392	752
Mov Cap-2 Maneuver	-	-	-	-	-	-	316	373	-	396	392	-
Stage 1	-	-	-	-	-	-	660	621	-	682	674	-
Stage 2	-	-	-	-	-	-	584	649	-	660	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	16.4	16.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	316	1235	-	-	1391	-	-	520
HCM Lane V/C Ratio	0.004	0.052	-	-	-	-	-	0.387
HCM Control Delay (s)	16.4	8.1	-	-	0	-	-	16.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	1.8

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	10	69	6	16	195	10	1	15	2	12	54	32
Future Vol, veh/h	10	69	6	16	195	10	1	15	2	12	54	32
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	87	8	20	247	13	1	19	3	15	68	41
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	9.7	8.1	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	12%	7%	12%
Vol Thru, %	83%	81%	88%	55%
Vol Right, %	11%	7%	5%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	85	221	98
LT Vol	1	10	16	12
Through Vol	15	69	195	54
RT Vol	2	6	10	32
Lane Flow Rate	23	108	280	124
Geometry Grp	1	1	1	1
Degree of Util (X)	0.031	0.137	0.342	0.161
Departure Headway (Hd)	4.918	4.572	4.395	4.668
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	726	783	820	768
Service Time	2.96	2.603	2.42	2.702
HCM Lane V/C Ratio	0.032	0.138	0.341	0.161
HCM Control Delay	8.1	8.3	9.7	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.5	1.5	0.6

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✥			✥	
Traffic Vol, veh/h	178	706	0	2	1204	18	1	0	2	0	0	168
Future Vol, veh/h	178	706	0	2	1204	18	1	0	2	0	0	168
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	196	776	0	2	1323	20	1	0	2	0	0	185

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1343	0	0	776	0	0	1834	2515	389	2118	2505	672
Stage 1	-	-	-	-	-	-	1168	1168	-	1337	1337	-
Stage 2	-	-	-	-	-	-	666	1347	-	781	1168	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	509	-	-	836	-	-	47	28	610	29	28	398
Stage 1	-	-	-	-	-	-	206	266	-	162	220	-
Stage 2	-	-	-	-	-	-	415	218	-	354	266	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	509	-	-	836	-	-	18	17	609	20	17	398
Mov Cap-2 Maneuver	-	-	-	-	-	-	18	17	-	20	17	-
Stage 1	-	-	-	-	-	-	127	164	-	100	220	-
Stage 2	-	-	-	-	-	-	222	218	-	217	164	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	0	80.4	21.6
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	51	509	-	-	836	-	-	398
HCM Lane V/C Ratio	0.065	0.384	-	-	0.003	-	-	0.464
HCM Control Delay (s)	80.4	16.4	-	-	9.3	-	-	21.6
HCM Lane LOS	F	C	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	1.8	-	-	0	-	-	2.4

HCM 6th Signalized Intersection Summary
13: S Willow Ave & E Jensen Ave

Timing Plan: EX AM
06/14/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	45	314	32	33	913	31	19	11	11	26	33	103
Future Volume (veh/h)	45	314	32	33	913	31	19	11	11	26	33	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	388	40	41	1127	38	23	14	14	32	41	127
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	1418	145	112	1483	50	74	98	98	95	235	199
Arrive On Green	0.08	0.44	0.44	0.06	0.42	0.42	0.04	0.11	0.11	0.05	0.13	0.13
Sat Flow, veh/h	1781	3254	334	1781	3508	118	1781	858	858	1781	1870	1585
Grp Volume(v), veh/h	56	211	217	41	571	594	23	0	28	32	41	127
Grp Sat Flow(s),veh/h/ln	1781	1777	1810	1781	1777	1849	1781	0	1716	1781	1870	1585
Q Serve(g_s), s	2.1	5.3	5.3	1.5	18.9	18.9	0.9	0.0	1.0	1.2	1.4	5.3
Cycle Q Clear(g_c), s	2.1	5.3	5.3	1.5	18.9	18.9	0.9	0.0	1.0	1.2	1.4	5.3
Prop In Lane	1.00		0.18	1.00		0.06	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	136	775	789	112	751	782	74	0	196	95	235	199
V/C Ratio(X)	0.41	0.27	0.28	0.37	0.76	0.76	0.31	0.00	0.14	0.34	0.17	0.64
Avail Cap(c_a), veh/h	386	1053	1073	386	1053	1096	386	0	496	386	541	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	12.5	12.5	31.1	17.0	17.0	32.2	0.0	27.6	31.6	27.0	28.7
Incr Delay (d2), s/veh	0.7	0.2	0.2	0.7	2.5	2.4	0.9	0.0	0.5	0.8	0.9	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.7	1.7	0.6	6.5	6.7	0.4	0.0	0.4	0.5	0.6	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	12.7	12.7	31.8	19.4	19.3	33.1	0.0	28.1	32.4	27.9	37.3
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	D
Approach Vol, veh/h		484			1206			51			200	
Approach Delay, s/veh		14.9			19.8			30.4			34.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	15.2	11.0	35.2	8.6	14.4	10.1	36.1
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	2.9	7.3	4.1	20.9	3.2	3.0	3.5	7.3
Green Ext Time (p_c), s	0.0	1.0	0.0	8.3	0.0	0.1	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

14: S Peach Ave & E Jensen Ave

06/14/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↑	↱		✥			✥	
Traffic Volume (veh/h)	73	231	12	21	716	58	5	34	13	87	92	207
Future Volume (veh/h)	73	231	12	21	716	58	5	34	13	87	92	207
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	269	14	24	833	67	6	40	15	101	107	241
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	1309	68	72	1281	571	77	432	151	157	155	302
Arrive On Green	0.08	0.38	0.38	0.04	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	3437	178	1781	3554	1585	87	1227	429	299	442	859
Grp Volume(v), veh/h	85	138	145	24	833	67	61	0	0	449	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1838	1781	1777	1585	1743	0	0	1600	0	0
Q Serve(g_s), s	4.0	4.5	4.5	1.1	16.8	2.4	0.0	0.0	0.0	16.8	0.0	0.0
Cycle Q Clear(g_c), s	4.0	4.5	4.5	1.1	16.8	2.4	2.0	0.0	0.0	21.6	0.0	0.0
Prop In Lane	1.00		0.10	1.00		1.00	0.10		0.25	0.22		0.54
Lane Grp Cap(c), veh/h	144	677	700	72	1281	571	659	0	0	614	0	0
V/C Ratio(X)	0.59	0.20	0.21	0.33	0.65	0.12	0.09	0.00	0.00	0.73	0.00	0.00
Avail Cap(c_a), veh/h	450	1033	1069	414	2066	922	1138	0	0	1069	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.1	17.9	17.9	40.1	23.0	18.4	18.7	0.0	0.0	24.9	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.3	0.3	1.0	1.3	0.2	0.1	0.0	0.0	4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.7	1.8	0.5	6.4	0.8	0.8	0.0	0.0	8.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	18.2	18.2	41.1	24.3	18.6	18.8	0.0	0.0	29.5	0.0	0.0
LnGrp LOS	D	B	B	D	C	B	B	A	A	C	A	A
Approach Vol, veh/h		368			924			61			449	
Approach Delay, s/veh		23.2			24.3			18.8			29.5	
Approach LOS		C			C			B			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		37.1	10.9	38.0		37.1	9.2	39.7				
Change Period (Y+Rc), s		6.8	4.0	7.0		6.8	5.7	7.0				
Max Green Setting (Gmax), s		55.0	21.7	50.0		55.0	20.0	50.0				
Max Q Clear Time (g_c+I1), s		23.6	6.0	18.8		4.0	3.1	6.5				
Green Ext Time (p_c), s		6.7	0.1	12.1		0.6	0.0	3.2				
Intersection Summary												
HCM 6th Ctrl Delay			25.2									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	↰↱	
Traffic Vol, veh/h	214	150	92	204	34	79
Future Vol, veh/h	214	150	92	204	34	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	246	172	106	234	39	91

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	418	0	778	332
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1141	-	365	710
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1141	-	331	710
Mov Cap-2 Maneuver	-	-	-	-	507	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	585	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	634	-	-	1141	-
HCM Lane V/C Ratio	0.205	-	-	0.093	-
HCM Control Delay (s)	12.1	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.3	-

HCM 6th TWSC
1: S Orange Ave & E American Ave

Timing Plan: EX PM
06/14/2023

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	8	88	6	1	66	3	6	11	3	13	16	2
Future Vol, veh/h	8	88	6	1	66	3	6	11	3	13	16	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	100	7	1	75	3	7	13	3	15	18	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	107	0	0	211	202	104	209	204	77
Stage 1	-	-	-	-	-	-	122	122	-	79	79	-
Stage 2	-	-	-	-	-	-	89	80	-	130	125	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1520	-	-	1484	-	-	746	694	951	748	692	984
Stage 1	-	-	-	-	-	-	882	795	-	930	829	-
Stage 2	-	-	-	-	-	-	918	828	-	874	792	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1520	-	-	1484	-	-	725	689	951	731	687	984
Mov Cap-2 Maneuver	-	-	-	-	-	-	725	689	-	731	687	-
Stage 1	-	-	-	-	-	-	877	790	-	924	828	-
Stage 2	-	-	-	-	-	-	895	827	-	852	787	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	10.1	10.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	730	1520	-	-	1484	-	-	719
HCM Lane V/C Ratio	0.031	0.006	-	-	0.001	-	-	0.049
HCM Control Delay (s)	10.1	7.4	0	-	7.4	0	-	10.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	7	82	13	12	53	7	22	28	11	6	32	4
Future Vol, veh/h	7	82	13	12	53	7	22	28	11	6	32	4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	96	15	14	62	8	26	33	13	7	38	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.8	7.9	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	36%	7%	17%	14%
Vol Thru, %	46%	80%	74%	76%
Vol Right, %	18%	13%	10%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	102	72	42
LT Vol	22	7	12	6
Through Vol	28	82	53	32
RT Vol	11	13	7	4
Lane Flow Rate	72	120	85	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.142	0.102	0.061
Departure Headway (Hd)	4.409	4.252	4.314	4.442
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	815	848	834	808
Service Time	2.424	2.252	2.326	2.458
HCM Lane V/C Ratio	0.088	0.142	0.102	0.061
HCM Control Delay	7.9	8	7.8	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.3	0.2

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	12	84	3	3	51	2	4	21	0	4	26	16
Future Vol, veh/h	12	84	3	3	51	2	4	21	0	4	26	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	97	3	3	59	2	5	24	0	5	30	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	114	83	39	133	92	24	48	0	0	24	0	0
Stage 1	49	49	-	34	34	-	-	-	-	-	-	-
Stage 2	65	34	-	99	58	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	863	807	1033	839	798	1052	1559	-	-	1591	-	-
Stage 1	964	854	-	982	867	-	-	-	-	-	-	-
Stage 2	946	867	-	907	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	809	802	1033	756	793	1052	1559	-	-	1591	-	-
Mov Cap-2 Maneuver	809	802	-	756	793	-	-	-	-	-	-	-
Stage 1	961	851	-	979	864	-	-	-	-	-	-	-
Stage 2	877	864	-	799	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.9	1.2	0.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1559	-	-	808	798	1591	-	-
HCM Lane V/C Ratio	0.003	-	-	0.141	0.081	0.003	-	-
HCM Control Delay (s)	7.3	0	-	10.2	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.3	0	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	1	21	0	8	53	4	0	7	4	6	22	5
Future Vol, veh/h	1	21	0	8	53	4	0	7	4	6	22	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	28	0	11	70	5	0	9	5	8	29	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	75	0	0	28	0	0	143	127	28	132	125	73
Stage 1	-	-	-	-	-	-	30	30	-	95	95	-
Stage 2	-	-	-	-	-	-	113	97	-	37	30	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1524	-	-	1585	-	-	826	764	1047	840	765	989
Stage 1	-	-	-	-	-	-	987	870	-	912	816	-
Stage 2	-	-	-	-	-	-	892	815	-	978	870	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1524	-	-	1585	-	-	792	758	1047	823	759	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	792	758	-	823	759	-
Stage 1	-	-	-	-	-	-	986	869	-	911	810	-
Stage 2	-	-	-	-	-	-	848	809	-	962	869	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	9.3	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	843	1524	-	-	1585	-	-	798
HCM Lane V/C Ratio	0.017	0.001	-	-	0.007	-	-	0.054
HCM Control Delay (s)	9.3	7.4	0	-	7.3	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	4	27	4	37	46	28	6	83	23	30	99	8
Future Vol, veh/h	4	27	4	37	46	28	6	83	23	30	99	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	30	4	41	51	31	7	91	25	33	109	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	339	310	114	315	302	104	118	0	0	116	0	0
Stage 1	180	180	-	118	118	-	-	-	-	-	-	-
Stage 2	159	130	-	197	184	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	615	605	939	638	611	951	1470	-	-	1473	-	-
Stage 1	822	750	-	887	798	-	-	-	-	-	-	-
Stage 2	843	789	-	805	747	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	545	589	939	598	595	951	1470	-	-	1473	-	-
Mov Cap-2 Maneuver	545	589	-	598	595	-	-	-	-	-	-	-
Stage 1	818	734	-	883	794	-	-	-	-	-	-	-
Stage 2	760	785	-	752	731	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.3	11.7	0.4	1.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1470	-	-	609	658	1473	-	-
HCM Lane V/C Ratio	0.004	-	-	0.063	0.185	0.022	-	-
HCM Control Delay (s)	7.5	-	-	11.3	11.7	7.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.7	0.1	-	-

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	21	81	23	14	74	24	19	48	7	31	56	24
Future Vol, veh/h	21	81	23	14	74	24	19	48	7	31	56	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	88	25	15	80	26	21	52	8	34	61	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	8.3	8.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	17%	12%	28%
Vol Thru, %	65%	65%	66%	50%
Vol Right, %	9%	18%	21%	22%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	74	125	112	111
LT Vol	19	21	14	31
Through Vol	48	81	74	56
RT Vol	7	23	24	24
Lane Flow Rate	80	136	122	121
Geometry Grp	1	1	1	1
Degree of Util (X)	0.104	0.169	0.151	0.152
Departure Headway (Hd)	4.659	4.467	4.457	4.544
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	769	803	805	789
Service Time	2.69	2.493	2.483	2.573
HCM Lane V/C Ratio	0.104	0.169	0.152	0.153
HCM Control Delay	8.2	8.4	8.3	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.6	0.5	0.5

7: S East Ave & W Central Ave

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣		↰	↑	↱
Traffic Vol, veh/h	21	117	21	4	108	17	21	8	5	24	11	24
Future Vol, veh/h	21	117	21	4	108	17	21	8	5	24	11	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	127	23	4	117	18	23	9	5	26	12	26
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	9.1	8.7	8.7	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	62%	13%	3%	100%	0%	0%
Vol Thru, %	24%	74%	84%	0%	100%	0%
Vol Right, %	15%	13%	13%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	159	129	24	11	24
LT Vol	21	21	4	24	0	0
Through Vol	8	117	108	0	11	0
RT Vol	5	21	17	0	0	24
Lane Flow Rate	37	173	140	26	12	26
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.058	0.235	0.19	0.043	0.018	0.034
Departure Headway (Hd)	5.618	4.895	4.874	5.867	5.364	4.658
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	638	735	738	611	668	769
Service Time	3.348	2.615	2.594	3.594	3.09	2.385
HCM Lane V/C Ratio	0.058	0.235	0.19	0.043	0.018	0.034
HCM Control Delay	8.7	9.1	8.7	8.9	8.2	7.5
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.9	0.7	0.1	0.1	0.1

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	26	148	14	27	78	9	10	48	30	18	47	14
Future Vol, veh/h	26	148	14	27	78	9	10	48	30	18	47	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	161	15	29	85	10	11	52	33	20	51	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	8.5	8.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	14%	24%	23%
Vol Thru, %	55%	79%	68%	59%
Vol Right, %	34%	7%	8%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	188	114	79
LT Vol	10	26	27	18
Through Vol	48	148	78	47
RT Vol	30	14	9	14
Lane Flow Rate	96	204	124	86
Geometry Grp	1	1	1	1
Degree of Util (X)	0.123	0.255	0.158	0.113
Departure Headway (Hd)	4.618	4.491	4.596	4.748
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	776	799	779	754
Service Time	2.651	2.52	2.629	2.784
HCM Lane V/C Ratio	0.124	0.255	0.159	0.114
HCM Control Delay	8.3	9.1	8.5	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	1	0.6	0.4

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	3	102	20	83	105	16	15	3	103	55	14	12
Future Vol, veh/h	3	102	20	83	105	16	15	3	103	55	14	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	119	23	97	122	19	17	3	120	64	16	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	141	0	0	142	0	0	478	472	131	524	474	132
Stage 1	-	-	-	-	-	-	137	137	-	326	326	-
Stage 2	-	-	-	-	-	-	341	335	-	198	148	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1442	-	-	1441	-	-	498	490	919	464	489	917
Stage 1	-	-	-	-	-	-	866	783	-	687	648	-
Stage 2	-	-	-	-	-	-	674	643	-	804	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1442	-	-	1441	-	-	450	453	919	378	452	917
Mov Cap-2 Maneuver	-	-	-	-	-	-	450	453	-	378	452	-
Stage 1	-	-	-	-	-	-	864	781	-	686	601	-
Stage 2	-	-	-	-	-	-	599	596	-	695	773	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	3.1	10.5	15.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	796	1442	-	-	1441	-	-	427
HCM Lane V/C Ratio	0.177	0.002	-	-	0.067	-	-	0.221
HCM Control Delay (s)	10.5	7.5	0	-	7.7	0	-	15.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.2	-	-	0.8

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱			✥			✥			✥	
Traffic Vol, veh/h	67	227	1	0	197	69	2	1	1	61	1	80
Future Vol, veh/h	67	227	1	0	197	69	2	1	1	61	1	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	273	1	0	237	83	2	1	1	73	1	96

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	320	0	0	274	0	0	763	756	275	717	715	279
Stage 1	-	-	-	-	-	-	436	436	-	279	279	-
Stage 2	-	-	-	-	-	-	327	320	-	438	436	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1240	-	-	1289	-	-	321	337	764	345	356	760
Stage 1	-	-	-	-	-	-	599	580	-	728	680	-
Stage 2	-	-	-	-	-	-	686	652	-	597	580	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1240	-	-	1289	-	-	265	315	763	326	333	760
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	315	-	326	333	-
Stage 1	-	-	-	-	-	-	560	542	-	681	680	-
Stage 2	-	-	-	-	-	-	598	652	-	555	542	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	16	16.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	332	1240	-	-	1289	-	-	481
HCM Lane V/C Ratio	0.015	0.065	-	-	-	-	-	0.356
HCM Control Delay (s)	16	8.1	-	-	0	-	-	16.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	1.6

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	43	199	11	8	92	17	6	68	10	19	32	17
Future Vol, veh/h	43	199	11	8	92	17	6	68	10	19	32	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	214	12	9	99	18	6	73	11	20	34	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.8	8.5	8.6	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	17%	7%	28%
Vol Thru, %	81%	79%	79%	47%
Vol Right, %	12%	4%	15%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	84	253	117	68
LT Vol	6	43	8	19
Through Vol	68	199	92	32
RT Vol	10	11	17	17
Lane Flow Rate	90	272	126	73
Geometry Grp	1	1	1	1
Degree of Util (X)	0.122	0.339	0.16	0.099
Departure Headway (Hd)	4.882	4.486	4.568	4.87
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	733	800	784	733
Service Time	2.926	2.517	2.604	2.914
HCM Lane V/C Ratio	0.123	0.34	0.161	0.1
HCM Control Delay	8.6	9.8	8.5	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	1.5	0.6	0.3

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✥			✥	
Traffic Vol, veh/h	213	1017	0	1	839	15	0	0	0	5	0	295
Future Vol, veh/h	213	1017	0	1	839	15	0	0	0	5	0	295
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	242	1156	0	1	953	17	0	0	0	6	0	335

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	970	0	0	1156	0	0	2119	2612	578	2026	2604	485
Stage 1	-	-	-	-	-	-	1640	1640	-	964	964	-
Stage 2	-	-	-	-	-	-	479	972	-	1062	1640	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	706	-	-	600	-	-	29	24	459	34	24	528
Stage 1	-	-	-	-	-	-	104	157	-	274	332	-
Stage 2	-	-	-	-	-	-	537	329	-	239	157	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	706	-	-	600	-	-	8	16	459	25	16	528
Mov Cap-2 Maneuver	-	-	-	-	-	-	8	16	-	25	16	-
Stage 1	-	-	-	-	-	-	68	103	-	180	331	-
Stage 2	-	-	-	-	-	-	196	328	-	157	103	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0	0	50.3
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	706	-	-	600	-	-	395
HCM Lane V/C Ratio	-	0.343	-	-	0.002	-	-	0.863
HCM Control Delay (s)	0	12.7	-	-	11	-	-	50.3
HCM Lane LOS	A	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	-	1.5	-	-	0	-	-	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	96	694	26	13	401	31	50	62	42	23	14	40
Future Volume (veh/h)	96	694	26	13	401	31	50	62	42	23	14	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	723	27	14	418	32	52	65	44	24	15	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	1107	41	50	767	58	144	184	124	80	264	224
Arrive On Green	0.12	0.32	0.32	0.03	0.23	0.23	0.08	0.18	0.18	0.04	0.14	0.14
Sat Flow, veh/h	1781	3493	130	1781	3346	255	1781	1040	704	1781	1870	1585
Grp Volume(v), veh/h	100	368	382	14	221	229	52	0	109	24	15	42
Grp Sat Flow(s),veh/h/ln	1781	1777	1847	1781	1777	1824	1781	0	1744	1781	1870	1585
Q Serve(g_s), s	2.8	9.5	9.5	0.4	5.8	5.9	1.5	0.0	2.9	0.7	0.4	1.2
Cycle Q Clear(g_c), s	2.8	9.5	9.5	0.4	5.8	5.9	1.5	0.0	2.9	0.7	0.4	1.2
Prop In Lane	1.00		0.07	1.00		0.14	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	206	563	586	50	407	418	144	0	308	80	264	224
V/C Ratio(X)	0.48	0.65	0.65	0.28	0.54	0.55	0.36	0.00	0.35	0.30	0.06	0.19
Avail Cap(c_a), veh/h	501	1366	1420	501	1366	1403	501	0	654	501	702	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	15.7	15.7	25.4	18.1	18.1	23.2	0.0	19.3	24.7	19.8	20.2
Incr Delay (d2), s/veh	0.7	1.6	1.5	1.1	1.4	1.4	0.6	0.0	1.1	0.8	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.1	3.2	0.2	2.0	2.1	0.6	0.0	1.2	0.3	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.7	17.3	17.2	26.5	19.5	19.5	23.8	0.0	20.4	25.4	20.1	21.3
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		850			464			161			81	
Approach Delay, s/veh		17.9			19.7			21.5			22.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	14.0	11.9	18.2	7.3	15.9	7.2	22.9
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	3.5	3.2	4.8	7.9	2.7	4.9	2.4	11.5
Green Ext Time (p_c), s	0.0	0.3	0.1	3.0	0.0	0.7	0.0	5.4

Intersection Summary			
HCM 6th Ctrl Delay			19.0
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary
14: S Peach Ave & E Jensen Ave

Timing Plan: EX PM
06/14/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↑	↱		✥			✥	
Traffic Volume (veh/h)	164	555	6	9	303	70	5	105	18	78	55	83
Future Volume (veh/h)	164	555	6	9	303	70	5	105	18	78	55	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	173	584	6	9	319	74	5	111	19	82	58	87
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	1195	12	34	833	371	84	362	60	204	128	142
Arrive On Green	0.15	0.33	0.33	0.02	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3604	37	1781	3554	1585	21	1537	255	424	544	602
Grp Volume(v), veh/h	173	288	302	9	319	74	135	0	0	227	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1585	1814	0	0	1570	0	0
Q Serve(g_s), s	4.3	6.1	6.1	0.2	3.6	1.8	0.0	0.0	0.0	2.9	0.0	0.0
Cycle Q Clear(g_c), s	4.3	6.1	6.1	0.2	3.6	1.8	2.9	0.0	0.0	5.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		1.00	0.04		0.14	0.36		0.38
Lane Grp Cap(c), veh/h	271	589	618	34	833	371	506	0	0	474	0	0
V/C Ratio(X)	0.64	0.49	0.49	0.27	0.38	0.20	0.27	0.00	0.00	0.48	0.00	0.00
Avail Cap(c_a), veh/h	821	1887	1979	757	3774	1684	2178	0	0	1877	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.7	12.5	12.6	22.8	15.2	14.5	14.9	0.0	0.0	15.9	0.0	0.0
Incr Delay (d2), s/veh	0.9	1.5	1.4	1.6	0.7	0.6	0.5	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.9	1.9	0.1	1.1	0.5	1.0	0.0	0.0	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	14.0	14.0	24.3	15.8	15.1	15.4	0.0	0.0	18.0	0.0	0.0
LnGrp LOS	B	B	B	C	B	B	B	A	A	B	A	A
Approach Vol, veh/h		763			402			135			227	
Approach Delay, s/veh		15.3			15.9			15.4			18.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		17.9	11.2	18.0		17.9	6.6	22.6
Change Period (Y+Rc), s		6.8	4.0	7.0		6.8	5.7	7.0
Max Green Setting (Gmax), s		55.0	21.7	50.0		55.0	20.0	50.0
Max Q Clear Time (g_c+I1), s		7.8	6.3	5.6		4.9	2.2	8.1
Green Ext Time (p_c), s		3.3	0.2	4.8		1.4	0.0	7.5

Intersection Summary			
HCM 6th Ctrl Delay			15.9
HCM 6th LOS			B

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	↰↱	
Traffic Vol, veh/h	175	90	78	191	67	114
Future Vol, veh/h	175	90	78	191	67	114
Conflicting Peds, #/hr	0	4	4	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	201	103	90	220	77	131

Major/Minor	Major1			Major2	Minor1	
Conflicting Flow All	0	0	308	0	657	258
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	400	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1253	-	430	781
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	677	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1248	-	397	777
Mov Cap-2 Maneuver	-	-	-	-	556	-
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	628	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	677	-	-	1248	-
HCM Lane V/C Ratio	0.307	-	-	0.072	-
HCM Control Delay (s)	12.7	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.2	-

Appendix B – 2040 Baseline (No Project) Conditions Synchro Output

1: S Orange Ave & E American Ave

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	9	45	2	4	153	7	7	13	6	7	12	9
Future Vol, veh/h	9	45	2	4	153	7	7	13	6	7	12	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	54	2	5	182	8	8	15	7	8	14	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	56	0	0	286	277	55	284	274	186
Stage 1	-	-	-	-	-	-	77	77	-	196	196	-
Stage 2	-	-	-	-	-	-	209	200	-	88	78	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1384	-	-	1549	-	-	666	631	1012	668	633	856
Stage 1	-	-	-	-	-	-	932	831	-	806	739	-
Stage 2	-	-	-	-	-	-	793	736	-	920	830	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1384	-	-	1549	-	-	640	623	1012	645	625	856
Mov Cap-2 Maneuver	-	-	-	-	-	-	640	623	-	645	625	-
Stage 1	-	-	-	-	-	-	925	824	-	800	736	-
Stage 2	-	-	-	-	-	-	765	733	-	889	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.2	10.5	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	689	1384	-	-	1549	-	-	690
HCM Lane V/C Ratio	0.045	0.008	-	-	0.003	-	-	0.048
HCM Control Delay (s)	10.5	7.6	0	-	7.3	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	3	29	13	9	126	11	25	40	7	5	26	9
Future Vol, veh/h	3	29	13	9	126	11	25	40	7	5	26	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	32	14	10	140	12	28	44	8	6	29	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	8.2	8	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	7%	6%	12%
Vol Thru, %	56%	64%	86%	65%
Vol Right, %	10%	29%	8%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	45	146	40
LT Vol	25	3	9	5
Through Vol	40	29	126	26
RT Vol	7	13	11	9
Lane Flow Rate	80	50	162	44
Geometry Grp	1	1	1	1
Degree of Util (X)	0.099	0.059	0.187	0.054
Departure Headway (Hd)	4.466	4.233	4.156	4.387
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	806	850	850	820
Service Time	2.471	2.239	2.251	2.392
HCM Lane V/C Ratio	0.099	0.059	0.191	0.054
HCM Control Delay	8	7.5	8.2	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.7	0.2

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	16	52	2	0	101	7	7	17	1	3	13	23
Future Vol, veh/h	16	52	2	0	101	7	7	17	1	3	13	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	56	2	0	109	8	8	18	1	3	14	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	126	68	27	97	80	19	39	0	0	19	0	0
Stage 1	33	33	-	35	35	-	-	-	-	-	-	-
Stage 2	93	35	-	62	45	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	848	823	1048	885	810	1059	1571	-	-	1597	-	-
Stage 1	983	868	-	981	866	-	-	-	-	-	-	-
Stage 2	914	866	-	949	857	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	750	817	1048	833	804	1059	1571	-	-	1597	-	-
Mov Cap-2 Maneuver	750	817	-	833	804	-	-	-	-	-	-	-
Stage 1	978	866	-	976	862	-	-	-	-	-	-	-
Stage 2	789	862	-	884	855	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10.1	2	0.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	806	817	1597	-	-
HCM Lane V/C Ratio	0.005	-	-	0.093	0.142	0.002	-	-
HCM Control Delay (s)	7.3	0	-	9.9	10.1	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.5	0	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	0	35	0	8	48	19	1	33	8	10	51	1
Future Vol, veh/h	0	35	0	8	48	19	1	33	8	10	51	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	0	12	71	28	1	49	12	15	75	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	99	0	0	51	0	0	198	174	51	191	160	85
Stage 1	-	-	-	-	-	-	51	51	-	109	109	-
Stage 2	-	-	-	-	-	-	147	123	-	82	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1494	-	-	1555	-	-	761	719	1017	769	732	974
Stage 1	-	-	-	-	-	-	962	852	-	896	805	-
Stage 2	-	-	-	-	-	-	856	794	-	926	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1494	-	-	1555	-	-	696	713	1017	716	726	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	696	713	-	716	726	-
Stage 1	-	-	-	-	-	-	962	852	-	896	799	-
Stage 2	-	-	-	-	-	-	768	788	-	863	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	10.2	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	756	1494	-	-	1555	-	-	727
HCM Lane V/C Ratio	0.082	-	-	-	0.008	-	-	0.125
HCM Control Delay (s)	10.2	0	-	-	7.3	0	-	10.7
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.4

5: S Elm Ave & W Central Ave

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	13	57	12	41	54	57	14	139	37	12	185	6
Future Vol, veh/h	13	57	12	41	54	57	14	139	37	12	185	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	73	15	53	69	73	18	178	47	15	237	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	580	532	241	553	513	202	245	0	0	225	0	0
Stage 1	271	271	-	238	238	-	-	-	-	-	-	-
Stage 2	309	261	-	315	275	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	426	453	798	444	465	839	1321	-	-	1344	-	-
Stage 1	735	685	-	765	708	-	-	-	-	-	-	-
Stage 2	701	692	-	696	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	337	442	798	373	453	839	1321	-	-	1344	-	-
Mov Cap-2 Maneuver	337	442	-	373	453	-	-	-	-	-	-	-
Stage 1	725	677	-	754	698	-	-	-	-	-	-	-
Stage 2	569	682	-	602	675	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	16.3	0.6	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1321	-	-	449	512	1344	-	-
HCM Lane V/C Ratio	0.014	-	-	0.234	0.381	0.011	-	-
HCM Control Delay (s)	7.8	-	-	15.5	16.3	7.7	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	1.8	0	-	-

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	19	82	120	88	118	44	23	52	6	24	156	28
Future Vol, veh/h	19	82	120	88	118	44	23	52	6	24	156	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	89	130	96	128	48	25	57	7	26	170	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.3	11.3	9.6	11
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	9%	35%	12%
Vol Thru, %	64%	37%	47%	75%
Vol Right, %	7%	54%	18%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	221	250	208
LT Vol	23	19	88	24
Through Vol	52	82	118	156
RT Vol	6	120	44	28
Lane Flow Rate	88	240	272	226
Geometry Grp	1	1	1	1
Degree of Util (X)	0.138	0.327	0.386	0.335
Departure Headway (Hd)	5.645	4.907	5.12	5.332
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	635	733	704	676
Service Time	3.681	2.935	3.148	3.361
HCM Lane V/C Ratio	0.139	0.327	0.386	0.334
HCM Control Delay	9.6	10.3	11.3	11
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.5	1.4	1.8	1.5

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥		↰	↑	↱
Traffic Vol, veh/h	12	108	20	16	162	21	11	14	3	79	63	42
Future Vol, veh/h	12	108	20	16	162	21	11	14	3	79	63	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	117	22	17	176	23	12	15	3	86	68	46
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	9.6	10.5	9	9.1
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	39%	9%	8%	100%	0%	0%
Vol Thru, %	50%	77%	81%	0%	100%	0%
Vol Right, %	11%	14%	11%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	140	199	79	63	42
LT Vol	11	12	16	79	0	0
Through Vol	14	108	162	0	63	0
RT Vol	3	20	21	0	0	42
Lane Flow Rate	30	152	216	86	68	46
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.05	0.224	0.316	0.144	0.105	0.061
Departure Headway (Hd)	5.9	5.309	5.265	6.041	5.536	4.83
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	603	674	681	592	644	737
Service Time	3.679	3.064	3.015	3.801	3.297	2.59
HCM Lane V/C Ratio	0.05	0.226	0.317	0.145	0.106	0.062
HCM Control Delay	9	9.6	10.5	9.8	9	7.9
HCM Lane LOS	A	A	B	A	A	A
HCM 95th-tile Q	0.2	0.9	1.4	0.5	0.4	0.2

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	13	125	9	105	305	22	9	65	30	9	65	6
Future Vol, veh/h	13	125	9	105	305	22	9	65	30	9	65	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	136	10	114	332	24	10	71	33	10	71	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.6			15			9.6			9.6		
HCM LOS	A			B			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	9%	24%	11%
Vol Thru, %	62%	85%	71%	81%
Vol Right, %	29%	6%	5%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	104	147	432	80
LT Vol	9	13	105	9
Through Vol	65	125	305	65
RT Vol	30	9	22	6
Lane Flow Rate	113	160	470	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.172	0.227	0.611	0.137
Departure Headway (Hd)	5.493	5.109	4.682	5.675
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	656	706	761	634
Service Time	3.505	3.109	2.767	3.687
HCM Lane V/C Ratio	0.172	0.227	0.618	0.137
HCM Control Delay	9.6	9.6	15	9.6
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.6	0.9	4.2	0.5

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	6	110	28	131	195	77	23	18	89	15	9	1
Future Vol, veh/h	6	110	28	131	195	77	23	18	89	15	9	1
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	129	33	154	229	91	27	21	105	18	11	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	321	0	0	162	0	0	750	789	146	807	760	277
Stage 1	-	-	-	-	-	-	160	160	-	584	584	-
Stage 2	-	-	-	-	-	-	590	629	-	223	176	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1239	-	-	1417	-	-	328	323	901	300	336	762
Stage 1	-	-	-	-	-	-	842	766	-	498	498	-
Stage 2	-	-	-	-	-	-	494	475	-	780	753	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1238	-	-	1417	-	-	284	278	901	223	289	761
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	278	-	223	289	-
Stage 1	-	-	-	-	-	-	837	761	-	495	431	-
Stage 2	-	-	-	-	-	-	416	411	-	666	748	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.6	14.5	21.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	532	1238	-	-	1417	-	-	251
HCM Lane V/C Ratio	0.287	0.006	-	-	0.109	-	-	0.117
HCM Control Delay (s)	14.5	7.9	0	-	7.8	0	-	21.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.4	-	-	0.4

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱			↰↱			✥			✥	
Traffic Vol, veh/h	61	174	0	0	208	65	1	0	0	125	2	128
Future Vol, veh/h	61	174	0	0	208	65	1	0	0	125	2	128
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	220	0	0	263	82	1	0	0	158	3	162

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	345	0	0	220	0	0	507	719	110	568	678	173
Stage 1	-	-	-	-	-	-	374	374	-	304	304	-
Stage 2	-	-	-	-	-	-	133	345	-	264	374	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1211	-	-	1346	-	-	449	353	922	406	373	840
Stage 1	-	-	-	-	-	-	619	616	-	681	662	-
Stage 2	-	-	-	-	-	-	857	635	-	718	616	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1211	-	-	1346	-	-	343	330	922	386	349	840
Mov Cap-2 Maneuver	-	-	-	-	-	-	343	330	-	386	349	-
Stage 1	-	-	-	-	-	-	579	577	-	637	662	-
Stage 2	-	-	-	-	-	-	689	635	-	672	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	15.5	21.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	343	1211	-	-	1346	-	-	529
HCM Lane V/C Ratio	0.004	0.064	-	-	-	-	-	0.61
HCM Control Delay (s)	15.5	8.2	-	-	0	-	-	21.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	4.1

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	11	75	7	17	203	10	2	25	3	29	129	76
Future Vol, veh/h	11	75	7	17	203	10	2	25	3	29	129	76
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	95	9	22	257	13	3	32	4	37	163	96
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	11.2	8.7	11.1
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	12%	7%	12%
Vol Thru, %	83%	81%	88%	55%
Vol Right, %	10%	8%	4%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	93	230	234
LT Vol	2	11	17	29
Through Vol	25	75	203	129
RT Vol	3	7	10	76
Lane Flow Rate	38	118	291	296
Geometry Grp	1	1	1	1
Degree of Util (X)	0.057	0.167	0.396	0.396
Departure Headway (Hd)	5.397	5.11	4.895	4.813
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	668	693	728	741
Service Time	3.397	3.202	2.971	2.885
HCM Lane V/C Ratio	0.057	0.17	0.4	0.399
HCM Control Delay	8.7	9.2	11.2	11.1
HCM Lane LOS	A	A	B	B
HCM 95th-tile Q	0.2	0.6	1.9	1.9

12: S Pullman Ave & E Jensen Ave

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✣			✣	
Traffic Vol, veh/h	258	1024	0	3	1727	26	1	0	3	0	0	208
Future Vol, veh/h	258	1024	0	3	1727	26	1	0	3	0	0	208
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	284	1125	0	3	1898	29	1	0	3	0	0	229

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1927	0	0	1125	0	0	2648	3626	564	3051	3612	964
Stage 1	-	-	-	-	-	-	1693	1693	-	1919	1919	-
Stage 2	-	-	-	-	-	-	955	1933	-	1132	1693	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	302	-	-	617	-	-	11	5	469	5	5	255
Stage 1	-	-	-	-	-	-	97	147	-	69	113	-
Stage 2	-	-	-	-	-	-	278	112	-	216	147	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	302	-	-	617	-	-	0	0	469	1	0	255
Mov Cap-2 Maneuver	-	-	-	-	-	-	0	0	-	1	0	-
Stage 1	-	-	-	-	-	-	6	9	-	4	112	-
Stage 2	-	-	-	-	-	-	29	111	-	13	9	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.2	0	12.7	74.8
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	469	302	-	-	617	-	-	255
HCM Lane V/C Ratio	0.009	0.939	-	-	0.005	-	-	0.896
HCM Control Delay (s)	12.7	75.4	-	-	10.9	-	-	74.8
HCM Lane LOS	B	F	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0	9.2	-	-	0	-	-	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	72	499	51	56	1544	52	24	14	14	45	57	177
Future Volume (veh/h)	72	499	51	56	1544	52	24	14	14	45	57	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	616	63	69	1906	64	30	17	17	56	70	219
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	2120	215	131	2251	75	84	127	127	120	316	268
Arrive On Green	0.08	0.45	0.45	0.07	0.44	0.44	0.05	0.15	0.15	0.07	0.17	0.17
Sat Flow, veh/h	1781	4711	477	1781	5074	170	1781	858	858	1781	1870	1585
Grp Volume(v), veh/h	89	443	236	69	1278	692	30	0	34	56	70	219
Grp Sat Flow(s),veh/h/ln	1781	1702	1784	1781	1702	1840	1781	0	1716	1781	1870	1585
Q Serve(g_s), s	4.3	7.3	7.4	3.3	29.7	29.8	1.4	0.0	1.5	2.7	2.9	11.8
Cycle Q Clear(g_c), s	4.3	7.3	7.4	3.3	29.7	29.8	1.4	0.0	1.5	2.7	2.9	11.8
Prop In Lane	1.00		0.27	1.00		0.09	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	143	1532	803	131	1510	816	84	0	255	120	316	268
V/C Ratio(X)	0.62	0.29	0.29	0.53	0.85	0.85	0.36	0.00	0.13	0.47	0.22	0.82
Avail Cap(c_a), veh/h	301	1573	824	301	1573	850	301	0	387	301	422	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	15.4	15.5	39.6	22.0	22.0	41.0	0.0	32.8	39.8	31.8	35.6
Incr Delay (d2), s/veh	1.7	0.1	0.3	1.2	4.5	8.0	1.0	0.0	0.4	1.0	0.9	16.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.5	2.6	1.4	10.9	12.6	0.6	0.0	0.6	1.2	1.3	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	15.6	15.7	40.8	26.5	30.0	41.9	0.0	33.2	40.9	32.8	52.3
LnGrp LOS	D	B	B	D	C	C	D	A	C	D	C	D
Approach Vol, veh/h		768			2039			64			345	
Approach Delay, s/veh		18.6			28.2			37.3			46.5	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	21.5	12.8	45.4	10.9	19.7	12.2	45.9
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	3.4	13.8	6.3	31.8	4.7	3.5	5.3	9.4
Green Ext Time (p_c), s	0.0	1.2	0.1	7.6	0.0	0.1	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary

Timing Plan: GP AM

14: S Peach Ave & E Jensen Ave

06/14/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑	↱		✥			✥	
Traffic Volume (veh/h)	112	353	18	33	1139	92	12	83	32	92	98	220
Future Volume (veh/h)	112	353	18	33	1139	92	12	83	32	92	98	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	130	410	21	38	1324	107	14	97	37	107	114	256
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	2191	111	86	1473	657	64	404	145	147	145	295
Arrive On Green	0.09	0.44	0.44	0.05	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	4976	253	1781	3554	1585	90	1167	419	317	418	852
Grp Volume(v), veh/h	130	279	152	38	1324	107	148	0	0	477	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1825	1781	1777	1585	1676	0	0	1587	0	0
Q Serve(g_s), s	8.5	5.9	6.0	2.4	41.0	5.0	0.0	0.0	0.0	26.0	0.0	0.0
Cycle Q Clear(g_c), s	8.5	5.9	6.0	2.4	41.0	5.0	7.0	0.0	0.0	32.9	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	0.09		0.25	0.22		0.54
Lane Grp Cap(c), veh/h	157	1499	803	86	1473	657	614	0	0	587	0	0
V/C Ratio(X)	0.83	0.19	0.19	0.44	0.90	0.16	0.24	0.00	0.00	0.81	0.00	0.00
Avail Cap(c_a), veh/h	327	1499	803	302	1505	671	812	0	0	772	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	52.9	20.2	20.2	54.6	32.2	21.7	27.5	0.0	0.0	35.7	0.0	0.0
Incr Delay (d2), s/veh	4.2	0.1	0.3	1.3	8.1	0.3	0.4	0.0	0.0	8.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	2.2	2.4	1.1	17.7	1.8	3.0	0.0	0.0	13.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	20.3	20.4	56.0	40.4	22.0	27.9	0.0	0.0	44.0	0.0	0.0
LnGrp LOS	E	C	C	E	D	C	C	A	A	D	A	A
Approach Vol, veh/h		561			1469			148			477	
Approach Delay, s/veh		28.9			39.4			27.9			44.0	
Approach LOS		C			D			C			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		47.7	14.4	56.0		47.7	11.4	59.0
Change Period (Y+Rc), s		6.8	4.0	7.0		6.8	5.7	7.0
Max Green Setting (Gmax), s		55.0	21.7	50.0		55.0	20.0	50.0
Max Q Clear Time (g_c+I1), s		34.9	10.5	43.0		9.0	4.4	8.0
Green Ext Time (p_c), s		6.0	0.1	5.9		1.6	0.0	5.4

Intersection Summary			
HCM 6th Ctrl Delay			37.4
HCM 6th LOS			D

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	↰↱	
Traffic Vol, veh/h	440	309	124	275	38	89
Future Vol, veh/h	440	309	124	275	38	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	506	355	143	316	44	102

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	861	0	1286	684
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	602	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	781	-	181	449
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	781	-	148	449
Mov Cap-2 Maneuver	-	-	-	-	345	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	447	-

Approach	EB		WB		NB	
HCM Control Delay, s	0		3.3		18.5	
HCM LOS					C	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	412	-	-	781	-
HCM Lane V/C Ratio	0.354	-	-	0.182	-
HCM Control Delay (s)	18.5	-	-	10.6	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.6	-	-	0.7	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	8	88	6	1	66	3	10	18	5	15	18	2
Future Vol, veh/h	8	88	6	1	66	3	10	18	5	15	18	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	100	7	1	75	3	11	20	6	17	20	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	107	0	0	212	202	104	214	204	77
Stage 1	-	-	-	-	-	-	122	122	-	79	79	-
Stage 2	-	-	-	-	-	-	90	80	-	135	125	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1520	-	-	1484	-	-	745	694	951	743	692	984
Stage 1	-	-	-	-	-	-	882	795	-	930	829	-
Stage 2	-	-	-	-	-	-	917	828	-	868	792	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1520	-	-	1484	-	-	723	689	951	718	687	984
Mov Cap-2 Maneuver	-	-	-	-	-	-	723	689	-	718	687	-
Stage 1	-	-	-	-	-	-	877	790	-	924	828	-
Stage 2	-	-	-	-	-	-	891	827	-	835	787	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	10.2	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	730	1520	-	-	1484	-	-	712
HCM Lane V/C Ratio	0.051	0.006	-	-	0.001	-	-	0.056
HCM Control Delay (s)	10.2	7.4	0	-	7.4	0	-	10.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

2: S Cedar Ave & E American Ave

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	7	82	13	12	55	7	22	28	11	6	32	4
Future Vol, veh/h	7	82	13	12	55	7	22	28	11	6	32	4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	96	15	14	65	8	26	33	13	7	38	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.8	7.9	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	36%	7%	16%	14%
Vol Thru, %	46%	80%	74%	76%
Vol Right, %	18%	13%	9%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	102	74	42
LT Vol	22	7	12	6
Through Vol	28	82	55	32
RT Vol	11	13	7	4
Lane Flow Rate	72	120	87	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.142	0.104	0.061
Departure Headway (Hd)	4.415	4.253	4.315	4.448
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	814	848	833	808
Service Time	2.428	2.253	2.326	2.461
HCM Lane V/C Ratio	0.088	0.142	0.104	0.061
HCM Control Delay	7.9	8	7.8	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.3	0.2

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	12	85	3	3	51	2	4	21	0	4	26	16
Future Vol, veh/h	12	85	3	3	51	2	4	21	0	4	26	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	98	3	3	59	2	5	24	0	5	30	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	114	83	39	134	92	24	48	0	0	24	0	0
Stage 1	49	49	-	34	34	-	-	-	-	-	-	-
Stage 2	65	34	-	100	58	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	863	807	1033	838	798	1052	1559	-	-	1591	-	-
Stage 1	964	854	-	982	867	-	-	-	-	-	-	-
Stage 2	946	867	-	906	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	809	802	1033	754	793	1052	1559	-	-	1591	-	-
Mov Cap-2 Maneuver	809	802	-	754	793	-	-	-	-	-	-	-
Stage 1	961	851	-	979	864	-	-	-	-	-	-	-
Stage 2	877	864	-	797	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.9	1.2	0.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1559	-	-	808	798	1591	-	-
HCM Lane V/C Ratio	0.003	-	-	0.142	0.081	0.003	-	-
HCM Control Delay (s)	7.3	0	-	10.2	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.3	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	1	21	0	16	108	8	0	8	4	8	28	6
Future Vol, veh/h	1	21	0	16	108	8	0	8	4	8	28	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	28	0	21	142	11	0	11	5	11	37	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	153	0	0	28	0	0	242	225	28	228	220	148
Stage 1	-	-	-	-	-	-	30	30	-	190	190	-
Stage 2	-	-	-	-	-	-	212	195	-	38	30	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1428	-	-	1585	-	-	712	674	1047	727	678	899
Stage 1	-	-	-	-	-	-	987	870	-	812	743	-
Stage 2	-	-	-	-	-	-	790	739	-	977	870	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1428	-	-	1585	-	-	669	664	1047	707	668	899
Mov Cap-2 Maneuver	-	-	-	-	-	-	669	664	-	707	668	-
Stage 1	-	-	-	-	-	-	986	869	-	811	733	-
Stage 2	-	-	-	-	-	-	733	729	-	959	869	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	9.9	10.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	756	1428	-	-	1585	-	-	701
HCM Lane V/C Ratio	0.021	0.001	-	-	0.013	-	-	0.079
HCM Control Delay (s)	9.9	7.5	0	-	7.3	0	-	10.6
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	10	65	10	42	52	32	6	86	24	38	125	10
Future Vol, veh/h	10	65	10	42	52	32	6	86	24	38	125	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	71	11	46	57	35	7	95	26	42	137	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	395	362	143	390	354	108	148	0	0	121	0	0
Stage 1	227	227	-	122	122	-	-	-	-	-	-	-
Stage 2	168	135	-	268	232	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	565	565	905	569	571	946	1434	-	-	1467	-	-
Stage 1	776	716	-	882	795	-	-	-	-	-	-	-
Stage 2	834	785	-	738	713	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	488	546	905	493	552	946	1434	-	-	1467	-	-
Mov Cap-2 Maneuver	488	546	-	493	552	-	-	-	-	-	-	-
Stage 1	772	695	-	878	791	-	-	-	-	-	-	-
Stage 2	741	781	-	635	692	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	12.9	0.4	1.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1434	-	-	564	591	1467	-	-
HCM Lane V/C Ratio	0.005	-	-	0.166	0.234	0.028	-	-
HCM Control Delay (s)	7.5	-	-	12.6	12.9	7.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.9	0.1	-	-

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	36	139	39	28	146	47	26	65	10	38	68	29
Future Vol, veh/h	36	139	39	28	146	47	26	65	10	38	68	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	151	42	30	159	51	28	71	11	41	74	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.1	10.1	9.4	9.6
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	17%	13%	28%
Vol Thru, %	64%	65%	66%	50%
Vol Right, %	10%	18%	21%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	101	214	221	135
LT Vol	26	36	28	38
Through Vol	65	139	146	68
RT Vol	10	39	47	29
Lane Flow Rate	110	233	240	147
Geometry Grp	1	1	1	1
Degree of Util (X)	0.16	0.311	0.319	0.209
Departure Headway (Hd)	5.249	4.809	4.775	5.129
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	675	740	745	691
Service Time	3.344	2.885	2.85	3.22
HCM Lane V/C Ratio	0.163	0.315	0.322	0.213
HCM Control Delay	9.4	10.1	10.1	9.6
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.6	1.3	1.4	0.8

HCM 6th AWSC
7: S East Ave & W Central Ave

Timing Plan: GP PM
06/14/2023

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣		↰	↑	↱
Traffic Vol, veh/h	39	217	39	5	139	22	26	10	6	88	40	88
Future Vol, veh/h	39	217	39	5	139	22	26	10	6	88	40	88
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	236	42	5	151	24	28	11	7	96	43	96
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	13.7	10.7	9.9	9.7
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	62%	13%	3%	100%	0%	0%
Vol Thru, %	24%	74%	84%	0%	100%	0%
Vol Right, %	14%	13%	13%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	42	295	166	88	40	88
LT Vol	26	39	5	88	0	0
Through Vol	10	217	139	0	40	0
RT Vol	6	39	22	0	0	88
Lane Flow Rate	46	321	180	96	43	96
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.084	0.497	0.285	0.174	0.073	0.142
Departure Headway (Hd)	6.599	5.576	5.681	6.547	6.04	5.33
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	543	651	633	548	593	672
Service Time	4.34	3.276	3.408	4.28	3.773	3.063
HCM Lane V/C Ratio	0.085	0.493	0.284	0.175	0.073	0.143
HCM Control Delay	9.9	13.7	10.7	10.7	9.3	8.9
HCM Lane LOS	A	B	B	B	A	A
HCM 95th-tile Q	0.3	2.8	1.2	0.6	0.2	0.5

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	58	329	31	49	143	16	13	63	39	18	48	14
Future Vol, veh/h	58	329	31	49	143	16	13	63	39	18	48	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	358	34	53	155	17	14	68	42	20	52	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.4	10.7	10	9.8
HCM LOS	C	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	14%	24%	23%
Vol Thru, %	55%	79%	69%	60%
Vol Right, %	34%	7%	8%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	418	208	80
LT Vol	13	58	49	18
Through Vol	63	329	143	48
RT Vol	39	31	16	14
Lane Flow Rate	125	454	226	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.195	0.616	0.324	0.14
Departure Headway (Hd)	5.616	4.881	5.16	5.814
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	639	745	696	616
Service Time	3.656	2.881	3.192	3.858
HCM Lane V/C Ratio	0.196	0.609	0.325	0.141
HCM Control Delay	10	15.4	10.7	9.8
HCM Lane LOS	A	C	B	A
HCM 95th-tile Q	0.7	4.3	1.4	0.5

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	5	168	33	120	152	23	18	4	126	58	15	13
Future Vol, veh/h	5	168	33	120	152	23	18	4	126	58	15	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	195	38	140	177	27	21	5	147	67	17	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	204	0	0	233	0	0	713	710	214	773	716	191
Stage 1	-	-	-	-	-	-	226	226	-	471	471	-
Stage 2	-	-	-	-	-	-	487	484	-	302	245	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1368	-	-	1335	-	-	347	359	826	316	356	851
Stage 1	-	-	-	-	-	-	777	717	-	573	560	-
Stage 2	-	-	-	-	-	-	562	552	-	707	703	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1368	-	-	1335	-	-	296	315	826	233	312	851
Mov Cap-2 Maneuver	-	-	-	-	-	-	296	315	-	233	312	-
Stage 1	-	-	-	-	-	-	773	713	-	570	493	-
Stage 2	-	-	-	-	-	-	469	486	-	575	699	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	3.3	12.4	25.4
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	655	1368	-	-	1335	-	-	275
HCM Lane V/C Ratio	0.263	0.004	-	-	0.105	-	-	0.364
HCM Control Delay (s)	12.4	7.6	0	-	8	0	-	25.4
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	1.1	0	-	-	0.3	-	-	1.6

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱			↰↱			✥			✥	
Traffic Vol, veh/h	76	258	1	0	204	72	2	1	1	143	2	188
Future Vol, veh/h	76	258	1	0	204	72	2	1	1	143	2	188
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	92	311	1	0	246	87	2	1	1	172	2	227

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	333	0	0	312	0	0	620	829	157	631	786	167
Stage 1	-	-	-	-	-	-	496	496	-	290	290	-
Stage 2	-	-	-	-	-	-	124	333	-	341	496	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1223	-	-	1245	-	-	372	305	861	366	323	848
Stage 1	-	-	-	-	-	-	524	544	-	694	671	-
Stage 2	-	-	-	-	-	-	867	642	-	647	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1223	-	-	1245	-	-	256	282	860	343	299	848
Mov Cap-2 Maneuver	-	-	-	-	-	-	256	282	-	343	299	-
Stage 1	-	-	-	-	-	-	485	503	-	642	671	-
Stage 2	-	-	-	-	-	-	633	642	-	595	503	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	16.5	32.3
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	319	1223	-	-	1245	-	-	516
HCM Lane V/C Ratio	0.015	0.075	-	-	-	-	-	0.778
HCM Control Delay (s)	16.5	8.2	-	-	0	-	-	32.3
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	7

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	45	206	11	8	93	17	9	105	15	48	81	43
Future Vol, veh/h	45	206	11	8	93	17	9	105	15	48	81	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	222	12	9	100	18	10	113	16	52	87	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	9.2	9.5	9.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	17%	7%	28%
Vol Thru, %	81%	79%	79%	47%
Vol Right, %	12%	4%	14%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	262	118	172
LT Vol	9	45	8	48
Through Vol	105	206	93	81
RT Vol	15	11	17	43
Lane Flow Rate	139	282	127	185
Geometry Grp	1	1	1	1
Degree of Util (X)	0.198	0.385	0.178	0.258
Departure Headway (Hd)	5.131	4.914	5.039	5.03
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	691	724	703	706
Service Time	3.229	2.994	3.135	3.122
HCM Lane V/C Ratio	0.201	0.39	0.181	0.262
HCM Control Delay	9.5	11.1	9.2	9.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.7	1.8	0.6	1

12: S Pullman Ave & E Jensen Ave

Intersection	
Int Delay, s/veh	129.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✥			✥	
Traffic Vol, veh/h	276	1316	0	1	1191	21	0	0	0	7	0	391
Future Vol, veh/h	276	1316	0	1	1191	21	0	0	0	7	0	391
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	314	1495	0	1	1353	24	0	0	0	8	0	444

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1377	0	0	1495	0	0	2802	3502	748	2743	3490	689
Stage 1	-	-	-	-	-	-	2123	2123	-	1367	1367	-
Stage 2	-	-	-	-	-	-	679	1379	-	1376	2123	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	494	-	-	445	-	-	8	6	355	9	6	~ 388
Stage 1	-	-	-	-	-	-	51	89	-	155	213	-
Stage 2	-	-	-	-	-	-	408	210	-	153	89	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	494	-	-	445	-	-	-	2	355	~ 4	2	~ 388
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	2	-	~ 4	2	-
Stage 1	-	-	-	-	-	-	19	32	-	56	213	-
Stage 2	-	-	-	-	-	-	-	210	-	56	32	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.2	0	0	$ 1028.7
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	494	-	-	445	-	-	144
HCM Lane V/C Ratio	-	0.635	-	-	0.003	-	-	3.141
HCM Control Delay (s)	0	24.1	-	-	13.1	-		$ 1028.7
HCM Lane LOS	A	C	-	-	B	-	-	F
HCM 95th %tile Q(veh)	-	4.4	-	-	0	-	-	42.5

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th Signalized Intersection Summary
13: S Willow Ave & E Jensen Ave

Timing Plan: GP PM
06/14/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	160	1155	43	22	668	52	81	100	68	28	17	48
Future Volume (veh/h)	160	1155	43	22	668	52	81	100	68	28	17	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	167	1203	45	23	696	54	84	104	71	29	18	50
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1930	72	75	1480	114	172	175	119	89	230	195
Arrive On Green	0.12	0.38	0.38	0.04	0.31	0.31	0.10	0.17	0.17	0.05	0.12	0.12
Sat Flow, veh/h	1781	5052	189	1781	4834	373	1781	1036	707	1781	1870	1585
Grp Volume(v), veh/h	167	811	437	23	489	261	84	0	175	29	18	50
Grp Sat Flow(s),veh/h/ln	1781	1702	1836	1781	1702	1803	1781	0	1743	1781	1870	1585
Q Serve(g_s), s	5.9	12.5	12.5	0.8	7.5	7.6	2.9	0.0	6.0	1.0	0.6	1.8
Cycle Q Clear(g_c), s	5.9	12.5	12.5	0.8	7.5	7.6	2.9	0.0	6.0	1.0	0.6	1.8
Prop In Lane	1.00		0.10	1.00		0.21	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	210	1300	702	75	1042	552	172	0	294	89	230	195
V/C Ratio(X)	0.80	0.62	0.62	0.31	0.47	0.47	0.49	0.00	0.59	0.32	0.08	0.26
Avail Cap(c_a), veh/h	413	2157	1164	413	2157	1143	413	0	539	413	578	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	16.2	16.2	30.1	18.2	18.2	27.7	0.0	24.8	29.7	25.1	25.7
Incr Delay (d2), s/veh	2.6	0.6	1.1	0.9	0.4	0.8	0.8	0.0	3.1	0.8	0.4	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.9	4.3	0.3	2.5	2.7	1.2	0.0	2.6	0.4	0.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	16.8	17.4	30.9	18.6	19.0	28.5	0.0	28.0	30.4	25.5	27.5
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1415			773			259			97	
Approach Delay, s/veh		18.6			19.1			28.2			28.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	14.4	13.3	25.8	8.1	17.4	8.4	30.7
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	4.9	3.8	7.9	9.6	3.0	8.0	2.8	14.5
Green Ext Time (p_c), s	0.1	0.4	0.1	5.7	0.0	1.1	0.0	10.2

Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary
14: S Peach Ave & E Jensen Ave

Timing Plan: GP PM
06/14/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑↱		↰	↑↑	↱		✥			✥	
Traffic Volume (veh/h)	239	810	9	14	480	111	6	136	23	107	76	114
Future Volume (veh/h)	239	810	9	14	480	111	6	136	23	107	76	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	252	853	9	15	505	117	6	143	24	113	80	120
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	2029	21	52	979	436	63	429	70	207	138	167
Arrive On Green	0.17	0.39	0.39	0.03	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	5210	55	1781	3554	1585	19	1544	252	470	495	600
Grp Volume(v), veh/h	252	557	305	15	505	117	173	0	0	313	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1860	1781	1777	1585	1814	0	0	1565	0	0
Q Serve(g_s), s	8.8	7.7	7.7	0.5	7.7	3.7	0.0	0.0	0.0	6.3	0.0	0.0
Cycle Q Clear(g_c), s	8.8	7.7	7.7	0.5	7.7	3.7	4.9	0.0	0.0	11.1	0.0	0.0
Prop In Lane	1.00		0.03	1.00		1.00	0.03		0.14	0.36		0.38
Lane Grp Cap(c), veh/h	302	1326	725	52	979	436	562	0	0	511	0	0
V/C Ratio(X)	0.83	0.42	0.42	0.29	0.52	0.27	0.31	0.00	0.00	0.61	0.00	0.00
Avail Cap(c_a), veh/h	602	2650	1449	555	2767	1234	1597	0	0	1369	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.8	14.3	14.3	30.5	19.7	18.2	18.5	0.0	0.0	20.6	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.5	0.9	1.1	1.0	0.8	0.6	0.0	0.0	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	2.4	2.7	0.2	2.8	1.2	1.9	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	14.8	15.2	31.6	20.7	19.0	19.1	0.0	0.0	23.8	0.0	0.0
LnGrp LOS	C	B	B	C	C	B	B	A	A	C	A	A
Approach Vol, veh/h		1114			637			173			313	
Approach Delay, s/veh		17.9			20.6			19.1			23.8	
Approach LOS		B			C			B			C	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	24.6	14.9	24.7		24.6	7.6	32.0
Change Period (Y+Rc), s	6.8	4.0	7.0		6.8	5.7	7.0
Max Green Setting (Gmax), s	55.0	21.7	50.0		55.0	20.0	50.0
Max Q Clear Time (g_c+I1), s	13.1	10.8	9.7		6.9	2.5	9.7
Green Ext Time (p_c), s	4.7	0.2	8.0		1.9	0.0	12.3

Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	Y	
Traffic Vol, veh/h	281	145	125	306	73	125
Future Vol, veh/h	281	145	125	306	73	125
Conflicting Peds, #/hr	0	4	4	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	323	167	144	352	84	144

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	494	0	1051	412
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	640	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1070	-	251	640
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	525	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1066	-	216	637
Mov Cap-2 Maneuver	-	-	-	-	396	-
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	454	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	17.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	520	-	-	1066	-
HCM Lane V/C Ratio	0.438	-	-	0.135	-
HCM Control Delay (s)	17.2	-	-	8.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.2	-	-	0.5	-

Appendix C – 2040 With Project Conditions Synchro Output

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	9	45	2	4	153	7	9	16	7	7	12	9
Future Vol, veh/h	9	45	2	4	153	7	9	16	7	7	12	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	54	2	5	182	8	11	19	8	8	14	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	56	0	0	286	277	55	287	274	186
Stage 1	-	-	-	-	-	-	77	77	-	196	196	-
Stage 2	-	-	-	-	-	-	209	200	-	91	78	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1384	-	-	1549	-	-	666	631	1012	665	633	856
Stage 1	-	-	-	-	-	-	932	831	-	806	739	-
Stage 2	-	-	-	-	-	-	793	736	-	916	830	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1384	-	-	1549	-	-	640	623	1012	638	625	856
Mov Cap-2 Maneuver	-	-	-	-	-	-	640	623	-	638	625	-
Stage 1	-	-	-	-	-	-	925	824	-	800	736	-
Stage 2	-	-	-	-	-	-	765	733	-	880	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.2	10.6	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	686	1384	-	-	1549	-	-	688
HCM Lane V/C Ratio	0.056	0.008	-	-	0.003	-	-	0.048
HCM Control Delay (s)	10.6	7.6	0	-	7.3	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	3	29	13	9	126	11	24	38	6	5	26	9
Future Vol, veh/h	3	29	13	9	126	11	24	38	6	5	26	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	32	14	10	140	12	27	42	7	6	29	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	8.2	7.9	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	7%	6%	12%
Vol Thru, %	56%	64%	86%	65%
Vol Right, %	9%	29%	8%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	45	146	40
LT Vol	24	3	9	5
Through Vol	38	29	126	26
RT Vol	6	13	11	9
Lane Flow Rate	76	50	162	44
Geometry Grp	1	1	1	1
Degree of Util (X)	0.094	0.059	0.187	0.054
Departure Headway (Hd)	4.472	4.219	4.148	4.381
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	805	852	852	821
Service Time	2.478	2.229	2.241	2.387
HCM Lane V/C Ratio	0.094	0.059	0.19	0.054
HCM Control Delay	7.9	7.5	8.2	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.7	0.2

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	16	52	2	0	100	7	7	17	1	3	13	22
Future Vol, veh/h	16	52	2	0	100	7	7	17	1	3	13	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	56	2	0	108	8	8	18	1	3	14	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	125	67	26	96	79	19	38	0	0	19	0	0
Stage 1	32	32	-	35	35	-	-	-	-	-	-	-
Stage 2	93	35	-	61	44	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	849	824	1050	887	811	1059	1572	-	-	1597	-	-
Stage 1	984	868	-	981	866	-	-	-	-	-	-	-
Stage 2	914	866	-	950	858	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	753	818	1050	835	805	1059	1572	-	-	1597	-	-
Mov Cap-2 Maneuver	753	818	-	835	805	-	-	-	-	-	-	-
Stage 1	979	866	-	976	862	-	-	-	-	-	-	-
Stage 2	790	862	-	885	856	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10.1	2	0.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	807	818	1597	-	-
HCM Lane V/C Ratio	0.005	-	-	0.093	0.141	0.002	-	-
HCM Control Delay (s)	7.3	0	-	9.9	10.1	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.5	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	0	35	0	9	56	23	1	34	8	12	64	1
Future Vol, veh/h	0	35	0	9	56	23	1	34	8	12	64	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	0	13	82	34	1	50	12	18	94	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	116	0	0	51	0	0	224	193	51	207	176	99
Stage 1	-	-	-	-	-	-	51	51	-	125	125	-
Stage 2	-	-	-	-	-	-	173	142	-	82	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1473	-	-	1555	-	-	732	702	1017	751	717	957
Stage 1	-	-	-	-	-	-	962	852	-	879	792	-
Stage 2	-	-	-	-	-	-	829	779	-	926	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1473	-	-	1555	-	-	652	696	1017	697	711	957
Mov Cap-2 Maneuver	-	-	-	-	-	-	652	696	-	697	711	-
Stage 1	-	-	-	-	-	-	962	852	-	879	785	-
Stage 2	-	-	-	-	-	-	722	772	-	862	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	10.3	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	738	1473	-	-	1555	-	-	711
HCM Lane V/C Ratio	0.086	-	-	-	0.009	-	-	0.159
HCM Control Delay (s)	10.3	0	-	-	7.3	0	-	11
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	21	90	19	46	61	64	15	144	38	12	185	6
Future Vol, veh/h	21	90	19	46	61	64	15	144	38	12	185	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	115	24	59	78	82	19	185	49	15	237	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	599	543	241	589	523	210	245	0	0	234	0	0
Stage 1	271	271	-	248	248	-	-	-	-	-	-	-
Stage 2	328	272	-	341	275	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	413	447	798	420	459	830	1321	-	-	1333	-	-
Stage 1	735	685	-	756	701	-	-	-	-	-	-	-
Stage 2	685	685	-	674	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	316	436	798	318	448	830	1321	-	-	1333	-	-
Mov Cap-2 Maneuver	316	436	-	318	448	-	-	-	-	-	-	-
Stage 1	725	677	-	745	691	-	-	-	-	-	-	-
Stage 2	540	675	-	536	675	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.2	18.8	0.6	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1321	-	-	438	478	1333	-	-
HCM Lane V/C Ratio	0.015	-	-	0.381	0.459	0.012	-	-
HCM Control Delay (s)	7.8	-	-	18.2	18.8	7.7	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.8	2.4	0	-	-

Intersection	
Intersection Delay, s/veh	16.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	22	91	133	121	162	61	23	53	6	40	258	46
Future Vol, veh/h	22	91	133	121	162	61	23	53	6	40	258	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	99	145	132	176	66	25	58	7	43	280	50
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.3	17.8	11.1	18.3
HCM LOS	B	C	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	9%	35%	12%
Vol Thru, %	65%	37%	47%	75%
Vol Right, %	7%	54%	18%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	246	344	344
LT Vol	23	22	121	40
Through Vol	53	91	162	258
RT Vol	6	133	61	46
Lane Flow Rate	89	267	374	374
Geometry Grp	1	1	1	1
Degree of Util (X)	0.166	0.433	0.613	0.621
Departure Headway (Hd)	6.712	5.829	5.898	5.978
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	533	618	613	606
Service Time	4.773	3.875	3.921	4
HCM Lane V/C Ratio	0.167	0.432	0.61	0.617
HCM Control Delay	11.1	13.3	17.8	18.3
HCM Lane LOS	B	B	C	C
HCM 95th-tile Q	0.6	2.2	4.2	4.3

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣		↰	↑	↱
Traffic Vol, veh/h	13	110	20	24	245	32	10	13	3	97	77	51
Future Vol, veh/h	13	110	20	24	245	32	10	13	3	97	77	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	120	22	26	266	35	11	14	3	105	84	55
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	10.2	13.4	9.5	9.8
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	38%	9%	8%	100%	0%	0%
Vol Thru, %	50%	77%	81%	0%	100%	0%
Vol Right, %	12%	14%	11%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	143	301	97	77	51
LT Vol	10	13	24	97	0	0
Through Vol	13	110	245	0	77	0
RT Vol	3	20	32	0	0	51
Lane Flow Rate	28	155	327	105	84	55
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.051	0.246	0.491	0.189	0.138	0.081
Departure Headway (Hd)	6.454	5.694	5.504	6.456	5.95	5.24
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	557	634	658	559	605	686
Service Time	4.17	3.394	3.204	4.166	3.659	2.95
HCM Lane V/C Ratio	0.05	0.244	0.497	0.188	0.139	0.08
HCM Control Delay	9.5	10.2	13.4	10.7	9.6	8.4
HCM Lane LOS	A	B	B	B	A	A
HCM 95th-tile Q	0.2	1	2.7	0.7	0.5	0.3

HCM 6th AWSC
8: S Cedar Ave & W Central Ave

Intersection	
Intersection Delay, s/veh	40.4
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	14	135	10	165	478	35	10	71	33	9	64	6
Future Vol, veh/h	14	135	10	165	478	35	10	71	33	9	64	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	147	11	179	520	38	11	77	36	10	70	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.7	55.8	11.1	10.8
HCM LOS	B	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	9%	24%	11%
Vol Thru, %	62%	85%	71%	81%
Vol Right, %	29%	6%	5%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	114	159	678	79
LT Vol	10	14	165	9
Through Vol	71	135	478	64
RT Vol	33	10	35	6
Lane Flow Rate	124	173	737	86
Geometry Grp	1	1	1	1
Degree of Util (X)	0.216	0.269	1.003	0.155
Departure Headway (Hd)	6.276	5.596	4.9	6.508
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	570	639	744	549
Service Time	4.337	3.648	2.932	4.574
HCM Lane V/C Ratio	0.218	0.271	0.991	0.157
HCM Control Delay	11.1	10.7	55.8	10.8
HCM Lane LOS	B	B	F	B
HCM 95th-tile Q	0.8	1.1	16.7	0.5

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	7	131	34	179	266	105	20	15	77	15	9	1
Future Vol, veh/h	7	131	34	179	266	105	20	15	77	15	9	1
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	154	40	211	313	124	24	18	91	18	11	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	438	0	0	194	0	0	994	1050	174	1043	1008	377
Stage 1	-	-	-	-	-	-	190	190	-	798	798	-
Stage 2	-	-	-	-	-	-	804	860	-	245	210	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1122	-	-	1379	-	-	224	227	869	207	240	670
Stage 1	-	-	-	-	-	-	812	743	-	380	398	-
Stage 2	-	-	-	-	-	-	377	373	-	759	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1121	-	-	1379	-	-	179	179	869	144	189	669
Mov Cap-2 Maneuver	-	-	-	-	-	-	179	179	-	144	189	-
Stage 1	-	-	-	-	-	-	806	737	-	377	316	-
Stage 2	-	-	-	-	-	-	289	296	-	658	722	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.6	18.7	31.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	394	1121	-	-	1379	-	-	163
HCM Lane V/C Ratio	0.334	0.007	-	-	0.153	-	-	0.18
HCM Control Delay (s)	18.7	8.2	0	-	8.1	0	-	31.9
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	1.4	0	-	-	0.5	-	-	0.6

Intersection	
Int Delay, s/veh	12.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱			↰↱			✣			✣	
Traffic Vol, veh/h	66	187	0	0	288	90	1	0	0	133	2	137
Future Vol, veh/h	66	187	0	0	288	90	1	0	0	133	2	137
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	237	0	0	365	114	1	0	0	168	3	173

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	479	0	0	237	0	0	589	884	119	709	827	240
Stage 1	-	-	-	-	-	-	405	405	-	422	422	-
Stage 2	-	-	-	-	-	-	184	479	-	287	405	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1080	-	-	1327	-	-	392	283	910	321	305	761
Stage 1	-	-	-	-	-	-	593	597	-	580	587	-
Stage 2	-	-	-	-	-	-	800	553	-	696	597	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1080	-	-	1327	-	-	283	261	910	302	281	761
Mov Cap-2 Maneuver	-	-	-	-	-	-	283	261	-	302	281	-
Stage 1	-	-	-	-	-	-	547	550	-	535	587	-
Stage 2	-	-	-	-	-	-	615	553	-	642	550	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0	17.8	38.6
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	283	1080	-	-	1327	-	-	433
HCM Lane V/C Ratio	0.004	0.077	-	-	-	-	-	0.795
HCM Control Delay (s)	17.8	8.6	-	-	0	-	-	38.6
HCM Lane LOS	C	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	7.1

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	11	77	7	16	195	10	2	29	4	34	154	92
Future Vol, veh/h	11	77	7	16	195	10	2	29	4	34	154	92
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	97	9	20	247	13	3	37	5	43	195	116
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	11.6	8.9	12.3
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	12%	7%	12%
Vol Thru, %	83%	81%	88%	55%
Vol Right, %	11%	7%	5%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	95	221	280
LT Vol	2	11	16	34
Through Vol	29	77	195	154
RT Vol	4	7	10	92
Lane Flow Rate	44	120	280	354
Geometry Grp	1	1	1	1
Degree of Util (X)	0.068	0.18	0.401	0.475
Departure Headway (Hd)	5.489	5.384	5.162	4.927
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	653	669	702	737
Service Time	3.514	3.397	3.162	2.927
HCM Lane V/C Ratio	0.067	0.179	0.399	0.48
HCM Control Delay	8.9	9.6	11.6	12.3
HCM Lane LOS	A	A	B	B
HCM 95th-tile Q	0.2	0.7	1.9	2.6

12: S Pullman Ave & E Jensen Ave

Intersection	
Int Delay, s/veh	9.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✥			✥	
Traffic Vol, veh/h	252	1001	0	3	1914	29	1	0	2	0	0	240
Future Vol, veh/h	252	1001	0	3	1914	29	1	0	2	0	0	240
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	277	1100	0	3	2103	32	1	0	2	0	0	264

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2135	0	0	1100	0	0	2712	3795	551	3230	3779	1068
Stage 1	-	-	-	-	-	-	1654	1654	-	2125	2125	-
Stage 2	-	-	-	-	-	-	1058	2141	-	1105	1654	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	~ 250	-	-	630	-	-	10	4	478	4	4	~ 218
Stage 1	-	-	-	-	-	-	102	154	-	51	89	-
Stage 2	-	-	-	-	-	-	240	87	-	225	154	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 250	-	-	630	-	-	-	0	478	-	0	~ 218
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	102	0	-	51	89	-
Stage 2	-	-	-	-	-	-	-	87	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.5	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 250	-	-	630	-	-	-
HCM Lane V/C Ratio	-	1.108	-	-	0.005	-	-	-
HCM Control Delay (s)	-	131.8	-	-	10.7	-	-	-
HCM Lane LOS	-	F	-	-	B	-	-	-
HCM 95th %tile Q(veh)	-	12	-	-	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

13: S Willow Ave & E Jensen Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	67	469	48	57	1573	53	33	19	19	55	70	220
Future Volume (veh/h)	67	469	48	57	1573	53	33	19	19	55	70	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	83	579	59	70	1942	65	41	23	23	68	86	272
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	2037	205	127	2173	73	100	155	155	126	365	309
Arrive On Green	0.08	0.43	0.43	0.07	0.43	0.43	0.06	0.18	0.18	0.07	0.19	0.19
Sat Flow, veh/h	1781	4714	475	1781	5074	170	1781	858	858	1781	1870	1585
Grp Volume(v), veh/h	83	416	222	70	1302	705	41	0	46	68	86	272
Grp Sat Flow(s),veh/h/ln	1781	1702	1785	1781	1702	1840	1781	0	1716	1781	1870	1585
Q Serve(g_s), s	4.3	7.4	7.6	3.6	33.3	33.4	2.1	0.0	2.1	3.5	3.6	15.7
Cycle Q Clear(g_c), s	4.3	7.4	7.6	3.6	33.3	33.4	2.1	0.0	2.1	3.5	3.6	15.7
Prop In Lane	1.00		0.27	1.00		0.09	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	134	1471	771	127	1458	788	100	0	309	126	365	309
V/C Ratio(X)	0.62	0.28	0.29	0.55	0.89	0.90	0.41	0.00	0.15	0.54	0.24	0.88
Avail Cap(c_a), veh/h	284	1484	778	284	1484	802	284	0	365	284	398	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	17.3	17.3	42.2	24.9	24.9	42.9	0.0	32.5	42.2	32.0	36.8
Incr Delay (d2), s/veh	1.7	0.1	0.3	1.4	7.3	12.7	1.0	0.0	0.4	1.3	0.9	24.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.6	2.8	1.5	13.0	15.2	0.9	0.0	0.9	1.5	1.7	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	17.4	17.6	43.6	32.2	37.6	43.9	0.0	32.8	43.6	32.8	61.3
LnGrp LOS	D	B	B	D	C	D	D	A	C	D	C	E
Approach Vol, veh/h		721			2077			87			426	
Approach Delay, s/veh		20.5			34.4			38.1			52.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	24.8	12.8	46.3	11.5	23.4	12.4	46.6
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	4.1	17.7	6.3	35.4	5.5	4.1	5.6	9.6
Green Ext Time (p_c), s	0.0	0.6	0.0	4.9	0.0	0.2	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary
14: S Peach Ave & E Jensen Ave

Timing Plan: Alt 2 AM
06/14/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑	↱		✥			✥	
Traffic Volume (veh/h)	108	342	18	37	1247	101	13	92	35	95	101	226
Future Volume (veh/h)	108	342	18	37	1247	101	13	92	35	95	101	226
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	398	21	43	1450	117	15	107	41	110	117	263
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	2163	113	90	1473	657	63	410	148	149	146	300
Arrive On Green	0.09	0.44	0.44	0.05	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	4968	260	1781	3554	1585	87	1164	421	320	415	852
Grp Volume(v), veh/h	126	272	147	43	1450	117	163	0	0	490	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1824	1781	1777	1585	1672	0	0	1587	0	0
Q Serve(g_s), s	8.4	5.9	6.0	2.8	48.7	5.6	0.0	0.0	0.0	26.8	0.0	0.0
Cycle Q Clear(g_c), s	8.4	5.9	6.0	2.8	48.7	5.6	7.8	0.0	0.0	34.6	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	0.09		0.25	0.22		0.54
Lane Grp Cap(c), veh/h	153	1482	794	90	1473	657	622	0	0	596	0	0
V/C Ratio(X)	0.83	0.18	0.19	0.48	0.98	0.18	0.26	0.00	0.00	0.82	0.00	0.00
Avail Cap(c_a), veh/h	320	1482	794	295	1473	657	794	0	0	756	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.3	20.9	20.9	55.7	34.9	22.3	27.8	0.0	0.0	36.1	0.0	0.0
Incr Delay (d2), s/veh	4.2	0.1	0.3	1.5	19.9	0.3	0.4	0.0	0.0	9.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	2.2	2.4	1.3	23.2	2.0	3.3	0.0	0.0	14.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.5	21.0	21.2	57.2	54.8	22.6	28.3	0.0	0.0	45.1	0.0	0.0
LnGrp LOS	E	C	C	E	D	C	C	A	A	D	A	A
Approach Vol, veh/h		545			1610			163			490	
Approach Delay, s/veh		29.7			52.5			28.3			45.1	
Approach LOS		C			D			C			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		49.3	14.3	57.0		49.3	11.8	59.5
Change Period (Y+Rc), s		6.8	4.0	7.0		6.8	5.7	7.0
Max Green Setting (Gmax), s		55.0	21.7	50.0		55.0	20.0	50.0
Max Q Clear Time (g_c+I1), s		36.6	10.4	50.7		9.8	4.8	8.0
Green Ext Time (p_c), s		5.9	0.1	0.0		1.8	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	45.4
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	↰↱	
Traffic Vol, veh/h	456	320	120	266	36	84
Future Vol, veh/h	456	320	120	266	36	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	524	368	138	306	41	97

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	892	0	1290	708
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	582	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	760	-	180	435
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	760	-	147	435
Mov Cap-2 Maneuver	-	-	-	-	345	-
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	457	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	18.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	403	-	-	760	-
HCM Lane V/C Ratio	0.342	-	-	0.181	-
HCM Control Delay (s)	18.5	-	-	10.8	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.5	-	-	0.7	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	8	93	6	1	66	3	9	17	5	16	20	2
Future Vol, veh/h	8	93	6	1	66	3	9	17	5	16	20	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	106	7	1	75	3	10	19	6	18	23	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	113	0	0	219	208	110	219	210	77
Stage 1	-	-	-	-	-	-	128	128	-	79	79	-
Stage 2	-	-	-	-	-	-	91	80	-	140	131	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1520	-	-	1476	-	-	737	689	943	737	687	984
Stage 1	-	-	-	-	-	-	876	790	-	930	829	-
Stage 2	-	-	-	-	-	-	916	828	-	863	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1520	-	-	1476	-	-	713	684	943	713	682	984
Mov Cap-2 Maneuver	-	-	-	-	-	-	713	684	-	713	682	-
Stage 1	-	-	-	-	-	-	871	785	-	924	828	-
Stage 2	-	-	-	-	-	-	888	827	-	832	783	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	10.2	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	725	1520	-	-	1476	-	-	706
HCM Lane V/C Ratio	0.049	0.006	-	-	0.001	-	-	0.061
HCM Control Delay (s)	10.2	7.4	0	-	7.4	0	-	10.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	7	82	13	13	55	7	23	29	11	6	32	4
Future Vol, veh/h	7	82	13	13	55	7	23	29	11	6	32	4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	96	15	15	65	8	27	34	13	7	38	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.8	7.9	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	37%	7%	17%	14%
Vol Thru, %	46%	80%	73%	76%
Vol Right, %	17%	13%	9%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	63	102	75	42
LT Vol	23	7	13	6
Through Vol	29	82	55	32
RT Vol	11	13	7	4
Lane Flow Rate	74	120	88	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.091	0.142	0.106	0.061
Departure Headway (Hd)	4.421	4.261	4.324	4.453
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	812	847	832	806
Service Time	2.436	2.261	2.335	2.468
HCM Lane V/C Ratio	0.091	0.142	0.106	0.061
HCM Control Delay	7.9	8	7.8	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.4	0.2

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	12	86	3	3	52	2	4	21	0	4	26	16
Future Vol, veh/h	12	86	3	3	52	2	4	21	0	4	26	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	99	3	3	60	2	5	24	0	5	30	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	114	83	39	134	92	24	48	0	0	24	0	0
Stage 1	49	49	-	34	34	-	-	-	-	-	-	-
Stage 2	65	34	-	100	58	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	863	807	1033	838	798	1052	1559	-	-	1591	-	-
Stage 1	964	854	-	982	867	-	-	-	-	-	-	-
Stage 2	946	867	-	906	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	808	802	1033	753	793	1052	1559	-	-	1591	-	-
Mov Cap-2 Maneuver	808	802	-	753	793	-	-	-	-	-	-	-
Stage 1	961	851	-	979	864	-	-	-	-	-	-	-
Stage 2	876	864	-	796	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.9	1.2	0.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1559	-	-	808	798	1591	-	-
HCM Lane V/C Ratio	0.003	-	-	0.144	0.082	0.003	-	-
HCM Control Delay (s)	7.3	0	-	10.2	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.3	0	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	1	21	0	21	139	11	0	8	4	9	32	7
Future Vol, veh/h	1	21	0	21	139	11	0	8	4	9	32	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	28	0	28	183	14	0	11	5	12	42	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	197	0	0	28	0	0	302	283	28	284	276	190
Stage 1	-	-	-	-	-	-	30	30	-	246	246	-
Stage 2	-	-	-	-	-	-	272	253	-	38	30	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1376	-	-	1585	-	-	650	626	1047	668	632	852
Stage 1	-	-	-	-	-	-	987	870	-	758	703	-
Stage 2	-	-	-	-	-	-	734	698	-	977	870	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1376	-	-	1585	-	-	600	613	1047	645	619	852
Mov Cap-2 Maneuver	-	-	-	-	-	-	600	613	-	645	619	-
Stage 1	-	-	-	-	-	-	986	869	-	757	689	-
Stage 2	-	-	-	-	-	-	668	684	-	959	869	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	10.2	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	711	1376	-	-	1585	-	-	650
HCM Lane V/C Ratio	0.022	0.001	-	-	0.017	-	-	0.097
HCM Control Delay (s)	10.2	7.6	0	-	7.3	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	11	73	11	45	56	34	6	89	25	39	127	10
Future Vol, veh/h	11	73	11	45	56	34	6	89	25	39	127	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	80	12	49	62	37	7	98	27	43	140	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	407	371	146	404	363	112	151	0	0	125	0	0
Stage 1	232	232	-	126	126	-	-	-	-	-	-	-
Stage 2	175	139	-	278	237	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	555	559	901	557	565	941	1430	-	-	1462	-	-
Stage 1	771	713	-	878	792	-	-	-	-	-	-	-
Stage 2	827	782	-	728	709	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	475	540	901	475	546	941	1430	-	-	1462	-	-
Mov Cap-2 Maneuver	475	540	-	475	546	-	-	-	-	-	-	-
Stage 1	767	692	-	874	788	-	-	-	-	-	-	-
Stage 2	729	778	-	616	688	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB
HCM Control Delay, s	12.9			13.4			0.4			1.7
HCM LOS	B			B						

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1430	-	-	557	578	1462	-	-
HCM Lane V/C Ratio	0.005	-	-	0.187	0.257	0.029	-	-
HCM Control Delay (s)	7.5	-	-	12.9	13.4	7.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	1	0.1	-	-

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	46	177	50	33	175	57	25	62	9	50	90	38
Future Vol, veh/h	46	177	50	33	175	57	25	62	9	50	90	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	192	54	36	190	62	27	67	10	54	98	41
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.9	11.7	10	11
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	17%	12%	28%
Vol Thru, %	65%	65%	66%	51%
Vol Right, %	9%	18%	22%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	273	265	178
LT Vol	25	46	33	50
Through Vol	62	177	175	90
RT Vol	9	50	57	38
Lane Flow Rate	104	297	288	193
Geometry Grp	1	1	1	1
Degree of Util (X)	0.168	0.424	0.411	0.299
Departure Headway (Hd)	5.805	5.148	5.134	5.565
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	617	700	700	644
Service Time	3.855	3.184	3.169	3.607
HCM Lane V/C Ratio	0.169	0.424	0.411	0.3
HCM Control Delay	10	11.9	11.7	11
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.6	2.1	2	1.3

7: S East Ave & W Central Ave

Intersection	
Intersection Delay, s/veh	16.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥		↰	↑	↱
Traffic Vol, veh/h	54	302	54	7	186	29	26	10	6	96	44	96
Future Vol, veh/h	54	302	54	7	186	29	26	10	6	96	44	96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	328	59	8	202	32	28	11	7	104	48	104
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	21.9	12.8	10.9	10.7
HCM LOS	C	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	62%	13%	3%	100%	0%	0%
Vol Thru, %	24%	74%	84%	0%	100%	0%
Vol Right, %	14%	13%	13%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	42	410	222	96	44	96
LT Vol	26	54	7	96	0	0
Through Vol	10	302	186	0	44	0
RT Vol	6	54	29	0	0	96
Lane Flow Rate	46	446	241	104	48	104
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.093	0.717	0.403	0.207	0.088	0.171
Departure Headway (Hd)	7.325	5.791	6.019	7.129	6.619	5.906
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	624	596	503	540	606
Service Time	5.098	3.531	3.768	4.883	4.373	3.658
HCM Lane V/C Ratio	0.094	0.715	0.404	0.207	0.089	0.172
HCM Control Delay	10.9	21.9	12.8	11.7	10	9.9
HCM Lane LOS	B	C	B	B	A	A
HCM 95th-tile Q	0.3	6	1.9	0.8	0.3	0.6

8: S Cedar Ave & W Central Ave

Intersection	
Intersection Delay, s/veh	22.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	76	435	41	65	189	22	17	80	50	18	48	14
Future Vol, veh/h	76	435	41	65	189	22	17	80	50	18	48	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	473	45	71	205	24	18	87	54	20	52	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	32.3	13.6	11.8	11
HCM LOS	D	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	14%	24%	23%
Vol Thru, %	54%	79%	68%	60%
Vol Right, %	34%	7%	8%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	552	276	80
LT Vol	17	76	65	18
Through Vol	80	435	189	48
RT Vol	50	41	22	14
Lane Flow Rate	160	600	300	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.279	0.865	0.468	0.16
Departure Headway (Hd)	6.287	5.191	5.616	6.613
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	567	696	639	538
Service Time	4.371	3.246	3.686	4.709
HCM Lane V/C Ratio	0.282	0.862	0.469	0.162
HCM Control Delay	11.8	32.3	13.6	11
HCM Lane LOS	B	D	B	B
HCM 95th-tile Q	1.1	10.2	2.5	0.6

9: S Maple Ave & W Central Ave

06/14/2023

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	7	233	46	153	194	30	24	5	165	55	14	12
Future Vol, veh/h	7	233	46	153	194	30	24	5	165	55	14	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	271	53	178	226	35	28	6	192	64	16	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	324	0	0	929	931	298	1013	940	244
Stage 1	-	-	-	-	-	-	314	314	-	600	600	-
Stage 2	-	-	-	-	-	-	615	617	-	413	340	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1303	-	-	1236	-	-	248	267	741	217	264	795
Stage 1	-	-	-	-	-	-	697	656	-	488	490	-
Stage 2	-	-	-	-	-	-	479	481	-	616	639	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1303	-	-	1236	-	-	199	220	741	136	218	795
Mov Cap-2 Maneuver	-	-	-	-	-	-	199	220	-	136	218	-
Stage 1	-	-	-	-	-	-	691	651	-	484	407	-
Stage 2	-	-	-	-	-	-	375	400	-	449	634	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	3.4	16.7	51.3
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	530	1303	-	-	1236	-	-	167
HCM Lane V/C Ratio	0.426	0.006	-	-	0.144	-	-	0.564
HCM Control Delay (s)	16.7	7.8	0	-	8.4	0	-	51.3
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.1	0	-	-	0.5	-	-	2.9

Intersection	
Int Delay, s/veh	34.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱			↰↱			↰↑↱			↰↑↱	
Traffic Vol, veh/h	102	345	2	0	233	82	2	1	1	163	3	214
Future Vol, veh/h	102	345	2	0	233	82	2	1	1	163	3	214
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	416	2	0	281	99	2	1	1	196	4	258

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	380	0	0	418	0	0	806	1043	210	787	995	190
Stage 1	-	-	-	-	-	-	663	663	-	331	331	-
Stage 2	-	-	-	-	-	-	143	380	-	456	664	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1175	-	-	1138	-	-	273	228	796	282	243	820
Stage 1	-	-	-	-	-	-	417	457	-	656	644	-
Stage 2	-	-	-	-	-	-	845	612	-	554	456	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1175	-	-	1138	-	-	170	204	795	258	217	820
Mov Cap-2 Maneuver	-	-	-	-	-	-	170	204	-	258	217	-
Stage 1	-	-	-	-	-	-	373	409	-	587	644	-
Stage 2	-	-	-	-	-	-	576	612	-	493	408	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	21.5	102.7
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	223	1175	-	-	1138	-	-	419
HCM Lane V/C Ratio	0.022	0.105	-	-	-	-	-	1.093
HCM Control Delay (s)	21.5	8.4	-	-	0	-	-	102.7
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	15.8

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	45	207	11	8	98	18	16	183	27	48	80	43
Future Vol, veh/h	45	207	11	8	98	18	16	183	27	48	80	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	223	12	9	105	19	17	197	29	52	86	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.2	10	11.3	10.5
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	17%	6%	28%
Vol Thru, %	81%	79%	79%	47%
Vol Right, %	12%	4%	15%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	226	263	124	171
LT Vol	16	45	8	48
Through Vol	183	207	98	80
RT Vol	27	11	18	43
Lane Flow Rate	243	283	133	184
Geometry Grp	1	1	1	1
Degree of Util (X)	0.359	0.419	0.204	0.275
Departure Headway (Hd)	5.325	5.328	5.495	5.385
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	676	676	652	666
Service Time	3.365	3.364	3.538	3.426
HCM Lane V/C Ratio	0.359	0.419	0.204	0.276
HCM Control Delay	11.3	12.2	10	10.5
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	1.6	2.1	0.8	1.1

Intersection	
Int Delay, s/veh	244.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✥			✥	
Traffic Vol, veh/h	308	1473	0	2	1265	23	0	0	0	7	0	411
Future Vol, veh/h	308	1473	0	2	1265	23	0	0	0	7	0	411
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	350	1674	0	2	1438	26	0	0	0	8	0	467

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1464	0	0	1674	0	0	3097	3842	837	2992	3829	732
Stage 1	-	-	-	-	-	-	2374	2374	-	1455	1455	-
Stage 2	-	-	-	-	-	-	723	1468	-	1537	2374	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	457	-	-	379	-	-	5	4	310	~ 6	4	~ 364
Stage 1	-	-	-	-	-	-	35	66	-	136	193	-
Stage 2	-	-	-	-	-	-	384	190	-	121	66	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	457	-	-	379	-	-	-	1	310	~ 2	1	~ 364
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	1	-	~ 2	1	-
Stage 1	-	-	-	-	-	-	8	15	-	32	192	-
Stage 2	-	-	-	-	-	-	-	189	-	28	15	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.9	0	0	$ 2018.1
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	457	-	-	379	-	-	90
HCM Lane V/C Ratio	-	0.766	-	-	0.006	-	-	5.278
HCM Control Delay (s)	0	34.3	-	-	14.6	-		$ 2018.1
HCM Lane LOS	A	D	-	-	B	-	-	F
HCM 95th %tile Q(veh)	-	6.6	-	-	0	-	-	51.6

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th Signalized Intersection Summary
13: S Willow Ave & E Jensen Ave

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	170	1230	46	23	712	55	101	125	85	35	22	61
Future Volume (veh/h)	170	1230	46	23	712	55	101	125	85	35	22	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	1281	48	24	742	57	105	130	89	36	23	64
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	1986	74	76	1514	116	180	173	118	103	232	196
Arrive On Green	0.12	0.39	0.39	0.04	0.31	0.31	0.10	0.17	0.17	0.06	0.12	0.12
Sat Flow, veh/h	1781	5051	189	1781	4838	370	1781	1035	708	1781	1870	1585
Grp Volume(v), veh/h	177	863	466	24	521	278	105	0	219	36	23	64
Grp Sat Flow(s),veh/h/ln	1781	1702	1836	1781	1702	1804	1781	0	1743	1781	1870	1585
Q Serve(g_s), s	6.6	14.1	14.1	0.9	8.5	8.5	3.8	0.0	8.2	1.3	0.7	2.5
Cycle Q Clear(g_c), s	6.6	14.1	14.1	0.9	8.5	8.5	3.8	0.0	8.2	1.3	0.7	2.5
Prop In Lane	1.00		0.10	1.00		0.20	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	219	1339	722	76	1065	564	180	0	291	103	232	196
V/C Ratio(X)	0.81	0.64	0.65	0.31	0.49	0.49	0.58	0.00	0.75	0.35	0.10	0.33
Avail Cap(c_a), veh/h	392	2047	1104	392	2047	1085	392	0	511	392	549	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	16.8	16.8	31.7	19.0	19.0	29.3	0.0	27.0	30.9	26.5	27.3
Incr Delay (d2), s/veh	2.7	0.7	1.2	0.9	0.4	0.8	1.1	0.0	6.3	0.7	0.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.4	4.9	0.4	2.8	3.1	1.6	0.0	3.7	0.6	0.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	17.5	18.0	32.5	19.4	19.9	30.4	0.0	33.4	31.6	27.0	29.8
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1506			823			324			123	
Approach Delay, s/veh		19.3			20.0			32.4			29.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	14.9	14.1	27.3	8.9	17.9	8.6	32.8
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	5.8	4.5	8.6	10.5	3.3	10.2	2.9	16.1
Green Ext Time (p_c), s	0.1	0.5	0.1	6.1	0.0	1.2	0.0	10.8

Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑	↱		✥			✥	
Traffic Volume (veh/h)	254	859	9	16	531	123	7	147	25	123	86	130
Future Volume (veh/h)	254	859	9	16	531	123	7	147	25	123	86	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	267	904	9	17	559	129	7	155	26	129	91	137
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	2097	21	57	1003	447	57	464	75	214	142	180
Arrive On Green	0.18	0.40	0.40	0.03	0.28	0.28	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	5213	52	1781	3554	1585	21	1541	251	491	470	599
Grp Volume(v), veh/h	267	590	323	17	559	129	188	0	0	357	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1861	1781	1777	1585	1812	0	0	1560	0	0
Q Serve(g_s), s	10.7	9.2	9.2	0.7	9.9	4.7	0.0	0.0	0.0	8.8	0.0	0.0
Cycle Q Clear(g_c), s	10.7	9.2	9.2	0.7	9.9	4.7	5.9	0.0	0.0	14.7	0.0	0.0
Prop In Lane	1.00		0.03	1.00		1.00	0.04		0.14	0.36		0.38
Lane Grp Cap(c), veh/h	312	1369	749	57	1003	447	596	0	0	536	0	0
V/C Ratio(X)	0.86	0.43	0.43	0.30	0.56	0.29	0.32	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	525	2313	1265	484	2415	1077	1393	0	0	1194	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.4	15.9	15.9	34.8	22.5	20.6	20.1	0.0	0.0	22.8	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.5	0.9	1.1	1.1	0.8	0.6	0.0	0.0	3.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.0	3.4	0.3	3.7	1.6	2.3	0.0	0.0	5.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	16.4	16.8	35.9	23.6	21.5	20.6	0.0	0.0	26.7	0.0	0.0
LnGrp LOS	C	B	B	D	C	C	C	A	A	C	A	A
Approach Vol, veh/h		1180			705			188			357	
Approach Delay, s/veh		20.2			23.5			20.6			26.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.9	16.9	27.8		28.9	8.0	36.6				
Change Period (Y+Rc), s		6.8	4.0	7.0		6.8	5.7	7.0				
Max Green Setting (Gmax), s		55.0	21.7	50.0		55.0	20.0	50.0				
Max Q Clear Time (g_c+I1), s		16.7	12.7	11.9		7.9	2.7	11.2				
Green Ext Time (p_c), s		5.4	0.2	8.9		2.0	0.0	13.0				
Intersection Summary												
HCM 6th Ctrl Delay			22.2									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	↰↱	
Traffic Vol, veh/h	318	164	152	372	90	153
Future Vol, veh/h	318	164	152	372	90	153
Conflicting Peds, #/hr	0	4	4	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	366	189	175	428	103	176

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	559	0	1243	466
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	778	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1012	-	193	597
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	453	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1008	-	159	594
Mov Cap-2 Maneuver	-	-	-	-	329	-
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	374	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	24.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	458	-	-	1008	-
HCM Lane V/C Ratio	0.61	-	-	0.173	-
HCM Control Delay (s)	24.4	-	-	9.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	4	-	-	0.6	-

Appendix E

Water Supply Assessment

FINAL REPORT | APRIL 2024

South Central Specific Plan Water Supply Assessment

PREPARED FOR

City of Fresno

PREPARED BY

West Yost
Water. Engineered.

South Central Specific Plan
Water Supply Assessment

Prepared for

City of Fresno

Project No. 750-60-22-04

BONNIE J. ROBISON
No. C85779
Exp. 9-30-24
REGISTERED PROFESSIONAL ENGINEER
CIVIL
STATE OF CALIFORNIA

Bonnie Robison

Project Manager: Bonnie Robison, PE

April 25, 2024
Date

Elizabeth Drayer

QA/QC Review: Elizabeth Drayer, PE

April 25, 2024
Date

WEST YOST
Water. Engineered.

FINAL REPORT | APRIL 2024

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

af/yr	Acre-Feet Per Year
CASGEM	California Statewide Groundwater Elevation Monitoring
CIMIS	California Irrigation Management Information System
City	City of Fresno
CVP	Central Valley Project
Delta	Sacramento-San Joaquin Delta
EIR	Environmental Impact Report
FID	Fresno Irrigation District
GSP	Groundwater Sustainability Plan
mgd	Million Gallons Per Day
NESWTF	Northeast Surface Water Treatment Facility
NFWRF	North Fresno Wastewater Reclamation Facility
NKGSA	North Kings Groundwater Sustainability Agency
RWRF	Regional Wastewater Reclamation Facility
SB 221	Senate Bill 221
SB 610	Senate Bill 610
SESWTF	Southeast Surface Water Treatment Facility
SGMA	Sustainable Groundwater Management Act
SOI	Sphere of Influence
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
Water Code	California Water Code
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan

EXECUTIVE SUMMARY

Purpose of Water Supply Assessment

The purpose of this Water Supply Assessment (WSA) is to perform the evaluation required by California Water Code sections 10910 through 10915, as established by Senate Bill 610 (SB 610), in connection with the City of Fresno's (City) proposed South Central Specific Plan (Proposed Project), and to support the Environmental Impact Report (EIR) being prepared for the Proposed Project. This WSA evaluates the adequacy of the City's total projected water supplies, including existing water supplies and future planned water supplies, to meet the City's existing and projected future water demands, including future water demands associated with the Proposed Project, under all hydrologic conditions (Normal Years, Single Dry Years, and Multiple Dry Years).

Proposed Project Overview

The Proposed Project is located in the southern portion of the City, within the City's Sphere of Influence (SOI) and mostly within City limits. The Proposed Project area includes approximately 4,940 acres (7.72 square miles), with a mix of land uses identified as the Blended Plan. By area, proposed land uses for the Proposed Project are 68 percent industrial, 20 percent business park, and 5 percent single-family residential, with the remaining 6 percent being a mix of general commercial, public, and open space land uses.

The Project area was previously referred to as the South Industrial Area in the City's 2035 General Plan (General Plan). The Proposed Project includes changes from the South Industrial Area mix of land uses, and reduces industrial use in favor of single-family residences and business parks.

The Proposed Project meets the definition of a "Project" per California Water Code (Water Code) sections 10910 through 10915, as established by SB 610 in 2001. SB 610 and SB 221 both apply to the Proposed Project (See Section 1.1 and 3.1).

Water Demands and Supply Availability

Projected water demands for full buildout of the Proposed Project total approximately 17,300 acre-feet per year (af/yr). This is lower than the projected water demands of the South Industrial Area (18,400 af/yr) that were included in the City's 2020 Urban Water Management Plan (UWMP). It is anticipated that the Proposed Project, if approved by the City, would be served from the City's existing and future portfolio of water supplies. The City currently receives water from four water supply sources:

- Surface water that is delivered to the City by two separate sources:
  - Fresno Irrigation District (FID) Agreement for Kings River water.
  - United States Bureau of Reclamation (USBR) Central Valley Project (CVP) Friant Division Contract for San Joaquin River water.
- Groundwater that is pumped from wells located within the City.
- Recycled water that is treated at the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) and North Fresno Wastewater Reclamation Facility (NFWRF). This water may be used for non-potable uses.

It is assumed for the purposes of this WSA that recycled water will not be used to offset potable water demands for the Proposed Project.

The City has always met system water demand, regardless of regional hydrology. The City expects reductions from normal-year water supply during single or multiple dry years but is still projected to meet existing and projected water demands. During a water shortage, the City would implement demand reduction measures as outlined in its Water Shortage Contingency Plan, which would apply to all customers, including those within the Proposed Project area. The projected available water supplies and water demands (including the Proposed Project) through 2045 are shown in Table ES-1. As shown in Table ES-1, available water supplies are more than sufficient to meet the projected water demands for the next 20 years.

Pursuant to Water Code Section 10910(c)(4), and based on the technical analyses described in this WSA, the City's existing and additional planned future water supplies are sufficient to meet the City's existing and projected future water demands, including future water demands associated with full buildout of the Proposed Project, to the year 2045 under all hydrologic conditions (including Normal Years, Single Dry Years, and Multiple Dry Years).

Water Supply Assessment Approval Process

It is recommended the City include this WSA in the Draft EIR that is being prepared for the Proposed Project.

The Proposed Project will not include a residential subdivision with more than 500 dwelling units. Therefore, the Proposed Project will not be subject to the requirements of SB 221 (Government Code Section 66473.7), and a verification of sufficient water supply (SB 221) report will not be required prior to final approvals.

Table ES-1. City of Fresno Water Demand Versus Water Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years, af/yr

Hydrologic Condition		2025	2030	2035	2040	2045
Normal Year(a)						
Available Water Supply		329,030	341,140	346,610	352,000	357,330
Total Water Demand		199,204	212,756	222,310	231,876	241,447
Potential Surplus (Deficit)		**129,826**	**128,384**	**124,300**	**120,124**	**115,883**
Percent Shortfall of Demand		-	-	-	-	-
Single Dry Year(b)						
Available Water Supply		189,852	195,392	200,862	206,252	211,582
Total Water Demand		164,092	176,132	184,174	192,228	200,287
Potential Surplus (Deficit)		**25,760**	**19,260**	**16,688**	**14,024**	**11,295**
Percent Shortfall of Demand		-	-	-	-	-
Multiple Dry Years(c)						
Multiple Dry Year 1	Available Water Supply	273,725	279,265	284,735	290,125	295,455
	Total Water Demand	199,204	212,756	222,310	231,876	241,447
	Potential Surplus (Deficit)	**74,521**	**66,509**	**62,425**	**58,249**	**54,008**
	Percent Shortfall of Demand	-	-	-	-	-
Multiple Dry Year 2	Available Water Supply	274,626	280,166	285,636	291,026	296,356
	Total Water Demand	199,204	212,756	222,310	231,876	241,447
	Potential Surplus (Deficit)	**75,422**	**67,410**	**63,326**	**59,150**	**54,909**
	Percent Shortfall of Demand	-	-	-	-	-
Multiple Dry Year 3	Available Water Supply	217,568	223,108	228,578	233,968	239,298
	Total Water Demand	190,267	193,637	197,736	201,753	205,708
	Potential Surplus (Deficit)	**27,301**	**29,471**	**30,842**	**32,215**	**33,589**
	Percent Shortfall of Demand	-	-	-	-	-
Multiple Dry Year 4	Available Water Supply	189,852	195,392	200,862	206,252	211,582
	Total Water Demand	162,551	165,920	170,020	174,036	177,992
	Potential Surplus (Deficit)	**27,301**	**29,471**	**30,842**	**32,215**	**33,589**
	Percent Shortfall of Demand	-	-	-	-	-
Multiple Dry Year 5	Available Water Supply	314,840	320,380	325,850	331,240	336,570
	Total Water Demand	199,204	212,756	222,310	231,876	241,447
	Potential Surplus (Deficit)	**115,636**	**107,624**	**103,540**	**99,364**	**95,123**
	Percent Shortfall of Demand	-	-	-	-	-

(a) From the City's 2020 UWMP, Table 7-1.

(b) From the City's 2020 UWMP, Table 7-2.

(c) From the City's 2020 UWMP, Table 7-3.

1.0 INTRODUCTION

1.1 Legal Requirement for a Water Supply Assessment

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 were companion measures which sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. The purpose of this coordination is to ensure that prudent water supply planning has been conducted and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of proposed projects.

SB 610 amended California Water Code (Water Code) sections 10910 through 10915 (inclusive) to require land use lead agencies to:

- Identify any public water purveyor that may supply water for a proposed development project; and
- Request a WSA from the identified water purveyor.

The purpose of the WSA is to demonstrate the sufficiency of the purveyor’s water supplies to satisfy the water demands of the proposed project, while still meeting the water purveyor’s existing and planned future uses. Water Code sections 10910 through 10915 delineate the specific information that must be included in the WSA.

The Proposed Project will not include a residential subdivision with more than 500 dwelling units (DUs) and will therefore not be subject to the requirements of SB 221 (Government Code Section 66473.7).

1.2 Need for and Purpose of Water Supply Assessment

The purpose of this WSA is to perform the evaluation required by Water Code sections 10910 through 10915 in connection with the City’s proposed South Central Specific Plan (Proposed Project). It is not to reserve water or to function as a “will serve” letter or any other form of commitment to supply water (see Water Code Section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable City policies and procedures, consistent with existing law.

1.3 Water Supply Assessment Preparation, Format and Organization

The format of this WSA is intended to follow Water Code sections 10910 through 10915 to clearly delineate compliance with the specific requirements for a WSA. The WSA includes the following sections:

- Section 1: Introduction
- Section 2: Description of Proposed Project
- Section 3: Required Determinations
- Section 4: City of Fresno Water Service Area
- Section 5: City of Fresno Water Demands
- Section 6: City of Fresno Water Supplies

- Section 7: Determination of Water Supply Sufficiency Based on the Requirements of SB 610
- Section 8: Water Supply Assessment Approval Process
- Section 9: References

Relevant citations of Water Code sections 10910 through 10915 are included throughout this WSA in *italics* to demonstrate compliance with the specific requirements of SB 610.

2.0 DESCRIPTION OF PROPOSED PROJECT

2.1 Proposed Project Location

The Proposed Project includes approximately 4,940 acres (7.72 square miles) and is located in the southern portion of the City, within the City's Sphere of Influence (SOI) and mostly within City limits. As shown in Figure 2-1, the Proposed Project area is traversed by Highways 41 and 99 and rail lines that serve industry in the area.

Existing land uses in the Proposed Project area include a mix of industrial and commercial developments, residential neighborhoods, public facilities, open space, and vacant land. Residential uses in the Proposed Project are largely characterized by rural residential lots not served by public utility systems, although a few small subdivisions have access to City water and sewer services.

2.2 Proposed Land Uses

The Proposed Project includes a mix of land uses identified as the Blended Plan. By area, land uses for the Proposed Project are 68 percent industrial, 20 percent business park, and 5 percent single-family residential, with the remaining 6 percent being a mix of general commercial, public, and open space land uses. The Proposed Project matches proposed land use to existing development and decreases the land use intensity of vacant parcels surrounding sensitive uses (residential, school, park, and day care).

The Proposed Project area was included in the City's 2035 General Plan (General Plan) and was referred to as the South Industrial Area. By area, proposed land uses included in the General Plan for the South Industrial Area are 84 percent industrial and 10 percent business park, with the remaining 6 percent being a mix of single-family residential and open space.

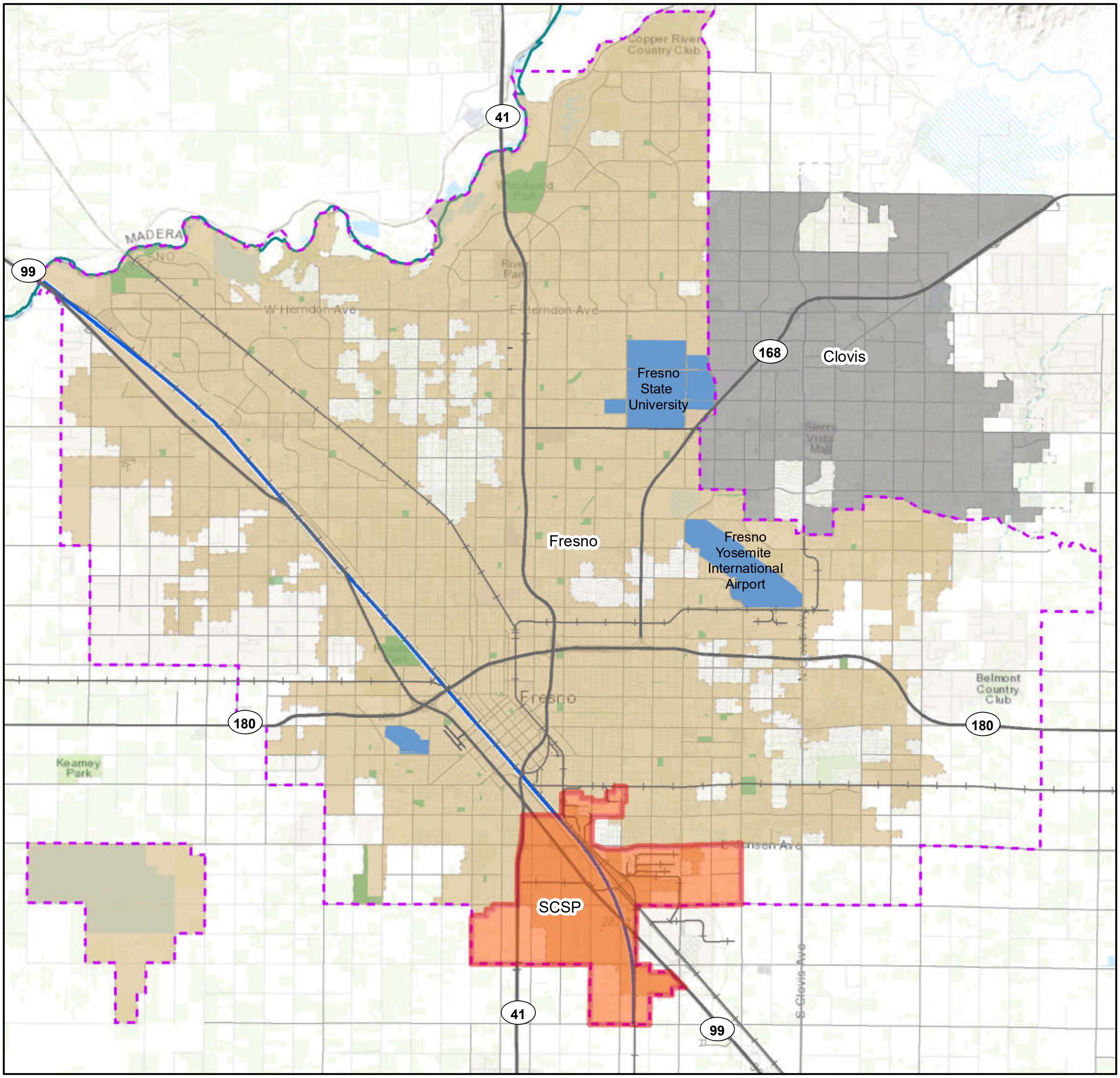
Figure 2-2 shows the land use designations for the Proposed Project. Table 2-1 presents the buildout land use acreage for the Proposed Project in comparison with the South Industrial Area.

2.3 Projected Water Demand

Table 2-1 presents the proposed land use (full buildout) and projected water demand for both the Proposed Project and the South Industrial Area. As shown in Table 2-1, the Proposed Project has an average day demand of approximately 15.4 million gallons per day (mgd), equating to an annual demand of about 17,300 acre-feet per year (af/yr). This is lower than the projected water demand of the South Industrial Area adopted in the General Plan, with an average day demand of approximately 16.4 mgd (18,400 af/yr).

It is expected that all water demands from the Proposed Project will be served by the City's existing potable water system. The City's 2020 Urban Water Management Plan (UWMP) showed that the City is able to meet the water demands of the South Industrial Area as identified in the General Plan. Therefore, since the projected future water demands of the Proposed Project are lower than the demands of the South Industrial Area, the City will also be able to meet the projected future demands of the Proposed Project.

DRAFT



Legend

- 🟥 South Central Specific Plan (SCSP)
- ━ CA Highspeed Rail - Unofficial Alignment
- ┼ Railroads
- ━ State Highways
- ⬚ Fresno Sphere of Influence
- ▨ Fresno City Limits
- ▨ City/Town
- 🟩 Parks
- 🟦 Places of Interest

Figure 2-1. Proposed Project Location

South Central Specific Plan

0 2 4 Miles

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community. 2016 Census Designated Places.

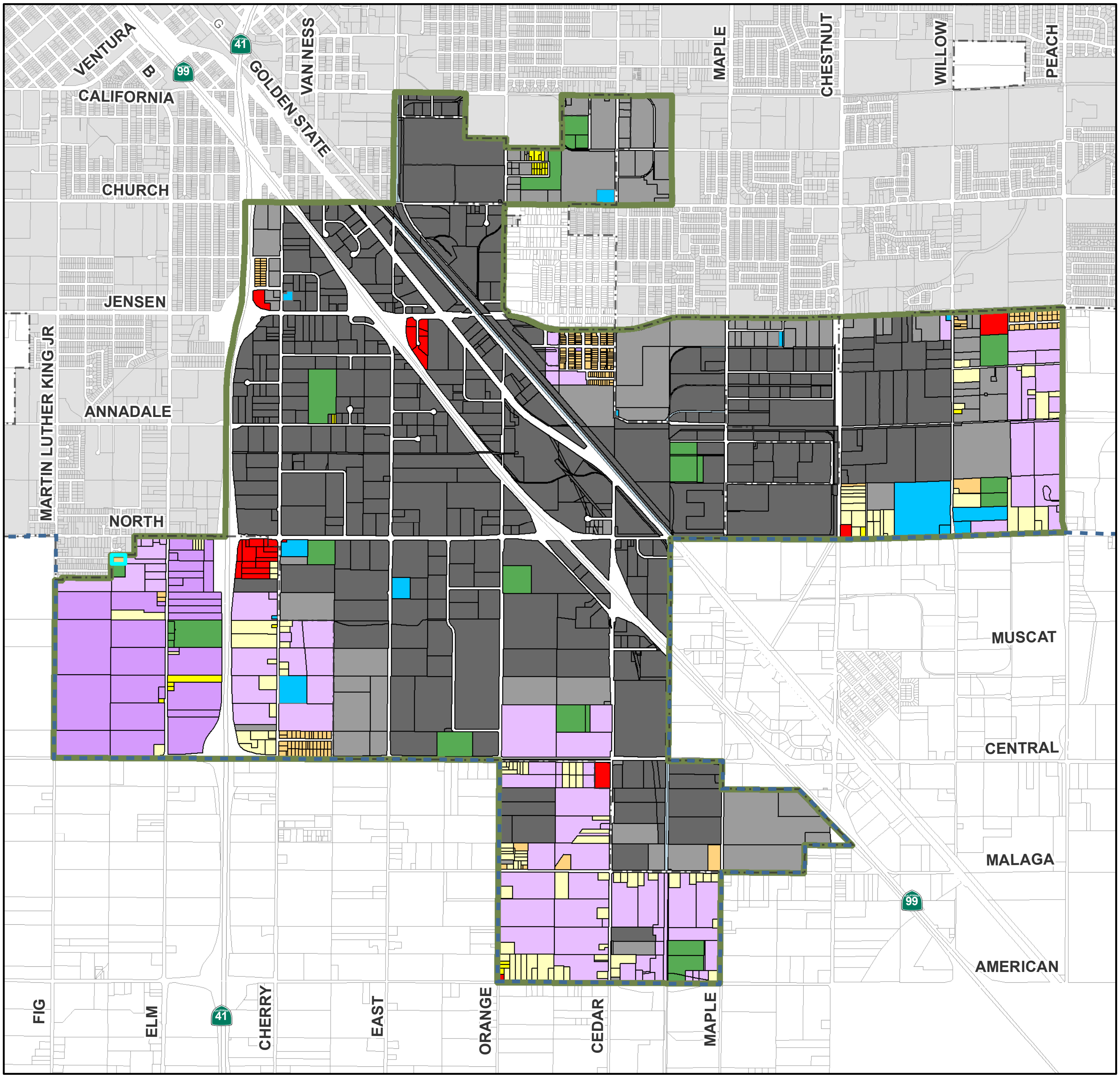


Figure 2-2. Proposed Land Use Designations

Legend

RESIDENTIAL

- 🟨 Low Density
- 🟨 Medium Low Density
- 🟧 Medium Density

COMMERCIAL

- 🟥 General

EMPLOYMENT

- 🟪 Business Park
- 🟪 Regional Business Park
- ⬜ Light Industrial
- ⬛ Heavy Industrial

MIXED USE

- 🟪 Neighborhood Mixed Use

OPEN SPACE

- 🟩 Ponding Basin
- 🟩 Neighborhood Park

PUBLIC FACILITIES

- 🟦 Public Facility
- 🟦 post office
- 🟦 pg&e substation
- 🟦 pump station
- 🟦 fire station
- 🟦 elementary school

UNDESIGNATED

- ⬜ Rail

- ⬚ Fresno Sphere of Influence
- ⬚ Fresno City Limits
- ⬚ South Central Specific Plan (SCSP)

South Central Specific Plan

0 0.5 1 Miles

Source: City of Fresno GIS Data
Prepared by the Planning and Development Department

Table 2-1. Projected Average Day Water Demands for Proposed Project[a]

Land Use Classifications	Water Use Factor, gpd/acre	General Plan South Industrial Area		Proposed Project	
		Proposed Plan Area, acre	Estimated Water Demands, mgd	Proposed Plan Area, acre	Estimated Water Demands, mgd
Residential					
Single-Family Residential	2,800	30	0.08	270	0.76
Neighborhood Mixed Use	2,900	0.25	0.00	0.25	0.00
Non-Residential					
Business Park	2,800	144	0.40	653	1.83
General Commercial	2,500	10	0.02	47	0.12
Regional Business Park	2,000	351	0.70	334	0.67
Heavy Industrial	3,900	3,486	13.59	2,650	10.33
Light Industrial	1,900	685	1.30	715	1.36
Open Space - Ponding Basin	1,300	158	0.20	158	0.20
Open Space - Neighborhood Park	3,500	2	0.01	2	0.01
Public	1,900	42	0.08	78	0.15
Rail	-	32	-	32	-
Total	-	**4,940 acres**	**16.40 mgd** **18,400 af/yr**	**4,940 acres**	**15.43 mgd** **17,300 af/yr**

(a) Estimated plan areas and water demands are from the *South Central Specific Plan Water and Sewer Hydraulic Analysis* Technical Memorandum, prepared for the City of Fresno by Akel Engineering Group, Inc., July 2022.

3.0 REQUIRED DETERMINATIONS

3.1 Does SB 610 apply to the Proposed Project?

> *10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.*
>
> *10912 (a) "Project" means any of the following:*

1. A proposed residential development of more than 500 dwelling units.
2. A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
3. A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
4. A proposed hotel or motel, or both, having more than 500 rooms.
5. A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
6. A mixed-use project that includes one or more of the projects specified in this subdivision.
7. A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.

Based on the following facts, SB 610 applies to the Proposed Project.

- The City has determined that the Proposed Project is subject to the California Environmental Quality Act (CEQA) and that an Environmental Impact Report (EIR) is required.
- The Proposed Project includes more than 500,000 square feet of retail space, more than 250,000 square feet of office space, and more than 650,000 square feet of industrial space.

Therefore, the City has requested that a WSA be prepared to document projected water demand and available water supply. The Proposed Project has not been the subject of a previously adopted WSA and has not been included in an adopted WSA for a larger project.

3.2 Who is the Identified Public Water System?

> *10910(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined by Section 10912, that may supply water for the project*
>
> *10912 (c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections…*

The City is the identified public water system for the Proposed Project. As shown on Figure 2-1, the Proposed Project is located within the City's SOI and mostly within City limits. The City's water system service area includes most areas within the City limits and the water system service area would be extended to serve the Proposed Project.

3.3 Does the City have an adopted Urban Water Management Plan (UWMP) and does the UWMP include the projected water demand for the Proposed Project?

> *10910(c)(1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).*

The City's most recently adopted UWMP was adopted by the City Council in July 2021 and is incorporated by reference into this WSA.[1] The City's 2020 UWMP included water demand projections for current water demands within the City (baseline demand) and anticipated water demands associated with future development projects and planning areas within the City's General Plan SOI through 2045.

Since the project area is included in the City's General Plan, projected water demands for the South Industrial Area are included in the City's 2020 UWMP. As described in Section 2.3 of this WSA, the South Industrial Area land use as adopted in the General Plan has higher projected water demands than the Proposed Project. Therefore, it can be assumed that the City's 2020 UWMP includes projected water demands for the Proposed Project.

The City's ability to meet the projected water demands for the Proposed Project is described in Section 7.0 of this WSA.

---

[1] City of Fresno 2020 Urban Water Management Plan, prepared by Water Systems Consulting, July 2021.

4.0 CITY OF FRESNO WATER SERVICE AREA

4.1 Water Service Area

The City is located in the San Joaquin Valley in Fresno County, California, and was incorporated in 1885. The existing incorporated area of the City encompasses approximately 128 square miles (2020 UWMP). The City's General Plan includes the City's SOI, which includes the area outside of the City limits that the City expects to annex and urbanize in the future.

With a few exceptions, the City's water service area is coterminous with the City limits. As future developments within the SOI, but outside the City limits, are approved, they will be annexed into the City and served by the City water system. Figure 2-1 illustrates the current City Limits and the SOI.

4.2 Population

The City was founded in 1885 in the heart of the nation's richest agricultural county and has historically been one of the fastest growing cities in the United States. According to the U.S. Census, the City's population was 354,282 in 1990, 427,652 in 2000, 494,665 in 2010, and 542,107 in 2020. The water service area does not completely coincide with the City's annexed boundaries. The population served by the City Water Division is slightly higher than the City's population after adding unincorporated areas served by the City and removing areas within the City limits served by private water companies, special districts, or private wells.

From 1995 to 2015, the City had an annual growth rate of 1.3 percent, and since 2015, the rate has not surpassed 1.0 percent. According to the City's Planning and Development Department, the City's water service area population is anticipated to continue to grow along with the City, with some slightly higher growth years anticipated within the next 10 years due to multiple large developments planned for completion in the near term. For planning purposes, the 2020 UWMP assumes the City will slowly incorporate areas served by others within the City's SOI by buildout in the year 2056.

Table 4-1 shows the City's projected water service area population in five-year increments to the year 2045.

Table 4-1. City of Fresno Water Service Area Existing and Projected Population

Years	2020	2025	2030	2035	2040	2045
Population Served[a]	550,217[b]	609,433	674,677	719,327	765,278	812,529

(a) From the City's 2020 UWMP, Table 3-3.
(b) Actual 2020 water service area population in UWMP determined using the Department of Water Resources Population Tool.

4.3 Climate

The City has cool, humid winters, and hot, dry summers. Based on the historical data obtained from the California Irrigation Management Information System (CIMIS), the City's average monthly temperature ranged from 38.9 to 85.1 °F, over the time period from 1988 to 2022. The rainy season typically begins in November and ends in March. Average monthly precipitation during the winter months is about 1 to 2 inches, and the total annual average is 11.3 inches.

Water demands during the winter are low relative to summer months (May to September). The combination of hot and dry weather during the summer results in high water demands during these periods. Landscape irrigation significantly contributes to the higher summer demands.

Evapotranspiration records, which measure the loss of water from the soil both by evaporation and by transpiration from the plants growing thereon, indicate average monthly values ranging from 1.10 inches during December to 8.80 inches in July.

Table 4-2 summarizes the City's average temperature and rainfall data, which was obtained from the City's 2020 UWMP.

Table 4-2. City of Fresno Climate Data[a]

Month	Average ET_o, inches	Average Rainfall, inches	Average Min Temperature, F	Average Max Temperature, F
January	1.17	2.33	37.4	56.9
February	1.98	1.80	39.8	62.6
March	3.73	1.99	43.6	68.4
April	5.43	0.99	46.9	73.7
May	7.33	0.54	53.2	81.3
June	8.41	0.19	59.1	89.6
July	8.80	0.02	63.8	95.7
August	7.82	0.01	62.5	94.6
September	5.69	0.07	57.9	89.6
October	3.68	0.59	49.3	79.3
November	1.85	0.98	40.6	66.2
December	1.10	1.83	36.1	56.5
Annual Total/Average	**56.99**	**11.34**	**49.2**	**76.2**

(a) From the City's 2020 UWMP, Table 3-2.

5.0 CITY OF FRESNO WATER DEMANDS

> *10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).*

The descriptions provided below for the City's water demands have been taken, for the most part, from the City's 2020 UWMP, which was adopted in July 2021. Supplemental information from other available reports has been included to provide the most recent data available and to meet the specific requirements of SB 610.

5.1 Historical and Existing Water Demand

The City's water demand significantly decreased from 2010 to 2015 due to restrictions associated with the 2012–2015 drought and the City completing water meter installations for all single-family residences in 2013. Table 5-1 shows the City's historical water demands for 2010 and 2015 to 2020.

Table 5-1. Historical Water Demand, af/yr

	2010[(b)]	2015[(b)]	2016[(c)]	2017[(c)]	2018[(c)]	2019[(c)]	2020[(c)]
Total Potable and Raw Water Demand[(a)]	199,168	132,884	177,731	192,876	168,872	198,492	164,680

(a) Distribution system losses are included in total demands.
(b) From the City's 2015 UWMP, Table 4-2 and Table 4-3.
(c) From the City's 2020 UWMP, Appendix E AWWA Water Audits and Figure 4-2.

5.2 Future Water Demand

As shown in Table 5-2, the City's water demand is projected to increase by over 20 percent from 2025 to 2045.

Table 5-2. Projected Future Water Demand, af/yr[(a)]

Demand Type	2025	2030	2035	2040	2045
Potable[(b)]	136,504	147,356	154,210	161,076	167,947
Non-Potable[(c)]	62,700	65,400	68,100	70,800	73,500
Total Water Demand	**199,204**	**212,756**	**222,310**	**231,876**	**241,447**

(a) From the City's 2020 UWMP, Table 4-6 and Table 4-7.
(b) Potable water demand includes estimated distribution system losses.
(c) Non-potable water demands are from the City's use of raw surface water for groundwater recharge.

5.3 Dry Year Water Demand

As shown in Table 5-1, the City's 2015 water demand was significantly lower than the 2010 demand in response to the drought and the Governor's April 2015 Executive Order B-29-15 mandating 25 percent water conservation statewide. The City initially had a water conservation reduction of 28 percent as compared to 2013 use, which changed to 25 percent in early 2016 (SWRCB, 2016; SWRCB, 2017).

The City has adopted a set of restrictions on water usage that promotes water conservation. The City Municipal Code contains sections on water conservation that are to take place under normal water supply conditions. These measures are mandated year-round and can be found in detail in Section 6-520(a) of the City's Municipal Code. The City's Water Shortage Contingency Plan (WSCP), outlined in Section 8 (and included as Appendix J) of the City's 2020 UWMP, includes a five-stage plan describing specific actions to reduce water demand by over 50 percent in the event of a water supply shortage or emergency. Demand is expected to decrease as the City implements water conservation measures in response to multiple dry years or other supply changes.

Although it has been demonstrated that the City can achieve significant water conservation during droughts, the 2020 UWMP conservatively projects future dry year water demand for the Drought Risk Assessment by assuming that potable demands are unrestricted, and non-potable water used for groundwater recharge is reduced in single dry years and years three and four of a five-year drought. Table 5-3 presents the City's projected future dry year water demand.

Table 5-3. Projected Future Dry Year Water Demand, af/yr

Hydrologic Condition	2025	2030	2035	2040	2045
Single Dry Year(a)	164,092	176,132	184,174	192,228	200,287
Multiple Dry Years First Year(b)	199,204	212,756	222,310	231,876	241,447
Multiple Dry Years Second Year(b)	199,204	212,756	222,310	231,876	241,447
Multiple Dry Years Third Year(b)	190,267	193,637	197,736	201,753	205,708
Multiple Dry Years Fourth Year(b)	162,551	165,920	170,020	174,036	177,992
Multiple Dry Years Fifth Year(b)	199,204	212,756	222,310	231,876	241,447

(a) From the City's 2020 UWMP, Table 7-2.
(b) From the City's 2020 UWMP, Table 7-3.

6.0 CITY OF FRESNO WATER SUPPLIES

> *10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*
>
> *10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.*
>
> *10910(d)(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:*
>
> - *(A) Written contracts or other proof of entitlement to an identified water supply.*
> - *(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*
> - *(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*
> - *(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*
>
> *10910(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.*

It is anticipated that the Proposed Project, if approved by the City, would be served from City's existing and future portfolio of water supplies. The inclusion of existing and planned future water supplies is specifically allowed by the Water Code:

> *Water Code Section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

The water supply for the Proposed Project will have the same water supply reliability and water quality as the water supply available to the City's other existing and future water customers. Proponents of individual developments within the Proposed Project area will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable water supplies to the Proposed Project area.

The water supplies needed to serve the Proposed Project (together with existing water demands and planned future uses) are described in the City's 2020 UWMP. Therefore, the descriptions provided below for the City's water supplies have been taken, for the most part, from the City's 2020 UWMP, which was adopted in July 2021. Supplemental information from other available reports has also been included to provide the most recent data available and to meet the specific requirements of SB 610.

6.1 Existing Water Supplies

The City currently receives potable water supplies from three sources:

- Surface water contract water that is delivered to the City by two separate sources:
  - Fresno Irrigation District (FID) Agreement for Kings River water.
  - United State Bureau of Reclamation (USBR) Central Valley Project (CVP) Friant Division Contract for San Joaquin River water.
- Groundwater that is pumped from wells located within the City.

Each of these existing supplies is described below. While the City also has a recycled water supply, this WSA conservatively assumes that recycled water will not be used to offset potable water demands for the Proposed Project.

6.1.1 Surface Water Contracts

The City's surface water supply has provided the City the opportunity to construct surface water treatment facilities and optimize its surface water and groundwater supplies. Surface water is either treated and delivered to customers or delivered to groundwater recharge basins. Each surface water supply is summarized in the following sections.

6.1.1.1 Surface Water Supplies through FID Agreement

In May 1976 the City and FID executed an agreement that stipulated that as land is annexed to the City, the City will receive a pro rata share of FID's Kings River entitlement; this agreement was revised, amended and restated in December 2016.[2] The pro rata share is based on the area annexed to the City, and within FID's boundaries, as compared to the total area of FID's water service area. The 2016 FID Agreement sets the maximum at 29.0 percent, although the City's service area is anticipated to expand and encompass more than 29.0 percent of FID's service area between 2025 and 2030. In 2020, the City's percentage of overall FID Kings deliveries was 25.79 percent.

The agreement stipulates the allocation amount will be reviewed each year by the two agencies to address new annexations to the City. As the City annexes new areas, the allocation will increase up to the limits stipulated in the 2016 agreement. The City estimates it will receive 131,600 acre-feet (af) of water from FID in 2045 based on the City's projected future water service area.

6.1.1.2 Surface Water Supplies through USBR Contract

The City, through an agreement originally executed in January of 1961, secured a surface water supply from USBR CVP-Friant Division. This agreement, for an annual water supply of 60,000 af of Class 1 water, was last renewed in 2010 as a Section 9(d) Contract that provides water from the San Joaquin River in perpetuity. The USBR CVP-Friant Division facilities generally include the following: Friant Dam (Millerton Reservoir), the Friant Kern Canal, and the Madera Canal. The Friant-Kern Canal is maintained and operated by the Friant Water Authority. The USBR water supply is a wholesale supply.

---

[2] Revised, Amended, and Restated Cooperative Agreement between Fresno Irrigation District and City of Fresno for Water Utilization and Conveyance, dated December 20, 2016.

Class 1 water was intended to be a supply that would be dependable in practically every year, regardless of the type of hydrologic water year. Class 2 water is essentially excess water available as determined by USBR and less reliable than Class 1 water. Class 1 water has historically been very reliable until the 2006 San Joaquin River Restoration Settlement and more recently by the restrictions on diversions from the Sacramento-San Joaquin Delta (Delta) due to concerns over the declining health of Delta ecosystem. Since 2006, the City anticipates receiving 100 percent of its annual allocation in normal and normal-wet years, and between 0 and 75 percent of its annual allocation in critical, dry, and normal-dry years.

6.1.2 Groundwater

> *10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.*
>
> *10910(f)(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*
>
> *10910(f)(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.*
>
> *10910(f)(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*
>
> *A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*
>
> *10910(f)(4) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.*
>
> *A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.*

6.1.2.1 Groundwater Overview

The City pumps groundwater from a portion of the Kings Subbasin underlying the City. Per the City's 2020 UWMP, the City has over 270 municipal wells and is actively operating approximately 202 municipal wells. Groundwater quality is a concern because the groundwater basin has several major contaminant plumes involving organic compounds, inorganic compounds, solvents, pesticides, and other contaminants. Several City wells are currently being treated or blended to address various contaminants. When the City's 2014 Water Master Plan was prepared, the total well capacity was approximately 460 mgd.

6.1.2.2 Basin Description

The City's wells are located within the northern part of the Kings Subbasin of the San Joaquin Valley Groundwater Basin. This section describes the Kings Subbasin, including its water-bearing formations, water levels, and water quality. The following information has been incorporated from the City's 2020 UWMP and the California Department of Water Resources (DWR) 2020 California's Groundwater (Bulletin 118) Update.

The Kings Subbasin is not adjudicated, and there are no legal restrictions to groundwater pumping. The Kings Subbasin is generally bounded: on the north by the San Joaquin River, on the west by the Fresno Slough, on the south by the Kings River and Cottonwood Creek, and on the east by the Sierra foothills. The upper several hundred feet within the Kings Subbasin generally consists of highly permeable, coarse-grained deposits, which are termed older alluvium. Coarse-grained stream channel deposits, associated with deposits by the ancestral San Joaquin and Kings Rivers, underlie much of the northwest portions of the City. Below the older alluvium to depths ranging from about 600 to 1,200 feet below ground surface, the finer-grained sediments of the Tertiary-Quaternary continental deposits are typically encountered. Substantial groundwater has been produced and utilized from these depths by the City; however, deeper deposits located in the southeastern and northern portions of the City have produced less groundwater. There are also reduced deposits in the northern and eastern portions of the City, at depths generally below 700 or 800 feet, which are associated with high concentrations of iron, manganese, arsenic, hydrogen sulfide, and methane gas. Groundwater at these depths does not generally provide a significant source for municipal supply wells. The City's average groundwater depth in 2015 was approximately 130 feet below the ground surface.

6.1.2.3 Conditions of Overdraft

The Sustainable Groundwater Management Act (SGMA) directs DWR to identify groundwater basins and subbasins that are in conditions of critical overdraft. This designation is determined based upon the presence of "undesirable impacts" such as seawater intrusion, land subsidence, groundwater depletion, and chronic lowering of groundwater levels. Per the DWR 2020 California's Groundwater (Bulletin 118) Update, the Kings Subbasin is designated as a critically over drafted basin.

As part of the California Statewide Groundwater Elevation Monitoring (CASGEM) Program, DWR is required to prioritize California groundwater basins to help identify, evaluate, and determine the need for additional groundwater level monitoring. Per the SGMA 2019 Basin Prioritization, which is the most recent basin prioritization by DWR and was completed in December 2019, the Kings Subbasin is a high priority subbasin (DWR, 2019).

6.1.2.4 Groundwater Management

The City was a founding member of the North Kings Groundwater Sustainability Agency (NKGSA). As a high priority basin, the NKGSA was required to complete and file a Groundwater Sustainability Plan (GSP) meeting SGMA requirements by January 2020. The GSP was submitted in January 2020 and was incorporated into the City's 2020 UWMP, which shows the City's water supply is sufficient to meet projected demands. The GSP was then revised and resubmitted in 2022 following DWR's 2-year review and determination. The revised GSP was recommended by DWR staff for approval in March 2023.

6.1.2.5 Historical Groundwater Use

The City has historically relied on groundwater as its main supply source prior to the construction of its surface water treatment facilities. With the recent investments in surface water infrastructure, the City has been able to significantly reduce its groundwater pumping. The City's groundwater production from 2015 to 2020 is provided in Table 6-1.

Table 6-1. City of Fresno Historical Groundwater Production, af/yr

	2015	2016	2017	2018	2019	2020
Total Groundwater Production[(a)]	82,500	99,100	105,200	76,800	54,600	55,000

(a) From the City's 2020 UWMP, Figure 6-7.

6.1.2.6 Projected Future Groundwater Use

The amount of groundwater pumped during dry years is not projected to differ from the amount pumped during normal years. Table 6-2 presents the City's projected future groundwater production through 2045. While the projected future groundwater production increases significantly from recent historical groundwater production, it remains sustainable. The groundwater production projections in Table 6-2 are the sum of the Kings Subbasin sustainable yield (i.e., natural recharge plus net subsurface inflow) and the volume intentionally recharged by the City.

Table 6-2. City of Fresno Projected Future Groundwater Production in Normal and Dry Years,[(a)] af/yr

	2025	2030	2035	2040	2045
Total Groundwater Production During Normal or Dry Years	138,090	143,630	149,100	154,490	159,820

(a) From the City's 2020 UWMP, Table 7-1, Table 7-2, and Table 7-3.

6.1.2.7 Groundwater Sufficiency

The City's 2020 UWMP addresses the sufficiency of the City's groundwater supplies, in conjunction with the City's other existing and additional water supplies, to meet the City's existing and planned future uses. Based on the information provided above and included in the City's 2020 UWMP and in the NKGSA GSP, the City's groundwater supply, together with the City's other existing and additional planned future water supplies, is sufficient to meet the water demands of the Proposed Project and the City's existing and planned future uses. See Section 7 for a determination of the sufficiency of the City's water supply portfolio, including groundwater, to meet the demands of the Proposed Project.

6.2 Future Water Projects

The inclusion of planned future water supplies in this WSA is specifically allowed by the Water Code:

> *Water Code Section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

The City has a number of future capital improvement projects planned to maintain and upgrade existing water supply and distribution facilities. The City completed construction on the 80-mgd Southeast Surface Water Treatment Facility (SESWTF) in 2018, while the City's Northeast Surface Water Treatment Facility

(NESWTF) currently has a 30-mgd capacity and the capability to expand up to 60 mgd. The City is also planning to develop additional groundwater recharge facilities that would optimize use of available surface water supplies in normal and wet years. The timing for the NESWTF expansion and the development of additional groundwater recharge facilities will be examined as part of the City's future Metro Plan update and determined based on need as the City grows and demands increase. The City also plans to continue expanding its recycled water distribution system to offset potable water demands.

6.3 Summary of Existing and Additional Planned Future Water Supplies

Table 6-3 summarizes the City's 2020 actual water supply deliveries and projected future water supply available. Section 6.4 discusses the future anticipated availability of these existing and additional planned future water supplies during dry years.

Table 6-3. City of Fresno Historical and Projected Water Supplies, af/yr

	2020[a]	2025[b]	2030[b]	2035[b]	2040[b]	2045[b]
Groundwater Production	55,028	138,090	143,630	149,100	154,490	159,820
Surface Water[c]	108,739	185,030	191,600	191,600	191,600	191,600
Potable Water Subtotal	**163,767**	**323,120**	**335,230**	**340,700**	**346,090**	**351,420**
Recycled Water[d]	912	5,910	5,910	5,910	5,910	5,910
Total Water Supply	**164,679**	**329,030**	**341,140**	**346,610**	**352,000**	**357,330**

(a) From the City's 2020 UWMP, Table 6-7.
(b) From the City's 2020 UWMP, Table 6-8.
(c) Surface water includes USBR CVP and FID Contract.
(d) Recycled water includes RWRF and NFWRF.

6.4 Water Supply Availability and Reliability

Water Code Section 10910 (c)(4) requires that a WSA discuss "whether total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses." Accordingly, this WSA addresses these three hydrologic conditions through the year 2045.

Also, in response to historical drought conditions, this WSA also discusses the availability and reliability of the City's available water supplies to meet the City's water demands if the City's surface water supplies are limited by emergency conditions.

6.4.1 Reliability During Normal, Single Dry, and Multiple Dry Years

Per the City's 2020 UWMP, this section discusses the reliability of the City's existing and additional planned water supplies and their projected availability during normal, single dry, and multiple dry years. The City expects to meet system water demand regardless of regional hydrology.

The City's surface water supply could face constraints during dry years. The single-dry-year supply availability is based on 2015, when the City had the lowest surface water supply available. The multiple-dry-year water supply availability is based on water supply allocations from the driest consecutive five-year drought, 2012–2016.

Water supplied from the FID contract is most susceptible to hydrologic conditions. The variability of precipitation, snowpack, and river flow conditions may constrain the City's allocation from Kings River. Scheduled maintenance of FID's vast canal network may also constrain the availability of Kings River water supply. FID typically terminates water deliveries to the City's water treatment facilities in November and/or December so they may perform necessary infrastructure repairs and maintenance. However, the City recently constructed a dedicated 13-mile, 72-inch-diameter raw water pipeline to deliver Kings River water to the SESWTF to allow for year-round operations and prevent shutdowns due to FID maintenance.

The City also has a contract for 60,000 af/yr of Class 1 water from the USBR's CVP, which is affected by required downstream flows for the San Joaquin River and the imposed restrictions on water diversions from the Delta. These restrictions have resulted in years where the CVP-Friant Division contractors, such as the City, receive zero allocations. The water supply is also restricted by maintenance of infrastructure, which results in termination of water supply during November and/or December. To improve delivery reliability and to protect source water quality, the City constructed a 4.6-mile long raw water pipeline that will permit the delivery of USBR water from the Friant-Kern Canal directly to the NESWTF.

Groundwater has long been the primary water supply source for the City. The continued use of groundwater is key to the sustainable use of all supplies, including surface water and recycled water. The groundwater supply has declined over the last 80 years, requiring new deeper wells and the lowering of pumps in existing wells. A constraint to lowering the pumps in existing wells is the limited depth of numerous existing municipal water wells. If the declining groundwater trend is not reversed, it may reduce the City's pumping capacity.

Another constraint to the use of groundwater is existing contaminant plumes throughout the subbasin. To ensure the continued beneficial use of the groundwater supply, the City will have to remain proactive in pursuing responsible party(ies) to conduct the proper remediation to preserve the groundwater system as a viable and sustainable resource in perpetuity. Despite these concerns, the City does not expect hydrologic conditions to impact groundwater supplies, as shown in Table 6-2.

While the supply of wastewater used to produce the recycled water may decrease somewhat if voluntary or mandatory conservation measures are enacted, the supply of recycled water produced by the City's recycled water facilities is expected to be unaffected by single or multiple dry years. Table 6-4 summarizes the percent of normal water supply available in single dry and multiple dry years.

Table 6-4. City of Fresno Water Supply Reliability in Single Dry and Multiple Dry Years, percent of Normal Year Supply

Hydrologic Condition	2025	2030	2035	2040	2045
Single Dry Year(a)	57.7	57.3	58.0	58.6	59.2
Multiple Dry Year - First Year(b)	83.2	81.9	82.1	82.4	82.7
Multiple Dry Year - Second Year(b)	83.5	82.1	82.4	82.7	82.9
Multiple Dry Year - Third Year(b)	66.1	65.4	65.9	66.5	67.0
Multiple Dry Year - Fourth Year(b)	57.7	57.3	58.0	58.6	59.2
Multiple Dry Year - Fifth Year(b)	95.7	93.9	94.0	94.1	94.2

(a) From the City's 2020 UWMP, Table 7-1 and Table 7-2.
(b) From the City's 2020 UWMP, Table 7-1 and Table 7-3.

6.4.2 Emergency Water Supply Conditions

The City's 2020 UWMP includes a WSCP to address droughts and catastrophic water supply interruptions due to regional power outage, earthquake, or other disasters. The WSCP defines five water shortage levels and the specific water supply conditions associated with each shortage level. Moving from one stage to the next is based on water supply conditions, including reductions in surface water from USBR and FID, reductions in treatment or distribution capacity, decrease in groundwater levels in 30 key wells, or climate or state political conditions that would impact the allotment of water supply.

Consumption reduction methods outlined in the WSCP include limiting or prohibiting the watering of lawns and other landscape areas, prohibiting the use of potable water for construction and dust control, and prohibiting vehicle washing except at facilities using water recycling equipment. Rate changes and fees may be implemented to penalize excessive water use or violation of water use ordinances.

If the City were to implement its WSCP, all City customers, including those within the Proposed Project area, would be subject to the same water conservation measures and water use restrictions as included in City's WSCP.

7.0 DETERMINATION OF WATER SUPPLY SUFFICIENCY BASED ON THE REQUIREMENTS OF SB 610

Water Code Section 10910 states:

> *10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

Pursuant to Water Code Section 10910(c)(4) and based on the technical analyses described in this Water Supply Assessment, the City finds that the total projected water supplies determined to be available for the Proposed Project during Normal, Single Dry, and Multiple Dry water years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses.

Table 7-1 summarizes the projected availability of the City’s existing and planned future potable water supplies and the City’s projected water demands in normal, single dry and multiple dry years through 2045. As shown in Table 7-1, demand within the City’s service area is not expected to exceed the City’s supplies in any normal, single dry, or multiple dry year between 2020 and 2045.

Table 7-1. City of Fresno Water Demand Versus Water Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years, af/yr

Hydrologic Condition		2025	2030	2035	2040	2045
Normal Year(a)						
	Available Water Supply	329,030	341,140	346,610	352,000	357,330
	Total Water Demand	199,204	212,756	222,310	231,876	241,447
	Potential Surplus (Deficit)	**129,826**	**128,384**	**124,300**	**120,124**	**115,883**
	Percent Shortfall of Demand	-	-	-	-	-
Single Dry Year(b)						
	Available Water Supply	189,852	195,392	200,862	206,252	211,582
	Total Water Demand	164,092	176,132	184,174	192,228	200,287
	Potential Surplus (Deficit)	**25,760**	**19,260**	**16,688**	**14,024**	**11,295**
	Percent Shortfall of Demand	-	-	-	-	-
Multiple Dry Years(c)						
Multiple Dry Year 1	Available Water Supply	273,725	279,265	284,735	290,125	295,455
	Total Water Demand	199,204	212,756	222,310	231,876	241,447
	Potential Surplus (Deficit)	**74,521**	**66,509**	**62,425**	**58,249**	**54,008**
	Percent Shortfall of Demand	-	-	-	-	-
Multiple Dry Year 2	Available Water Supply	274,626	280,166	285,636	291,026	296,356
	Total Water Demand	199,204	212,756	222,310	231,876	241,447
	Potential Surplus (Deficit)	**75,422**	**67,410**	**63,326**	**59,150**	**54,909**
	Percent Shortfall of Demand	-	-	-	-	-
Multiple Dry Year 3	Available Water Supply	217,568	223,108	228,578	233,968	239,298
	Total Water Demand	190,267	193,637	197,736	201,753	205,708
	Potential Surplus (Deficit)	**27,301**	**29,471**	**30,842**	**32,215**	**33,589**
	Percent Shortfall of Demand	-	-	-	-	-
Multiple Dry Year 4	Available Water Supply	189,852	195,392	200,862	206,252	211,582
	Total Water Demand	162,551	165,920	170,020	174,036	177,992
	Potential Surplus (Deficit)	**27,301**	**29,471**	**30,842**	**32,215**	**33,589**
	Percent Shortfall of Demand	-	-	-	-	-
Multiple Dry Year 5	Available Water Supply	314,840	320,380	325,850	331,240	336,570
	Total Water Demand	199,204	212,756	222,310	231,876	241,447
	Potential Surplus (Deficit)	**115,636**	**107,624**	**103,540**	**99,364**	**95,123**
	Percent Shortfall of Demand	-	-	-	-	-

(a) From the City's 2020 UWMP, Table 7-1.
(b) From the City's 2020 UWMP, Table 7-2.
(c) From the City's 2020 UWMP, Table 7-3.

8.0 WATER SUPPLY ASSESSMENT APPROVAL PROCESS

> *10910 (g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.*
>
> *10911 (b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.*

A WSA is required for the Proposed Project. It is recommended the City include this WSA in the Draft EIR that is being prepared for the Proposed Project.

9.0 REFERENCES

Akel Engineering Group, Inc., South Central Specific Plan Water and Sewer Hydraulic Analysis Technical Memorandum Final Draft, July 2022.

California Department of Water Resources, California's Groundwater Update (Bulletin 118), November 2021.

City of Fresno, South Central Specific Plan, January 2023.

Dyett & Bhatia, Fresno General Plan, December 2014.

Provost & Pritchard, City of Fresno 2015 Urban Water Management Plan, June 2016.

Provost & Pritchard, North Kings Groundwater Sustainability Agency Groundwater Sustainability Plan, June 2022.

Revised, Amended, and Restated Cooperative Agreement between Fresno Irrigation District and City of Fresno for Water Utilization and Conveyance, December 2016.

State Water Recourses Control Board, Urban Water Supplier Conservation Tiers, California Water Boards, July 2017, *https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/supplier_tiers.pdf*

State Water Resources Control Board, Urban Water Supplier Conservation Standard for Extended Emergency Regulation Rulemaking – 2016, California Water Boards, March 2016, *https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/emergency_reg/supplier_standards_effective030116.pdf*

Water Systems Consulting, City of Fresno 2020 Urban Water Management Plan, July 2021.

West Yost Associates, City of Fresno Water Master Plan, August 2014.

Appendix F

Transportation Impact Analysis, Supplemental Alternatives Analysis

Transportation Impact Analysis - Supplemental Report

South Central Specific Plan

Alternatives Analysis

City of Fresno, California

August 7, 2023

TJKM

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

This supplemental report constitutes an addendum to a transportation impact analysis (TIA) that was conducted to assess the potential environmental and operational impacts on the transportation system from future development within the proposed South Central Specific Plan ("SCSP"), located in the southern portion of Fresno, California. The SCSP includes approximately 5,000 acres of land, south and southeast of Downtown Fresno. The plan area is generally located south of California Avenue, north of American Avenue, and east of Fig Avenue, and west of Peach Avenue The area consists of a multitude of uses, including residential, places of worship, institutional, public, and industrial.

This report contains two alternative analysis scenarios for the proposed SCSP, as described in Section 1.1. The supplemental report includes an intersection level of service (LOS) analysis, segment LOS analysis, and a vehicle miles travelled (VMT) analysis for the two alternatives scenarios.

1.1 Analysis Scenarios

The two additional traffic scenarios that were analyzed for this supplemental report include:

- **2040 Future Alternative 3 (Community Alternative) Conditions** – This scenario evaluates study segments and intersections for the year 2040 with higher residential and lower commercial land uses compared to the preferred alternative in the TIA.
- **2040 Future Alternative 4 (Business Alternative) Conditions** – This scenario evaluates study segments and intersections for the year 2040 with no residential uses and higher industrial/commercial land uses compared to the preferred alternative in the TIA.

1.2 Fresno Council of Governments Activity Based Model (Fresno ABM)

The latest approved version of the Fresno Activity Based Travel Demand Model (Fresno ABM) was obtained for use in travel demand forecasting and VMT analysis for this project. All traffic volume forecasts were adjusted, using the difference (delta) method, to account for the difference between existing counts and base year model forecasts. The Fresno ABM has a base year of 2015 and a forecast year of 2035, while the count data collected from the Fresno City count database were from the year 2018.

Of note, for the purposes of this study, the VMT analysis herein uses the 2035 forecast year as opposed to the 2040 build-out of the specific plan. This was done given that the model was calibrated and validated specifically for 2035 conditions. This is consistent with the Governor's Office of Planning and Research (OPR) guidelines on the California Environmental Quality Act (CEQA).

2.0 STUDY METHODOLOGY

Traffic impacts related to the proposed plan were evaluated for both compliance with applicable regulatory documents and environmental significance as defined in the California Environmental Quality Act (CEQA). In accordance with the *Technical Advisory* published by the Governor's Office of Planning and Research (OPR), a quantitative Vehicle Miles Traveled (VMT) assessment forms the basis of the CEQA analysis for the proposed project. Effective as of July 1, 2020, intersection Level of Service (LOS) can no longer be used to determine significant impacts for CEQA purposes. However, the CEQA guidelines do not preclude the use of LOS analyses when determining consistency with plans and standards for jurisdictions or agencies, such as the City of Fresno.

2.1 Vehicle Miles Traveled (VMT) Methodology

Senate Bill ("SB") 743, which was signed into law by Governor Brown in 2013 and codified in Public Resources Code § 21099, tasked OPR with establishing new criteria for determining the significance of transportation impacts under CEQA. SB 743 requires the new criteria to "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."

SB 743 changed the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (see Pub. Resource Code, § 21099, subd. (b)(2)).

In December 2018, OPR circulated its most recent *Technical Advisory on Evaluating Transportation Impacts in CEQA* provides recommendations and describes various options for assessing VMT for transportation analysis purposes. "Vehicle miles traveled" refers to the amount and distance of automobile travel "attributable to a project". Other relevant considerations may include the effects of the project on transit or non-motorized travel. The VMT analysis options described by OPR are primarily tailored towards single-use development residential, office or office projects, not mixed-use projects and not athletic facility projects. OPR recommends the following methodology and criteria for specific land uses:

- For residential projects, OPR recommends that VMT impacts be considered potentially significant if a residential project is expected to generate VMT per Capita (i.e., VMT per resident) at a rate that exceeds 85 percent of a regional average.
- For office projects, OPR recommends that VMT impacts be considered potentially significant if an office project is expected to generate VMT per Employee at a rate that exceeds 85 percent of a regional average.
- For retail projects, OPR recommends that VMT impacts be considered potentially significant if a project results in a net increase in total VMT. This approach takes into account the likelihood that retail developments may lead to increases or decreases in VMT, depending on previously existing retail travel patterns. This approach may also be used for other types of projects with customer components.

- OPR also indicates that local serving retail (projects smaller than 50,000 square feet) may be presumed to have a less than significant VMT impact.
- OPR does not provide specific guidance on evaluating other land use types, except to say that other land uses could choose to use the method applicable to the land use with the most similarity to the proposed project.
- For mixed-use projects, OPR describes several options that include (1) evaluating each land use separately; or (2) evaluating mixed-use projects based on the method applicable to the dominant land use. Evaluating each land use separately would potentially fail to measure the positive effects of mixed-use projects in reducing VMT.

OPR also recommends exempting some project types from VMT analysis based on the likelihood that such projects will generate low rates of VMT:

- OPR recommends that projects generating less than 110 trips per day generally may be assumed to cause a less than significant transportation impact.
- OPR notes that residential and office projects that are located in areas with low VMT, and that incorporate similar features, will tend to exhibit similar low VMT, and can be screened out.
- OPR states that residential, retail, office, and mixed-use projects near transit stations or major transit stops should be screened out based on the likelihood that such projects will have a less than significant impact on VMT.

Pursuant to the intent of SB 743 and OPR's *Technical Advisory*, the City of Fresno has adopted its own guidelines for VMT analysis: *CEQA Guidelines for Vehicle Miles Traveled Thresholds* in June 2020.

2.1.1 VMT Screening Criteria

The City of Fresno guidelines include the following screening criteria for identifying projects that can be presumed to have a less-than-significant impact:

- Projects that generate or attract fewer than 110 daily vehicle trips.
- Projects of 10,000 square feet or less of non-residential space.
- Residential, retail, office projects, or mixed-use projects proposed within a ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor.
- Residential projects (home-based VMT) at 13 percent or below the baseline County-wide home-based average VMT per capita, or employment projects (employee VMT) at 13 percent or below the baseline Fresno average commute VMT per employee in areas with low VMT that incorporate similar VMT reducing features (i.e., density, mix of uses, transit accessibility).
- Public facilities (e.g. emergency services, passive parks (low-intensity recreation, open space, libraries, community centers, public utilities), and government buildings.
- Land use plans should compare existing VMT over a project area to the expected future year VMT. If there is a net increase, than the VMT impacts are deemed significant.

2.2 Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The operational LOS are given letter designations from A to F, with A representing the free-flow operating conditions and F representing the severely congested flow with high delays. Typically, LOS C is considered an ideal condition as it represents stable flow and efficient use of the transportation facility. Intersections generally are the capacity-controlling locations concerning traffic operations on arterial and collector streets. The following sections provide a detailed study methodology for roadway segments and intersections (signalized and stop-controlled).

2.2.1 Roadway Segment Level of Service Analysis Standards

Roadway segments are typically analyzed for overall usage and congestion during the weekday commuter peak hours. Consistent with the analysis methodology used in the *City of Fresno General Plan and Development Code Update*, 2014 Master Environmental Impact Report (MEIR), roadway segment LOS were assessed in terms of volume-to-capacity (v/c) ratio. Volumes represent the future traffic expected on the study roadway segments, and roadway capacities were categorized based on functional classification, presence of medians, and the number of travel lanes. The road segment LOS thresholds are shown in **Table 1**.

LOS grades are generally defined as follows:

- **LOS A** represents free-flow travel with excellent levels of comfort and convenience and the freedom to maneuver.
- **LOS B** represents stable operating conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience, and maneuvering freedom.
- **LOS C** represents stable operating conditions, but the operation of individual users is substantially affected by the interaction with others in the traffic stream.
- **LOS D** represents high density, but stable flow. Users experience severe restrictions in speed and freedom to maneuver, with poor levels of comfort and convenience.
- **LOS E** represents operating conditions at or near capacity. Speeds are reduced to a low but relatively uniform value. Freedom to maneuver is difficult with users experiencing frustration and poor comfort and convenience. Unstable operation is frequent, and minor disturbances in traffic flow can cause breakdown conditions.
- **LOS F** represents forced or breakdown conditions. These conditions exist when the volume of traffic exceeds the capacity of the roadway. Long queues can form behind these bottleneck points with queued traffic traveling in a stop-and-go fashion.

Table 1: Roadway Functional Class and Peak Hour LOS Thresholds

			Peak Hour Level of Service Capacity Thresholds				
Functional Class	**Median**	**Lanes**	**A**	**B**	**C**	**D**	**D**
Freeway	N/A	4	2,720	4,460	6,630	7,720	8,630
		3+Aux	2,360	3,860	5,640	6,730	7,530
		3	2,000	3,270	4,660	5,740	6,430
		2+Aux	1,650	2,700	3,850	4,760	5,340
		2	1,300	2,130	3,050	3,790	4,260
State Expressway	Divided	6		3,960	5,730	7,450	8,450
		4		2,650	3,810	4,960	5,630
		2		1,340	1,890	2,470	2,810
City Expressway	Raised Median	6			1,860	6,170	6,520
		5			1,520	5,110	5,430
		4			1,180	4,050	4,340
		2			520	1,910	2,160
Super Arterial	Raised Median	6				4,910	6,240
		5				4,040	5,195
		4				3,170	4,150
Arterial	Raised Median	8			2,120	7,070	7,490
		6			1,560	5,270	5,610
		5			1,280	4,370	4,670
		4			1,000	3,470	3,730
		3			720	2,555	2,795
		2			440	1,640	1,860
	TWLTL	4			940	3,290	3,550
		2			420	1,550	1,760
	Undivided	4			770	2,740	2,980
		2			340	1,270	1,480
Collector	TWLTL	4			940	3,290	3,550
		2			420	1,550	1,760
	Undivided	4			770	2,740	2,980
		2			340	1,270	1,480
One-Way	Undivided	3		1,960	2,240	2,430	2,640
		2		1,250	1,490	1,620	1,740
		1		550	740	800	870
Rural State Highway	Undivided	2	310	570	1,020	1,730	2,470
Rural Arterial	Divided	4			19,520	3,580	3,780
	Undivided	2			570	1,230	1,310
Rural Collector/Local	Undivided	2			700	930	1,000

Source: LSA's City of Fresno General Plan and Development Code Update, 2014 MEIR

2.2.2 Signalized Intersections

The study intersections under traffic signal control are analyzed using the HCM 6 methodology described in Chapter 19. This methodology determines LOS based on average control delay per vehicle for the overall intersection and by approach and a combination of control delay per vehicle and volume-to-capacity (v/c) for lane groups during the peak hour operating conditions.

Delay quantifies the increase in travel time due to traffic signal control; it is also a surrogate measure of driver discomfort and fuel consumption. The v/c ratio quantifies the degree to which a phase's capacity is utilized by a lane group. A v/c ratio of 1.0 or more indicates cycle capacity is fully utilized and represents failure from a capacity perspective (just as a delay in excess of 80 seconds per vehicle represents failure from a delay perspective).

Table 2 summarizes the relationship between the control delay and LOS for signalized intersections. The LOS assessments under all scenarios are based on current traffic controls and signal timings unless otherwise noted. For the purposes of this report, intersection LOS was analyzed using *Synchro* version 11 software.

Table 2: Level of Service Definitions for Signalized Intersections

LOS	Definition	Control Delay Range (s/veh)	v/c Range
A	Very low control delay. This level is typically assigned when the v/c ratio is low and either progression is exceptionally favorable or the cycle length is short. Most vehicles arrive during the green phase. Many vehicles do not stop at all.	≤ 10	≤ 1.0
B	The v/c ratio is low. There is good progression, short cycle lengths, or both. More vehicles stop, causing higher levels of delay.	≤ 20	≤ 1.0
C	Higher delays occur in favorable progression or a due to a moderate cycle length, or both. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during a given cycle) may begin to appear. The number of vehicles stopping is still considered low-to-moderate, though many vehicles still pass through the intersection without stopping.	≤ 35	≤ 1.0
D	The influence of congestion becomes more apparent. Longer delays may result from some combination of a high v/c ratio, ineffective progression, long cycle length, or high volumes. Many vehicles stop; the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	≤ 55	≤ 1.0
E	Typically considered the limit of unacceptable delay. High delays usually indicate a very high v/c ratio, poor progression, long cycle lengths, and high volumes. Most cycles fail to clear the queue.	≤ 80	≤ 1.0
F	Delays are unacceptable to most drivers. Conditions are considered oversaturated. Arrival flow rates exceed the capacity of the intersection (v/c in excess of 1.0). Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.	> 80	> 1.0

Source: Transportation Research Board's (TRB) Highway Capacity Manual, 6th Edition

2.2.3 Stop-Controlled Intersections

The study intersections under one-/two-way stop control (OWSC / TWSC) and all-way stop control (AWSC) are analyzed using the HCM 6 methodology described in Chapters 20 and 21, respectively. LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At one- or two-way stop-controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The weighted average delay for the entire intersection is presented for all-way stop-controlled intersections.

Table 3 summarizes the relationship between delay and LOS for stop-controlled intersections. The delay ranges for stop-controlled intersections are lower than for signalized intersections, as drivers expect less delay at stop-controlled intersections. For the purposes of this report, intersection LOS was analyzed using *Synchro* version 11 software.

Table 3: Level of Service Definitions for Stop-Controlled Intersections

LOS	Definition	Control Delay Range (s/veh)	v/c Range
A	Usually no conflicting traffic. Drivers can easily find gaps in traffic to maneuver. v/c is low.	≤ 10	≤ 1.0
B	Occasionally some delays due to conflicting traffic. Drivers can find gaps in traffic. v/c is low.	≤ 15	≤ 1.0
C	There is some noticeable delay due to conflicting traffic. Drivers are still able to find gaps in traffic.	≤ 25	≤ 1.0
D	Drivers experience delays due to fewer gaps in traffic to maneuver. Lane group v/c creeps closer to 1.0.	≤ 35	≤ 1.0
E	Delay approaches driver tolerance levels. Drivers will occasionally find gaps in traffic to maneuver. Lane group v/c approaches 1.0.	≤ 50	≤ 1.0
F	Delay exceeds driver tolerance levels or v/c exceeds 1.0 or both.	> 50	> 1.0

Source: Transportation Research Board's (TRB) Highway Capacity Manual, 6th Edition

2.2.4 Level of Service Standards

Although level of service is no longer used for identifying impacts under CEQA, level of service analysis is still used for determining consistency with adopted agency plans and standards. Where standards refer to significant environmental impacts, this analysis instead identifies these as substantial inconsistencies with adopted plans.

The City of Fresno discusses its specific standards in the Mobility and Transportation Section within the *Fresno General Plan* (adopted December 18, 2014). As specified on Page 4-28 (MT-1-k):

> *"Develop and use a tiered system of flexible, multi-modal Level of Service standards for streets designated by the Circulation Diagram (Figure MT-1). Strive to accommodate a peak hour vehicle LOS of D or better on street segments and at intersections, except where Policies MT-1-m through MT-1-p provide greater specificity. Establish minimum acceptable service levels for other modes and use them in the development review process."*

The County of Fresno discusses its specific standards in the Transportation and Circulation Element within the *Fresno General Plan* (adopted December 18, 2014). As specified on Page 3-9 (Policy TR-A.2):

> *"The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county…*
>
> *The County may, in programming capacity-increasing projects, allow exceptions to the level of service standards in this policy where it finds that the improvements or other measures required to achieve the LOS policy are unacceptable based on established criteria. In addition to consideration of the total overall needs of the roadway system, the County shall consider the following factors:*
>
> > *a. The right-of-way needs and the physical impacts on surrounding properties;*
> >
> > *b. Construction and right-of-way acquisition costs;*
> >
> > *c. The number of hours that the roadway would operate at conditions below the standard;*
> >
> > *d. The ability of the required improvement to significantly reduce delay and improve traffic operations; and*
> >
> > *e. Environmental impacts upon which the County may base findings to allow an exceedance of the standards.*
>
> *In no case should the County plan for worse than LOS D on rural County roadways, worse than LOS E on urban roadways within the spheres of influence of the cities of Fresno and Clovis, or in cooperation with Caltrans and the Council of Fresno County Governments, plan for worse than LOS E on State highways in the county."*

Given the location of the study intersections and segments (all within the City's sphere of influence and planning area), the applicable LOS standard assumed for the purposes of this report is LOS D or better for study segments and intersections.

4.0 2040 ALTERNATIVE 3 (COMMUNITY ALTERNATIVE) CONDITION

This section presents the results of the level of service and VMT calculations under the 2040 Community Alternative Conditions; VMT and level of service analyses at the study intersections and segments were evaluated under this scenario to assess potential impacts due to the changes in density with the incorporation of the SCSP.

4.1 SCSP Community Alternative Project Trip Generation and Future Traffic Volumes

The SCSP Community Alternative includes approximately 5,000 acres of land, south and southeast of Downtown Fresno. The area consists of a multitude of uses, including residential, places of worship, institutional, public, and industrial. In total, the SCSP Community Alternative would account for 739 new housing units planned for 2,2200 residents and approximately 25,000 employees.

In order to estimate trips generated by the proposed development for the weekday morning (a.m.) and weekday afternoon (p.m.) peak periods as well as for weekday daily trips, TJKM utilized the published trip generation rates from the Institute of Transportation Engineers' (ITE) Trip Generation Manual (TGM), 11th Edition. **Table 4** summarizes the project's trip generation. Note that the table below does not take into account reductions due to pass-bys or internal capture. Internal captures were accounted for through the use of the Fresno ABM to assign trips inside and outside the planning area.

Table 4: SCSP Trip Generation (Community Alternative)

Land Use (Units)	***Size***		***Daily***		***a.m. Peak***		***p.m. Peak***	
			Rate	***Trips***	***Rate***	***Trips***	***Rate***	***Trips***
Housing (Dwelling Units)	739	Dwelling Units	9.43	6,969	0.70	64	0.94	695
Restaurants (Employees)	2,650	Employees	21.26	56,339	2.97	544	1.95	5,168
Retail / Commercial (Employees)	6,154	Employees	17.42	107,203	0.65	1,056	1.8	11,077
General Light Industrial (Employees)	4,141	Employees	3.10	12,837	0.53	5,605	0.49	2,029
Office (Employees)	12,482	Employees	3.33	41,565	0.49	944	0.45	5,617
Total Trips (Without Reductions)				**224,913**		**20,699**		**24,585**

In total, the SCSP Community Alternative is expected to generate 224,913 total daily trips, 20,699 a.m. peak hour trips and 24,585 p.m. peak hour trips from 739 total dwelling units and 25,427 total employees.

4.1.1 Community Alternative Peak Hour Traffic Volumes for Study Intersections

To grow 2023 Conditions to 2040 Community Alternative Conditions, the Fresno ABM was used to derive annual growth factors by intersection approach. These growth factors were applied to 2023 volumes to project 2040 Community Alternative conditions. The 2040 Community Alternative intersection traffic volumes are illustrated in **Figure 1**. Note, other parameters such as peak hour factors, and pedestrian and bicycle volumes were kept consistent with existing conditions due to the rural nature of the study area

4.1.2 Community Alternative Peak Hour Traffic Volumes for Study Segments

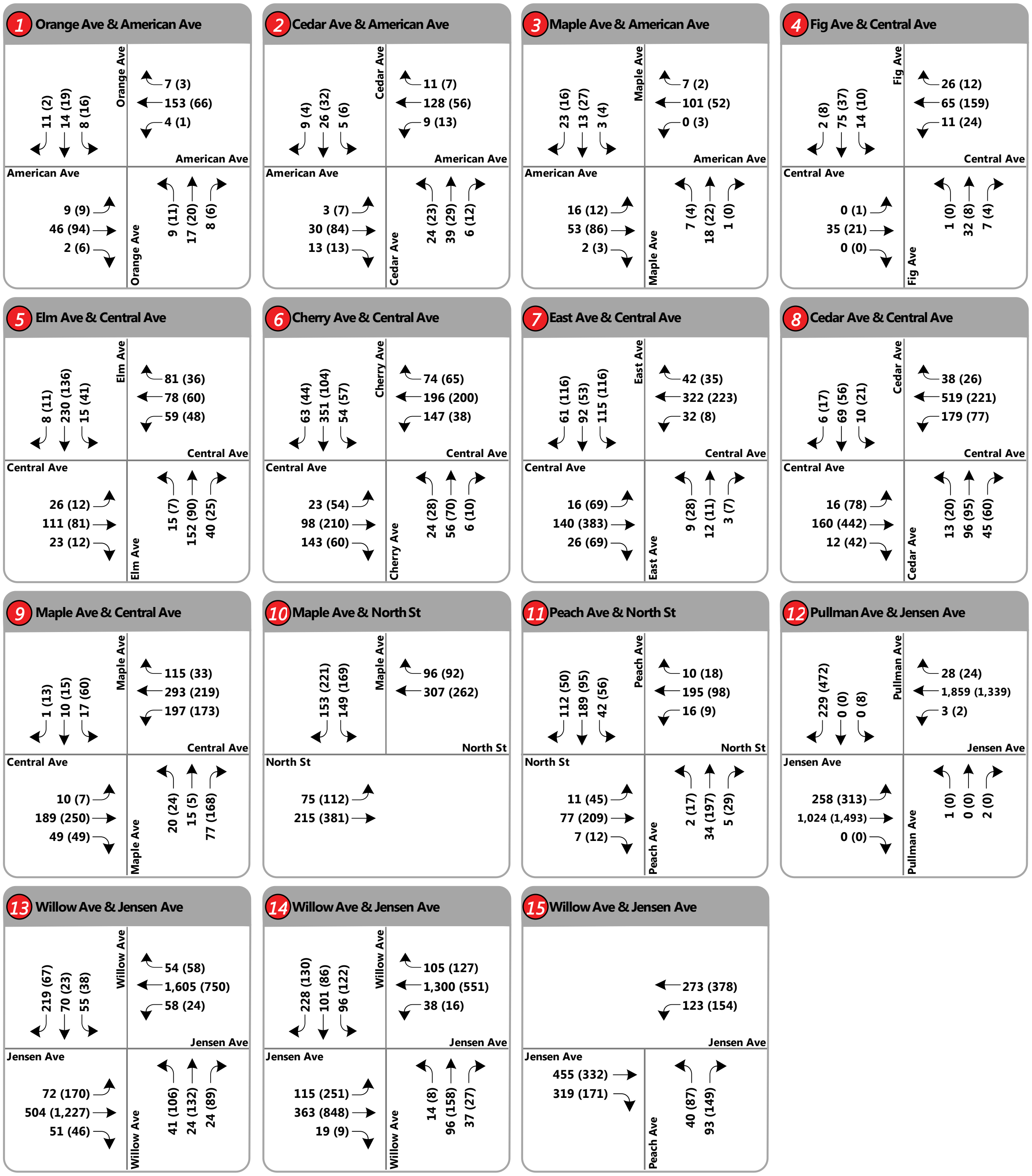
Study segment volumes were forecasted using the Fresno ABM delta method, which takes growth rates from the model and applies them on top of existing count data. **Table 5** shows the forecasted study segment volumes for the 2040 Community Alternative Conditions.

Table 5: Community Alternative Conditions – Study Segment Traffic Volumes

#	Segment Name	a.m. Peak	p.m. Peak	Daily
1	Jensen Avenue Bypass from Cherry Avenue to East Avenue	3,307	3,204	43,390
2	Jensen Avenue Bypass from Sunset Avenue to Cedar Avenue	1,941	1,636	29,492
3	North Avenue from Hayston Avenue to Maple Avenue	686	871	3,436
4	Central Avenue from Cherry Avenue to East Avenue	371	517	8,532
5	American Avenue from Orange Avenue to Cedar Avenue	219	172	1,782
6	Cherry Avenue from Church Avenue to Byrd Avenue	289	158	6,555
7	Cherry Avenue from Central Avenue to North Avenue	280	282	6,197
8	East Avenue from Central Avenue to North Avenue	478	701	3,706
9	Cedar Avenue from Central Avenue to Parkway Drive	138	189	3,721
10	Maple Avenue from North Avenue to Annadale Avenue	209	315	1,854
11	Willow Avenue from Jensen Parkway to Annadale Avenue	446	511	9,236
12	Elm Avenue from Central Avenue to North Avenue	504	891	6,049

.

Figure 1: Community Alternative Conditions – Turning Movement Volumes



4.2 Community Alternative Level of Service Analysis

4.2.1 Community Alternative Intersections Analysis

The results of the level of service analysis for Community Alternative Conditions are summarized in **Table 6**. Intersections that operated at unacceptable LOS are shown in red. Detailed calculation sheets for the Community Alternative Conditions scenario are contained in the **Appendix.**

Under Community Alternative Conditions, all but five of the 15 study intersections would operate at acceptable LOS D or better, as shown in **Table 6**. The following intersections would operate at unacceptable LOS E or F:

- Intersection 6: S. Cherry Avenue & W. Central Avenue would operate at LOS E in the a.m. peak hour, a *significant inconsistency*.
- Intersection 8: S. Cedar Avenue & W. Central Avenue would operate at LOS E in the a.m. peak hour, a *significant inconsistency*.
- Intersection 9: S. Maple Avenue & W. Central Avenue would operate at LOS F in the p.m. peak hour, a *significant inconsistency*.
- Intersection 10: S. Maple Avenue & E. North Avenue would operate at LOS E in the a.m. peak hour and LOS F in the p.m. peak hour, a *significant inconsistency*.
- Intersection 12: S. Pullman Avenue & E. Jensen Avenue would operate at LOS F during both peak hours, with substantially more delay than experienced under Existing Conditions or General Plan (No Build) Conditions, a *significant inconsistency*. During the a.m. peak hour, Synchro was unable to calculate delay, indicating estimated delay above 2,000 seconds.

Table 6: Community Alternative Conditions – Intersection Level of Service Analysis Results

ID	Intersection Name	Control	Peak Hour	General Plan No Build		Community Alternative		Change in Delay
				Delay	Level of Service	Delay	Level of Service	
1	S. Orange Ave. & E. American Ave.	TWSC	AM	10.5	B	10.6	B	0.1
			PM	10.4	B	10.5	B	0.1
2	S. Cedar Ave. & E. American Ave.	AWSC	AM	8.0	A	8.0	A	0.0
			PM	7.9	A	7.9	A	0.0
3	S. Maple Ave. & E. American Ave.	TWSC	AM	10.1	B	10.1	B	0.0
			PM	10.2	B	10.2	B	0.0
4	S. Fig Ave. & W. Central Ave.	TWSC	AM	10.7	B	11.4	B	0.7
			PM	10.6	B	11.6	B	1.0
5	S. Elm Ave. & W. Central Ave.	TWSC	AM	16.3	C	30.9	D	14.6
			PM	12.9	B	14.0	B	1.1
6	S. Cherry Ave. & W. Central Ave.	AWSC	AM	10.7	B	**38.2**	**E**	27.5
			PM	9.9	A	13.4	B	3.5
	Mitigation: add westbound left turn lane	*AWSC*	*AM*	-	-	*26.5*	*D*	*15.8*
			PM	-	-	*13.6*	*B*	*3.7*
7	S. East Ave. & W. Central Ave.	TWSC	AM	9.7	A	15.2	C	5.5
			PM	11.6	B	33.0	D	21.4
8	S. Cedar Ave. & W. Central Ave.	AWSC	AM	12.7	B	**69.3**	**F**	56.6
			PM	12.9	B	31.9	D	19.0
	Mitigation: add westbound left turn lane	*AWSC*	*AM*	-	-	*28.6*	*D*	*15.9*
			PM	-	-	*32.3*	*D*	*19.4*
9	S. Maple Ave. & W. Central Ave.	TWSC	AM	21.2	C	**47.4**	**E**	26.2
			PM	25.4	D	**81.6**	**F**	56.2
	Mitigation: all-way stop control	*AWSC*	*AM*	-	-	*31.9*	*D*	*10.7*
			PM	-	-	*19.6*	*C*	*-5.8*
10	S. Maple Ave. & E. North Ave.	TWSC	AM	21.9	C	**72.5**	**F**	50.6
			PM	32.3	D	**176.9**	**F**	144.6
	Mitigation: all-way stop control	*AWSC*	*AM*	-	-	*16.9*	*C*	*-5.0*
			PM	-	-	*29.4*	*D*	*-2.9*
11	S. Peach Ave. & E. North Ave.	AWSC	AM	10.7	B	13.2	B	2.5
			PM	10.2	B	11.8	B	1.6
12	S. Pullman Ave. & E. Jensen Ave.	TWSC	AM	**74.8**	**F (SB)**		**ERROR**	-74.8
			PM	**1028.7**	**F (SB)**	**4514.9**	**F (SB)**	3486.2
	Mitigation: Signalize	*SIGNAL*	*AM*	-	-	*39.4*	*D*	*-35.4*
			PM	-	-	*36.4*	*D*	*-992.3*
13	S. Willow Ave. & E. Jensen Ave.	SIGNAL	AM	28.0	C	35.8	D	7.8
			PM	20.1	C	22.2	C	2.1
14	S. Peach Ave. & E. Jensen Ave.	SIGNAL	AM	37.4	D	53.8	D	16.4
			PM	19.6	B	22.3	C	2.7
15	S. Cherry Ave. & E. Church Ave.	TWSC	AM	18.5	C	19.3	C	0.8
			PM	17.2	C	24.6	C	7.4

Notes:
1. Signal = Signalized; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control
2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour
3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service
Red indicates unacceptable LOS.

4.2.2 Community Alternative Intersection Mitigation Measures

In order to mitigate the significant inconsistencies noted above, the following mitigations are recommended:

- Intersection 6: add westbound left turn lane
- Intersection 8: add westbound left turn lane.
- Intersection 9: convert to all-way stop control
- Intersection 10: convert to all-way stop control.
- Intersection 12: signalize, with protected left turns on Jensen Avenue, a southbound right turn lane, and southbound right turn overlap phase.

Intersections 9 and 10 were evaluated for all-way stop control based on the guidelines in the California Manual on Uniform Traffic Control Devices (MUTCD). Peak hour volumes are sufficiently high to suggest that a more robust stop sign warrant analysis should be conducted, reviewing hourly volumes for at least eight hours of the day (projected to Community Alternative Conditions), as well as crash history. With all-way stop control, both Intersection 9 and Intersection 10 would operate at LOS D or better during both peak hours.

The intersection of S. Pullman Avenue & E. Jensen Avenue (Intersection 12) was evaluated for signalization. Cross-traffic volumes are sufficiently high that geometric changes would be insufficient to fully mitigate the identified inconsistency by lowering side street delay. Evaluation was based on the Four Hour (Warrant 2) and Peak Hour (Warrant 3) signal warrants from the MUTCD. A more robust signal warrant study would be required prior to signalization, reviewing hourly volumes for at least eight hours of the day (projected to Community Alternative Conditions), as well as crash history. However, it should be noted that the intersection meets both Four Hour and Peak Hour warrants under both Existing and Community Alternative Conditions. With signalization, operations at this intersection would improve to LOS D during both peak hours. No widening or other geometric changes would be required.

4.2.3 Community Alternative Segment Analysis

The study segment level of analysis for the forecasted volumes is presented in **Table 7.** All of the study segments for the year 2040 Community Alternative Conditions are forecasted to perform at LOS C or better.

Table 7: Community Alternative Conditions – Segment Level of Service Analysis Results

#	Segment Name	General Plan No Build		Community Alternative	
		AM Peak	PM Peak	AM Peak	PM Peak
1	Jensen Parkway from Cherry Avenue to East Avenue	C	C	C	C
2	Jensen Parkway from Sunset Avenue to Cedar Avenue	C	C	B	C
3	North Avenue from Hayston Avenue to Maple Avenue	B	B	B	C
4	Central Avenue from Cherry Avenue to East Avenue	A	B	A	B
5	American Avenue from Orange Avenue to Cedar Avenue	A	A	A	A
6	Cherry Avenue from Church Avenue to Byrd Avenue	A	A	A	A
7	Cherry Avenue from Central Avenue to North Avenue	A	A	A	A
8	East Avenue from Central Avenue to North Avenue	B	C	B	C
9	Cedar Avenue from Central Avenue to Parkway Drive	A	A	A	A
10	Maple Avenue from North Avenue to Annadale Avenue	A	A	A	A
11	Willow Avenue from Jensen Parkway to Annadale Avenue	A	B	B	B
12	Elm Avenue from Central Avenue to North Avenue	A	B	B	C

4.3 Community Alternative Conditions Vehicle Miles Traveled

For Community Alternative Conditions VMT, the SCSP project area was overlaid on top of the Fresno ABM loaded vehicle assignment network and the total VMT of the SCSP project area was calculated by multiplying daily volumes by distance traveled. In addition, VMT per service population (which is the sum of population and employees) was calculated.

Table 8 summarizes the 2040 Community Alternative VMT from the Fresno ABM for the SCSP project area. Under Community Alternative Conditions, VMT per service population decreases when compared to general plan baseline alternative.

Table 8: Community Alternative Conditions – VMT Analysis Results

	General Plan (Baseline) Scenario	SCSP Community Alternative Scenario	Delta
SCSP VMT	1,079,983	1,159,768	+79,785
Population	2,461	4,725	+2,264
Employment	20,796	46,223	+25,427
SCSP VMT per Service Population	46.44	22.76	-23.68

5.0 2040 ALTERNATIVE 4 (BUSINESS ALTERNATIVE) CONDITIONS

This section presents the results of the level of service and VMT calculations under 2040 Business Alternative Conditions. VMT and level of service analyses at the study intersections and segments were evaluated under 2040 Business Alternative Conditions to assess potential impacts due to the changes in density with the incorporation of the SCSP.

5.1 SCSP Business Alternative Trip Generation and Future Traffic Volumes

The SCSP Business Alternative includes approximately 5,000 acres of land, south and southeast of Downtown Fresno. The area consists of a multitude of uses, including residential, places of worship, institutional, public, and industrial. In total, the SCSP Business Alternative would account for no new housing units and approximately 13,657 additional employees.

In order to estimate trips generated by the proposed development for the a.m. and p.m. peak periods as well as for weekday daily trips, TJKM utilized the published trip generation rates from the ITE's TGM. **Table 9** summarizes the project's trip generation. Note that the table below take into account reductions due to pass-bys or internal capture. Internal captures were accounted for through the use of the Fresno ABM to assign trips inside and outside the planning area.

Table 9: SCSP Trip Generation (Business Alternative)

Land Use (Units)	***Size***		***Daily***		***a.m. Peak***		***p.m. Peak***	
			Rate	***Trips***	***Rate***	***Trips***	***Rate***	***Trips***
Housing (Dwelling Units)	0	Dwelling Units	9.43	0	0.7	0	0.94	0
Restaurants (Employees)	19	Employees	21.26	404	2.97	56	1.95	37
Retail / Commercial (Employees)	543	Employees	17.42	9,459	0.65	353	1.8	977
General Light Industrial (Employees)	11,166	Employees	3.1	34,615	0.53	5,918	0.49	5,471
Office (Employees)	1,929	Employees	3.33	6,424	0.49	945	0.45	868
Total Trips (Without Reductions)				**50,901**		**7,273**		**7,354**

In total, the SCSP Business Alternative is expected to generate 50,901 total daily trips, 7,273 a.m. peak hour trips and 7,354 p.m. peak hour trips from 13,657 total employees.

5.1.1 Business Alternative Peak Hour Traffic Volumes for Study Intersections

To grow 2023 conditions to 2040 Business Alternative Conditions, the Fresno ABM (in combination with changes to the model to include the SCSP) was used to derive annual growth factors by intersection approach. These growth factors were applied to 2023 volumes to project 2040 Business Alternative conditions. The forecasted traffic volumes are illustrated in **Figure 2.** Note, other parameters such as peak hour factors, and pedestrian and bicycle volumes were kept consistent with existing conditions due to the rural nature of the study area.

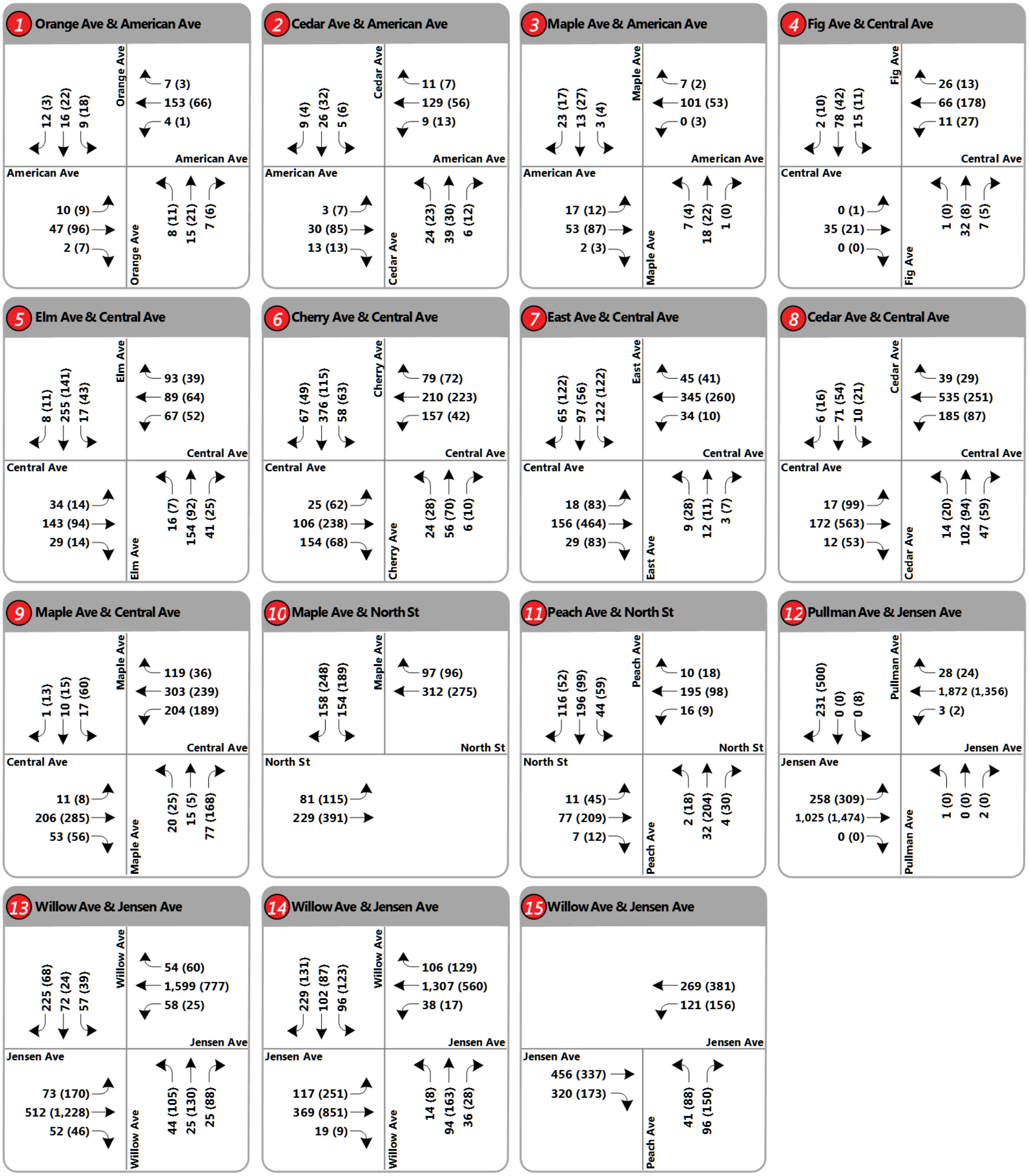
5.1.2 Business Alternative Project Peak Hour Traffic Volumes for Study Segments

Study segment volumes were forecasted using the Fresno ABM delta method, which takes growth rates from the model (in combination with changes to the model to include the SCSP) and applies them on top of existing count data. **Table 10** shows the forecasted study segment volumes shows the forecasted study segment volumes for the 2040 Business Alternative Conditions.

Table 10: Business Alternative Conditions – Study Segment Traffic Volumes

#	Segment Name	a.m. Peak	p.m. Peak	Daily
1	Jensen Parkway from Cherry Avenue to East Avenue	3,381	3,268	44,769
2	Jensen Parkway from Sunset Avenue to Cedar Avenue	1,960	1,637	30,016
3	North Avenue from Hayston Avenue to Maple Avenue	708	918	3,699
4	Central Avenue from Cherry Avenue to East Avenue	405	604	9,625
5	American Avenue from Orange Avenue to Cedar Avenue	219	172	1,782
6	Cherry Avenue from Church Avenue to Byrd Avenue	292	160	6,768
7	Cherry Avenue from Central Avenue to North Avenue	312	335	7,152
8	East Avenue from Central Avenue to North Avenue	519	754	3,992
9	Cedar Avenue from Central Avenue to Parkway Drive	144	190	4,051
10	Maple Avenue from North Avenue to Annadale Avenue	216	356	1,938
11	Willow Avenue from Jensen Parkway to Annadale Avenue	472	522	9,686
12	Elm Avenue from Central Avenue to North Avenue	597	1,099	7,079

Figure 2: Business Alternative Conditions – Turning Movement Volumes



5.2 Business Alternative Level of Service Analysis

5.2.1 Business Alternative Intersections Analysis

Under Business Alternative Conditions, all but six of the 15 study intersections would operate at acceptable LOS D or better, as shown in **Table 11.** The following intersections would operate at unacceptable LOS E or F:

- Intersection 5: S. Elm Avenue & W. Central Avenue would operate at LOS F in the a.m. peak hour, a *significant inconsistency*.
- Intersection 6: S. Cherry Avenue & W. Central Avenue would operate at LOS E in the a.m. peak hour, a *significant inconsistency*.
- Intersection 8: S. Cedar Avenue & W. Central Avenue would operate at LOS E in both. peak hours, a *significant inconsistency*.
- Intersection 9: S. Maple Avenue & W. Central Avenue would operate at LOS F in the p.m. peak hour, a *significant inconsistency*.
- Intersection 10: S. Maple Avenue & E. North Avenue would operate at LOS E in the a.m. peak hour and LOS F in the p.m. peak hour, a *significant inconsistency*.
- Intersection 12: S. Pullman Avenue & E. Jensen Avenue would operate at LOS F during both peak hours, with substantially more delay than experienced under Existing Conditions or General Plan (No Build) Conditions, a *significant inconsistency*. During the a.m. peak hour, Synchro was unable to calculate delay, indicating estimated delay above 2,000 seconds.
- Intersection 14: S. Peach Avenue & Jensen Avenue would operate at LOS E in the a.m. peak hour, a *significant inconsistency*.

Table 11: Business Alternative Conditions – Intersection Level of Service Analysis Results

ID	Intersection Name	Control	Peak Hour	General Plan No Build		Business Alternative		Change in Delay
				Delay	Level of Service	Delay	Level of Service	
1	S. Orange Ave. & E. American Ave.	TWSC	AM	10.5	B	10.6	B	0.1
			PM	10.4	B	10.5	B	0.1
2	S. Cedar Ave. & E. American Ave.	AWSC	AM	8.0	A	8.0	A	0.0
			PM	7.9	A	7.9	A	0.0
3	S. Maple Ave. & E. American Ave.	TWSC	AM	10.1	B	10.1	B	0.0
			PM	10.2	B	10.2	B	0.0
4	S. Fig Ave. & W. Central Ave.	TWSC	AM	10.7	B	11.5	B	0.8
			PM	10.6	B	12.1	B	1.5
5	S. Elm Ave. & W. Central Ave.	TWSC	AM	16.3	C	**64.7**	**F**	48.4
			PM	12.9	B	14.7	B	1.8
	Mitigation: add EBL and WBL turn lanes	*TWSC*				*25.0*	*D*	*8.7*
						13.4	*B*	*0.5*
6	S. Cherry Ave. & W. Central Ave.	AWSC	AM	10.7	B	**52.9**	**F**	42.2
			PM	9.9	A	16.4	C	6.5
	Mitigation: add EBL, WBL, and SBL turn lanes	*AWSC*	*AM*	-	-	*33.5*	*D*	*22.8*
			PM	-	-	*15.0*	*B*	*5.1*
7	S. East Ave. & W. Central Ave.	TWSC	AM	9.7	A	17.3	C	7.6
			PM	11.6	B	72.8	F	61.2
8	S. Cedar Ave. & W. Central Ave.	AWSC	AM	12.7	B	**82.3**	**F**	69.6
			PM	12.9	B	**79.8**	**F**	66.9
	Mitigation: signalize	*SIGNAL*	*AM*	-	-	*17.7*	*B*	*5.0*
			PM	-	-	*7.4*	*A*	*-5.5*
9	S. Maple Ave. & W. Central Ave.	TWSC	AM	21.2	C	**54.2**	**F**	33.0
			PM	25.4	D	**137.2**	**F**	111.8
	Mitigation: all-way stop control, add WBL turn lane	*AWSC*	*AM*	-	-	*15.4*	*C*	*-5.8*
			PM	-	-	*16.0*	*C*	*-9.4*
10	S. Maple Ave. & E. North Ave.	TWSC	AM	21.9	C	**96.1**	**F**	74.2
			PM	32.3	D	**266.3**	**F**	234.0
	Mitigation: all-way stop control, add SBL turn lane	*AWSC*	*AM*	-	-	*14.5*	*B*	*-7.4*
			PM	-	-	*29.3*	*D*	*-3.0*
11	S. Peach Ave. & E. North Ave.	AWSC	AM	10.7	B	13.8	B	3.1
			PM	10.2	B	12.0	B	1.8
12	S. Pullman Ave. & E. Jensen Ave.	TWSC	AM	**74.8**	**F (SB)**		**ERROR**	-74.8
			PM	**1028.7**	**F (SB)**	**4506.6**	**F (SB)**	3477.9
	Mitigation: Signalize	*SIGNAL*	*AM*	-	-	*40.7*	*D*	*-34.1*
			PM	-	-	*38.2*	*D*	*-990.5*
13	S. Willow Ave. & E. Jensen Ave.	SIGNAL	AM	28.0	C	36.6	D	8.6
			PM	20.1	C	22.3	C	2.2
14	S. Peach Ave. & E. Jensen Ave.	SIGNAL	AM	37.4	D	**55.6**	**E**	18.2
			PM	19.6	B	22.7	C	3.1
	Mitigation: Signal timing adjustments	*SIGNAL*	*AM*	-	-	*54.1*	*D*	*16.7*
			PM	-	-	*29.0*	*C*	*9.4*
15	S. Cherry Ave. & E. Church Ave.	TWSC	AM	18.5	C	19.5	C	1.0
			PM	17.2	C	25.5	D	8.3

Notes:

(1.) AM – morning peak hour, PM – evening peak hour; (2.) Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections; (3.) LOS – Level of Service; (4.) ***Bold*** *indicates unacceptable LOS and Delay.*

5.2.2 Business Alternative Intersection Mitigation Measures

In order to mitigate the significant inconsistencies noted above, the following mitigations are recommended:

- Intersection 5: add eastbound and westbound left turn lanes.
- Intersection 6: add eastbound, westbound, and southbound left turn lane.
- Intersection 8: signalize (no widening/restriping required).
- Intersection 9: convert to all-way stop control and add a westbound left turn lane.
- Intersection 10: convert to all-way stop control and add southbound left turn lane.
- Intersection 12: signalize, with protected left turns on Jensen Avenue, a southbound right turn lane, and a southbound right turn overlap phase.

The intersection of S. Cedar Avenue & W. Central Avenue (Intersection 8) was evaluated for signalization. Traffic volumes are sufficiently high that geometric changes would be insufficient to fully mitigate the identified inconsistency. Evaluation was based on the Peak Hour signal warrant (Warrant 3) from the MUTCD. A more robust signal warrant study would be required prior to signalization, reviewing hourly volumes for at least eight hours of the day (projected to Business Alternative Conditions), as well as crash history. With signalization, Intersection 8 would operate at LOS B in the a.m. peak hour and LOS A in the a.m. peak hour.

Intersections 9 and 10 were evaluated for all-way stop control based on the guidelines in the MUTCD. Peak hour volumes are sufficiently high to suggest that a more robust stop sign warrant analysis should be conducted, reviewing hourly volumes for at least eight hours of the day (projected to Business Alternative Conditions), as well as crash history. With all-way stop control, Intersection 9 would operate at LOS C during both peak hours, and Intersection 10 would operate at LOS B in the a.m. peak hour and LOS D in the p.m. peak hour.

The intersection of S. Pullman Avenue & E. Jensen Avenue (Intersection 12) was evaluated for signalization. Cross-traffic volumes are sufficiently high that geometric changes would be insufficient to fully mitigate the identified inconsistency by lowering side street delay. Evaluation was based on the Four-Hour (Warrant 2) and Peak Hour (Warrant 3) signal warrants from the MUTCD. A more robust signal warrant study would be required prior to signalization, reviewing hourly volumes for at least eight hours of the day (projected to Business Alternative Conditions), as well as crash history. However, it should be noted that the intersection meets both Four Hour and Peak Hour warrants under both Existing and Business Alternative Conditions. With signalization, operations at this intersection would improve to LOS D during both peak hours. No widening or other geometric changes would be required.

5.2.3 Business Alternative Segment Analysis

The study segment level of analysis for the forecasted volumes is presented in **Table 12**. The results for 2040 Baseline Conditions are included for comparison purposes. Intersections that operated at unacceptable thresholds are shown in red, and intersections that degraded between "No Project" conditions to "Plus Project" conditions per the applicable thresholds are likewise shown in red.

All of the study segments for the year 2040 Business Alternative Conditions are forecasted to perform at LOS C or better.

Table 12: Business Alternative Conditions – Segment Level of Service Analysis Results

#	Segment Name	General Plan No Build		Business Alternative	
		AM Peak	PM Peak	AM Peak	PM Peak
1	Jensen Parkway from Cherry Avenue to East Avenue	C	C	C	C
2	Jensen Parkway from Sunset Avenue to Cedar Avenue	C	C	B	C
3	North Avenue from Hayston Avenue to Maple Avenue	B	B	B	C
4	Central Avenue from Cherry Avenue to East Avenue	A	B	A	B
5	American Avenue from Orange Avenue to Cedar Avenue	A	A	A	A
6	Cherry Avenue from Church Avenue to Byrd Avenue	A	A	A	A
7	Cherry Avenue from Central Avenue to North Avenue	A	A	A	A
8	East Avenue from Central Avenue to North Avenue	B	C	B	C
9	Cedar Avenue from Central Avenue to Parkway Drive	A	A	A	A
10	Maple Avenue from North Avenue to Annadale Avenue	A	A	A	B
11	Willow Avenue from Jensen Parkway to Annadale Avenue	A	B	B	B
12	Elm Avenue from Central Avenue to North Avenue	A	B	B	C

5.3 Business Alternative Vehicle Miles Traveled

For the 2040 Business Alternative VMT, the SCSP project area was overlaid on the Fresno ABM loaded vehicle assignment network and the total VMT of the SCSP project area was calculated by multiplying daily volumes by distance traveled. In addition, VMT per service population (which is the sum of population and employees) was calculated.

Table 13 summarizes the Business Alternative VMT from the Fresno ABM for the SCSP project area. The results for 2040 Baseline Conditions are included for comparison purposes.

As illustrated, VMT per service population decreases when compared to the Baseline Conditions due to increased employment densities that facilitate internal interaction within the SCSP project area.

Table 13: Business Alternative Conditions – VMT Analysis Results

	General Plan (Baseline) Scenario	Business Alternative Scenario	Delta
SCSP VMT	1,079,983	1,180,968	+100,985
Population	2,461	2,461	+0
Employment	20,796	34,453	+13,657
SCSP VMT per Service Population	46.44	31.99	-14.45

6.0 CONCLUSION

Regarding intersection LOS, all three future (Preferred Alternative, Community Alternative, and Business Alternative) would result in intersections operating at acceptable LOS with mitigation. However, each scenario would require different levels of mitigation. Both the Community Alternative and Business Alternative would require more mitigation than the Preferred Alternative. The Community Alternative has six intersections that would need mitigation, while the Business Alternative has seven intersections that would need mitigation. For segment LOS, both the Community Alternative and the Business Alternative have no segments performing at LOS D or below.

The VMT analysis showed that both the Community and Business Alternatives have lower VMT per service population (22.76 for the Community Alternative and 31.99 for Business Alternative) than the General Plan baseline (46.44). Although the preferred alternative has higher VMT per service population (29.87) than the Community Alternative, it still is lower than the Business Alternative.

Appendix A – Commercial Alternative Synchro Output

HCM 6th TWSC

1: S Orange Ave & E American Ave

Timing Plan: Alt 3 AM

07/18/2023

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	9	46	2	4	153	7	9	17	8	8	14	11
Future Vol, veh/h	9	46	2	4	153	7	9	17	8	8	14	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	55	2	5	182	8	11	20	10	10	17	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	57	0	0	289	278	56	289	275	186
Stage 1	-	-	-	-	-	-	78	78	-	196	196	-
Stage 2	-	-	-	-	-	-	211	200	-	93	79	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1384	-	-	1547	-	-	663	630	1011	663	632	856
Stage 1	-	-	-	-	-	-	931	830	-	806	739	-
Stage 2	-	-	-	-	-	-	791	736	-	914	829	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1384	-	-	1547	-	-	634	622	1011	634	624	856
Mov Cap-2 Maneuver	-	-	-	-	-	-	634	622	-	634	624	-
Stage 1	-	-	-	-	-	-	924	823	-	800	736	-
Stage 2	-	-	-	-	-	-	758	733	-	876	822	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.2	10.6	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	688	1384	-	-	1547	-	-	689
HCM Lane V/C Ratio	0.059	0.008	-	-	0.003	-	-	0.057
HCM Control Delay (s)	10.6	7.6	0	-	7.3	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	3	30	13	9	128	11	24	39	6	5	26	9
Future Vol, veh/h	3	30	13	9	128	11	24	39	6	5	26	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	33	14	10	142	12	27	43	7	6	29	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	8.2	8	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	7%	6%	12%
Vol Thru, %	57%	65%	86%	65%
Vol Right, %	9%	28%	7%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	46	148	40
LT Vol	24	3	9	5
Through Vol	39	30	128	26
RT Vol	6	13	11	9
Lane Flow Rate	77	51	164	44
Geometry Grp	1	1	1	1
Degree of Util (X)	0.095	0.06	0.19	0.054
Departure Headway (Hd)	4.481	4.231	4.151	4.391
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	803	850	850	820
Service Time	2.485	2.237	2.244	2.396
HCM Lane V/C Ratio	0.096	0.06	0.193	0.054
HCM Control Delay	8	7.5	8.2	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.7	0.2

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	16	53	2	0	101	7	7	18	1	3	13	23
Future Vol, veh/h	16	53	2	0	101	7	7	18	1	3	13	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	57	2	0	109	8	8	19	1	3	14	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	127	69	27	98	81	20	39	0	0	20	0	0
Stage 1	33	33	-	36	36	-	-	-	-	-	-	-
Stage 2	94	36	-	62	45	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	846	822	1048	884	809	1058	1571	-	-	1596	-	-
Stage 1	983	868	-	980	865	-	-	-	-	-	-	-
Stage 2	913	865	-	949	857	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	749	816	1048	831	803	1058	1571	-	-	1596	-	-
Mov Cap-2 Maneuver	749	816	-	831	803	-	-	-	-	-	-	-
Stage 1	978	866	-	975	861	-	-	-	-	-	-	-
Stage 2	788	861	-	883	855	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10.1	2	0.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	805	816	1596	-	-
HCM Lane V/C Ratio	0.005	-	-	0.095	0.142	0.002	-	-
HCM Control Delay (s)	7.3	0	-	9.9	10.1	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.5	0	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	0	35	0	11	65	26	1	32	7	14	75	2
Future Vol, veh/h	0	35	0	11	65	26	1	32	7	14	75	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	0	16	96	38	1	47	10	21	110	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	134	0	0	51	0	0	255	217	51	227	198	115
Stage 1	-	-	-	-	-	-	51	51	-	147	147	-
Stage 2	-	-	-	-	-	-	204	166	-	80	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1451	-	-	1555	-	-	698	681	1017	728	698	937
Stage 1	-	-	-	-	-	-	962	852	-	856	775	-
Stage 2	-	-	-	-	-	-	798	761	-	929	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1451	-	-	1555	-	-	605	674	1017	676	690	937
Mov Cap-2 Maneuver	-	-	-	-	-	-	605	674	-	676	690	-
Stage 1	-	-	-	-	-	-	962	852	-	856	766	-
Stage 2	-	-	-	-	-	-	673	753	-	869	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	10.5	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	714	1451	-	-	1555	-	-	692
HCM Lane V/C Ratio	0.082	-	-	-	0.01	-	-	0.193
HCM Control Delay (s)	10.5	0	-	-	7.3	0	-	11.4
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	13.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	26	111	23	59	78	81	15	152	40	15	230	8
Future Vol, veh/h	26	111	23	59	78	81	15	152	40	15	230	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	142	29	76	100	104	19	195	51	19	295	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	699	622	300	683	602	221	305	0	0	246	0	0
Stage 1	338	338	-	259	259	-	-	-	-	-	-	-
Stage 2	361	284	-	424	343	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	354	403	740	363	414	819	1256	-	-	1320	-	-
Stage 1	676	641	-	746	694	-	-	-	-	-	-	-
Stage 2	657	676	-	608	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	245	391	740	245	402	819	1256	-	-	1320	-	-
Mov Cap-2 Maneuver	245	391	-	245	402	-	-	-	-	-	-	-
Stage 1	666	632	-	735	684	-	-	-	-	-	-	-
Stage 2	482	666	-	446	628	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25	30.9	0.6	0.5
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1256	-	-	380	408	1320	-	-
HCM Lane V/C Ratio	0.015	-	-	0.54	0.685	0.015	-	-
HCM Control Delay (s)	7.9	-	-	25	30.9	7.8	-	-
HCM Lane LOS	A	-	-	D	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.1	5	0	-	-

Intersection	
Intersection Delay, s/veh	38.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	23	98	143	147	196	74	24	56	6	54	351	63
Future Vol, veh/h	23	98	143	147	196	74	24	56	6	54	351	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	107	155	160	213	80	26	61	7	59	382	68
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	18.6	38.7	13.4	53.3
HCM LOS	C	E	B	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	9%	35%	12%
Vol Thru, %	65%	37%	47%	75%
Vol Right, %	7%	54%	18%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	264	417	468
LT Vol	24	23	147	54
Through Vol	56	98	196	351
RT Vol	6	143	74	63
Lane Flow Rate	93	287	453	509
Geometry Grp	1	1	1	1
Degree of Util (X)	0.211	0.557	0.859	0.95
Departure Headway (Hd)	8.115	6.991	6.821	6.724
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	440	514	530	544
Service Time	6.208	5.07	4.888	4.724
HCM Lane V/C Ratio	0.211	0.558	0.855	0.936
HCM Control Delay	13.4	18.6	38.7	53.3
HCM Lane LOS	B	C	E	F
HCM 95th-tile Q	0.8	3.4	9.2	12.2

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥		↰	↑	↱
Traffic Vol, veh/h	16	140	26	32	322	42	9	12	3	115	92	61
Future Vol, veh/h	16	140	26	32	322	42	9	12	3	115	92	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	152	28	35	350	46	10	13	3	125	100	66
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	11.7	20.1	10.2	10.7
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	38%	9%	8%	100%	0%	0%
Vol Thru, %	50%	77%	81%	0%	100%	0%
Vol Right, %	12%	14%	11%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	182	396	115	92	61
LT Vol	9	16	32	115	0	0
Through Vol	12	140	322	0	92	0
RT Vol	3	26	42	0	0	61
Lane Flow Rate	26	198	430	125	100	66
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.051	0.331	0.686	0.24	0.178	0.105
Departure Headway (Hd)	7.087	6.029	5.74	6.917	6.408	5.696
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	504	595	628	519	560	629
Service Time	4.849	3.77	3.472	4.658	4.149	3.436
HCM Lane V/C Ratio	0.052	0.333	0.685	0.241	0.179	0.105
HCM Control Delay	10.2	11.7	20.1	11.8	10.5	9.1
HCM Lane LOS	B	B	C	B	B	A
HCM 95th-tile Q	0.2	1.4	5.4	0.9	0.6	0.4

Intersection	
Intersection Delay, s/veh	69.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	16	160	12	179	519	38	13	96	45	10	69	6
Future Vol, veh/h	16	160	12	179	519	38	13	96	45	10	69	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	174	13	195	564	41	14	104	49	11	75	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.9	102.6	12.4	11.5
HCM LOS	B	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	9%	24%	12%
Vol Thru, %	62%	85%	71%	81%
Vol Right, %	29%	6%	5%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	154	188	736	85
LT Vol	13	16	179	10
Through Vol	96	160	519	69
RT Vol	45	12	38	6
Lane Flow Rate	167	204	800	92
Geometry Grp	1	1	1	1
Degree of Util (X)	0.29	0.328	1.147	0.171
Departure Headway (Hd)	6.718	6.023	5.163	7.08
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	539	601	704	510
Service Time	4.718	4.023	3.176	5.08
HCM Lane V/C Ratio	0.31	0.339	1.136	0.18
HCM Control Delay	12.4	11.9	102.6	11.5
HCM Lane LOS	B	B	F	B
HCM 95th-tile Q	1.2	1.4	24.8	0.6

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	10	189	49	197	293	115	20	15	77	17	10	1
Future Vol, veh/h	10	189	49	197	293	115	20	15	77	17	10	1
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	222	58	232	345	135	24	18	91	20	12	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	481	0	0	280	0	0	1159	1220	251	1208	1182	415
Stage 1	-	-	-	-	-	-	275	275	-	878	878	-
Stage 2	-	-	-	-	-	-	884	945	-	330	304	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1082	-	-	1283	-	-	173	180	788	160	190	637
Stage 1	-	-	-	-	-	-	731	683	-	343	366	-
Stage 2	-	-	-	-	-	-	340	340	-	683	663	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1081	-	-	1283	-	-	129	133	788	102	140	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	129	133	-	102	140	-
Stage 1	-	-	-	-	-	-	721	674	-	338	273	-
Stage 2	-	-	-	-	-	-	243	254	-	581	654	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.7	25.4	47.4
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	306	1081	-	-	1283	-	-	117
HCM Lane V/C Ratio	0.431	0.011	-	-	0.181	-	-	0.282
HCM Control Delay (s)	25.4	8.4	0	-	8.4	0	-	47.4
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	2.1	0	-	-	0.7	-	-	1.1

Intersection	
Int Delay, s/veh	22.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑ ↱			↰ ↱			✥			✥	
Traffic Vol, veh/h	75	215	0	0	307	96	1	0	0	149	2	153
Future Vol, veh/h	75	215	0	0	307	96	1	0	0	149	2	153
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	272	0	0	389	122	1	0	0	189	3	194

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	511	0	0	272	0	0	658	973	136	776	912	256
Stage 1	-	-	-	-	-	-	462	462	-	450	450	-
Stage 2	-	-	-	-	-	-	196	511	-	326	462	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1050	-	-	1288	-	-	350	251	888	287	272	743
Stage 1	-	-	-	-	-	-	549	563	-	558	570	-
Stage 2	-	-	-	-	-	-	787	535	-	661	563	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1050	-	-	1288	-	-	239	228	888	267	248	743
Mov Cap-2 Maneuver	-	-	-	-	-	-	239	228	-	267	248	-
Stage 1	-	-	-	-	-	-	500	512	-	508	570	-
Stage 2	-	-	-	-	-	-	579	535	-	601	512	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0	20.1	72.5
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	239	1050	-	-	1288	-	-	394
HCM Lane V/C Ratio	0.005	0.09	-	-	-	-	-	0.977
HCM Control Delay (s)	20.1	8.8	-	-	0	-	-	72.5
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	11.5

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	11	77	7	16	195	10	2	34	5	42	189	112
Future Vol, veh/h	11	77	7	16	195	10	2	34	5	42	189	112
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	97	9	20	247	13	3	43	6	53	239	142
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10	12.3	9.2	15.2
HCM LOS	A	B	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	12%	7%	12%
Vol Thru, %	83%	81%	88%	55%
Vol Right, %	12%	7%	5%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	95	221	343
LT Vol	2	11	16	42
Through Vol	34	77	195	189
RT Vol	5	7	10	112
Lane Flow Rate	52	120	280	434
Geometry Grp	1	1	1	1
Degree of Util (X)	0.082	0.189	0.42	0.599
Departure Headway (Hd)	5.668	5.667	5.41	4.967
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	631	633	666	725
Service Time	3.713	3.708	3.445	2.996
HCM Lane V/C Ratio	0.082	0.19	0.42	0.599
HCM Control Delay	9.2	10	12.3	15.2
HCM Lane LOS	A	A	B	C
HCM 95th-tile Q	0.3	0.7	2.1	4

12: S Pullman Ave & E Jensen Ave

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✣			✣	
Traffic Vol, veh/h	258	1024	0	3	1859	28	1	0	2	0	0	229
Future Vol, veh/h	258	1024	0	3	1859	28	1	0	2	0	0	229
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	284	1125	0	3	2043	31	1	0	2	0	0	252

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2074	0	0	1125	0	0	2721	3773	564	3197	3758	1037
Stage 1	-	-	-	-	-	-	1693	1693	-	2065	2065	-
Stage 2	-	-	-	-	-	-	1028	2080	-	1132	1693	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	~ 265	-	-	617	-	-	10	4	469	4	4	~ 228
Stage 1	-	-	-	-	-	-	97	147	-	56	96	-
Stage 2	-	-	-	-	-	-	251	94	-	216	147	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 265	-	-	617	-	-	-	0	469	-	0	~ 228
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	97	0	-	56	96	-
Stage 2	-	-	-	-	-	-	-	94	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.5	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 265	-	-	617	-	-	-
HCM Lane V/C Ratio	-	1.07	-	-	0.005	-	-	-
HCM Control Delay (s)	-	116.7	-	-	10.9	-	-	-
HCM Lane LOS	-	F	-	-	B	-	-	-
HCM 95th %tile Q(veh)	-	11.5	-	-	0	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	72	504	51	58	1605	54	41	24	24	55	70	219
Future Volume (veh/h)	72	504	51	58	1605	54	41	24	24	55	70	219
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	622	63	72	1981	67	51	30	30	68	86	270
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	2031	204	127	2162	73	111	159	159	125	361	306
Arrive On Green	0.08	0.43	0.43	0.07	0.43	0.43	0.06	0.19	0.19	0.07	0.19	0.19
Sat Flow, veh/h	1781	4716	473	1781	5072	171	1781	858	858	1781	1870	1585
Grp Volume(v), veh/h	89	447	238	72	1328	720	51	0	60	68	86	270
Grp Sat Flow(s),veh/h/ln	1781	1702	1785	1781	1702	1840	1781	0	1716	1781	1870	1585
Q Serve(g_s), s	4.6	8.2	8.3	3.7	35.0	35.1	2.6	0.0	2.8	3.5	3.7	15.8
Cycle Q Clear(g_c), s	4.6	8.2	8.3	3.7	35.0	35.1	2.6	0.0	2.8	3.5	3.7	15.8
Prop In Lane	1.00		0.27	1.00		0.09	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	135	1466	769	127	1451	784	111	0	318	125	361	306
V/C Ratio(X)	0.66	0.31	0.31	0.57	0.92	0.92	0.46	0.00	0.19	0.54	0.24	0.88
Avail Cap(c_a), veh/h	280	1466	769	280	1465	792	280	0	360	280	393	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	17.8	17.8	42.8	25.7	25.8	43.1	0.0	32.8	42.8	32.5	37.4
Incr Delay (d2), s/veh	2.0	0.1	0.3	1.5	9.3	15.7	1.1	0.0	0.5	1.4	0.9	25.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.9	3.1	1.6	14.0	16.6	1.1	0.0	1.1	1.5	1.7	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.8	17.9	18.1	44.3	35.1	41.4	44.2	0.0	33.2	44.2	33.4	62.4
LnGrp LOS	D	B	B	D	D	D	D	A	C	D	C	E
Approach Vol, veh/h		774			2120			111			424	
Approach Delay, s/veh		21.1			37.5			38.3			53.6	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	24.9	12.9	46.6	11.6	24.1	12.5	47.0
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	4.6	17.8	6.6	37.1	5.5	4.8	5.7	10.3
Green Ext Time (p_c), s	0.0	0.6	0.0	3.5	0.0	0.3	0.0	5.1

Intersection Summary			
HCM 6th Ctrl Delay			35.8
HCM 6th LOS			D

Notes

User approved pedestrian interval to be less than phase max green.

14: S Peach Ave & E Jensen Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑	↱		✣			✣	
Traffic Volume (veh/h)	115	363	19	38	1300	105	14	96	37	96	101	228
Future Volume (veh/h)	115	363	19	38	1300	105	14	96	37	96	101	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	422	22	44	1512	122	16	112	43	112	117	265
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	2162	112	90	1454	649	64	410	148	151	145	301
Arrive On Green	0.09	0.43	0.43	0.05	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	4971	257	1781	3554	1585	90	1155	418	323	409	848
Grp Volume(v), veh/h	134	288	156	44	1512	122	171	0	0	494	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1824	1781	1777	1585	1663	0	0	1580	0	0
Q Serve(g_s), s	9.0	6.4	6.5	2.9	50.0	6.0	0.0	0.0	0.0	27.2	0.0	0.0
Cycle Q Clear(g_c), s	9.0	6.4	6.5	2.9	50.0	6.0	8.3	0.0	0.0	35.6	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	0.09		0.25	0.23		0.54
Lane Grp Cap(c), veh/h	161	1480	793	90	1454	649	622	0	0	597	0	0
V/C Ratio(X)	0.83	0.19	0.20	0.49	1.04	0.19	0.27	0.00	0.00	0.83	0.00	0.00
Avail Cap(c_a), veh/h	316	1480	793	292	1454	649	781	0	0	744	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.7	21.3	21.3	56.4	36.1	23.1	28.1	0.0	0.0	36.5	0.0	0.0
Incr Delay (d2), s/veh	4.3	0.1	0.3	1.5	34.6	0.3	0.5	0.0	0.0	9.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.4	2.7	1.3	26.7	2.2	3.5	0.0	0.0	14.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.9	21.5	21.6	57.9	70.7	23.4	28.6	0.0	0.0	45.9	0.0	0.0
LnGrp LOS	E	C	C	E	F	C	C	A	A	D	A	A
Approach Vol, veh/h		578			1678			171			494	
Approach Delay, s/veh		30.2			66.9			28.6			45.9	
Approach LOS		C			E			C			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		50.1	15.0	57.0		50.1	11.9	60.1
Change Period (Y+Rc), s		6.8	4.0	7.0		6.8	5.7	7.0
Max Green Setting (Gmax), s		55.0	21.7	50.0		55.0	20.0	50.0
Max Q Clear Time (g_c+I1), s		37.6	11.0	52.0		10.3	4.9	8.5
Green Ext Time (p_c), s		5.8	0.1	0.0		1.9	0.0	5.6

Intersection Summary			
HCM 6th Ctrl Delay			53.8
HCM 6th LOS			D

15: S Cherry Ave & E. Church Ave

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	Y	
Traffic Vol, veh/h	455	319	123	273	40	93
Future Vol, veh/h	455	319	123	273	40	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	523	367	141	314	46	107

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	890	0	1303	707
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	596	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	761	-	177	435
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	550	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	761	-	144	435
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	448	-

Approach	EB		WB		NB	
HCM Control Delay, s	0		3.4		19.3	
HCM LOS					C	

Minor Lane/Major Mvmt		NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)		402	-	-	761	-
HCM Lane V/C Ratio		0.38	-	-	0.186	-
HCM Control Delay (s)		19.3	-	-	10.8	-
HCM Lane LOS		C	-	-	B	-
HCM 95th %tile Q(veh)		1.7	-	-	0.7	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	9	94	6	1	66	3	11	20	6	16	19	2
Future Vol, veh/h	9	94	6	1	66	3	11	20	6	16	19	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	107	7	1	75	3	13	23	7	18	22	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	114	0	0	222	211	111	225	213	77
Stage 1	-	-	-	-	-	-	131	131	-	79	79	-
Stage 2	-	-	-	-	-	-	91	80	-	146	134	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1520	-	-	1475	-	-	734	686	942	730	684	984
Stage 1	-	-	-	-	-	-	873	788	-	930	829	-
Stage 2	-	-	-	-	-	-	916	828	-	857	785	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1520	-	-	1475	-	-	711	681	942	702	679	984
Mov Cap-2 Maneuver	-	-	-	-	-	-	711	681	-	702	679	-
Stage 1	-	-	-	-	-	-	867	782	-	923	828	-
Stage 2	-	-	-	-	-	-	889	827	-	820	780	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	10.3	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	723	1520	-	-	1475	-	-	701
HCM Lane V/C Ratio	0.058	0.007	-	-	0.001	-	-	0.06
HCM Control Delay (s)	10.3	7.4	0	-	7.4	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

2: S Cedar Ave & E American Ave

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	7	84	13	13	56	7	23	29	12	6	32	4
Future Vol, veh/h	7	84	13	13	56	7	23	29	12	6	32	4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	99	15	15	66	8	27	34	14	7	38	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.9	7.9	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	36%	7%	17%	14%
Vol Thru, %	45%	81%	74%	76%
Vol Right, %	19%	12%	9%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	104	76	42
LT Vol	23	7	13	6
Through Vol	29	84	56	32
RT Vol	12	13	7	4
Lane Flow Rate	75	122	89	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.092	0.145	0.108	0.061
Departure Headway (Hd)	4.422	4.266	4.329	4.463
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	812	845	831	804
Service Time	2.437	2.266	2.34	2.479
HCM Lane V/C Ratio	0.092	0.144	0.107	0.061
HCM Control Delay	7.9	8	7.9	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.4	0.2

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	12	86	3	3	52	2	4	22	0	4	27	16
Future Vol, veh/h	12	86	3	3	52	2	4	22	0	4	27	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	99	3	3	60	2	5	25	0	5	31	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	116	85	40	136	94	25	49	0	0	25	0	0
Stage 1	50	50	-	35	35	-	-	-	-	-	-	-
Stage 2	66	35	-	101	59	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	861	805	1031	835	796	1051	1558	-	-	1589	-	-
Stage 1	963	853	-	981	866	-	-	-	-	-	-	-
Stage 2	945	866	-	905	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	806	800	1031	750	791	1051	1558	-	-	1589	-	-
Mov Cap-2 Maneuver	806	800	-	750	791	-	-	-	-	-	-	-
Stage 1	960	850	-	978	863	-	-	-	-	-	-	-
Stage 2	875	863	-	795	843	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.9	1.1	0.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	806	796	1589	-	-
HCM Lane V/C Ratio	0.003	-	-	0.144	0.082	0.003	-	-
HCM Control Delay (s)	7.3	0	-	10.2	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.3	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	1	21	0	24	159	12	0	8	4	10	37	8
Future Vol, veh/h	1	21	0	24	159	12	0	8	4	10	37	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	28	0	32	209	16	0	11	5	13	49	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	225	0	0	28	0	0	341	319	28	319	311	217
Stage 1	-	-	-	-	-	-	30	30	-	281	281	-
Stage 2	-	-	-	-	-	-	311	289	-	38	30	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1344	-	-	1585	-	-	613	598	1047	634	604	823
Stage 1	-	-	-	-	-	-	987	870	-	726	678	-
Stage 2	-	-	-	-	-	-	699	673	-	977	870	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1344	-	-	1585	-	-	557	584	1047	611	590	823
Mov Cap-2 Maneuver	-	-	-	-	-	-	557	584	-	611	590	-
Stage 1	-	-	-	-	-	-	986	869	-	725	662	-
Stage 2	-	-	-	-	-	-	625	658	-	959	869	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	10.4	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	685	1344	-	-	1585	-	-	619
HCM Lane V/C Ratio	0.023	0.001	-	-	0.02	-	-	0.117
HCM Control Delay (s)	10.4	7.7	0	-	7.3	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	12	81	12	48	60	36	7	90	25	41	136	11
Future Vol, veh/h	12	81	12	48	60	36	7	90	25	41	136	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	89	13	53	66	40	8	99	27	45	149	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	427	387	155	425	380	113	161	0	0	126	0	0
Stage 1	245	245	-	129	129	-	-	-	-	-	-	-
Stage 2	182	142	-	296	251	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	538	547	891	540	552	940	1418	-	-	1460	-	-
Stage 1	759	703	-	875	789	-	-	-	-	-	-	-
Stage 2	820	779	-	712	699	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	454	527	891	450	532	940	1418	-	-	1460	-	-
Mov Cap-2 Maneuver	454	527	-	450	532	-	-	-	-	-	-	-
Stage 1	754	681	-	870	784	-	-	-	-	-	-	-
Stage 2	715	774	-	591	677	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	14	0.4	1.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1418	-	-	542	559	1460	-	-
HCM Lane V/C Ratio	0.005	-	-	0.213	0.283	0.031	-	-
HCM Control Delay (s)	7.6	-	-	13.4	14	7.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	1.2	0.1	-	-

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	54	210	60	38	200	65	28	70	10	57	104	44
Future Vol, veh/h	54	210	60	38	200	65	28	70	10	57	104	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	228	65	41	217	71	30	76	11	62	113	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.5	13.8	10.9	12.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	17%	13%	28%
Vol Thru, %	65%	65%	66%	51%
Vol Right, %	9%	19%	21%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	324	303	205
LT Vol	28	54	38	57
Through Vol	70	210	200	104
RT Vol	10	60	65	44
Lane Flow Rate	117	352	329	223
Geometry Grp	1	1	1	1
Degree of Util (X)	0.204	0.531	0.498	0.367
Departure Headway (Hd)	6.243	5.432	5.443	5.933
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	571	659	659	602
Service Time	4.329	3.498	3.509	4.008
HCM Lane V/C Ratio	0.205	0.534	0.499	0.37
HCM Control Delay	10.9	14.5	13.8	12.4
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	0.8	3.1	2.8	1.7

7: S East Ave & W Central Ave

Intersection	
Intersection Delay, s/veh	33
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥		↰	↑	↱
Traffic Vol, veh/h	69	383	69	8	223	35	28	11	7	116	53	116
Future Vol, veh/h	69	383	69	8	223	35	28	11	7	116	53	116
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	416	75	9	242	38	30	12	8	126	58	126
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	54.5	16.7	12.1	12.1
HCM LOS	F	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	61%	13%	3%	100%	0%	0%
Vol Thru, %	24%	74%	84%	0%	100%	0%
Vol Right, %	15%	13%	13%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	521	266	116	53	116
LT Vol	28	69	8	116	0	0
Through Vol	11	383	223	0	53	0
RT Vol	7	69	35	0	0	116
Lane Flow Rate	50	566	289	126	58	126
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.115	0.968	0.533	0.274	0.117	0.231
Departure Headway (Hd)	8.288	6.259	6.642	7.831	7.318	6.599
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	434	583	546	460	492	546
Service Time	6.014	3.959	4.342	5.547	5.034	4.315
HCM Lane V/C Ratio	0.115	0.971	0.529	0.274	0.118	0.231
HCM Control Delay	12.1	54.5	16.7	13.5	11	11.3
HCM Lane LOS	B	F	C	B	B	B
HCM 95th-tile Q	0.4	13.3	3.1	1.1	0.4	0.9

Intersection	
Intersection Delay, s/veh	31.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	78	442	42	77	221	26	20	95	60	21	56	17
Future Vol, veh/h	78	442	42	77	221	26	20	95	60	21	56	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	480	46	84	240	28	22	103	65	23	61	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	49.2	17.4	13.5	12.1
HCM LOS	E	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	14%	24%	22%
Vol Thru, %	54%	79%	68%	60%
Vol Right, %	34%	7%	8%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	175	562	324	94
LT Vol	20	78	77	21
Through Vol	95	442	221	56
RT Vol	60	42	26	17
Lane Flow Rate	190	611	352	102
Geometry Grp	1	1	1	1
Degree of Util (X)	0.356	0.957	0.589	0.203
Departure Headway (Hd)	6.74	5.638	6.025	7.163
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	533	648	599	499
Service Time	4.804	3.638	4.077	5.239
HCM Lane V/C Ratio	0.356	0.943	0.588	0.204
HCM Control Delay	13.5	49.2	17.4	12.1
HCM Lane LOS	B	E	C	B
HCM 95th-tile Q	1.6	13.5	3.8	0.8

9: S Maple Ave & W Central Ave

Intersection	
Int Delay, s/veh	12.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	7	250	49	173	219	33	24	5	168	60	15	13
Future Vol, veh/h	7	250	49	173	219	33	24	5	168	60	15	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	291	57	201	255	38	28	6	195	70	17	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	293	0	0	348	0	0	1028	1031	320	1112	1040	274
Stage 1	-	-	-	-	-	-	336	336	-	676	676	-
Stage 2	-	-	-	-	-	-	692	695	-	436	364	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1269	-	-	1211	-	-	212	233	721	186	230	765
Stage 1	-	-	-	-	-	-	678	642	-	443	453	-
Stage 2	-	-	-	-	-	-	434	444	-	599	624	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1269	-	-	1211	-	-	163	185	721	112	183	765
Mov Cap-2 Maneuver	-	-	-	-	-	-	163	185	-	112	183	-
Stage 1	-	-	-	-	-	-	673	637	-	439	363	-
Stage 2	-	-	-	-	-	-	324	356	-	429	619	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	3.5	18.9	81.6
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	484	1269	-	-	1211	-	-	139
HCM Lane V/C Ratio	0.473	0.006	-	-	0.166	-	-	0.736
HCM Control Delay (s)	18.9	7.9	0	-	8.6	0	-	81.6
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.5	0	-	-	0.6	-	-	4.3

Intersection	
Int Delay, s/veh	56.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱			↰↑↱			✥			✥	
Traffic Vol, veh/h	112	381	2	0	262	92	2	1	1	169	3	221
Future Vol, veh/h	112	381	2	0	262	92	2	1	1	169	3	221
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	135	459	2	0	316	111	2	1	1	204	4	266

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	427	0	0	461	0	0	890	1157	232	873	1103	214
Stage 1	-	-	-	-	-	-	730	730	-	372	372	-
Stage 2	-	-	-	-	-	-	160	427	-	501	731	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1129	-	-	1096	-	-	237	195	770	244	210	791
Stage 1	-	-	-	-	-	-	380	426	-	621	617	-
Stage 2	-	-	-	-	-	-	826	584	-	521	425	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1129	-	-	1096	-	-	141	172	769	220	185	791
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	172	-	220	185	-
Stage 1	-	-	-	-	-	-	334	375	-	546	617	-
Stage 2	-	-	-	-	-	-	545	584	-	456	374	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	24.7	176.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	188	1129	-	-	1096	-	-	369
HCM Lane V/C Ratio	0.026	0.12	-	-	-	-	-	1.283
HCM Control Delay (s)	24.7	8.6	-	-	0	-	-	176.9
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0	-	-	21.4

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	45	209	12	9	98	18	17	197	29	56	95	50
Future Vol, veh/h	45	209	12	9	98	18	17	197	29	56	95	50
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	225	13	10	105	19	18	212	31	60	102	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.7	10.3	12	11.2
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	17%	7%	28%
Vol Thru, %	81%	79%	78%	47%
Vol Right, %	12%	5%	14%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	243	266	125	201
LT Vol	17	45	9	56
Through Vol	197	209	98	95
RT Vol	29	12	18	50
Lane Flow Rate	261	286	134	216
Geometry Grp	1	1	1	1
Degree of Util (X)	0.394	0.436	0.212	0.328
Departure Headway (Hd)	5.429	5.49	5.686	5.468
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	661	655	629	655
Service Time	3.477	3.537	3.742	3.52
HCM Lane V/C Ratio	0.395	0.437	0.213	0.33
HCM Control Delay	12	12.7	10.3	11.2
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.9	2.2	0.8	1.4

Intersection	
Int Delay, s/veh	597.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✣			✣	
Traffic Vol, veh/h	313	1493	0	2	1339	24	0	0	0	8	0	472
Future Vol, veh/h	313	1493	0	2	1339	24	0	0	0	8	0	472
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	356	1697	0	2	1522	27	0	0	0	9	0	536

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1549	0	0	1697	0	0	3174	3962	849	3101	3949	775
Stage 1	-	-	-	-	-	-	2409	2409	-	1540	1540	-
Stage 2	-	-	-	-	-	-	765	1553	-	1561	2409	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	424	-	-	372	-	-	4	3	304	~ 5	3	~ 341
Stage 1	-	-	-	-	-	-	33	63	-	121	175	-
Stage 2	-	-	-	-	-	-	362	173	-	117	63	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	424	-	-	372	-	-	-	0	304	~ 1	0	~ 341
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	~ 1	0	-
Stage 1	-	-	-	-	-	-	5	10	-	19	174	-
Stage 2	-	-	-	-	-	-	-	172	-	19	10	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.7	0	0	$ 4514.9
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	424	-	-	372	-	-	51
HCM Lane V/C Ratio	-	0.839	-	-	0.006	-	-	10.695
HCM Control Delay (s)	0	44.5	-	-	14.7	-	$	4514.9
HCM Lane LOS	A	E	-	-	B	-	-	F
HCM 95th %tile Q(veh)	-	8	-	-	0	-	-	65

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th Signalized Intersection Summary
13: S Willow Ave & E Jensen Ave

Timing Plan: Alt 3 PM
07/18/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	170	1227	46	24	750	58	106	132	89	38	23	67
Future Volume (veh/h)	170	1227	46	24	750	58	106	132	89	38	23	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	1278	48	25	781	60	110	138	93	40	24	70
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	1964	74	78	1500	115	180	180	122	110	250	212
Arrive On Green	0.12	0.39	0.39	0.04	0.31	0.31	0.10	0.17	0.17	0.06	0.13	0.13
Sat Flow, veh/h	1781	5051	190	1781	4838	370	1781	1042	702	1781	1870	1585
Grp Volume(v), veh/h	177	861	465	25	548	293	110	0	231	40	24	70
Grp Sat Flow(s),veh/h/ln	1781	1702	1836	1781	1702	1804	1781	0	1744	1781	1870	1585
Q Serve(g_s), s	6.7	14.4	14.4	0.9	9.2	9.3	4.1	0.0	8.8	1.5	0.8	2.8
Cycle Q Clear(g_c), s	6.7	14.4	14.4	0.9	9.2	9.3	4.1	0.0	8.8	1.5	0.8	2.8
Prop In Lane	1.00		0.10	1.00		0.21	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	219	1324	714	78	1055	559	180	0	302	110	250	212
V/C Ratio(X)	0.81	0.65	0.65	0.32	0.52	0.52	0.61	0.00	0.76	0.36	0.10	0.33
Avail Cap(c_a), veh/h	384	2006	1082	384	2006	1063	384	0	501	384	538	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	17.4	17.4	32.2	19.7	19.8	30.0	0.0	27.4	31.3	26.4	27.3
Incr Delay (d2), s/veh	2.7	0.7	1.3	0.9	0.5	0.9	1.2	0.0	6.5	0.7	0.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.6	5.1	0.4	3.1	3.4	1.8	0.0	4.0	0.6	0.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.4	18.1	18.7	33.1	20.2	20.7	31.2	0.0	33.9	32.1	26.9	29.7
LnGrp LOS	C	B	B	C	C	C	C	A	C	C	C	C
Approach Vol, veh/h		1503			866			341			134	
Approach Delay, s/veh		19.9			20.8			33.0			29.9	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	15.8	14.3	27.6	9.2	18.6	8.8	33.1
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	6.1	4.8	8.7	11.3	3.5	10.8	2.9	16.4
Green Ext Time (p_c), s	0.1	0.5	0.1	6.5	0.0	1.3	0.0	10.7

Intersection Summary			
HCM 6th Ctrl Delay			22.2
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary
14: S Peach Ave & E Jensen Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑	↱		✣			✣	
Traffic Volume (veh/h)	251	848	9	16	551	127	8	158	27	122	86	130
Future Volume (veh/h)	251	848	9	16	551	127	8	158	27	122	86	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	264	893	9	17	580	134	8	166	28	128	91	137
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	308	2127	21	57	1029	459	57	459	75	212	141	179
Arrive On Green	0.17	0.41	0.41	0.03	0.29	0.29	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	5212	53	1781	3554	1585	23	1536	251	489	471	600
Grp Volume(v), veh/h	264	583	319	17	580	134	202	0	0	356	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1861	1781	1777	1585	1811	0	0	1559	0	0
Q Serve(g_s), s	10.7	9.1	9.1	0.7	10.3	4.9	0.0	0.0	0.0	8.4	0.0	0.0
Cycle Q Clear(g_c), s	10.7	9.1	9.1	0.7	10.3	4.9	6.5	0.0	0.0	14.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		1.00	0.04		0.14	0.36		0.38
Lane Grp Cap(c), veh/h	308	1389	760	57	1029	459	591	0	0	532	0	0
V/C Ratio(X)	0.86	0.42	0.42	0.30	0.56	0.29	0.34	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	518	2279	1246	477	2379	1061	1371	0	0	1173	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.0	15.8	15.8	35.3	22.5	20.6	20.6	0.0	0.0	23.3	0.0	0.0
Incr Delay (d2), s/veh	3.3	0.5	0.9	1.1	1.1	0.8	0.7	0.0	0.0	4.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.0	3.4	0.3	3.9	1.7	2.6	0.0	0.0	5.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	16.3	16.7	36.4	23.7	21.4	21.3	0.0	0.0	27.3	0.0	0.0
LnGrp LOS	C	B	B	D	C	C	C	A	A	C	A	A
Approach Vol, veh/h		1166			731			202			356	
Approach Delay, s/veh		20.2			23.5			21.3			27.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.1	16.9	28.6		29.1	8.1	37.5				
Change Period (Y+Rc), s		6.8	4.0	7.0		6.8	5.7	7.0				
Max Green Setting (Gmax), s		55.0	21.7	50.0		55.0	20.0	50.0				
Max Q Clear Time (g_c+I1), s		16.9	12.7	12.3		8.5	2.7	11.1				
Green Ext Time (p_c), s		5.4	0.2	9.3		2.2	0.0	12.8				

Intersection Summary			
HCM 6th Ctrl Delay			22.3
HCM 6th LOS			C

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	Y	
Traffic Vol, veh/h	332	171	154	378	87	149
Future Vol, veh/h	332	171	154	378	87	149
Conflicting Peds, #/hr	0	4	4	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	382	197	177	434	100	171

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	583	0	1273	486
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	788	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	991	-	185	581
Stage 1	-	-	-	-	619	-
Stage 2	-	-	-	-	448	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	987	-	151	578
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	368	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	24.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	448	-	-	987	-
HCM Lane V/C Ratio	0.606	-	-	0.179	-
HCM Control Delay (s)	24.6	-	-	9.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	3.9	-	-	0.7	-

Appendix B – Business Alternative Synchro Output

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	10	47	2	4	153	7	8	15	7	9	16	12
Future Vol, veh/h	10	47	2	4	153	7	8	15	7	9	16	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	56	2	5	182	8	10	18	8	11	19	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	58	0	0	294	281	57	290	278	186
Stage 1	-	-	-	-	-	-	81	81	-	196	196	-
Stage 2	-	-	-	-	-	-	213	200	-	94	82	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1384	-	-	1546	-	-	658	627	1009	662	630	856
Stage 1	-	-	-	-	-	-	927	828	-	806	739	-
Stage 2	-	-	-	-	-	-	789	736	-	913	827	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1384	-	-	1546	-	-	626	619	1009	636	622	856
Mov Cap-2 Maneuver	-	-	-	-	-	-	626	619	-	636	622	-
Stage 1	-	-	-	-	-	-	919	821	-	799	736	-
Stage 2	-	-	-	-	-	-	753	733	-	878	820	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	10.6	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	683	1384	-	-	1546	-	-	687
HCM Lane V/C Ratio	0.052	0.009	-	-	0.003	-	-	0.064
HCM Control Delay (s)	10.6	7.6	0	-	7.3	0	-	10.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

2: S Cedar Ave & E American Ave

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	3	30	13	9	129	11	24	39	6	5	26	9
Future Vol, veh/h	3	30	13	9	129	11	24	39	6	5	26	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	33	14	10	143	12	27	43	7	6	29	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	8.2	8	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	7%	6%	12%
Vol Thru, %	57%	65%	87%	65%
Vol Right, %	9%	28%	7%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	46	149	40
LT Vol	24	3	9	5
Through Vol	39	30	129	26
RT Vol	6	13	11	9
Lane Flow Rate	77	51	166	44
Geometry Grp	1	1	1	1
Degree of Util (X)	0.095	0.06	0.191	0.054
Departure Headway (Hd)	4.482	4.232	4.151	4.392
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	803	850	851	819
Service Time	2.487	2.238	2.244	2.398
HCM Lane V/C Ratio	0.096	0.06	0.195	0.054
HCM Control Delay	8	7.5	8.2	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.7	0.2

3: S Maple Ave & E American Ave

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	17	53	2	0	101	7	7	18	1	3	13	23
Future Vol, veh/h	17	53	2	0	101	7	7	18	1	3	13	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	57	2	0	109	8	8	19	1	3	14	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	127	69	27	98	81	20	39	0	0	20	0	0
Stage 1	33	33	-	36	36	-	-	-	-	-	-	-
Stage 2	94	36	-	62	45	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	846	822	1048	884	809	1058	1571	-	-	1596	-	-
Stage 1	983	868	-	980	865	-	-	-	-	-	-	-
Stage 2	913	865	-	949	857	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	749	816	1048	831	803	1058	1571	-	-	1596	-	-
Mov Cap-2 Maneuver	749	816	-	831	803	-	-	-	-	-	-	-
Stage 1	978	866	-	975	861	-	-	-	-	-	-	-
Stage 2	788	861	-	883	855	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.1	2	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	804	816	1596	-	-
HCM Lane V/C Ratio	0.005	-	-	0.096	0.142	0.002	-	-
HCM Control Delay (s)	7.3	0	-	10	10.1	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.5	0	-	-

4: S Fig Ave & W Central Ave

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	0	35	0	11	66	26	1	32	7	15	78	2
Future Vol, veh/h	0	35	0	11	66	26	1	32	7	15	78	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	0	16	97	38	1	47	10	22	115	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	135	0	0	51	0	0	258	218	51	228	199	116
Stage 1	-	-	-	-	-	-	51	51	-	148	148	-
Stage 2	-	-	-	-	-	-	207	167	-	80	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1449	-	-	1555	-	-	695	680	1017	727	697	936
Stage 1	-	-	-	-	-	-	962	852	-	855	775	-
Stage 2	-	-	-	-	-	-	795	760	-	929	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1449	-	-	1555	-	-	599	673	1017	675	689	936
Mov Cap-2 Maneuver	-	-	-	-	-	-	599	673	-	675	689	-
Stage 1	-	-	-	-	-	-	962	852	-	855	766	-
Stage 2	-	-	-	-	-	-	666	752	-	869	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	10.5	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	713	1449	-	-	1555	-	-	691
HCM Lane V/C Ratio	0.083	-	-	-	0.01	-	-	0.202
HCM Control Delay (s)	10.5	0	-	-	7.3	0	-	11.5
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.8

Intersection	
Int Delay, s/veh	26.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	34	143	29	67	89	93	16	154	41	17	255	8
Future Vol, veh/h	34	143	29	67	89	93	16	154	41	17	255	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	183	37	86	114	119	21	197	53	22	327	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	758	668	332	752	647	224	337	0	0	250	0	0
Stage 1	376	376	-	266	266	-	-	-	-	-	-	-
Stage 2	382	292	-	486	381	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	324	379	710	327	390	815	1222	-	-	1316	-	-
Stage 1	645	616	-	739	689	-	-	-	-	-	-	-
Stage 2	640	671	-	563	613	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	207	366	710	183	377	815	1222	-	-	1316	-	-
Mov Cap-2 Maneuver	207	366	-	183	377	-	-	-	-	-	-	-
Stage 1	634	606	-	726	677	-	-	-	-	-	-	-
Stage 2	446	660	-	366	603	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42.2	64.7	0.6	0.5
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1222	-	-	346	348	1316	-	-
HCM Lane V/C Ratio	0.017	-	-	0.763	0.917	0.017	-	-
HCM Control Delay (s)	8	-	-	42.2	64.7	7.8	-	-
HCM Lane LOS	A	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	6.1	9.3	0.1	-	-

Intersection	
Intersection Delay, s/veh	52.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	25	106	154	157	210	79	24	56	6	58	376	67
Future Vol, veh/h	25	106	154	157	210	79	24	56	6	58	376	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	115	167	171	228	86	26	61	7	63	409	73
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	21.6	52.5	14.2	77.6
HCM LOS	C	F	B	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	9%	35%	12%
Vol Thru, %	65%	37%	47%	75%
Vol Right, %	7%	54%	18%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	285	446	501
LT Vol	24	25	157	58
Through Vol	56	106	210	376
RT Vol	6	154	79	67
Lane Flow Rate	93	310	485	545
Geometry Grp	1	1	1	1
Degree of Util (X)	0.218	0.615	0.935	1.043
Departure Headway (Hd)	8.739	7.429	7.197	6.895
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	413	489	509	523
Service Time	6.739	5.429	5.197	4.966
HCM Lane V/C Ratio	0.225	0.634	0.953	1.042
HCM Control Delay	14.2	21.6	52.5	77.6
HCM Lane LOS	B	C	F	F
HCM 95th-tile Q	0.8	4.1	11.4	15.7

Intersection	
Intersection Delay, s/veh	17.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥		↰	↑	↱
Traffic Vol, veh/h	18	156	29	34	345	45	9	12	3	122	97	65
Future Vol, veh/h	18	156	29	34	345	45	9	12	3	122	97	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	170	32	37	375	49	10	13	3	133	105	71
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Righ	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	12.6	24.1	10.5	11.2
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	38%	9%	8%	100%	0%	0%
Vol Thru, %	50%	77%	81%	0%	100%	0%
Vol Right, %	12%	14%	11%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	203	424	122	97	65
LT Vol	9	18	34	122	0	0
Through Vol	12	156	345	0	97	0
RT Vol	3	29	45	0	0	65
Lane Flow Rate	26	221	461	133	105	71
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.053	0.378	0.749	0.261	0.193	0.115
Departure Headway (Hd)	7.339	6.163	5.852	7.091	6.581	5.868
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	486	583	618	507	544	609
Service Time	5.118	3.915	3.594	4.844	4.334	3.62
HCM Lane V/C Ratio	0.053	0.379	0.746	0.262	0.193	0.117
HCM Control Delay	10.5	12.6	24.1	12.3	10.9	9.4
HCM Lane LOS	B	B	C	B	B	A
HCM 95th-tile Q	0.2	1.8	6.6	1	0.7	0.4

Intersection	
Intersection Delay, s/veh	82.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	17	172	12	185	535	39	14	102	47	10	71	6
Future Vol, veh/h	17	172	12	185	535	39	14	102	47	10	71	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	187	13	201	582	42	15	111	51	11	77	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.5	123.8	13	11.8
HCM LOS	B	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	8%	24%	11%
Vol Thru, %	63%	86%	70%	82%
Vol Right, %	29%	6%	5%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	163	201	759	87
LT Vol	14	17	185	10
Through Vol	102	172	535	71
RT Vol	47	12	39	6
Lane Flow Rate	177	218	825	95
Geometry Grp	1	1	1	1
Degree of Util (X)	0.315	0.355	1.202	0.177
Departure Headway (Hd)	6.872	6.165	5.244	7.278
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	526	588	693	496
Service Time	4.872	4.165	3.269	5.278
HCM Lane V/C Ratio	0.337	0.371	1.19	0.192
HCM Control Delay	13	12.5	123.8	11.8
HCM Lane LOS	B	B	F	B
HCM 95th-tile Q	1.3	1.6	28.2	0.6

9: S Maple Ave & W Central Ave

07/19/2023

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	11	206	53	204	303	119	20	15	77	17	10	1
Future Vol, veh/h	11	206	53	204	303	119	20	15	77	17	10	1
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	242	62	240	356	140	24	18	91	20	12	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	497	0	0	304	0	0	1213	1276	273	1261	1237	428
Stage 1	-	-	-	-	-	-	299	299	-	907	907	-
Stage 2	-	-	-	-	-	-	914	977	-	354	330	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1067	-	-	1257	-	-	159	167	766	147	176	627
Stage 1	-	-	-	-	-	-	710	666	-	330	355	-
Stage 2	-	-	-	-	-	-	327	329	-	663	646	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	1257	-	-	116	120	766	91	127	626
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	120	-	91	127	-
Stage 1	-	-	-	-	-	-	699	656	-	325	259	-
Stage 2	-	-	-	-	-	-	228	240	-	560	636	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.8	28.6	54.2
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	281	1066	-	-	1257	-	-	105
HCM Lane V/C Ratio	0.469	0.012	-	-	0.191	-	-	0.314
HCM Control Delay (s)	28.6	8.4	0	-	8.5	0	-	54.2
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.4	0	-	-	0.7	-	-	1.2

Intersection	
Int Delay, s/veh	29.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱			↰↑↱			✥			✥	
Traffic Vol, veh/h	81	229	0	0	312	97	1	0	0	154	2	158
Future Vol, veh/h	81	229	0	0	312	97	1	0	0	154	2	158
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	103	290	0	0	395	123	1	0	0	195	3	200

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	518	0	0	290	0	0	695	1014	145	808	953	259
Stage 1	-	-	-	-	-	-	496	496	-	457	457	-
Stage 2	-	-	-	-	-	-	199	518	-	351	496	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1044	-	-	1269	-	-	329	237	876	272	258	740
Stage 1	-	-	-	-	-	-	524	544	-	553	566	-
Stage 2	-	-	-	-	-	-	784	531	-	639	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1044	-	-	1269	-	-	220	214	876	251	232	740
Mov Cap-2 Maneuver	-	-	-	-	-	-	220	214	-	251	232	-
Stage 1	-	-	-	-	-	-	472	490	-	498	566	-
Stage 2	-	-	-	-	-	-	570	531	-	576	490	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0	21.5	96.1
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	220	1044	-	-	1269	-	-	376
HCM Lane V/C Ratio	0.006	0.098	-	-	-	-	-	1.057
HCM Control Delay (s)	21.5	8.8	-	-	0	-	-	96.1
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	13.6

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	11	77	7	16	195	10	2	32	4	44	196	116
Future Vol, veh/h	11	77	7	16	195	10	2	32	4	44	196	116
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	97	9	20	247	13	3	41	5	56	248	147
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.1	12.5	9.2	16
HCM LOS	B	B	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	12%	7%	12%
Vol Thru, %	84%	81%	88%	55%
Vol Right, %	11%	7%	5%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	95	221	356
LT Vol	2	11	16	44
Through Vol	32	77	195	196
RT Vol	4	7	10	116
Lane Flow Rate	48	120	280	451
Geometry Grp	1	1	1	1
Degree of Util (X)	0.076	0.191	0.423	0.626
Departure Headway (Hd)	5.711	5.706	5.446	4.999
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	625	628	660	726
Service Time	3.766	3.757	3.491	2.999
HCM Lane V/C Ratio	0.077	0.191	0.424	0.621
HCM Control Delay	9.2	10.1	12.5	16
HCM Lane LOS	A	B	B	C
HCM 95th-tile Q	0.2	0.7	2.1	4.4

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✥			✥	
Traffic Vol, veh/h	258	1025	0	3	1872	28	1	0	2	0	0	231
Future Vol, veh/h	258	1025	0	3	1872	28	1	0	2	0	0	231
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	284	1126	0	3	2057	31	1	0	2	0	0	254

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2088	0	0	1126	0	0	2729	3788	564	3211	3773	1044
Stage 1	-	-	-	-	-	-	1694	1694	-	2079	2079	-
Stage 2	-	-	-	-	-	-	1035	2094	-	1132	1694	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	~ 261	-	-	616	-	-	10	4	469	4	4	~ 226
Stage 1	-	-	-	-	-	-	96	147	-	55	94	-
Stage 2	-	-	-	-	-	-	248	92	-	216	147	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 261	-	-	616	-	-	-	0	469	-	0	~ 226
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	96	0	-	55	94	-
Stage 2	-	-	-	-	-	-	-	92	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.6	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 261	-	-	616	-	-	-
HCM Lane V/C Ratio	-	1.086	-	-	0.005	-	-	-
HCM Control Delay (s)	-	122.6	-	-	10.9	-	-	-
HCM Lane LOS	-	F	-	-	B	-	-	-
HCM 95th %tile Q(veh)	-	11.8	-	-	0	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	73	512	52	58	1599	54	44	25	25	57	72	225
Future Volume (veh/h)	73	512	52	58	1599	54	44	25	25	57	72	225
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	632	64	72	1974	67	54	31	31	70	89	278
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	2018	203	127	2147	73	113	163	163	126	368	312
Arrive On Green	0.08	0.43	0.43	0.07	0.42	0.42	0.06	0.19	0.19	0.07	0.20	0.20
Sat Flow, veh/h	1781	4716	473	1781	5072	172	1781	858	858	1781	1870	1585
Grp Volume(v), veh/h	90	455	241	72	1324	717	54	0	62	70	89	278
Grp Sat Flow(s),veh/h/ln	1781	1702	1785	1781	1702	1839	1781	0	1716	1781	1870	1585
Q Serve(g_s), s	4.7	8.5	8.6	3.8	35.2	35.4	2.8	0.0	2.9	3.6	3.9	16.4
Cycle Q Clear(g_c), s	4.7	8.5	8.6	3.8	35.2	35.4	2.8	0.0	2.9	3.6	3.9	16.4
Prop In Lane	1.00		0.27	1.00		0.09	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	135	1457	764	127	1441	779	113	0	326	126	368	312
V/C Ratio(X)	0.67	0.31	0.32	0.57	0.92	0.92	0.48	0.00	0.19	0.56	0.24	0.89
Avail Cap(c_a), veh/h	278	1457	764	278	1454	786	278	0	358	278	390	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	18.1	18.2	43.1	26.1	26.2	43.4	0.0	32.7	43.2	32.5	37.6
Incr Delay (d2), s/veh	2.1	0.2	0.3	1.5	9.7	16.2	1.2	0.0	0.5	1.4	0.9	26.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.0	3.2	1.6	14.2	16.9	1.2	0.0	1.2	1.6	1.8	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	18.3	18.5	44.6	35.8	42.3	44.6	0.0	33.1	44.6	33.4	64.2
LnGrp LOS	D	B	B	D	D	D	D	A	C	D	C	E
Approach Vol, veh/h		786			2113			116			437	
Approach Delay, s/veh		21.4			38.3			38.5			54.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	25.4	13.0	46.6	11.7	24.7	12.5	47.1
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	4.8	18.4	6.7	37.4	5.6	4.9	5.8	10.6
Green Ext Time (p_c), s	0.0	0.5	0.0	3.3	0.0	0.3	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary
14: S Peach Ave & E Jensen Ave

Timing Plan: Alt 4 AM
07/19/2023

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑	↱		✣			✣	
Traffic Volume (veh/h)	117	369	19	38	1307	106	14	94	36	96	102	229
Future Volume (veh/h)	117	369	19	38	1307	106	14	94	36	96	102	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	136	429	22	44	1520	123	16	109	42	112	119	266
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	2162	110	90	1449	646	65	407	148	151	147	301
Arrive On Green	0.09	0.43	0.43	0.05	0.41	0.41	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1781	4976	253	1781	3554	1585	93	1145	416	322	414	847
Grp Volume(v), veh/h	136	292	159	44	1520	123	167	0	0	497	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1825	1781	1777	1585	1654	0	0	1583	0	0
Q Serve(g_s), s	9.2	6.5	6.6	2.9	50.0	6.1	0.0	0.0	0.0	27.7	0.0	0.0
Cycle Q Clear(g_c), s	9.2	6.5	6.6	2.9	50.0	6.1	8.1	0.0	0.0	35.9	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	0.10		0.25	0.23		0.54
Lane Grp Cap(c), veh/h	163	1479	793	90	1449	646	621	0	0	599	0	0
V/C Ratio(X)	0.84	0.20	0.20	0.49	1.05	0.19	0.27	0.00	0.00	0.83	0.00	0.00
Avail Cap(c_a), veh/h	315	1479	793	291	1449	646	774	0	0	742	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.8	21.4	21.5	56.7	36.3	23.3	28.1	0.0	0.0	36.6	0.0	0.0
Incr Delay (d2), s/veh	4.3	0.2	0.3	1.5	37.6	0.3	0.4	0.0	0.0	9.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	2.5	2.7	1.3	27.4	2.2	3.5	0.0	0.0	14.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	21.6	21.8	58.2	74.0	23.7	28.5	0.0	0.0	46.1	0.0	0.0
LnGrp LOS	E	C	C	E	F	C	C	A	A	D	A	A
Approach Vol, veh/h		587			1687			167			497	
Approach Delay, s/veh		30.3			69.9			28.5			46.1	
Approach LOS		C			E			C			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		50.4	15.2	57.0		50.4	11.9	60.3				
Change Period (Y+Rc), s		6.8	4.0	7.0		6.8	5.7	7.0				
Max Green Setting (Gmax), s		55.0	21.7	50.0		55.0	20.0	50.0				
Max Q Clear Time (g_c+I1), s		37.9	11.2	52.0		10.1	4.9	8.6				
Green Ext Time (p_c), s		5.8	0.1	0.0		1.8	0.0	5.7				

Intersection Summary			
HCM 6th Ctrl Delay			55.6
HCM 6th LOS			E

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	↰↱	
Traffic Vol, veh/h	456	320	121	269	41	96
Future Vol, veh/h	456	320	121	269	41	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	524	368	139	309	47	110

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	892	0	1295	708
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	587	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	760	-	179	435
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	556	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	760	-	146	435
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	454	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.3	19.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	403	-	-	760	-
HCM Lane V/C Ratio	0.391	-	-	0.183	-
HCM Control Delay (s)	19.5	-	-	10.8	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.8	-	-	0.7	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	9	96	7	1	66	3	11	21	6	18	22	3
Future Vol, veh/h	9	96	7	1	66	3	11	21	6	18	22	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	109	8	1	75	3	13	24	7	20	25	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	117	0	0	226	213	113	228	216	77
Stage 1	-	-	-	-	-	-	133	133	-	79	79	-
Stage 2	-	-	-	-	-	-	93	80	-	149	137	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1520	-	-	1471	-	-	729	684	940	727	682	984
Stage 1	-	-	-	-	-	-	870	786	-	930	829	-
Stage 2	-	-	-	-	-	-	914	828	-	854	783	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1520	-	-	1471	-	-	702	679	940	698	677	984
Mov Cap-2 Maneuver	-	-	-	-	-	-	702	679	-	698	677	-
Stage 1	-	-	-	-	-	-	864	780	-	923	828	-
Stage 2	-	-	-	-	-	-	882	827	-	816	778	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	10.3	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	717	1520	-	-	1471	-	-	701
HCM Lane V/C Ratio	0.06	0.007	-	-	0.001	-	-	0.07
HCM Control Delay (s)	10.3	7.4	0	-	7.4	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

2: S Cedar Ave & E American Ave

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	7	85	13	13	56	7	23	30	12	6	32	4
Future Vol, veh/h	7	85	13	13	56	7	23	30	12	6	32	4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	100	15	15	66	8	27	35	14	7	38	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.9	7.9	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	7%	17%	14%
Vol Thru, %	46%	81%	74%	76%
Vol Right, %	18%	12%	9%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	105	76	42
LT Vol	23	7	13	6
Through Vol	30	85	56	32
RT Vol	12	13	7	4
Lane Flow Rate	76	124	89	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.094	0.147	0.108	0.061
Departure Headway (Hd)	4.426	4.271	4.332	4.468
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	812	845	830	803
Service Time	2.441	2.271	2.346	2.484
HCM Lane V/C Ratio	0.094	0.147	0.107	0.061
HCM Control Delay	7.9	8	7.9	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.4	0.2

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	12	87	3	3	53	2	4	22	0	4	27	17
Future Vol, veh/h	12	87	3	3	53	2	4	22	0	4	27	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	100	3	3	61	2	5	25	0	5	31	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	118	86	41	138	96	25	51	0	0	25	0	0
Stage 1	51	51	-	35	35	-	-	-	-	-	-	-
Stage 2	67	35	-	103	61	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	858	804	1030	833	794	1051	1555	-	-	1589	-	-
Stage 1	962	852	-	981	866	-	-	-	-	-	-	-
Stage 2	943	866	-	903	844	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	802	799	1030	747	789	1051	1555	-	-	1589	-	-
Mov Cap-2 Maneuver	802	799	-	747	789	-	-	-	-	-	-	-
Stage 1	959	849	-	978	863	-	-	-	-	-	-	-
Stage 2	872	863	-	792	841	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.9	1.1	0.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	805	794	1589	-	-
HCM Lane V/C Ratio	0.003	-	-	0.146	0.084	0.003	-	-
HCM Control Delay (s)	7.3	0	-	10.2	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.3	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	1	21	0	27	178	13	0	8	5	11	42	10
Future Vol, veh/h	1	21	0	27	178	13	0	8	5	11	42	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	28	0	36	234	17	0	11	7	14	55	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	251	0	0	28	0	0	379	353	28	354	345	243
Stage 1	-	-	-	-	-	-	30	30	-	315	315	-
Stage 2	-	-	-	-	-	-	349	323	-	39	30	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1314	-	-	1585	-	-	579	572	1047	601	578	796
Stage 1	-	-	-	-	-	-	987	870	-	696	656	-
Stage 2	-	-	-	-	-	-	667	650	-	976	870	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1314	-	-	1585	-	-	516	557	1047	576	562	796
Mov Cap-2 Maneuver	-	-	-	-	-	-	516	557	-	576	562	-
Stage 1	-	-	-	-	-	-	986	869	-	695	639	-
Stage 2	-	-	-	-	-	-	584	633	-	957	869	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.9	10.4	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	679	1314	-	-	1585	-	-	592
HCM Lane V/C Ratio	0.025	0.001	-	-	0.022	-	-	0.14
HCM Control Delay (s)	10.4	7.7	0	-	7.3	0	-	12.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.5

5: S Elm Ave & W Central Ave

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	14	94	14	52	64	39	7	92	25	43	141	11
Future Vol, veh/h	14	94	14	52	64	39	7	92	25	43	141	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	103	15	57	70	43	8	101	27	47	155	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	442	399	161	445	392	115	167	0	0	128	0	0
Stage 1	255	255	-	131	131	-	-	-	-	-	-	-
Stage 2	187	144	-	314	261	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	526	539	884	523	544	937	1411	-	-	1458	-	-
Stage 1	749	696	-	873	788	-	-	-	-	-	-	-
Stage 2	815	778	-	697	692	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	438	519	884	423	523	937	1411	-	-	1458	-	-
Mov Cap-2 Maneuver	438	519	-	423	523	-	-	-	-	-	-	-
Stage 1	745	674	-	868	783	-	-	-	-	-	-	-
Stage 2	704	773	-	561	670	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	14.7	0.4	1.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1411	-	-	533	540	1458	-	-
HCM Lane V/C Ratio	0.005	-	-	0.252	0.315	0.032	-	-
HCM Control Delay (s)	7.6	-	-	14	14.7	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1	1.3	0.1	-	-

Intersection	
Intersection Delay, s/veh	16.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	62	238	68	42	223	72	28	70	10	63	115	49
Future Vol, veh/h	62	238	68	42	223	72	28	70	10	63	115	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	259	74	46	242	78	30	76	11	68	125	53
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	18.6	16.9	11.8	14.2
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	17%	12%	28%
Vol Thru, %	65%	65%	66%	51%
Vol Right, %	9%	18%	21%	22%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	368	337	227
LT Vol	28	62	42	63
Through Vol	70	238	223	115
RT Vol	10	68	72	49
Lane Flow Rate	117	400	366	247
Geometry Grp	1	1	1	1
Degree of Util (X)	0.221	0.642	0.591	0.435
Departure Headway (Hd)	6.775	5.777	5.809	6.344
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	528	628	623	567
Service Time	4.84	3.791	3.826	4.397
HCM Lane V/C Ratio	0.222	0.637	0.587	0.436
HCM Control Delay	11.8	18.6	16.9	14.2
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.8	4.6	3.9	2.2

Intersection	
Intersection Delay, s/veh	72.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥		↰	↑	↱
Traffic Vol, veh/h	83	464	83	10	260	41	28	11	7	122	56	122
Future Vol, veh/h	83	464	83	10	260	41	28	11	7	122	56	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	504	90	11	283	45	30	12	8	133	61	133
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	3	1	1
HCM Control Delay	131.6	20.3	12.9	13
HCM LOS	F	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	61%	13%	3%	100%	0%	0%
Vol Thru, %	24%	74%	84%	0%	100%	0%
Vol Right, %	15%	13%	13%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	630	311	122	56	122
LT Vol	28	83	10	122	0	0
Through Vol	11	464	260	0	56	0
RT Vol	7	83	41	0	0	122
Lane Flow Rate	50	685	338	133	61	133
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.115	1.209	0.619	0.289	0.124	0.245
Departure Headway (Hd)	8.989	6.358	6.95	8.366	7.85	7.127
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	401	575	524	432	460	507
Service Time	6.689	4.104	4.65	6.066	5.55	4.827
HCM Lane V/C Ratio	0.125	1.191	0.645	0.308	0.133	0.262
HCM Control Delay	12.9	131.6	20.3	14.4	11.7	12.1
HCM Lane LOS	B	F	C	B	B	B
HCM 95th-tile Q	0.4	24.9	4.2	1.2	0.4	1

Intersection	
Intersection Delay, s/veh	79.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	99	563	53	87	251	29	20	94	59	21	54	16
Future Vol, veh/h	99	563	53	87	251	29	20	94	59	21	54	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	108	612	58	95	273	32	22	102	64	23	59	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	134.2	21.1	14.4	12.8
HCM LOS	F	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	14%	24%	23%
Vol Thru, %	54%	79%	68%	59%
Vol Right, %	34%	7%	8%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	173	715	367	91
LT Vol	20	99	87	21
Through Vol	94	563	251	54
RT Vol	59	53	29	16
Lane Flow Rate	188	777	399	99
Geometry Grp	1	1	1	1
Degree of Util (X)	0.357	1.223	0.665	0.2
Departure Headway (Hd)	7.374	5.665	6.377	7.882
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	491	637	570	458
Service Time	5.374	3.721	4.377	5.882
HCM Lane V/C Ratio	0.383	1.22	0.7	0.216
HCM Control Delay	14.4	134.2	21.1	12.8
HCM Lane LOS	B	F	C	B
HCM 95th-tile Q	1.6	27.9	4.9	0.7

Intersection	
Int Delay, s/veh	16.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	8	285	56	189	239	36	25	5	168	60	15	13
Future Vol, veh/h	8	285	56	189	239	36	25	5	168	60	15	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	331	65	220	278	42	29	6	195	70	17	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	320	0	0	396	0	0	1137	1142	364	1221	1153	299
Stage 1	-	-	-	-	-	-	382	382	-	739	739	-
Stage 2	-	-	-	-	-	-	755	760	-	482	414	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1240	-	-	1163	-	-	179	200	681	157	197	741
Stage 1	-	-	-	-	-	-	640	613	-	409	424	-
Stage 2	-	-	-	-	-	-	401	414	-	565	593	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1240	-	-	1163	-	-	131	152	681	89	150	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	152	-	89	150	-
Stage 1	-	-	-	-	-	-	634	607	-	405	326	-
Stage 2	-	-	-	-	-	-	286	318	-	395	588	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	3.6	23.4	137.2
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	421	1240	-	-	1163	-	-	111
HCM Lane V/C Ratio	0.547	0.008	-	-	0.189	-	-	0.922
HCM Control Delay (s)	23.4	7.9	0	-	8.8	0	-	137.2
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	3.2	0	-	-	0.7	-	-	5.7

Intersection	
Int Delay, s/veh	89.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱			↰↱			✣			✣	
Traffic Vol, veh/h	115	391	2	0	275	96	2	1	1	189	3	248
Future Vol, veh/h	115	391	2	0	275	96	2	1	1	189	3	248
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	410	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	139	471	2	0	331	116	2	1	1	228	4	299

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	447	0	0	473	0	0	918	1197	238	904	1140	224
Stage 1	-	-	-	-	-	-	750	750	-	389	389	-
Stage 2	-	-	-	-	-	-	168	447	-	515	751	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1110	-	-	1085	-	-	227	185	763	232	200	779
Stage 1	-	-	-	-	-	-	369	417	-	606	607	-
Stage 2	-	-	-	-	-	-	817	572	-	511	416	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1110	-	-	1085	-	-	125	162	762	~ 208	175	779
Mov Cap-2 Maneuver	-	-	-	-	-	-	125	162	-	~ 208	175	-
Stage 1	-	-	-	-	-	-	323	365	-	530	607	-
Stage 2	-	-	-	-	-	-	501	572	-	444	364	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	26.8	266.3
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	170	1110	-	-	1085	-	-	354
HCM Lane V/C Ratio	0.028	0.125	-	-	-	-	-	1.498
HCM Control Delay (s)	26.8	8.7	-	-	0	-	-	266.3
HCM Lane LOS	D	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0	-	-	28.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	45	209	12	9	98	18	18	204	30	59	99	52
Future Vol, veh/h	45	209	12	9	98	18	18	204	30	59	99	52
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	225	13	10	105	19	19	219	32	63	106	56
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.9	10.4	12.3	11.5
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	17%	7%	28%
Vol Thru, %	81%	79%	78%	47%
Vol Right, %	12%	5%	14%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	266	125	210
LT Vol	18	45	9	59
Through Vol	204	209	98	99
RT Vol	30	12	18	52
Lane Flow Rate	271	286	134	226
Geometry Grp	1	1	1	1
Degree of Util (X)	0.411	0.441	0.215	0.345
Departure Headway (Hd)	5.461	5.552	5.754	5.503
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	656	646	621	650
Service Time	3.514	3.604	3.818	3.558
HCM Lane V/C Ratio	0.413	0.443	0.216	0.348
HCM Control Delay	12.3	12.9	10.4	11.5
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2	2.3	0.8	1.5

Intersection	
Int Delay, s/veh	626.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			✥			✥	
Traffic Vol, veh/h	309	1474	0	2	1356	24	0	0	0	8	0	500
Future Vol, veh/h	309	1474	0	2	1356	24	0	0	0	8	0	500
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	50	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	351	1675	0	2	1541	27	0	0	0	9	0	568

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1568	0	0	1675	0	0	3152	3949	838	3099	3936	784
Stage 1	-	-	-	-	-	-	2377	2377	-	1559	1559	-
Stage 2	-	-	-	-	-	-	775	1572	-	1540	2377	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	417	-	-	379	-	-	4	3	309	~ 5	3	~ 336
Stage 1	-	-	-	-	-	-	35	66	-	117	172	-
Stage 2	-	-	-	-	-	-	357	169	-	121	66	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	417	-	-	379	-	-	-	0	309	~ 1	0	~ 336
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	~ 1	0	-
Stage 1	-	-	-	-	-	-	6	10	-	18	171	-
Stage 2	-	-	-	-	-	-	-	168	-	19	10	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.9	0	0	$ 4504.6
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	417	-	-	379	-	-	54
HCM Lane V/C Ratio	-	0.842	-	-	0.006	-	-	10.69
HCM Control Delay (s)	0	45.4	-	-	14.6	-	-	$ 4504.6
HCM Lane LOS	A	E	-	-	B	-	-	F
HCM 95th %tile Q(veh)	-	8.1	-	-	0	-	-	68.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

13: S Willow Ave & E Jensen Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑↱		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	170	1228	46	25	777	60	105	130	88	39	24	68
Future Volume (veh/h)	170	1228	46	25	777	60	105	130	88	39	24	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	1279	48	26	809	62	109	135	92	41	25	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	1965	74	81	1507	115	180	177	121	112	248	211
Arrive On Green	0.12	0.39	0.39	0.05	0.31	0.31	0.10	0.17	0.17	0.06	0.13	0.13
Sat Flow, veh/h	1781	5051	190	1781	4839	369	1781	1037	706	1781	1870	1585
Grp Volume(v), veh/h	177	862	465	26	568	303	109	0	227	41	25	71
Grp Sat Flow(s),veh/h/ln	1781	1702	1836	1781	1702	1804	1781	0	1743	1781	1870	1585
Q Serve(g_s), s	6.7	14.4	14.4	1.0	9.6	9.7	4.1	0.0	8.6	1.5	0.8	2.8
Cycle Q Clear(g_c), s	6.7	14.4	14.4	1.0	9.6	9.7	4.1	0.0	8.6	1.5	0.8	2.8
Prop In Lane	1.00		0.10	1.00		0.20	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	219	1324	714	81	1060	562	180	0	298	112	248	211
V/C Ratio(X)	0.81	0.65	0.65	0.32	0.54	0.54	0.61	0.00	0.76	0.37	0.10	0.34
Avail Cap(c_a), veh/h	384	2005	1081	384	2005	1062	384	0	501	384	537	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	17.4	17.4	32.2	19.8	19.8	30.0	0.0	27.5	31.3	26.5	27.4
Incr Delay (d2), s/veh	2.7	0.7	1.3	0.8	0.5	1.0	1.2	0.0	6.5	0.7	0.5	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.6	5.1	0.4	3.2	3.5	1.7	0.0	4.0	0.7	0.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.4	18.1	18.7	33.0	20.3	20.8	31.2	0.0	34.0	32.0	27.0	29.8
LnGrp LOS	C	B	B	C	C	C	C	A	C	C	C	C
Approach Vol, veh/h		1504			897			336			137	
Approach Delay, s/veh		19.9			20.9			33.1			30.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	15.7	14.3	27.7	9.3	18.4	8.9	33.1
Change Period (Y+Rc), s	4.9	6.5	5.7	6.0	4.9	6.5	5.7	6.0
Max Green Setting (Gmax), s	15.0	20.0	15.0	41.0	15.0	20.0	15.0	41.0
Max Q Clear Time (g_c+I1), s	6.1	4.8	8.7	11.7	3.5	10.6	3.0	16.4
Green Ext Time (p_c), s	0.1	0.5	0.1	6.8	0.0	1.3	0.0	10.7

Intersection Summary	
HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

14: S Peach Ave & E Jensen Ave

07/19/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑	↱		✣			✣	
Traffic Volume (veh/h)	251	851	9	17	560	129	8	163	28	123	87	131
Future Volume (veh/h)	251	851	9	17	560	129	8	163	28	123	87	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	264	896	9	18	589	136	8	172	29	129	92	138
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	308	2129	21	59	1035	462	56	464	76	211	141	180
Arrive On Green	0.17	0.41	0.41	0.03	0.29	0.29	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	5213	52	1781	3554	1585	23	1537	251	486	467	595
Grp Volume(v), veh/h	264	585	320	18	589	136	209	0	0	359	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1861	1781	1777	1585	1812	0	0	1549	0	0
Q Serve(g_s), s	10.9	9.3	9.3	0.7	10.7	5.1	0.0	0.0	0.0	8.6	0.0	0.0
Cycle Q Clear(g_c), s	10.9	9.3	9.3	0.7	10.7	5.1	6.9	0.0	0.0	15.5	0.0	0.0
Prop In Lane	1.00		0.03	1.00		1.00	0.04		0.14	0.36		0.38
Lane Grp Cap(c), veh/h	308	1390	760	59	1035	462	596	0	0	532	0	0
V/C Ratio(X)	0.86	0.42	0.42	0.30	0.57	0.29	0.35	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	509	2241	1225	469	2339	1043	1349	0	0	1149	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.5	16.1	16.1	35.9	22.9	20.9	20.9	0.0	0.0	23.6	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.5	0.9	1.1	1.2	0.8	0.7	0.0	0.0	4.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	3.1	3.5	0.3	4.0	1.7	2.7	0.0	0.0	5.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	16.5	16.9	36.9	24.0	21.7	21.6	0.0	0.0	27.7	0.0	0.0
LnGrp LOS	C	B	B	D	C	C	C	A	A	C	A	A
Approach Vol, veh/h		1169			743			209			359	
Approach Delay, s/veh		20.7			23.9			21.6			27.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.7	17.1	29.1		29.7	8.2	38.0				
Change Period (Y+Rc), s		6.8	4.0	7.0		6.8	5.7	7.0				
Max Green Setting (Gmax), s		55.0	21.7	50.0		55.0	20.0	50.0				
Max Q Clear Time (g_c+I1), s		17.5	12.9	12.7		8.9	2.7	11.3				
Green Ext Time (p_c), s		5.4	0.2	9.4		2.3	0.0	12.9				

Intersection Summary			
HCM 6th Ctrl Delay			22.7
HCM 6th LOS			C

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↑	↰↱	
Traffic Vol, veh/h	337	173	156	381	88	150
Future Vol, veh/h	337	173	156	381	88	150
Conflicting Peds, #/hr	0	4	4	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	387	199	179	438	101	172

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	590	0	1287	492
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	796	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	985	-	181	577
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	444	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	981	-	148	574
Mov Cap-2 Maneuver	-	-	-	-	318	-
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	363	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	25.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	442	-	-	981	-
HCM Lane V/C Ratio	0.619	-	-	0.183	-
HCM Control Delay (s)	25.5	-	-	9.5	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	4.1	-	-	0.7	-