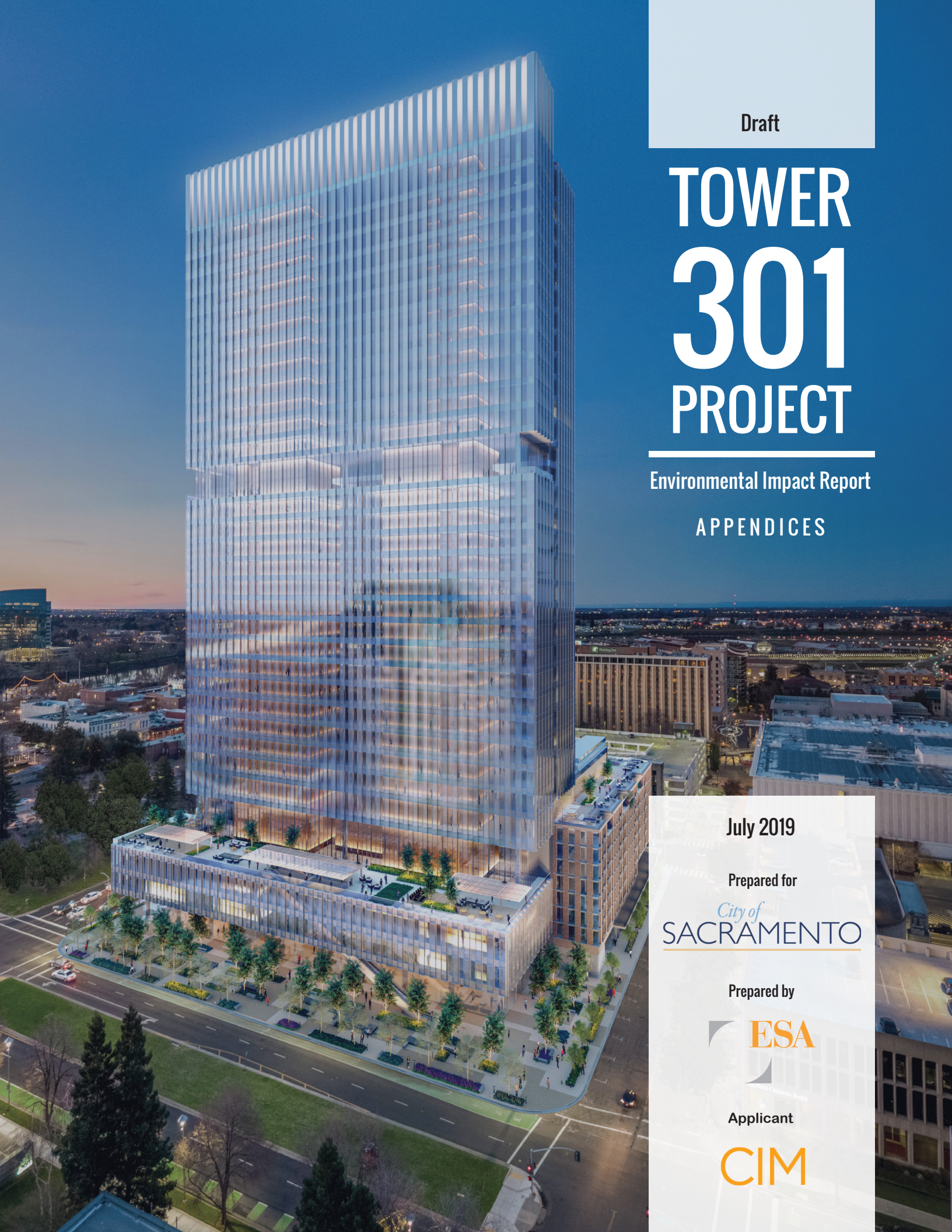


Draft

TOWER 301 PROJECT

Environmental Impact Report

APPENDICES

July 2019

Prepared for

City of SACRAMENTO

Prepared by

ESA

Applicant

CIM

Appendix A
Notice of Preparation

ESA

City of SACRAMENTO
Community Development

300 Richards Blvd., 3rd Floor
Sacramento, CA 95811

Help Line: 916-264-5011
CityofSacramento.org/dsd

DATE: December 19, 2018

TO: Interested Persons

FROM: Ron Bess, Assistant Planner
Community Development Department

RE: **NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING FOR THE TOWER 301 PROJECT (P18-078)**

COMMENT PERIOD

December 19, 2018 – January 25, 2019

SCOPING MEETING

City Hall, 915 I Street

Wednesday, January 9, 2019; 5:30-7:30 p.m.

Responsible agencies and members of the public are invited to attend and provide input on the scope of the EIR. The scoping meeting will be conducted in an open house format. Written comments regarding relevant issues may be submitted at the meeting.

INTRODUCTION

The City of Sacramento (City) is the Lead Agency for preparation of an Environmental Impact Report (EIR) for the proposed Tower 301 project. The EIR to be prepared by the City will evaluate potential significant environmental effects of the proposed Tower 301 project and other actions and transactions associated with the proposed project. Written comments regarding the issues that should be covered in the EIR, including potential alternatives to the proposed Tower 301 project and the scope of the analysis, are invited.

The EIR for the proposed Tower 301 project is being prepared in compliance with the California Environmental Quality Act (CEQA). Under CEQA, upon deciding to prepare an EIR, the City as lead agency must issue a Notice of Preparation (NOP) to inform trustee agencies, responsible agencies, and the public of that decision. The purpose of the NOP is to provide information describing the project and its potential environmental effects to those who may wish to comment regarding the scope and content of the information to be included in the EIR. Agencies should

comment on such information as it relates to their statutory responsibilities in connection with the project.

The EIR will provide an evaluation of potential environmental impacts associated with development of the proposed Tower 301 project. The proposed Tower 301 project description, location, and 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.

PROJECT LOCATION/SETTING

Exhibit 1 (Regional Location Map) shows the location of the project site in the Sacramento region. The Tower 301 project site is a 2.59-acre site located on the north side of Capitol Mall in Downtown Sacramento. The site is bounded by Capitol Mall to the south, 3rd Street to the west, L Street to the north, and 4th Street to the east. Exhibit 2 (Project Location Map) illustrates the proposed project site within Downtown Sacramento.

PROJECT DESCRIPTION

The proposed Tower 301 project is a mixed-use high rise development on a site that was previously developed and entitled for a previous high rise development, for which the foundational elements were constructed before the project was discontinued. The proposed Tower 301 project would construct an approximately 557-foot-tall, 41-story high-rise building that would include office, residential, restaurant, and retail uses. The proposed building structure would be a 31-story tower atop a 10-story podium, with a single sub-grade level. Exhibit 3 shows a conceptual rendering of the proposed structure, as viewed from the southeast. Exhibit 4 shows a conceptual cross-section of the building's east side. As is shown in the exhibits, the podium portion of the structure would be the approximate length and width of the parcel, spanning approximately 294 feet, from north/south, and approximately 317 feet east/west. The podium structure would be set back approximately 90 feet from the center of Capitol Mall. The 31-story tower portion of structure would be situated along an east-west axis atop the podium, with an east-west length of approximately 267 feet and a north-south width of approximately 92 feet. The tower section of the structure would be set back 140 feet from the center of Capitol Mall. The main pedestrian entry to the proposed Tower 301 building would be oriented toward Capitol Mall and centered on the block. The tower section of the building would be primarily dedicated to office uses and have a side-core configuration on the south side of the tower, with elevator and internal circulation areas on the south side of the building, placing the majority of the office space to the north.

The proposed project would include approximately 791,647 square feet (sf) of office uses. Office uses would include lobbies and upper-level amenities. Approximately 24,653 sf of retail uses would be located on the ground floor and surrounding a publicly accessible view deck at approximately the 5th floor and fronting Capitol Mall. One hundred residential units are proposed to wrap around the north and east sides of the podium (96,755 sf). The proposed project would include a resident-only lobby along L Street, and resident amenities would be included in the

building. Approximately 1,304 vehicle parking spaces (536,227 sf) spread across 9 parking levels within the podium structure would be provided for residents and employees. Bicycle parking for residents and employees (approximately 234 bicycle parking spaces) would also be provided.

The project would include vehicle accesses on 3rd Street, L Street and 4th Street. Loading and drop off areas would be located at ground-level within the parking garage. Dedicated sidewalks for pedestrians and access for bicyclists will be provided along the project site perimeter.

ENVIRONMENTAL EFFECTS AND SCOPE OF THE EIR

The EIR will analyze potentially significant impacts that result from implementation of the proposed Tower 301 project.

Pursuant to section 15063 (a) of the CEQA Guidelines, an Initial Study has not been prepared for the proposed project. The EIR will evaluate the full range of environmental issues contemplated for consideration under CEQA and the CEQA Guidelines, including:

- Aesthetics, Light and Glare
- Air 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
- Noise and Vibration
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Growth Inducement
- Urban Decay
- Cumulative Impacts
- Alternatives

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 4:00 p.m. on January 25, 2019. Please include the commenter's full name and address.

Ron Bess, Environmental Planning Services
City of Sacramento Community Development Department
300 Richards Blvd., Third Floor, Sacramento, CA 95811
Tele: (916) 808-8272
E-mail: rbess@cityofsacramento.org

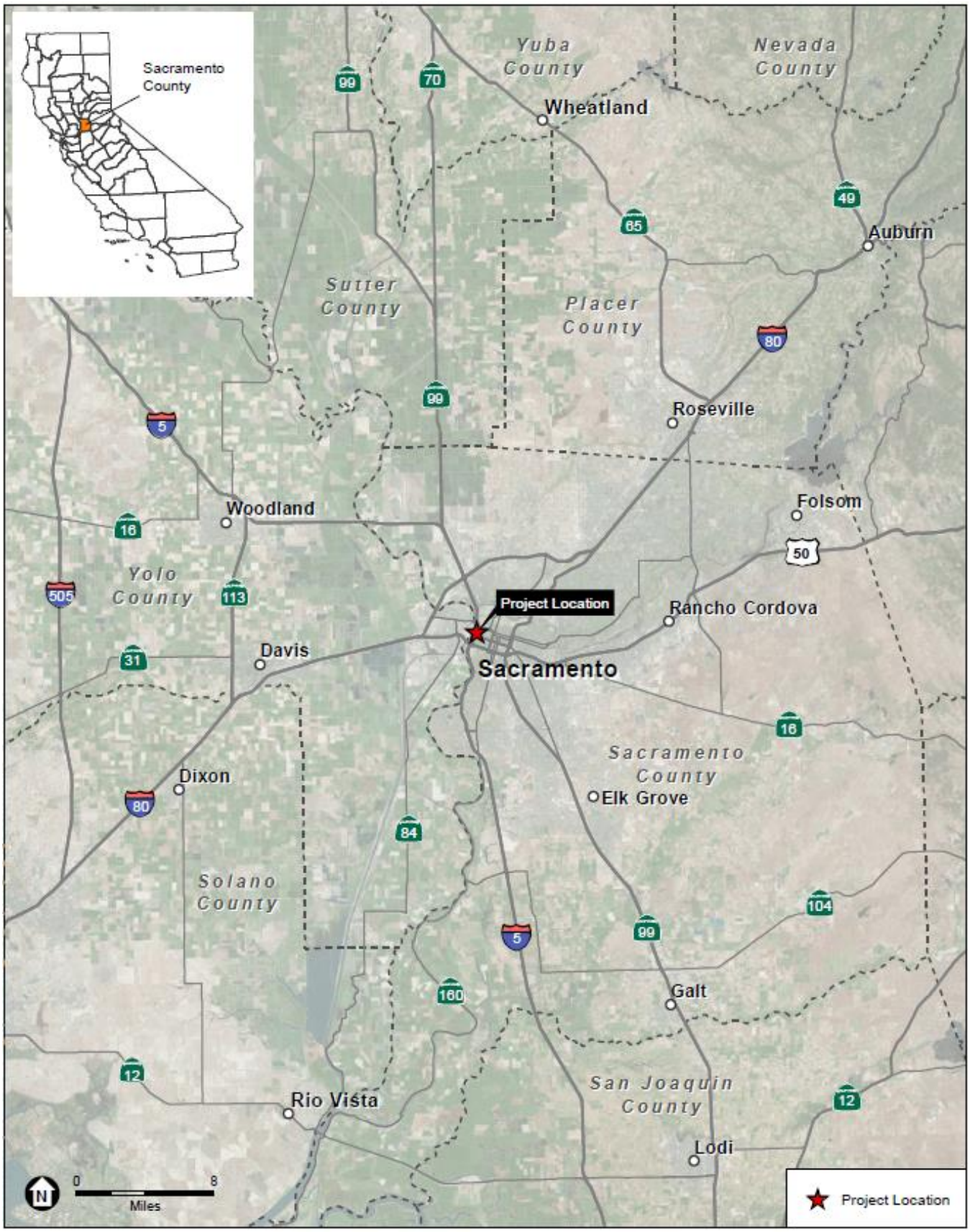
Exhibit 1. Regional Location Map

Exhibit 2. Project Location Map

Exhibit 3. Conceptual Rendering of the Proposed Tower 301 Project

Exhibit 4. Conceptual Cross-section of the Proposed Tower 301 Project

Exhibit 1. Regional Location Map



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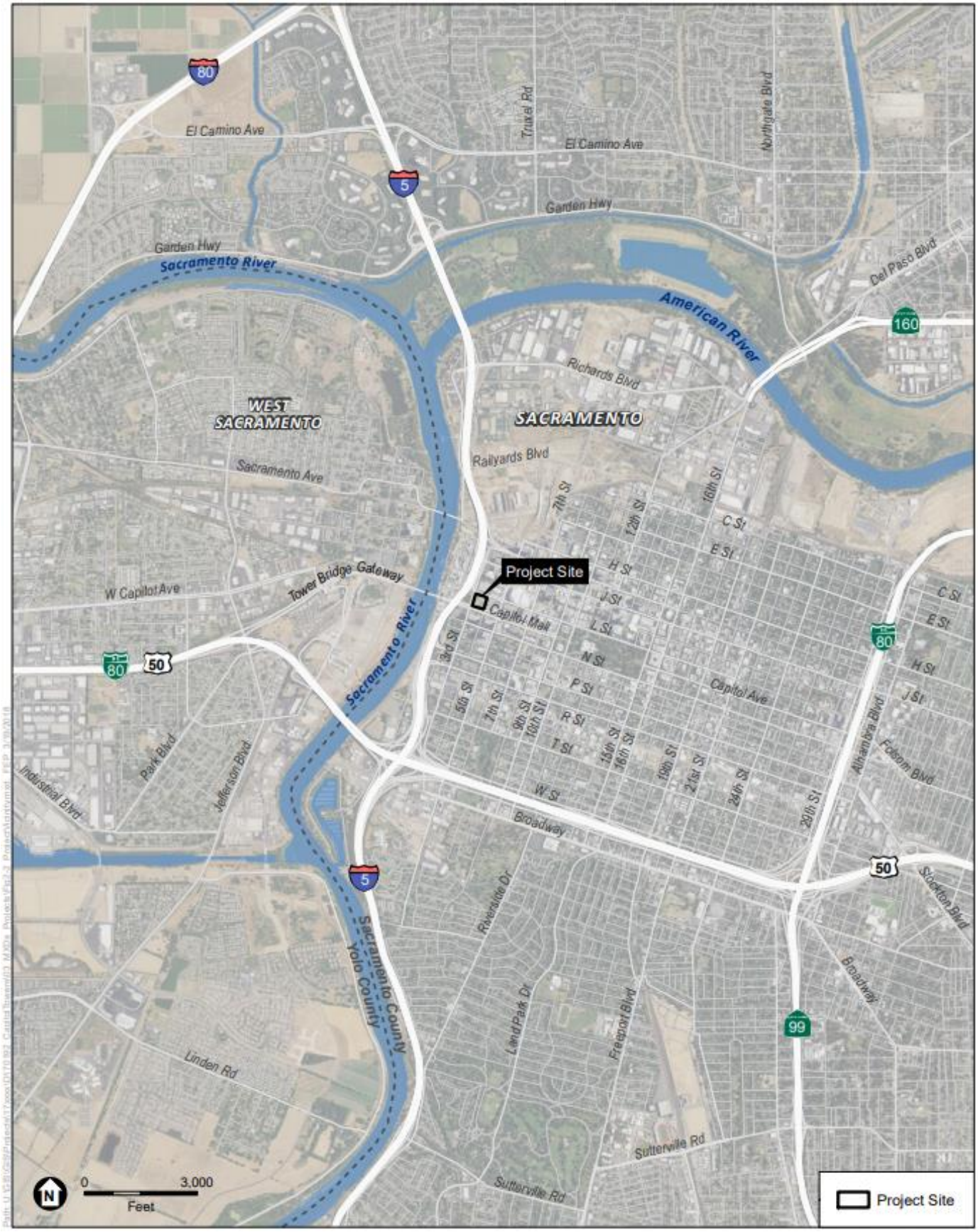


Exhibit 3. Conceptual Rendering of the Proposed Tower 301 Project

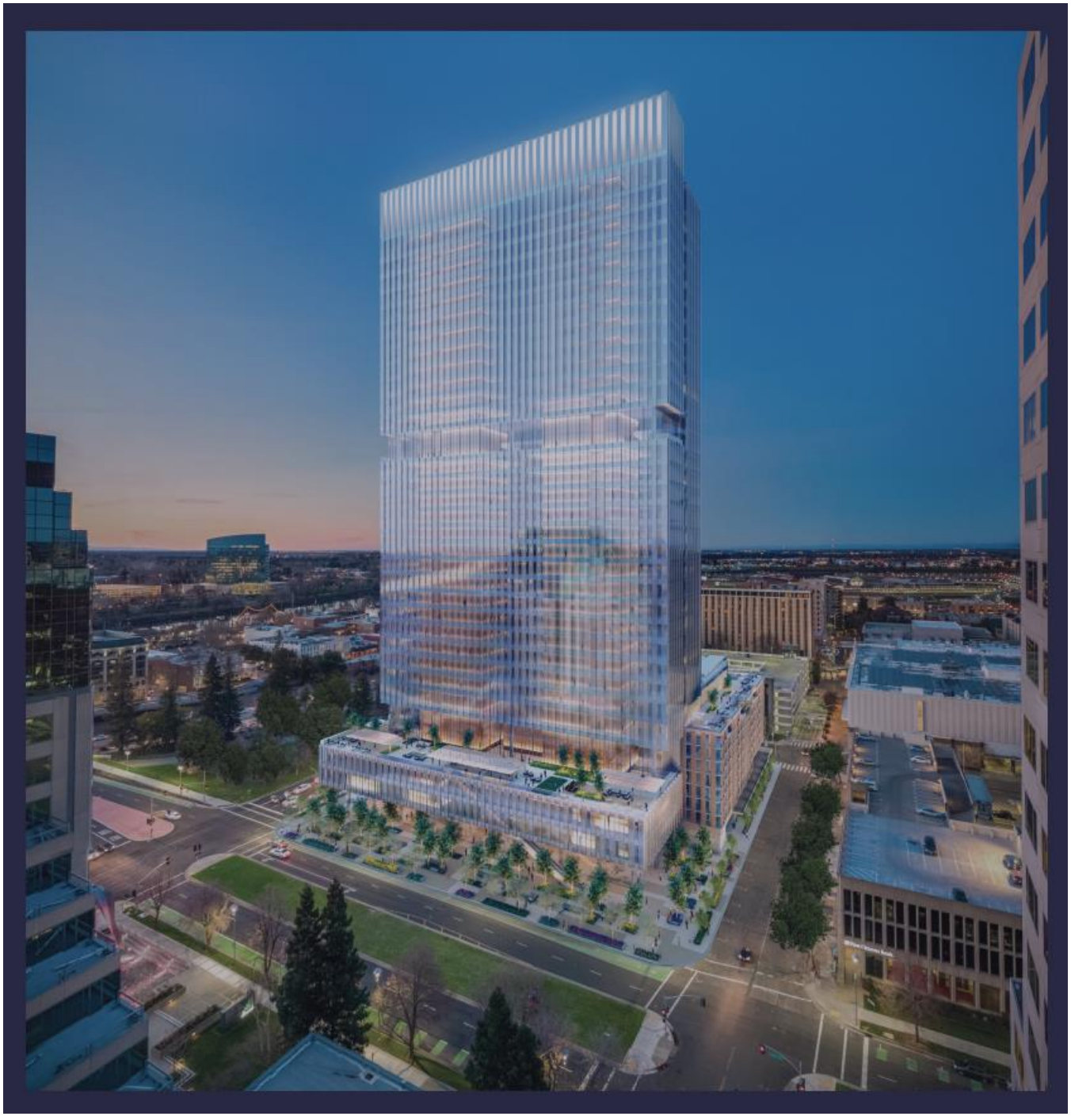
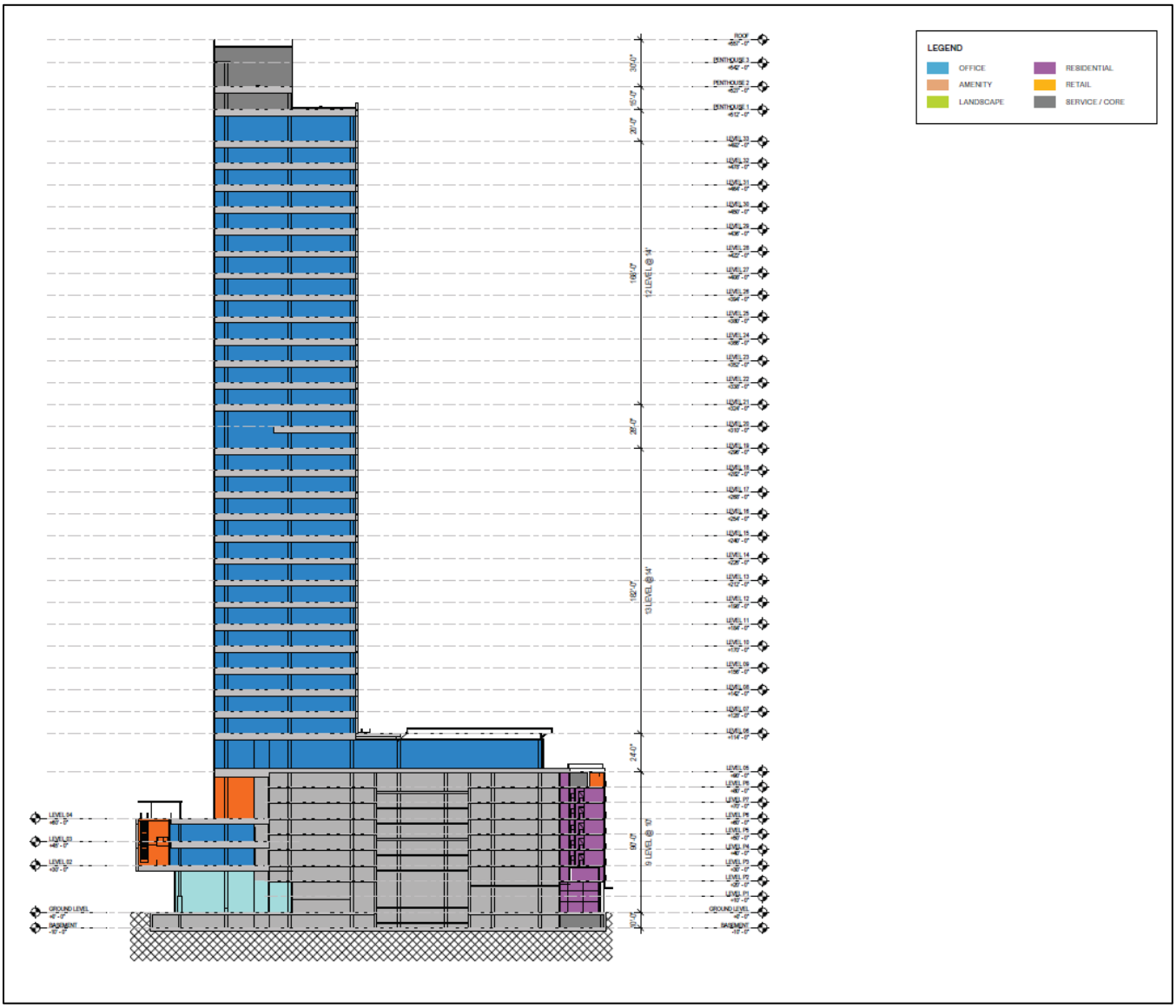


Exhibit 4. Conceptual Cross-section of the Proposed Tower 301 Project



Appendix B
NOP Scoping Comment Letters

ESA

TOWER 301
NOP SCOPING COMMENT LETTERS

	Agency/Person	Date
1.	Pacific Gas & Electric (PG&E)	December 20, 2018
2.	Sacramento Regional County Sanitation District (Regional San)	December 20, 2018
3.	Native American Heritage Commission (NAHC)	December 27, 2018
4.	California Department of Transportation (CalTrans)	January 3, 2019
5.	Sacramento Metropolitan Air Quality Management District (SMAQMD)	January 3, 2019
6.	Lozeau Drury, LLP	January 3, 2019
7.	Sacramento Fire Department (SFD)	January 4, 2019
8.	Sacramento Metropolitan Air Quality Management District (SMAQMD)	January 14, 2019
9.	Central Valley Regional Water Quality Control Board (CVRWQCB)	January 16, 2019
10.	California Department of Fish and Wildlife (CDFW)	January 17, 2019
11.	Sacramento Municipal Utility District (SMUD)	January 25, 2019
12.	Myrna Rudman	March 18, 2019

Pacific Gas and Electric Company

Plan Review Team
Land Management

PGEPlanReview@pge.com

6111 Bollinger Canyon Road 3370A
San Ramon, CA 94583

December 20, 2018

Ron Bess
City of Sacramento
300 Richards Blvd., 3rd Floor
Sacramento, CA 95811

Ref: Gas and Electric Transmission and Distribution

Dear Mr.Bess,

Thank you for submitting P18-078 plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en_US/business/services/building-and-renovation/overview/overview.page.

2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.

3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851filing is required.

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

Sincerely,

Plan Review Team
Land Management

Attachment 1 – Gas Facilities

There could be gas transmission pipelines in this area which would be considered critical facilities for PG&E and a high priority subsurface installation under California law. Care must be taken to ensure safety and accessibility. So, please ensure that if PG&E approves work near gas transmission pipelines it is done in adherence with the below stipulations. Additionally, the following link provides additional information regarding legal requirements under California excavation laws: http://usanorth811.org/wp-content/uploads/2017/05/CA-LAW-English.pdf

1. Standby Inspection: A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity that comes within 10 feet of the gas pipeline. This includes all grading, trenching, substructure depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection can be coordinated through the Underground Service Alert (USA) service at 811. A minimum notice of 48 hours is required. Ensure the USA markings and notifications are maintained throughout the duration of your work.

2. Access: At any time, PG&E may need to access, excavate, and perform work on the gas pipeline. Any construction equipment, materials, or spoils may need to be removed upon notice. Any temporary construction fencing installed within PG&E's easement would also need to be capable of being removed at any time upon notice. Any plans to cut temporary slopes exceeding a 1:4 grade within 10 feet of a gas transmission pipeline need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

3. Wheel Loads: To prevent damage to the buried gas pipeline, there are weight limits that must be enforced whenever any equipment gets within 10 feet of traversing the pipe.

Ensure a list of the axle weights of all equipment being used is available for PG&E's Standby Inspector. To confirm the depth of cover, the pipeline may need to be potholed by hand in a few areas.

Due to the complex variability of tracked equipment, vibratory compaction equipment, and cranes, PG&E must evaluate those items on a case-by-case basis prior to use over the gas pipeline (provide a list of any proposed equipment of this type noting model numbers and specific attachments).

No equipment may be set up over the gas pipeline while operating. Ensure crane outriggers are at least 10 feet from the centerline of the gas pipeline. Transport trucks must not be parked over the gas pipeline while being loaded or unloaded.

4. Grading: PG&E requires a minimum of 36 inches of cover over gas pipelines (or existing grade if less) and a maximum of 7 feet of cover at all locations. The graded surface cannot exceed a cross slope of 1:4.

5. Excavating: Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 12 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [24/2 + 24 + 36/2 = 54] away, or be entirely dug by hand.)

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 12 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible (90° +/- 15°). All utility lines crossing the gas pipeline must have a minimum of 12 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line ‘kicker blocks’, storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E’s ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4’) in height at maturity may be planted within the easement area.

11. Cathodic Protection: PG&E pipelines are protected from corrosion with an “Impressed Current” cathodic protection system. Any proposed facilities, such as metal conduit, pipes,

service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

Attachment 2 – Electric Facilities

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as "**RESTRICTED USE AREA – NO BUILDING."**

2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.

3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&'s facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.

4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), trees and shrubs are limited to those varieties that do not exceed 15 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.

5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.

6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.

7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.

8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for

proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (https://www.dir.ca.gov/Title8/sb5g2.html), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.

Tom Buford

From: PGE Plan Review <PGEPlanReview@pge.com>
Sent: Thursday, December 20, 2018 7:23 AM
To: Tom Buford
Subject: RE: Notice of Preparation: Tower 301 Project
Attachments: Initial_Response_Letter_18_12_20.pdf

Dear Mr. Bess,

Thank you for submitting the P18-078 plans. The PG&E Plan Review Team is currently reviewing the information provided. Should we find the possibility this project may interfere with our facilities, we will respond to you with project specific comments on or prior to the provided deadline. Attached is general information regarding PG&E facilities for your reference. **If you do not hear from us, within 45 days, you can assume we have no comments at this time.**
This email and attachment does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. If there are subsequent modifications made to your design, we ask that you resubmit the plans to the email address listed below.

If you have any questions regarding our response, please contact the PG&E Plan Review Team at (877) 259-8314 or pgeplanreview@pge.com.

Thank you,
Plan Review Team
6111 Bollinger Canyon Rd., 3rd Floor
Mail Code BR1Y3A
San Ramon, CA 94583
pgeplanreview@pge.com

*****This is a notification email only. Please do not reply to this message.***

From: Tom Buford <TBuford@cityofsacramento.org>
Sent: Wednesday, December 19, 2018 3:57 PM
To: Tom Buford <TBuford@cityofsacramento.org>
Subject: Notice of Preparation: Tower 301 Project

*******CAUTION: This email was sent from an EXTERNAL source. Think before clicking links or opening attachments.*******
Please see the attached Notice of Preparation for the Tower 301 project located at 301 Capitol Mall in Sacramento.

Closing date for written comments is January 25, 2019. A scoping meeting will be held at City Hall on January 9. 2019 from 5:30 p.m. to 7:30 p.m.

If you have any questions regarding the CEQA review please contact Ron Bess, Assistant Planner at (916) 808-8272, email at rbess@cityofsacramento.org.

Tom Buford, Manager
Environmental Planning Services
(916) 799-1531

Pacific Gas and Electric Company

Plan Review Team
Land Management

PGEPlanReview@pge.com

6111 Bollinger Canyon Road 3370A
San Ramon, CA 94583

December 20, 2018

Ron Bess
City of Sacramento
300 Richards Blvd., 3rd Floor
Sacramento, CA 95811

Ref: Gas and Electric Transmission and Distribution

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Plan Review Team
Land Management

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5. Excavating: Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 12 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [24/2 + 24 + 36/2 = 54] away, or be entirely dug by hand.)

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 12 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible (90° +/- 15°). All utility lines crossing the gas pipeline must have a minimum of 12 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line ‘kicker blocks’, storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E’s ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4’) in height at maturity may be planted within the easement area.

11. Cathodic Protection: PG&E pipelines are protected from corrosion with an “Impressed Current” cathodic protection system. Any proposed facilities, such as metal conduit, pipes,

service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

Attachment 2 – Electric Facilities

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as "**RESTRICTED USE AREA – NO BUILDING."**

2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.

3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&'s facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.

4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), trees and shrubs are limited to those varieties that do not exceed 15 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.

5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.

6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.

7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.

8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for

proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (https://www.dir.ca.gov/Title8/sb5g2.html), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.

REGIONALSAN
TAKING THE WASTE OUT OF WATER
Sacramento Regional County Sanitation District

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December 20, 2018

Mr. Ron Bess
City of Sacramento – Community Development Department
300 Richards Boulevard, 3rd Floor
Sacramento CA 95811

Subject: Notice of Preparation of an Environmental Impact Report for the Tower 301 Project (P18-030)

Dear Mr. Bess,

Sacramento Regional County Sanitation District (Regional San) has the following comments pertaining to the Notice of Preparation of an Environmental Impact Report for the Tower 301 project.

The proposed project is located at 301 Capitol Mall on 2.39-acre site that was previously developed and entitled for a previous high-rise development. The proposed project would construct an approximately 557-foot-tall, 41-story high-rise building that would include office, residential, restaurant, and retail uses.

Regional San is not a land-use authority. Projects identified within Regional San planning documents are based on growth projections provided by land-use authorities. Sewer studies may need to be completed to assess the impacts of any proposed project that has the potential to increase flow demands. Onsite and offsite impacts associated with constructing sanitary sewer facilities to provide service to the subject project site should be included in this environmental impact report.

Customers receiving service from Regional San are responsible for rates and fees outlined within the latest Regional San ordinances. Fees for connecting to the sewer system are set up to recover the capital investment of sewer treatment facilities that provides service to new customers. The Regional San ordinance is located on the Regional San website at: www.regionalsan.com.

Local sanitary sewer service for the proposed project site will be provided by the City of Sacramento's (City) local sewer collection system. Ultimate conveyance of wastewater from the City collection system to the Sacramento Regional Wastewater Treatment Plant (SRWTP) for treatment and disposal will be provided via Sump 2/2A and the Regional San City Interceptor system. Cumulative impacts of the proposed project will need to be quantified by the project proponents to ensure that wet and dry weather capacity limitations within Sump 2/2A and the City Interceptor are not exceeded.

On March 13, 2013, Regional San approved the Wastewater Operating Agreement between Regional San and the City. The following limitations are outlined in the subject Agreement:

Service Area	*Flow Rate (MGD)*
Combined Flows from Sump 2 and Sump 2A	*60*
Combined flows from Sumps 2, 2A, 21, 55, and 119	*98*
Total to City Interceptor of combined flows from Sumps 2, 2A, 21, 55, 119, and five trunk connections	*108.5*

The SRWTP provides secondary treatment using an activated sludge process. Incoming wastewater flows through mechanical bar screens through a primary sedimentation process. This allows most of the heavy organic solids to settle to the bottom of the tanks. These solids are later delivered to the digesters. Next, oxygen is added to the wastewater to grow naturally occurring microscopic organisms, which consume the organic particles in the wastewater. These organisms eventually settle on the bottom of the secondary clarifiers. Clean water pours off the top of these clarifiers and is chlorinated, removing any pathogens or other harmful organisms that may still exist. Chlorine disinfection occurs while the wastewater travels through a two mile "outfall" pipeline to the Sacramento River, near the town of Freeport, California. Before entering the river, sulfur dioxide is added to neutralize the chlorine. The design of the SRWTP and collection system was balanced to have SRWTP facilities accommodate some of the wet weather flows while minimizing idle SRWTP facilities during dry weather. The SRWTP was designed to accommodate some wet weather flows while the storage basins and interceptors were designed to accommodate the remaining wet weather flows.

A NPDES Discharge Permit was issued to Regional San by the Central Valley Regional Water Quality Control Board (Water Board) in December 2010. In adopting the new Discharge Permit, the Water Board required Regional San to meet significantly more restrictive treatment levels over its current levels. Regional San believed that many of these new conditions go beyond what is reasonable and necessary to protect the environment, and appealed the permit decision to the State Water Resources Control Board (State Board). In December 2012, the State Board issued an Order that effectively upheld the Permit. As a result, Regional San filed litigation in California Superior Court. Regional San and the Water Board agreed to a partial settlement in October 2013 to address several issues and a final settlement on the remaining issues were heard by the Water Board in August 2014. Regional San began the necessary activities, studies and projects to meet the permit conditions. The new treatment facilities to achieve the permit and settlement requirements must be completed by May 2021 for ammonia and nitrate and May 2023 for the pathogen requirements

Regional San currently owns and operates a 5-mgd Water Reclamation (WRF) that has been producing Title 22 tertiary recycled since 2003. The WRF is located within the SRWTP property in Elk Grove. A portion of the recycled water is used by Regional San at the SRWTP and the rest is wholesaled to the Sacramento County Water Agency (SCWA).

SCWA retails the recycled water, primarily for landscape irrigation use, to select customers in the City of Elk Grove. It should be noted that Regional San currently does not have any planned facilities that could provide recycled water to the proposed project or its vicinity. Additionally, Regional San is not a water purveyor and any potential use of recycled water in the project area must be coordinated between the key stakeholders, e.g. land use jurisdictions, water purveyors, users, and the recycled water producers.

If you have any questions regarding this letter, please feel free to contact me at (916) 876-6104 or by email: armstrongro@sacsewer.com.

Sincerely,

Robb Armstrong

Robb Armstrong
Regional San Development Services & Plan Check

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
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December 27, 2018

Ron Bess
City of Sacramento
300 Richards Boulevard 3rd Floor
Sacramento, CA 95811

RE: SCH# 2018122045 Tower 301 Project (P18-078), Sacramento County

Dear Mr. Bess:

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: Sharaya.Souza@nahc.ca.gov.

Sincerely,

for

Sharaya Souza
Staff Services Analyst

cc: State Clearinghouse

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Making Conservation a California Way of Life.

January 3, 2019

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03-SAC-5 PM 23.48
P18-078

Matthew Sites
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Community Development Department
City of Sacramento
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Ron Bess
Environmental Planning Services
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300 Richards Boulevard, 3rd Floor
Sacramento, CA 95811

Tower 301 – Notice of Preparation of an Environmental Impact Report and Site Plan & Design Review

Dear Mr. Sites and Mr. Bess:

Thank you for including the California Department of Transportation (Caltrans) in the review process for the Tower 301 project. Caltrans' new mission, vision, and goals signal a modernization of our approach to California's transportation system. We review this local development for impacts to the State Highway System (SHS) in keeping with our mission, vision and goals for sustainability/livability/economy, and safety/heath. We provide these comments consistent with the state's mobility goals that support a vibrant economy and build communities.

Located at the northeast corner of Capitol Mall and 3rd Street in the City of Sacramento, the proposed project is intended to be Sacramento's tallest building, adjacent to the northbound Interstate 5 (I-5) on-ramp at 3rd and L Street.

The proposed project is a mixed use, high rise project comprised of office, residential, retail uses, and parking. The project proposes approximately 791,647 square feet (sq. ft.) of office space; 96,755 sq. ft. divided between 100 residential units primarily made up of studio and 1-bedroom units; 24,653 sq. ft. in retail space; and 536,227 sq. ft. of parking for both vehicles and bicycles over nine levels with 1,304 parking spaces for vehicles and 234 spaces for bicycles.

Based on the Site Plan & Design Review received on December 3, 2018, and the Notice of Preparation of an Environmental Impact Report review received on December 19, 2018, Caltrans provides the following comments:

Forecasting / Freeway Operations

The proposed project is an urban infill project as it is located close to transit, bike, and pedestrian facilities, which aids the project in having low vehicle miles traveled (VMT) generation rates when compared to other non-infill projects. However, based on the project's footprint size, the project is still projected to generate a significant amount of traffic that will impact nearby I-5 and U.S. Route 50 (US-50) that currently operate at a Level of Service (LOS) F during AM and PM peak hours. According to the Institute of Transportation Engineers (ITE) Trip Generations Manual, Caltrans anticipates the project to generate approximately 1,000 trips during the AM and PM peak hours. Based on these factors, Caltrans recommends a fair share contribution to the I-5 Subregional Corridor Mitigation Program (SCMP) to offset the anticipated impacts.

I-5 Subregional Corridor Mitigation Program

The I-5 SCMP is a voluntary impact fee program for new development within the I-5, State Route 99 (SR 99), State Route 51 (SR 51), and US-50 corridors between the cities of Elk Grove, Sacramento, and West Sacramento. The I-5 SCMP was developed with each city in collaboration with Caltrans for promoting smart growth, reducing daily congested VMT and delay on the SHS, and reduce daily VMT on the regional transportation system through funding an array of projects that includes all modes.

Through the I-5 SCMP, impact fee contributions can be made in lieu of conducting a detailed traffic impact study for freeway mainline impacts, including freeway mainline analysis, "merge and diverge" analysis and weaving analysis on the mainline under either existing and cumulative conditions. If the applicant chooses to contribute towards the I-5 SCMP, the applicant would still be required to analyze intersection impacts, off-ramp traffic back-up onto the freeway mainline, and any significant safety issues near the intersection.

Multi-Modal Transportation Impact Analysis

If the applicant elects not to contribute towards the I-5 SCMP, then a multi-modal transportation impact analysis should be completed, along with mitigation measures, to lessen impacts to acceptable levels that are consistent with local and regional plans.

A multi-modal transportation impact analysis for this project should include an analysis of VMT generated by the project with a trip distribution diagram and analyze and identify any potential safety issues for all modes of transportation. The scope of the multi-modal analysis should include

- nearby I-5 and US-50 mainline, ramps, and ramp intersections;
- trips generated and distributed from the project site;
- existing traffic conditions without the project;
- existing traffic conditions with the project; and
- future cumulative traffic conditions without and with the project.

Mitigation proposed in the analysis should include Transportation Demand Management and Access Management projects and strategies that increase multimodal access and reduce VMT on the SHS.

Geotechnical Analysis

The project as proposed shares with adjacent I-5 the same general geotechnical characteristics including soil, bedrock and water table. The location has a history of flood events associated with increased rainfall and intrusive water from the nearby Sacramento River. For the project hydrological and geotechnical analyses, please consider the effects of climate change with regard to soil and bedrock stability, seismicity, potential for subsidence, lateral spreading, soil liquefaction and the building's ability to withstand geotechnical events. We are specifically interested in resiliency for the built environment including and around state highways under circumstances of climate change.

Please provide our office with copies of any further actions regarding this project. We would appreciate the opportunity to review and comment on any changes related to this development.

If you have any question regarding these comments or require additional information, please contact Todd Rogers, Intergovernmental Review Coordinator, by phone (530) 741-4507 or via email to todd.rogers@dot.ca.gov.

Sincerely,

Alex Fong, Branch Chief
Office of Transportation Planning
Regional Planning Branch—South

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

January 3, 2018

SENT VIA E-MAIL ONLY

Matthew Sites
City of Sacramento
Community Development Department
300 Richards Blvd., 3rd Floor
Sacramento, CA 95811

RE: Tower 301 (P18-078) (SAC201802104)

Dear Mr. Sites:

Thank you for providing the routing package for Tower 301 to the Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) for review. The project is a request for a mixed-use development at 301 Capitol Mall, a 2.39-acre site bounded by Capitol Mall, 3rd Street, L Street, and 4th Street. The project site is located within the Central Business District (C-3-SPD) zone and within the Central City Special Planning District (SPD). The applicant proposes a 33-story building which includes offices, residences, retail, structured parking, and publicly accessible open space. The request requires commission-level Site Plan and Design Review. Sac Metro Air District staff comments follow.

Membership in Transportation Management Association

However, given the size of the proposed project, with 100 residential units, 791,647 gross square feet of office use, and 24,653 gross square feet of retail, the Sac Metro Air District recommends programming to reduce new vehicle trips. As the project has excellent locational efficiency and a variety of transportation options, transportation demand management (TDM) services would ensure the residents and employees will have the greatest opportunity to utilize sustainable modes. Traditionally, TDM services are provided by a Transportation Management Association (TMA). The 301 Capitol Mall project is located within the boundaries of the Sacramento Transportation Management Association. Similar to the City's condition on 500 Capitol Mall, we recommend requiring, as a condition of approval, that the building maintain membership in the Sacramento TMA to provide such services to all tenants, ensuring the project will best leverage existing and future low-carbon options.

Construction

All projects are subject to Sac Metro Air District rules at the time of construction. Specific rules that may relate to construction activities are attached. A complete listing of current rules is available at www.airquality.org or by calling 916-874-4800.

Thank you for your consideration of these comments. If you have any questions, please contact me at 916-874-4816 or tduarte@airquality.org.

Sincerely,

Teri Duarte, MPH
Planner/Analyst

Attachment
Cc: Paul Philley, AICP, Sac Metro Air District
Tom Buford, City of Sacramento

Attachment

Sac Metro Air District Rules & Regulations Statement (revised 6/2018)

*The following statement is recommended as standard condition of approval or construction document language for **all** development projects within the Sacramento Metropolitan Air Quality Management District (Sac Metro Air District):*

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Rule 201: General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from Sac Metro Air District prior to equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact the Sac Metro Air District early to determine if a permit is required, and to begin the permit application process. Other general types of uses that require a permit include, but are not limited to, dry cleaners, gasoline stations, spray booths, and operations that generate airborne particulate emissions. Portable construction equipment (e.g. generators, compressors, pile drivers, lighting equipment, etc.) with an internal combustion engine over 50 horsepower is required to have a Sac Metro Air District permit or a California Air Resources Board portable equipment registration (PERP) (see Other Regulations below).

Rule 402: Nuisance. The developer or contractor is required to prevent dust or any emissions from onsite activities from causing injury, nuisance, or annoyance to the public.

Rule 403: Fugitive Dust. The developer or contractor is required to control dust emissions from earth moving activities, storage or any other construction activity to prevent airborne dust from leaving the project site.

Rule 414: Water Heaters, Boilers and Process Heaters Rated Less Than 1,000,000 BTU PER Hour. The developer or contractor is required to install water heaters (including residence water heaters), boilers or process heaters that comply with the emission limits specified in the rule.

Rule 417: Wood Burning Appliances. This rule prohibits the installation of any new, permanently installed, indoor or outdoor, uncontrolled fireplaces in new or existing developments.

Rule 442: Architectural Coatings. The developer or contractor is required to use coatings that comply with the volatile organic compound content limits specified in the rule.

Rule 453: Cutback and Emulsified Asphalt Paving Materials. This rule prohibits the use of certain types of cut back or emulsified asphalt for paving, road construction or road maintenance activities.

Rule 460: Adhesives and Sealants. The developer or contractor is required to use adhesives and sealants that comply with the volatile organic compound content limits specified in the rule.

Rule 902: Asbestos. The developer or contractor is required to notify the Sac Metro Air District of any regulated renovation or demolition activity. Rule 902 contains specific requirements for surveying, notification, removal, and disposal of asbestos containing material.

Other Regulations (California Code of Regulations (CCR))

17 CCR, Division 3, Chapter 1, Subchapter 7.5, §93105 Naturally Occurring Asbestos: The developer or contractor is required to notify the Sac Metro Air District of earth moving projects, greater than 1 acre in size in areas "Moderately Likely to Contain Asbestos" within eastern Sacramento County. The developer or contractor is required to comply with specific requirements for surveying, notification, and handling soil that contains naturally occurring asbestos.

13 CCR, Division 3, Chapter 9, Article 5, Portable Equipment Registration Program: The developer or contractor is required to comply with all registration and operational requirements of the portable equipment registration program such as recordkeeping and notification.

13 CCR, Division 3, Chapter 9, Article 4.8, §2449(d)(2) and 13 CCR, Division 3, Chapter 10, Article 1, §2485 regarding Anti-Idling: Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes. These apply to diesel powered off-road equipment and on-road vehicles, respectively.

LOZEAU DRURY LLP

T 510.836.4200
F 510.836.4205

410 12th Street, Suite 250
Oakland, Ca 94607

www.lozeaudrury.com
michael@lozeaudrury.com

Via Email and U.S. Mail

January 3, 2019

Ron Bess, Planner
Environmental Planning Services
City of Sacramento Community
300 Richards Blvd., Third Floor
Sacramento, CA 95811
rbess@cityofsacramento.org

Ryan Devore, Director
Community Development Department
City of Sacramento
300 Richards Boulevard, 3rd Floor
Sacramento, CA 95881
rdevore@cityofsacramento.org

Mindy Cuppy, MMC
City Clerk, City of Sacramento
915 I Street
New City Hall
Sacramento, CA 95814
clerk@cityofsacramento.org

Re: CEQA and Land Use Notice Request for the Project known as Tower 301 Project aka P18-078

Dear Mr. Bess, Mr. Devore, and Ms. Cuppy:

I am writing on behalf of the Laborers International Union of North America, Local Union 185 and its members living in the City of Sacramento ("LiUNA"), regarding the project known as Tower 301 Project aka P18-078, including all actions related or referring to the proposed construction of an approximately 557-foot-tall, 41-story high-rise building that would include office, residential, restaurant, and retail uses. The proposed building structure would be a 31-story tower atop a 10-story podium, with a single sub-grade level located on the north side of Capitol Mall in Downtown Sacramento. The site is bounded by Capitol Mall to the south, 3rd Street to the west, L Street to the north, and 4th Street to the east on APN: 006-0141-043-0000 in the City of Sacramento ("Project").

We hereby request that the City of Sacramento ("City") send by electronic mail, if possible or U.S. Mail to our firm at the address below notice of any and all actions or hearings related to activities undertaken, authorized, approved, permitted, licensed, or certified by the City and any of its subdivisions, and/or supported, in whole or in part, through contracts, grants, subsidies, loans or other forms of assistance from the City, including, but not limited to the following:

- Notice of any public hearing in connection with projects as required by California Planning and Zoning Law pursuant to Government Code Section 65091.
- Any and all notices prepared pursuant to the California Environmental Quality Act ("CEQA"), including, but not limited to:

- Notices of any public hearing held pursuant to CEQA.
- Notices of determination that an Environmental Impact Report ("EIR") or supplemental EIR is required for the project, prepared pursuant to Public Resources Code Section 21080.4.
- Notices of any scoping meeting held pursuant to Public Resources Code Section 21083.9.
- Notices of preparation of an EIR or a negative declaration for the project, prepared pursuant to Public Resources Code Section 21092.
- Notices of availability of an EIR or a negative declaration for the project, prepared pursuant to Public Resources Code Section 21152 and Section 15087 of Title 14 of the California Code of Regulations.
- Notices of approval and/or determination to carry out the project, prepared pursuant to Public Resources Code Section 21152 or any other provision of law.
- Notices of approval or certification of any EIR or negative declaration, prepared pursuant to Public Resources Code Section 21152 or any other provision of law.
- Notices of determination that the project is exempt from CEQA, prepared pursuant to Public Resources Code section 21152 or any other provision of law.
- Notice of any Final EIR prepared pursuant to CEQA.
- Notice of determination, prepared pursuant to Public Resources Code Section 21108 or Section 21152.

Please note that we are requesting notices of CEQA actions and notices of any public hearings to be held under any provision of Title 7 of the California Government Code governing California Planning and Zoning Law. **This request is filed pursuant to Public Resources Code Sections 21092.2 and 21167(f), and Government Code Section 65092**, which requires agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

In addition, we request that the City of Sacramento send to us via email or U.S. Mail a copy of all Planning Commission, and City Council meeting and/or hearing agendas.

Please send notice by electronic mail, if possible or U.S. Mail to:

Michael Lozeau
Hannah Hughes
Lozeau Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607
510 836-4200
michael@lozeaudrury.com
hannah@lozeaudrury.com

Please call if you have any questions. Thank you for your attention to this matter.

Sincerely,

Hannah Z Hughes

Hannah Hughes
Legal Assistant
Lozeau | Drury LLP

Ron Bess

From: Tom Buford
Sent: Friday, January 4, 2019 1:57 PM
To: Ron Bess
Subject: FW: Notice of Preparation: Tower 301 Project

Ron:

Please review this response with me or Scott.

Tom

Tom Buford, Manager
Environmental Planning Services
(916) 799-1531

From: King Tunson <ktunson@sfd.cityofsacramento.org>
Sent: Thursday, January 3, 2019 2:35 PM
To: Tom Buford <TBuford@cityofsacramento.org>
Subject: RE: Notice of Preparation: Tower 301 Project

Hi Tom,

I don't have any questions for this EIR at this time. Once the full document is released, I will review and comment at that time. Thanks

King Tunson
Entitlement Plan Review Supervisor
Sacramento Fire Department
5770 Freeport Blvd, Ste 200
Sacramento, CA 95822
Office (916) 808-1358
Fax (916) 808-1677
ktunson@sfd.cityofsacramento.org

From: Tom Buford <TBuford@cityofsacramento.org>
Sent: Wednesday, December 19, 2018 3:57 PM
To: Tom Buford <TBuford@cityofsacramento.org>
Subject: Notice of Preparation: Tower 301 Project

Please see the attached Notice of Preparation for the Tower 301 project located at 301 Capitol Mall in Sacramento.

Closing date for written comments is January 25, 2019. A scoping meeting will be held at City Hall on January 9. 2019 from 5:30 p.m. to 7:30 p.m.

If you have any questions regarding the CEQA review please contact Ron Bess, Assistant Planner at (916) 808-8272, email at rbess@cityofsacramento.org.

Tom Buford, Manager

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

January 3, 2018

SENT VIA E-MAIL ONLY

Matthew Sites
City of Sacramento
Community Development Department
300 Richards Blvd., 3rd Floor
Sacramento, CA 95811

RE: Tower 301 (P18-078) (SAC201802104)

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Sincerely,

Teri Duarte, MPH
Planner/Analyst

Attachment
Cc: Paul Philley, AICP, Sac Metro Air District
Tom Buford, City of Sacramento

Attachment

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CALIFORNIA
Water Boards

Central Valley Regional Water Quality Control Board

Edmund G. Brown Jr.
Governor

Matthew Rodriquez
Secretary for
Environmental Protection

11 January 2019

Ron Bess
City of Sacramento
300 Richards Boulevard, 3rd Floor
Sacramento, CA 95811

CERTIFIED MAIL
7018 1830 0001 0062 6658

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, TOWER 301 (P18-078) PROJECT, SCH#2018122045, SACRAMENTO COUNTY

Pursuant to the State Clearinghouse's 20 December 2018 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environmental Impact Report* for the Tower 301 (P18-078) Project, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases,

the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan

(SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

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[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

For more information on the Water Quality Certification, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4812 or Jordan.Hensley@waterboards.ca.gov.

Jordan Hensley
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/regulatory_information/for_growers/coalition_groups/ or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 11-100 acres are currently $1,277 + $8.53/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order.

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

Jonathan Teofilo

From: Ron Bess <RBess@cityofsacramento.org>
Sent: Wednesday, January 23, 2019 3:16 PM
To: Christina Erwin
Cc: Jonathan Teofilo
Subject: FW: Comments on the Notice of Preparation for the Tower 301 Project SCH: 2018122045

Here are the comments I received from Dylan at California Fish & Wildlife.

Thanks,

Ron Bess
City of Sacramento
Community Development Department
Environmental Planning Services
300 Richards Blvd. 3rd Floor
Sacramento, CA 95811
(916) 808-8272
Rbess@cityofsacramento.org

From: Wood, Dylan A@Wildlife <Dylan.A.Wood@wildlife.ca.gov>
Sent: Thursday, January 17, 2019 4:40 PM
To: Ron Bess <RBess@cityofsacramento.org>
Cc: Wildlife R2 CEQA <R2CEQA@wildlife.ca.gov>
Subject: RE: Comments on the Notice of Preparation for the Tower 301 Project SCH: 2018122045

Mr. Bess,

The California Department of Fish and Wildlife (CDFW) has received and reviewed the **Notice of Preparation** for the **Tower 301** (Project) in Sacramento County. CDFW offers the comments and recommendations below to assist the Lead Agency in adequately identifying and, where appropriate, mitigating the Project's significant or potentially significant, direct and indirect impacts on fish and wildlife resources.

CDFW has identified several potential impacts relating to nesting and migrating birds. CDFW recommends that the draft Environmental Impact Report discuss the following impacts:

- ➔ Bird nests on the project site: Please include a site map that includes the number and species of trees to be removed for the project. This should characterize areas designated for construction and any areas used for project staging/storage that are not within the construction footprint.
- ➔ Bird collisions: An analysis should be included that discusses the height of the building and reflective nature of the windows. CDFW recommends the City choose a window treatment that reduces potential for bird collisions. Any relevant data from the window manufacturer or designer for the proposed window treatments is useful in reducing impacts to a less than significant level.
- ➔ Wildlife disturbance: Please include a discussion of construction impacts as it relates to noise and other wildlife disturbance. This can be centered around the question of whether urban disturbance from this project will be higher than average conditions as a result of project activities.

CDFW recognizes the urban setting of the project; however given the proximity of the Sacramento River and high potential for special-status birds in near river habitat, impacts of constructing a very large structure nearby have the potential to be significant.

I am available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts, please call me at 916-358-2384 or email at dylan.a.wood@wildlife.ca.gov. Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife.

Sincerely,

Dylan Wood
California Department of Fish and Wildlife
Environmental Scientist
(916) 358-2384

Every Californian should conserve water. Find out how at:

Save Our Water

SaveOurWater.com · Drought.CA.gov

From: Ron Bess <RBess@cityofsacramento.org>
Sent: Thursday, December 20, 2018 10:17 AM
To: veronica@sachousingalliance.org; Wood, Dylan A@Wildlife <Dylan.A.Wood@wildlife.ca.gov>; tduarte@airquality.org
Subject: Notice of Preparation for the Tower 301 Project

Please see the attached Notice of Preparation for the Tower 301 project located at 301 Capitol Mall in Sacramento.

Closing date for written comments is January 25, 2019. A scoping meeting will be held at City Hall on January 9. 2019 from 5:30 p.m. to 7:30 p.m.

If you have any questions regarding the CEQA review please contact Ron Bess at (916) 808-8272, or email me at rbess@cityofsacramento.org.

Thank You,

Ron Bess
City of Sacramento
Community Development Department
Environmental Planning Services
300 Richards Blvd. 3rd Floor
Sacramento, CA 95811
(916) 808-8272
Rbess@cityofsacramento.org

SMUD®

Sent Via E-Mail

January 24, 2019

Ron Bess
City of Sacramento
300 Richards Blvd., 3rd Floor
Sacramento, CA 95811
rbess@cityofsacramento.org

Subject: Tower 301 / P18-078 / NOP

Dear Mr. Bess

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the proposed Notice of Preparation (NOD) for the Tower 301 Project (Project, P18-078). SMUD is the primary energy provider for Sacramento County and the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers.

It is our desire that the Project NOP will acknowledge any Project impacts related to the following:

- Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment:
  - https://www.smud.org/en/Business-Solutions-and-Rebates/Design-and-Construction-Services
  - https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land-Use/Transmission-Right-of-Way
- Utility line routing
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery

More specifically, SMUD would like to have the following details related to the electrical infrastructure incorporated into the project description:

Existing Facilities

- Underground 12 kV/480 V network vault along the east side of 3rd Street under the sidewalk approximately 200 ft south of L Street. *This vault space could augment service to Tower 301 if necessary.*
- 12 kV UG infrastructure and facilities along the south side of L Street along the entire northern boundary of the project area.
- 12 kV UG infrastructure and facilities along the west side of 4th Street along the entire eastern boundary of the project area.

Estimated Proposed Facilities

- SMUD will require vaulted 12 kV network transformer space of sufficient size to meet the requested service size. The location of this space as shown on Page 18 of the Tower 301 Entitlement Package dated 11/15/18 is tentatively satisfactory pending further service details and overall service requirements. NOTE: This vaulted transformer space must meet all SMUD requirements for service.
- SMUD will require a new 8x14 ft manhole near the location of the proposed network vault space on the south side of L Street east of 3rd Street. The excavation of this manhole and any construction related impacts need to be evaluated as part of the project.
- SMUD will require a new 12 kV underground duct bank from an existing SMUD manhole (MH-490) located on the west side of 4th Street, midway between L and Capitol Mall, to the new 8x14 ft manhole location mentioned above. The associated activities for the construction of this underground duct bank and any associated impacts need to be evaluated as part of the project.
- SMUD may require a new 12 kV underground duct bank from the new 8x14 ft manhole location mentioned above to the existing vault location mentioned in the existing facilities section. This requirement will be on an "as needed" basis and is commensurate with the overall service requirement for the building. The associated activities for the construction of this underground duct bank and any associated impacts need to be evaluated as part of the project.

SMUD would like to be involved with discussing the above areas of interest as well as discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.

Environmental leadership is a core value of SMUD and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this NOP.

If you have any questions regarding this letter, please contact SMUD's Environmental Management Specialist, Rob Ferrera, at rob.ferrera@smud.org or 916.732.6676.

Sincerely,

Nicole Goi
Regional & Local Government Affairs
Sacramento Municipal Utility District
6301 S Street, Mail Stop A313
Sacramento, CA 95817
Nicole.goi@smud.org

Cc: Rob Ferrera

Ron Bess

From: Scott Johnson
Sent: Monday, March 18, 2019 7:11 AM
To: Ron Bess
Subject: FW: Tower 301 Comment Submittal

FYI

From: mlrudman <mlrudman@att.net>
Sent: Saturday, March 16, 2019 1:39 PM
To: Scott Johnson <SRJohnson@cityofsacramento.org>
Subject: Tower 301 Comment Submittal

I would like to see a joint hospital built with different floors and staff run my Sutter, Mercy and UCD. Lab, xray and all ancillary sevices could be cost shared. Many older people in this part of the city with no means to visit those in downtown or further locations. Great salaries and day and night activity, and much needed. We don't need more office buildings or malls. Myrna Rudman@mlrudman@att.net.

Appendix C
Initial Study

ESA

City of
SACRAMENTO

TOWER 301 [P18-078]

INITIAL STUDY

This Initial Study has been prepared by the City of Sacramento, Community Development Department, 300 Richards Boulevard, Third Floor, Sacramento, CA 95811, pursuant to the California Environmental Quality Act (Public Resources Code Section 21000 *et seq*.), CEQA Guidelines (Title 14, Section 15000 *et seq*. of the California Code of Regulations) and the Sacramento Local Environmental Regulations (Resolution 91-892) adopted by the City of Sacramento.

ORGANIZATION OF THE INITIAL STUDY

This Initial Study is organized into the following sections:

SECTION I - BACKGROUND: Provides summary background information about the project name, location, sponsor, and the date this Initial Study was completed.

SECTION II - PROJECT DESCRIPTION: Includes a detailed description of the proposed project.

SECTION III - ENVIRONMENTAL CHECKLIST AND DISCUSSION: Reviews proposed project and states whether the project would have additional significant environmental effects (project-specific effects).

SECTION IV - ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: Identifies which environmental factors were determined to have additional significant environmental effects.

SECTION V - DETERMINATION: States whether environmental effects associated with development of the proposed project are significant, and what, if any, added environmental documentation may be required.

REFERENCES CITED: Identifies source materials that have been consulted in the preparation of the Initial Study.

SECTION I - BACKGROUND

Project Name and File Number:	Tower 301 (P18-078)
Project Location:	301 Capitol Mall
Project Applicant:	CIM Group 4700 Wilshire Boulevard Los Angeles, CA 90010 Attn: Scott Hayner (323) 860-4900
Project Planner:	Matthew Sites Community Development Department 300 Richards Boulevard, Third Floor Sacramento, CA 95811 MSites@cityofsacramento.org
Environmental Planner:	Ron Bess, Assistant Planner Community Development Department 300 Richards Boulevard, Third Floor Sacramento, CA 95811 Rbess@cityofsacramento.org
Date Initial Study Completed:	July 3, 2019

This Initial Study was prepared in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations). The Lead Agency is the City of Sacramento.

The City has prepared the attached Initial Study to identify any potential project-specific significant environmental effects and any mitigation measures or alternatives that may avoid or mitigate the identified effects to a level of insignificance, if any.

SECTION II - PROJECT DESCRIPTION

INTRODUCTION

The proposed project is the construction and operation of a high-rise structure with office, residential, retail and restaurant uses, on an approximately 2.39-acre property located in the Central Business District of Downtown Sacramento, within the City of Sacramento. This initial study (IS) has been prepared to evaluate the environmental effects of this project and to ensure compliance under the California Environmental Quality Act (CEQA). The City of Sacramento is the lead agency responsible for CEQA compliance.

PROJECT LOCATION

The project site is located within the City of Sacramento's Central City community. **Figure 1** shows the location of the project site in the Sacramento region. The 2.39-acres project site is a full city block, generally bounded by L Street to the north, 3rd Street to the west, 4th Street to the east, and Capitol Mall to the south. The project site is within an area of downtown Sacramento under the Central Business District (CBD) general plan land use designation, within the Central Business District (C-3-SPD) zone, and within the Central City Special Planning District, the City's planning designations intended for the highest development density. The project site is located within the Central City Specific Plan boundaries.

The project site is within the City's existing downtown grid and has been previously developed but is currently unutilized, with remnant site excavation and foundational elements from a previous development effort. The project site is bounded by a parking structure to the north, office uses to the east and south, and open space and I-5 to the west. **Figure 2** and **Figure 3** show the project location in Sacramento's Central City.

PROJECT OBJECTIVES

CEQA Guidelines section 15124(b) requires that the project description include a statement of the objectives intended to be achieved by the project. The objectives describe the purpose of the project, and are intended to assist the lead agency in developing a reasonable range of alternatives for consideration in the EIR, as well as assisting the decision makers in assessing the feasibility of mitigation measures and alternatives. The following are the objectives of the Towers project.

The following are the applicant's stated objectives for the proposed project:

1. Create a high-quality visual landmark that enhances and defines the Downtown skyline.

2. Provide a complimentary mix of office, retail, residential and entertainment uses to enhance the emergence of Downtown as a 24-hour urban center.

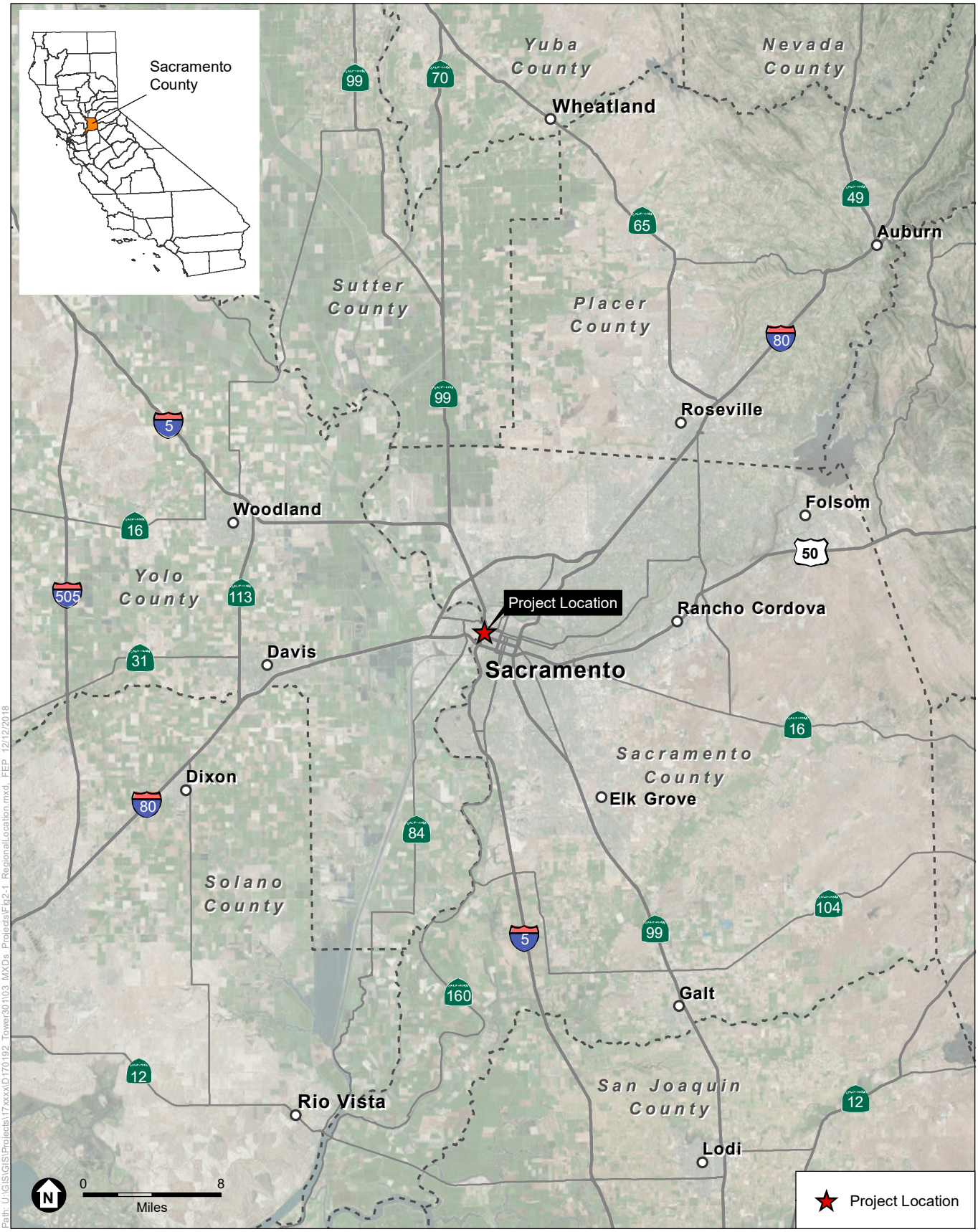
3. Engage the public realm by providing active uses and pedestrian friendly features along all street frontages.

4. Provide amenities that benefit residents of and visitors to the CBD.

5. Provide office space with a variety of floorplate sizes to target a broad range of office tenants, including government uses, private businesses, and other creative professionals.

6. Provide an urban housing option within the CBD.

7. Create a high-rise development that incorporates sustainable features into building design and operation.

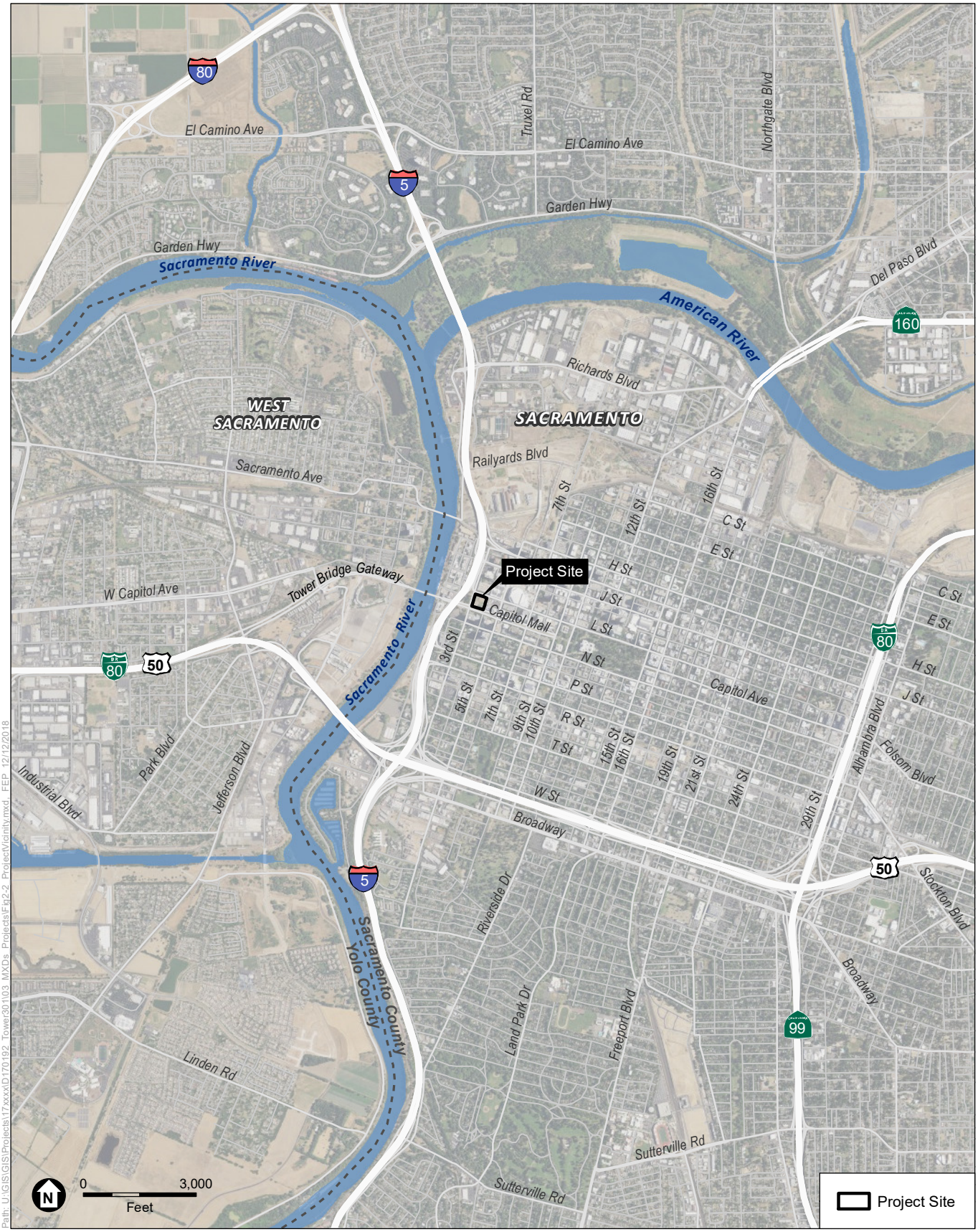


SOURCE: Esri, 2018; ESA, 2018

Tower 301

Figure 1
Regional Location

ESA



SOURCE: USDA, 2016; Esri, 2015; ESA, 2018

Tower 301

Figure 2
Project Vicinity

ESA

Path: U:\GIS\GIS\Projects\17xxxx\D170192_Tower301\03_MXDs_Projects\Fig2-3_ProjectSite.mxd FEP 12/12/2018

SOURCE: Google, 2017; ESA, 2018

Tower 301

Figure 3
Project Site

ESA

PROPOSED PROJECT

The proposed Tower 301 project would be infill development of a mixed-use, high rise project comprised of office, residential, retail uses, and parking, situated on the Capitol Mall in Sacramento, California.

Project Site

Location

The Tower 301 project site consists of approximately 2.39 acres, encompassing a single city block in downtown Sacramento.[1] (see Figure 3) The project site is located on the block bounded by 3rd, L, and 4th streets and Capitol Mall.

Existing Conditions

General Plan and Zoning

The Tower 301 project site is designated as Central Business District (CBD) on the City of Sacramento 2035 General Plan Land Use and Urban Form Diagram.

According to the 2035 General Plan, "[t]he Central Business District is Sacramento's most intensely developed area. The CBD includes a mixture of retail, office, governmental, entertainment and visitor-serving uses built on a formal framework of streets and park spaces laid out for the original Sutter Land Grant in the 1840s. The vision for the CBD is a vibrant downtown core that will continue to serve as the business, governmental, retail, and entertainment center for the city and the region. A significant element in the future CBD includes new residential uses. Increasing the residential population will add vitality to the CBD by extending the hours of activity and the built-in market for retail, services, and entertainment."

The project site is zoned C-3-SPD: CBD zone and Central City Special Planning District as defined in sections 17.216.800 through 17.216.880 and 17.444.010 through 17.44.180 of the Sacramento Planning and Development Code. The C-3-SPD zone is intended for the most intense residential, retail, commercial and office developments in the City and is the only classification which has no height limit, aside from 300-foot height limit imposed by the Capitol View Protection requirements (PDC section 17.216.860). Generally, office, retail, restaurant, residential, fitness, and theaters are permitted by right in the C-3 zone. An assembly use is allowed in the C-3 zone subject to the approval of a conditional use permit by the City Planning and Design Commission.

Existing and Adjacent Uses

The project site is made up of a single parcel, which has been developed for different uses at different times in the past. At present, the project site is not in use but contains foundational elements from a previous development effort, named the Towers on Capitol Mall project (P04-221). The previous project was approved in August of 2005, and construction on the site was started but never completed. As part of the Towers on Capitol Mall project (P04-221), the project site was excavated for the construction of subgrade levels and foundational piles were installed in the northwest and southeast quadrants of the project site. No further project elements were completed. The project site has remained closed to the public, with fencing surrounding the perimeter of the project site. The interior of project site has been subject to vegetative growth due to non-use.

The project site is located at the entrance to the Capitol Mall Corridor, which leads to the State Capitol. The predominant uses along the Capitol Mall are office, with some street-facing restaurant uses. Similar to the project site, the adjacent blocks to the north, south, and east are designated Central Business District in the 2035 General Plan and Central City Community Plan and zoned C-3-SPD. To the west the triangular strip west of 3rd Street is designated as Parks, and the larger vegetated area between the slip ramp and I-5 is designated as Public. Structures along the Capitol Mall vary in height from 3 floors (at the corner of

[1] The project site consists of Assessor's Parcels 006-0141-043.

4th Street and Capitol Mall) to 30 floors (on Capitol Mall between 4th Street and 5th Street). The 18-floor Westamerica Bank office building is located immediately south of the proposed project site along Capitol Mall. The tallest existing building along Capitol Mall is the Wells Fargo Center, which is 30 floors and 423 feet tall, located on the south side of the Capitol Mall at 4th Street. North of the project site, on L Street, is a parking garage with five levels above grade and one level below grade. A three-story office building and a three-story parking-over-retail building are located east of the site, along 4th Street. There are no developed uses west of 3rd Street, between I Street and N Street.

Farther east of the proposed project site, there are additional office and commercial uses, including Downtown Commons and the Golden 1 Center.

Project Elements

Building Design

The proposed project would be an approximately 557-feet-tall, 41-story high-rise building that would include office, residential, restaurant, and retail uses. The proposed structure would include a single, 31-story high-rise tower, atop a 10-story podium and a single subgrade level. **Figure 4** provides a rendering of the proposed structure. Major components of the proposed project would include an office tower with penthouse levels, south-facing office lobby, publicly accessible view deck, internal parking levels, loft offices, residential liner, north-facing residential lobby, upper and ground-floor retail. **Figure 5** shows the general distribution of uses across each level of the proposed structure. The location of the Tower on the podium and entrances to the project are shown in Figure 4. Ground level uses, including the main office lobby, residential lobby, retail, parking, vehicle accesses, utilities, and site exterior are shown in **Figure 6**.

The podium portion of the structure would be the approximate length and width of the parcel, spanning approximately 294 feet, from north/south, and approximately 317 feet east/west. The podium structure would be set back approximately 90 feet from the center of Capitol Mall and centered on the block. The 31-story tower portion of structure would be situated along an east-west axis atop the podium, with an east-west length of approximately 267 feet and a north-south width of approximately 92 feet. The tower section of the structure would be set back 140 feet from the center of Capitol Mall, in compliance with requirements for the Capitol View Protection Area. The main pedestrian entry to the proposed Tower 301 building would be oriented toward Capitol Mall and centered on the block. The tower section of the building would be primarily dedicated to office uses and have a side-core configuration on the south side of the tower, with elevator and internal circulation areas on the south side of the building, placing the majority of the office space to the north. Elevator lobbies and circulation on each floor would be oriented toward the south and the Capitol Mall.

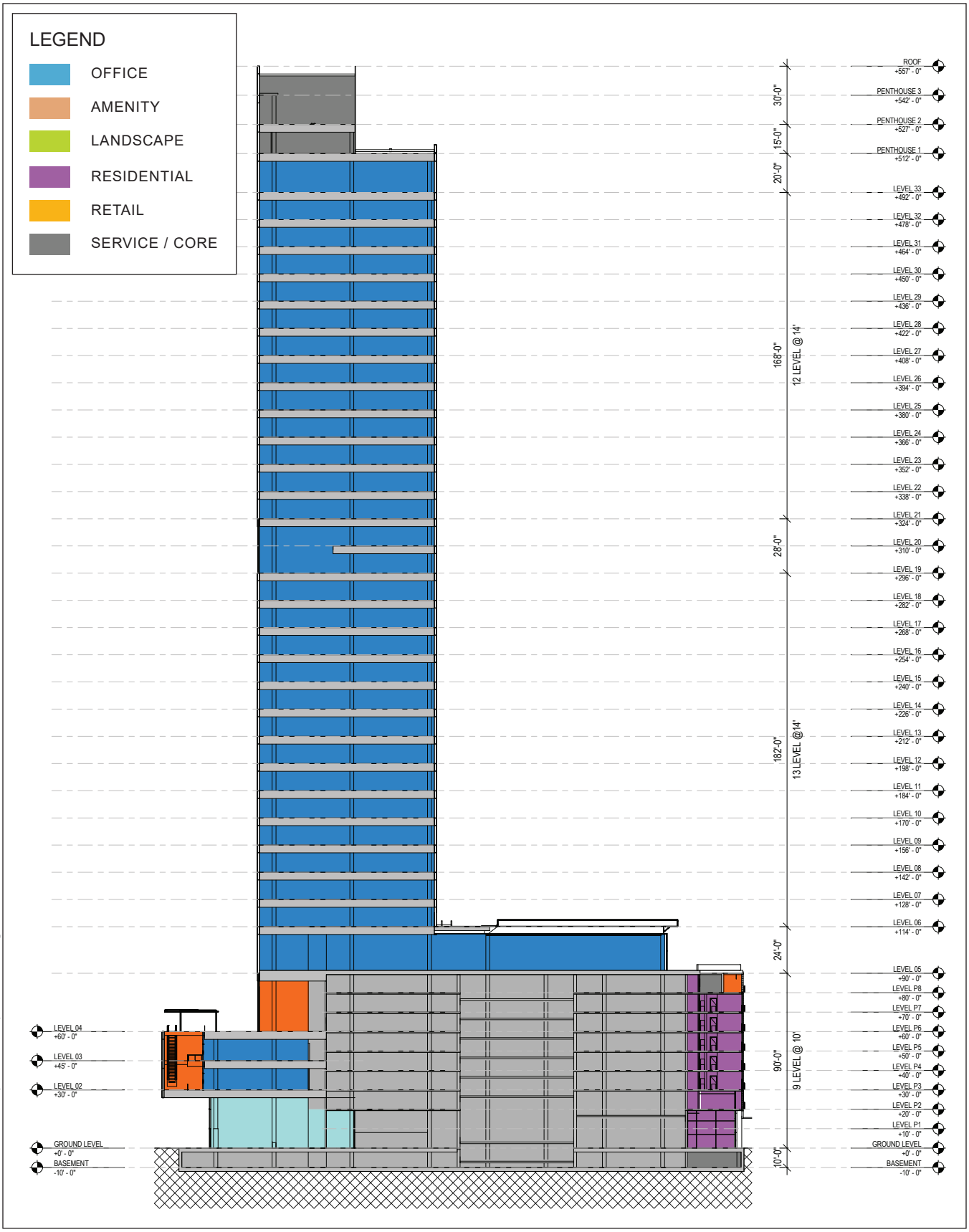
D170192.00 - The Towers on Capitol Mall\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Skidmore, Owings & Merrill LLP, 2018

Tower 301

Figure 4
Rendering of the Proposed Towers on Capitol Mall Structure

ESA



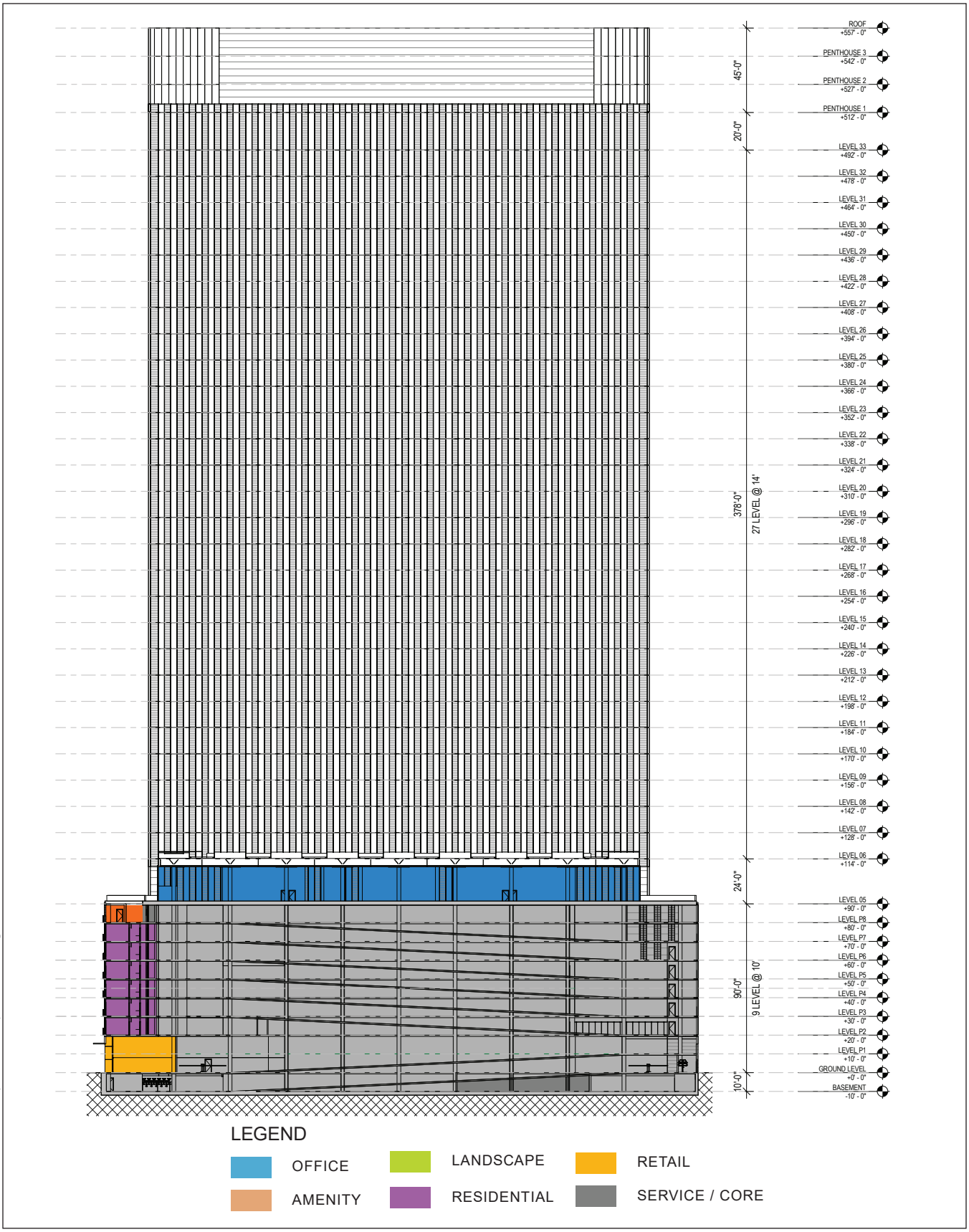
D170192.00 - The Towers on Capitol Mall\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Skidmore, Owings & Merrill LLP, 2018

Tower 301

Figure 5a
Building Sections

ESA



D170192.00 - The Towers on Capitol Mall\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Skidmore, Owings & Merrill LLP, 2018

Tower 301

Figure 5b
Building Sections

ESA

SOURCE: Skidmore, Owings & Merrill LLP, 2018

Tower 301

Figure 6
Ground Level Plan

ESA

D170192.00 - The Towers on Capitol Mall\05 Graphics-GIS-Modeling\Illustrator

The proposed structure would include the programmed uses shown in **Table 2-1**, below.

TABLE 2-1
PROPOSED TOWER 301 PROGRAMMED USES

Use Type	Floor GSF x Number of Floor	Use Type Gross Square Feet (GSF)	Floors	Units	Total GSF
Office					
Lobby	13,723 GSF x 1	13,723 GSF	1 Floor		
Liner Office	25,120 GSF x 1 24,648 GSF x 1	49,768 GSF	2 Floors		
Loft Office	54,589 GSF x 1	54,589 GSF	1 Floor		
Tower Office	24,306 GSF x 26	631,956 GSF	26 Floors		
Transfer Floors	23,376 GSF x 1 18,236 GSF x 1	41,612 GSF	Lower Level (1 Floor) Mezzanine Level (1 Floor)		
Office Gross Area					**791,647 GSF**
Residential					
Residential Units		96,755 GSF	7 Levels	100 Residential Units	
Residential Gross Area					**96,755 GSF**
Retail/Amenity					
Ground Level Retail/ Restaurant	12,453 GSF x 1	12,453 GSF	Ground Level (1 Floor)		
Public Amenity Deck Retail/Restaurant/Gym	12,200 GSF x 1	12,200 GSF	Public Amenity Deck (1 Floor)		
Public Amenity Deck (Outdoor Space)	14,782 GSF x 1	14,782 GSF (Not Included in Total)	Public Amenity Deck (1 Floor)		
Retail Gross Area					**24,653 GSF**
Parking					
Below Grade Level			1 Floor	163 Vehicles Spaces 176 Long Term Bicycle Spaces	
Above Grade Level			8 Floors	1,141 Vehicle Spaces 58 Short Term Bicycle Spaces	
Parking Totals				**Vehicle Spaces: 1,304** **Bicycle Spaces: 234**	**536,227 GSF**
Total Program Gross Area (Parking Not Included)					**913,055 GSF**

SOURCE: Skidmore, Owings & Merrill, LLP, 2018.

As shown in Table 2-1, the proposed Tower 301 project would include approximately 791,647 GSF of office space, 24,663 GSF of retail and amenity space, 100 residential units totaling 96,755 GSF, 1,304 vehicle parking spaces, and 234 bicycle parking spaces.

Office

The proposed project would include approximately 791,647 GSF of office uses. Office uses would be spread across 30 floors with larger single floor uses on the Lower Level, Mezzanine Level, and Loft Office Level. Most of the office uses would be concentrated in the office tower, with larger office spaces available in the podium levels.

Residential

The proposed project would include 100 residential units across 7 levels, that would line the east and north sides of the podium levels. The proposed residential uses would have a separate lobby on the ground floor that fronts to L Street, and separate parking areas. Residents would also have a separate vehicle entrance and exit along L Street. There would be a proposed gym located on the public view deck level for which residents would have shared access with office uses.

Retail/Amenity

The proposed project would feature ground level-retail, as shown in Figure 6. Additional retail and amenity uses would be developed on the public view deck, including restaurant use and a proposed gym. The Loft Level could also include some amenity uses.

Parking

As shown in Figure 1, the proposed project would include 1,304 onsite vehicle parking spaces, spread across 9 levels. Resident parking would be located on the subgrade parking level with access to and from the parking area on L Street. Employee parking for the office, retail, and amenity uses would be located in separate areas across all 9 parking levels, with access to and from the parking areas on 3rd Street and 4th Street. Office parking spaces may be made available for events at the Downtown Commons and Golden 1 Center, during evening hours when office parking is not required. It is anticipated that such uses would have access to internal parking areas limited to the 3rd Street and 4th Street vehicle entry points.

Project Employment

The proposed project would employ approximately 4,500 permanent employees, in a variety of office, residential, retail, and related service roles. The project would also provide temporary construction employment for the duration of project construction, which would be anticipated to last approximately 31 months.

Circulation

Vehicular Circulation

The proposed project would provide onsite parking in a 9-floor parking garage within the proposed structure. The proposed structure would include vehicle entrances to the internal parking garage on 3rd Street, 4th Street, and L Street (see Figure 6). Vehicle access to subgrade and above-ground-level parking levels would be available via a system of internal ramps within the parking structure components of the project site (see Figures 5a and 5b).

Curbside parking places presently located along the east side of 3rd Street, between L Street and Capitol Mall would be temporarily preserved, with the exception of 2 to 3 parking spaces, at mid-block, which would be removed to allow for the construction of the western project driveway. Upon adoption of the Final design of the Sacramento Streetcar project (described in the Transit discussion, below), curbside parking may be relocated to make way for the streetcar tracks and station in 3rd Street. Curbside parking on 4th Street would be generally preserved, with the exception of 2 to 3 parking spots that would be eliminated to establish the east vehicle entry and exit points to the project site.

Delivery and Loading

Delivery and loading facilities for the proposed project would be located along the internal driveway between the 3rd and 4th Street project driveway accesses.

Pedestrian

Sidewalk improvements around the project site along the Capitol Mall, 3rd Street, 4th Street, and L Street frontages would comply with City standards for width and design. The office lobby of the proposed project would face Capitol Mall, providing pedestrian access from Capitol Mall and from the internal project driveway on the Ground Level. The residential lobby would face L Street, providing access from L Street to the residential uses within the project site.

The proposed project would attract pedestrian traffic to the office, residential, retail and restaurant uses on the project site. Crosswalks presently exist along most segments of each intersection that is located adjacent to the project site. To further accommodate increased pedestrian demand, the proposed project would include the striping and addition of crossing equipment along the western segment of the L Street and 4th Street intersection.

Bicycle

Employee, resident, and short-term patron bicycle parking spaces would be provided on-site, including 176 long-term bicycle parking spaces in the subgrade parking level and 58 short-term bicycle parking spaces on the ground level of the parking garage. The proposed project would not include alterations to existing vehicle lanes, vehicle turning movements, or parking configurations on existing roadways, with the exception of provisions for three project driveways. As such, no alterations are proposed to existing City bicycle facilities including the dedicated bicycle lane on the North side of Capitol Mall, that lines the south side of the project site.

Transit

The project site is located adjacent to the anticipated pathway of the Sacramento Downtown Streetcar (Streetcar), which is planned run east and west across Capitol Mall and Tower bridge, to and from West Sacramento, before turning north on 3rd Street, in Downtown Sacramento. The proposed project is designed to accommodate a proposed Streetcar platform on the east side of 3rd Street on the northwest side of the project site. The project driveway on 3rd Street is designed in anticipation that traffic entering and exiting the project site would cross the Streetcar tracks, which would be separated from 3rd Street by a secondary curb and a line of curbside parking along the east side of the road.

Utilities

The site of the proposed project is located within an area where infrastructure is well established. Thus, minimal offsite improvements would be necessary to provide utility services to the project site, as described below.

Water Supply

Water supply would be provided to the project site through existing 10-inch water supply mains in L and 3rd streets.

Wastewater

The wastewater systems for the proposed project would connect to the City's combined sewer system (CSS). The project would access the City's network of sanitary sewer mains via a 24-inch CSS main located in 3rd Street and an 8-inch CSS main located in 4th Street.

Drainage

The proposed project would develop a high-rise structure with impervious surfaces, for which stormwater drainage must be managed. It is anticipated that storm water would be collected and treated on-site before the treated runoff leaves the project site and enters the City's Basin 52 separated storm drain system. Since the storm water system is currently separated all the way to the outfall into the Sacramento River, the project site would include temporary storage with the necessary pre-release treatment facilities as required to meet both current water quality standards and the discharge capacity of the existing system.

Stormwater within the construction footprint would be managed pursuant to a Stormwater Pollution Prevention Plan (SWPPP) that would be prepared for the proposed project.

Energy and Telecommunications

Electrical Service

Electrical service would be provided by the Sacramento Municipal Utility District (SMUD) through service from its 21-kV system. The project site would connect to the SMUD electrical grid at a 21-kV underground local lines within L Street and 4th Street. Aside from connections that may be necessary to tie project systems to the SMUD system under adjacent streets, no further improvements to the SMUD electrical system would be required.

Natural Gas

Natural gas service would be established via service laterals from the existing Pacific Gas & Electric (PG&E) service grid within the downtown roadway network. The nearest PG&E line to the project site is a 12-inch main, located along the west side of 3rd Street. A service lateral would likely be installed along this line to provide service to the project site. Other than proposed connections between the project site and the existing PG&E natural gas mains, no further improvements to the PG&E distribution system would be necessary.

Telecommunications

The proposed project would acquire telephone and data service from the current existing carrier(s) that are now established in downtown Sacramento. Connection(s) would be completed in existing telephonic and data manholes. The project applicant would coordinate with the City and other utility providers to determine the optimal solution for gaining access to adjacent lines, potentially including either open cuts or directional drilling that could be done in these manholes without severe traffic interference. Where open cuts are determined to be necessary, appropriate traffic management plans would be developed, subject to approval by the City of Sacramento. If feasible, service to the project site would be coordinated with SMUD in a common joint trench, in which a few 2-inch conduits would be added to the joint trench for telecommunication service.

Project Construction

Construction of the proposed project would occur over approximately 31 months, beginning in December 2019 and concluding in July 2022. Anticipated activities would include demolition of existing foundational elements from the previous project, construction of the foundation, and erection of the proposed high-rise structure. The final year of construction would consist primarily of internal construction and commissioning, and exterior landscaping.

Demolition

The first element of project construction would be demolition and clearing of the project site including removal of existing utilities, planters, trees, and other site features. Demolition would also include removal of the existing foundational elements from the previous project on the project site, for which construction was never completed. Some foundational piers from the previous project have been marked for

preservation and would be incorporated into the foundational structure of the proposed project. Site demolition and site clearing would last approximately 1 month.

Grading and Foundation Work

Grading and foundation work would be anticipated to take approximately 7 months. The project site was previously excavated to make way for a subgrade level for a previous project. It is not anticipated that substantial additional excavation would be required. As described above, some of the foundational elements constructed for the previous project would be utilized for the proposed project. The project site would be excavated to a depth of approximately 20 to 25 feet below ground level, where previous excavation to that level has not occurred. Excavated soil and debris would be hauled offsite for disposal. Excavated soil and debris would be hauled offsite for disposal. It is estimated that approximately 34,000 cubic yards of material would be exported from the project site and 17,500 cubic yards of material would be imported to the project site during this phase.

Construction

The deep foundations/footings phase of construction would involve the driving or drilling of concrete foundation piles throughout the excavation area, except where piles from the previous project would be utilized. As described above, some of the foundational elements constructed for the previous project would be utilized for the proposed project. However, additional cast-in-drilled-hole piles would be needed for the proposed structure. The approximate duration of pile installation will be 3 months, and would take place within the anticipated 7-month-duration of grading and foundation work.

The construction phase would involve the erection of steel, concrete and/or precast concrete elements, and would take place over approximately 21 months. This phase would involve the use of numerous cranes, loaders, welders, generators, concrete pumpers, and similar construction equipment.

Interior and exterior finish work would take place over approximately 19 months. This phase would involve a wide variety of construction activities involving creating and outfitting interior spaces and completing the exterior finish of the building, including plumbing, electrical, heating and air conditioning systems, and the like.

Exterior site work and landscaping, including landscaping on the public view deck, would be undertaken over a period of approximately 7 months, concurrent with interior and exterior finish work.

Construction Circulation

During construction, the entire project site would be fenced off. Construction fencing would be placed along the west side of 4th Street between L Street and Capitol Mall. Construction fencing would also be placed along the south side of L Street, the west side of 3rd Street, and the north side of Capitol Mall.

Water-filled construction barriers would be placed on the south side of L Street between 3rd Street and 4th Street. The on-street parking on the western curb of 4th Street between L Street and Capitol Mall would be temporarily blocked, for the duration of construction, as would the on-street curbside parking along 3rd Street.

Construction gates providing access to the site would be located on L Street during work at ground level. As above ground podium levels are completed, site access for construction and delivery vehicles would be anticipated to occur along 4th Street. Additional construction gates may be provided to other roadways around the project site.

Road Closures

The proposed project would not require road closures. Short term, temporary lane closures may be necessary for the establishment of project links to utilities or construction elements along the perimeter of the project site, however no long-term lane closures are anticipated.

Truck Routes

Construction vehicles would follow established truck routes for the City and which are largely determined by the streets that can access the site and the City's one-way street system. Inbound truck trips access the project site from L Street.

The direction of outbound truck trips would be determined by the destination of the truck, especially during demolition when trucks would be transporting demolition materials to recycling facilities or landfills. Outbound trucks headed to Richards Boulevard would depart the site on L Street. Trucks heading toward I-5 could travel west on L Street to the L Street northbound onramp. Trucks heading south on I-5 could travel south on 3rd Street to P Street to the P Street onramp to I-5 South and connecting freeways.

Construction Dewatering

Construction of the foundations and subgrade parking level components of the proposed project likely would require temporary dewatering during the rainy season. Analysis of the ground water, both for contaminates and quantity would be performed in advance of installation of the construction dewatering system. Monitor wells would be used to provide historical data prior to and during the construction dewatering period. The wells would be either new or existing wells around the project site, including the project vicinity covering an area with a radius of about three-quarters of a mile. The system of monitoring wells would be used to determine subsidence parameters which in turn would dictate to the dewatering subcontractor how low the immediate site water table can be dropped. Automatic controls may be used to alternate pumps and subsequent discharge quantities during the construction dewatering period.

Periodic water quality tests would be performed to establish needs requirement or onsite treatment prior to discharge to the city collection grid. Approval of dewatering activities and permitting for the discharge of the temporary dewatering into the City's sewer and/or storm drain systems would be coordinated with the City Department of Utilities, Sacramento Regional County Sanitation District (SRCSD), and the Central Valley Regional Water Quality Control Board (CVRWQCB), as appropriate.

Project Actions

The proposed project is anticipated to require, but may not be limited to, the following City actions:

- Certification of the EIR to determine that the EIR was completed in compliance with the requirements of CEQA, that the decision-making body has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the City of Sacramento;
- Adoption of a Mitigation Monitoring Plan (MMP), which specifies the methods for monitoring mitigation measures required to eliminate or reduce the project's significant effects on the environment;
- Adoption of Findings of Fact, and for any impacts determined to be significant and unavoidable, a Statement of Overriding Considerations;
- Approval of a Site Plan and Design Review;
- Approval of a demolition permit;
- Approval of a grading permit to regulate land disturbances, landfill, soil storage, pollution, and erosion and sedimentation resulting from construction activities; and
- Approval of a groundwater memorandum of understanding from the City of Sacramento for construction dewatering.

The proposed project is anticipated to include, but may not be limited to, the following actions by entities other than the City:

- Approval of a construction activity stormwater permit, including an SWPPP, from the CVRWQCB;
- Approval of a pre-treatment permit from the SRCSD to allow discharges associated with construction de-watering to the CSS; and
- Approval of a stationary source permit from the Sacramento Metropolitan Air Quality Management District (SMAQMD).

ATTACHMENTS

Attachment 1 – City of Sacramento SB 610/SB 221 Water Supply Assessment and Certification Form

LAND USE, POPULATION AND HOUSING, AGRICULTURAL RESOURCES AND ENERGY

Introduction

CEQA requires the Lead Agency to examine the effects of a project on the physical conditions that exist within the area that would be affected by the project. CEQA also requires a discussion of any inconsistency between the proposed project and applicable general plans and regional plans.

An inconsistency between the proposed project and an adopted plan for land use development in a community would not constitute a physical change in the environment. When a project diverges from an adopted plan, however, it may affect planning in the community regarding infrastructure and services, and the new demands generated by the project may result in later physical changes in response to the project.

In the same manner, the fact that a project brings new people or demand for housing to a community does not, by itself, change the physical conditions. An increase in population may, however, generate changes in retail demand or demand for governmental services, and the demand for housing may generate new activity in residential development. Physical environmental impacts that could result from implementing the proposed project are discussed in the appropriate technical sections.

This section of the initial study identifies the applicable land use designations, plans and policies, and permissible densities and intensities of use, and discusses any inconsistencies between these plans and the proposed project. This section also discusses agricultural resources and the effect of the project on these resources. In addition, this section discusses energy and the project impact on energy facilities, policies, and other such resources.

Discussion

Land Use

The project site includes approximately 2.39 acres, encompassing a single city block in the downtown Sacramento area. Land use designations in the project area are based on the City's 2035 General Plan which was adopted in March 2015. In addition, the project site is within the City's, Central City Special Planning District (Central City SPD) as well as the Central Business District (CBD), which both help inform applicable land use regulations. The project site is bounded by 3rd Street to the west, 4th Street to the east, L Street to the north, and Capitol Mall to the south.

The project site is situated in an area of the CBD predominantly made up of commercial (e.g., office, hotel, retail, restaurant, entertainment) development in downtown Sacramento. High-rise office buildings with first-floor commercial/retail shops, are located both south and east of the project site, as well as governmental offices, and the State Capitol building. In addition, the Golden 1 Center arena and the Downtown Commons area (DOCO) are both located to the northeast of the project site, across L Street, and directly adjacent to Macy's which is directly north of the project site. To the west, beyond 3rd Street and across I-5, is Old Town Sacramento which parallels the Sacramento River. Also, to the west is the Tower Bridge which connects Sacramento to the City of West Sacramento.

Vehicular access to the project site would be provided into and out of a proposed multi-level internal parking garage at three locations, including approximately mid-block entry and exit points on the 3rd, 4th and L Street frontages. The project site is located in an urbanized area of Sacramento on a previously developed but currently vacant parcel. As described in the project description, the project site is designated as Central Business District (CBD) in the City of Sacramento's 2035 General Plan (2035 General Plan).

The 2035 General Plan describes the Central Business District as Sacramento's most intensely developed area. The CBD includes a mixture of office, governmental, retail, entertainment and visitor-serving uses

built on a formal framework of streets and park spaces. The vision for the CBD in the 2035 General Plan is for land uses to remain relatively the same, but to also create a more vibrant downtown core to include new residential uses. The goal of additional residential uses is to create supportive mixed uses for the already existing uses to help add vitality to the CBD through an extension in the hours of activity, and the built-in market for retail, services, and entertainment. The minimum allowable floor-area ratio (FAR) for the Central Business District land use designation is 3.00 and the maximum FAR is 15.00. The 2035 General Plan land use designations for surrounding properties are also CBD.

An additional SPD, that is adjacent to the project site, is the Entertainment and Sports Complex Special Planning District (ESC SPD) which is to the north-east of the project site. The ESC SPD is located within the Central City area, and generally bounded by 3rd Street to the west, J Street to the north, 7th Street to the east, and L Street to the south. This ESC SPD is designed to provide specific development procedures in creating a unique Entertainment and Sports Center for the City of Sacramento. Specific projects developed within the ESC SPD have been the Golden 1 Center, and the Sawyer Hotel which both contribute in creating the Downtown Commons, or DOCO area. This portion of the Central City is a uniquely situated common area that can intermittently draw large crowds of spectators, which in turn can influence auto, bike, and pedestrian traffic patterns, as well as land use decisions throughout the city.

Zoning for the project site is based on the Central City SPD, which is an overlay to the City's base zoning. The goals of the Central City SPD are to (1) Maintain and improve the character, quality, and vitality of the neighborhoods within the Central City SPD; (2) Create cohesive mixed-use neighborhoods that contain a variety of housing types; (3) Provide an opportunity for a balanced mix of uses in neighborhoods adjacent to transit facilities and transportation corridors; and (4) Facilitate infill redevelopment by allowing a broad mix of uses and flexible development standards. The project site is zoned C-3-SPD (also called the CBD zone) based on the Central City SPD. The C-3-SPD zone is intended to provide for the most intense residential, retail, commercial, and office developments in the city. Parcels in the immediate vicinity of the project site are also zoned C-3-SPD and are within the Central City SPD. Other lots in the immediate vicinity of the project site to the northeast are zoned C-3-SPD, but fall within the ESC SPD, described above.

The proposed project would develop approximately 791,647 gross square feet (gsf) of office space; 96,755 gsf of residential; 24,653 gsf of retail space; and 536,227 gsf of garage space; for a total project gross area of 913,055 gsf, on a 104,108 sf parcel (2.39 acres). The FAR for the proposed project would be 8.77, which falls between the minimum and maximum allowable FAR thresholds for the existing land use designation. Therefore, the proposed use would be compatible with the existing land use designation, and would not require any amendment to the General Plan. The proposed project would also be a conforming use to existing zoning designations and would not require changes to the zoning designation.

The project site would continue the similar land use patterns from adjacent office/retail land uses while also adding a residential component. The proposed project would fill in a vacant site amongst other developed uses; thus, the proposed project would not physically divide an established community. As mentioned above, with current land use patterns remaining the same, it is anticipated that the proposed project would conform with all applicable land use plans, policies, and regulations for the City of Sacramento. In addition, based on the geographic and urban context of the proposed project, there are currently no applicable habitat conservation plans or natural community conservation plans, therefore it is anticipated that no conflicts will arise from the proposed project on any such conservation plans.

Population and Housing, and Employment

There are 100 residential uses proposed for the project site. The 2035 General Plan includes assumptions for the amount of growth that will occur within the Policy Area over the next 20 years. The General Plan assumes the City will grow by approximately 165,000 new residents, 86,483 new jobs, and 68,347 new housing units. The 2035 General Plan Master EIR identifies, estimates, and evaluates population and housing changes that would be caused by development of the 2035 General Plan that have the potential to cause physical environmental effects. The Land Use, Population, and Housing analysis in the 2035 General Plan Master EIR (Chapter 3) provides a detailed discussion of how the City reached these assumptions and the methodology used to determine a realistic level of growth for the City.

For the purposes of this analysis, an estimate of 1.62 persons per dwelling unit is used. This average household size is based on the assumption that households in the Central City area tend to be smaller than those of the City of Sacramento as a whole. This could be considered a conservative estimate, since no vacancy is assumed and the estimates from the Census are for occupied housing units only ("conservative" in this context meaning this may overestimate slightly the additional residential population associated with the project).

As previously mentioned, the proposed project would add 100 new dwelling units. Therefore, the City assumes that the net additional population from the proposed project would be approximately 162 residents. This projected population is consistent with the cumulative population growth assumed in the General Plan and Master EIR.

The project would be consistent with the General Plan land use designation (CBD); additionally, it would not require any change to the current zoning (C-3-SPD). There are no existing houses or residential uses on the project site; therefore, people and housing units would not be displaced as a result of project construction and implementation. Impacts due to the development of proposed project related to population and housing would be less than significant.

The proposed project would employ approximately 4,500 permanent employees, in a variety of office, residential, retail, and related service roles. The project would also provide temporary construction employment for the duration of project construction, which would be anticipated to last approximately 31 months.

Energy

The structure built for the proposed project would be subject to Titles 20 and 24 of the California Code of Regulations, which would reduce demand for electrical energy by implementing energy-efficient standards for residential and non-residential buildings. The 2035 General Plan includes policies (see 2035 General Plan Energy Resources Goal U 6.1.1) to encourage energy-efficient technology by offering rebates and other incentives to commercial and residential developers, coordination with local utility providers and recruitment of businesses that research and promote energy conservation and efficiency.

The Master EIR discussed energy conservation and relevant 2035 General Plan policies in Section 6.3 (page 6-3). The discussion concluded that with implementation of the 2035 General Plan policies and energy regulation (e.g., Title 24) development allowed in the 2035 General Plan would not result in the inefficient, wasteful or unnecessary consumption of energy.

The proposed project would comply with Building Energy Efficiency Standards included in Title 24 of the California Code of Regulations which requires new residential and nonresidential development to incorporate energy efficiency standards into project designs. Development on the project site was anticipated under the 2035 General Plan and the proposed project would implement general plan policies and energy regulations including Title 24 requirements; thus, the proposed project would not result in any energy impacts.

Agricultural Resources

The City of Sacramento 2035 General Plan policies include measures to address the protection and preservation of agricultural lands and operations surrounding Sacramento. Policies ER 4.2.1 and ER 4.2.3 encourage infill development within existing urban areas of the city and require the City and County of Sacramento to coordinate with adjacent jurisdictions to implement existing conservation plans, in order to minimize the pressure for conversion of productive agricultural lands for urban uses and to preserve prime farmland and critical habitat outside the city.[2] Therefore, to the extent the 2035 General Plan

[2] City of Sacramento, 2015. City of Sacramento 2035 General Plan. March 2015. pp. 2-326 and 2-327. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/General-Plan/2035-GP/Environmental-Resources.pdf?la=en. Accessed March 15, 2018.

accommodates future growth within the City limits, the conversion of farmland outside the City limits is minimized through implementation of Policies ER 4.2.1 and 4.2.3.

The project site does not contain soils designated as Important Farmland (i.e., Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance).[3] The site is not zoned for agricultural uses, and there are no Williamson Act contracts that affect the project site. No existing agricultural or timber-harvest uses are located on or in the vicinity of the project site. Finally, development of the project site was anticipated in the 2035 General Plan, which concluded that development impacts assumed under the 2035 General Plan on agricultural resources within the City would be less than significant.

[3] California Department of Conservation, Division of Land Resource Protection, 2014. Sacramento County Important Farmland Map. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/sac14.pdf. Accessed June 12, 2019.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
1. AESTHETICS Would the proposal: A) Create a source of glare that would cause a public hazard or annoyance?	X			
B) Create a new source of light that would be cast onto oncoming traffic or residential uses?	X			
C) Substantially degrade the existing visual character of the site or its surroundings?	X			

Answers to Checklist Questions

Questions A through C

The proposed project would include the construction and operation of a high-rise structure including office, residential, retail, and restaurant uses. The proposed structure would be the tallest building in the downtown Sacramento skyline and would be visible from many points from the north, south, and east, in the City of Sacramento and from the City of west Sacramento to the west. Due to the generally flat landscape surrounding Downtown Sacramento, high rise structures in the Central City can be visible from considerable distances outside of the City limits, including across the Yolo Causeway, approaching from Elk Grove to the South and approaching from Woodland to the northwest. The proposed project would include daytime and nighttime lighting and would be at least partially covered by potentially reflective surfaces. The proposed project would be a prominent aesthetic feature that would alter the shape of the City's skyline. For these reasons, impacts related to aesthetics would be ***potentially significant*** and these issues will be analyzed in the EIR.

Mitigation Measures

Mitigation Measures for impacts relating to aesthetics, light, and glare will be proposed and analyzed in the EIR.

Findings

All potentially significant environmental effects of the proposed project relating to aesthetics, light, and glare will be analyzed in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than significant Impact	No Impact
2. AIR QUALITY Would the proposal: A) Result in construction emissions of NOx above 85 pounds per day?	X			
B) Result in operational emissions of NOx or ROG above 65 pounds per day?	X			
C) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X			
D) Result in PM10 concentrations equal to or greater than five percent of the State ambient air quality standard (i.e., 50 micrograms/cubic meter for 24 hours) in areas where there is evidence of existing or projected violations of this standard?	X			
E) Result in CO concentrations that exceed the 1-hour state ambient air quality standard (i.e., 20.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm)?	X			
F) Result in exposure of sensitive receptors to substantial pollutant concentrations?	X			
G) Result in TAC exposures create a risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources?	X			
H) Conflict with the Climate Action Plan?	X			

Answers to Checklist Questions

Questions A through H

The proposed project would include the construction and operation of a high-rise structure including office, residential, retail, and restaurant uses. Short-term construction emissions would be produced that could expose people to substantial pollutant concentrations or violate air quality standards. Similarly, operational emissions, particularly from automobile trips associated with the proposed project, could result in, or contribute to, air quality pollutant levels that exceed thresholds of significance for criteria air pollutants. For these reasons, impacts related to air quality would be ***potentially significant*** and these issues will be analyzed in the EIR.

Mitigation Measures

Mitigation Measures for impacts relating to air quality will be proposed and analyzed in the EIR.

Findings

The proposed project would have potentially significant environmental effects relating to air quality that will be analyzed in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
3. BIOLOGICAL RESOURCES Would the proposal: A) Create a potential health hazard, or use, production or disposal of materials that would pose a hazard to plant or animal populations in the area affected?	X			
B) Result in substantial degradation of the quality of the environment, reduction of the habitat, reduction of population below self-sustaining levels of threatened or endangered species of plant or animal species?	X			
C) Affect other species of special concern to agencies or natural resource organizations (such as regulatory waters and wetlands)?	X			

Answers to Checklist Questions

Questions A through C

The proposed project would include the construction and operation of a high-rise structure including office, residential, retail, and restaurant uses. The project site was previously developed and, although it is currently unutilized, it contains exposed piles from a previously approved project that was not completed. Natural and man-made features on the site include ruderal herbaceous vegetation, ornamental trees, and manmade water-filled depressions and drainage swales. Construction of the project could negatively impact nesting special-status bird species, migratory birds, and raptors, as well as special-status amphibians. For this reason, impacts related to biological resources would be ***potentially significant*** and this issue will be analyzed in the EIR.

Mitigation Measures

Mitigation Measures for impacts relating to biological resources will be proposed and analyzed in the EIR.

Findings

The proposed project would have potentially significant environmental effects relating to biological resources that will be analyzed in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
4. CULTURAL RESOURCES Would the project: A) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?				X
B) Cause a substantial adverse change in the significance of an archaeological resource as pursuant to § 15064.5?		X		
C) Disturb any human remains, including those interred outside of formal cemeteries?		X		
D) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC § 21074?		X		
E) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X

This section examines the potential impacts of the proposed project on cultural and paleontological resources. The term cultural resource includes historical resources, archaeological resources, tribal cultural resources, and human remains. Historical resources are categorized as historic architectural resources and archaeological resources. When applicable, the distinction between architectural resources and archaeological resources hinges on the condition of the resource—if a resource is considered a ruin (e.g., building lacking structural elements, structure lacking historic configuration, etc.), it is classified as an archaeological resource. Built environment resources include historic buildings, structures (e.g., bridges, canals, roads, utility lines, railroads), objects (e.g., monuments, boundary markers), and districts. Archaeological resources include historic-period and prehistoric remnants of past cultures, typically recorded as sites or districts. Historic-period archaeological resources are those archaeological resources dating to the period after Euroamerican settlement and may include foundations, landscaping, refuse scatters, mining features, and railroad grades. Prehistoric archaeological resources are those archaeological resources dating to the period prior to Euroamerican settlement and may include lithic scatters, ceramic scatters, quarries, habitation sites, temporary camps, ceremonial sites, and trails. A tribal cultural resource is a site, feature, place, cultural landscape, sacred place, or object of cultural value to a California Native American tribe. This section relies upon the information and findings presented in the cultural resources technical report prepared by Peak and Associates.[4]

Paleontological resources are the fossilized evidence of past life found in the geologic record. Fossils are preserved in sedimentary rocks, which are the most abundant rock type exposed at the surface of the earth. Despite the abundance of these rocks, and the vast numbers of organisms that have lived through time, preservation of plant or animal remains as fossils can be a rare occurrence. In many cases, fossils of animals and plants occur only in limited areas and in small numbers relative to the distribution of the living

[4] Peak and Associates, 2005. *Cultural Resources Overview for the Capitol Towers Project.* Prepared for EIP Associates, 2005.

organisms they represent. In particular, fossils of vertebrates – animals with backbones – are sufficiently rare to be considered nonrenewable resources.

Environmental Setting

Prehistory

Categorizing the prehistoric period into cultural stages allows researchers to describe a broad range of archaeological resources with similar cultural patterns and components during a given timeframe, thereby creating a regional chronology. A commonly used interpretation of the Central Valley prehistoric record and has divided human history in the region into three basic periods: Paleo-Indian (13,550 to 10,550 before present (BP)), Archaic (10,550 to 900 BP), and Emergent (900 to 300 BP)[5] The Archaic period is subdivided into three sub-periods: Lower Archaic (10,550 to 7550 BP), Middle Archaic (7,550 to 2,550 BP), and Upper Archaic (2,550 to 900 BP).[6] Economic patterns, stylistic aspects, and regional phases further subdivide cultural patterns into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

Ethnography

The project area is within the lands occupied and used by the Nisenan, or Southern Maidu. The language of the Nisenan, which includes several dialects, is classified in the Maiduan family of the Penutian linguistic stock.[7,8] The western boundary of Nisenan territory was the western bank of the Sacramento River. The eastern boundary was "the line in the Sierra Nevada Mountain Range where the snow lay on the ground all winter."[9] Nisenan settlement locations depended primarily on elevation, exposure, and proximity to water and other resources. Permanent villages usually were located on low rises along major watercourses. Village size ranged from three houses to 40 or 50. Houses were domed structures covered with earth and tule or grass. Brush shelters were used in summer and at temporary camps during food-gathering rounds. Larger villages often had semi-subterranean dance houses that were covered in earth and tule or brush, with a central smoke hole at the top and an east-facing entrance. Another common village structure was a granary used for storing acorns.[10]

As with other California Native American groups, the Gold Rush of 1849 had a devastating effect on the Valley Nisenan. The flood of miners that came to the area in search of gold brought diseases with them that decimated the Nisenan population. Those who survived were subjected to violence and prejudice at the hands of the miners, and the Nisenan eventually were pushed out of their ancestral territory. Although this contact with settlers had a profound negative impact on the Nisenan population through disease and

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5 Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton, "The Central Valley: A View from the Catbird's Seat", In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 147-163, AltaMira Press, Lanham, Maryland, 2007.

6 Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton, "The Central Valley: A View from the Catbird's Seat", In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 147-163, AltaMira Press, Lanham, Maryland, 2007.

7 Kroeber, Alfred L., Handbook of the Indians of California, Bureau of American Ethnology Bulletin 78, Smithsonian Institution, Washington, D.C., 1976 reprinted ed., Dover Publications, Inc., New York, 1925 [1976].

8 Shipley, William F., "Native Languages of California", In California, edited by Robert F. Heizer, pp. 80-90, Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C., 1978.

9 Littlejohn, Hugh W., Nisenan Geography, Document 18, University of California Department of Anthropology, Berkeley, California, 1928.

10 Wilson, Norman L., and Arlean H. Towne, "Nisenan", In *California*, edited by Robert F. Heizer, pp. 387-397, Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C., 1978.

violent actions, the Nisenan people survived and maintained strong communities and action-oriented organizations.[11]

The closest documented Native American village to the project area was *Pijune*, also known as Joe Mound and CA-SAC-26, located approximately 1.5 miles north of the project area. *Pijune* was an ethnographically recorded Nisenan village known to have been large and influential in the area at the time of Sutter's arrival in the 1840s.[12,13]

History

While the Spanish had made forays into the Central Valley since the mid eighteenth century, the earliest non-indigenous presence in the region occurred in 1808 when Capitan Gabriel Moraga led an expedition from Mission San Jose to the northern Sacramento River Valley. By the late 1820s, English, American, and French fur trappers, attracted by the valley's abundance of animal life, had established operations throughout the region. The earliest Euro-American settlement of the area occurred in the 1840s with the establishment of land grants by the Mexican government. In 1839, John Sutter, born in Germany to Swiss parents, became a Mexican citizen and obtained Governor Juan B. Alvarado's permission to establish a settlement in the California interior. Sutter left Yerba Buena in August of 1839, traveling up the Sacramento River in search of a site for his estate. Sutter arrived at the confluence of the American and Sacramento rivers, established a settlement, and received the first land grant in the region in 1841 for his New Helvetia Rancho. The New Helvetia Rancho encompassed 97 square miles and included lands on the east bank of the Feather and Sacramento Rivers. Sutter established Sutter's Fort, and developed fisheries, a flour mill, and a lumber mill.[14]

The Sacramento River Valley remained relatively isolated and sparsely populated until the advent of the Gold Rush period. Given Sacramento's proximity to mining areas, and its accessibility to maritime traffic, the area quickly became a trading and economic center. Commerce along the Sacramento River encouraged continued population growth, with many of the miners and farmers settling along the natural levees of the Sacramento River. Settlers recognized that the active flood plain deposited fertile soils in the lands nearest to the river, which supported bountiful crops and provided easy access to transportation corridors along the river itself. Ranchers and farmers found economic success in providing food and supplies for the miners, although frequent flooding troubled settlers' agricultural efforts and additional settlement.[15]

This site-specific history of the project area is adapted from Peak and Associates.[16] The block bounded by 3rd Street, L Street, 4th Street, and Capitol Mall (or M Street) was built upon by 1851. In 1852, fire destroyed all buildings in the northern half of the block. The block was quickly rebuilt, as was much of Sacramento, and by December of 1852 there were over 700 buildings in the City.

In 1866, Mark Twain reportedly lodged for a few months at one of the boarding houses on the block while working for the *Sacramento Union* newspaper. The building was at 309 M Street until the early 1940s.

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11 Castillo, Edward D., "The Impact of Euro-American Exploration and Settlement", In *California*, edited by Robert F. Heizer, pp. 99-127*,* Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C., 1978.

12 Kroeber, Alfred L., Handbook of the Indians of California, Bureau of American Ethnology Bulletin 78, Smithsonian Institution, Washington, D.C., 1976 reprinted ed., Dover Publications, Inc., New York, 1925 [1976].

13 Derr, Eleanor H., "Archeological Investigations at CA-SAC-16: Interpretations of a Middle/Late Horizon Village in the Lower Sacramento Valley of California", M.A. thesis, Department of Anthropology, California State University, Sacramento, 1983.

14 Hoover, Mildred, Hero Eugene Rensch, Ethel Grace Rensch, and William N. Abeloe, Historic Spots in California, edited by Douglas Kyle, Stanford University Press, Stanford, California, 2002.

15 Hoover, Mildred, Hero Eugene Rensch, Ethel Grace Rensch, and William N. Abeloe, Historic Spots in California, edited by Douglas Kyle, Stanford University Press, Stanford, California, 2002.

16 Peak and Associates, 2005. *Cultural Resources Overview for the Capitol Towers Project.* Prepared for EIP Associates, 2005.

In the 1870s, the streets were raised approximately two feet along a portion of Fourth Street and L Street to help meet the established grades for the City. In 1870, there were at least two "bawdy" houses on the block, one of which was owned by an African American woman.

Japanese immigrants began coming to the United States as contract laborers after 1884 and by 1895, the block had apparently begun to attract Japanese individuals, with one of the boarding houses on the block shown as "Jap. Lodgings." In 1890, there were about 1,100 individuals of Japanese descent in California and by 1910, there were over 41,000.

By 1915 the block became the heart of "Japantown," the Japanese community in Sacramento. There were numerous businesses and boarding houses that catered to the Japanese community, including 10 Japanese restaurants, 7 other restaurants, a "moving pictures" theater, two poolrooms, two Japanese laundries, a saloon, numerous tenements and boardinghouses, a soda works, and a bank. The alley on the block is indicated on maps and in telephone directories as "Jap [sic] Alley."

Japanese and Japanese American individuals were tenants for the most part, but slowly began to purchase lots in the community. In 1925, only two of the buildings on the block had Japanese-surnamed owners; however, by 1940, 12 of the 37 lots on the block were owned by Japanese-surnamed individuals or companies.

By the 1930s, the population of individuals of Japanese descent in the area had declined, in part due to the Depression. In 1942, the internment of Japanese and Japanese Americans began, with 3,500 citizens of Sacramento forced to leave their homes. Residents of the block were taken to the Walerga Center in northern Sacramento County, used as an assembly point, with the internees sent on to Tule Lake.

After Japanese and Japanese American residents were removed from the block, the boardinghouses were rented to other lower income individuals, including African Americans, Chinese and Chinese-Americans, Hispanics, and Phillipinos. Demolition of some buildings on the block began in the early 1940s, including the boarding house where Mark Twain had stayed, which was torn down in 1943. In the 1950s a gas station was constructed at the corner of Capitol Mall and 3rd Street. By 1960, the block became a predominantly Hispanic neighborhood, with several restaurants, some lodging and rooming houses, and several other businesses.

Demolition of all buildings on the block began in the early 1960s, and no businesses were listed for the block after 1964. Copley Press acquired the block as their main office site, and as a plant site for printing books and the *Sacramento Union* newspaper. The center of the block was excavated to at least nine feet below street grade for construction of the building. In turn, the Copley Press building was demolished in 2006. Some excavation on the northwest and south east portions of the block was completed for a proposed building in 2008. Currently the block is vacant.

Regulatory Setting

State

California Environmental Quality Act

CEQA requires lead agencies to determine if a proposed project would have a significant effect on historical resources, including archaeological resources. The CEQA Guidelines define a historical resource as: (1) a resource in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in Public Resources Code (PRC) Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is an historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section 21083 regarding unique archaeological resources. A unique archaeological resource is "an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person" (PRC Section 21083.2 [g]).

The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064[c][4]).

Impacts to tribal cultural resources also are considered under CEQA, as described under PRC Section 21084.2. PRC Section 21074(a) defines a tribal cultural resource as any of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    - included or determined to be eligible for inclusion in the [California Register]; or
    - included in a local register of historical resources, as defined in PRC Section 5020.1(k).
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of [PRC] Section 5024.1. In applying these criteria, the lead agency would consider the significance of the resource to a California Native American tribe.

Per PRC Section 21074(a)(c), an historical resource, unique archaeological resource, or non-unique archaeological resource may also be a tribal cultural resource if it is included or determined eligible for the California Register or included in a local register of historical resources.

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility are based on National Register of Historic Places (National Register) criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for or listed in the National Register.

To be eligible for the California Register, an historical resource must be significant at the local, state, and/or federal level under one or more of the following criteria.

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

2. Is associated with the lives of persons important in our past.

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

4. Has yielded, or may be likely to yield, information important in prehistory or history (PRC Section 5024.1[c]).

For a resource to be eligible for the California Register, it must also retain enough integrity to be recognizable as a historical resource and to convey its significance. A resource that does not retain sufficient integrity to meet the National Register criteria may still be eligible for listing in the California Register.

Assembly Bill 52

In September of 2014, the California Legislature passed Assembly Bill (AB) 52, which added provisions to the PRC regarding the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 requires lead agencies to analyze project impacts on "tribal cultural resources" separately from archaeological resources (PRC Section 21074; 21083.09). The Bill defines "tribal cultural resources" in a new section of the PRC Section 21074. AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Section 21080.3.1, 21080.3.2, 21082.3).

Other Provisions of California Public Resources Code

Several sections of the PRC protect paleontological resources. PRC Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury, and defacement of any paleontological feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted permission.

Section 7050.5 of the Health and Safety Code protects human remains by prohibiting the disinterring, disturbing, or removing of human remains from any location other than a dedicated cemetery. Section 5097.98 of the PRC (and reiterated in CEQA Section 15064.59 [e]) also identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery.

Local

City of Sacramento

The City of Sacramento 2035 General Plan includes policies for both identification and preservation of cultural resources (Policies HCR 2.1.1 to 2.1.17) and public awareness of cultural resources (Policies HCR 3.1.1 to 3.1.4). Specifically, these policies address issues ranging identification of cultural resources and consultation with potential interested parties, to project review and development of protocol for mitigating impacts to cultural resources. The public awareness policies focus on heritage tourism, coordination with interested parties, public/private partnerships, and public education.

Standards of Significance

This analysis evaluates the proposed project's impacts on cultural resources based on the criteria identified in the CEQA Guidelines, Appendix G. The project could have a significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Disturb any human remains, including those interred outside of formal cemeteries;
- Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074; or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Answers to Checklist Questions

Question A

A significant impact would occur if the proposed project caused a substantial adverse change to a historical resource, herein referring to historic-period architectural resources or the built environment, including buildings, structures, and objects. A substantial adverse change includes the physical demolition, destruction, relocation, or alteration of the resource.

No architectural resources are in the project area; therefore, the proposed project is not anticipated to result in a substantial adverse change in the significance of a historical resource. There would be **no impact** to historical resources and no mitigation is necessary.

Question B

This section discusses archaeological resources, both as historical resources according to CEQA Guidelines Section 15064.5, as well as unique archaeological resources as defined in PRC Section 21083.2(g). A significant impact would occur if the proposed project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

In order to determine the archaeological sensitivity of the project area, ESA completed background research, including a review of previous documentation for the project area, and conducted a review of historic maps and existing conditions. ESA completed a records search at the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) at Sacramento State University on February 6, 2017 (SAC-17-22). The NCIC maintains the official CHRIS records of previous cultural resources studies and recorded cultural resources for the County of Sacramento and the project area. The results indicate that several historic-period archaeological investigations have been completed in this part of Sacramento prior to development projects; the nearest to the project area are on the blocks bounded by Capitol Mall, 2nd, 3rd, and N streets;[17] I, J, 5th, and 6th streets;[18] and J, K, 6th, and 7th streets.[19] These investigations all resulted in the discovery of significant archaeological deposits related to the early history of Sacramento. No prehistoric archaeological resources have been documented in the nearby vicinity; the nearest known prehistoric sites are ½ mile to the southeast, northeast, and north. Despite the paucity of known sites in the immediate vicinity, the general area was extensively occupied during the prehistoric period.

As described in the Setting, the block where the proposed Project is located had extensive residential and commercial use during the historic period beginning in the 1850s, with numerous buildings that were subsequently demolished. The grading plan for the Copley Press building indicates that the central portion of the block was excavated to a depth of 9 feet prior to construction and may have actually exceeded that depth as thick concrete pads were apparently installed on the lower level of the building to support the weight of the printing presses.[20] Following demolition of the Copley Press building, additional disturbance occurred in preparation for a new building in the northwest and southeast portions of the block. These disturbances likely destroyed any archaeological features that may have been present, such as artifact filled privies or wells, associated with much of the early settlement on the block.

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17 Meyer, Michael, *Waterfront Archaeological Excavation Report for the Embassy Hotel Suites Site, Sacramento, California.* 2002.

18 Praetzellis, Mary and Adrian Praetzellis, *Archaeological and Historical Studies of the IJ56 Block, Sacramento, California: An Early Chinese Community.* 1982.

19 Praetzellis, Mary, Adrian Praetzellis, and Marley R. Brown III, *Historical Archaeology at the Golden Eagle Site*, *Sacramento, California.* 1980.

20 Peak and Associates, 2005. *Cultural Resources Overview for the Capitol Towers Project.* Prepared for EIP Associates, 2005. p. 7.

There are, however, portions of the project area that remain relatively undisturbed, especially on the northern and southwestern portions of the block, although the southwestern portion may have been at least partially disturbed during installation of underground tanks for the former gas station. Undisturbed portions of the project area have a high potential to contain historic-period artifacts and features that would be able to address important research questions. These resources could be eligible for listing in the California Register and therefore be considered historical resources and/or unique archaeological resources for the purposes of CEQA. There is also a potential for prehistoric archaeological resources to be within the project area; however, this potential is lessened given the amount of previous disturbance.

Impacts to historical resources and/or unique archaeological resources during Project construction would be significant. Any such potential significant impacts would be reduced to a **less-than-significant** level by implementing **Mitigation Measure CUL-1**, which requires that a pre-construction Archaeological Research Design and Treatment Plan be developed and implemented to ensure that any significant archaeological resources are appropriately treated.

Question C

Based on the background research, no human remains are known to exist within the project area. The project would involve ground-disturbing activities and, while unlikely, if any unidentified human remains were encountered during ground disturbing activities impacts to the human remains could be potentially significant. Any such potential significant impacts would be reduced to a **less-than-significant** level by implementing **Mitigation Measure CUL-2**, which would ensure that appropriate and legal protocol would be followed including contacting the County Coroner and, if the remains are determined to be Native American in origin, the Native American Heritage Commission (NAHC).

Question D

CEQA requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in Public Resources Code Section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on the national, state, or local register of historical resources.

ESA sent a letter to the NAHC on March 7, 2018 requesting a search of the sacred lands file and a list of Native American tribes in the vicinity who might have an interest in the Project. ESA received a response on March 16, 2018 indicating that the NAHC does not have record of any sacred sites in the vicinity. ESA provided the response to the City. The City sent a letter to each tribe on the contact list on December 13, 2018. The City received responses from two tribes. The United Auburn Indian Community sent an email to the City on December 28, 2018 and a letter dated January 7, 2019. The Wilton Rancheria sent a letter to the City on December 13, 2018. Both tribes requested consultation regarding the proposed project.

Based on the results of the records search at the NCIC and the response from the NAHC, there are no tribal cultural resources in the project area or in the vicinity. There would be no impact to known tribal cultural resources. The City has drafted comprehensive mitigation to address any potentially significant impacts to unknown tribal cultural resources should they be identified during project construction. Any such potential significant impacts would be reduced to a **less-than-significant** level by implementing **Mitigation Measure CUL-3**, which would require cultural resources sensitivity training for all project personnel prior to construction and **Mitigation Measure CUL-4**, which would ensure that appropriate and legal protocol would be followed in the event of an inadvertent discovery of tribal cultural resources.

Question E

ESA conducted a paleontological database search for fossil localities within Sacramento County through the University of California Museum of Paleontology (UCMP) on-line database March 7, 2018 and reviewed United States Geological Survey (USGS) geologic mapping for the project area. The surficial geology of

the Project area is mapped as Holocene alluvium (Qha).[21] These sediments date from the last 10,000 years and are considered too young to preserve fossil remains.

Per the City's 2035 General Plan Master EIR (Section 4.5, Geology, Soils, and Mineral Resources), the City of Sacramento is not highly sensitive for paleontological resources due to the absence of fossil-bearing soils and rock formations. Proposed project ground-disturbing activities would occur in Holocene alluvium, which is not considered sensitive for paleontological resources. Therefore, with respect to this criterion, there would be **no impact** and no mitigation is necessary.

Mitigation Measures

CUL-1 **Archaeological Research Design and Treatment Plan.** Prior to submittal of a building permit or grading application to the City of Sacramento, the project applicant shall retain a Secretary of the Interior-qualified archaeologist to prepare and implement an Archaeological Resources Design and Treatment Plan (ARDTP). The ARDTP shall include a pre-construction preliminary archaeological testing program for previously undisturbed portions of the project area. The ARDTP shall identify the types of expected archaeological materials that may be encountered in the project area, the testing methods to be used to identify potential feature or site boundaries and constituents, and the locations recommended for testing. the purpose of the testing program will be to determine to the extent possible the presence or absence of archaeological materials in the proposed areas of disturbance for the project that have not been previously disturbed. If, during the testing, a significant archaeological feature or site is uncovered, the project applicant shall conduct a data recovery program as outlined in the ARDTP. The ARDTP will include how the data recovery program would preserve the significant information the archaeological resource is expected to contain. Treatment would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim of targeting the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project. The ARDTP shall include provisions for analysis of data in a regional context; reporting of results; curation of artifacts and data at a local facility acceptable to the City; and dissemination of final confidential reports to the North Central Information Center of the California Historical Resources Information System and the City.

CUL-2 **Implement Procedures in the Event of the Inadvertent Discovery of Human Remains.** If an inadvertent discovery of human remains is made at any time during project-related construction activities or project planning, the City the following performance standards shall be met prior to implementing or continuing actions such as construction, which may result in damage to or destruction of human remains. In accordance with the California Health and Safety Code (HSC), if human remains are encountered during ground disturbing activities, the City shall immediately halt potentially damaging excavation in the area of the remains and notify the Sacramento County Coroner and a professional archaeologist to determine the nature of the remains. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (HSC Section 7050.5[b]).

If the human remains are of historic age and are determined to be not of Native American origin, the City will follow the provisions of the HSC Section 7000 (et seq.) regarding the disinterment and removal of non-Native American human remains.

If the Coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (HSC Section 7050[c]). After the Coroner's findings have been made, the archaeologist and the NAHC-designated Most Likely Descendant (MLD), in consultation with the landowner, shall determine the ultimate treatment and disposition of the remains. The

[21] Helley, E.J. 1979. Preliminary geologic map of Cenozoic deposits of the Davis, Knights Landing, Lincoln, and Fair Oaks quadrangles, California. U.S. Geological Survey Open-File Report OF-79-583. Scale 1:62,500.

responsibilities of the City for acting upon notification of a discovery of Native American human remains are identified in California PRC Section 5097.9 et seq.

CUL-3 **Conduct Cultural Resources and Tribal Cultural Resources Sensitivity and Awareness Training Program Prior to Ground-Disturbing Activities.** The City shall require the applicant/contractor to provide a cultural resources and tribal cultural resources sensitivity and awareness training program (Worker Environmental Awareness Program [WEAP]) for all personnel involved in project construction, including field consultants and construction workers. The WEAP will be developed in coordination with an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology, as well as culturally affiliated Native American tribes. The City may invite Native American representatives from interested culturally affiliated Native American tribes to participate. The WEAP shall be conducted before any project-related construction activities begin at the project site. The WEAP will include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The WEAP will also describe appropriate avoidance and impact minimization measures for cultural resources and tribal cultural resources that could be located at the project site and will outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The WEAP will emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and will discuss appropriate behaviors and responsive actions, consistent with Native American tribal values.

CUL-4 **In the Event that Cultural Resources or Tribal Cultural Resources Are Discovered During Construction, Implement Avoidance and Minimization Measures to Avoid Significant Impacts and Procedures to Evaluate Resources.** If cultural resources or tribal cultural resources (such as structural features, unusual amounts of bone or shell, artifacts, or human remains) are encountered at the project site during construction, work shall be suspended within 100 feet of the find (based on the apparent distribution of cultural materials), and the construction contractor shall immediately notify the project's City representative. Avoidance and preservation in place is the preferred manner of mitigating impacts to cultural resources and tribal cultural resources. This will be accomplished, if feasible, by several alternative means, including:

- Planning construction to avoid tribal cultural resources, archaeological sites and/or other cultural resources; incorporating cultural resources within parks, green-space or other open space; covering archaeological resources; deeding a cultural resource to a permanent conservation easement; or other preservation and protection methods agreeable to consulting parties and regulatory authorities with jurisdiction over the activity.

- Recommendations for avoidance of cultural resources and tribal cultural resources will be reviewed by the City representative, interested culturally affiliated Native American tribes and other appropriate agencies, in light of factors such as costs, logistics, feasibility, design, technology and social, cultural and environmental considerations, and the extent to which avoidance is consistent with project objectives. Avoidance and design alternatives may include realignment within the project site to avoid cultural resources or tribal cultural resources, modification of the design to eliminate or reduce impacts to cultural resources or tribal cultural resources or modification or realignment to avoid highly significant features within a cultural resource or tribal cultural resource.

- Native American representatives from interested culturally affiliated Native American tribes will be invited to review and comment on these analyses and shall have the opportunity to meet with the City representative and its representatives who have technical expertise to identify and recommend feasible avoidance and design alternatives, so that appropriate and feasible avoidance and design alternatives can be identified.

- If the discovered cultural resource or tribal cultural resource can be avoided, the construction contractor(s), will install protective fencing outside the site boundary, including a 100-foot buffer area, before construction restarts. The boundary of a cultural resource or a tribal cultural resource will be determined in consultation with interested culturally affiliated Native American tribes and tribes will be invited to monitor the installation of fencing. Use of temporary and permanent forms of protective fencing will be determined in consultation with Native American representatives from interested culturally affiliated Native American tribes.

- The construction contractor(s) will maintain the protective fencing throughout construction to avoid the site during all remaining phases of construction. The area will be demarcated as an "Environmentally Sensitive Area."

If a cultural resource or a tribal cultural resource cannot be avoided, the following performance standard shall be met prior to continuance of construction and associated activities that may result in damage to or destruction of cultural resources or tribal cultural resources:

- Each resource will be evaluated for California Register of Historical Resources-(California Register) eligibility through application of established eligibility criteria (California Code of Regulations 15064.636), in consultation with consulting Native American Tribes, as applicable.

If a cultural resource or a tribal cultural resource is determined to be eligible for listing in the California Register, the City will avoid damaging effects to the resource in accordance with California PRC Section 21084.3, if feasible. The City shall coordinate the investigation of the find with a qualified archaeologist (meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology) approved by the City and with interested culturally affiliated Native American tribes that respond to the City's invitation. As part of the site investigation and resource assessment, the City and the archaeologist shall consult with interested culturally affiliated Native American tribes to assess the significance of the find, make recommendations for further evaluation and treatment as necessary and provide proper management recommendations should potential impacts to the resources be determined by the City to be significant. A written report detailing the site assessment, coordination activities, and management recommendations shall be provided to the City representative by the qualified archaeologist. These recommendations will be documented in the project record. For any recommendations made by interested culturally affiliated Native American tribes that are not implemented, a justification for why the recommendation was not followed will be provided in the project record.

Native American representatives from interested culturally affiliated Native American Tribes and the City representative will also consult to develop measures for long-term management of any discovered tribal cultural resources. Consultation will be limited to actions consistent with the jurisdiction of the City and taking into account ownership of the subject property. To the extent that the City has jurisdiction, routine operation and maintenance within tribal cultural resources retaining tribal cultural integrity shall be consistent with the avoidance and minimization standards identified in this mitigation measure.

If the City determines that the project may cause a significant impact to a tribal cultural resource, and measures are not otherwise identified in the consultation process, the following are examples of mitigation capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to the resource. These measures may be considered to avoid or minimize significant adverse impacts and constitute the standard by which an impact conclusion of less-than significant may be reached:

- Avoid and preserve resources in place, including, but not limited to, planning construction to avoid the resources and protect the cultural and natural context, or

planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

- Treat 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:
  - Protect the cultural character and integrity of the resource.
  - Protect the traditional use of the resource.
  - Protect the confidentiality of the resource.
  - Establish permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or using the resources or places.
  - Protect the resource.

Findings

All potential significant environmental effects of the Project relating to cultural and paleontological resources can be mitigated to a less-than-significant level.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No impact
5. GEOLOGY, SOILS, and SEISMICITY Would the project allow a project to be built that will either introduce geologic or seismic hazards by allowing the construction of the project on such a site without protection against those hazards?		X		

Environmental Setting

The proposed project site is located within the Sacramento Valley, and lies centrally in the Great Valley geomorphic province of California, a relatively flat alluvial plan composed of a deep sequence of sediments in a bedrock trough. The Sacramento Valley forms the northern third of the Great Valley, which fills a northwest-trending structural depression bounded on the west by the Great Valley Fault Zone and the northern Coast Range and to the east by the northern Sierra Nevada and the Foothills Fault Zone. Most of the surface of the Great Valley is covered with Holocene and Pleistocene-age alluvium, primarily composed of sediments from the Sierra Nevada and the Coast Ranges, which were carried by water and deposited on the valley floor. Siltstone, claystone, and sandstone are the primary types of sedimentary deposits. Older Tertiary Cenozoic deposits underlie the Quaternary alluvium.

Seismicity

Within the City of Sacramento and the Sacramento region, there are no known active faults. The greatest earthquake threat to the city comes from earthquakes along Northern California's major faults, which are the San Andreas, Calaveras, and Hayward faults. Ground shaking on any of these faults could cause shaking within the City to an intensity of 5 to 6 moment magnitude (Mw). Sacramento's seismic ground-shaking hazard is low, ranking among the lowest in the state. The city is in Seismic Zone 3; accordingly, any future development, rehabilitation, reuse, or possible change of use of a structure would be required to comply with all design standards applicable to Seismic Zone 3.[22]

Liquefaction

Liquefaction is a soil strength and stiffness loss phenomenon that typically occurs in loose, saturated cohesion-less sands as a result of strong ground shaking during earthquakes. The potential for liquefaction at a specific site is usually determined based on the results of the underlain soil composition and groundwater conditions beneath the site. Some areas in the City of Sacramento are susceptible to liquefaction events, including the Central City, Pocket, and North and South Natomas Community Plan areas. The proposed project site is not located within a State Designated Seismic Hazard Zone for liquefaction.[23]

[22] City of Sacramento, 2015. City of Sacramento 2035 General Plan Master Environmental Impact Report. p. 4.5-1.

[23] California Department of Conservation, 2015. Department of Conservation Website: Seismic Hazard Zones. Available: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed June 13, 2019.

Project Area Geology

According to the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey, the entire project site is made up of Urban land.[24] No unique geologic or physical features are located on or adjacent to the project site.

Standards of Significance

For the purposes of this Initial Study, an impact is considered significant if it allows a project to be built that will either introduce geologic or seismic hazards by allowing the construction of the project on such a site without protection against those hazards.

Answers to Checklist Questions

Question A

The City of Sacramento's topography is relatively flat, the City is not located within an Alquist-Priolo Earthquake Fault Zone, and the City is not located in the immediate vicinity of an active fault. However, the 2035 General Plan indicates that ground shaking would occur periodically in Sacramento as a result of distant earthquakes. The 2035 General Plan further states that the earthquake resistance of any building is dependent on an interaction of seismic frequency, intensity, and duration with the structure's height, condition, and construction materials. Although the project site is not located near any active or potentially active faults, strong ground shaking could occur at the project site during a major earthquake on any of the major regional faults.

According to the California Geological Survey and the USGS, no active faults are mapped across the project site, nor is the project site located within an Alquist-Priolo Earthquake Special Study Zone. In addition, the nearest fault to the proposed project site, the Dunnigan Hills Fault, is located approximately 22 miles to the northwest. Table 5-1 describes the proximity of the project site to local active and potentially active faults. The intensity of ground shaking caused by an earthquake at the Dunnigan Hills Fault is not expected to cause substantial damage to the project site, according to the *Probabilistic Seismic Hazard Assessment for the State of California*.

TABLE 5-1
LOCAL ACTIVE AND POTENTIALLY ACTIVE FAULTS

Activity	Fault Name	Distance, Direction
Historic	Green Valley Fault	67 km W-SW
Historic	Rodgers Creek Fault	98 km W-SW
Active	Dunnigan Hills	35 km W-NW
Active	West Napa Fault	78 km W-SW
Active	Concord Fault	79 km SW
Potentially Active	Midland Fault	33 km W-SW
Potentially Active	Bear Mountains Fault Zone – West	45 km E
Potentially Active	Bear Mountains Fault Zone – East	51 km E
Potentially Active	Maidu Fault	46 km NE
Potentially Active	Melones – West	60 km E-SE
Potentially Active	Melones – East	64 km E-SE

SOURCE: California Geologic Survey, 2016

[24] U.S. Department of Agriculture, 2015. Natural Resources Conservation Service. Custom Soils Report for Sacramento County, California: 301 Capitol Towers. Created from http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed June 13, 2019.

The State of California provides minimum standards for building design through the California Building Standards Code (CBSC) (Title 24 of the California Code of Regulations). The CBSC is based on the federal Uniform Building Code (UBC) but is more detailed and stringent than the federal UBC. Specific minimum seismic safety requirements are set forth in Chapter 23 of the CBSC. The state earth protection law (California Health and Safety Code Section 19100 et seq.) requires that buildings be designed to resist stresses produced by lateral forces caused by earthquakes. Earthquake resistant design and materials are required to meet or exceed the current seismic engineering standards of the CBSC Seismic Risk Zone 3 improvements. The proposed project would be required to comply with CBSC requirements and the City's 2035 General Plan, which require project applicants to prepare site-specific geotechnical evaluations and conformance with Title 24 of the California Code of Regulations.

Construction activities would involve building, utility, and landscaping demolition, as well as excavating, filling, moving, grading, and temporarily stockpiling soils onsite, which would expose site soils to erosion from wind and surface water runoff. The City has adopted standard measures to control erosion and sediment during construction and all projects in the City are required to comply with the City's Standard Construction Specifications for Erosion and Sediment Control. The proposed project would comply with the City's standards set forth in the "Administrative and Technical Procedures Manual for Grading and Erosion and Sediment Control." The project would also comply with the City's grading ordinance (Chapter 15.88 of Sacramento City Code) which specifies construction standards to minimize erosion and runoff.

Because the proposed project would be required to comply with federal, state, and local construction standards, it would not expose people or structures to the risk of loss, injury, or death.

However, per City requirements (2035 Master EIR Policy EC 1.1.2), a geotechnical investigation of the site is required. Since the geotechnical investigation has not been completed to verify onsite geologic conditions, the impact is **potentially significant**. Implementation of **Mitigation Measure GEO-1** described below would reduce the impacts to **less than significant**.

Mitigation Measures

GEO-1 **Geotechnical Investigation**. Prior to issuance of a building permit, the project applicant shall conduct a geotechnical investigation of the project site to determine the potential for ground rupture, earth shaking, and liquefaction due to seismic events, as well as expansive soils problems. As required by the City, recommendations identified in the geotechnical report for the proposed development shall be implemented.

Findings

All significant environmental effects of the proposed project relating to geology, soils, and seismicity would be mitigated to a less-than-significant level.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
6. HAZARDS Would the project: A) Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities?		X		
B) Expose people (e.g., residents, pedestrians, construction workers) to asbestos-containing materials or other hazardous materials?			X	
C) Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during dewatering activities?		X		

Environmental Setting

The project site was previously developed and although it is currently unutilized, it contains foundational elements from a previous development effort and is surrounded by urban development. Urban land uses are associated with hazardous material use and storage resulting of the application of pesticides and fertilizers for landscaping and use of petroleum-related compounds and other chemicals for general maintenance of facilities and equipment. Information relating to hazardous materials on the project site was collected by conducting a review of the California Environmental Protection Agency's (Cal EPA) Cortese List Data Resources (Cortese List).[25] The Cortese list includes the following data resources that provide information regarding the facilities or sites identified as meeting the Cortese list requirements: the list of Hazardous Waste and Substances sites from the California Department of Toxic Substances Control (DTSC) EnviroStor database; the list of Leaking Underground Storage Tank (LUST) sites from GeoTracker database; the list of solid waste disposal sites identified by Water Board; the list of active Cease and Desist Orders and Cleanup and Abatement Orders from Water Board; and the list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code identified by DTSC. The Cortese List is a reporting document used by the state, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. The Cortese List is updated at least annually, in compliance with California regulations (California Code Section 65964.6(a)(4)). The Cortese List includes federal superfund sites, state response sites, non-operating hazardous waste sites, voluntary cleanup sites, and school cleanup sites.

Based on a review of the Cortese List conducted in March 5, 2018, the following five active sites were found within approximately 0.5 miles of the project site.

Union Pacific Railroad, Downtown Sacramento

The Union Pacific Railroad (UPRR) yard is a 240-acre site that was used for heavy industrial activities and train repair. Groundwater at the site, known as the South Plume, is polluted with chlorinated volatile organic compounds (CVOCs). The South Plume originates in the railyards and extends across the Sacramento

[25] California Department of Toxic Substances Control, 2018. Envirostor Database. California Department of Toxic Substances Control. DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List). March 5, 2018. Available: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm.

Station into downtown Sacramento. The eastern and western margins of the plume correspond to approximately 12th Street and 5th Street, respectively. The southern margin of the plume extends to approximately P Street. Groundwater in the South Plume ranges in depth from approximately 25 feet below ground surface (bgs) to as deep as approximately 180 feet bgs.[26]

The South Plume Remedial Action Plan, which was approved in July 2013, is currently being implemented. The Remedial Action Plan identifies remediation goals (levels and timing) and preferred alternative for achieving established remediation goals.[27]

Mixed Use Tower and City Parking

The Mixed-Use Tower and City Parking property, which was contaminated by a railroad maintenance shop, is located 930 feet northeast of the project site. Groundwater at the site was calculated to flow toward the east-southeast, away from the Project site.[28] Therefore, contamination from this site is not considered potential hazard to the Proposed Project.

State of California Central Plant Block 261

The property, located 0.35 miles southeast of the project site, is occupied by a utility plant which formerly provided fuel from an UST. Upon removal of the UST, petroleum hydrocarbons were observed in the soil. Closure of this cleanup site has been approved by the County of Sacramento pending the destruction of the on-site wells[29].

Lot X, City of Sacramento Development Site

Lot X, a paved city parking lot, is located 350 feet southwest of the project site. Petroleum impacted soil and groundwater were discovered at the property, which was subsequently designated as a Leaking UST site. In 2007, a Phase I and Phase II Environmental Site Assessment have been completed for this site. The reports detected relatively low levels of gasoline and motor oil range petroleum hydrocarbon impacts, therefore no remedial action was recommended.[30]

Sacramento County Jail

The Sacramento County Jail, designated as a leaking UST site, is located 0.35 miles northeast of the project site. However, the release of diesel was minor and contamination from this property is considered unlikely to impact the Proposed Project.[31]

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[26] California Department of Toxic Substances Control, 2018. Envirostor Database. The Railyards (SL205072992), 501 Jibboom Street, Sacramento, CA 95814. Available: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL205072992. Accessed March 5, 2018.

[27] California Department of Toxic Substances Control, 2018. Envirostor Database. The Railyards (SL205072992), 501 Jibboom Street, Sacramento, CA 95814. Available: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL205072992. Accessed March 5, 2018.

[28] California Department of Toxic Substances Control, 2018. Envirostor Database. Mixed Use Tower and City Parking (60002233), SE Corner of 5th and J Streets, Sacramento, CA 95814. Available: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002233. Accessed March 5, 2018.

[29] California State Water Resources Control Board, 2018. Geotracker Database. State of California Central Plant Block 261 (T0606794060), 625 Q Street, Sacramento, CA 95814. Available: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606794060. Accessed March 5, 2018.

[30] California State Water Resources Control Board, 2018. Geotracker Database. Lot X City of Sacramento Development Site (T0606716751), 0 N Street, Sacramento, CA 95814. Available: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606716751. Accessed March 5, 2018.

[31] California State Water Resources Control Board, 2018. Geotracker Database. Sacramento County Jail (T0606714066), 651 I Street, Sacramento, CA 95814. Available: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606716751. Accessed March 5, 2018.

Regulatory Setting

State Department of Toxic Substances Control (DTSC)

DTSC is responsible for the management of hazardous materials and hazardous wastes within the state of California. The DTSC oversees some cleanup sites, sharing certain overlapping jurisdiction with the Sacramento County Environmental Management Department (SCEMD) or the Regional Water Quality Control Board (RWQCB). Sites within DTSC's jurisdiction include hazardous materials sites where soil and sometimes groundwater has been contaminated.

Regional Water Quality Control Board (RWQCB)

RWQCB is responsible for maintaining the high quality of waters within the state. Although many hazardous materials sites are overseen by the local Certified Unified Program Agency (CUPA), the RWQCB often assumes lead agency status over hazardous materials sites where groundwater has been contaminated.

County of Sacramento Environmental Management Department (SCEMD)

SCEMD is the local CUPA. Hazardous waste laws and regulations are enforced locally by SCEMD, including UST investigations and cleanups, as referenced in the Setting above for the USTs formerly at the project site.

Sacramento Metropolitan Air Quality Management District (SMAQMD)

SMAQMD enforces Rule 902 that protects the public from exposure to asbestos in the event of a release, as discussed further below. *Federal regulations and regulations adopted by SMAQMD apply to the identification and treatment of hazardous materials during demolition and construction activities. Failure to comply with these regulations respecting asbestos may result in a Notice of Violation (NOV) being issued by SMAQMD and civil penalties under state and/or federal law, in addition to possible action by U.S. EPA under federal law.* Federal law covers a number of different activities involving asbestos, including demolition and renovation of structures (40 CFR § 61.145).

Standards of Significance

For the purposes of this Initial Study, an impact is considered significant if the proposed project would:

- expose people (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities;
- expose people (e.g., residents, pedestrians, construction workers) to asbestos-containing materials or other hazardous materials; or
- expose people (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during dewatering activities.

Answers to Checklist Questions

Question A

As discussed in the Setting, there are no active hazardous materials sites within the project site. Therefore, excavation and earth moving activities during construction are not anticipated to expose construction workers and/or the general public to unusual or excessive risks related to contaminated soils. However, should any previously undiscovered chemicals of concern be found during construction of the project, including excavation or earth moving activities, construction activities would be required to cease. Upon identification of undiscovered contamination, a remediation plan pursuant to Section 25401.05 (a)(1) of the California Health and Safety Code and approved by the appropriate agency or authority must be implemented at the site.

Implementation of **Mitigation Measure HAZ-1** would reduce impacts to **less-than-significant** levels by ensuring that any unidentified contaminated soils are contained and disposed of properly.

Question B

As discussed in the Setting, the project site was previously developed but currently is unutilized and has no existing structures. Therefore, no renovation or demolition would occur. In addition, according to the Cortese list, no known hazardous materials sites are located within the project site.[32] As such, the project site is free of asbestos-containing construction materials.

Construction activities on the project site would involve the transport and use of fuels, lubricants, paint, solvents, and other potentially hazardous materials to the project site during construction. Relatively small amounts of these commonly used hazardous substances would be used on site for construction and equipment maintenance. An array of federal, state, and local laws regulate the transport, management, storage, and use of hazardous materials. These laws are enforced by various City, County, and State departments. Consequently, use of these materials during project construction, for their intended purpose, in compliance with federal, state, and local laws, would not pose a significant risk to the public or environment.

During project operations, the transport, storage, use, and/or disposal of hazardous materials would be limited to common hazardous materials, typical of places of employment (e.g., cleaning agents, paints and thinners, fuels, insecticides, herbicides, etc.). Although limited quantities of hazardous materials can be found in most buildings, the use of such substances would not occur in quantities that would present a significant hazard to the environment or the public. Accidents or spills involving small quantities of the materials typical of any residences or place of employment (cleaning agents, paints, etc.) would not create a significant hazard to the public or the environment. Therefore, construction and operation of the project, in compliance with existing regulations, would not expose people (e.g., pedestrians, construction workers) to asbestos-containing materials or other hazardous materials. This impact is considered to be **less than significant**.

Question C

As discussed in the Setting, no known groundwater contamination exists on the project site.[33] However, dewatering during construction activities could result in the movement of the South Plume, northwest of the project site. If groundwater was actively pumped from the site for construction and operation, the South Plume could move towards the project site. Special dewatering recommendations may be required for potential excavations that extend below the foundation subgrade level during periods when groundwater is high. Active dewatering would require the installation of a series of groundwater wells and pumps surrounding the project site. The active system would require a high amount of pumping to reduce the groundwater level at the project site. Further, active pumping for dewatering would lower groundwater levels in areas adjacent to the project site and could affect the movement of the underlying South Plume.

Using a passive dewatering system would be less intensive and would not require the pumping of groundwater in quantities that could affect the current extent of the plume. Passive dewatering techniques would be sensitive to changes in groundwater level and the depth of the excavation. The advantage of a passive dewatering system is that the flow rate of water entering the excavation would be controlled by the Sacramento and American River levels and permeability of the silty, sandy, and gravelly soil adjacent to and beneath the proposed development. During periods of low river levels, little or no dewatering would be required. As the rivers rise, the flow rate of water entering the excavation would be relatively slow due to the low permeability of the soil in and around the project site. Consequently, the rate in which water would

[32] California Department of Toxic Substances Control, 2018. Envirostor Database. California Department of Toxic Substances Control. DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List). March 5, 2018. Available: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm.

[33] California Department of Toxic Substances Control, 2018. Envirostor Database. California Department of Toxic Substances Control. DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List). March 5, 2018. Available: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm.

need to be collected and removed from the proposed excavation would be less than a comparable active dewatering system that is designed to locally suppress the groundwater table.

Implementation of **Mitigation Measure HAZ-2** would reduce impacts to **less-than-significant** levels by ensuring that dewatering activities do not move the plume of groundwater contamination towards the project.

Mitigation Measures

HAZ-1 If unidentified or suspected contaminated soil or groundwater evidenced by stained soil, noxious odors, or other factors, is encountered during site preparation or construction activities work shall stop in the area of potential contamination, and the type and extent of contamination shall be identified by a qualified professional. The qualified professional shall prepare a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations, and recommendations for appropriate handling and disposal. Site preparation or construction activities shall not recommence within the contaminated areas until remediation is complete and a “no further action” letter is obtained from the appropriate regulatory agency.

HAZ-2 Construction and operation of the Proposed project shall implement a dewatering regime detailed in a subdrain plan. The subdrain plan shall use a passive dewatering system, including, but not limited to, a series of subdrains, sumps, and pumps, to prevent any influence on the movement or extent of the existing South Plume. The passive dewatering system and subdrain plan shall be written, managed, and updated by a qualified State licensed engineer.

Findings

All significant environmental effects of the proposed project relating to hazards would be mitigated to a less-than-significant level.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
7. HYDROLOGY AND WATER QUALITY Would the project: A) Substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increases in sediments and other contaminants generated by construction and/or development of the project?			X	
B) Substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood?			X	

Environmental Setting

Hydrology

The project site is within a greater regional context that includes the Sacramento River and the American River and their tributaries, which merge in the City of Sacramento approximately 1.25 miles north of the project site. The Sacramento River Basin encompasses approximately 27,000 square miles and is bound by the Sierra Nevada mountain range to the east, the California coast range to the west, the Cascade Range and Trinity Mountains to the north, and the Sacramento River Delta to the southeast.[34]

The project site is located within the City's existing downtown grid and was previously developed. Although it is currently unutilized with no impervious surfaces, adjacent land uses to the project site are urbanized, with a high level of impervious surfaces. The project lies within the South American Subbasin, which is set in the Sacramento Valley Groundwater Basin. The subbasin is bound on the east by the Sierra Nevada Mountain Range, on the west by the Sacramento River, on the north by the American River, and on the south by the Consumnes and Mokelumne Rivers. These four perennial rivers create a groundwater divide in the shallow subsurface. Groundwater storage capacity in the subbasin was calculated at 4,816,000.[35]

Surface and groundwater within the City of Sacramento are regulated by the CVRWQCB. The primary function of the CVRWQCB is the prevention of either the introduction of new pollutants or an increase in the discharge of existing pollutants into bodies of water that fall under its jurisdiction.

Flood Protection

The Federal Emergency Management Agency (FEMA)[36] is responsible for delineating areas that are expected to be subject to flooding during a 100-year flood event. A 100-year flood event is defined as the

[34] Sacramento River Watershed Program, 2018. Sacramento River Basin. Available: http://www.sacriver.org/aboutwatershed/roadmap/sacramento-river-basin. Accessed June 12, 2019.

[35] DWR, 2004. Sacramento Valley Groundwater Basin – South American Subbasin. Available: https://www.water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/5-21.65.pdf. Accessed March 14, 2018.

[36] Federal Emergency Management Agency, 2015. Flood Insurance Rate Map Number 06067C0160J. Available: https://msc.fema.gov/portal. Accessed June 13, 2019.

area that is expected to be inundated by flood flows during a rainfall event that would have an annual probability of occurrence of one percent. FEMA creates and maintains Flood Insurance Rate Maps (FIRMs) which identify areas located within a 100-year floodplain boundary area. Based on FEMA flood mapping, the Project site is within Zone X. Zone X limits the base flood and the 0.2-percent annual-chance (of 500 year) flood. The southeast portion of the project site is within the "Area with Reduced Flood Risk due to Levee" while the northwest corner is within the "Area of Minimal Flood Hazard." Areas of Minimal Flood Hazard is defined as areas outside the Special Flood Hazard Area (SFHA) that are higher than the elevation of the 0.2 percent annual-chance flood.

Stormwater Infrastructure

Local stormwater drainage in and surrounding the project area is collected by City storm drain systems, and pumped or gravity flown into nearby drainages, creeks, and rivers. The public wastewater collection system within the city includes a combined sewer system (CSS) in the older central city area, the smaller Basin 52 system located in the western portion of downtown, and a newer separated sewer system (sanitary sewer) in the remaining areas of the City. The project site is located within Basin 52, which serves the storm drainage needs of an area of approximately 320 acres, bounded generally by the UPRR tracks north of I Street, Sacramento River, S Street, and 7th & 10th streets.[37] Within the Basin 52 service area, stormwater and wastewater are managed separately, with stormwater discharged through the levee into the Sacramento River at Sump 52, located near the Crocker Museum at 3rd and P streets, and wastewater diverted to the CSS.

The CSS serves residences and businesses generally within the Downtown, East Sacramento, and Land Park communities, which contribute both sanitary sewage and storm drainage flows (combined sewer) to the CSS. The communities of East Sacramento, River Park and Tahoe Park contribute only sanitary sewage flows to the CSS. Pipes within the latter communities once conveyed combined sewer but the sanitary sewer and storm drainage flows were separated in the 1950s in an effort to improve operational efficiency by diverting storm drainage into its own system and thus reduce the surcharging caused by high runoff flows.

The CSS is composed of about 345 miles of 4- to 120-inch diameter vitrified clay, reinforced concrete and brick pipes that drain to the west to two large pump station facilities known as Pump Station 1/1A/1B and Pump Station 2/2A, located near the Sacramento River. Pump Stations 1B and 2A are the primary pumping stations at each facility, operating continuously throughout the year, while Pump Stations 1/1A and 2 only operate during large storms. Other City facilities include an off-line storage facility known a Pioneer Reservoir that also serves as a primary treatment plant and the Combined Wastewater Treatment Plant (CWTP), which is another primary treatment plant with a capacity of 130 million gallons per day (mgd). Pioneer Reservoir has a peak hydraulic capacity of approximately 350 mgd and a treatment capacity of about 250 mgd.

The City has an agreement with the SRCSD whereby the City can convey a maximum of 60 mgd to the Sacramento Regional Wastewater Treatment Plant (SRWTP) for secondary treatment prior to discharge to the Sacramento River. This capacity is sufficient to treat all CSS dry weather sanitary flows (about 17 to 18 mgd) and stormwater from low-intensity storms. During moderate to large storms when the CSS flows are greater than 60 mgd, the flows greater than 60 mgd are routed to CWTP and/or Pioneer Reservoir for temporary storage. When flows exceed storage capacity, the excess flows are released to the Sacramento River after receiving primary treatment, including chlorination and de-chlorination. When the storage and treatment capacities are reached, additional CSS flows are discharged directly to the Sacramento River from Sump 1 and/or Sump 2.

[37] City of Sacramento Department of Utilities, 2015. City of Sacramento Drainage Basins Map. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/DOU/Specs-Drawings/DRAINAGE_BASINS_11-2015.pdf?la=en. Accessed April 18, 2019.

Flows conveyed by the City's wastewater systems are routed to the SRWTP for treatment and disposal via an interceptor system consisting of large diameter pipes and pump stations. The interceptor system and the SRWTP, located just south of the City limits, are owned and operated by the independent SRCSD.

Regulatory Setting

Stormwater Quality Improvement Plan

The City of Sacramento Stormwater Quality Improvement Program (SQIP) was established in 1990 to reduce the pollution carried by stormwater into local creeks and rivers. The SQIP[38] outlines the priorities, key elements, strategies, and evaluation methods of the City's Stormwater Management program. The Program is based on the National Pollutant Discharge Elimination System (NPDES) municipal stormwater discharge permit. The comprehensive Program includes pollution reduction activities for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. The Program also includes an extensive public education effort, target pollutant reduction strategy and monitoring program.[39]

Sacramento City Code

The Sacramento City Code Section 13.08.145 addresses mitigation of drainage impacts and provides a design and procedures manual for water, sanitary sewer, storm drainage, and water quality facilities. The code requires that when a property contributes drainage to the storm drain system or combined sewer system, all storm water and surface runoff drainage impacts resulting from the improvement or development must be fully mitigated to ensure that the improvement or development does not affect the function of the storm drain system and that there is no increase in flooding or in water surface elevation that adversely affects individuals, streets, structures, infrastructure, or property. The project site is located within Sacramento of Sacramento City Sewer System service area.[40] Revenues are generated from impact fees paid by developers and others whose projects add to the demand on the combined sewer collection systems.

Standards of Significance

For purposes of this Initial Study, impacts to hydrology and water quality may be considered significant if the proposed project would:

- substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increases in sediments and other contaminants generated by construction and/or development of the proposed project or
- substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood.

Answers to Checklist Questions

Question A

The proposed project may result in some sedimentation and construction-period erosion and runoff. Construction activities associated with the proposed project would expose soils that could result in rainfall-generated runoff into the City's storm system. Fuel, oil, grease, solvents, concrete wash, and other chemicals used in construction activities have the potential to create toxic problems if allowed to enter a

[38] City of Sacramento, 2007. City of Sacramento Department of Utilities, Engineering Services. Stormwater Quality Improvement Program. Accessed March 15, 2018.

[39] City of Sacramento, 2016. Stormwater Program Information Page. Available: https://www.cityofsacramento.org/Utilities/Stormwater/About-Us. Accessed March 15, 2018.

[40] City of Sacramento, 2018. City of Sacramento City Sewer System. Available: https://www.cityofsacramento.org/-/media/Corporate/Images/DOU/Map-of-sewer-systems.jpg?la=en. Accessed March 15, 2018.

waterway. Sediments and other contaminants could ultimately be discharged to the Sacramento River through the storm drain systems, or migrate to groundwater via infiltration, which could violate water quality standards or waste discharge requirements.

The proposed project would be required to apply for a NPDES General Construction Permit to prevent potential discharges of runoff from construction activities into the City's storm system. The NPDES General Construction Permit would require the preparation of a Storm Water Pollution Prevention Plan (SWPPP) to be kept on the project site during construction activities. The SWPPP must include Best Management Practices (BMPs), such as drop inlet protection devices, vegetation erosion control measures (i.e., mulching, grassy swales, or seeding/plantings), physical stabilization (i.e. silt fences, straw bale barriers, sandbag barrier, etc.) or equally effective soil during project construction. Other BMPs that could be implemented as part of the SWPPP include, but would not be limited to:

- reduction of area and length of time that the site is cleared and graded;
- revegetation/stabilization of cleared areas as soon as possible; and
- implementation of compressive erosion, dust, and sediment controls.

Compliance with measures identified in the SWPPP would reduce contaminants reaching waterways. Therefore, the proposed project would not violate any water quality standards or otherwise degrade water quality. Accordingly, impacts relating to water quality would be **less than significant**.

Question B

The project site is located within Zone X, in an area with "Reduced Flood Risk due to Levee" and "Area of Minimal Flood Hazard", as mapped by FEMA. Accordingly, the project site is outside the area having a 0.2 percent chance of a flood. Based on these designations, the project site is not subject to flooding from the 100 or 500-year storm events. Because the proposed project site is located outside the FEMA 100-year floodplain, the project would not place people and/or property within a 100-year flood hazard, expose people to significant risk, or impede flood flows, a **less-than-significant** impact would occur.

Mitigation Measures

None required.

Findings

The proposed project would not have significant environmental effects relating to hydrology and water quality.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
8. NOISE Would the project: A) Result in exterior noise levels in the project area that are above the upper value of the normally acceptable category for various land uses due to the project's noise level increases?	X			
B) Result in residential interior noise levels of 45 dBA L_{dn} or greater caused by noise level increases due to the project?	X			
C) Result in construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance?	X			
D) Permit existing and/or planned residential and commercial areas to be exposed to vibration-peak-particle velocities greater than 0.5 inches per second due to project construction?	X			
E) Permit adjacent residential and commercial areas to be exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations?	X			
F) Permit historic buildings and archaeological sites to be exposed to vibration-peak-particle velocities greater than 0.2 inches per second due to project construction and highway traffic?	X			

Answers to Checklist Questions

Questions A through C

The proposed project would include the construction and operation of a high-rise structure, including office, residential, retail, and restaurant uses. Project construction would result in substantial amounts of noise and vibration. Employees, residents and visitors to the project site would substantially increase the amount of vehicle trips to and from the project site, during project operations. For these reasons, impacts related to noise would be ***potentially significant*** and these issues will be analyzed in the EIR.

Mitigation Measures

Mitigation Measures for impacts relating to noise and vibration will be proposed and analyzed in the EIR.

Findings

The proposed project would have potentially significant environmental effects relating to noise will be analyzed in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
9. PUBLIC SERVICES Would the project result in the need for new or altered services related to fire protection, police protection, school facilities, or other governmental services beyond what was anticipated in the 2035 General Plan?			X	

Environmental Setting

The project site is located in downtown Sacramento and is served with fire protection and police protection by the City of Sacramento.

The Sacramento City Police Department (SPD) provides police protection services to the project site. The project area is serviced by Central Command, operating through the Richards Police Facility at 300 Richards Boulevard approximately 1.15 miles north of the project site. In addition to the SPD, the Sacramento County Sheriff's Department, California Highway Patrol (CHP), UC Davis Police Department, and the Regional Transit Police Department aid the SPD to provide protection for the City.

The Sacramento Fire Department (SFD) provides fire protection and emergency medical services to the entire City and some small areas just outside the City boundaries within the Sacramento County limits. SFD provides fire protection and emergency medical services to the project area. First-response service is provided by Station 1, located at 624 Q Street, approximately 0.42 miles south-southeast of the project site.[41] Service is also provided by Station 2, located at 1229 I Street approximately 0.74 miles west of the site; Station 5, located at 731 Broadway approximately 1.02 miles south of the project site; Station 14, located at 1341 North C Street approximately 1.31 miles northwest of the project site; and Station 4, located at 3145 Granada Way approximately 2.14 miles west-southwest of the project site.

City of Sacramento Unified School District provides school services to approximately 42,800 students within the project area. The District serves 40 elementary schools, 5 K-8 schools, 9 middle schools, 5 high schools, 2 adult schools, and 4 children centers, plus 1 administrative site. Elementary, middle, and high school students are assigned to a designated neighborhood school based on where the student lives, as long as the school offers the services required by the student. Each neighborhood school has a defined geographic boundary and is intended to serve the students who live within that boundary. William Land Elementary School, Sutter Middle School, and C.K. McClatchy High School are the assigned schools for the proposed project site.[42]

Standards of Significance

For the purposes of this Initial Study, an impact would be considered significant if the project resulted in the need for new or altered services related to fire protection, police protection, school facilities, or other governmental services beyond what was anticipated in the 2035 General Plan.

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41 City of Sacramento Fire Department, 2019. Map of Engine Company First-In Districts and Response Zones – BARB Configuration. Updated January 23, 2019. Available: http://www.cityofsacramento.org/-/media/Corporate/Files/Fire/Maps/Engine-Districts-20120423.pdf?la=en. Accessed June 13, 2019.

42 Sacramento City Unified School District, 2018. SCUSF School Locator Interactive Map. Available: https://www.google.com/maps/d/u/0/viewer?mid=106OuWPg2xI-E7nrd2rmvbU0OUGI&ll=38.54453899075784%2C-121.45743026473997&z=13. Accessed June 13, 2019.

Answers to Checklist Questions

Fire Protection

The proposed project would create an increased demand for fire protection services to the project area. The Sacramento Fire Department would provide fire protection and emergency medical services to the proposed project. Five fire stations are located in close proximity to the proposed project site. The proposed project would be served by SFD Station 1, located approximately 0.42 miles south-southeast of the site, with backup service provided by Stations 2, 5, 14, and 4.

According to the 2035 General Plan Master EIR, the SFD requires a ratio of one fire station for every 1.5-mile service radius, per every 16,000-population, and where a company experiences call volumes exceeding 3,500 in a year. For purposes of the Master EIR analysis, a 1 station per 16,000 city residents threshold was used to determine whether the additional growth anticipated to occur under full buildout of the General Plan, including the proposed project site, would require additional fire stations that could result in additional environmental impacts that were not evaluated in the Master EIR[43]. The proposed project is consistent with the land use designation in the 2035 General Plan, and although it introduces new office, retail and residential space, impacts to fire service from the proposed project are accounted for under the 2035 General Plan. The proposed project would also incorporate fire protection features as required in the City Code, including alarm systems, fire extinguisher systems, and exit illumination. Therefore, the project would comply with the requirements of the City Code and General Plan policies regarding adequate fire protection services.

For the reasons stated above, the proposed project would not result in the need for new fire protection facilities, and impacts related to fire protection would be **less than significant**.

Police Protection

The proposed project would create an increased demand for police protection services to the project area. The project area, including the proposed project site, is currently served by Central Command, located at 300 Richards Boulevard, approximately 1.15 miles north of the project site. Although the proposed project would increase the service population for the SPD in the project area, the SPD does not have an adopted officer-to-resident ratio. The Department uses a variety of data that includes GIS-based data, call and crime frequency information, and available personnel to rebalance the deployment of resources on an annual basis to meet the changing demands of the City. However, the project applicant would be required to pay fair share fees for the provision of public services as a result of project implementation. Additionally, the location of the project would be consistent with established service areas in the Sacramento 2035 General Plan and SPD Annual Report.[44]

As the proposed project would not result in the need for new police protection facilities, impacts related to police protection would be **less than significant**.

Schools

The proposed project includes 100 multi-family residential units, resulting in a permanent increase in population to the area. According to the Sacramento Unified School District Developer Fee Justification Report, a new multi-family unit ("apartments" and "condos") will generate an average of 0.26 K-12 students.[45] Student generation varies based on grade level with 0.19 students generated in grades K-6,

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[43] City of Sacramento, 2014. City of Sacramento 2035 General Plan Master Environmental Impact Report. p. 4.10-5.

[44] Sacramento Police Department, 2016. Sacramento Police Department 2016 Annual Report. Available: http://www.cityofsacramento.org/Police/About-SPD/Annual-Report. Accessed March 14, 2018.

[45] Sacramento City Unified School District, 2012. Developer Fee Justification Report. Available: www.scusd.edu/sites/main/files/file-attachments/scusd_level_1_11_042612.pdf. Accessed June 13, 2019. p. 2.

0.03 students generated in grades 7-8, and 0.04 students generated in grades 9-12 per multi-family dwelling unit.[46] Based on this generation rate, the proposed project is expected to generate 26 K-12 students, encompassing 19 K-6 students, three 7-8 students, and four 9-12 students.

The proposed General Plan policies include measures to accommodate growth and increased service demands. Policies ERC 1.1.1 and ERC 1.1.2 encourages the City to work with school districts to ensure that schools are provided to serve all existing and future residents, are constructed in safe locations in the neighborhoods that they serve, and are connected to surrounding uses by walkways, bicycle paths, and greenways. Policy ERC 1.1.3 suggests that schools be developed with joint uses to integrate recreational, cultural, and non-school related activities.

Implementation of Sacramento 2035 General Plan Policies ERC 1.1.1 through ERC 1.1.3 would ensure that adequate school facilities are provided to serve the anticipated student growth in the city. Those policies, coupled with the payment of fees by developers under SB 50, would serve as complete CEQA mitigation to satisfy the impact of development on school facilities. Therefore, the impact to school facilities would be **less than significant**.

Mitigation Measures

None required.

Findings

The project would have no significant environmental effects relating to public services.

[46] Sacramento City Unified School District, 2012. Developer Fee Justification Report. Available: www.scusd.edu/sites/main/files/file-attachments/scusd_level_1_11_042612.pdf. Accessed June 13, 2019. p. 7.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
10. RECREATION Would the project: A) Cause or accelerate substantial physical deterioration of existing area parks or recreational facilities?			X	
B) Create a need for construction or expansion of recreational facilities beyond what was anticipated in the 2035 General Plan?			X	

Environmental Setting

The City of Sacramento Youth, Parks and Community Enrichment (Parks) Department maintains parks and recreational facilities within the City of Sacramento. The Parks Department classifies parks according to three distinct types: (1) neighborhood parks; (2) community parks; and, (3) regional parks. Neighborhood parks are typically less than ten acres in size and are intended to be used primarily by residents within a half-mile radius. Neighborhood parks contribute to a sense of community by providing gathering places for recreation, entertainment, sports, or quiet relaxation. Community Parks are generally 10 to 60 acres and serve an area within approximately two to three miles, encompassing several neighborhoods and meeting the requirements of a large portion of the City. Regional parks are larger in size and serve the entire City, as well as population from around the region. Regional parks are developed with a wide range of improvements not usually found in local neighborhood and community parks.[47] The City of Sacramento currently has a park inventory of 226 facilities with a total area of 3,431 acres. Of these, 1,607 acres are neighborhood and community parks and the remaining are City regional parks and parkways.

The closest parks to the proposed project site are Crocker Park, located approximately 530 feet southwest of the project site, at the corner of 3rd Street and N Street; Roosevelt Park, located 0.5 mile southeast of the project site, at the corner of P Street and 9th Street; The Capitol Park, located 0.5-mile east of the project site, at Capitol Mall and 10th Street; and Cesar Chavez Plaza Park, located 0.4 mile to the northeast of the project site, at the corner of J Street and 9th Street. In general, neighborhood parks are located near the residential neighborhoods that they serve.

The City's 2035 General Plan establishes a goal of developing and maintaining 5 acres of neighborhood and community parks and other recreational facilities/sites per 1,000 residents. The 2035 General Plan also requires new residential development to meet its fair share of park dedication, payment of a fee in lieu of dedication, or a combination of the two. For new development in urban areas where land dedication or acquisition is constrained by a lack of available suitable properties (e.g., the Central City), General Plan Policy ERC 2.2.5 requires new development to either construct improvements or pay fees for existing park and recreation enhancements to address increased use. General Plan Policy ERC 2.2.5 requires the City to identify and pursue the best possible options for park development, such as joint use, regional park partnerships, private open space, acquisition of parkland, and use of grant funding.

Residential and non-residential projects that are built in the City of Sacramento are required to pay a park development impact fee pursuant to Chapter 18.44 of the Sacramento City Code. The fees collected pursuant to Chapter 18.44 are used to finance the construction of neighborhood and community park

[47] City of Sacramento Department of Parks and Recreation, 2015. Parks. Available: http://portal.cityofsacramento.org/ParksandRec/Parks. Accessed March 31, 2015.

facilities. Projects sized below the map requirement threshold are not required to meet the construct improvements or pay fees.

Standards of Significance

For purposes of this Initial Study, impacts to recreational resources are considered significant if the proposed project would do either of the following:

- cause or accelerate substantial physical deterioration of existing area parks or recreational facilities; or
- create a need for construction or expansion of recreational facilities beyond what was anticipated in the 2035 General Plan.

Answers to Checklist Questions

Questions A and B

The proposed project would construct 100 residential apartment units, which would house up to 162 individuals, and develop 24,653 sf of retail uses and 791,647 sf of office uses. The proposed residential units would add demand for parks to the project site. The proposed project would be subject to park development impact fees pursuant to Chapter 18.44 of the City's code. The City would determine the park development impact fee at the time of development and payment of the fees is required at the time of application for building permits. Park development impact fees are used by the City to finance construction of new neighborhood and community parks and address the impacts on existing parks caused by development in the City. Based on the payment of park development impact fees, the proposed project would not adversely affect the capacity or physical conditions of local parks and recreation facilities. Further, no aspect of this project would cause or accelerate the physical deterioration of area parks and recreation facilities, and would not create the need for construction or expansion of parks or recreation facilities. This impact would be **less than significant**.

Mitigation Measures

None required.

Findings

The project would have no significant environmental effects relating to recreation.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
11. TRANSPORTATION AND CIRCULATION Would the project: A) Roadway segments: degrade peak period Level of Service (LOS) from A, B, C or D (without the project) to E or F (with project) or the LOS (without project) is E or F, and project generated traffic increases the Volume to Capacity Ratio (V/C ratio) by 0.02 or more?	X			
B) Intersections: degrade peak period level of service from A, B, C or D (without project) to E or F (with project) or the LOS (without project) is E or F, and project generated traffic increases the peak period average vehicle delay by five seconds or more?	X			
C) Freeway facilities: off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway; project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service; project traffic increases that cause the freeway level of service to deteriorate beyond level of service threshold defined in the Caltrans Route Concept Report for the facility; or the expected ramp queue is greater than the storage capacity?	X			
D) Transit: adversely affect public transit operations or fail to adequately provide for access to public transit?	X			
E) Bicycle facilities: adversely affect bicycle travel, bicycle paths or fail to adequately provide for access by bicycle?	X			
F) Pedestrian: adversely affect pedestrian travel, pedestrian paths or fail to adequately provide for access by pedestrians?	X			

Answers to Checklist Questions

Questions A and B

The proposed project would include the construction and operation of a high-rise structure, including office, residential, retail, and restaurant uses. All of the proposed uses for the proposed project would generate traffic to and from the project site as well as construction traffic during project construction. The existing

traffic could exceed the capacity of nearby City roadways and intersections. In addition, increased traffic of all types in the vicinity of the project sites would be anticipated to increase potential conflicts between vehicles, transit, bicyclists, and pedestrians. For these reasons, impacts related to traffic would be ***potentially significant*** and these issues will be analyzed in the EIR.

Mitigation Measures

Mitigation Measures for impacts relating to transportation and circulation will be proposed and analyzed in the EIR.

Findings

The proposed project would have potentially significant environmental effects relating to transportation and traffic that will be analyzed in the EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	Less than Significant Impact	No Impact
12. UTILITIES AND SERVICE SYSTEMS Would the project: A) Result in the determination that adequate capacity is not available to serve the project's demand in addition to existing commitments?			X	
B) Require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts?			X	

Environmental Setting

Water Supply

Water service for the project would be provided by the City of Sacramento. The City provides domestic water service from a combination of surface water and groundwater sources including the American River, Sacramento River, and groundwater wells. Water from the American River and Sacramento River is diverted by two water treatment plants: the Sacramento River Water Treatment Plant (WTP), located at the southern end of Bercut Drive, approximately 0.75-mile north of the project site, and the E.A. Fairbairn Water Treatment Plant (EAFWTP), located at the northeast of corner of State University Drive South and College Town Drive approximately 5 miles east-southeast of the project site. Water diverted from the Sacramento and American Rivers is treated, stored in storage reservoirs, and pumped to customers via an existing conveyance network. Water supply would be provided to the project site through existing 10-inch water supply mains in L Street and 3rd Street.

The City of Sacramento complies with the California Water Code, which requires urban water suppliers to prepare and adopt an Urban Water Management Plan (UWMP) every five years. The most recent UWMP was adopted in 2016 (the 2015 UWMP), and includes an analysis of water demand sufficiency under normal, single dry year, and multiple dry year scenarios.[48] Water supply and demand projections include future planned development until 2040. Based, in part, on these projections, the City possesses sufficient water supply entitlements and treatment capacity during normal, dry, and multiple dry years to meet the demands of its customers up to the year 2040.

Water Transmission

The City conveys water using its system of larger transmission pipelines, which are at least 18 inches in diameter, and smaller distribution mains, which range in diameter from 4 to 16 inches in diameter. Transmission pipelines are used solely for the conveyance of large volumes of water; they are generally not tapped for water or fire services.[49] In total, the City manages approximately 1,600 miles of water pipelines.[50] The project area is served by several major transmission mains ranging in size from 14-inch to

[48] City of Sacramento, 2016. 2015 Urban Water Management Plan. Adopted June, 2016.

[49] City of Sacramento Department of Utilities. *2015 Urban Water Management Plan.* June 2016, West Yost Associates.

[50] City of Sacramento, 2017. Department of Utilities. Available: https://www.cityofsacramento.org/Utilities/Your-Utilities-Your-Community/Your-Utilities.

42-inch in diameter together with an extensive system of service mains ranging in size from 6-inch to 12-inch diameter.

Upsizing of the existing mains has been performed over the years as development in the project area has occurred. However, many of the system mains within the project area are cast iron pipelines which have demonstrated a history of problems associated with mains reaching the end of their useful life. Hydraulic testing of these mains has determined a severe reduction in capacity. Continued replacement/upsizing of the cast iron mains, and the smaller 6-inch and 8-inch mains is envisioned in order to provide adequate domestic water needs and meet current regulations for fire suppression. Assessment and prioritization of rehabilitation of the distribution system in this area is currently in the beginning stages as part of the City Department of Utilities asset management program. The City does not supply recycled water to the downtown area or other parts of the Central City.

Wastewater and Stormwater

The wastewater systems for the proposed project would connect to the City's combined sewer system (CSS). The project would access City's network of sanitary sewer mains via a 24-inch CSS main located in 3rd Street and an 8-inch CSS main located in 4th Street. Wastewater for the proposed project would be collected by the City of Sacramento's CSS, conveyed to the SRCSD system, and ultimately treated at the SRCSD Wastewater Treatment Plant (WWTP), which is located in Elk Grove.

Local stormwater drainage in and surrounding the project area is collected by City storm drain systems, and pumped or gravity flown into nearby drainages, creeks, and rivers. The project site is located within Basin 52, which serves the storm drainage needs of an area of approximately 320 acres, bounded generally by the UPRR tracks north of I Street, Sacramento River, S Street, and 7th & 10th streets. Basin 52 discharges stormwater through the levee into the Sacramento River at Sump 52, located near the Crocker Museum at 3rd and P streets. The proposed project would develop a high-rise structure with impervious surfaces, for which stormwater drainage must be managed. It is anticipated that storm water would be collected and treated on-site before the treated runoff leaves the project site and enters the City separated storm drain system. Since the storm water system is currently separated all the way to the outfall into the Sacramento River, the proposed project would include temporary storage on site with the necessary pre-release treatment facilities as required to meet the both current water quality standards and the discharge capacity of the existing system. Stormwater within the construction footprint would be managed pursuant to an SWPPP that would be prepared for the proposed project.

Solid Waste

As discussed in the City's 2035 General Plan Background Report, large commercial and residential development properties, such as the proposed project, are served by private haulers franchised by the Sacramento Solid Waste Authority (SWA).[51]

The Sacramento County Kiefer Landfill is the primary location for the disposal of waste in the City of Sacramento. The landfill accepts municipal waste and industrial waste and is permitted to accept up to 10,815 tons per day, averaging 6,300 tons per day.[52] This is further limited, however, by Section 17, Condition 26 and Table 2 of Kiefer's Solid Waste Permit, which limits the 2013 peak to 5,928 TPD and average to 3,487 TPD.[53] It is the only landfill facility in Sacramento County permitted to accept household waste from the public. Current peak and average daily disposal is much lower than the current permitted

[51] City of Sacramento, 2014. City of Sacramento 2035 General Plan Background Report Public Review Draft. August 2014. p. 4-44.

[52] CalRecycle, 2019. Solid Waste Facility Permit 34-AA-0001. Available: https://www2.calrecycle.ca.gov/swfacilities/Directory/34-AA-0001. Accessed June 13, 2019.

[53] CalRecycle, 2019. Solid Waste Facility Permit 34-AA-0001. Available: https://www2.calrecycle.ca.gov/swfacilities/Directory/34-AA-0001. Accessed June 13, 2019.

amounts. As of 2012, 305 acres of the 660 acres contain waste.[54] The landfill facility sits on 1,084 acres. As a result, the Kiefer Landfill is expected to be able to provide service to the City, without need for new expansion beyond that already planned, until the year 2065.[55]

Electricity and Natural Gas

SMUD is responsible for the generation, transmission, and distribution of electrical power to its 900 square mile service area, which includes most of Sacramento County (including the project site and vicinity), and a small portion of Placer County. SMUD buys and sells energy and capacity on a short-term basis to meet load requirements and reduce costs. The Pacific Gas & Electric Company (PG&E) provides natural gas service to residents and businesses within the City of Sacramento, including the project site and vicinity.

Electrical service would be provided by SMUD through service from its 21-kV system. The project site would be anticipated to connect to the SMUD electrical grid via 21-kV underground local lines within L Street and 4th Street. Aside from connections or service laterals that may be necessary to tie project systems to the SMUD system under adjacent streets, no further improvements to the SMUD electrical system are anticipated to be necessary to serve the project site.

Natural gas service would be established via service laterals from the existing PG&E service grid within the downtown roadway network. The nearest PG&E line to the project site is a 12-inch main, located along the west side of 3rd Street. A service lateral would likely be installed along this line to provide service to the project site. Other than proposed connections between the project site and the existing PG&E natural gas mains, no further improvements to the PG&E distribution system would be necessary.

Standards of Significance

For the purposes of this Initial Study, an impact would be considered significant if the project resulted in the need for new or altered services related to water, wastewater, or other utilities facilities beyond what was anticipated in the 2035 General Plan:

- Result in the determination that adequate capacity is not available to serve the project's demand in addition to existing commitments, or
- Require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts.

Answers to Checklist Questions

Questions A and B

Water Supply

The proposed project would include construction and use of a mixed use, high rise project, totaling nearly 913,055 gsf of finished floor area. The proposed structure would include approximately 24,653 gsf of retail space, 791,647 gsf of office space, and 96,755 gsf of residential space, which would accommodate 100 residential units. Existing water transmission mains run north-south along 3rd Street and L Street in the existing right-of-way (roadways located adjacent to the west, and north sides of the project site respectively); the proposed on-site water conveyance system for the proposed project would connect to these water pipelines for water conveyance.

Based on the City's demand factors for Residential and Non-residential water use for the Central Business District land use category, as provided in the City's SB 610/SB 221 Water Supply Assessment and

[54] City of Sacramento, 2014. City of Sacramento 2035 General Plan Background Report Public Review Draft. August 2014. p. 4-45.

[55] City of Sacramento, 2014. City of Sacramento 2035 General Plan Background Report Public Review Draft. August 2014. p. 4-45.

Certification Form (see **Attachment 1**), the annual water demand was calculated for the residential and non-residential uses included in the proposed project. Based on the City's demand factors, the water demand for the proposed 100 residential units would be 0.15 acre-feet-per-year (afy) per residential unit, for a total of 15 afy. The water demand for the non-residential units is calculated at 0.02 afy per employee. The proposed project would employ approximately 4,500 employees, resulting in a water demand of 90 afy. Thus, the total estimated water demand for the proposed project would be 105 afy.

The projected water demand from the proposed project was accounted for in the City's 2035 General Plan and Master EIR, as the project is consistent with the General Plan land use designation for the project site. The Master EIR concluded that the City's existing water right permits and United States Bureau of Reclamation (USBR) contract are sufficient to meet the total water demand projected for buildout of the proposed 2035 General Plan, including the proposed project site. In addition, according to the 2015 Sacramento Urban Water Management Plan (UWMP), the City's water supply would be well below the City's water demand during a multiple-dry year through 2040. For example, during the third year of a multiple year drought year in 2040, the City's water yearly supply (excludes wholesale supplies, which are tracked separately in the UWMP) is expected to be 294,419 acre feet (AFY), while the City's yearly water demand would be 162,029 AFY; thus it is anticipated that there would be a 132,390 AFY surplus of water supply in the year 2040 during drought.[56] Because the City would have over 130,000 AFY of surplus capacity at buildout of the 2035 General Plan, and the proposed project is consistent with the General Plan, the project would have a **less-than-significant** impact related to water supply.

Water Transmission

The City conveys water using its system of larger transmission pipelines, which are at least 18 inches in diameter, and smaller distribution mains, which range in diameter from 4 to 16 inches in diameter. The proposed project would access the City's water transmission infrastructure via a service lateral from an existing 10-inch distribution mains in L and 3rd streets. Water supply for fire systems would be connected to the proposed project via service laterals from two locations along a 10-inch main in 3rd Street and at one point along a 12-inch main in 4th Street. The City's Department of Utilities has reviewed the planning application for the Tower 301 project, and determined that existing water supply transmission lines within the project vicinity would be adequate to serve the proposed project. Upgrades to the existing transmission mains are not anticipated to be required to support future development within the Central City area. However, the City has identified several sections of older mains that would likely need to be replaced within the next 30 years due to age. These mains would be the responsibility of the City Department of Utilities (DOU) through its ongoing Capital Improvement Program (CIP). For these reasons, the proposed project would not require changes to local water transmission infrastructure, and this impact would be **less than significant**.

Wastewater

The proposed project consists of 100 residential units, which would house up to 162 individuals, and develop 24,653 sf of retail uses and 791,647 sf of office uses. Because the proposed project land use is consistent with that identified for the project site in the 2035 General Plan, wastewater flows on the project site were accounted for in the 2035 General Plan and Master EIR.

The City uses an Equivalent Single-Family Dwelling Unit (ESD) standard to characterize wastewater demand for proposed projects relative to the capacity of wastewater treatment and conveyance facilities. The City of Sacramento Design Standards for wastewater generation rates contain average daily flow rates for residential and non-residential uses. The existing standard for sewer generation that flows into the CSS is 310 gallons per day (gpd) per ESD.[57]

This analysis uses wastewater generation factors provided by the City Department of Utilities (DOU) to establish ESD factors for the calculation of wastewater impacts from each of the land uses included in the proposed project. **Table 12-1** shows the anticipated wastewater generation by the proposed project. The

[56] City of Sacramento, 2016. 2015 Urban Water Management Plan. Adopted June, 2016.
[57] City of Sacramento, 2018. *City of Sacramento Design and Procedures Manual*; Section 9. p. 9-17. July 24, 2018.

factors provided by the City DOU are based on the standard generation rate of 310 gpd per ESD. As indicated in **Table 12-1**, the proposed project would generate approximately 146,274 gpd of wastewater.

TABLE 12-1
WASTEWATER GENERATION

Land Use Type	# of Units	ESD Factor	ESD	Generation Rate[1]	Average Dry Weather Flow (ADWF)
Residential Units	100 units	0.75 / Residential Unit (Condo, Townhouse, Apartments, or Mobile Home)	75.00	232.5 gpd / Unit	23,250 gpd
Office	791,647 sf[2]	0.5 / 1,000 sf of Gross Floor Area (Office Building)	395.8	155 gpd / 1,000 GFA	122,705 gpd
Retail	24,653 sf	0.5 / 1,000 sf of Gross Floor Area (Non-defined commercial)	12.3	155 gpd / 1,000 GFA	318.43 gpd
Total			483.2 ESD		146,273.7 gpd

NOTES:
1 310 gpd x ESD factor.
2 sf – square feet

SOURCE: City of Sacramento Department of Public Works, 2018. *City of Sacramento Design and Procedures Manual*; Section 9. p. 9-56. July 24, 2018.

The SRCSD has a program in place to continually evaluate demand/capacity needs, and the master planning effort provides the flexibility to respond to changes in demand that can be anticipated in advance of planned improvements so that capacity issues are addressed in a timely and cost-effective manner. Master planning efforts that would identify necessary improvement in capacity to accommodate city growth beyond the 2020 Master Plan timeframe would be initiated well in advance of 2035. To fund expansions to the conveyance systems, the SRCSD requires a regional connection fee be paid to the District for any users connecting to or expanding sewer collection systems (SRCSD Ordinance No. SRCSD-0043).

Therefore, because there are established plans and fee programs in place as well as proposed policies to increase treatment capacity in response to demand, the impact would be **less than significant**.

Wastewater Conveyance

Development under the proposed 2035 General Plan would also increase the demand for conveyance capacity in the local City-maintained sewer lines that connect to major trunk lines and interceptors in the separate sewer system. For the areas in the city that are served by the CSS, including the proposed project, there would not be a substantial increase in sewage flows to the system because it is already limited in capacity, and flows must currently be mitigated in accordance with the Combined System Development Fee.

The proposed project would add wastewater flows to local conveyance facilities in the project vicinity. Projects contributing more than 5 ESDs to the CSS are required to evaluate the available sewage only capacity of existing CSS mains from the project's point of connection to the nearest 18-inch or larger main including all tributary sewage flows. If any portion of the mains to the nearest 18-inch main is determined to have insufficient capacity to accommodate the increased sewer flow, the development shall also be required to improve the undersized mains to the nearest 18-inch main. The proposed project would access an existing 8-inch CSS main in 4th Street, which would be anticipated to be of sufficient size to serve the project site. If the City determines that additional capacity would be necessary to serve the proposed project, existing 24-inch CSS main could be accessed in 3rd Street or in Capitol Mall. The proposed project could also be required to pay the CSS mitigation fee, adopted by the City Council to offset additional downstream CSS outflows in excess of previous ESDs attributed to the project site. CSS mitigation fees would represent the projects fair share for improvements to the CSS infrastructure necessary to serve the project and other developments in the project area.

Therefore, because there are established plans and fee programs in place as well as proposed policies to increase conveyance capacity in response to demand, the impact would be **less than significant**.

See Section 7, Hydrology and Water Quality for a discussion related to the Combined System Development and SRCSD Regional Connection fees.

Stormwater

The proposed project would add impervious surface area to the Basin 52 service area, where impervious surface area previously existed, prior to demolition of previous development on the project site, but does not exist under current conditions. The approximately 320-acre area served by Basin 52 contains only approximately 3.6 acres of pervious or raw land. As a result, the peak stormwater flow rate and volume of rainfall-runoff is not expected to significantly change when the land use changes on the project site. However, in the event that construction period dewatering occurs during a major storm event, sufficient capacity in the Basin 52 system would be available to support dewatering discharges and existing capacity would not be exceeded. This is considered a **less-than-significant** impact.

Solid Waste

As described above, the proposed project would be served by private haulers franchised by the Sacramento Solid Waste Authority (SWA).[58] Projected solid waste generation on the project site was accounted for in the City's 2035 General Plan and Master EIR, as the project is consistent with the General Plan land use designation for the project site. As discussed previously, Kiefer landfill maintains sufficient capacity to provide waste services for more than 40 years. The proposed project would result in a negligible decrease in waste generation, in comparison to what was previously planned at the project site, and therefore potential impacts on solid waste would be **less than significant.**

Electricity and Natural Gas

Construction of the proposed project would result in increased use of electricity and natural gas to support 100 residential units, 24,653 sf of retail uses and 791,647 sf of office uses. Both utility providers would install new distribution facilities, as needed, according to California Public Utilities Commission rules. Because the increased demand in energy is evaluated in the 2035 General Plan Master EIR, and because PG&E and SMUD would ensure their capability of providing an adequate level of service to the project site, this impact would be **less than significant**.

Mitigation Measures

None required.

Findings

The project would have no significant project-specific environmental effects relating to utilities and service systems.

[58] City of Sacramento, 2014. City of Sacramento 2035 General Plan Background Report Public Review Draft. August 2014. p. 4-44.

Issues:	Effect will be studied in the EIR	Effect remains significant with all identified mitigation	Effect can be mitigated to less than significant	Less than Significant Impact
13. MANDATORY FINDINGS OF SIGNIFICANCE A) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	X			
B) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a 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 projects.)	X			
C) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

Answers to Checklist Questions

Question A

With the incorporation of mitigation measures, the proposed project would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community. In addition, the proposed project would not eliminate important examples of the major periods of California history or prehistory. However, the proposed project could negatively impact nesting special-status bird species, migratory birds, and raptors, as well as special-status amphibians. This topic will be addressed further in the EIR. For the purposes of this initial study, these potential impacts to biological resources are considered **significant**.

Question B

The analysis in this Initial Study demonstrates there would be no project-specific or cumulative significant and unavoidable impacts to biological resources, cultural resources, geology and soils, hazards, hydrology and water quality, public services, recreation, or utilities.

Potential cumulative significant impacts to aesthetics, air quality, global climate change, noise, and transportation will be analyzed in an EIR. For the purposes of this initial study, those potential cumulative impacts are considered **significant**.

Question B

The proposed project would not have significant adverse effects on humans related to the issue areas addressed in this Initial Study. The EIR will include analysis of aesthetics, air quality, biological resources, greenhouse gas emissions, noise and vibration, and transportation/traffic. For the purposes of this initial study, those potential impacts to human beings are considered **significant**.

SECTION IV - ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would potentially be affected by this project.

X	Aesthetics		Hazards
X	Air Quality	X	Noise
X	Biological Resources		Public Services
	Cultural Resources		Recreation
	Energy and Mineral Resources	X	Transportation/Circulation
	Geology and Soils		Utilities and Service Systems
	Hydrology and Water Quality		
	None Identified		

SECTION V - DETERMINATION

On the basis of the initial study:

X I find that the proposed project may have a significant effect on the environment, and an environmental impact report is required.

Signature

July 3, 2019
Date

Ron Bess
Printed Name

California Department of Conservation, 2015. Department of Conservation Website: Seismic Hazard Zones. Available: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed June 13, 2019.

California Department of Conservation, Division of Land Resource Protection, 2014. Sacramento County Important Farmland Map. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/sac14.pdf. Accessed June 12, 2019.

California Department of Toxic Substances Control, 2018. Envirostor Database. The Railyards (SL205072992), 501 Jibboom Street, Sacramento, CA 95814. Available: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL205072992. Accessed March 5, 2018.

California Department of Toxic Substances Control, 2018. Envirostor Database. Mixed Use Tower and City Parking (60002233), SE Corner of 5th and J Streets, Sacramento, CA 95814. Available: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002233. Accessed March 5, 2018.

California Department of Toxic Substances Control, 2018. Envirostor Database. California Department of Toxic Substances Control. DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List). March 5, 2018. Available: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm.

California Department of Water Resources, 2004. Sacramento Valley Groundwater Basin – South American Subbasin. Available: https://www.water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/5-21.65.pdf. Accessed March 14, 2018.

California State Water Resources Control Board, 2018. Geotracker Database. Lot X City of Sacramento Development Site (T0606716751), 0 N Street, Sacramento, CA 95814. Available: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606716751. Accessed March 5, 2018.

California State Water Resources Control Board, 2018. Geotracker Database. Sacramento County Jail (T0606714066), 651 I Street, Sacramento, CA 95814. Available: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606716751. Accessed March 5, 2018.

California State Water Resources Control Board, 2018. Geotracker Database. State of California Central Plant Block 261 (T0606794060), 625 Q Street, Sacramento, CA 95814. Available: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606794060. Accessed March 5, 2018.

CalRecycle, 2019. Solid Waste Facility Permit 34-AA-0001. Available: https://www2.calrecycle.ca.gov/swfacilities/Directory/34-AA-0001. Accessed June 13, 2019.

Castillo, Edward D., "The Impact of Euro-American Exploration and Settlement", In California, edited by Robert F. Heizer, pp. 99-127, Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C., 1978.

City of Sacramento, 2007. City of Sacramento Department of Utilities, Engineering Services. Stormwater Quality Improvement Program. Accessed June 13, 2019.

City of Sacramento, 2014. City of Sacramento 2035 General Plan Master Environmental Impact Report.

City of Sacramento, 2014. City of Sacramento 2035 General Plan Background Report Public Review Draft. August 2014.

City of Sacramento, 2015. City of Sacramento 2035 General Plan Master Environmental Impact Report.

City of Sacramento, 2015. City of Sacramento 2035 General Plan. March 2015. pp. 2-326 and 2-327. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/General-Plan/2035-GP/Environmental-Resources.pdf?la=en. Accessed March 15, 2018.

City of Sacramento, 2016. Stormwater Program Information Page. Available: https://www.cityofsacramento.org/Utilities/Stormwater/About-Us. Accessed March 15, 2018.

City of Sacramento, 2016. 2015 Urban Water Management Plan. Adopted June, 2016.

City of Sacramento, 2018. City of Sacramento Design and Procedures Manual; Section 9. July 24, 2018.

City of Sacramento, 2018. City of Sacramento City Sewer System. Available: https://www.cityofsacramento.org/-/media/Corporate/Images/DOU/Map-of-sewer-systems.jpg?la=en. Accessed March 15, 2018.

City of Sacramento Department of Parks and Recreation. 2015. Parks. Available: http://portal.cityofsacramento.org/ParksandRec/Parks. Accessed April 19, 2015.

City of Sacramento Department of Utilities, 2015. City of Sacramento Drainage Basins Map. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/DOU/Specs-Drawings/DRAINAGE_BASINS_11-2015.pdf?la=en. Accessed April 18, 2019.

City of Sacramento Department of Utilities. 2015 Urban Water Management Plan. June 2016, West Yost Associates.

City of Sacramento Department of Utilities, 2017. Department of Utilities website. Available: https://www.cityofsacramento.org/Utilities/Your-Utilities-Your-Community/Your-Utilities.

City of Sacramento Fire Department, 2019. Map of Engine Company First-In Districts and Response Zones – BARB Configuration. Updated January 23, 2019. Available: http://www.cityofsacramento.org/-/media/Corporate/Files/Fire/Maps/Engine-Districts-20120423.pdf?la=en. Accessed June 13, 2019.

Derr, Eleanor H., “Archeological Investigations at CA-SAC-16: Interpretations of a Middle/Late Horizon Village in the Lower Sacramento Valley of California”, M.A. thesis, Department of Anthropology, California State University, Sacramento, 1983.

Federal Emergency Management Agency, 2015. Flood Insurance Rate Map Number 06067C0160J. Available: https://msc.fema.gov/portal. Accessed June 13, 2019.

Helley, E.J. 1979. Preliminary geologic map of Cenozoic deposits of the Davis, Knights Landing, Lincoln, and Fair Oaks quadrangles, California. U.S. Geological Survey Open-File Report OF-79-583. Scale 1:62,500.

Hoover, Mildred, Hero Eugene Rensch, Ethel Grace Rensch, and William N. Abeloe, Historic Spots in California, edited by Douglas Kyle, Stanford University Press, Stanford, California, 2002.

Kroeber, Alfred L., Handbook of the Indians of California, Bureau of American Ethnology Bulletin 78, Smithsonian Institution, Washington, D.C., 1976 reprinted ed., Dover Publications, Inc., New York, 1925 [1976].

Littlejohn, Hugh W., Nisenan Geography, Document 18, University of California Department of Anthropology, Berkeley, California, 1928.

Meyer, Michael, Waterfront Archaeological Excavation Report for the Embassy Hotel Suites Site, Sacramento, California. 2002.

Ochoa, Sarai, City of Sacramento, Department of Utilities, 2019. Personal Communication with Jonathan Teofilo, April 18, 2019.

Peak and Associates, Cultural Resources Overview for the Capitol Towers Project. Prepared for EIP Associates, 2005.

Praetzellis, Mary and Adrian Praetzellis, Archaeological and Historical Studies of the IJ56 Block, Sacramento, California: An Early Chinese Community. 1982.

Praetzellis, Mary, Adrian Praetzellis, and Marley R. Brown III, Historical Archaeology at the Golden Eagle Site, Sacramento, California. 1980.

Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton, "The Central Valley: A View from the Catbird's Seat", In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 147-163, AltaMira Press, Lanham, Maryland, 2007.

Sacramento City Unified School District, 2012. Developer Fee Justification Report. Available: www.scusd.edu/sites/main/files/file-attachments/scusd_level_1_11_042612.pdf. Accessed June 13, 2019.

Sacramento City Unified School District, 2018. SCUSF School Locator Interactive Map. Available: https://www.google.com/maps/d/u/0/viewer?mid=106OuWPg2xI-E7nrd2rmvbU0OUGI&ll=38.54453899075784%2C-121.45743026473997&z=13. Accessed June 13, 2019.

Sacramento Police Department, 2016. Sacramento Police Department 2016 Annual Report. Available: http://www.cityofsacramento.org/Police/About-SPD/Annual-Report. Accessed June 13, 2019.

Sacramento River Watershed Program, 2018. Sacramento River Basin. Available: http://www.sacriver.org/aboutwatershed/roadmap/sacramento-river-basin. Accessed June 13, 2019.

Shipley, William F., "Native Languages of California", In California, edited by Robert F. Heizer, pp. 80-90, Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C., 1978.

Wilson, Norman L., and Arlean H. Towne, "Nisenan", In California, edited by Robert F. Heizer, pp. 387-397, Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C., 1978.

U.S. Department of Agriculture, 2015. Natural Resources Conservation Service. Custom Soils Report for Sacramento County, California: 301 Capitol Towers. Created from http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed June 13, 2019.

ATTACHMENT 1
CITY OF SACRAMENTO
SB 610/SB 221 WATER SUPPLY ASSESSMENT AND CERTIFICATION FORM

City of Sacramento
SB 610/SB 221 Water Supply Assessment and Certification Form

This form may be used to complete water supply assessments for projects located in an area covered by the City's most recent Urban Water Management Plan.

Note: Please do not use this form if the projected water demand for your project area was not included in the City's latest Urban Water Management Plan. To review the City's Urban Water Management Plan, please visit: http://www.cityofsacramento.org/utilities/urbanwater/index.html

Project: Tower 301 Environmental Impact Report

Date: April 1, 2019

Project Applicant (Name of Company): City of Sacramento

Applicant Contact (Name of Individual): Samhita Saquib on behalf of ESA for City of Sacramento

Phone Number: 916-564-4500

E-mail: ssaquib@esassoc.com

Address: ESA, 2600 Capitol Avenue, Suite 200, Sacramento, CA 95816

Project Applicant to fill in the following:

1. Does the project include:

Type of Development	Yes	No
A proposed residential development of 500 or more dwelling units		X
A shopping Center employing more than 1,000 persons or having more than 500,000 square feet?		X
A Commercial Office building employing more than 1,000 persons or having more than 250,000 square feet?	X	
A proposed hotel or motel, or both, having more than 500 rooms		X
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		X
A mixed use project that includes one or more of the projects specified above	X	
A project that would demand an amount of water equivalent to, or greater than, the water required by a 500 dwelling unit project	X	

If the answer is no to all of the above, a water supply assessment is not required for the project.

2. Is the projected water demand for the project location included in the City's 2015 Urban Water Management Plan, adopted June 2016?

Yes: ___X___ No: _____

If the answer is no, you cannot use this form. Please refer to the requirements of SB 610 for preparing a water supply assessment.

3. Please fill in the project demands below:

Type of Development	Land Use Category	Demand Factor		Proposed Development			Current Zoning		
		Residential Water Use Factor, afy/dwelling unit	Non-Residential Water Use Factor, afy/employee	Number Dwelling Units	Number Employees	Total Demand	Number Dwelling Units	Number Employees	Total Demand
Residential - Low	Rural Residential (RR)	.61	.09						
	Suburban Neighborhood Low Density (SNLD)								
	Traditional Neighborhood Low Density (TLDR)								
Residential - Medium	Suburban Neighborhood Medium Density (SMDR)	.39	.09						
	Urban Neighborhood Low Density (ULDR)								
Residential - High	Suburban Neighborhood High Density (SHDR)	.12	.04						
	Traditional Neighborhood Medium Density (TMDR)								
	Urban Neighborhood Medium Density (UMDR)								
	Traditional Neighborhood High Density (THDR)								
Mixed Use	Employment Center Mid Rise (ECMR)	.19	.09						
	Suburban Center (SCnt)								
	Suburban Corridor (Scor)								
	Traditional Center (TCnt)								
Mixed Use - Higher Density	Urban Center High (UCntHigh)	.15	.04						
	Urban Center Low (UcntLow)								
	Urban Corridor High (UCorHigh)								
	Urban Corridor Low (UCorLow)								
Central Business District	Central Business District (CBD)	.15	.02	100	4,500	105			
	Urban Neighborhood High Density (UHDR)								

Type of Development	Land Use Category	Demand Factor		Proposed Development			Current Zoning		
		Residential Water Use Factor, afy/dwelling unit	Non-Residential Water Use Factor, afy/employee	Number Dwelling Units	Number Employees	Total Demand	Number Dwelling Units	Number Employees	Total Demand
Commercial	Regional Commercial (RC)	.15	.09						
	Employment Center Low Rise (ECLR)								
Industrial	Industrial (IND)		.14						
Public	Public/Quasi-Public (PUB)	.37	.17						
Park	Parks and Recreation (PRK)	.37	.17						
Open Space	Open Space (OS)	0	0						
Other									
Other									
Other									
Total Demand (AFY)		2.5	0.94	100	4,500	105			

4. Required Elements of Water Supply Assessment (Water Code § 10910)

A. Water supply entitlements, water rights or water service contracts (Water Code § 10910(d)):

The City's water supply entitlements, water rights and water service contract are identified and discussed in the Urban Water Management Plan, Chapters 4, and 5.

All infrastructure necessary to deliver a water supply to the project is in place, excepting any distribution facilities required to be constructed and financed by the project applicant: Yes: X No: ___

B. Identification of other sources of water supply if no water has been received under City's existing entitlements, water rights or water service contracts (Water Code § 10910(e)):

Not applicable.

C. Information and analysis pertaining to groundwater supply (Water Code § 10910(f)):

Addressed by Urban Water Management Plan, Chapters 2, 4 and 5.

Verification of Water Supply
(for residential development of more than 500 dwelling units)

Based on the City's most recent Urban Water Management Plan, are there sufficient water supplies for the project during normal, single dry and multiple dry years over a 20 year period?

Yes:_____ No:_____

By:_____

Title:_____

Date:_____

This box to be filled in by the City

Distribution:

Applicant
Development Services Department (Org: 4913) – Assigned Planner:_____
Utilities Department (Org: 3334) - Development Review (Tony Bertrand)
Utilities Department (Org: 3332) - Capital Improvements (Brett Ewart)

Appendix D
Air Quality Modeling

ESA

A-1 Air Quality Modeling CalEEMod Outputs

Tower 301 Construction

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	791.65	1000sqft	2.40	791,647.00	0
Enclosed Parking with Elevator	1,304.00	Space	2.40	536,227.00	0
Apartments Mid Rise	100.00	Dwelling Unit	2.40	96,755.00	267
Strip Mall	24.65	1000sqft	2.40	24,653.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2022
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Specific

Land Use - Parking includes bike parking (square footage from entitlement package)
Residential square footage from entitlement package
Total Lot acreage = 2.4 from entitlement package

Construction Phase - From project sponsor

Off-road Equipment - CalEEMod default equipment for dem w/ >2 acre PLUS scraper from equipment list.

Off-road Equipment - CalEEMod defaults for building construction >20 acre because high rise. Additional Crane, pump, cement from construction equipment list

Off-road Equipment - CalEEMod defaults for site prep + grade phases at >2acre; pile driving equipment and excavator added from construction eq list

Off-road Equipment - aerial lifts added from construction equipment list. other construction equipment assumed. additional air compressors for nail guns etc.

Off-road Equipment - defaults for paving. general industrial equipment assumed (mower etc).

Trips and VMT - worker trips based on calculation and client data. haul trips all phases one way =17300. dem haul trips = export, grad haul trips = import.

Grading - import/export from data request. acres from PD

Vehicle Trips - traffic report

Woodstoves - 30 fireplaces represent firepits etc

Energy Use -

Land Use Change -

Sequestration - 50 tree conservative (close to 65 in entitlement package)

Construction Off-road Equipment Mitigation - mit for HRA

Stationary Sources - Emergency Generators and Fire Pumps - 85 hp would be a Generac 50kW diesel genset
Assume O&M <50 hr/yr

Stationary Sources - Process Boilers -

Stationary Sources - User Defined -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstructionPhase	NumDays	20.00	183.00
tblConstructionPhase	NumDays	230.00	547.00
tblConstructionPhase	NumDays	20.00	413.00
tblConstructionPhase	NumDays	20.00	153.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblFireplaces	FireplaceDayYear	0.00	120.00
tblFireplaces	FireplaceHourDay	0.00	6.00
tblFireplaces	NumberNoFireplace	100.00	30.00
tblGrading	AcresOfGrading	228.75	2.40
tblGrading	MaterialExported	0.00	34,000.00
tblGrading	MaterialImported	0.00	17,500.00
tblLandUse	LandUseSquareFeet	791,650.00	791,647.00
tblLandUse	LandUseSquareFeet	521,600.00	536,227.00
tblLandUse	LandUseSquareFeet	100,000.00	96,755.00
tblLandUse	LandUseSquareFeet	24,650.00	24,653.00
tblLandUse	LotAcreage	18.17	2.40
tblLandUse	LotAcreage	11.74	2.40
tblLandUse	LotAcreage	2.63	2.40

tblLandUse	LotAcreage	0.57	2.40
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblSequestration	NumberOfNewTrees	0.00	50.00
tblStationaryBoilersUse	AnnualHeatInput	0.00	2,580.00
tblStationaryBoilersUse	BoilerRatingValue	0.00	3.00
tblStationaryBoilersUse	DailyHeatInput	0.00	7.00
tblStationaryBoilersUse	NumberOfEquipment	0.00	10.00
tblStationaryBoilersUse	NumberOfEquipment	0.00	3.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,890.00
tblTripsAndVMT	HaulingTripNumber	6,438.00	7,556.00

tblTripsAndVMT	HaulingTripNumber	0.00	23,154.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	25.00	250.00
tblTripsAndVMT	WorkerTripNumber	558.00	460.00
tblTripsAndVMT	WorkerTripNumber	112.00	20.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	10.00	9.30
tblVehicleTrips	CW_TTP	33.00	100.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	HO_TL	6.50	0.00
tblVehicleTrips	HO_TTP	41.00	0.00
tblVehicleTrips	HS_TL	5.00	0.00
tblVehicleTrips	HS_TTP	12.50	0.00
tblVehicleTrips	HW_TL	10.00	9.30
tblVehicleTrips	HW_TTP	46.50	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	ST_TR	6.39	2.16
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	5.86	2.16

tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	6.65	2.16
tblVehicleTrips	WD_TR	11.03	5.06
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0728	1.1834	0.5272	2.2100e-003	0.0347	0.0317	0.0664	9.5200e-003	0.0295	0.0391	0.0000	209.0417	209.0417	0.0249	0.0000	209.6630
2020	1.3607	12.3222	7.4654	0.0244	2.0863	0.4128	2.4991	0.9456	0.3841	1.3297	0.0000	2,224.1685	2,224.1685	0.3582	0.0000	2,233.1224
2021	4.0923	13.5092	10.7990	0.0319	0.9445	0.4398	1.3843	0.2558	0.4160	0.6717	0.0000	2,919.6297	2,919.6297	0.3396	0.0000	2,928.1202
2022	1.7871	4.1002	3.5091	0.0105	0.4109	0.1265	0.5374	0.1088	0.1202	0.2289	0.0000	961.3936	961.3936	0.1076	0.0000	964.0831
Maximum	**4.0923**	**13.5092**	**10.7990**	**0.0319**	**2.0863**	**0.4398**	**2.4991**	**0.9456**	**0.4160**	**1.3297**	**0.0000**	**2,919.6297**	**2,919.6297**	**0.3582**	**0.0000**	**2,928.1202**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0298	0.8090	0.5360	2.2100e-003	0.0347	3.5700e-003	0.0383	9.5200e-003	3.4600e-003	0.0130	0.0000	209.0416	209.0416	0.0249	0.0000	209.6629
2020	0.7834	7.4602	9.1665	0.0244	2.0863	0.0566	2.1429	0.9456	0.0547	1.0003	0.0000	2,224.1673	2,224.1673	0.3582	0.0000	2,233.1212
2021	3.5299	10.6714	11.5838	0.0319	0.9445	0.0839	1.0283	0.2558	0.0828	0.3386	0.0000	2,919.6284	2,919.6284	0.3396	0.0000	2,928.1189
2022	1.6281	3.4358	3.7821	0.0105	0.4109	0.0308	0.4417	0.1088	0.0305	0.1393	0.0000	961.3932	961.3932	0.1076	0.0000	964.0826
Maximum	**3.5299**	**10.6714**	**11.5838**	**0.0319**	**2.0863**	**0.0839**	**2.1429**	**0.9456**	**0.0828**	**1.0003**	**0.0000**	**2,919.6284**	**2,919.6284**	**0.3582**	**0.0000**	**2,928.1189**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**18.35**	**28.09**	**-12.41**	**0.00**	**0.00**	**82.70**	**18.63**	**0.00**	**81.94**	**34.29**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-1-2019**	**2-29-2020**	3.4823	1.9270
2	**3-1-2020**	**5-31-2020**	3.3510	1.6202
3	**6-1-2020**	**8-31-2020**	3.3181	1.8905
4	**9-1-2020**	**11-30-2020**	3.2616	2.4396
5	**12-1-2020**	**2-28-2021**	4.1649	3.3563
6	**3-1-2021**	**5-31-2021**	4.1104	3.3499
7	**6-1-2021**	**8-31-2021**	4.5109	3.6225
8	**9-1-2021**	**11-30-2021**	4.6839	3.7439

9	**12-1-2021**	**2-28-2022**	4.2421	3.5160
10	**3-1-2022**	**5-31-2022**	2.9026	2.5015
11	**6-1-2022**	**8-31-2022**	0.3532	0.3356
		Highest	4.6839	3.7439

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0807	0.0122	1.0595	6.0000e-005		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	1.7372	1.7372	1.7600e-003	0.0000	1.7813
Energy	0.0619	0.5598	0.4516	3.3800e-003		0.0428	0.0428		0.0428	0.0428	0.0000	4,705.1573	4,705.1573	0.2128	0.0528	4,726.2200
Mobile	1.0010	4.6263	13.1504	0.0440	3.8846	0.0379	3.9224	1.0414	0.0354	1.0769	0.0000	4,043.8420	4,043.8420	0.1837	0.0000	4,048.4331
Stationary	0.3749	1.0227	5.0618	0.0299		0.3872	0.3872		0.3872	0.3872	0.0000	5,371.7948	5,371.7948	0.1089	0.0000	5,374.5176
Waste						0.0000	0.0000		0.0000	0.0000	164.0390	0.0000	164.0390	9.6944	0.0000	406.3998
Water						0.0000	0.0000		0.0000	0.0000	52.7321	284.5624	337.2945	0.1955	0.1176	377.2165
Total	**5.5185**	**6.2209**	**19.7233**	**0.0773**	**3.8846**	**0.4736**	**4.3582**	**1.0414**	**0.4712**	**1.5126**	**216.7711**	**14,407.0937**	**14,623.8648**	**10.3970**	**0.1704**	**14,934.5683**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0807	0.0122	1.0595	6.0000e-005		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	1.7372	1.7372	1.7600e-003	0.0000	1.7813
Energy	0.0619	0.5598	0.4516	3.3800e-003		0.0428	0.0428		0.0428	0.0428	0.0000	4,705.1573	4,705.1573	0.2128	0.0528	4,726.2200
Mobile	1.0010	4.6263	13.1504	0.0440	3.8846	0.0379	3.9224	1.0414	0.0354	1.0769	0.0000	4,043.8420	4,043.8420	0.1837	0.0000	4,048.4331
Stationary	0.3749	1.0227	5.0618	0.0299		0.3872	0.3872		0.3872	0.3872	0.0000	5,371.7948	5,371.7948	0.1089	0.0000	5,374.5176
Waste						0.0000	0.0000		0.0000	0.0000	164.0390	0.0000	164.0390	9.6944	0.0000	406.3998
Water						0.0000	0.0000		0.0000	0.0000	52.7321	284.5624	337.2945	0.1955	0.1176	377.2165
Total	**5.5185**	**6.2209**	**19.7233**	**0.0773**	**3.8846**	**0.4736**	**4.3582**	**1.0414**	**0.4712**	**1.5126**	**216.7711**	**14,407.0937**	**14,623.8648**	**10.3970**	**0.1704**	**14,934.5683**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	35.4000
Total	**35.4000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition/clearing	Demolition	12/1/2019	12/31/2019	6	26	
2	Grading/foundation work	Grading	1/1/2020	7/31/2020	6	183	
3	Erection of Structure	Building Construction	8/1/2020	4/30/2022	6	547	
4	Interior and exterior finish work	Architectural Coating	12/1/2020	6/30/2022	5	413	
5	Site work and landscaping	Paving	7/1/2021	1/31/2022	5	153	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.4

Residential Indoor: 195,929; Residential Outdoor: 65,310; Non-Residential Indoor: 1,224,450; Non-Residential Outdoor: 408,150; Striped Parking Area: 32,174 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition/clearing	Concrete/Industrial Saws	1	10.00	81	0.73
Demolition/clearing	Rubber Tired Dozers	1	10.00	247	0.40
Demolition/clearing	Scrapers	1	10.00	367	0.48
Demolition/clearing	Tractors/Loaders/Backhoes	3	10.00	97	0.37
Grading/foundation work	Bore/Drill Rigs	3	10.00	221	0.50
Grading/foundation work	Excavators	1	10.00	158	0.38
Grading/foundation work	Graders	2	10.00	187	0.41
Grading/foundation work	Rubber Tired Dozers	2	10.00	247	0.40
Grading/foundation work	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Erection of Structure	Cement and Mortar Mixers	1	10.00	9	0.56
Erection of Structure	Cranes	2	10.00	231	0.29
Erection of Structure	Forklifts	3	10.00	89	0.20
Erection of Structure	Generator Sets	1	10.00	84	0.74
Erection of Structure	Pumps	1	10.00	84	0.74
Erection of Structure	Tractors/Loaders/Backhoes	3	10.00	97	0.37
Erection of Structure	Welders	1	10.00	46	0.45
Interior and exterior finish work	Aerial Lifts	1	8.00	63	0.31
Interior and exterior finish work	Air Compressors	3	8.00	78	0.48
Interior and exterior finish work	Other Construction Equipment	1	8.00	172	0.42
Site work and landscaping	Other General Industrial Equipment	2	8.00	88	0.34
Site work and landscaping	Pavers	2	8.00	130	0.42
Site work and landscaping	Paving Equipment	2	8.00	132	0.36
Site work and landscaping	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition/clearing	6	20.00	0.00	3,890.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/foundation work	10	250.00	0.00	7,556.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Erection of Structure	12	460.00	232.00	23,154.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Interior and exterior finish work	5	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site work and landscaping	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Demolition/clearing - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0546	0.5783	0.3730	6.4000e-004		0.0291	0.0291		0.0271	0.0271	0.0000	56.9110	56.9110	0.0159	0.0000	57.3075
Total	**0.0546**	**0.5783**	**0.3730**	**6.4000e-004**		**0.0291**	**0.0291**		**0.0271**	**0.0271**	**0.0000**	**56.9110**	**56.9110**	**0.0159**	**0.0000**	**57.3075**

3.2 Demolition/clearing - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0172	0.6043	0.1462	1.5500e-003	0.0328	2.5400e-003	0.0354	9.0100e-003	2.4300e-003	0.0114	0.0000	150.3851	150.3851	8.9400e-003	0.0000	150.6086
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	7.4000e-004	7.9800e-003	2.0000e-005	1.9100e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7456	1.7456	5.0000e-005	0.0000	1.7469
Total	**0.0182**	**0.6051**	**0.1542**	**1.5700e-003**	**0.0347**	**2.5500e-003**	**0.0373**	**9.5200e-003**	**2.4400e-003**	**0.0120**	**0.0000**	**152.1306**	**152.1306**	**8.9900e-003**	**0.0000**	**152.3555**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0116	0.2040	0.3818	6.4000e-004		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	56.9110	56.9110	0.0159	0.0000	57.3074
Total	**0.0116**	**0.2040**	**0.3818**	**6.4000e-004**		**1.0100e-003**	**1.0100e-003**		**1.0100e-003**	**1.0100e-003**	**0.0000**	**56.9110**	**56.9110**	**0.0159**	**0.0000**	**57.3074**

3.2 Demolition/clearing - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0172	0.6043	0.1462	1.5500e-003	0.0328	2.5400e-003	0.0354	9.0100e-003	2.4300e-003	0.0114	0.0000	150.3851	150.3851	8.9400e-003	0.0000	150.6086
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	7.4000e-004	7.9800e-003	2.0000e-005	1.9100e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7456	1.7456	5.0000e-005	0.0000	1.7469
Total	**0.0182**	**0.6051**	**0.1542**	**1.5700e-003**	**0.0347**	**2.5500e-003**	**0.0373**	**9.5200e-003**	**2.4400e-003**	**0.0120**	**0.0000**	**152.1306**	**152.1306**	**8.9900e-003**	**0.0000**	**152.3555**

3.3 Grading/foundation work - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3842	0.0000	1.3842	0.7582	0.0000	0.7582	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5269	6.0053	2.9694	8.0000e-003		0.2519	0.2519		0.2317	0.2317	0.0000	702.5745	702.5745	0.2272	0.0000	708.2552
Total	**0.5269**	**6.0053**	**2.9694**	**8.0000e-003**	**1.3842**	**0.2519**	**1.6360**	**0.7582**	**0.2317**	**0.9899**	**0.0000**	**702.5745**	**702.5745**	**0.2272**	**0.0000**	**708.2552**

3.3 Grading/foundation work - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0290	1.0855	0.2453	2.9700e-003	0.0637	3.8800e-003	0.0676	0.0175	3.7200e-003	0.0212	0.0000	289.0642	289.0642	0.0168	0.0000	289.4843
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0852	0.0578	0.6332	1.6500e-003	0.1680	1.2100e-003	0.1692	0.0447	1.1200e-003	0.0458	0.0000	148.8559	148.8559	4.2100e-003	0.0000	148.9611
Total	**0.1142**	**1.1433**	**0.8785**	**4.6200e-003**	**0.2317**	**5.0900e-003**	**0.2368**	**0.0622**	**4.8400e-003**	**0.0670**	**0.0000**	**437.9200**	**437.9200**	**0.0210**	**0.0000**	**438.4453**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3842	0.0000	1.3842	0.7582	0.0000	0.7582	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1541	2.3617	4.4888	8.0000e-003		0.0255	0.0255		0.0245	0.0245	0.0000	702.5737	702.5737	0.2272	0.0000	708.2543
Total	**0.1541**	**2.3617**	**4.4888**	**8.0000e-003**	**1.3842**	**0.0255**	**1.4097**	**0.7582**	**0.0245**	**0.7826**	**0.0000**	**702.5737**	**702.5737**	**0.2272**	**0.0000**	**708.2543**

3.3 Grading/foundation work - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0290	1.0855	0.2453	2.9700e-003	0.0637	3.8800e-003	0.0676	0.0175	3.7200e-003	0.0212	0.0000	289.0642	289.0642	0.0168	0.0000	289.4843
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0852	0.0578	0.6332	1.6500e-003	0.1680	1.2100e-003	0.1692	0.0447	1.1200e-003	0.0458	0.0000	148.8559	148.8559	4.2100e-003	0.0000	148.9611
Total	**0.1142**	**1.1433**	**0.8785**	**4.6200e-003**	**0.2317**	**5.0900e-003**	**0.2368**	**0.0622**	**4.8400e-003**	**0.0670**	**0.0000**	**437.9200**	**437.9200**	**0.0210**	**0.0000**	**438.4453**

3.4 Erection of Structure - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2612	2.4512	1.9776	3.4300e-003		0.1342	0.1342		0.1267	0.1267	0.0000	294.7292	294.7292	0.0672	0.0000	296.4100
Total	**0.2612**	**2.4512**	**1.9776**	**3.4300e-003**		**0.1342**	**0.1342**		**0.1267**	**0.1267**	**0.0000**	**294.7292**	**294.7292**	**0.0672**	**0.0000**	**296.4100**

3.4 Erection of Structure - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0213	0.7966	0.1800	2.1800e-003	0.1586	2.8500e-003	0.1614	0.0403	2.7300e-003	0.0430	0.0000	212.1350	212.1350	0.0123	0.0000	212.4433
Vendor	0.0582	1.7042	0.4753	3.7400e-003	0.0889	8.8200e-003	0.0977	0.0257	8.4400e-003	0.0341	0.0000	359.5577	359.5577	0.0213	0.0000	360.0899
Worker	0.1122	0.0761	0.8340	2.1700e-003	0.2213	1.5900e-003	0.2229	0.0589	1.4700e-003	0.0603	0.0000	196.0668	196.0668	5.5400e-003	0.0000	196.2053
Total	**0.1916**	**2.5768**	**1.4893**	**8.0900e-003**	**0.4687**	**0.0133**	**0.4820**	**0.1248**	**0.0126**	**0.1375**	**0.0000**	**767.7595**	**767.7595**	**0.0392**	**0.0000**	**768.7386**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0644	1.2675	2.1504	3.4300e-003		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	294.7288	294.7288	0.0672	0.0000	296.4096
Total	**0.0644**	**1.2675**	**2.1504**	**3.4300e-003**		**8.6700e-003**	**8.6700e-003**		**8.6700e-003**	**8.6700e-003**	**0.0000**	**294.7288**	**294.7288**	**0.0672**	**0.0000**	**296.4096**

3.4 Erection of Structure - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0213	0.7966	0.1800	2.1800e-003	0.1586	2.8500e-003	0.1614	0.0403	2.7300e-003	0.0430	0.0000	212.1350	212.1350	0.0123	0.0000	212.4433
Vendor	0.0582	1.7042	0.4753	3.7400e-003	0.0889	8.8200e-003	0.0977	0.0257	8.4400e-003	0.0341	0.0000	359.5577	359.5577	0.0213	0.0000	360.0899
Worker	0.1122	0.0761	0.8340	2.1700e-003	0.2213	1.5900e-003	0.2229	0.0589	1.4700e-003	0.0603	0.0000	196.0668	196.0668	5.5400e-003	0.0000	196.2053
Total	**0.1916**	**2.5768**	**1.4893**	**8.0900e-003**	**0.4687**	**0.0133**	**0.4820**	**0.1248**	**0.0126**	**0.1375**	**0.0000**	**767.7595**	**767.7595**	**0.0392**	**0.0000**	**768.7386**

3.4 Erection of Structure - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5624	5.3165	4.6368	8.1900e-003		0.2766	0.2766		0.2613	0.2613	0.0000	704.2525	704.2525	0.1588	0.0000	708.2235
Total	**0.5624**	**5.3165**	**4.6368**	**8.1900e-003**		**0.2766**	**0.2766**		**0.2613**	**0.2613**	**0.0000**	**704.2525**	**704.2525**	**0.1588**	**0.0000**	**708.2235**

3.4 Erection of Structure - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0472	1.7480	0.3995	5.1500e-003	0.1746	5.9900e-003	0.1806	0.0461	5.7300e-003	0.0518	0.0000	500.9678	500.9678	0.0289	0.0000	501.6904
Vendor	0.1142	3.7142	0.9927	8.8600e-003	0.2123	0.0103	0.2225	0.0614	9.8200e-003	0.0712	0.0000	851.9476	851.9476	0.0487	0.0000	853.1654
Worker	0.2493	0.1629	1.8221	5.0100e-003	0.5287	3.7000e-003	0.5324	0.1406	3.4100e-003	0.1440	0.0000	452.5140	452.5140	0.0119	0.0000	452.8110
Total	**0.4106**	**5.6251**	**3.2143**	**0.0190**	**0.9156**	**0.0200**	**0.9356**	**0.2481**	**0.0190**	**0.2670**	**0.0000**	**1,805.4294**	**1,805.4294**	**0.0895**	**0.0000**	**1,807.6668**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1539	3.0285	5.1380	8.1900e-003		0.0207	0.0207		0.0207	0.0207	0.0000	704.2516	704.2516	0.1588	0.0000	708.2226
Total	**0.1539**	**3.0285**	**5.1380**	**8.1900e-003**		**0.0207**	**0.0207**		**0.0207**	**0.0207**	**0.0000**	**704.2516**	**704.2516**	**0.1588**	**0.0000**	**708.2226**

3.4 Erection of Structure - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0472	1.7480	0.3995	5.1500e-003	0.1746	5.9900e-003	0.1806	0.0461	5.7300e-003	0.0518	0.0000	500.9678	500.9678	0.0289	0.0000	501.6904
Vendor	0.1142	3.7142	0.9927	8.8600e-003	0.2123	0.0103	0.2225	0.0614	9.8200e-003	0.0712	0.0000	851.9476	851.9476	0.0487	0.0000	853.1654
Worker	0.2493	0.1629	1.8221	5.0100e-003	0.5287	3.7000e-003	0.5324	0.1406	3.4100e-003	0.1440	0.0000	452.5140	452.5140	0.0119	0.0000	452.8110
Total	**0.4106**	**5.6251**	**3.2143**	**0.0190**	**0.9156**	**0.0200**	**0.9356**	**0.2481**	**0.0190**	**0.2670**	**0.0000**	**1,805.4294**	**1,805.4294**	**0.0895**	**0.0000**	**1,807.6668**

3.4 Erection of Structure - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1673	1.5636	1.5046	2.7000e-003		0.0778	0.0778		0.0735	0.0735	0.0000	231.8208	231.8208	0.0519	0.0000	233.1185
Total	**0.1673**	**1.5636**	**1.5046**	**2.7000e-003**		**0.0778**	**0.0778**		**0.0735**	**0.0735**	**0.0000**	**231.8208**	**231.8208**	**0.0519**	**0.0000**	**233.1185**

3.4 Erection of Structure - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0146	0.5270	0.1259	1.6700e-003	0.1561	1.6900e-003	0.1578	0.0394	1.6200e-003	0.0410	0.0000	162.8625	162.8625	9.3400e-003	0.0000	163.0961
Vendor	0.0349	1.1605	0.3012	2.8900e-003	0.0699	2.9600e-003	0.0728	0.0202	2.8300e-003	0.0230	0.0000	277.8890	277.8890	0.0156	0.0000	278.2783
Worker	0.0767	0.0482	0.5510	1.5900e-003	0.1740	1.1800e-003	0.1752	0.0463	1.0900e-003	0.0474	0.0000	143.5766	143.5766	3.5100e-003	0.0000	143.6644
Total	**0.1261**	**1.7358**	**0.9781**	**6.1500e-003**	**0.3999**	**5.8300e-003**	**0.4057**	**0.1058**	**5.5400e-003**	**0.1114**	**0.0000**	**584.3282**	**584.3282**	**0.0284**	**0.0000**	**585.0389**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0506	0.9966	1.6908	2.7000e-003		6.8200e-003	6.8200e-003		6.8200e-003	6.8200e-003	0.0000	231.8205	231.8205	0.0519	0.0000	233.1183
Total	**0.0506**	**0.9966**	**1.6908**	**2.7000e-003**		**6.8200e-003**	**6.8200e-003**		**6.8200e-003**	**6.8200e-003**	**0.0000**	**231.8205**	**231.8205**	**0.0519**	**0.0000**	**233.1183**

3.4 Erection of Structure - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0146	0.5270	0.1259	1.6700e-003	0.1561	1.6900e-003	0.1578	0.0394	1.6200e-003	0.0410	0.0000	162.8625	162.8625	9.3400e-003	0.0000	163.0961
Vendor	0.0349	1.1605	0.3012	2.8900e-003	0.0699	2.9600e-003	0.0728	0.0202	2.8300e-003	0.0230	0.0000	277.8890	277.8890	0.0156	0.0000	278.2783
Worker	0.0767	0.0482	0.5510	1.5900e-003	0.1740	1.1800e-003	0.1752	0.0463	1.0900e-003	0.0474	0.0000	143.5766	143.5766	3.5100e-003	0.0000	143.6644
Total	**0.1261**	**1.7358**	**0.9781**	**6.1500e-003**	**0.3999**	**5.8300e-003**	**0.4057**	**0.1058**	**5.5400e-003**	**0.1114**	**0.0000**	**584.3282**	**584.3282**	**0.0284**	**0.0000**	**585.0389**

3.5 Interior and exterior finish work - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2486					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0173	0.1451	0.1442	2.3000e-004		8.4500e-003	8.4500e-003		8.1800e-003	8.1800e-003	0.0000	19.6886	19.6886	3.4800e-003	0.0000	19.7756
Total	**0.2659**	**0.1451**	**0.1442**	**2.3000e-004**		**8.4500e-003**	**8.4500e-003**		**8.1800e-003**	**8.1800e-003**	**0.0000**	**19.6886**	**19.6886**	**3.4800e-003**	**0.0000**	**19.7756**

3.5 Interior and exterior finish work - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	5.8000e-004	6.3700e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.4967	1.4967	4.0000e-005	0.0000	1.4978
Total	**8.6000e-004**	**5.8000e-004**	**6.3700e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.4967**	**1.4967**	**4.0000e-005**	**0.0000**	**1.4978**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2486					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6500e-003	0.1103	0.1531	2.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	19.6886	19.6886	3.4800e-003	0.0000	19.7756
Total	**0.2582**	**0.1103**	**0.1531**	**2.3000e-004**		**4.0400e-003**	**4.0400e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**19.6886**	**19.6886**	**3.4800e-003**	**0.0000**	**19.7756**

3.5 Interior and exterior finish work - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	5.8000e-004	6.3700e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.4967	1.4967	4.0000e-005	0.0000	1.4978
Total	**8.6000e-004**	**5.8000e-004**	**6.3700e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.4967**	**1.4967**	**4.0000e-005**	**0.0000**	**1.4978**

3.5 Interior and exterior finish work - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8208					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1740	1.4471	1.6207	2.5800e-003		0.0805	0.0805		0.0780	0.0780	0.0000	223.3899	223.3899	0.0383	0.0000	224.3472
Total	**2.9947**	**1.4471**	**1.6207**	**2.5800e-003**		**0.0805**	**0.0805**		**0.0780**	**0.0780**	**0.0000**	**223.3899**	**223.3899**	**0.0383**	**0.0000**	**224.3472**

3.5 Interior and exterior finish work - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0400e-003	5.9100e-003	0.0661	1.8000e-004	0.0192	1.3000e-004	0.0193	5.1000e-003	1.2000e-004	5.2200e-003	0.0000	16.4059	16.4059	4.3000e-004	0.0000	16.4167
Total	**9.0400e-003**	**5.9100e-003**	**0.0661**	**1.8000e-004**	**0.0192**	**1.3000e-004**	**0.0193**	**5.1000e-003**	**1.2000e-004**	**5.2200e-003**	**0.0000**	**16.4059**	**16.4059**	**4.3000e-004**	**0.0000**	**16.4167**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8208					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1013	1.1972	1.7328	2.5800e-003		0.0400	0.0400		0.0400	0.0400	0.0000	223.3896	223.3896	0.0383	0.0000	224.3469
Total	**2.9221**	**1.1972**	**1.7328**	**2.5800e-003**		**0.0400**	**0.0400**		**0.0400**	**0.0400**	**0.0000**	**223.3896**	**223.3896**	**0.0383**	**0.0000**	**224.3469**

3.5 Interior and exterior finish work - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0400e-003	5.9100e-003	0.0661	1.8000e-004	0.0192	1.3000e-004	0.0193	5.1000e-003	1.2000e-004	5.2200e-003	0.0000	16.4059	16.4059	4.3000e-004	0.0000	16.4167
Total	**9.0400e-003**	**5.9100e-003**	**0.0661**	**1.8000e-004**	**0.0192**	**1.3000e-004**	**0.0193**	**5.1000e-003**	**1.2000e-004**	**5.2200e-003**	**0.0000**	**16.4059**	**16.4059**	**4.3000e-004**	**0.0000**	**16.4167**

3.5 Interior and exterior finish work - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0794	0.6456	0.7978	1.2700e-003		0.0346	0.0346		0.0335	0.0335	0.0000	110.3998	110.3998	0.0187	0.0000	110.8670
Total	**1.4735**	**0.6456**	**0.7978**	**1.2700e-003**		**0.0346**	**0.0346**		**0.0335**	**0.0335**	**0.0000**	**110.3998**	**110.3998**	**0.0187**	**0.0000**	**110.8670**

3.5 Interior and exterior finish work - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1700e-003	2.6200e-003	0.0300	9.0000e-005	9.4700e-003	6.0000e-005	9.5400e-003	2.5200e-003	6.0000e-005	2.5800e-003	0.0000	7.8182	7.8182	1.9000e-004	0.0000	7.8230
Total	**4.1700e-003**	**2.6200e-003**	**0.0300**	**9.0000e-005**	**9.4700e-003**	**6.0000e-005**	**9.5400e-003**	**2.5200e-003**	**6.0000e-005**	**2.5800e-003**	**0.0000**	**7.8182**	**7.8182**	**1.9000e-004**	**0.0000**	**7.8230**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0476	0.5713	0.8558	1.2700e-003		0.0176	0.0176		0.0176	0.0176	0.0000	110.3997	110.3997	0.0187	0.0000	110.8669
Total	**1.4418**	**0.5713**	**0.8558**	**1.2700e-003**		**0.0176**	**0.0176**		**0.0176**	**0.0176**	**0.0000**	**110.3997**	**110.3997**	**0.0187**	**0.0000**	**110.8669**

3.5 Interior and exterior finish work - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1700e-003	2.6200e-003	0.0300	9.0000e-005	9.4700e-003	6.0000e-005	9.5400e-003	2.5200e-003	6.0000e-005	2.5800e-003	0.0000	7.8182	7.8182	1.9000e-004	0.0000	7.8230
Total	**4.1700e-003**	**2.6200e-003**	**0.0300**	**9.0000e-005**	**9.4700e-003**	**6.0000e-005**	**9.5400e-003**	**2.5200e-003**	**6.0000e-005**	**2.5800e-003**	**0.0000**	**7.8182**	**7.8182**	**1.9000e-004**	**0.0000**	**7.8230**

3.6 Site work and landscaping - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1110	1.1116	1.2277	1.8400e-003		0.0626	0.0626		0.0576	0.0576	0.0000	161.8547	161.8547	0.0524	0.0000	163.1634
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1110**	**1.1116**	**1.2277**	**1.8400e-003**		**0.0626**	**0.0626**		**0.0576**	**0.0576**	**0.0000**	**161.8547**	**161.8547**	**0.0524**	**0.0000**	**163.1634**

3.6 Site work and landscaping - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5700e-003	2.9900e-003	0.0334	9.0000e-005	9.6900e-003	7.0000e-005	9.7600e-003	2.5800e-003	6.0000e-005	2.6400e-003	0.0000	8.2972	8.2972	2.2000e-004	0.0000	8.3027
Total	**4.5700e-003**	**2.9900e-003**	**0.0334**	**9.0000e-005**	**9.6900e-003**	**7.0000e-005**	**9.7600e-003**	**2.5800e-003**	**6.0000e-005**	**2.6400e-003**	**0.0000**	**8.2972**	**8.2972**	**2.2000e-004**	**0.0000**	**8.3027**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0297	0.8117	1.3992	1.8400e-003		3.0300e-003	3.0300e-003		3.0300e-003	3.0300e-003	0.0000	161.8546	161.8546	0.0524	0.0000	163.1632
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0297**	**0.8117**	**1.3992**	**1.8400e-003**		**3.0300e-003**	**3.0300e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**161.8546**	**161.8546**	**0.0524**	**0.0000**	**163.1632**

3.6 Site work and landscaping - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5700e-003	2.9900e-003	0.0334	9.0000e-005	9.6900e-003	7.0000e-005	9.7600e-003	2.5800e-003	6.0000e-005	2.6400e-003	0.0000	8.2972	8.2972	2.2000e-004	0.0000	8.3027
Total	**4.5700e-003**	**2.9900e-003**	**0.0334**	**9.0000e-005**	**9.6900e-003**	**7.0000e-005**	**9.7600e-003**	**2.5800e-003**	**6.0000e-005**	**2.6400e-003**	**0.0000**	**8.2972**	**8.2972**	**2.2000e-004**	**0.0000**	**8.3027**

3.6 Site work and landscaping - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0153	0.1523	0.1938	2.9000e-004		8.1700e-003	8.1700e-003		7.5200e-003	7.5200e-003	0.0000	25.7539	25.7539	8.3300e-003	0.0000	25.9621
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0153**	**0.1523**	**0.1938**	**2.9000e-004**		**8.1700e-003**	**8.1700e-003**		**7.5200e-003**	**7.5200e-003**	**0.0000**	**25.7539**	**25.7539**	**8.3300e-003**	**0.0000**	**25.9621**

3.6 Site work and landscaping - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	4.3000e-004	4.8800e-003	1.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.2727	1.2727	3.0000e-005	0.0000	1.2735
Total	**6.8000e-004**	**4.3000e-004**	**4.8800e-003**	**1.0000e-005**	**1.5400e-003**	**1.0000e-005**	**1.5500e-003**	**4.1000e-004**	**1.0000e-005**	**4.2000e-004**	**0.0000**	**1.2727**	**1.2727**	**3.0000e-005**	**0.0000**	**1.2735**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7300e-003	0.1291	0.2226	2.9000e-004		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	25.7539	25.7539	8.3300e-003	0.0000	25.9621
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.7300e-003**	**0.1291**	**0.2226**	**2.9000e-004**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**	**0.0000**	**25.7539**	**25.7539**	**8.3300e-003**	**0.0000**	**25.9621**

3.6 Site work and landscaping - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	4.3000e-004	4.8800e-003	1.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.2727	1.2727	3.0000e-005	0.0000	1.2735
Total	**6.8000e-004**	**4.3000e-004**	**4.8800e-003**	**1.0000e-005**	**1.5400e-003**	**1.0000e-005**	**1.5500e-003**	**4.1000e-004**	**1.0000e-005**	**4.2000e-004**	**0.0000**	**1.2727**	**1.2727**	**3.0000e-005**	**0.0000**	**1.2735**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0010	4.6263	13.1504	0.0440	3.8846	0.0379	3.9224	1.0414	0.0354	1.0769	0.0000	4,043.8420	4,043.8420	0.1837	0.0000	4,048.4331
Unmitigated	1.0010	4.6263	13.1504	0.0440	3.8846	0.0379	3.9224	1.0414	0.0354	1.0769	0.0000	4,043.8420	4,043.8420	0.1837	0.0000	4,048.4331

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	216.00	216.00	216.00	731,203	731,203
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	4,005.75	0.00	0.00	9,685,901	9,685,901
Strip Mall	0.00	0.00	0.00		
Total	4,221.75	216.00	216.00	10,417,104	10,417,104

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	9.30	0.00	0.00	100.00	0.00	0.00	100	0	0
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
General Office Building	9.30	0.00	0.00	100.00	0.00	0.00	100	0	0
Strip Mall	10.00	5.00	6.50	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.559527	0.038733	0.206173	0.118029	0.019040	0.005245	0.018552	0.023249	0.002031	0.002054	0.005884	0.000619	0.000865
Enclosed Parking with Elevator	0.559527	0.038733	0.206173	0.118029	0.019040	0.005245	0.018552	0.023249	0.002031	0.002054	0.005884	0.000619	0.000865
General Office Building	0.559527	0.038733	0.206173	0.118029	0.019040	0.005245	0.018552	0.023249	0.002031	0.002054	0.005884	0.000619	0.000865
Strip Mall	0.559527	0.038733	0.206173	0.118029	0.019040	0.005245	0.018552	0.023249	0.002031	0.002054	0.005884	0.000619	0.000865

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4,092.5939	4,092.5939	0.2011	0.0416	4,110.0164
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4,092.5939	4,092.5939	0.2011	0.0416	4,110.0164
NaturalGas Mitigated	0.0619	0.5598	0.4516	3.3800e-003		0.0428	0.0428		0.0428	0.0428	0.0000	612.5634	612.5634	0.0117	0.0112	616.2036
NaturalGas Unmitigated	0.0619	0.5598	0.4516	3.3800e-003		0.0428	0.0428		0.0428	0.0428	0.0000	612.5634	612.5634	0.0117	0.0112	616.2036

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	974810	5.2600e-003	0.0449	0.0191	2.9000e-004		3.6300e-003	3.6300e-003		3.6300e-003	3.6300e-003	0.0000	52.0196	52.0196	1.0000e-003	9.5000e-004	52.3287
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.03706e+007	0.0559	0.5084	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386	0.0000	553.4134	553.4134	0.0106	0.0102	556.7021
Strip Mall	133619	7.2000e-004	6.5500e-003	5.5000e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1304	7.1304	1.4000e-004	1.3000e-004	7.1728
Total		**0.0619**	**0.5598**	**0.4516**	**3.3800e-003**		**0.0428**	**0.0428**		**0.0428**	**0.0428**	**0.0000**	**612.5634**	**612.5634**	**0.0118**	**0.0112**	**616.2036**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	974810	5.2600e-003	0.0449	0.0191	2.9000e-004		3.6300e-003	3.6300e-003		3.6300e-003	3.6300e-003	0.0000	52.0196	52.0196	1.0000e-003	9.5000e-004	52.3287
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.03706e+007	0.0559	0.5084	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386	0.0000	553.4134	553.4134	0.0106	0.0102	556.7021
Strip Mall	133619	7.2000e-004	6.5500e-003	5.5000e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1304	7.1304	1.4000e-004	1.3000e-004	7.1728
Total		**0.0619**	**0.5598**	**0.4516**	**3.3800e-003**		**0.0428**	**0.0428**		**0.0428**	**0.0428**	**0.0000**	**612.5634**	**612.5634**	**0.0118**	**0.0112**	**616.2036**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	425646	113.9710	5.6000e-003	1.1600e-003	114.4562
Enclosed Parking with Elevator	3.14229e+006	841.3800	0.0413	8.5500e-003	844.9618
General Office Building	1.14314e+007	3,060.8683	0.1504	0.0311	3,073.8987
Strip Mall	285235	76.3746	3.7500e-003	7.8000e-004	76.6997
Total		**4,092.5939**	**0.2011**	**0.0416**	**4,110.0164**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	425646	113.9710	5.6000e-003	1.1600e-003	114.4562
Enclosed Parking with Elevator	3.14229e+006	841.3800	0.0413	8.5500e-003	844.9618
General Office Building	1.14314e+007	3,060.8683	0.1504	0.0311	3,073.8987
Strip Mall	285235	76.3746	3.7500e-003	7.8000e-004	76.6997
Total		**4,092.5939**	**0.2011**	**0.0416**	**4,110.0164**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0807	0.0122	1.0595	6.0000e-005		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	1.7372	1.7372	1.7600e-003	0.0000	1.7813
Unmitigated	4.0807	0.0122	1.0595	6.0000e-005		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	1.7372	1.7372	1.7600e-003	0.0000	1.7813

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4464					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0337	0.0122	1.0595	6.0000e-005		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	1.7372	1.7372	1.7600e-003	0.0000	1.7813
Total	**4.0807**	**0.0122**	**1.0595**	**6.0000e-005**		**5.8000e-003**	**5.8000e-003**		**5.8000e-003**	**5.8000e-003**	**0.0000**	**1.7372**	**1.7372**	**1.7600e-003**	**0.0000**	**1.7813**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4464					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0337	0.0122	1.0595	6.0000e-005		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	1.7372	1.7372	1.7600e-003	0.0000	1.7813
Total	**4.0807**	**0.0122**	**1.0595**	**6.0000e-005**		**5.8000e-003**	**5.8000e-003**		**5.8000e-003**	**5.8000e-003**	**0.0000**	**1.7372**	**1.7372**	**1.7600e-003**	**0.0000**	**1.7813**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	337.2945	0.1955	0.1176	377.2165
Unmitigated	337.2945	0.1955	0.1176	377.2165

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	6.5154 / 4.10754	14.8471	8.5500e-003	5.1400e-003	16.5927
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	140.703 / 86.2373	318.3167	0.1845	0.1110	356.0040
Strip Mall	1.82589 / 1.11909	4.1308	2.3900e-003	1.4400e-003	4.6198
Total		**337.2945**	**0.1955**	**0.1176**	**377.2165**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	6.5154 / 4.10754	14.8471	8.5500e-003	5.1400e-003	16.5927
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	140.703 / 86.2373	318.3167	0.1845	0.1110	356.0040
Strip Mall	1.82589 / 1.11909	4.1308	2.3900e-003	1.4400e-003	4.6198
Total		**337.2945**	**0.1955**	**0.1176**	**377.2165**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	164.0390	9.6944	0.0000	406.3998
Unmitigated	164.0390	9.6944	0.0000	406.3998

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	46	9.3376	0.5518	0.0000	23.1335
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	736.23	149.4480	8.8321	0.0000	370.2512
Strip Mall	25.88	5.2534	0.3105	0.0000	13.0151
Total		**164.0390**	**9.6944**	**0.0000**	**406.3998**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	46	9.3376	0.5518	0.0000	23.1335
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	736.23	149.4480	8.8321	0.0000	370.2512
Strip Mall	25.88	5.2534	0.3105	0.0000	13.0151
Total		**164.0390**	**9.6944**	**0.0000**	**406.3998**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	50	2584	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
Boiler	10	35	9200	10	CNG
Boiler	3	7	2580	3	CNG

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Boiler - CNG (2 - 5 MMBTU)	0.0209	0.0426	0.3718	2.2800e-003		0.0288	0.0288		0.0288	0.0288	0.0000	413.0428	413.0428	7.9200e-003	0.0000	413.2407
Boiler - CNG (5 - 75 MMBTU)	0.2480	0.5060	4.4197	0.0271		0.3428	0.3428		0.3428	0.3428	0.0000	4,909.5529	4,909.5529	0.0941	0.0000	4,911.9054
Emergency Generator - Diesel (750 - 9999 HP)	0.1060	0.4741	0.2703	5.1000e-004		0.0156	0.0156		0.0156	0.0156	0.0000	49.1990	49.1990	6.9000e-003	0.0000	49.3714
Total	**0.3749**	**1.0227**	**5.0618**	**0.0299**		**0.3872**	**0.3872**		**0.3872**	**0.3872**	**0.0000**	**5,371.7948**	**5,371.7948**	**0.1089**	**0.0000**	**5,374.5176**

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	35.4000	0.0000	0.0000	35.4000

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	50	35.4000	0.0000	0.0000	35.4000
Total		**35.4000**	**0.0000**	**0.0000**	**35.4000**

Tower 301 Construction

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	791.65	1000sqft	2.40	791,647.00	0
Enclosed Parking with Elevator	1,304.00	Space	2.40	536,227.00	0
Apartments Mid Rise	100.00	Dwelling Unit	2.40	96,755.00	267
Strip Mall	24.65	1000sqft	2.40	24,653.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2022
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Specific

Land Use - Parking includes bike parking (square footage from entitlement package)
Residential square footage from entitlement package
Total Lot acreage = 2.4 from entitlement package

Construction Phase - From project sponsor

Off-road Equipment - CalEEMod default equipment for dem w/ >2 acre PLUS scraper from equipment list.

Off-road Equipment - CalEEMod defaults for building construction >20 acre because high rise. Additional Crane, pump, cement from construction equipment list

Off-road Equipment - CalEEMod defaults for site prep + grade phases at >2acre; pile driving equipment and excavator added from construction eq list

Off-road Equipment - aerial lifts added from construction equipment list. other construction equipment assumed. additional air compressors for nail guns etc.

Off-road Equipment - defaults for paving. general industrial equipment assumed (mower etc).

Trips and VMT - worker trips based on calculation and client data. haul trips all phases one way =17300. dem haul trips = export, grad haul trips = import.

Grading - import/export from data request. acres from PD

Vehicle Trips - traffic report

Woodstoves - 30 fireplaces represent firepits etc

Energy Use -

Land Use Change -

Sequestration - 50 tree conservative (close to 65 in entitlement package)

Construction Off-road Equipment Mitigation - mit for HRA

Stationary Sources - Emergency Generators and Fire Pumps - 85 hp would be a Generac 50kW diesel genset
Assume O&M <50 hr/yr

Stationary Sources - Process Boilers -

Stationary Sources - User Defined -

Table Name	Column Name	Default Value	New Value
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstructionPhase	NumDays	20.00	413.00
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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblFireplaces	FireplaceDayYear	0.00	120.00
tblFireplaces	FireplaceHourDay	0.00	6.00
tblFireplaces	NumberNoFireplace	100.00	30.00
tblGrading	AcresOfGrading	228.75	2.40
tblGrading	MaterialExported	0.00	34,000.00
tblGrading	MaterialImported	0.00	17,500.00
tblLandUse	LandUseSquareFeet	791,650.00	791,647.00
tblLandUse	LandUseSquareFeet	521,600.00	536,227.00
tblLandUse	LandUseSquareFeet	100,000.00	96,755.00
tblLandUse	LandUseSquareFeet	24,650.00	24,653.00
tblLandUse	LotAcreage	18.17	2.40
tblLandUse	LotAcreage	11.74	2.40
tblLandUse	LotAcreage	2.63	2.40

tblLandUse	LotAcreage	0.57	2.40
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
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tblOffRoadEquipment	UsageHours	6.00	8.00
tblSequestration	NumberOfNewTrees	0.00	50.00
tblStationaryBoilersUse	AnnualHeatInput	0.00	2,580.00
tblStationaryBoilersUse	BoilerRatingValue	0.00	3.00
tblStationaryBoilersUse	DailyHeatInput	0.00	7.00
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tblStationaryBoilersUse	NumberOfEquipment	0.00	3.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,890.00
tblTripsAndVMT	HaulingTripNumber	6,438.00	7,556.00

tblTripsAndVMT	HaulingTripNumber	0.00	23,154.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	25.00	250.00
tblTripsAndVMT	WorkerTripNumber	558.00	460.00
tblTripsAndVMT	WorkerTripNumber	112.00	20.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	10.00	9.30
tblVehicleTrips	CW_TTP	33.00	100.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	HO_TL	6.50	0.00
tblVehicleTrips	HO_TTP	41.00	0.00
tblVehicleTrips	HS_TL	5.00	0.00
tblVehicleTrips	HS_TTP	12.50	0.00
tblVehicleTrips	HW_TL	10.00	9.30
tblVehicleTrips	HW_TTP	46.50	100.00
tblVehicleTrips	PB_TP	3.00	0.00
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tblVehicleTrips	ST_TR	6.39	2.16
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2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	5.6379	91.3050	41.1555	0.1686	2.7557	2.4404	5.1961	0.7530	2.2754	3.0284	0.0000	17,609.2521	17,609.2521	2.1298	0.0000	17,662.4966
2020	30.2634	89.6171	66.8989	0.1950	17.7474	2.9897	20.5563	8.9869	2.8432	11.5728	0.0000	19,690.7453	19,690.7453	2.9954	0.0000	19,744.4771
2021	31.1351	98.0741	82.9640	0.2222	6.3541	3.4647	9.8188	1.7148	3.2650	4.9797	0.0000	22,323.3253	22,323.3253	2.9741	0.0000	22,397.6782
2022	30.2720	88.7613	80.6414	0.2201	8.3478	2.9429	11.2907	2.2041	2.7751	4.9792	0.0000	22,109.5094	22,109.5094	2.9394	0.0000	22,182.9930
Maximum	**31.1351**	**98.0741**	**82.9640**	**0.2222**	**17.7474**	**3.4647**	**20.5563**	**8.9869**	**3.2650**	**11.5728**	**0.0000**	**22,323.3253**	**22,323.3253**	**2.9954**	**0.0000**	**22,397.6782**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.3270	62.5080	41.8276	0.1686	2.7557	0.2780	3.0336	0.7530	0.2693	1.0222	0.0000	17,609.2521	17,609.2521	2.1298	0.0000	17,662.4966
2020	26.5949	68.5222	70.3101	0.1950	17.7474	0.6907	18.0830	8.9869	0.6808	9.3079	0.0000	19,690.7453	19,690.7453	2.9954	0.0000	19,744.4771
2021	26.7367	76.9947	89.6252	0.2222	6.3541	0.6170	6.9711	1.7148	0.6103	2.3251	0.0000	22,323.3253	22,323.3253	2.9741	0.0000	22,397.6782
2022	26.5048	74.3957	87.9050	0.2201	8.3478	0.5695	8.9172	2.2041	0.5635	2.7675	0.0000	22,109.5094	22,109.5094	2.9394	0.0000	22,182.9930
Maximum	**26.7367**	**76.9947**	**89.6252**	**0.2222**	**17.7474**	**0.6907**	**18.0830**	**8.9869**	**0.6808**	**9.3079**	**0.0000**	**22,323.3253**	**22,323.3253**	**2.9954**	**0.0000**	**22,397.6782**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**15.56**	**23.20**	**-6.63**	**0.00**	**0.00**	**81.79**	**21.03**	**0.00**	**80.97**	**37.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.4447	0.0972	8.4758	4.5000e-004		0.0464	0.0464		0.0464	0.0464	0.0000	15.3193	15.3193	0.0156	0.0000	15.7082
Energy	0.3392	3.0676	2.4747	0.0185		0.2343	0.2343		0.2343	0.2343		3,699.9210	3,699.9210	0.0709	0.0678	3,721.9078
Mobile	7.1824	35.9806	101.4344	0.3240	30.3130	0.2875	30.6006	8.1034	0.2691	8.3726		32,850.5425	32,850.5425	1.5448		32,889.1628
Stationary	6.2410	23.0444	46.4581	0.2386		3.3882	3.3882		3.3882	3.3882		45,817.0975	45,817.0975	1.1407		45,845.6155
Total	**36.2073**	**62.1898**	**158.8431**	**0.5816**	**30.3130**	**3.9564**	**34.2694**	**8.1034**	**3.9380**	**12.0414**	**0.0000**	**82,382.8803**	**82,382.8803**	**2.7720**	**0.0678**	**82,472.3942**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.4447	0.0972	8.4758	4.5000e-004		0.0464	0.0464		0.0464	0.0464	0.0000	15.3193	15.3193	0.0156	0.0000	15.7082
Energy	0.3392	3.0676	2.4747	0.0185		0.2343	0.2343		0.2343	0.2343		3,699.9210	3,699.9210	0.0709	0.0678	3,721.9078
Mobile	7.1824	35.9806	101.4344	0.3240	30.3130	0.2875	30.6006	8.1034	0.2691	8.3726		32,850.5425	32,850.5425	1.5448		32,889.1628
Stationary	6.2410	23.0444	46.4581	0.2386		3.3882	3.3882		3.3882	3.3882		45,817.0975	45,817.0975	1.1407		45,845.6155
Total	**36.2073**	**62.1898**	**158.8431**	**0.5816**	**30.3130**	**3.9564**	**34.2694**	**8.1034**	**3.9380**	**12.0414**	**0.0000**	**82,382.8803**	**82,382.8803**	**2.7720**	**0.0678**	**82,472.3942**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition/clearing	Demolition	12/1/2019	12/31/2019	6	26	
2	Grading/foundation work	Grading	1/1/2020	7/31/2020	6	183	
3	Erection of Structure	Building Construction	8/1/2020	4/30/2022	6	547	
4	Interior and exterior finish work	Architectural Coating	12/1/2020	6/30/2022	5	413	
5	Site work and landscaping	Paving	7/1/2021	1/31/2022	5	153	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.4

Residential Indoor: 195,929; Residential Outdoor: 65,310; Non-Residential Indoor: 1,224,450; Non-Residential Outdoor: 408,150; Striped Parking Area: 32,174 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition/clearing	Concrete/Industrial Saws	1	10.00	81	0.73
Demolition/clearing	Rubber Tired Dozers	1	10.00	247	0.40
Demolition/clearing	Scrapers	1	10.00	367	0.48
Demolition/clearing	Tractors/Loaders/Backhoes	3	10.00	97	0.37
Grading/foundation work	Bore/Drill Rigs	3	10.00	221	0.50
Grading/foundation work	Excavators	1	10.00	158	0.38
Grading/foundation work	Graders	2	10.00	187	0.41
Grading/foundation work	Rubber Tired Dozers	2	10.00	247	0.40
Grading/foundation work	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Erection of Structure	Cement and Mortar Mixers	1	10.00	9	0.56
Erection of Structure	Cranes	2	10.00	231	0.29
Erection of Structure	Forklifts	3	10.00	89	0.20
Erection of Structure	Generator Sets	1	10.00	84	0.74
Erection of Structure	Pumps	1	10.00	84	0.74
Erection of Structure	Tractors/Loaders/Backhoes	3	10.00	97	0.37
Erection of Structure	Welders	1	10.00	46	0.45
Interior and exterior finish work	Aerial Lifts	1	8.00	63	0.31
Interior and exterior finish work	Air Compressors	3	8.00	78	0.48
Interior and exterior finish work	Other Construction Equipment	1	8.00	172	0.42
Site work and landscaping	Other General Industrial Equipment	2	8.00	88	0.34
Site work and landscaping	Pavers	2	8.00	130	0.42
Site work and landscaping	Paving Equipment	2	8.00	132	0.36
Site work and landscaping	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition/clearing	6	20.00	0.00	3,890.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/foundation work	10	250.00	0.00	7,556.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Erection of Structure	12	460.00	232.00	23,154.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Interior and exterior finish work	5	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site work and landscaping	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Demolition/clearing - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.2003	44.4861	28.6947	0.0491		2.2404	2.2404		2.0841	2.0841		4,825.6678	4,825.6678	1.3445		4,859.2814
Total	**4.2003**	**44.4861**	**28.6947**	**0.0491**		**2.2404**	**2.2404**		**2.0841**	**2.0841**		**4,825.6678**	**4,825.6678**	**1.3445**		**4,859.2814**

3.2 Demolition/clearing - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3513	46.7552	11.8395	0.1181	2.6035	0.1990	2.8025	0.7126	0.1904	0.9030		12,639.7843	12,639.7843	0.7807		12,659.3011
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0863	0.0637	0.6213	1.4500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		143.8000	143.8000	4.5600e-003		143.9141
Total	**1.4375**	**46.8188**	**12.4607**	**0.1196**	**2.7557**	**0.2001**	**2.9557**	**0.7530**	**0.1914**	**0.9443**		**12,783.5843**	**12,783.5843**	**0.7852**		**12,803.2152**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8895	15.6892	29.3668	0.0491		0.0779	0.0779		0.0779	0.0779	0.0000	4,825.6678	4,825.6678	1.3445		4,859.2814
Total	**0.8895**	**15.6892**	**29.3668**	**0.0491**		**0.0779**	**0.0779**		**0.0779**	**0.0779**	**0.0000**	**4,825.6678**	**4,825.6678**	**1.3445**		**4,859.2814**

3.2 Demolition/clearing - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3513	46.7552	11.8395	0.1181	2.6035	0.1990	2.8025	0.7126	0.1904	0.9030		12,639.7843	12,639.7843	0.7807		12,659.3011
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0863	0.0637	0.6213	1.4500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		143.8000	143.8000	4.5600e-003		143.9141
Total	**1.4375**	**46.8188**	**12.4607**	**0.1196**	**2.7557**	**0.2001**	**2.9557**	**0.7530**	**0.1914**	**0.9443**		**12,783.5843**	**12,783.5843**	**0.7852**		**12,803.2152**

3.3 Grading/foundation work - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					15.1273	0.0000	15.1273	8.2859	0.0000	8.2859			0.0000			0.0000
Off-Road	5.7589	65.6316	32.4520	0.0874		2.7525	2.7525		2.5323	2.5323		8,463.9980	8,463.9980	2.7374		8,532.4337
Total	**5.7589**	**65.6316**	**32.4520**	**0.0874**	**15.1273**	**2.7525**	**17.8798**	**8.2859**	**2.5323**	**10.8181**		**8,463.9980**	**8,463.9980**	**2.7374**		**8,532.4337**

3.3 Grading/foundation work - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3236	11.9242	2.7985	0.0322	0.7183	0.0433	0.7616	0.1966	0.0414	0.2380		3,451.1666	3,451.1666	0.2079		3,456.3635
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.9920	0.7068	6.9892	0.0175	1.9018	0.0132	1.9150	0.5045	0.0122	0.5166		1,742.2213	1,742.2213	0.0501		1,743.4736
Total	**1.3156**	**12.6310**	**9.7877**	**0.0497**	**2.6201**	**0.0565**	**2.6766**	**0.7011**	**0.0536**	**0.7546**		**5,193.3879**	**5,193.3879**	**0.2580**		**5,199.8371**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					15.1273	0.0000	15.1273	8.2859	0.0000	8.2859			0.0000			0.0000
Off-Road	1.6839	25.8106	49.0575	0.0874		0.2791	0.2791		0.2674	0.2674	0.0000	8,463.9980	8,463.9980	2.7374		8,532.4337
Total	**1.6839**	**25.8106**	**49.0575**	**0.0874**	**15.1273**	**0.2791**	**15.4064**	**8.2859**	**0.2674**	**8.5533**	**0.0000**	**8,463.9980**	**8,463.9980**	**2.7374**		**8,532.4337**

3.3 Grading/foundation work - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3236	11.9242	2.7985	0.0322	0.7183	0.0433	0.7616	0.1966	0.0414	0.2380		3,451.1666	3,451.1666	0.2079		3,456.3635
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.9920	0.7068	6.9892	0.0175	1.9018	0.0132	1.9150	0.5045	0.0122	0.5166		1,742.2213	1,742.2213	0.0501		1,743.4736
Total	**1.3156**	**12.6310**	**9.7877**	**0.0497**	**2.6201**	**0.0565**	**2.6766**	**0.7011**	**0.0536**	**0.7546**		**5,193.3879**	**5,193.3879**	**0.2580**		**5,199.8371**

3.4 Erection of Structure - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.9880	37.4227	30.1927	0.0523		2.0482	2.0482		1.9348	1.9348		4,960.0506	4,960.0506	1.1315		4,988.3371
Total	**3.9880**	**37.4227**	**30.1927**	**0.0523**		**2.0482**	**2.0482**		**1.9348**	**1.9348**		**4,960.0506**	**4,960.0506**	**1.1315**		**4,988.3371**

3.4 Erection of Structure - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3318	12.2243	2.8689	0.0330	2.5136	0.0444	2.5579	0.6378	0.0424	0.6802		3,538.0484	3,538.0484	0.2131		3,543.3761
Vendor	0.9216	25.9949	7.8760	0.0563	1.3962	0.1373	1.5334	0.4018	0.1313	0.5331		5,960.3653	5,960.3653	0.3751		5,969.7428
Worker	1.8252	1.3005	12.8601	0.0322	3.4992	0.0243	3.5235	0.9282	0.0224	0.9506		3,205.6872	3,205.6872	0.0922		3,207.9914
Total	**3.0785**	**39.5198**	**23.6050**	**0.1215**	**7.4090**	**0.2059**	**7.6149**	**1.9677**	**0.1961**	**2.1639**		**12,704.1009**	**12,704.1009**	**0.6804**		**12,721.1104**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9832	19.3512	32.8304	0.0523		0.1324	0.1324		0.1324	0.1324	0.0000	4,960.0506	4,960.0506	1.1315		4,988.3371
Total	**0.9832**	**19.3512**	**32.8304**	**0.0523**		**0.1324**	**0.1324**		**0.1324**	**0.1324**	**0.0000**	**4,960.0506**	**4,960.0506**	**1.1315**		**4,988.3371**

3.4 Erection of Structure - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3318	12.2243	2.8689	0.0330	2.5136	0.0444	2.5579	0.6378	0.0424	0.6802		3,538.0484	3,538.0484	0.2131		3,543.3761
Vendor	0.9216	25.9949	7.8760	0.0563	1.3962	0.1373	1.5334	0.4018	0.1313	0.5331		5,960.3653	5,960.3653	0.3751		5,969.7428
Worker	1.8252	1.3005	12.8601	0.0322	3.4992	0.0243	3.5235	0.9282	0.0224	0.9506		3,205.6872	3,205.6872	0.0922		3,207.9914
Total	**3.0785**	**39.5198**	**23.6050**	**0.1215**	**7.4090**	**0.2059**	**7.6149**	**1.9677**	**0.1961**	**2.1639**		**12,704.1009**	**12,704.1009**	**0.6804**		**12,721.1104**

3.4 Erection of Structure - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.5936	33.9709	29.6281	0.0523		1.7674	1.7674		1.6694	1.6694		4,960.4182	4,960.4182	1.1188		4,988.3880
Total	**3.5936**	**33.9709**	**29.6281**	**0.0523**		**1.7674**	**1.7674**		**1.6694**	**1.6694**		**4,960.4182**	**4,960.4182**	**1.1188**		**4,988.3880**

3.4 Erection of Structure - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3069	11.2191	2.6567	0.0326	1.1546	0.0390	1.1936	0.3042	0.0374	0.3415		3,496.6543	3,496.6543	0.2089		3,501.8759
Vendor	0.7595	23.6854	6.9010	0.0558	1.3960	0.0679	1.4639	0.4017	0.0649	0.4666		5,910.2479	5,910.2479	0.3591		5,919.2242
Worker	1.6978	1.1656	11.7375	0.0311	3.4992	0.0236	3.5228	0.9282	0.0218	0.9500		3,096.5555	3,096.5555	0.0825		3,098.6185
Total	**2.7642**	**36.0702**	**21.2951**	**0.1195**	**6.0498**	**0.1305**	**6.1804**	**1.6341**	**0.1240**	**1.7581**		**12,503.4578**	**12,503.4578**	**0.6504**		**12,519.7186**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9832	19.3512	32.8304	0.0523		0.1324	0.1324		0.1324	0.1324	0.0000	4,960.4182	4,960.4182	1.1188		4,988.3880
Total	**0.9832**	**19.3512**	**32.8304**	**0.0523**		**0.1324**	**0.1324**		**0.1324**	**0.1324**	**0.0000**	**4,960.4182**	**4,960.4182**	**1.1188**		**4,988.3880**

3.4 Erection of Structure - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3069	11.2191	2.6567	0.0326	1.1546	0.0390	1.1936	0.3042	0.0374	0.3415		3,496.6543	3,496.6543	0.2089		3,501.8759
Vendor	0.7595	23.6854	6.9010	0.0558	1.3960	0.0679	1.4639	0.4017	0.0649	0.4666		5,910.2479	5,910.2479	0.3591		5,919.2242
Worker	1.6978	1.1656	11.7375	0.0311	3.4992	0.0236	3.5228	0.9282	0.0218	0.9500		3,096.5555	3,096.5555	0.0825		3,098.6185
Total	**2.7642**	**36.0702**	**21.2951**	**0.1195**	**6.0498**	**0.1305**	**6.1804**	**1.6341**	**0.1240**	**1.7581**		**12,503.4578**	**12,503.4578**	**0.6504**		**12,519.7186**

3.4 Erection of Structure - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2479	30.3604	29.2148	0.0524		1.5103	1.5103		1.4276	1.4276		4,961.9165	4,961.9165	1.1111		4,989.6930
Total	**3.2479**	**30.3604**	**29.2148**	**0.0524**		**1.5103**	**1.5103**		**1.4276**	**1.4276**		**4,961.9165**	**4,961.9165**	**1.1111**		**4,989.6930**

3.4 Erection of Structure - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2878	10.2721	2.5424	0.0322	3.1484	0.0336	3.1820	0.7935	0.0321	0.8257		3,454.1122	3,454.1122	0.2052		3,459.2409
Vendor	0.7049	22.4787	6.3644	0.0553	1.3958	0.0597	1.4555	0.4017	0.0571	0.4587		5,857.7329	5,857.7329	0.3489		5,866.4544
Worker	1.5877	1.0479	10.7633	0.0300	3.4992	0.0230	3.5222	0.9282	0.0212	0.9494		2,985.6832	2,985.6832	0.0740		2,987.5335
Total	**2.5804**	**33.7987**	**19.6702**	**0.1174**	**8.0435**	**0.1163**	**8.1597**	**2.1234**	**0.1104**	**2.2338**		**12,297.5284**	**12,297.5284**	**0.6280**		**12,313.2287**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9832	19.3512	32.8304	0.0524		0.1324	0.1324		0.1324	0.1324	0.0000	4,961.9165	4,961.9165	1.1111		4,989.6930
Total	**0.9832**	**19.3512**	**32.8304**	**0.0524**		**0.1324**	**0.1324**		**0.1324**	**0.1324**	**0.0000**	**4,961.9165**	**4,961.9165**	**1.1111**		**4,989.6930**

3.4 Erection of Structure - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2878	10.2721	2.5424	0.0322	3.1484	0.0336	3.1820	0.7935	0.0321	0.8257		3,454.1122	3,454.1122	0.2052		3,459.2409
Vendor	0.7049	22.4787	6.3644	0.0553	1.3958	0.0597	1.4555	0.4017	0.0571	0.4587		5,857.7329	5,857.7329	0.3489		5,866.4544
Worker	1.5877	1.0479	10.7633	0.0300	3.4992	0.0230	3.5222	0.9282	0.0212	0.9494		2,985.6832	2,985.6832	0.0740		2,987.5335
Total	**2.5804**	**33.7987**	**19.6702**	**0.1174**	**8.0435**	**0.1163**	**8.1597**	**2.1234**	**0.1104**	**2.2338**		**12,297.5284**	**12,297.5284**	**0.6280**		**12,313.2287**

3.5 Interior and exterior finish work - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	21.6152					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5023	12.6181	12.5420	0.0198		0.7345	0.7345		0.7112	0.7112		1,887.2161	1,887.2161	0.3334		1,895.5517
Total	**23.1175**	**12.6181**	**12.5420**	**0.0198**		**0.7345**	**0.7345**		**0.7112**	**0.7112**		**1,887.2161**	**1,887.2161**	**0.3334**		**1,895.5517**

3.5 Interior and exterior finish work - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0565	0.5591	1.4000e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		139.3777	139.3777	4.0100e-003		139.4779
Total	**0.0794**	**0.0565**	**0.5591**	**1.4000e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**		**139.3777**	**139.3777**	**4.0100e-003**		**139.4779**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	21.6152					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.8387	9.5948	13.3156	0.0198		0.3513	0.3513		0.3513	0.3513	0.0000	1,887.2161	1,887.2161	0.3334		1,895.5517
Total	**22.4539**	**9.5948**	**13.3156**	**0.0198**		**0.3513**	**0.3513**		**0.3513**	**0.3513**	**0.0000**	**1,887.2161**	**1,887.2161**	**0.3334**		**1,895.5517**

3.5 Interior and exterior finish work - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0565	0.5591	1.4000e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		139.3777	139.3777	4.0100e-003		139.4779
Total	**0.0794**	**0.0565**	**0.5591**	**1.4000e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**		**139.3777**	**139.3777**	**4.0100e-003**		**139.4779**

3.5 Interior and exterior finish work - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	21.6152					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.3330	11.0889	12.4194	0.0198		0.6169	0.6169		0.5977	0.5977		1,886.9365	1,886.9365	0.3234		1,895.0222
Total	**22.9481**	**11.0889**	**12.4194**	**0.0198**		**0.6169**	**0.6169**		**0.5977**	**0.5977**		**1,886.9365**	**1,886.9365**	**0.3234**		**1,895.0222**

3.5 Interior and exterior finish work - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0738	0.0507	0.5103	1.3500e-003	0.1521	1.0300e-003	0.1532	0.0404	9.5000e-004	0.0413		134.6329	134.6329	3.5900e-003		134.7226
Total	**0.0738**	**0.0507**	**0.5103**	**1.3500e-003**	**0.1521**	**1.0300e-003**	**0.1532**	**0.0404**	**9.5000e-004**	**0.0413**		**134.6329**	**134.6329**	**3.5900e-003**		**134.7226**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	21.6152					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.7763	9.1740	13.2785	0.0198		0.3062	0.3062		0.3062	0.3062	0.0000	1,886.9365	1,886.9365	0.3234		1,895.0222
Total	**22.3915**	**9.1740**	**13.2785**	**0.0198**		**0.3062**	**0.3062**		**0.3062**	**0.3062**	**0.0000**	**1,886.9365**	**1,886.9365**	**0.3234**		**1,895.0222**

3.5 Interior and exterior finish work - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0738	0.0507	0.5103	1.3500e-003	0.1521	1.0300e-003	0.1532	0.0404	9.5000e-004	0.0413		134.6329	134.6329	3.5900e-003		134.7226
Total	**0.0738**	**0.0507**	**0.5103**	**1.3500e-003**	**0.1521**	**1.0300e-003**	**0.1532**	**0.0404**	**9.5000e-004**	**0.0413**		**134.6329**	**134.6329**	**3.5900e-003**		**134.7226**

3.5 Interior and exterior finish work - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	21.6152					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2302	10.0093	12.3686	0.0198		0.5363	0.5363		0.5196	0.5196		1,886.7433	1,886.7433	0.3194		1,894.7284
Total	**22.8454**	**10.0093**	**12.3686**	**0.0198**		**0.5363**	**0.5363**		**0.5196**	**0.5196**		**1,886.7433**	**1,886.7433**	**0.3194**		**1,894.7284**

3.5 Interior and exterior finish work - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0456	0.4680	1.3000e-003	0.1521	1.0000e-003	0.1531	0.0404	9.2000e-004	0.0413		129.8123	129.8123	3.2200e-003		129.8928
Total	**0.0690**	**0.0456**	**0.4680**	**1.3000e-003**	**0.1521**	**1.0000e-003**	**0.1531**	**0.0404**	**9.2000e-004**	**0.0413**		**129.8123**	**129.8123**	**3.2200e-003**		**129.8928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	21.6152					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.7379	8.8568	13.2678	0.0198		0.2730	0.2730		0.2730	0.2730	0.0000	1,886.7433	1,886.7433	0.3194		1,894.7284
Total	**22.3530**	**8.8568**	**13.2678**	**0.0198**		**0.2730**	**0.2730**		**0.2730**	**0.2730**	**0.0000**	**1,886.7433**	**1,886.7433**	**0.3194**		**1,894.7284**

3.5 Interior and exterior finish work - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0456	0.4680	1.3000e-003	0.1521	1.0000e-003	0.1531	0.0404	9.2000e-004	0.0413		129.8123	129.8123	3.2200e-003		129.8928
Total	**0.0690**	**0.0456**	**0.4680**	**1.3000e-003**	**0.1521**	**1.0000e-003**	**0.1531**	**0.0404**	**9.2000e-004**	**0.0413**		**129.8123**	**129.8123**	**3.2200e-003**		**129.8928**

3.6 Site work and landscaping - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6816	16.8428	18.6007	0.0279		0.9478	0.9478		0.8719	0.8719		2,703.2472	2,703.2472	0.8743		2,725.1043
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6816**	**16.8428**	**18.6007**	**0.0279**		**0.9478**	**0.9478**		**0.8719**	**0.8719**		**2,703.2472**	**2,703.2472**	**0.8743**		**2,725.1043**

3.6 Site work and landscaping - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0738	0.0507	0.5103	1.3500e-003	0.1521	1.0300e-003	0.1532	0.0404	9.5000e-004	0.0413		134.6329	134.6329	3.5900e-003		134.7226
Total	**0.0738**	**0.0507**	**0.5103**	**1.3500e-003**	**0.1521**	**1.0300e-003**	**0.1532**	**0.0404**	**9.5000e-004**	**0.0413**		**134.6329**	**134.6329**	**3.5900e-003**		**134.7226**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4502	12.2980	21.2006	0.0279		0.0458	0.0458		0.0458	0.0458	0.0000	2,703.2472	2,703.2472	0.8743		2,725.1043
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4502**	**12.2980**	**21.2006**	**0.0279**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**2,703.2472**	**2,703.2472**	**0.8743**		**2,725.1043**

3.6 Site work and landscaping - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0738	0.0507	0.5103	1.3500e-003	0.1521	1.0300e-003	0.1532	0.0404	9.5000e-004	0.0413		134.6329	134.6329	3.5900e-003		134.7226
Total	**0.0738**	**0.0507**	**0.5103**	**1.3500e-003**	**0.1521**	**1.0300e-003**	**0.1532**	**0.0404**	**9.5000e-004**	**0.0413**		**134.6329**	**134.6329**	**3.5900e-003**		**134.7226**

3.6 Site work and landscaping - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4603	14.5018	18.4519	0.0279		0.7780	0.7780		0.7158	0.7158		2,703.6966	2,703.6966	0.8744		2,725.5574
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4603**	**14.5018**	**18.4519**	**0.0279**		**0.7780**	**0.7780**		**0.7158**	**0.7158**		**2,703.6966**	**2,703.6966**	**0.8744**		**2,725.5574**

3.6 Site work and landscaping - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0456	0.4680	1.3000e-003	0.1521	1.0000e-003	0.1531	0.0404	9.2000e-004	0.0413		129.8123	129.8123	3.2200e-003		129.8928
Total	**0.0690**	**0.0456**	**0.4680**	**1.3000e-003**	**0.1521**	**1.0000e-003**	**0.1531**	**0.0404**	**9.2000e-004**	**0.0413**		**129.8123**	**129.8123**	**3.2200e-003**		**129.8928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4502	12.2980	21.2006	0.0279		0.0458	0.0458		0.0458	0.0458	0.0000	2,703.6966	2,703.6966	0.8744		2,725.5574
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4502**	**12.2980**	**21.2006**	**0.0279**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**2,703.6966**	**2,703.6966**	**0.8744**		**2,725.5574**

3.6 Site work and landscaping - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0456	0.4680	1.3000e-003	0.1521	1.0000e-003	0.1531	0.0404	9.2000e-004	0.0413		129.8123	129.8123	3.2200e-003		129.8928
Total	**0.0690**	**0.0456**	**0.4680**	**1.3000e-003**	**0.1521**	**1.0000e-003**	**0.1531**	**0.0404**	**9.2000e-004**	**0.0413**		**129.8123**	**129.8123**	**3.2200e-003**		**129.8928**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.1824	35.9806	101.4344	0.3240	30.3130	0.2875	30.6006	8.1034	0.2691	8.3726		32,850.5425	32,850.5425	1.5448		32,889.1628
Unmitigated	7.1824	35.9806	101.4344	0.3240	30.3130	0.2875	30.6006	8.1034	0.2691	8.3726		32,850.5425	32,850.5425	1.5448		32,889.1628

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	216.00	216.00	216.00	731,203	731,203
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	4,005.75	0.00	0.00	9,685,901	9,685,901
Strip Mall	0.00	0.00	0.00		
Total	4,221.75	216.00	216.00	10,417,104	10,417,104

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	9.30	0.00	0.00	100.00	0.00	0.00	100	0	0
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
General Office Building	9.30	0.00	0.00	100.00	0.00	0.00	100	0	0
Strip Mall	10.00	5.00	6.50	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.559527	0.038733	0.206173	0.118029	0.019040	0.005245	0.018552	0.023249	0.002031	0.002054	0.005884	0.000619	0.000865
Enclosed Parking with Elevator	0.559527	0.038733	0.206173	0.118029	0.019040	0.005245	0.018552	0.023249	0.002031	0.002054	0.005884	0.000619	0.000865
General Office Building	0.559527	0.038733	0.206173	0.118029	0.019040	0.005245	0.018552	0.023249	0.002031	0.002054	0.005884	0.000619	0.000865
Strip Mall	0.559527	0.038733	0.206173	0.118029	0.019040	0.005245	0.018552	0.023249	0.002031	0.002054	0.005884	0.000619	0.000865

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3392	3.0676	2.4747	0.0185		0.2343	0.2343		0.2343	0.2343		3,699.9210	3,699.9210	0.0709	0.0678	3,721.9078
NaturalGas Unmitigated	0.3392	3.0676	2.4747	0.0185		0.2343	0.2343		0.2343	0.2343		3,699.9210	3,699.9210	0.0709	0.0678	3,721.9078

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2670.71	0.0288	0.2461	0.1047	1.5700e-003		0.0199	0.0199		0.0199	0.0199		314.2015	314.2015	6.0200e-003	5.7600e-003	316.0686
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	28412.5	0.3064	2.7855	2.3399	0.0167		0.2117	0.2117		0.2117	0.2117		3,342.6513	3,342.6513	0.0641	0.0613	3,362.5150
Strip Mall	366.08	3.9500e-003	0.0359	0.0302	2.2000e-004		2.7300e-003	2.7300e-003		2.7300e-003	2.7300e-003		43.0683	43.0683	8.3000e-004	7.9000e-004	43.3242
Total		**0.3392**	**3.0676**	**2.4747**	**0.0185**		**0.2343**	**0.2343**		**0.2343**	**0.2343**		**3,699.9210**	**3,699.9210**	**0.0709**	**0.0678**	**3,721.9078**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.67071	0.0288	0.2461	0.1047	1.5700e-003		0.0199	0.0199		0.0199	0.0199		314.2015	314.2015	6.0200e-003	5.7600e-003	316.0686
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	28.4125	0.3064	2.7855	2.3399	0.0167		0.2117	0.2117		0.2117	0.2117		3,342.6513	3,342.6513	0.0641	0.0613	3,362.5150
Strip Mall	0.36608	3.9500e-003	0.0359	0.0302	2.2000e-004		2.7300e-003	2.7300e-003		2.7300e-003	2.7300e-003		43.0683	43.0683	8.3000e-004	7.9000e-004	43.3242
Total		**0.3392**	**3.0676**	**2.4747**	**0.0185**		**0.2343**	**0.2343**		**0.2343**	**0.2343**		**3,699.9210**	**3,699.9210**	**0.0709**	**0.0678**	**3,721.9078**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	22.4447	0.0972	8.4758	4.5000e-004		0.0464	0.0464		0.0464	0.0464	0.0000	15.3193	15.3193	0.0156	0.0000	15.7082
Unmitigated	22.4447	0.0972	8.4758	4.5000e-004		0.0464	0.0464		0.0464	0.0464	0.0000	15.3193	15.3193	0.0156	0.0000	15.7082

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4458					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	19.7293					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2696	0.0972	8.4758	4.5000e-004		0.0464	0.0464		0.0464	0.0464		15.3193	15.3193	0.0156		15.7082
Total	**22.4447**	**0.0972**	**8.4758**	**4.5000e-004**		**0.0464**	**0.0464**		**0.0464**	**0.0464**	**0.0000**	**15.3193**	**15.3193**	**0.0156**	**0.0000**	**15.7082**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4458					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	19.7293					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2696	0.0972	8.4758	4.5000e-004		0.0464	0.0464		0.0464	0.0464		15.3193	15.3193	0.0156		15.7082
Total	**22.4447**	**0.0972**	**8.4758**	**4.5000e-004**		**0.0464**	**0.0464**		**0.0464**	**0.0464**	**0.0000**	**15.3193**	**15.3193**	**0.0156**	**0.0000**	**15.7082**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	50	2584	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
Boiler	10	35	9200	10	CNG
Boiler	3	7	2580	3	CNG

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Boiler - CNG (2 - 5 MMBTU)	0.1132	0.2310	2.0177	0.0124		0.1565	0.1565		0.1565	0.1565		2,470.6298	2,470.6298	0.0474		2,471.8136
Boiler - CNG (5 - 75 MMBTU)	1.8873	3.8501	33.6280	0.2059		2.6079	2.6079		2.6079	2.6079		41,177.1632	41,177.1632	0.7892		41,196.8939
Emergency Generator - Diesel (750 - 9999 HP)	4.2405	18.9633	10.8124	0.0204		0.6238	0.6238		0.6238	0.6238		2,169.3045	2,169.3045	0.3041		2,176.9079
Total	**6.2411**	**23.0444**	**46.4581**	**0.2386**		**3.3882**	**3.3882**		**3.3882**	**3.3882**		**45,817.0975**	**45,817.0975**	**1.1407**		**45,845.6155**

11.0 Vegetation

D-2 Air Quality Modeling AERMOD Data

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.6.5
** Lakes Environmental Software Inc.
** Date: 4/16/2019
** File: C:\Model\Tower 301\Tower301_Construction\Tower301_Construction.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Model\Tower 301\Tower301_Construction\Tower301_Construction.isc
   MODELOPT DFAULT CONC
   AVERTIME 1 PERIOD
   URBANOPT 1531000 Sac_County
   POLLUTID PM_10
   FLAGPOLE 1.80
   RUNORNOT RUN
   ERRORFIL Tower301_Construction.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION AREA1        AREA       630402.230  4271160.450        6.040
** DESCRSRC Construction Main Activities
** Source Parameters **
   SRCPARAM AREA1        0.0001052632     3.890   100.000    95.000   -73.163
1.400
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
```

```
**
**
RE STARTING
   INCLUDED Tower301_Construction.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "..\Sac Exec ARPT\724830.SFC"
   PROFFILE "..\Sac Exec ARPT\724830.PFL"
   SURFDATA 23232 2009 SACRAMENTO/EXECUTIVE_ARPT
   UAIRDATA 23230 2009 OAKLAND/WSO_AP
   PROFBASE 4.6 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST Tower301_Construction.AD\01H1GALL.PLT 31
   PLOTFILE PERIOD ALL Tower301_Construction.AD\PE00GALL.PLT 32
   SUMMFILE Tower301_Construction.sum
OU FINISHED

 *********************************
 *** SETUP Finishes Successfully ***
 *********************************

↑ *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
                        ***        11:08:02

                                   PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                             ***     MODEL SETUP OPTIONS SUMMARY
 ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

- -

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for 1 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 1531000.0 ; Urban Roughness Length = 1.000 m

**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
CCVR_Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: PM_10

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 1 Source(s); 1 Source Group(s); and 339 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 0 VOLUME source(s)
and: 1 AREA type source(s)
and: 0 LINE source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 14134

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and
Missing Hours

 **Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =   4.60 ; Decay
Coef. =   0.000   ; Rot. Angle =   0.0
                  Emission Units = GRAMS/SEC   ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =   3.5 MB of RAM.

 **Input Runstream File: aermod.inp

 **Output Print File: aermod.out

 **Detailed Error/Message File: Tower301_Construction.err

 **File for Summary of Results: Tower301_Construction.sum

↟ *** AERMOD - VERSION 18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***   04/16/19
 *** AERMET - VERSION 14134 ***   ***
                       ***   11:08:02

                                  PAGE   2
 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

                                                    *** AREA SOURCE DATA ***

               NUMBER EMISSION RATE COORD (SW CORNER) BASE   RELEASE X-DIM
Y-DIM   ORIENT.   INIT.   URBAN EMISSION RATE
   SOURCE   PART. (GRAMS/SEC   X   Y   ELEV.   HEIGHT OF AREA
OF AREA   OF AREA   SZ   SOURCE SCALAR VARY
     ID   CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS) (METERS)

```
                                 Tower301_Construction
(METERS)   (DEG.)  (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

 AREA1            0   0.10526E-03  630402.2 4271160.5     6.0     3.89    100.00
95.00    -73.16     1.40     YES
↑ *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
                       ***        11:08:02

                                  PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN


                                           *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                                SOURCE IDs
 -----------                                                ----------



  ALL        AREA1       ,
↑ *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
                       ***        11:08:02

                                  PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN


                                          *** SOURCE IDs DEFINED AS URBAN SOURCES
***

  URBAN ID   URBAN POP                                      SOURCE IDs
  --------   ---------                                      ----------



              1531000.   AREA1       ,
↑ *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
                       ***        11:08:02

                                  PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                            *** DISCRETE CARTESIAN RECEPTORS ***
```

(630205.8, 4271354.0, 8.5, 8.5, 1.8); (630175.8, 4271364.0, 7.1, 7.1, 1.8);
(630185.8, 4271364.0, 7.1, 7.1, 1.8); (630195.8, 4271364.0, 7.7, 7.7, 1.8);
(630205.8, 4271364.0, 8.2, 8.2, 1.8); (630165.8, 4271374.0, 7.2, 7.2, 1.8);
(630175.8, 4271374.0, 6.8, 6.8, 1.8); (630185.8, 4271374.0, 6.8, 6.8, 1.8);
(630195.8, 4271374.0, 7.5, 7.5, 1.8); (630205.8, 4271374.0, 8.0, 8.0, 1.8);
(630175.8, 4271384.0, 6.8, 6.8, 1.8); (630185.8, 4271384.0, 6.9, 6.9, 1.8);
(630195.8, 4271384.0, 7.5, 7.5, 1.8); (630205.8, 4271384.0, 8.0, 8.0, 1.8);
(630215.8, 4271384.0, 8.3, 8.3, 1.8); (630185.8, 4271394.0, 7.0, 7.0, 1.8);
(630195.8, 4271394.0, 7.5, 7.5, 1.8); (630716.1, 4271367.1, 9.7, 9.7, 1.8);
(630726.1, 4271367.1, 9.6, 9.6, 1.8); (630686.1, 4271377.1, 9.7, 9.7, 1.8);
(630696.1, 4271377.1, 9.7, 9.7, 1.8); (630706.1, 4271377.1, 9.7, 9.7, 1.8);
(630716.1, 4271377.1, 9.7, 9.7, 1.8); (630726.1, 4271377.1, 9.7, 9.7, 1.8);
(630736.1, 4271377.1, 9.6, 9.6, 1.8); (630656.1, 4271387.1, 9.4, 9.4, 1.8);
(630666.1, 4271387.1, 9.6, 9.6, 1.8); (630676.1, 4271387.1, 9.5, 9.5, 1.8);
(630686.1, 4271387.1, 9.4, 9.4, 1.8); (630696.1, 4271387.1, 9.3, 9.3, 1.8);
(630706.1, 4271387.1, 9.3, 9.3, 1.8); (630716.1, 4271387.1, 9.3, 9.3, 1.8);
(630726.1, 4271387.1, 9.3, 9.3, 1.8); (630736.1, 4271387.1, 9.3, 9.3, 1.8);
(630656.1, 4271397.1, 9.2, 9.2, 1.8); (630666.1, 4271397.1, 9.5, 9.5, 1.8);
(630676.1, 4271397.1, 9.3, 9.3, 1.8); (630686.1, 4271397.1, 9.1, 9.1, 1.8);
(630696.1, 4271397.1, 9.0, 9.0, 1.8); (630706.1, 4271397.1, 9.0, 9.0, 1.8);
(630716.1, 4271397.1, 9.0, 9.0, 1.8); (630726.1, 4271397.1, 9.0, 9.0, 1.8);
(630736.1, 4271397.1, 9.0, 9.0, 1.8); (630656.1, 4271407.1, 9.0, 9.0, 1.8);
(630666.1, 4271407.1, 9.4, 9.4, 1.8); (630676.1,

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4271407.1,       9.1,       9.1,       1.8);
     ( 630686.1, 4271407.1,       8.8,       8.8,       1.8);         ( 630696.1,
4271407.1,       8.7,       8.7,       1.8);
     ( 630706.1, 4271407.1,       8.6,       8.6,       1.8);         ( 630716.1,
4271407.1,       8.6,       8.6,       1.8);
     ( 630726.1, 4271407.1,       8.6,       8.6,       1.8);         ( 630736.1,
4271407.1,       8.7,       8.7,       1.8);
     ( 630746.1, 4271407.1,       8.8,       8.8,       1.8);         ( 630656.1,
4271417.1,       9.1,       9.1,       1.8);
     ( 630666.1, 4271417.1,       9.4,       9.4,       1.8);         ( 630676.1,
4271417.1,       9.1,       9.1,       1.8);
     ( 630686.1, 4271417.1,       8.9,       8.9,       1.8);         ( 630696.1,
4271417.1,       8.8,       8.8,       1.8);
     ( 630706.1, 4271417.1,       8.7,       8.7,       1.8);         ( 630716.1,
4271417.1,       8.7,       8.7,       1.8);
     ( 630726.1, 4271417.1,       8.7,       8.7,       1.8);         ( 630736.1,
4271417.1,       8.8,       8.8,       1.8);
     ( 630746.1, 4271417.1,       8.9,       8.9,       1.8);         ( 630666.1,
4271427.1,       9.5,       9.5,       1.8);
     ( 630676.1, 4271427.1,       9.2,       9.2,       1.8);         ( 630686.1,
4271427.1,       8.9,       8.9,       1.8);
     ( 630696.1, 4271427.1,       8.9,       8.9,       1.8);         ( 630706.1,
4271427.1,       8.9,       8.9,       1.8);
     ( 630716.1, 4271427.1,       8.9,       8.9,       1.8);         ( 630726.1,
4271427.1,       8.9,       8.9,       1.8);
     ( 630736.1, 4271427.1,       8.9,       8.9,       1.8);         ( 630746.1,
4271427.1,       9.0,       9.0,       1.8);
     ( 630666.1, 4271437.1,       9.5,       9.5,       1.8);         ( 630676.1,
4271437.1,       9.3,       9.3,       1.8);
     ( 630686.1, 4271437.1,       9.0,       9.0,       1.8);         ( 630696.1,
4271437.1,       9.0,       9.0,       1.8);
     ( 630706.1, 4271437.1,       9.0,       9.0,       1.8);         ( 630716.1,
4271437.1,       9.0,       9.0,       1.8);
     ( 630666.1, 4271447.1,       9.4,       9.4,       1.8);         ( 630676.1,
4271447.1,       9.2,       9.2,       1.8);
     ( 630686.1, 4271447.1,       9.0,       9.0,       1.8);         ( 630262.5,
4270784.8,       5.5,       5.5,       1.8);
     ( 630272.5, 4270784.8,       5.4,       5.4,       1.8);         ( 630232.5,
4270794.8,       5.6,       5.6,       1.8);
     ( 630242.5, 4270794.8,       5.7,       5.7,       1.8);         ( 630252.5,
4270794.8,       5.6,       5.6,       1.8);
     ( 630262.5, 4270794.8,       5.5,       5.5,       1.8);         ( 630272.5,
4270794.8,       5.5,       5.5,       1.8);
     ( 630282.5, 4270794.8,       5.4,       5.4,       1.8);         ( 630202.5,
4270804.8,       5.7,       5.7,       1.8);
 *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
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*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(630212.5, 4270804.8, 5.3, 5.3, 1.8); (630222.5, 4270804.8, 5.5, 5.5, 1.8);
(630232.5, 4270804.8, 5.8, 5.8, 1.8); (630242.5, 4270804.8, 5.9, 5.9, 1.8);
(630252.5, 4270804.8, 5.8, 5.8, 1.8); (630262.5, 4270804.8, 5.6, 5.6, 1.8);
(630272.5, 4270804.8, 5.6, 5.6, 1.8); (630282.5, 4270804.8, 5.5, 5.5, 1.8);
(630192.5, 4270814.8, 6.1, 6.1, 1.8); (630202.5, 4270814.8, 5.7, 5.7, 1.8);
(630212.5, 4270814.8, 5.2, 5.2, 1.8); (630222.5, 4270814.8, 5.5, 5.5, 1.8);
(630232.5, 4270814.8, 5.9, 5.9, 1.8); (630242.5, 4270814.8, 6.1, 6.1, 1.8);
(630252.5, 4270814.8, 5.9, 5.9, 1.8); (630262.5, 4270814.8, 5.7, 5.7, 1.8);
(630272.5, 4270814.8, 5.6, 5.6, 1.8); (630282.5, 4270814.8, 5.6, 5.6, 1.8);
(630192.5, 4270824.8, 6.0, 6.0, 1.8); (630202.5, 4270824.8, 5.6, 5.6, 1.8);
(630212.5, 4270824.8, 5.2, 5.2, 1.8); (630222.5, 4270824.8, 5.5, 5.5, 1.8);
(630232.5, 4270824.8, 6.0, 6.0, 1.8); (630242.5, 4270824.8, 6.2, 6.2, 1.8);
(630252.5, 4270824.8, 6.0, 6.0, 1.8); (630262.5, 4270824.8, 5.9, 5.9, 1.8);
(630272.5, 4270824.8, 5.6, 5.6, 1.8); (630282.5, 4270824.8, 5.4, 5.4, 1.8);
(630292.5, 4270824.8, 5.3, 5.3, 1.8); (630192.5, 4270834.8, 5.9, 5.9, 1.8);
(630202.5, 4270834.8, 5.5, 5.5, 1.8); (630212.5, 4270834.8, 5.2, 5.2, 1.8);
(630222.5, 4270834.8, 5.5, 5.5, 1.8); (630232.5, 4270834.8, 6.0, 6.0, 1.8);
(630242.5, 4270834.8, 6.3, 6.3, 1.8); (630252.5, 4270834.8, 6.1, 6.1, 1.8);
(630262.5, 4270834.8, 6.0, 6.0, 1.8); (630272.5, 4270834.8, 5.6, 5.6, 1.8);
(630282.5, 4270834.8, 5.1, 5.1, 1.8); (630292.5,

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4270834.8,       5.0,       5.0,       1.8);
     ( 630202.5, 4270844.8,       5.5,       5.5,       1.8);         ( 630212.5,
4270844.8,       5.1,       5.1,       1.8);
     ( 630222.5, 4270844.8,       5.5,       5.5,       1.8);         ( 630232.5,
4270844.8,       6.1,       6.1,       1.8);
     ( 630242.5, 4270844.8,       6.3,       6.3,       1.8);         ( 630252.5,
4270844.8,       6.3,       6.3,       1.8);
     ( 630262.5, 4270844.8,       6.2,       6.2,       1.8);         ( 630272.5,
4270844.8,       5.5,       5.5,       1.8);
     ( 630282.5, 4270844.8,       4.9,       4.9,       1.8);         ( 630292.5,
4270844.8,       4.8,       4.8,       1.8);
     ( 630202.5, 4270854.8,       5.4,       5.4,       1.8);         ( 630212.5,
4270854.8,       5.0,       5.0,       1.8);
     ( 630222.5, 4270854.8,       5.3,       5.3,       1.8);         ( 630232.5,
4270854.8,       5.8,       5.8,       1.8);
     ( 630242.5, 4270854.8,       6.0,       6.0,       1.8);         ( 630252.5,
4270854.8,       6.0,       6.0,       1.8);
     ( 630262.5, 4270854.8,       6.0,       6.0,       1.8);         ( 630272.5,
4270854.8,       5.5,       5.5,       1.8);
     ( 630282.5, 4270854.8,       4.9,       4.9,       1.8);         ( 630292.5,
4270854.8,       4.9,       4.9,       1.8);
     ( 630302.5, 4270854.8,       5.2,       5.2,       1.8);         ( 630202.5,
4270864.8,       5.3,       5.3,       1.8);
     ( 630212.5, 4270864.8,       5.0,       5.0,       1.8);         ( 630222.5,
4270864.8,       5.1,       5.1,       1.8);
     ( 630232.5, 4270864.8,       5.4,       5.4,       1.8);         ( 630242.5,
4270864.8,       5.6,       5.6,       1.8);
     ( 630252.5, 4270864.8,       5.7,       5.7,       1.8);         ( 630262.5,
4270864.8,       5.8,       5.8,       1.8);
     ( 630272.5, 4270864.8,       5.4,       5.4,       1.8);         ( 630282.5,
4270864.8,       5.0,       5.0,       1.8);
     ( 630292.5, 4270864.8,       5.0,       5.0,       1.8);         ( 630302.5,
4270864.8,       5.4,       5.4,       1.8);
     ( 630212.5, 4270874.8,       4.8,       4.8,       1.8);         ( 630222.5,
4270874.8,       4.9,       4.9,       1.8);
     ( 630232.5, 4270874.8,       5.1,       5.1,       1.8);         ( 630242.5,
4270874.8,       5.3,       5.3,       1.8);
     ( 630252.5, 4270874.8,       5.5,       5.5,       1.8);         ( 630262.5,
4270874.8,       5.6,       5.6,       1.8);
     ( 630272.5, 4270874.8,       5.4,       5.4,       1.8);         ( 630282.5,
4270874.8,       5.1,       5.1,       1.8);
     ( 630292.5, 4270874.8,       5.2,       5.2,       1.8);         ( 630302.5,
4270874.8,       5.5,       5.5,       1.8);
     ( 630212.5, 4270884.8,       5.2,       5.2,       1.8);         ( 630222.5,
4270884.8,       5.2,       5.2,       1.8);
     ( 630232.5, 4270884.8,       5.3,       5.3,       1.8);         ( 630242.5,
4270884.8,       5.4,       5.4,       1.8);
     ( 630252.5, 4270884.8,       5.6,       5.6,       1.8);         ( 630262.5,
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4270884.8, 5.8, 5.8, 1.8);
     (630272.5, 4270884.8, 5.6, 5.6, 1.8); (630282.5,
4270884.8, 5.4, 5.4, 1.8);
↟ *** AERMOD - VERSION 18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   *** 04/16/19
 *** AERMET - VERSION 14134 ***   ***
                     *** 11:08:02

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

     (630292.5, 4270884.8, 5.4, 5.4, 1.8); (630302.5,
4270884.8, 5.6, 5.6, 1.8);
     (630312.5, 4270884.8, 5.7, 5.7, 1.8); (630212.5,
4270894.8, 5.6, 5.6, 1.8);
     (630222.5, 4270894.8, 5.5, 5.5, 1.8); (630232.5,
4270894.8, 5.5, 5.5, 1.8);
     (630242.5, 4270894.8, 5.6, 5.6, 1.8); (630252.5,
4270894.8, 5.8, 5.8, 1.8);
     (630262.5, 4270894.8, 5.9, 5.9, 1.8); (630272.5,
4270894.8, 5.8, 5.8, 1.8);
     (630282.5, 4270894.8, 5.7, 5.7, 1.8); (630292.5,
4270894.8, 5.6, 5.6, 1.8);
     (630302.5, 4270894.8, 5.6, 5.6, 1.8); (630312.5,
4270894.8, 5.5, 5.5, 1.8);
     (630222.5, 4270904.8, 5.8, 5.8, 1.8); (630232.5,
4270904.8, 5.7, 5.7, 1.8);
     (630242.5, 4270904.8, 5.7, 5.7, 1.8); (630252.5,
4270904.8, 5.9, 5.9, 1.8);
     (630262.5, 4270904.8, 6.1, 6.1, 1.8); (630272.5,
4270904.8, 6.1, 6.1, 1.8);
     (630282.5, 4270904.8, 6.1, 6.1, 1.8); (630292.5,
4270904.8, 5.8, 5.8, 1.8);
     (630302.5, 4270904.8, 5.5, 5.5, 1.8); (630312.5,
4270904.8, 5.4, 5.4, 1.8);
     (630222.5, 4270914.8, 5.9, 5.9, 1.8); (630232.5,
4270914.8, 5.8, 5.8, 1.8);
     (630242.5, 4270914.8, 5.8, 5.8, 1.8); (630252.5,
4270914.8, 6.0, 6.0, 1.8);
     (630262.5, 4270914.8, 6.2, 6.2, 1.8); (630272.5,
4270914.8, 6.0, 6.0, 1.8);
     (630282.5, 4270914.8, 5.8, 5.8, 1.8); (630292.5,
4270914.8, 5.7, 5.7, 1.8);
     (630302.5, 4270914.8, 5.5, 5.5, 1.8); (630312.5,

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4270914.8,       5.3,       5.3,       1.8);
     ( 630322.5, 4270914.8,       5.4,       5.4,       1.8);         ( 630222.5,
4270924.8,       5.9,       5.9,       1.8);
     ( 630232.5, 4270924.8,       5.9,       5.9,       1.8);         ( 630242.5,
4270924.8,       6.0,       6.0,       1.8);
     ( 630252.5, 4270924.8,       6.1,       6.1,       1.8);         ( 630262.5,
4270924.8,       6.2,       6.2,       1.8);
     ( 630272.5, 4270924.8,       5.8,       5.8,       1.8);         ( 630282.5,
4270924.8,       5.5,       5.5,       1.8);
     ( 630292.5, 4270924.8,       5.4,       5.4,       1.8);         ( 630302.5,
4270924.8,       5.4,       5.4,       1.8);
     ( 630312.5, 4270924.8,       5.4,       5.4,       1.8);         ( 630322.5,
4270924.8,       5.4,       5.4,       1.8);
     ( 630232.5, 4270934.8,       6.0,       6.0,       1.8);         ( 630242.5,
4270934.8,       6.1,       6.1,       1.8);
     ( 630252.5, 4270934.8,       6.2,       6.2,       1.8);         ( 630262.5,
4270934.8,       6.2,       6.2,       1.8);
     ( 630272.5, 4270934.8,       5.6,       5.6,       1.8);         ( 630282.5,
4270934.8,       5.0,       5.0,       1.8);
     ( 630292.5, 4270934.8,       5.1,       5.1,       1.8);         ( 630302.5,
4270934.8,       5.3,       5.3,       1.8);
     ( 630312.5, 4270934.8,       5.5,       5.5,       1.8);         ( 630322.5,
4270934.8,       5.4,       5.4,       1.8);
     ( 630232.5, 4270944.8,       6.0,       6.0,       1.8);         ( 630242.5,
4270944.8,       6.0,       6.0,       1.8);
     ( 630252.5, 4270944.8,       6.1,       6.1,       1.8);         ( 630262.5,
4270944.8,       6.1,       6.1,       1.8);
     ( 630272.5, 4270944.8,       5.7,       5.7,       1.8);         ( 630282.5,
4270944.8,       5.3,       5.3,       1.8);
     ( 630292.5, 4270944.8,       5.3,       5.3,       1.8);         ( 630302.5,
4270944.8,       5.6,       5.6,       1.8);
     ( 630312.5, 4270944.8,       5.7,       5.7,       1.8);         ( 630322.5,
4270944.8,       5.5,       5.5,       1.8);
     ( 630332.5, 4270944.8,       5.4,       5.4,       1.8);         ( 630232.5,
4270954.8,       5.9,       5.9,       1.8);
     ( 630242.5, 4270954.8,       5.9,       5.9,       1.8);         ( 630252.5,
4270954.8,       5.8,       5.8,       1.8);
     ( 630262.5, 4270954.8,       5.8,       5.8,       1.8);         ( 630272.5,
4270954.8,       5.8,       5.8,       1.8);
     ( 630282.5, 4270954.8,       5.8,       5.8,       1.8);         ( 630292.5,
4270954.8,       5.9,       5.9,       1.8);
     ( 630302.5, 4270954.8,       6.0,       6.0,       1.8);         ( 630312.5,
4270954.8,       6.0,       6.0,       1.8);
     ( 630322.5, 4270954.8,       5.7,       5.7,       1.8);         ( 630332.5,
4270954.8,       5.4,       5.4,       1.8);
     ( 630242.5, 4270964.8,       5.7,       5.7,       1.8);         ( 630252.5,
4270964.8,       5.6,       5.6,       1.8);
     ( 630262.5, 4270964.8,       5.6,       5.6,       1.8);         ( 630272.5,
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4270964.8, 6.0, 6.0, 1.8);
     (630282.5, 4270964.8, 6.4, 6.4, 1.8); (630292.5,
4270964.8, 6.4, 6.4, 1.8);
     (630302.5, 4270964.8, 6.4, 6.4, 1.8); (630312.5,
4270964.8, 6.3, 6.3, 1.8);
     (630322.5, 4270964.8, 5.8, 5.8, 1.8); (630332.5,
4270964.8, 5.4, 5.4, 1.8);
     (630242.5, 4270974.8, 5.8, 5.8, 1.8); (630252.5,
4270974.8, 5.6, 5.6, 1.8);

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                      (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

     (630262.5, 4270974.8, 5.6, 5.6, 1.8); (630272.5,
4270974.8, 6.0, 6.0, 1.8);
     (630282.5, 4270974.8, 6.4, 6.4, 1.8); (630292.5,
4270974.8, 6.5, 6.5, 1.8);
     (630302.5, 4270974.8, 6.5, 6.5, 1.8); (630312.5,
4270974.8, 6.3, 6.3, 1.8);
     (630322.5, 4270974.8, 5.9, 5.9, 1.8); (630332.5,
4270974.8, 5.5, 5.5, 1.8);
     (630342.5, 4270974.8, 5.6, 5.6, 1.8); (630242.5,
4270984.8, 5.9, 5.9, 1.8);
     (630252.5, 4270984.8, 5.8, 5.8, 1.8); (630262.5,
4270984.8, 5.7, 5.7, 1.8);
     (630272.5, 4270984.8, 5.9, 5.9, 1.8); (630282.5,
4270984.8, 6.2, 6.2, 1.8);
     (630292.5, 4270984.8, 6.2, 6.2, 1.8); (630302.5,
4270984.8, 6.2, 6.2, 1.8);
     (630312.5, 4270984.8, 6.2, 6.2, 1.8); (630322.5,
4270984.8, 5.9, 5.9, 1.8);
     (630332.5, 4270984.8, 5.7, 5.7, 1.8); (630342.5,
4270984.8, 5.8, 5.8, 1.8);
     (630242.5, 4270994.8, 6.0, 6.0, 1.8); (630252.5,
4270994.8, 5.9, 5.9, 1.8);
     (630262.5, 4270994.8, 5.8, 5.8, 1.8); (630272.5,
4270994.8, 5.9, 5.9, 1.8);
     (630282.5, 4270994.8, 5.9, 5.9, 1.8); (630292.5,
4270994.8, 5.9, 5.9, 1.8);
     (630302.5, 4270994.8, 6.0, 6.0, 1.8); (630312.5,

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4270994.8,       6.0,       6.0,       1.8);
     ( 630322.5, 4270994.8,       6.0,       6.0,       1.8);         ( 630332.5,
4270994.8,       5.9,       5.9,       1.8);
     ( 630342.5, 4270994.8,       5.9,       5.9,       1.8);         ( 630252.5,
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     ( 630262.5, 4271004.8,       6.0,       6.0,       1.8);         ( 630272.5,
4271004.8,       5.9,       5.9,       1.8);
     ( 630282.5, 4271004.8,       5.8,       5.8,       1.8);         ( 630292.5,
4271004.8,       5.8,       5.8,       1.8);
     ( 630302.5, 4271004.8,       5.9,       5.9,       1.8);         ( 630312.5,
4271004.8,       6.0,       6.0,       1.8);
     ( 630322.5, 4271004.8,       6.0,       6.0,       1.8);         ( 630332.5,
4271004.8,       6.0,       6.0,       1.8);
     ( 630342.5, 4271004.8,       6.0,       6.0,       1.8);         ( 630252.5,
4271014.8,       6.0,       6.0,       1.8);
     ( 630262.5, 4271014.8,       6.1,       6.1,       1.8);         ( 630272.5,
4271014.8,       6.0,       6.0,       1.8);
     ( 630282.5, 4271014.8,       5.8,       5.8,       1.8);         ( 630292.5,
4271014.8,       5.9,       5.9,       1.8);
     ( 630302.5, 4271014.8,       5.9,       5.9,       1.8);         ( 630312.5,
4271014.8,       6.0,       6.0,       1.8);
     ( 630252.5, 4271024.8,       6.1,       6.1,       1.8);         ( 630262.5,
4271024.8,       6.2,       6.2,       1.8);
     ( 630272.5, 4271024.8,       6.0,       6.0,       1.8);         ( 630282.5,
4271024.8,       5.9,       5.9,       1.8);
     ( 630550.2, 4270907.6,       5.7,       5.7,       1.8);         ( 630560.2,
4270907.6,       5.7,       5.7,       1.8);
     ( 630570.2, 4270907.6,       5.7,       5.7,       1.8);         ( 630580.2,
4270907.6,       5.8,       5.8,       1.8);
     ( 630530.2, 4270917.6,       5.8,       5.8,       1.8);         ( 630540.2,
4270917.6,       5.7,       5.7,       1.8);
     ( 630550.2, 4270917.6,       5.7,       5.7,       1.8);         ( 630560.2,
4270917.6,       5.7,       5.7,       1.8);
     ( 630570.2, 4270917.6,       5.7,       5.7,       1.8);         ( 630580.2,
4270917.6,       5.7,       5.7,       1.8);
     ( 630530.2, 4270927.6,       5.8,       5.8,       1.8);         ( 630540.2,
4270927.6,       5.7,       5.7,       1.8);
     ( 630550.2, 4270927.6,       5.6,       5.6,       1.8);         ( 630560.2,
4270927.6,       5.6,       5.6,       1.8);
     ( 630570.2, 4270927.6,       5.5,       5.5,       1.8);         ( 630530.2,
4270937.6,       5.8,       5.8,       1.8);
     ( 630540.2, 4270937.6,       5.7,       5.7,       1.8);

 *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***       04/16/19
 *** AERMET - VERSION  14134 ***   ***
                      ***       11:08:02
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Tower301_Construction
PAGE   9
*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54,   3.09,   5.14,   8.23,   10.80,

↑ *** AERMOD - VERSION 18081 ***   *** C:\Model\Tower 301\Tower301_Construction\Tower301_Construction.isc   ***   04/16/19
*** AERMET - VERSION 14134 ***   ***
***   11:08:02

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*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\Sac Exec ARPT\724830.SFC
Met Version: 14134
Profile file: ..\Sac Exec ARPT\724830.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 23232 Upper air station no.: 23230
Name: SACRAMENTO/EXECUTIVE_ARPT Name: OAKLAND/WSO_AP
Year: 2009 Year: 2009

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
09	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.1	2.0
09	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.1	2.0
09	01	01	1	03	-7.9	0.137	-9.000	-9.000	-999.	121.	29.5	0.32	0.94	1.00	1.76	94.	10.0	278.8	2.0
09	01	01	1	04	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.8	2.0
09	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.8	2.0
09	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.8	2.0
09	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.8	2.0
09	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	0.76	0.00	0.	10.0	278.8	2.0
09	01	01	1	09	-5.0	0.179	-9.000	-9.000	-999.	181.	104.7	0.32	0.94	0.40	1.76	47.	10.0	278.8	2.0
09	01	01	1	10	6.0	0.323	0.247	0.017	91.	441.	-513.3	0.51	0.94	0.28	2.36	131.	10.0	278.1	2.0
09	01	01	1	11	14.6	0.226	0.408	0.015	169.	262.	-71.7	0.32	0.94	0.23	1.76	34.	10.0	278.8	2.0
09	01	01	1	12	19.4	-9.000	-9.000	-9.000	233.	-999.	-99999.0	0.35	0.94	0.22	0.00	0.	10.0	278.8	2.0
09	01	01	1	13	20.0	-9.000	-9.000	-9.000	285.	-999.	-99999.0	0.35	0.94	0.22	0.00	0.	10.0	278.8	2.0
09	01	01	1	14	16.6	-9.000	-9.000	-9.000	322.	-999.	-99999.0	0.35	0.94	0.23	0.00	0.	10.0	279.2	2.0
09	01	01	1	15	9.2	-9.000	-9.000	-9.000	340.	-999.	-99999.0	0.35	0.94	0.26	0.00	0.	10.0	279.2	2.0
09	01	01	1	16	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	0.35	0.00	0.	10.0	279.2	2.0
09	01	01	1	17	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94

```
0.61    0.00    0.   10.0  279.2    2.0
 09 01 01   1 18 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.35   0.94
1.00    0.00    0.   10.0  279.2    2.0
 09 01 01   1 19  -10.0  0.175 -9.000 -9.000 -999.  176.     48.6  0.51   0.94
1.00    1.76  124.   10.0  279.9    2.0
 09 01 01   1 20  -15.9  0.278 -9.000 -9.000 -999.  351.    122.3  0.51   0.94
1.00    2.36  157.   10.0  279.9    2.0
 09 01 01   1 21  -15.9  0.278 -9.000 -9.000 -999.  351.    122.3  0.51   0.94
1.00    2.36  150.   10.0  279.9    2.0
 09 01 01   1 22  -28.4  0.495 -9.000 -9.000 -999.  837.    389.1  0.51   0.94
1.00    3.86  162.   10.0  279.9    2.0
 09 01 01   1 23  -15.9  0.278 -9.000 -9.000 -999.  396.    122.3  0.51   0.94
1.00    2.36  150.   10.0  279.9    2.0
 09 01 01   1 24  -36.3  0.634 -9.000 -9.000 -999. 1212.    637.3  0.51   0.94
1.00    4.86  130.   10.0  279.9    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 09 01 01 01   10.0 1 -999.  -99.00   278.2   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
                      ***        11:08:02

                                 PAGE  11
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                             *** THE PERIOD ( 43872 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     AREA1       ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                      ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
         630205.76    4271354.01       17.17345                       630175.76
4271364.01       12.85651
         630185.76    4271364.01       14.13479                       630195.76
4271364.01       15.53934
```

630205.76 4271364.01 17.11206 630165.76 4271374.01 11.77887
630175.76 4271374.01 12.89776 630185.76 4271374.01 14.12795
630195.76 4271374.01 15.47170 630205.76 4271374.01 16.96355
630175.76 4271384.01 12.87661 630185.76 4271384.01 14.05103
630195.76 4271384.01 15.33242 630205.76 4271384.01 16.74523
630215.76 4271384.01 18.31327 630185.76 4271394.01 13.92724
630195.76 4271394.01 15.14385 630716.06 4271367.10 3.75425
630726.06 4271367.10 3.51585 630686.06 4271377.10 4.76866
630696.06 4271377.10 4.43634 630706.06 4271377.10 4.13479
630716.06 4271377.10 3.86314 630726.06 4271377.10 3.62019
630736.06 4271377.10 3.39868 630656.06 4271387.10 6.18374
630666.06 4271387.10 5.70238 630676.06 4271387.10 5.29626
630686.06 4271387.10 4.92937 630696.06 4271387.10 4.59235
630706.06 4271387.10 4.28411 630716.06 4271387.10 4.00414
630726.06 4271387.10 3.74938 630736.06 4271387.10 3.51775
630656.06 4271397.10 7.01203 630666.06 4271397.10 5.84765
630676.06 4271397.10 5.44680 630686.06 4271397.10 5.66552
630696.06 4271397.10 5.29459 630706.06 4271397.10 4.95501
630716.06 4271397.10 4.64385 630726.06 4271397.10 4.35833
630736.06 4271397.10 4.09638 630656.06 4271407.10 7.10299
630666.06 4271407.10 5.98212 630676.06 4271407.10 6.16382
630686.06 4271407.10 5.76113 630696.06 4271407.10 5.38962
630706.06 4271407.10 5.04816 630716.06 4271407.10 4.73472
630726.06 4271407.10 4.44566 630736.06 4271407.10 4.18020

630746.06 4271407.10 3.93487 630656.06 4271417.10 7.17192
630666.06 4271417.10 6.08767 630676.06 4271417.10 6.23960
630686.06 4271417.10 5.83800 630696.06 4271417.10 5.46627
630706.06 4271417.10 5.12412 630716.06 4271417.10 4.80950
630726.06 4271417.10 4.51932 630736.06 4271417.10 4.25205
630746.06 4271417.10 4.00509 630666.06 4271427.10 6.18070
630676.06 4271427.10 6.30272 630686.06 4271427.10 5.90359
630696.06 4271427.10 5.53299 630706.06 4271427.10 5.19127
630716.06 4271427.10 4.87620 630726.06 4271427.10 4.58550
630736.06 4271427.10 4.31738 630746.06 4271427.10 4.06974
630666.06 4271437.10 6.26231 630676.06 4271437.10 5.85847
630686.06 4271437.10 5.95831 630696.06 4271437.10 5.59002
630706.06 4271437.10 5.24961 630716.06 4271437.10 4.93541
630666.06 4271447.10 6.35620 630676.06 4271447.10 6.39550

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE PERIOD (43872 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC

\- -
\- -

630686.06 4271447.10 6.00341 630262.46
4270784.82 1.20961
630272.46 4270784.82 1.27359 630232.46
4270794.82 1.06460
630242.46 4270794.82 1.12162 630252.46
4270794.82 1.18249
630262.46 4270794.82 1.24676 630272.46
4270794.82 1.31446
630282.46 4270794.82 1.38552 630202.46
4270804.82 0.93169
630212.46 4270804.82 0.98381 630222.46
4270804.82 1.03706
630232.46 4270804.82 1.09288 630242.46
4270804.82 1.15259
630252.46 4270804.82 1.21725 630262.46
4270804.82 1.28563
630272.46 4270804.82 1.35722 630282.46
4270804.82 1.43253
630192.46 4270814.82 0.90202 630202.46
4270814.82 0.95343
630212.46 4270814.82 1.00847 630222.46
4270814.82 1.06403
630232.46 4270814.82 1.12216 630242.46
4270814.82 1.18491
630252.46 4270814.82 1.25348 630262.46
4270814.82 1.32623
630272.46 4270814.82 1.40207 630282.46
4270814.82 1.48192
630192.46 4270824.82 0.92222 630202.46
4270824.82 0.97598
630212.46 4270824.82 1.03361 630222.46
4270824.82 1.09186
630232.46 4270824.82 1.15294 630242.46
4270824.82 1.21903
630252.46 4270824.82 1.29130 630262.46
4270824.82 1.36802
630272.46 4270824.82 1.44984 630282.46
4270824.82 1.53628
630292.46 4270824.82 1.62609 630192.46
4270834.82 0.94289
630202.46 4270834.82 0.99913 630212.46
4270834.82 1.05951
630222.46 4270834.82 1.12061 630232.46
4270834.82 1.18485
630242.46 4270834.82 1.25455 630252.46
4270834.82 1.33069

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         630262.46    4270834.82        1.41171                        630272.46
4270834.82        1.50001
         630282.46    4270834.82        1.59385                        630292.46
4270834.82        1.68980
         630202.46    4270844.82        1.02283                        630212.46
4270844.82        1.08614
         630222.46    4270844.82        1.15018                        630232.46
4270844.82        1.21781
         630242.46    4270844.82        1.29139                        630252.46
4270844.82        1.37171
         630262.46    4270844.82        1.45741                        630272.46
4270844.82        1.55289
         630282.46    4270844.82        1.65482                        630292.46
4270844.82        1.75741
         630202.46    4270854.82        1.04719                        630212.46
4270854.82        1.11390
         630222.46    4270854.82        1.18191                        630232.46
4270854.82        1.25405
         630242.46    4270854.82        1.33220                        630252.46
4270854.82        1.41694
         630262.46    4270854.82        1.50761                        630272.46
4270854.82        1.60858
         630282.46    4270854.82        1.71653                        630292.46
4270854.82        1.82561
         630302.46    4270854.82        1.93646                        630202.46
4270864.82        1.07213
         630212.46    4270864.82        1.14241                        630222.46
4270864.82        1.21478
         630232.46    4270864.82        1.29185                        630242.46
4270864.82        1.37491
         630252.46    4270864.82        1.46444                        630262.46
4270864.82        1.56034
         630272.46    4270864.82        1.66719                        630282.46
4270864.82        1.78141
 *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
                      ***        11:08:02

                                 PAGE  13
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                *** THE PERIOD ( 43872 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL        ***
                                    INCLUDING SOURCE(S):     AREA1       ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***
```

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
630292.46	4270864.82	1.89732	630302.46	4270864.82	2.01615
630212.46	4270874.82	1.17179	630222.46	4270874.82	1.24881
630232.46	4270874.82	1.33126	630242.46	4270874.82	1.41959
630252.46	4270874.82	1.51426	630262.46	4270874.82	1.61575
630272.46	4270874.82	1.72877	630282.46	4270874.82	1.84965
630292.46	4270874.82	1.97337	630302.46	4270874.82	2.10100
630212.46	4270884.82	1.19914	630222.46	4270884.82	1.28057
630232.46	4270884.82	1.36838	630242.46	4270884.82	1.46238
630252.46	4270884.82	1.56295	630262.46	4270884.82	1.67110
630272.46	4270884.82	1.79084	630282.46	4270884.82	1.91910
630292.46	4270884.82	2.05288	630302.46	4270884.82	2.19274
630312.46	4270884.82	2.34039	630212.46	4270894.82	1.22699
630222.46	4270894.82	1.31308	630232.46	4270894.82	1.40640
630242.46	4270894.82	1.50632	630252.46	4270894.82	1.61321
630262.46	4270894.82	1.72854	630272.46	4270894.82	1.85552
630282.46	4270894.82	1.99191	630292.46	4270894.82	2.13717
630302.46	4270894.82	2.29099	630312.46	4270894.82	2.45296
630222.46	4270904.82	1.34647	630232.46	4270904.82	1.44562
630242.46	4270904.82	1.55193	630252.46	4270904.82	1.66554
630262.46	4270904.82	1.78865	630272.46	4270904.82	1.92350

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         630282.46    4270904.82        2.06865                      630292.46
4270904.82        2.22659
         630302.46    4270904.82        2.39626                      630312.46
4270904.82        2.57403
         630222.46    4270914.82        1.38237                      630232.46
4270914.82        1.48681
         630242.46    4270914.82        1.59940                      630252.46
4270914.82        1.72059
         630262.46    4270914.82        1.85246                      630272.46
4270914.82        1.99899
         630282.46    4270914.82        2.15711                      630292.46
4270914.82        2.32742
         630302.46    4270914.82        2.50981                      630312.46
4270914.82        2.70184
         630322.46    4270914.82        2.89977                      630222.46
4270924.82        1.41959
         630232.46    4270924.82        1.52934                      630242.46
4270924.82        1.64866
         630252.46    4270924.82        1.77798                      630262.46
4270924.82        1.91979
         630272.46    4270924.82        2.08000                      630282.46
4270924.82        2.25427
         630292.46    4270924.82        2.43770                      630302.46
4270924.82        2.63198
         630312.46    4270924.82        2.83831                      630322.46
4270924.82        3.05535
         630232.46    4270934.82        1.57313                      630242.46
4270934.82        1.69961
         630252.46    4270934.82        1.83779                      630262.46
4270934.82        1.99032
         630272.46    4270934.82        2.16572                      630282.46
4270934.82        2.35855
         630292.46    4270934.82        2.55587                      630302.46
4270934.82        2.76309
         630312.46    4270934.82        2.98535                      630322.46
4270934.82        3.22403
         630232.46    4270944.82        1.61938                      630242.46
4270944.82        1.75426
         630252.46    4270944.82        1.90271                      630262.46
4270944.82        2.06686
 *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
                      ***        11:08:02

                                  PAGE  14
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN
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*** THE PERIOD (43872 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
630272.46	4270944.82	2.25300	630282.46	4270944.82	2.45753
630292.46	4270944.82	2.67062	630302.46	4270944.82	2.89646
630312.46	4270944.82	3.14048	630322.46	4270944.82	3.40484
630332.46	4270944.82	3.68169	630232.46	4270954.82	1.66728
630242.46	4270954.82	1.81172	630252.46	4270954.82	1.97179
630262.46	4270954.82	2.14856	630272.46	4270954.82	2.34288
630282.46	4270954.82	2.55612	630292.46	4270954.82	2.78683
630302.46	4270954.82	3.03572	630312.46	4270954.82	3.30583
630322.46	4270954.82	3.59947	630332.46	4270954.82	3.90834
630242.46	4270964.82	1.87133	630252.46	4270964.82	2.04416
630262.46	4270964.82	2.23453	630272.46	4270964.82	2.43726
630282.46	4270964.82	2.66053	630292.46	4270964.82	2.91097
630302.46	4270964.82	3.18532	630312.46	4270964.82	3.48470
630322.46	4270964.82	3.81206	630332.46	4270964.82	4.15751
630242.46	4270974.82	1.93093	630252.46	4270974.82	2.11576
630262.46	4270974.82	2.32059	630272.46	4270974.82	2.53927
630282.46	4270974.82	2.78074	630292.46	4270974.82	3.05412

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         630302.46    4270974.82        3.35530                    630312.46
4270974.82        3.68544
         630322.46    4270974.82        4.04629                    630332.46
4270974.82        4.42911
         630342.46    4270974.82        4.80935                    630242.46
4270984.82        1.99113
         630252.46    4270984.82        2.18793                    630262.46
4270984.82        2.40801
         630272.46    4270984.82        2.64876                    630282.46
4270984.82        2.91650
         630292.46    4270984.82        3.21665                    630302.46
4270984.82        3.54742
         630312.46    4270984.82        3.91000                    630322.46
4270984.82        4.30561
         630332.46    4270984.82        4.72550                    630342.46
4270984.82        5.15157
         630242.46    4270994.82        2.05300                    630252.46
4270994.82        2.26251
         630262.46    4270994.82        2.49924                    630272.46
4270994.82        2.76463
         630282.46    4270994.82        3.06229                    630292.46
4270994.82        3.39211
         630302.46    4270994.82        3.75626                    630312.46
4270994.82        4.15602
         630322.46    4270994.82        4.59067                    630332.46
4270994.82        5.05319
         630342.46    4270994.82        5.53298                    630252.46
4271004.82        2.34096
         630262.46    4271004.82        2.59478                    630272.46
4271004.82        2.88493
         630282.46    4271004.82        3.21329                    630292.46
4271004.82        3.57665
         630302.46    4271004.82        3.97929                    630312.46
4271004.82        4.42299
         630322.46    4271004.82        4.90554                    630332.46
4271004.82        5.42085
         630342.46    4271004.82        5.96280                    630252.46
4271014.82        2.42307
         630262.46    4271014.82        2.69464                    630272.46
4271014.82        3.00921
         630282.46    4271014.82        3.36844                    630292.46
4271014.82        3.76928
         630302.46    4271014.82        4.21725                    630312.46
4271014.82        4.71290
         630252.46    4271024.82        2.50800                    630262.46
4271024.82        2.79852
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*** THE PERIOD (43872 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S):   AREA1   ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
630272.46	4271024.82	3.14021	630282.46	4271024.82	3.53381
630550.21	4270907.64	4.97679	630560.21	4270907.64	4.87227
630570.21	4270907.64	4.75748	630580.21	4270907.64	4.63421
630530.21	4270917.64	5.39582	630540.21	4270917.64	5.30159
630550.21	4270917.64	5.19291	630560.21	4270917.64	5.07201
630570.21	4270917.64	4.94107	630580.21	4270917.64	4.80207
630530.21	4270927.64	5.65813	630540.21	4270927.64	5.54573
630550.21	4270927.64	5.41869	630560.21	4270927.64	5.27956
630570.21	4270927.64	5.13081	630530.21	4270937.64	5.93493
630540.21	4270937.64	5.80186			

Tower301_Construction

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
630205.76	4271354.01	254.89547	(13022723)	630175.76	4271364.01	227.57005	(13022723)
630185.76	4271364.01	229.92157	(13022723)	630195.76	4271364.01	230.41157	(13022723)
630205.76	4271364.01	235.68972	(10121020)	630165.76	4271374.01	207.70363	(13022723)
630175.76	4271374.01	209.11801	(13022723)	630185.76	4271374.01	209.49565	(10121020)
630195.76	4271374.01	216.82816	(12021719)	630205.76	4271374.01	228.22900	(12021719)
630175.76	4271384.01	193.64034	(10121020)	630185.76	4271384.01	200.73766	(12021719)
630195.76	4271384.01	210.66017	(12021719)	630205.76	4271384.01	219.85095	(12021719)
630215.76	4271384.01	228.13106	(12021719)	630185.76	4271394.01	195.19076	(12021719)
630195.76	4271394.01	203.22222	(12021719)	630716.06	4271367.10	192.05704	(13022821)
630726.06	4271367.10	187.53505	(13022821)	630686.06	4271377.10	206.93697	(12013008)
630696.06	4271377.10	201.52275	(12013008)	630706.06	4271377.10	195.67714	(09022022)
630716.06	4271377.10	190.31877	(09022022)	630726.06	4271377.10	184.35435	(09022022)
630736.06	4271377.10	178.39651	(12022504)	630656.06	4271387.10	226.73073	(13022820)
630666.06	4271387.10	219.77152	(13022820)	630676.06	4271387.10	210.87151	(13022820)
630686.06	4271387.10	201.44658	(13022820)	630696.06	4271387.10	194.88117	(13010908)
630706.06	4271387.10	189.98316	(12013008)	630716.06	4271387.10	185.20940	(12013008)
630726.06	4271387.10	179.98715	(12013008)	630736.06	4271387.10	175.17562	(09022022)

630656.06 4271397.10 181.91835 (13022820) 630666.06 4271397.10 215.59503 (13022820)
630676.06 4271397.10 208.35982 (13022820) 630686.06 4271397.10 165.54820 (13022820)
630696.06 4271397.10 159.58019 (13022820) 630706.06 4271397.10 153.48450 (13022820)
630716.06 4271397.10 147.85817 (12013008) 630726.06 4271397.10 144.18618 (12013008)
630736.06 4271397.10 140.38757 (12013008) 630656.06 4271407.10 175.51844 (13022820)
630666.06 4271407.10 207.93140 (13022820) 630676.06 4271407.10 167.56641 (13022820)
630686.06 4271407.10 163.04204 (13022820) 630696.06 4271407.10 158.15676 (13022820)
630706.06 4271407.10 152.99221 (13022820) 630716.06 4271407.10 147.66195 (13022820)
630726.06 4271407.10 142.17575 (13022820) 630736.06 4271407.10 137.31343 (12013008)
630746.06 4271407.10 134.08853 (12013008) 630656.06 4271417.10 167.52263 (13022820)
630666.06 4271417.10 198.09943 (13022820) 630676.06 4271417.10 162.20235 (13022820)
630686.06 4271417.10 158.85918 (13022820) 630696.06 4271417.10 155.05799 (13022820)
630706.06 4271417.10 150.87134 (13022820) 630716.06 4271417.10 146.43484 (13022820)
630726.06 4271417.10 141.75589 (13022820) 630736.06 4271417.10 136.96557 (13022820)
630746.06 4271417.10 132.06980 (13022820) 630666.06 4271427.10 185.88970 (13022820)
630676.06 4271427.10 155.52265 (13022820) 630686.06 4271427.10 153.33861 (13022820)
630696.06 4271427.10 150.60757 (13022820) 630706.06 4271427.10 147.42016 (13022820)
630716.06 4271427.10 143.89264 (13022820) 630726.06 4271427.10 140.06208 (13022820)
630736.06 4271427.10 136.04060 (13022820) 630746.06 4271427.10 131.84201 (13022820)
630666.06 4271437.10 171.89735 (13022820) 630676.06 4271437.10 173.33397 (13022820)
630686.06 4271437.10 146.70730 (13022820) 630696.06 4271437.10 144.99674 (13022820)
630706.06 4271437.10 142.78804 (13022820) 630716.06 4271437.10 140.17685 (13022820)
630666.06 4271447.10 164.95878 (09022718) 630676.06 4271447.10 139.36762 (13022820)

*** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL   ***
INCLUDING SOURCE(S):   AREA1   ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
630686.06	4271447.10	139.21413	(13022820)	630262.46	4270784.82	109.46022	(12010303)
630272.46	4270784.82	110.42966	(09011624)	630232.46	4270794.82	109.98946	(09021920)
630242.46	4270794.82	110.43417	(12020407)	630252.46	4270794.82	111.19499	(12010303)
630262.46	4270794.82	112.71311	(12010303)	630272.46	4270794.82	113.56503	(09011624)
630282.46	4270794.82	114.59303	(09011624)	630202.46	4270804.82	110.09222	(10120322)
630212.46	4270804.82	111.86540	(09021920)	630222.46	4270804.82	113.17883	(09021920)
630232.46	4270804.82	113.60643	(09021920)	630242.46	4270804.82	113.68880	(12020407)
630252.46	4270804.82	114.46891	(13011121)	630262.46	4270804.82	116.04415	(12010303)
630272.46	4270804.82	116.89338	(12010303)	630282.46	4270804.82	118.17064	(09011624)
630192.46	4270814.82	112.00477	(10120322)	630202.46	4270814.82	113.45703	(10120322)
630212.46	4270814.82	114.77672	(09021920)	630222.46	4270814.82	116.48834	(09021920)
630232.46	4270814.82	117.27785	(09021920)	630242.46	4270814.82	117.10096	(09021920)
630252.46	4270814.82	118.06981	(12020407)	630262.46	4270814.82	119.44618	(12010303)
630272.46	4270814.82	120.61264	(12010303)	630282.46	4270814.82	121.92597	(09011624)

630192.46 4270824.82 114.87587 (10120322) 630202.46 4270824.82 116.75845 (10120322)
630212.46 4270824.82 117.75618 (10120322) 630222.46 4270824.82 119.87995 (09021920)
630232.46 4270824.82 121.07693 (09021920) 630242.46 4270824.82 121.26415 (09021920)
630252.46 4270824.82 121.85227 (12020407) 630262.46 4270824.82 123.01298 (12010303)
630272.46 4270824.82 124.54141 (12010303) 630282.46 4270824.82 125.74792 (09011624)
630292.46 4270824.82 126.54631 (09011624) 630192.46 4270834.82 117.71043 (10120322)
630202.46 4270834.82 120.10276 (10120322) 630212.46 4270834.82 121.56683 (10120322)
630222.46 4270834.82 123.35757 (09021920) 630232.46 4270834.82 124.98960 (09021920)
630242.46 4270834.82 125.57861 (09021920) 630252.46 4270834.82 125.76137 (12020407)
630262.46 4270834.82 126.66498 (13011121) 630272.46 4270834.82 128.58863 (12010303)
630282.46 4270834.82 129.78293 (09011624) 630292.46 4270834.82 130.88883 (09011624)
630202.46 4270844.82 123.46018 (10120322) 630212.46 4270844.82 125.44706 (10120322)
630222.46 4270844.82 126.76612 (09021920) 630232.46 4270844.82 128.90505 (09021920)
630242.46 4270844.82 129.96271 (09021920) 630252.46 4270844.82 129.83272 (09021920)
630262.46 4270844.82 130.88511 (12020407) 630272.46 4270844.82 132.76646 (12010303)
630282.46 4270844.82 134.03856 (09011624) 630292.46 4270844.82 135.48803 (09011624)
630202.46 4270854.82 126.71334 (10120322) 630212.46 4270854.82 129.25772 (10120322)
630222.46 4270854.82 130.71417 (10120322) 630232.46 4270854.82 132.92780 (09021920)
630242.46 4270854.82 134.48693 (09021920) 630252.46 4270854.82 134.80994 (09021920)
630262.46 4270854.82 135.49282 (12020407) 630272.46 4270854.82 137.15598 (12010303)
630282.46 4270854.82 138.67279 (12010303) 630292.46 4270854.82 140.19886 (09011624)
630302.46 4270854.82 140.60397 (09011624) 630202.46 4270864.82 130.19072 (10022201)
630212.46 4270864.82 133.10997 (10120322) 630222.46 4270864.82 135.15106 (10120322)
630232.46 4270864.82 137.01372 (09021920) 630242.46 4270864.82 139.13717 (09021920)

630252.46 4270864.82 139.96720 (09021920) 630262.46 4270864.82 140.25856 (12020407)
630272.46 4270864.82 141.63666 (12010303) 630282.46 4270864.82 143.62445 (12010303)
*** AERMOD - VERSION 18081 *** *** C:\Model\Tower301\Tower301_Construction\Tower301_Construction.isc *** 04/16/19
*** AERMET - VERSION 14134 *** *** 11:08:02

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
630292.46	4270864.82	145.15833	(09011624)	630302.46	4270864.82	145.90286	(09011624)
630212.46	4270874.82	136.96095	(10120322)	630222.46	4270874.82	139.68068	(10120322)
630232.46	4270874.82	141.16145	(10120322)	630242.46	4270874.82	143.92667	(09021920)
630252.46	4270874.82	145.32377	(09021920)	630262.46	4270874.82	145.21575	(09021920)
630272.46	4270874.82	146.50409	(13011121)	630282.46	4270874.82	148.78289	(12010303)
630292.46	4270874.82	150.43061	(09011624)	630302.46	4270874.82	151.54574	(09011624)
630212.46	4270884.82	140.76093	(10022201)	630222.46	4270884.82	144.09997	(10120322)
630232.46	4270884.82	146.26465	(10120322)	630242.46	4270884.82	148.66605	(09021920)
630252.46	4270884.82	150.73281	(09021920)	630262.46	4270884.82	151.20322	(09021920)
630272.46	4270884.82	152.02290	(12020407)	630282.46	4270884.82	154.19607	(12010303)
630292.46	4270884.82	155.81553	(09011624)	630302.46	4270884.82	157.45908	(09011624)

630312.46 4270884.82 157.66342 (11121219) 630212.46
4270894.82 145.60566 (10022201)
630222.46 4270894.82 148.54071 (10120322) 630232.46
4270894.82 151.44892 (10120322)
630242.46 4270894.82 153.49601 (09021920) 630252.46
4270894.82 156.27077 (09021920)
630262.46 4270894.82 157.40945 (09021920) 630272.46
4270894.82 157.85562 (12020407)
630282.46 4270894.82 159.76385 (12010303) 630292.46
4270894.82 161.72883 (12010303)
630302.46 4270894.82 163.67765 (09011624) 630312.46
4270894.82 163.88663 (09011624)
630222.46 4270904.82 152.95966 (10120322) 630232.46
4270904.82 156.75088 (10120322)
630242.46 4270904.82 158.96619 (10120322) 630252.46
4270904.82 161.96843 (09021920)
630262.46 4270904.82 163.81409 (09021920) 630272.46
4270904.82 163.88144 (12020407)
630282.46 4270904.82 165.57638 (12010303) 630292.46
4270904.82 168.21600 (12010303)
630302.46 4270904.82 170.33423 (09011624) 630312.46
4270904.82 170.97279 (09011624)
630222.46 4270914.82 158.44076 (10022201) 630232.46
4270914.82 161.94508 (10120322)
630242.46 4270914.82 165.10249 (10120322) 630252.46
4270914.82 167.78674 (09021920)
630262.46 4270914.82 170.49384 (09021920) 630272.46
4270914.82 171.25755 (09021920)
630282.46 4270914.82 172.25158 (12020407) 630292.46
4270914.82 175.08644 (12010303)
630302.46 4270914.82 177.24309 (09011624) 630312.46
4270914.82 178.50173 (09011624)
630322.46 4270914.82 180.03098 (11121219) 630222.46
4270924.82 164.17922 (12012823)
630232.46 4270924.82 167.17473 (10120322) 630242.46
4270924.82 171.27727 (10120322)
630252.46 4270924.82 173.62847 (09021920) 630262.46
4270924.82 177.33466 (09021920)
630272.46 4270924.82 178.98220 (09021920) 630282.46
4270924.82 179.64877 (12020407)
630292.46 4270924.82 182.27943 (12010303) 630302.46
4270924.82 184.59810 (09011624)
630312.46 4270924.82 186.42005 (09011624) 630322.46
4270924.82 187.73793 (11121219)
630232.46 4270934.82 173.41551 (10022201) 630242.46
4270934.82 177.58082 (10120322)
630252.46 4270934.82 180.86685 (10120322) 630262.46
4270934.82 184.32241 (09021920)

630272.46 4270934.82 187.02805 (09021920) 630282.46 4270934.82 187.36212 (12020407)
630292.46 4270934.82 189.83185 (12010303) 630302.46 4270934.82 192.47255 (12010303)
630312.46 4270934.82 194.96092 (09011624) 630322.46 4270934.82 195.84096 (11121219)
630232.46 4270944.82 180.14631 (12012823) 630242.46 4270944.82 183.82271 (10120322)
630252.46 4270944.82 188.43561 (10120322) 630262.46 4270944.82 191.57777 (09021920)

*** AERMOD - VERSION 18081 *** *** C:\Model\Tower301\Tower301_Construction\Tower301_Construction.isc *** 04/16/19
*** AERMET - VERSION 14134 *** *** *** 11:08:02

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
630272.46	4270944.82	195.34046	(09021920)	630282.46	4270944.82	196.53080	(09021920)
630292.46	4270944.82	197.74045	(13011121)	630302.46	4270944.82	201.24889	(12010303)
630312.46	4270944.82	203.90373	(09011624)	630322.46	4270944.82	204.54158	(11121219)
630332.46	4270944.82	207.51106	(11121219)	630232.46	4270954.82	187.86783	(12012823)
630242.46	4270954.82	190.97542	(10022201)	630252.46	4270954.82	195.95843	(10120322)
630262.46	4270954.82	199.60180	(10120322)	630272.46	4270954.82	203.92538	(09021920)
630282.46	4270954.82	206.17457	(09021920)	630292.46	4270954.82	206.99386	(12020407)
630302.46	4270954.82	210.47143	(12010303)	630312.46	4270954.82	213.47217	(09011624)

630322.46 4270954.82 214.65634 (09011624) 630332.46 4270954.82 217.59634 (11121219)
630242.46 4270964.82 199.04650 (12012823) 630252.46 4270964.82 203.65268 (10120322)
630262.46 4270964.82 208.65342 (10120322) 630272.46 4270964.82 212.75263 (09021920)
630282.46 4270964.82 216.18838 (09021920) 630292.46 4270964.82 216.75278 (12020407)
630302.46 4270964.82 220.22051 (12010303) 630312.46 4270964.82 223.62003 (09011624)
630322.46 4270964.82 225.83103 (09011624) 630332.46 4270964.82 228.50682 (11121219)
630242.46 4270974.82 208.15340 (12012823) 630252.46 4270974.82 211.88776 (10022201)
630262.46 4270974.82 217.96787 (10120322) 630272.46 4270974.82 221.80813 (09021920)
630282.46 4270974.82 226.76083 (09021920) 630292.46 4270974.82 228.44726 (09021920)
630302.46 4270974.82 230.61405 (12010303) 630312.46 4270974.82 234.52475 (09011624)
630322.46 4270974.82 237.74363 (09011624) 630332.46 4270974.82 240.17143 (11121219)
630342.46 4270974.82 241.62800 (11121219) 630242.46 4270984.82 217.42078 (12020608)
630252.46 4270984.82 221.53599 (12012823) 630262.46 4270984.82 227.20869 (10120322)
630272.46 4270984.82 232.78206 (10120322) 630282.46 4270984.82 237.91931 (09021920)
630292.46 4270984.82 241.13934 (09021920) 630302.46 4270984.82 242.33949 (12020407)
630312.46 4270984.82 246.93873 (12010303) 630322.46 4270984.82 250.67776 (09011624)
630332.46 4270984.82 252.95955 (11121219) 630342.46 4270984.82 255.05063 (11121219)
630242.46 4270994.82 227.06885 (12020608) 630252.46 4270994.82 232.43552 (12012823)
630262.46 4270994.82 236.97983 (10022201) 630272.46 4270994.82 244.17369 (10120322)
630282.46 4270994.82 249.48461 (09021920) 630292.46 4270994.82 254.53437 (09021920)
630302.46 4270994.82 255.59847 (12020407) 630312.46 4270994.82 260.35669 (12010303)
630322.46 4270994.82 264.61235 (09011624) 630332.46 4270994.82 266.56843 (11121219)
630342.46 4270994.82 269.86097 (11121219) 630252.46 4271004.82 243.65322 (12020608)
630262.46 4271004.82 248.80517 (12012823) 630272.46 4271004.82 255.82259 (10120322)

```
        630282.46   4271004.82      262.07599  (10120322)                630292.46
4271004.82      268.57783  (09021920)
        630302.46   4271004.82      271.13596  (09021920)                630312.46
4271004.82      274.66764  (12010303)
        630322.46   4271004.82      279.66244  (09011624)                630332.46
4271004.82      281.76820  (09011624)
        630342.46   4271004.82      285.93240  (11121219)                630252.46
4271014.82      255.23100  (12020608)
        630262.46   4271014.82      261.96323  (12012823)                630272.46
4271014.82      267.61538  (10120322)
        630282.46   4271014.82      276.37808  (10120322)                630292.46
4271014.82      283.19110  (09021920)
        630302.46   4271014.82      287.99187  (09021920)                630312.46
4271014.82      289.97344  (12010303)
        630252.46   4271024.82      266.79988  (13022601)                630262.46
4271024.82      275.76086  (12020608)
↑ *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
                        ***        11:08:02

                                          PAGE  20
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     AREA1       ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
        630272.46   4271024.82      282.26912  (12012823)                630282.46
4271024.82      291.18170  (10120322)
        630550.21   4270907.64      146.94816  (09121618)                630560.21
4270907.64      144.74613  (09121618)
        630570.21   4270907.64      141.44034  (09121618)                630580.21
4270907.64      138.09940  (13013123)
        630530.21   4270917.64      159.79661  (11020718)                630540.21
4270917.64      155.63773  (11020718)
        630550.21   4270917.64      152.22497  (09121618)                630560.21
4270917.64      149.12027  (09121618)
```

630570.21 4270917.64 145.05998 (13013123) 630580.21 4270917.64 143.26517 (10021508)
630530.21 4270927.64 164.91263 (11020718) 630540.21 4270927.64 160.17019 (09121618)
630550.21 4270927.64 157.35451 (09121618) 630560.21 4270927.64 153.27104 (09121618)
630570.21 4270927.64 150.40367 (10021508) 630530.21 4270937.64 169.83997 (11020718)
630540.21 4270937.64 166.16723 (09121618)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE SUMMARY OF MAXIMUM PERIOD (43872 HRS) RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

GROUP ID	NETWORK	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	18.31327	AT (630215.76, 4271384.01, 8.29, 8.29, 1.80)	DC	
	2ND HIGHEST VALUE IS	17.17345	AT (630205.76, 4271354.01, 8.51, 8.51, 1.80)	DC	
	3RD HIGHEST VALUE IS	17.11206	AT (630205.76, 4271364.01, 8.21, 8.21, 1.80)	DC	
	4TH HIGHEST VALUE IS	16.96355	AT (630205.76, 4271374.01, 8.04, 8.04, 1.80)	DC	
	5TH HIGHEST VALUE IS	16.74523	AT (630205.76, 4271384.01, 7.97, 7.97, 1.80)	DC	
	6TH HIGHEST VALUE IS	15.53934	AT (630195.76, 4271364.01, 7.66, 7.66, 1.80)	DC	
	7TH HIGHEST VALUE IS	15.47170	AT (630195.76, 4271374.01, 7.45, 7.45, 1.80)	DC	
	8TH HIGHEST VALUE IS	15.33242	AT (630195.76, 4271384.01, 7.46, 7.46, 1.80)	DC	

9TH HIGHEST VALUE IS 15.14385 AT (630195.76, 4271394.01, 7.47, 7.47, 1.80) DC
10TH HIGHEST VALUE IS 14.13479 AT (630185.76, 4271364.01, 7.08, 7.08, 1.80) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE	CONC	DATE (YYMMDDHH)	NETWORK OF TYPE	GRID-ID	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)
ALL	HIGH	1ST HIGH VALUE IS	291.18170	ON 10120322:	AT	(630282.46, 4271024.82, 5.89, 5.89, 1.80) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

```
*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of        14622 Informational Message(s)

A Total of        43872 Hours Were Processed

A Total of        12213 Calm Hours Identified

A Total of         2409 Missing Hours Identified (  5.49 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ***********************************
   *** AERMOD Finishes Successfully ***
   ***********************************
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for   1 Source(s),
for Total of   1 Urban Area(s):
Urban Population =   1531000.0 ; Urban Roughness Length = 1.000 m

**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
CCVR_Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: PM_10

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 1 Source(s);   1 Source Group(s); and   339 Receptor(s)

with: 0 POINT(s), including

Tower301_Construction
0 POINTCAP(s) and 0 POINTHOR(s)
and: 0 VOLUME source(s)
and: 1 AREA type source(s)
and: 0 LINE source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 14134

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 4.60 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ;
Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: Tower301_Construction.err

**File for Summary of Results: Tower301_Construction.sum

Tower301_Construction
PAGE 2
*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

↑ *** AERMOD - VERSION 18081 *** *** C:\Model\Tower 301\Tower301_Construction\Tower301_Construction.isc *** 04/16/19
*** AERMET - VERSION 14134 *** ***
*** 11:08:02

PAGE 3
*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\Sac Exec ARPT\724830.SFC
Met Version: 14134
Profile file: ..\Sac Exec ARPT\724830.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 23232 Upper air station no.: 23230
Name: SACRAMENTO/EXECUTIVE_ARPT Name: OAKLAND/WSO_AP
Year: 2009 Year: 2009

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
09	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.1	2.0
09	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.1	2.0
09	01	01	1	03	-7.9	0.137	-9.000	-9.000	-999.	121.	29.5	0.32	0.94	1.00	1.76	94.	10.0	278.8	2.0
09	01	01	1	04	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.8	2.0
09	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.8	2.0
09	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.8	2.0
09	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	1.00	0.00	0.	10.0	278.8	2.0
09	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	0.76	0.00	0.	10.0	278.8	2.0
09	01	01	1	09	-5.0	0.179	-9.000	-9.000	-999.	181.	104.7	0.32	0.94	0.40	1.76	47.	10.0	278.8	2.0
09	01	01	1	10	6.0	0.323	0.247	0.017	91.	441.	-513.3	0.51	0.94	0.28	2.36	131.	10.0	278.1	2.0
09	01	01	1	11	14.6	0.226	0.408	0.015	169.	262.	-71.7	0.32	0.94	0.23	1.76	34.	10.0	278.8	2.0
09	01	01	1	12	19.4	-9.000	-9.000	-9.000	233.	-999.	-99999.0	0.35	0.94	0.22	0.00	0.	10.0	278.8	2.0
09	01	01	1	13	20.0	-9.000	-9.000	-9.000	285.	-999.	-99999.0	0.35	0.94	0.22	0.00	0.	10.0	278.8	2.0
09	01	01	1	14	16.6	-9.000	-9.000	-9.000	322.	-999.	-99999.0	0.35	0.94	0.23	0.00	0.	10.0	279.2	2.0
09	01	01	1	15	9.2	-9.000	-9.000	-9.000	340.	-999.	-99999.0	0.35	0.94	0.26	0.00	0.	10.0	279.2	2.0
09	01	01	1	16	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94	0.35	0.00	0.	10.0	279.2	2.0
09	01	01	1	17	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.35	0.94

0.61   0.00   0.   10.0 279.2   2.0
 09 01 01   1 18 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.35   0.94
1.00   0.00   0.   10.0 279.2   2.0
 09 01 01   1 19 -10.0 0.175 -9.000 -9.000 -999. 176.   48.6 0.51   0.94
1.00   1.76 124.   10.0 279.9   2.0
 09 01 01   1 20 -15.9 0.278 -9.000 -9.000 -999. 351.   122.3 0.51   0.94
1.00   2.36 157.   10.0 279.9   2.0
 09 01 01   1 21 -15.9 0.278 -9.000 -9.000 -999. 351.   122.3 0.51   0.94
1.00   2.36 150.   10.0 279.9   2.0
 09 01 01   1 22 -28.4 0.495 -9.000 -9.000 -999. 837.   389.1 0.51   0.94
1.00   3.86 162.   10.0 279.9   2.0
 09 01 01   1 23 -15.9 0.278 -9.000 -9.000 -999. 396.   122.3 0.51   0.94
1.00   2.36 150.   10.0 279.9   2.0
 09 01 01   1 24 -36.3 0.634 -9.000 -9.000 -999. 1212.   637.3 0.51   0.94
1.00   4.86 130.   10.0 279.9   2.0

 First hour of profile data
 YR MO DY HR HEIGHT F WDIR   WSPD AMB_TMP sigmaA sigmaW sigmaV
 09 01 01 01   10.0 1 -999. -99.00   278.2   99.0 -99.00 -99.00

 F indicates top of profile (=1) or below (=0)

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

                                     *** THE SUMMARY OF MAXIMUM PERIOD (43872
HRS) RESULTS ***

                                   ** CONC OF PM_10   IN MICROGRAMS/M**3
             **

                      NETWORK
GROUP ID   AVERAGE CONC   RECEPTOR (XR, YR, ZELEV,
ZHILL, ZFLAG) OF TYPE GRID-ID
- -
- - - - - - - - - - - - - - - - - - -

ALL   1ST HIGHEST VALUE IS   18.31327 AT (630215.76, 4271384.01,   8.29,
    8.29,   1.80) DC
          2ND HIGHEST VALUE IS   17.17345 AT (630205.76, 4271354.01,   8.51,
    8.51,   1.80) DC

```
        3RD HIGHEST VALUE IS      17.11206 AT (  630205.76,  4271364.01,     8.21,
  8.21,    1.80)  DC
        4TH HIGHEST VALUE IS      16.96355 AT (  630205.76,  4271374.01,     8.04,
  8.04,    1.80)  DC
        5TH HIGHEST VALUE IS      16.74523 AT (  630205.76,  4271384.01,     7.97,
  7.97,    1.80)  DC
        6TH HIGHEST VALUE IS      15.53934 AT (  630195.76,  4271364.01,     7.66,
  7.66,    1.80)  DC
        7TH HIGHEST VALUE IS      15.47170 AT (  630195.76,  4271374.01,     7.45,
  7.45,    1.80)  DC
        8TH HIGHEST VALUE IS      15.33242 AT (  630195.76,  4271384.01,     7.46,
  7.46,    1.80)  DC
        9TH HIGHEST VALUE IS      15.14385 AT (  630195.76,  4271394.01,     7.47,
  7.47,    1.80)  DC
       10TH HIGHEST VALUE IS      14.13479 AT (  630185.76,  4271364.01,     7.08,
  7.08,    1.80)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***        04/16/19
 *** AERMET - VERSION  14134 ***   ***
                       ***        11:08:02

                                  PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                              *** THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
               **

                                                    DATE
                                        NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS     291.18170  ON 10120322: AT (  630282.46,
4271024.82,     5.89,     5.89,    1.80)  DC
```

*** RECEPTOR TYPES: GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR
*** AERMOD - VERSION 18081 ***   *** C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc   ***   04/16/19
*** AERMET - VERSION 14134 ***   ***
                     ***   11:08:02

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   0 Warning Message(s)
A Total of   14622 Informational Message(s)

A Total of   43872 Hours Were Processed

A Total of   12213 Calm Hours Identified

A Total of   2409 Missing Hours Identified (5.49 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
              *** NONE ***

PE00GALL

```
* AERMOD ( 18081): C:\Model\Tower
301\Tower301_Construction\Tower301_Construction.isc       04/16/19
* AERMET ( 14134):
      11:08:02
* MODELING OPTIONS USED:   RegDFAULT  CONC  ELEV  FLGPOL  URBAN
*         PLOT FILE OF PERIOD VALUES AVERAGED ACROSS   0 YEARS FOR SOURCE GROUP: ALL

*         FOR A TOTAL OF   339 RECEPTORS.
*         FORMAT: (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)


*        X             Y      AVERAGE CONC    ZELEV    ZHILL    ZFLAG    AVE     GRP
     NUM HRS   NET ID
* ____________  ____________  ____________   ______   ______   ______  ______
________  ________  ________
  630205.76000 4271354.01000      17.17345     8.51     8.51     1.80  PERIOD  ALL
    00043872
  630175.76000 4271364.01000      12.85651     7.07     7.07     1.80  PERIOD  ALL
    00043872
  630185.76000 4271364.01000      14.13479     7.08     7.08     1.80  PERIOD  ALL
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  630195.76000 4271364.01000      15.53934     7.66     7.66     1.80  PERIOD  ALL
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  00043872
630272.46000 4270894.82000       1.85552     5.83     5.83     1.80  PERIOD  ALL
  00043872
630282.46000 4270894.82000       1.99191     5.71     5.71     1.80  PERIOD  ALL
  00043872
630292.46000 4270894.82000       2.13717     5.62     5.62     1.80  PERIOD  ALL
  00043872
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00043872
630292.46000 4270934.82000 2.55587 5.07 5.07 1.80 PERIOD ALL

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630322.46000 4270954.82000       3.59947     5.68     5.68     1.80  PERIOD  ALL
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00043872
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00043872
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00043872
630272.46000 4271004.82000 2.88493 5.86 5.86 1.80 PERIOD ALL
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630302.46000	4271004.82000	3.97929	5.91	5.91	1.80	PERIOD	ALL
00043872							
630312.46000	4271004.82000	4.42299	5.97	5.97	1.80	PERIOD	ALL
00043872							
630322.46000	4271004.82000	4.90554	6.00	6.00	1.80	PERIOD	ALL
00043872							
630332.46000	4271004.82000	5.42085	6.03	6.03	1.80	PERIOD	ALL
00043872							
630342.46000	4271004.82000	5.96280	6.03	6.03	1.80	PERIOD	ALL
00043872							
630252.46000	4271014.82000	2.42307	6.03	6.03	1.80	PERIOD	ALL
00043872							
630262.46000	4271014.82000	2.69464	6.06	6.06	1.80	PERIOD	ALL
00043872							
630272.46000	4271014.82000	3.00921	5.95	5.95	1.80	PERIOD	ALL
00043872							
630282.46000	4271014.82000	3.36844	5.83	5.83	1.80	PERIOD	ALL
00043872							
630292.46000	4271014.82000	3.76928	5.87	5.87	1.80	PERIOD	ALL
00043872							
630302.46000	4271014.82000	4.21725	5.93	5.93	1.80	PERIOD	ALL
00043872							
630312.46000	4271014.82000	4.71290	5.99	5.99	1.80	PERIOD	ALL
00043872							
630252.46000	4271024.82000	2.50800	6.08	6.08	1.80	PERIOD	ALL
00043872							
630262.46000	4271024.82000	2.79852	6.17	6.17	1.80	PERIOD	ALL
00043872							
630272.46000	4271024.82000	3.14021	6.03	6.03	1.80	PERIOD	ALL
00043872							
630282.46000	4271024.82000	3.53381	5.89	5.89	1.80	PERIOD	ALL
00043872							
630550.21000	4270907.64000	4.97679	5.68	5.68	1.80	PERIOD	ALL
00043872							
630560.21000	4270907.64000	4.87227	5.70	5.70	1.80	PERIOD	ALL
00043872							
630570.21000	4270907.64000	4.75748	5.72	5.72	1.80	PERIOD	ALL
00043872							
630580.21000	4270907.64000	4.63421	5.80	5.80	1.80	PERIOD	ALL
00043872							
630530.21000	4270917.64000	5.39582	5.78	5.78	1.80	PERIOD	ALL
00043872							
630540.21000	4270917.64000	5.30159	5.74	5.74	1.80	PERIOD	ALL
00043872							
630550.21000	4270917.64000	5.19291	5.70	5.70	1.80	PERIOD	ALL

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  630560.21000 4270917.64000       5.07201     5.69     5.69     1.80  PERIOD  ALL
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  630570.21000 4270917.64000       4.94107     5.68     5.68     1.80  PERIOD  ALL
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  630580.21000 4270917.64000       4.80207     5.73     5.73     1.80  PERIOD  ALL
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  630530.21000 4270927.64000       5.65813     5.80     5.80     1.80  PERIOD  ALL
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  630540.21000 4270927.64000       5.54573     5.72     5.72     1.80  PERIOD  ALL
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  630550.21000 4270927.64000       5.41869     5.65     5.65     1.80  PERIOD  ALL
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  630560.21000 4270927.64000       5.27956     5.60     5.60     1.80  PERIOD  ALL
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  630570.21000 4270927.64000       5.13081     5.55     5.55     1.80  PERIOD  ALL
    00043872
  630530.21000 4270937.64000       5.93493     5.82     5.82     1.80  PERIOD  ALL
    00043872
  630540.21000 4270937.64000       5.80186     5.71     5.71     1.80  PERIOD  ALL
    00043872
** CONCUNIT ug/m^3
** DEPUNIT g/m^2
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D-3 Air Quality Modeling OEHHA Methodology Calculations

TOWER 301 - Health Risk Assessment

Onsite DPM Emissions per Phase (tons)

Phase	Year	Unmitigated	Mitigation (tier 4)
1	2019	0.0291	0.00101
2	2020	0.2519	0.0255
3	2020	0.1342	0.00867
	2021	0.2766	0.0207
	2022	0.0778	0.00583
4	2020	0.00845	0.00404
	2021	0.0805	0.04
	2022	0.0346	0.0176
5	2021	0.0626	0.00303
	2022	0.00817	0.00048

Year	Unmitigated	Mitigation (tier 4)	Total Calendar Days	Number of Months
2019	0.029	0.001	31.000	1
2020	0.395	0.038	366.000	12
2021	0.420	0.064	365.000	12
2022	0.121	0.024	181.000	6

Emission Rates - Scaling Factors (g/s)

Year	Unmitigated	Mitigation (tier 4)
2019	0.010	0.000
2020	0.011	0.001
2021	0.012	0.002
2022	0.007	0.001

AERMOD Out (emission rate = 1 g/s)

Annual Average	@Clarendon	18.31	ug/m^3

Emission Impact - (ug/m^3)

Year	Unmitigated	Mitigation (tier 4)
2019	1.80E-01	6.26E-03
2020	2.07E-01	2.01E-02
2021	2.21E-01	3.36E-02
2022	1.28E-01	2.54E-02

Age Group	3rd Trimester	Age 0<2	Age 2<9
Months exposure	3	24	21
2019	0.33	0	0
2020	0.67	0.42	0
2021	0	0.50	0
2022	0	0.08	1

construction < 3 years. Conservatively apply BAAQMD guidance for 3 yr exposure duration minimum

Cancer Risk = Dose inhalation × Inhalation CPF × ASF × ED/AT × FAH **(Equation 8.2.4 A)**

Where:

Cancer Risk = residential inhalation cancer risk

Dose inhalation (mg/kg-day) = C_{AIR} × DBR × A × EF × 10^{-6} **(Equation 2)**

Inhalation CPF = inhalation cancer potency factor ([mg/kg/day]$^{-1}$)
ASF = age sensitivity factor for a specified age group (unitless)
ED = exposure duration for a specified age group (years)
AT = averaging time period over which exposure is averaged in days (years)
FAH = fraction of time at home (unitless)

Where:

C_{AIR} = concentration of compound in air in micrograms per cubic meter (µg/m^3)
DBR = daily breathing rate in liter per kilogram of body weight per day (L/kg-body weight/day)
A = inhalation absorption factor (1 for DPM, unitless)
EF = exposure frequency in days per year (unitless, days/365 days)
10^{-6} = micrograms to milligrams conversion, liters to cubic meters conversion

Dose Inhalation Inputs

Receptor Type	Exposure Scenario	Receptor Group Age	C_{AIR} (µg/m^3) Unmitigated	C_{AIR} (µg/m^3) Mitigation (tier 4)	DBR (L/kg-day)	A (unitless)	EF (days/year)
Off-Site Child Resident	Construction	3rd Trimester	1.98E-01	1.55E-02	361	1	0.96
		Age 0<2	2.08E-01	2.73E-02	1090	1	0.96
		Age 2<9	1.28E-01	2.54E-02	861	1	0.96

Dose Inhalation Outputs

Receptor Type	Exposure Scenario	Receptor Group Age	Dose inhalation (mg/kg-day) Unmitigated	Dose inhalation (mg/kg-day) Mitigation (tier 4)
Off-Site Child Resident	Construction	3rd Trimester	6.87E-05	5.36E-06
		Age 0<2	2.17E-04	2.85E-05
		Age 2<9	1.06E-04	2.10E-05

Risk Inputs

Receptor Type	Exposure Scenario	Receptor Group Age	CPF (mg/kg-day^{-1})	ASF (unitless)	ED (years)	AT (years)	FAH (unitless)	REL (µg/m^3)
Off-Site Child Resident	Construction	3rd Trimester	1.1	10	0.25	70.00	0.85	5
		Age 0<2	1.1	10	2	70.00	0.85	5
		Age 2<9	1.1	3	1.75	70.00	0.72	5

TOWER 301 - Health Risk Assessment

Risk Outputs

Receptor Type	Exposure Scenario	Receptor Group Age	Unmitigated	Mitigation (tier 4)	Unmitigated	Mitigation (tier 4)
			Cancer Risk		**Chronic Non-Cancer Risk**	
Off-Site Child Resident	Construction	3rd Trimester	2.29E-06	1.79E-07	3.97E-02	3.09E-03
		Age 0<2	5.80E-05	7.61E-06	4.15E-02	5.45E-03
		Age 2<9	6.28E-06	1.25E-06	2.56E-02	5.08E-03
		Total Risk	6.65E-05	9.04E-06	0.11	0.01
		Risk per Million	66.54	9.04	NA	NA

SOURCE: Office of Environmental Health Hazard Assessment, 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments* . February.

Daily breathing rate for school receptor is based on the OEHHA 95th percentile 8-hour moderate intensity breathing rates (Table 5.8).

Fraction of time at home is set to 0.85 for residential since the nearest school has an unmitigated cancer risk of <1 per million, per OEHHA Table 8.4. FAH is not applicable to school receptors.

Inhalation cancer potency factor from Table 7.1

D-4 Air Quality Modeling CALINE4 Output from EMFAC 2014 Model

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Sacramento
Calendar Year: 2036
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

average emission factor 3.74 g/mile

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	ROG_RUNE	TOG_RUNE	CO_RUNEX	NOx_RUNE	CO2_RUNE	PM10_RUN	PM2_5_RUNEX
Sacramento	2036	All Other Buses	Aggregated	5	DSL	180.5422	0.26279	0.299166	1.383239	11.18135	2143.501	0.006587	0.006302
Sacramento	2036	LDA	Aggregated	5	GAS	916.555	0.029288	0.042738	0.620583	0.044081	642.4019	0.006419	0.005902
Sacramento	2036	LDA	Aggregated	5	DSL	12.55946	0.086437	0.098403	2.656198	0.04855	483.7251	0.002349	0.002247
Sacramento	2036	LDT1	Aggregated	5	GAS	63.52808	0.038829	0.056659	0.737841	0.056832	704.8288	0.006851	0.006299
Sacramento	2036	LDT1	Aggregated	5	DSL	0.042989	0.296997	0.338111	2.823927	0.316205	605.2544	0.054521	0.052162
Sacramento	2036	LDT2	Aggregated	5	GAS	398.5159	0.040184	0.058637	0.826061	0.058696	811.991	0.006583	0.006053
Sacramento	2036	LDT2	Aggregated	5	DSL	0.867292	0.263408	0.299873	2.669769	0.152638	598.6961	0.009277	0.008876
Sacramento	2036	LHD1	Aggregated	5	GAS	4970.476	0.056584	0.082567	0.460471	0.204614	1314.294	0.007545	0.006938
Sacramento	2036	LHD1	Aggregated	5	DSL	5090.355	0.769649	0.876194	3.514226	0.813474	1153.563	0.032255	0.03086
Sacramento	2036	LHD2	Aggregated	5	GAS	1577.918	0.024321	0.035489	0.229768	0.07436	1375.124	0.007601	0.006989
Sacramento	2036	LHD2	Aggregated	5	DSL	2402.367	0.744986	0.848117	3.309252	0.341936	1194.146	0.018821	0.018006
Sacramento	2036	MCY	Aggregated	5	GAS	10.09544	12.64174	15.84218	44.78631	1.656941	565.7358	0.013328	0.012427
Sacramento	2036	MDV	Aggregated	5	GAS	190.477	0.06208	0.090588	1.064363	0.094384	1084.963	0.007015	0.00645
Sacramento	2036	MDV	Aggregated	5	DSL	5.229469	0.102191	0.116338	3.027082	0.056718	741.3973	0.002937	0.00281
Sacramento	2036	MH	Aggregated	5	GAS	168.4167	0.097923	0.142889	0.607948	0.281969	3696.252	0.007603	0.006991
Sacramento	2036	MH	Aggregated	5	DSL	44.19862	0.815677	0.928594	2.17136	11.30494	2008.076	0.08738	0.0836
Sacramento	2036	Motor Coach	Aggregated	5	DSL	150.2893	0.508512	0.578902	3.002645	17.65143	3017.215	0.009555	0.009142
Sacramento	2036	OBUS	Aggregated	5	GAS	326.2972	0.078231	0.114154	0.46906	0.200656	3666.936	0.007657	0.00704
Sacramento	2036	SBUS	Aggregated	5	GAS	102.9903	0.056961	0.083118	0.321239	0.162626	1744.574	0.007191	0.006612
Sacramento	2036	SBUS	Aggregated	5	DSL	159.8242	0.266389	0.303263	1.237297	9.331145	2135.403	0.008637	0.008263
Sacramento	2036	T6 Ag	Aggregated	5	DSL	141.5869	0.289864	0.329988	1.525747	11.88281	2169.359	0.007402	0.007082
Sacramento	2036	T6 CAIRP heavy	Aggregated	5	DSL	27.29506	0.227306	0.258771	1.196464	9.467961	2092.086	0.005458	0.005222
Sacramento	2036	T6 CAIRP small	Aggregated	5	DSL	83.7891	0.215232	0.245025	1.13291	8.756907	2109.487	0.005062	0.004843
Sacramento	2036	T6 instate construction heavy	Aggregated	5	DSL	137.4407	0.25855	0.29434	1.360004	11.07863	2126.666	0.006484	0.006203
Sacramento	2036	T6 instate construction small	Aggregated	5	DSL	1035.65	0.236947	0.269746	1.246335	9.986349	2117.94	0.005786	0.005536
Sacramento	2036	T6 instate heavy	Aggregated	5	DSL	1143.476	0.254568	0.289807	1.339964	10.73796	2108.166	0.006322	0.006048
Sacramento	2036	T6 instate small	Aggregated	5	DSL	2888.555	0.238374	0.271371	1.254723	10.05533	2120.526	0.005814	0.005563
Sacramento	2036	T6 OOS heavy	Aggregated	5	DSL	15.63904	0.227456	0.258941	1.197251	9.473282	2092.171	0.005462	0.005226
Sacramento	2036	T6 OOS small	Aggregated	5	DSL	48.008	0.215232	0.245025	1.13291	8.756907	2109.487	0.005062	0.004843
Sacramento	2036	T6 Public	Aggregated	5	DSL	596.2923	0.214393	0.24407	1.004737	7.544374	2131.057	0.009849	0.009423
Sacramento	2036	T6 utility	Aggregated	5	DSL	25.79941	0.177834	0.202451	0.936062	6.429484	2110.153	0.003828	0.003663
Sacramento	2036	T6TS	Aggregated	5	GAS	616.0765	0.081957	0.119591	0.51001	0.211564	3669.825	0.007539	0.006932
Sacramento	2036	T7 Ag	Aggregated	5	DSL	16.92745	0.676167	0.769764	3.992606	21.39001	2990.091	0.013424	0.012844
Sacramento	2036	T7 CAIRP	Aggregated	5	DSL	671.084	0.567646	0.646222	3.35182	20.59399	2766.852	0.011043	0.010565
Sacramento	2036	T7 CAIRP construction	Aggregated	5	DSL	43.95515	0.58181	0.662346	3.43403	21.38594	2789.325	0.011424	0.01093
Sacramento	2036	T7 NNOOS	Aggregated	5	DSL	832.145	0.49725	0.566081	2.936146	17.20513	2760.5	0.009276	0.008874
Sacramento	2036	T7 NOOS	Aggregated	5	DSL	265.078	0.567933	0.646548	3.353512	20.59971	2767.125	0.011049	0.010571
Sacramento	2036	T7 other port	Aggregated	5	DSL	8.762498	0.619155	0.704861	3.655969	23.35417	2784.966	0.012358	0.011824
Sacramento	2036	T7 POAK	Aggregated	5	DSL	26.01536	0.623704	0.710039	3.682825	23.58359	2784.966	0.012473	0.011934
Sacramento	2036	T7 Public	Aggregated	5	DSL	454.0346	0.487268	0.554717	2.282343	13.50877	2913.723	0.024923	0.023844
Sacramento	2036	T7 Single	Aggregated	5	DSL	927.3268	0.471386	0.536637	2.783422	15.50003	2811.584	0.008591	0.008219
Sacramento	2036	T7 single construction	Aggregated	5	DSL	113.7062	0.482439	0.54922	2.840487	15.75998	2826.488	0.009021	0.008631
Sacramento	2036	T7 SWCV	Aggregated	5	DSL	2148.866	0.194903	5.886052	19.51346	3.661995	5857.463	0.010145	0.009706
Sacramento	2036	T7 tractor	Aggregated	5	DSL	457.7621	0.585965	0.667077	3.459989	21.17821	2781.679	0.011479	0.010982
Sacramento	2036	T7 tractor construction	Aggregated	5	DSL	84.77636	0.604941	0.688679	3.569682	22.13679	2810.232	0.011994	0.011475
Sacramento	2036	T7 utility	Aggregated	5	DSL	2.130112	0.367174	0.418	2.168077	10.49847	2801.606	0.00598	0.005721
Sacramento	2036	T7IS	Aggregated	5	GAS	34.03984	2.082832	3.039263	54.22863	5.664663	3800.197	0.007657	0.007041
Sacramento	2036	UBUS	Aggregated	5	GAS	431.0104	0.27506	0.401367	2.043411	0.97712	3711.084	0.007171	0.006593
Sacramento	2036	UBUS	Aggregated	5	DSL	448.9237	1.04488	13.24422	40.6851	6.802761	2964.262	0.041711	0.039906

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Cumulative plus Project, intersection 2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT:

I. SITE VARIABLES

U= 0.5 M/S Z0= 400. CM ALT= 7. (M)
BRG= WORST CASE VD= 0.0 CM/S
CLAS= 7 (G) VS= 0.0 CM/S
MIXH= 1000. M AMB= 0.0 PPM
SIGTH= 5. DEGREES TEMP= 16.1 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. W->0	*	-80	0	0	0	* DP	2260	3.7	-6.0	20.0
B. 0->E	*	0	0	150	0	* AG	3250	3.7	0.0	20.0
C. S->0	*	5	-150	5	0	* AG	100	3.7	0.0	13.0
D. 0->N	*	5	0	4	100	* AG	90	3.7	0.0	10.0
E. N->0	*	-5	100	-5	0	* AG	300	3.7	0.0	13.0
F. N->E	*	-5	100	0	0	* AG	80	3.7	0.0	10.0
G. 0->S	*	-5	0	-5	-150	* AG	1260	3.7	0.0	13.0
H. Off->0	*	-35	-35	0	0	* DP	1860	3.7	-5.0	16.5

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. R_NE-3m	*	9	9	1.8
2. R_SE-3m	*	11	-9	1.8
3. R_SW-3m	*	-19	-8	1.8
4. R_NW-3m	*	-11	9	1.8
5. R_NE-7m	*	12	12	1.8
6. R_SE-7m	*	14	-12	1.8
7. R_SW-7m	*	-23	-10	1.8
8. R_NW-7m	*	-14	12	1.8
9. R_SW2-3m	*	-10	-17	1.8

10. R_SW2-7m * -11 -21 1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Cumulative plus Project, intersection 2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT:

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. R_NE-3m	222.	1.8	0.3	0.4	0.0	0.0	0.0	0.0	0.2	0.8
2. R_SE-3m	278.	2.0	1.1	0.3	0.0	0.0	0.0	0.0	0.2	0.4
3. R_SW-3m	85.	2.4	0.4	1.2	0.0	0.0	0.0	0.0	0.2	0.6
4. R_NW-3m	176.	1.7	0.5	0.0	0.0	0.0	0.0	0.0	0.8	0.4
5. R_NE-7m	222.	1.7	0.2	0.5	0.0	0.0	0.0	0.0	0.2	0.7
6. R_SE-7m	283.	1.6	0.9	0.2	0.0	0.0	0.0	0.0	0.2	0.3
7. R_SW-7m	84.	2.3	0.5	1.1	0.0	0.0	0.0	0.0	0.2	0.6
8. R_NW-7m	173.	1.4	0.5	0.0	0.0	0.0	0.0	0.0	0.6	0.3
9. R_SW2-3m	8.	1.5	0.4	0.0	0.0	0.0	0.1	0.0	0.4	0.5
10. R_SW2-7m	10.	1.5	0.3	0.0	0.0	0.0	0.1	0.0	0.4	0.6

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Cumulative plus Project, intersection 8
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT:

I. SITE VARIABLES

U=	0.5 M/S	Z0=	400. CM	ALT=	7. (M)
BRG=	WORST CASE	VD=	0.0 CM/S		
CLAS=	7 (G)	VS=	0.0 CM/S		
MIXH=	1000. M	AMB=	0.0 PPM		
SIGTH=	5. DEGREES	TEMP=	16.1 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. E->0	150	6	-1	6	AG	920	3.7	0.0	16.5
B. E->S	150	4	0	0	AG	20	3.7	0.0	10.0
C. E->W	150	2	0	0	AG	10	3.7	0.0	10.0
D. 0->W	-1	6	-150	6	AG	940	3.7	0.0	16.5
E. W->0	-150	-6	1	-6	DP	710	3.7	-6.0	16.5
F. 0->E	1	-6	150	-6	AG	820	3.7	0.0	16.5
G. S->0	10	-30	2	0	AG	20	3.7	0.0	10.5
H. 0->N	2	0	-5	30	AG	70	3.7	-5.0	10.5
I. N->0	-10	30	-2	0	AG	190	3.7	0.0	11.5
J. 0->S	-2	0	5	-30	AG	40	3.7	0.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. R_NE-3m	4	13	1.8
2. R_SE-3m	9	-13	1.8
3. R_SW-3m	-4	-13	1.8
4. R_NW-3m	-9	13	1.8
5. R_NE-7m	7	16	1.8
6. R_SE-7m	12	-16	1.8
7. R_SW-7m	-7	-16	1.8

8. R_NW-7m	*	-12	16 1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Cumulative plus Project, intersection 8
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT:

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. R_NE-3m	263.	0.8	0.1	0.0	0.0	0.6	0.1	0.0	0.0	0.0
2. R_SE-3m	277.	0.9	0.0	0.0	0.0	0.2	0.6	0.1	0.0	0.0
3. R_SW-3m	277.	0.8	0.0	0.0	0.0	0.1	0.7	0.0	0.0	0.0
4. R_NW-3m	97.	0.8	0.5	0.0	0.0	0.1	0.0	0.1	0.0	0.0
5. R_NE-7m	260.	0.6	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0
6. R_SE-7m	280.	0.7	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0
7. R_SW-7m	281.	0.7	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0
8. R_NW-7m	101.	0.7	0.4	0.0	0.0	0.0	0.0	0.2	0.0	0.0

RECEPTOR	CONC/LINK (PPM) I	J
1. R_NE-3m	0.0	0.0
2. R_SE-3m	0.0	0.0
3. R_SW-3m	0.0	0.0
4. R_NW-3m	0.0	0.0
5. R_NE-7m	0.0	0.0
6. R_SE-7m	0.0	0.0
7. R_SW-7m	0.0	0.0
8. R_NW-7m	0.1	0.0

Appendix E
Biological Resources Data

ESA

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: June 26, 2019
Consultation Code: 08ESMF00-2018-SLI-1371
Event Code: 08ESMF00-2019-E-07374
Project Name: The Towers on Capitol

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2018-SLI-1371

Event Code: 08ESMF00-2019-E-07374

Project Name: The Towers on Capitol

Project Type: DEVELOPMENT

Project Description: 2.7 acre development project

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.579968122558014N121.50330493690375W

Counties: Sacramento, CA

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE **RareFind**

Query Summary:
Quad IS (Sacramento East (3812154) OR Sacramento West (3812155) OR Rio Linda (3812164) OR Taylor Monument (3812165) OR Grays Bend (3812166) OR Davis (3812156) OR Saxon (3812146) OR Clarksburg (3812145) OR Florin (3812144))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Accipiter cooperii	Cooper's hawk	Birds	ABNKC12040	117	3	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Cismontane woodland, Riparian forest, Riparian woodland, Upper montane coniferous forest
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	955	22	None	Threatened	G2G3	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Ammodramus savannarum	grasshopper sparrow	Birds	ABPBXA0020	27	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Valley & foothill grassland
Antrozous pallidus	pallid bat	Mammals	AMACC10010	419	1	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Archoplites interruptus	Sacramento perch	Fish	AFCQB07010	5	1	None	None	G2G3	S1	null	AFS_TH-Threatened, CDFW_SSC-Species of Special Concern	Aquatic, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters
Ardea alba	great egret	Birds	ABNGA04040	43	6	None	None	G5	S4	null	CDF_S-	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp,

											Sensitive, IUCN_LC-Least Concern	Riparian forest, Wetland
Ardea herodias	great blue heron	Birds	ABNGA04010	155	7	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Dicots	PDFAB0F8R3	18	4	None	None	G2T1	S1	1B.1	BLM_S-Sensitive	Meadow & seep, Valley & foothill grassland, Wetland
Astragalus tener var. tener	alkali milk-vetch	Dicots	PDFAB0F8R1	65	10	None	None	G2T1	S1	1B.2	null	Alkali playa, Valley & foothill grassland, Vernal pool, Wetland
Athene cunicularia	burrowing owl	Birds	ABNSB10010	1984	87	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
Atriplex cordulata var. cordulata	heartscale	Dicots	PDCHE040B0	66	1	None	None	G3T2	S2	1B.2	BLM_S-Sensitive	Chenopod scrub, Meadow & seep, Valley & foothill grassland
Atriplex depressa	brittlescale	Dicots	PDCHE042L0	60	5	None	None	G2	S2	1B.2	null	Alkali playa, Chenopod scrub, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Bombus crotchii	Crotch bumble bee	Insects	IIHYM24480	234	1	None	None	G3G4	S1S2	null	null	null
Bombus occidentalis	western bumble bee	Insects	IIHYM24250	282	1	None	None	G2G3	S1	null	USFS_S-Sensitive, XERCES_IM-Imperiled	null
Branchinecta conservatio	Conservancy fairy shrimp	Crustaceans	ICBRA03010	43	1	Endangered	None	G2	S2	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
Branchinecta lynchi	vernal pool fairy shrimp	Crustaceans	ICBRA03030	768	39	Threatened	None	G3	S3	null	IUCN_VU-Vulnerable	Valley & foothill grassland, Vernal pool, Wetland
Branchinecta mesovallensis	midvalley fairy shrimp	Crustaceans	ICBRA03150	128	8	None	None	G2	S2S3	null	null	Vernal pool, Wetland
Buteo regalis	ferruginous hawk	Birds	ABNKC19120	107	2	None	None	G4	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Great Basin scrub, Pinon & juniper woodlands, Valley & foothill grassland
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2474	313	None	Threatened	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
Carex comosa	bristly sedge	Monocots	PMCYP032Y0	29	1	None	None	G5	S2	2B.1	null	Coastal prairie, Freshwater marsh, Marsh & swamp, Valley &

												foothill grassland, Wetland
Centromadia parryi ssp. parryi	pappose tarplant	Dicots	PDAST4R0P2	39	2	None	None	G3T2	S2	1B.2	BLM_S-Sensitive	Chaparral, Coastal prairie, Marsh & swamp, Meadow & seep, Valley & foothill grassland
Charadrius alexandrinus nivosus	western snowy plover	Birds	ABNNB03031	138	2	Threatened	None	G3T3	S2S3	null	CDFW_SSC-Species of Special Concern, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Great Basin standing waters, Sand shore, Wetland
Charadrius montanus	mountain plover	Birds	ABNNB03100	90	4	None	None	G3	S2S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Chenopod scrub, Valley & foothill grassland
Chloropyron palmatum	palmate-bracted bird's-beak	Dicots	PDSCR0J0J0	25	3	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chenopod scrub, Meadow & seep, Valley & foothill grassland, Wetland
Cicindela hirticollis abrupta	Sacramento Valley tiger beetle	Insects	IICOL02106	6	2	None	None	G5TH	SH	null	null	Sand shore
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	156	2	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Sensitive, NABCI_RWL-Red Watch List, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Riparian forest
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Dicots	PDCUS01111	6	1	None	None	G5T4?	SH	2B.2	null	Marsh & swamp, Wetland
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	24	Threatened	None	G3T2	S2	null	null	Riparian scrub
Downingia pusilla	dwarf downingia	Dicots	PDCAM060C0	132	6	None	None	GU	S2	2B.2	null	Valley & foothill grassland, Vernal pool, Wetland
Egretta thula	snowy egret	Birds	ABNGA06030	20	1	None	None	G5	S4	null	IUCN_LC-Least Concern	Marsh & swamp, Meadow & seep, Riparian forest, Riparian woodland, Wetland
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	180	18	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland

											Protected, IUCN_LC-Least Concern	
Elderberry Savanna	Elderberry Savanna	Riparian	CTT63440CA	4	3	None	None	G2	S2.1	null	null	Riparian scrub
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1367	7	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Eryngium jepsonii	Jepson's coyote-thistle	Dicots	PDAPI0Z130	19	2	None	None	G2	S2	1B.2	null	Valley & foothill grassland, Vernal pool
Extriplex joaquinana	San Joaquin spearscale	Dicots	PDCHE041F3	127	9	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Alkali playa, Chenopod scrub, Meadow & seep, Valley & foothill grassland
Falco columbarius	merlin	Birds	ABNKD06030	37	6	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Estuary, Great Basin grassland, Valley & foothill grassland
Fritillaria agrestis	stinkbells	Monocots	PMLIL0V010	32	2	None	None	G3	S3	4.2	null	Chaparral, Cismontane woodland, Pinon & juniper woodlands, Ultramafic, Valley & foothill grassland
Gratiola heterosepala	Boggs Lake hedge-hyssop	Dicots	PDSCR0R060	99	1	None	Endangered	G2	S2	1B.2	BLM_S-Sensitive	Freshwater marsh, Marsh & swamp, Vernal pool, Wetland
Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	Riparian	CTT61410CA	56	1	None	None	G2	S2.1	null	null	Riparian forest
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Dicots	PDMAL0H0R3	173	10	None	None	G5T3	S3	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Freshwater marsh, Marsh & swamp, Wetland
Juglans hindsii	Northern California black walnut	Dicots	PDJUG02040	5	1	None	None	G1	S1	1B.1	SB_USDA-US Dept of Agriculture	Riparian forest, Riparian woodland
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	139	1	None	None	G5	S3S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Lower montane coniferous forest, Oldgrowth, Riparian forest
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	238	2	None	None	G5	S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	303	1	None	Threatened	G3G4T1	S1	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland

											Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	
Legenere limosa	legenere	Dicots	PDCAM0C010	83	7	None	None	G2	S2	1B.1	BLM_S-Sensitive	Vernal pool, Wetland
Lepidium latipes var. heckardii	Heckard's pepper-grass	Dicots	PDBRA1M0K1	14	7	None	None	G4T1	S1	1B.2	null	Valley & foothill grassland, Vernal pool
Lepidurus packardi	vernal pool tadpole shrimp	Crustaceans	ICBRA10010	325	26	Endangered	None	G4	S3S4	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
Lilaeopsis masonii	Mason's lilaeopsis	Dicots	PDAPI19030	197	1	None	Rare	G2	S2	1B.1	null	Freshwater marsh, Marsh & swamp, Riparian scrub, Wetland
Linderiella occidentalis	California linderiella	Crustaceans	ICBRA06010	438	41	None	None	G2G3	S2S3	null	IUCN_NT-Near Threatened	Vernal pool
Melospiza melodia	song sparrow ("Modesto" population)	Birds	ABPBXA3010	92	10	None	None	G5	S3?	null	CDFW_SSC-Species of Special Concern	null
Myrmosula pacifica	Antioch multilid wasp	Insects	IIHYM15010	3	1	None	None	GH	SH	null	null	Interior dunes
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Dicots	PDPLM0C0E1	58	2	None	None	G4T2	S2	1B.1	BLM_S-Sensitive	Cismontane woodland, Lower montane coniferous forest, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Neostapfia colusana	Colusa grass	Monocots	PMPOA4C010	64	3	Threatened	Endangered	G1	S1	1B.1	null	Vernal pool, Wetland
Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	Herbaceous	CTT44120CA	21	1	None	None	G1	S1.1	null	null	Vernal pool, Wetland
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	Herbaceous	CTT44110CA	126	8	None	None	G3	S3.1	null	null	Vernal pool, Wetland
Nycticorax nycticorax	black-crowned night heron	Birds	ABNGA11010	37	4	None	None	G5	S4	null	IUCN_LC-Least Concern	Marsh & swamp, Riparian forest, Riparian woodland, Wetland
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	Fish	AFCHA0209K	31	5	Threatened	None	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	Fish	AFCHA0205A	13	1	Threatened	Threatened	G5	S1	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	Fish	AFCHA0205B	2	1	Endangered	Endangered	G5	S1	null	AFS_EN-Endangered	Aquatic, Sacramento/San Joaquin flowing waters
Phalacrocorax auritus	double-crested cormorant	Birds	ABNFD01020	39	3	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
Plagiobothrys	bearded	Dicots	PDBOR0V0H0	14	1	None	None	G2	S2	1B.1	null	Valley & foothill grassland, Vernal pool, Wetland

hystriculus	popcornflower											
Plegadis chihi	white-faced ibis	Birds	ABNGE02020	20	1	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Marsh & swamp, Wetland
Pogonichthys macrolepidotus	Sacramento splittail	Fish	AFCJB34020	15	1	None	None	GNR	S3	null	AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered	Aquatic, Estuary, Freshwater marsh, Sacramento/San Joaquin flowing waters
Progne subis	purple martin	Birds	ABPAU01010	71	10	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Broadleaved upland forest, Lower montane coniferous forest
Puccinellia simplex	California alkali grass	Monocots	PMPOA53110	80	8	None	None	G3	S2	1B.2	null	Chenopod scrub, Meadow & seep, Valley & foothill grassland, Vernal pool
Riparia riparia	bank swallow	Birds	ABPAU08010	298	1	None	Threatened	G5	S2	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Riparian scrub, Riparian woodland
Sagittaria sanfordii	Sanford's arrowhead	Monocots	PMALI040Q0	126	25	None	None	G3	S3	1B.2	BLM_S-Sensitive	Marsh & swamp, Wetland
Spirinchus thaleichthys	longfin smelt	Fish	AFCHB03010	46	1	Candidate	Threatened	G5	S1	null	null	Aquatic, Estuary
Symphyotrichum lentum	Suisun Marsh aster	Dicots	PDASTE8470	175	1	None	None	G2	S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture	Brackish marsh, Freshwater marsh, Marsh & swamp, Wetland
Taxidea taxus	American badger	Mammals	AMAJF04010	589	3	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, Ione formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Thamnophis gigas	giant gartersnake	Reptiles	ARADB36150	366	87	Threatened	Threatened	G2	S2	null	IUCN_VU-Vulnerable	Marsh & swamp, Riparian scrub, Wetland
Trifolium hydrophilum	saline clover	Dicots	PDFAB400R5	49	7	None	None	G2	S2	1B.2	null	Marsh & swamp, Valley & foothill grassland, Vernal pool, Wetland
Tuctoria mucronata	Crampton's tuctoria or Solano grass	Monocots	PMPOA6N020	4	2	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Valley & foothill grassland, Vernal pool, Wetland
Vireo bellii pusillus	least Bell's vireo	Birds	ABPBW01114	500	2	Endangered	Endangered	G5T2	S2	null	IUCN_NT-Near Threatened,	Riparian forest, Riparian scrub, Riparian woodland

											NABCI_YWL-Yellow Watch List	
Xanthocephalus xanthocephalus	yellow-headed blackbird	Birds	ABPBXB3010	13	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Marsh & swamp, Wetland

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

31 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812166, 3812165, 3812164, 3812156, 3812155, 3812154, 3812146 3812145 and 3812144;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus pauperculus	depauperate milk-vetch	Fabaceae	annual herb	Mar-Jun	4.3	S4	G4
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2	S3	G5T3
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1	S1	G1
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	2B.2	SH	G5T4?
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Eryngium jepsonii	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?

Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	Apr-May	1B.1	S1	G1
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	1B.2	S1	G4T1
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	1B.1	S1	G1
Plagiobothrys hystriculus	bearded popcornflower	Boraginaceae	annual herb	Apr-May	1B.1	S2	G2
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Tuctoria mucronata	Crampton's tuctoria or Solano grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1

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TABLE 1
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Sites
Amphibians				
Ambystoma californiense	California tiger salamander	FT/ST/--	Found in vernal pools, ephemeral wetlands, and seasonal ponds, including constructed stockponds, in grassland and oak savannah plant communities from 3 to 1,054 meters. This species has been extirpated from the Central Valley.	**Unlikely**. The project site occurs outside of the known extant geographic range for this species.
Rana draytonii	California red-legged frog	FT/CSC/--	Found in permanent and temporary pools of streams, marshes, and ponds with dense grassy and/or shrubby vegetation from 0 to 1,500 meters.	**Unlikely**. The project site does not provide habitat for this species.
Spea hammondii	Western spadefoot	--/CSC/--	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	**Unlikely**. The project site does not provide habitat for this species.
Birds				
Agelaius tricolor	Tricolored blackbird	--/SC,CSC/--	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging areas with insect prey within a few kilometers of the colony.	**Unlikely**. The project site does not provide habitat for this species.
Ammodramus savannarum	Grasshopper sparrow	--/CSC/--	Frequents dense, dry, or well-drained grassland, especially native grassland. Nests at base of overhanging clump of grass.	**Unlikely**. The project site does not provide habitat for this species.
Athene cunicularia	Burrowing owl	--/CSC/--	Forages in open plains, grasslands, and prairies; typically nests in abandoned small mammal burrows.	**Moderate.** The disturbed areas within the project site provide habitat for this species.
Buteo swainsoni	Swainson's hawk	--/ST/--	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, alfalfa, or grain fields supporting rodent populations.	**Moderate.** While the trees within the project site provide marginal nesting habitat given the small size, the mature trees in the vicinity of the project site provide suitable nesting habitat.
Charadrius alexandrinus nivosus	Western snowy plover	--/ST/CSC	Nests on the ground on broad open beaches or salt or dry mud flats, where vegetation is sparse or absent (small clumps of vegetation are used for cover by chicks); nests beside or under objects or in open areas.	**Unlikely**. The project site does not provide habitat for this species.
Charadrius montanus	Mountain plover	--/--/CSC	Nesting habitat includes high plains/shortgrass prairie and desert tablelands.	**Unlikely**. The project site does not provide habitat for this species.

TABLE 1
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Sites
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FT/SE/--	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Unlikely**. The project site does not provide habitat for this species.
Elanus leucurus	White-tailed kite	--/FP/--	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**High.** The trees within and in the vicinity of the project site provide nesting habitat for this species.
Laterallus jamaicensis coturniculus	California black rail	--/ST, FP/--	Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	**Unlikely**. The project site does not provide habitat for this species.
Melospiza melodia	Song sparrow ("Modesto" population)	--/CSC/--	Emergent freshwater marshes dominated by tule (*Scirpus* spp., *Schoenoplectus* spp.) and cattail (*Typha* spp.) as well as riparian willow (*Salix* spp.) thickets. Also nest in riparian forests of valley oak (*Quercus lobata*) with a sufficient understory of blackberry (*Rubus* spp.), along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites.	**Unlikely**. The project site does not provide habitat for this species.
Progne subis	Purple martin	--/CSC/--	Inhabits woodlands, low elevation coniferous forest of Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), and Monterey pine (*Pinus radiata*). Nests primarily in old woodpecker cavities, also in human-made structures. Nest often located in tall, isolated tree/snag.	**Unlikely**. The project site does not provide habitat for this species.
Riparia riparia	Bank swallow	--/ST/--	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**Unlikely**. The project site does not provide habitat for this species.
Vireo bellii pusillus	Least Bell's vireo	FE/SE/--	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis* sp., and mesquite.	**Unlikely**. The project site does not provide habitat for this species.

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SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Sites
Xanthocephalus xanthocephalus	Yellow-headed blackbird	--/CSC/--	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as *Odonata* are abundant, nesting timed with maximum emergence of aquatic insects.	**Unlikely**. The project site does not provide habitat for this species.
Fish				
Archoplites interruptus	Sacramento perch	--/CSC/--	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefers warm water. Aquatic vegetation is essential for young. Tolerates wide range of physio-chemical water conditions.	**Unlikely**. The project site does not provide habitat for this species.
Hypomesus transpacificus	Delta smelt	FT/SE/--	Open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators. May be affected by downstream sedimentation.	**Unlikely**. The project site does not provide habitat for this species.
Oncorhynchus mykiss irideus pop. 11	Central Valley DPS steelhead	FT/--/--	This ESU enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning from December to April. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	**Unlikely**. The project site does not provide habitat for this species.
Oncorhynchus tshawytscha	Chinook salmon - Sacramento River winter-run ESU	FT/SE/--	Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temperatures >27C is lethal to adults. Federal listing refers to populations spawning in Sacramento River and tributaries.	**Unlikely**. The project site does not provide habitat for this species.
Oncorhynchus tshawytscha	Chinook salmon - Central Valley spring-run ESU	FT/ST/--	Sacramento river below Keswick Dam. Spawns in the Sacramento River but not in tributary streams. Requires clean, cold water over gravel beds with water temperatures between 6 and 14C for spawning.	**Unlikely**. The project site does not provide habitat for this species.
Pogonichthys macrolepidotus	Sacramento splittail	--/CSC/--	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay and associated marshes. Slow moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young.	**Unlikely**. The project site does not provide habitat for this species.

TABLE 1
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Sites
Spirinchus thaleichthys	Longfin smelt	FC/ST,CSC/--	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	**Unlikely**. The project site does not provide habitat for this species.
Invertebrates				
Bombus crotchii	Crotch bumble bee	--/SC/--	Found in open grassland and scrub. Nests underground in abandoned rodent burrows. Colonies are annual and only the newly mated queens overwinter. The queens emerge from hibernation in early spring to search for nest sites. Host plant food includes milkweed *(Asclepias* sp.), pincushion (*Chaenactis* sp.), lupine (*Lupinus* sp.), bur clover (*Medicago* sp.), phacelia (*Phacelia* sp.), and sage (*Salvia* sp.)	**Unlikely**. The project site does not provide habitat for this species.
Bombus occidentalis	Western bumble bee	--/SC/--	Found in open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. Nests underground in abandoned rodent burrows or other cavities, but may also nest above ground in structures including logs and railroad ties. Host plant food includes ceanothus (*Ceanothus* sp.), thistle (*Centaurea* sp.), rabbitbrush (*Chrysothamnus* sp.), geranium (*Geranium* sp.), gumplant (*Grindelia* sp.), lupine (*Lupinus* sp.), sweetclover (*Melilotus* sp.), monardella (*Monardella* sp.), blackberry (*Rubus* sp.), goldenrod (*Solidago* sp.), and clover (*Trifolium* sp.).	**Unlikely**. The project site does not provide habitat for this species.
Branchinecta conservatio	Conservancy fairy shrinp	FE/--/--	Found in ephemeral wetland habitats and vernal pools that fill by winter and hold water until June on clay, volcanic, and alluvial soils within grassland communities.	**Unlikely**. The project site does not provide habitat for this species.
Branchinecta lynchi	Vernal pool fairy shrimp	FT/--/--	Endemic to the grasslands of the Central Valley, central Coast Mountains, and south Coast Mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**Unlikely**. The project site does not provide habitat for this species.

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SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Sites
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT/--/--	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* subsp. *caerulea*). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	**Unlikely**. Although the project site contains a single elderberry shrub growing in disturbed uplands, the shrub is isolated, lacks exit holes, and likely became established from bird droppings or from the fill that had been imported for the previous project before construction ceased[1].
Lepidurus packardi	Vernal pool tadpole shrimp	FE/--/--	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	**Unlikely**. The project site does not provide habitat for this species.
Mammals				
Antrozous pallidus	Pallid bat	--/CSC/--	Inhabits oak woodland, savannah, and riparian habitats. Roosts in crevices and hollows in trees, rocks, cliffs, bridges, and buildings.	**Unlikely.** The project site does not provide habitat for this species.
Taxidea taxus	American badger	--/CSC/--	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Unlikely.** The project site does not provide habitat for this species.
Reptiles				
Emys marmorata	Western pond turtle	--/CSC/--	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg-laying.	**Moderate**. There are no CNDDB occurrences within 5 miles of the project site. Although no occurrences are documented within the vicinity, the manmade water-filled depressions provide aquatic habitat and the nonnative grassland provides upland habitat.
Thamnophis gigas	Giant garter snake	FT/ST/--	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and and irrigation ditches. This is the most aquatic of the garter snakes in California.	**Unlikely.** The project site does not provide habitat for this species.

[1] ESA coordinated with the USFWS representative Kellie Berry via phone on May 20 and 28, 2019. The purpose of the coordination was to discuss an elderberry (*Sambucus nigra* ssp. *caerulea*) that recently established within the project site. The elderberry shrub lacks exit holes and occurs on disturbed uplands. Ms. Berry concurred that the elderberry likely became established from bird droppings or from the fill that had been imported for the previous project before construction ceased. Ms. Berry agreed that the single elderberry onsite is an isolated feature and occurs in disturbed uplands and, therefore, does not provide habitat for the federally listed valley elderberry longhorn beetle (*Desmocerus californicus dimophus*).

TABLE 1
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Sites
Plants				
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	--/--/1B.1	Annual herb found in meadows and seeps that are occasionally vernally mesic and valley and foothill grassland that are occasionally subalkaline flats from 2 to 75 meters. Blooms April through May.	**Unlikely.** The project site does not provide habitat for this species.
Astragalus tener var. *tener*	Alkali milk-vetch	--/--/1B.2	Annual herb found on alkaline soils in playas, valley and foothill grassland that are occasionally on adobe clay, and vernal pools from 1 to 60 meters. Blooms March through June.	**Unlikely.** The project site does not provide habitat for this species.
Atriplex cordulata var. *cordulata*	Heartscale	--/--/1B.2	Annual herb found on alkaline or saline soils in chenopod scrub, meadows and seeps, and valley and foothill grassland that are occasionally sandy from 0 to 560 meters. Blooms April through October.	**Unlikely.** The project site does not provide habitat for this species.
Atriplex depressa	Brittlescale	--/--/1B.2	Annual herb found on alkaline, clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools from 1 to 320 meters. Blooms April through October.	**Unlikely.** The project site does not provide habitat for this species.
Carex comosa	Bristly sedge	--/--/2B.1	Perennial rhizomatous herb found in coastal prairie, marshes and swamps, occasionally along lake margins, and valley and foothill grassland from 0 to 625 meters. Blooms May through September.	**Unlikely.** The project site does not provide habitat for this species.
Chloropyron palmatum	Palmate-bracted bird's beak	--/--/1B.1	Annual hemiparasitic herb found on alkaline substrate in chenopod scrub and valley and foothill grassland from 5 to 155 meters. Blooms from May through October.	**Unlikely.** The project site does not provide habitat for this species.
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	--/--/2B.2	Annual parasitic vine found in marshes and swamps, which are occasionally freshwater, from 15 to 280 meters. Blooms July through October.	**Unlikely**. The project site does not provide habitat for this species.
Downingia pusilla	Dwarf downingia	--/--/2B.2	Annual herb found in valley and foothill grassland, occasionally on mesic soils, and in vernal pools from 1 to 445 meters. Blooms March through May.	**Unlikely.** The project site does not provide habitat for this species.
Eyngium jepsonii	Jepson's coyote thistle	--/--/1B.2	Perennial herb found on clay in valley and foothill grassland and vernal pools from 3 to 300 meters. Blooms April through August.	**Unlikely.** The project site does not provide habitat for this species.

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SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Sites
Etriplex joaquinana	San Joaquin spearscale	--/--/1B.2	Annual herb found on alkaline soils in chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from 1 to 835 meters. Blooms April through October.	**Unlikely.** The project site does not provide habitat for this species.
Gratiola heterosepala	Boggs Lake hedge-hyssop	--/SE/1B.2	Annual herb found on clay substrate in marshes and swamps, occasionally along lake margins, and vernal pools from 10 to 2,375 meters. Blooms April through August.	**Unlikely**. The project site does not provide habitat for this species.
Hibiscus lasiocarpos var. *occidentalis*	Woolly rose-mallow	--/--/1B.2	Perennial rhizomatous herb found in marshes and swamps, which are occasionally freshwater, from 1 to 120 meters. Blooms June through September.	**Unlikely**. The project site does not provide habitat for this species.
Juglans hindsii	Northern California black walnut	--/--/1B.1	Perennial deciduous tree found in riparian forest and riparian woodland from 0 to 440 meters. Blooms April through May.	**Unlikely**. This species was not observed within the project site.
Juncus leiospermus var. *ahartii*	Ahart's dwarf rush	--/--/1B.2	Annual herb found in valley and foothill grassland, which is occasionally mesic, from 30 to 229 meters. Blooms March through May.	**Unlikely.** The project site does not provide habitat for this species.
Legenere limosa	Legenere	--/--/1B.1	Annual herb found in vernal pools from 1 to 880 meters. Blooms April through June.	**Unlikely**. The project site does not provide habitat for this species.
Lepidium latipes var. heckardii	Heckard's pepper-grass	--/--/1B.2	Annual herb found occasionally on alkaline flats in valley and foothill grassland from 2 to 200 meters. Blooms March-May.	**Unlikely.** The project site does not provide habitat for this species.
Lilaeopsis masonii	Mason's lilaeopsis	--/SR/1B.1	Rhizomatous herb found in marshes and swamps, that are occasionally brackish or freshwater, and riparian scrub from 0 to 10 meters. Blooms April through November.	**Unlikely**. The project site does not provide habitat for this species.
Navarretia leucocephala subsp. *bakeri*	Baker's navarretia	--/--/1B.1	Annual herb found on mesic areas in cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools from 5 to 1,740 meters. Blooms April through July.	**Unlikely.** The project site does not provide habitat for this species.
Neostapfia colusana	Colusa grass	FT/SE/1B.1	Annual herb found in vernal pools that are occasionally large on adobe soils, from 5 to 200 meters. Blooms May through August.	**Unlikely**. The project site does not provide habitat for this species.

TABLE 1
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Sites
Plagiobothrys histriculus	Bearded popcorn flower	--/--/1B.1	Annual herb found often in vernal swales within valley and foothill grassland, which are mesic, and vernal pool margins from 0 to 274 meters. Blooms April through May.	**Unlikely.** The project site does not provide habitat for this species.
Puccinellia simplex	California alkali grass	--/--/1B.2	Annual herb found on alkaline, vernally mesic areas, within sinks, flats, and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools from 2 to 930 meters. Blooms March through May.	**Unlikely.** The project site does not provide habitat for this species.
Sagittaria sanfordii	Sanford's arrowhead	--/--/1B.2	Perennial rhizomatous herb, which is occasionally emergent, found in marshes and swamps, which are occasionally comprised of assorted shallow freshwater, from 0 to 650 meters. Blooms May through October.	**Unlikely.** The project site does not provide habitat for this species.
Symphyotrichum lentum	Suisun Marsh aster	--/--/1B.2	Perennial rhizomatous herb found in marshes and swamps, which are occasionally brackish and freshwater, from 0 to 3 meters. Blooms May through November.	**Unlikely**. The project site does not provide habitat for this species.
Trifolium hydrophilum	Saline clover	--/--/1B.2	Found in marshes and swamps, valley and foothill grassland, occasionally in mesic or alkaline areas, and vernal pools from 0 to 300 meters. Blooms April through June.	**Unlikely**. The project site does not provide habitat for this species.
Tuctoria mucronata	Solano grass	FE/SE/1B.1	Annual herb found in valley and foothill grassland, occasionally on mesic soils, and in vernal pools from 5 to 10 meters. Blooms April through August.	**Unlikely**. The project site does not provide habitat for this species.
Sensitive Vegetation Communities				
Elderberry savanna	--	--	Open to moderately closed stands characterized by *Sambucus nigra* subsp. *caerulea*. Understory typically dominated by grasses. Occurs in association with remnant riparian forest vegetation.	**Unlikely**. The project site does not contain this habitat.
Great Valley Cottonwood Riparian Forest	--	--	A dense, broadleafed, winter deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*) and Goodding's black willow (*Salix gooddingii*). The understory is usually dense, with abundant vegetative reproduction of canopy dominants and California wild grape is the most conspicuous vine. Habitat experiences frequent flooding.	**Unlikely**. While a small clump of Fremont cottonwood occurs within the project site, the understory either lacks vegetation or contains weedy, nonnative vegetation.

TABLE 1
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Sites
Great Valley Valley Oak Riparian Forest	--	--	Medium to tall (rarely to 100 feet) broadleaved, winter deciduous, closed-canopy riparian forest dominated by Valley oak (*Quercus lobata*). Understories include scattered Oregon ash, Northern California black walnut, and western sycamore as well as young valley oaks. Vines are relatively scattered throughout the shady understory but quickly become conspicuous occupying gaps where light is available.	**Unlikely**. The project site does not contain this habitat.
Northern Claypan Vernal Pool	--	--	Similar to Northern Hardpan Vernal Pools, but with less topographical relief, and usually lower overall cover. Pools range in size from the small (a few square meters) to quite large (covering several hectares).	**Unlikely**. The project site does not contain this habitat.
Northern Hardpan Vernal Pool	--	--	Community is dominated by annual grasses and herbs that grow in and out of the water. Germination and growth begin with winter rains, often continuing even when inundated. These pools gradually evaporate during spring, leaving concentric bands of vegetation that colorfully encircle the drying pools.	**Unlikely**. The project site does not contain this habitat.

KEY:
Federal: (USFWS)
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FC = Candidate for listing by the Federal Government

State: (CDFW)
SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SR = Listed as Rare by the State of California (plants only)
SC = Candidate for listing by the State of California
CSC = California Species of Special Concern
FP = CDFW Fully Protected Species

CRPR: (California Rare Plant Rank)
Rank 1B = Plants rare, threatened, or endangered in California and elsewhere
Rank 2A = Plants rare, threatened, or endangered in California but more common elsewhere

An extension reflecting the level of threat to each species is appended to each rarity category as follows:
.1 – Seriously endangered in California.
.2 – Fairly endangered in California.

SOURCES: CDFW, 2019; CNPS, 2019; and USFWS, 2019; CalFlora, 2019; Nature Serve, 2019.

Appendix F
Noise Data

ESA

Appendix F: Noise Analysis Data

F1: Construction Noise Model Output

F2: Traffic Noise Model Output

F1: Construction Noise Model Output

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 3/28/2019
Case Descr Tower 301

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Clarenden	Residential	65	65	60

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Auger Drill Rig	No	20		84.4	495	0
Mounted Impact Hammer (ho	Yes	20		90.3	495	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Auger Drill Rig	64.4	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mounted Impact Hammer (ho	70.4	63.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.4	64.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

F2: Traffic Noise Model Output

Tower 301
Roadway Noise Analysis

Existing

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto	%	Auto	MT	%	MT	HT	%	HT	VEHICLE SPEED Auto k/h		MT k/h		HT k/h		NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL 15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:			%	Auto		%	MT		%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
3rd Street	Capital	N Street	1410		96	1353.6		3	42.3		1	14.1	30	48	30	48	30	48	63.7	59.3	61.6	66.7	40	62.4	22.0	72.1
3rd Street	N Street	P Street	1236		96	1186.6		3	37.08		1	12.36	30	48	30	48	30	48	63.1	58.7	61.0	66.1	40	61.8	19.3	63.2
4th Street	Capital	N Street	375		96	360		3	11.25		1	3.75	25	40	25	40	25	40	55.7	52.3	55.1	59.4	40	55.1	4.1	13.4
4th Street	N Street	P Street	282		96	270.72		3	8.46		1	2.82	25	40	25	40	25	40	54.4	51.0	53.9	58.1	40	53.9	3.1	10.1
J street	3rd Street	5th Street	1173		96	1126.1		3	35.19		1	11.73	30	48	30	48	30	48	62.9	58.5	60.8	65.9	40	61.6	18.3	60.0
L Street	5th Street	7th Street	1304		96	1251.8		3	39.12		1	13.04	25	40	25	40	25	40	61.1	57.7	60.6	64.8	40	60.5	14.2	46.7
Capital M	3rd Street	4th Street	1431		96	1373.8		3	42.93		1	14.31	30	48	30	48	30	48	63.8	59.3	61.7	66.7	40	62.5	22.3	73.2
N Street	3rd Street	5th Street	422		96	405.12		3	12.66		1	4.22	25	40	25	40	25	40	56.2	52.8	55.7	59.9	40	55.6	4.6	15.1
N Street	5th Street	6th Street	496		96	476.16		3	14.88		1	4.96	25	40	25	40	25	40	56.9	53.5	56.4	60.6	40	56.3	5.4	17.8
P Street	3rd Street	4th Street	2020		96	1939.2		3	60.6		1	20.2	25	40	25	40	25	40	63.0	59.6	62.5	66.7	40	62.4	22.1	72.4
Q Street	3rd Street	4th Street	805		96	772.8		3	24.15		1	8.05	25	40	25	40	25	40	59.0	55.6	58.5	62.7	40	58.4	8.8	28.8

Assumptions: PM peak hour traffic data from Fehr & Peers

Existing + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto	%	Auto	MT	%	MT	HT	%	HT	VEHICLE SPEED Auto k/h		MT k/h		HT k/h		NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL 15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:				%	Auto		%	MT		%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
3rd Street	Capital	N Street	1493		96	1433.3		3	44.79		1	14.93	30	48	30	48	30	48	63.9	59.5	61.9	66.9	40	62.7	23.3	76.4
3rd Street	N Street	P Street	1359		96	1304.6		3	40.77		1	13.59	30	48	30	48	30	48	63.5	59.1	61.5	66.5	40	62.2	21.2	69.5
4th Street	Capital	N Street	443		96	425.28		3	13.29		1	4.43	25	40	25	40	25	40	56.4	53.0	55.9	60.1	40	55.8	4.8	15.9
4th Street	N Street	P Street	309		96	296.64		3	9.27		1	3.09	25	40	25	40	25	40	54.8	51.4	54.3	58.5	40	54.3	3.4	11.1
J street	3rd Street	5th Street	1215		96	1166.4		3	36.45		1	12.15	30	48	30	48	30	48	63.0	58.6	61.0	66.0	40	61.8	18.9	62.2
L Street	5th Street	7th Street	1320		96	1267.2		3	39.6		1	13.2	25	40	25	40	25	40	61.1	57.7	60.6	64.8	40	60.6	14.4	47.3
Capital M	3rd Street	4th Street	1495		96	1435.2		3	44.85		1	14.95	30	48	30	48	30	48	63.9	59.5	61.9	66.9	40	62.7	23.3	76.5
N Street	3rd Street	5th Street	462		96	443.52		3	13.86		1	4.62	25	40	25	40	25	40	56.6	53.2	56.0	60.3	40	56.0	5.0	16.6
N Street	5th Street	6th Street	536		96	514.56		3	16.08		1	5.36	25	40	25	40	25	40	57.2	53.8	56.7	60.9	40	56.7	5.9	19.2
P Street	3rd Street	4th Street	2043		96	1961.3		3	61.29		1	20.43	25	40	25	40	25	40	63.0	59.6	62.5	66.7	40	62.5	22.3	73.2
Q Street	3rd Street	4th Street	811		96	778.56		3	24.33		1	8.11	25	40	25	40	25	40	59.0	55.6	58.5	62.7	40	58.5	8.9	29.1

Tower 301
Roadway Noise Analysis

Cumulative

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto k/h		MT k/h		HT k/h		NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL 15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak from:				%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
3rd Street	Capital	N Street	1440	96	1382.4	3	43.2	1	14.4	30	48	30	48	30	48	63.8	59.3	61.7	66.8	40	62.5	22.5	73.7
3rd Street	N Street	P Street	1590	96	1526.4	3	47.7	1	15.9	30	48	30	48	30	48	64.2	59.8	62.1	67.2	40	62.9	24.8	81.4
4th Street	Capital	N Street	290	96	278.4	3	8.7	1	2.9	25	40	25	40	25	40	54.5	51.1	54.0	58.2	40	54.0	3.2	10.4
4th Street	N Street	P Street	330	96	316.8	3	9.9	1	3.3	25	40	25	40	25	40	55.1	51.7	54.6	58.8	40	54.5	3.6	11.8
J street	3rd Street	5th Street	2060	96	1977.6	3	61.8	1	20.6	30	48	30	48	30	48	65.3	60.9	63.3	68.3	40	64.0	32.1	105.4
L Street	5th Street	7th Street	1600	96	1536	3	48	1	16	25	40	25	40	25	40	62.0	58.6	61.4	65.7	40	61.4	17.5	57.3
Capital M	3rd Street	4th Street	1920	96	1843.2	3	57.6	1	19.2	30	48	30	48	30	48	65.0	60.6	63.0	68.0	40	63.7	29.9	98.2
N Street	3rd Street	5th Street	450	96	432	3	13.5	1	4.5	25	40	25	40	25	40	56.5	53.1	55.9	60.2	40	55.9	4.9	16.1
N Street	5th Street	6th Street	1070	96	1027.2	3	32.1	1	10.7	25	40	25	40	25	40	60.2	56.8	59.7	63.9	40	59.7	11.7	38.3
P Street	3rd Street	4th Street	2320	96	2227.2	3	69.6	1	23.2	25	40	25	40	25	40	63.6	60.2	63.1	67.3	40	63.0	25.3	83.1
Q Street	3rd Street	4th Street	1110	96	1065.6	3	33.3	1	11.1	25	40	25	40	25	40	60.4	57.0	59.9	64.1	40	59.8	12.1	39.8

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto k/h		MT k/h		HT k/h		NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL 15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak from:				%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
3rd Street	Capital	N Street	1540	96	1478.4	3	46.2	1	15.4	30	48	30	48	30	48	64.1	59.6	62.0	67.0	40	62.8	24.0	78.8
3rd Street	N Street	P Street	1700	96	1632	3	51	1	17	30	48	30	48	30	48	64.5	60.1	62.4	67.5	40	63.2	26.5	87.0
4th Street	Capital	N Street	340	96	326.4	3	10.2	1	3.4	25	40	25	40	25	40	55.2	51.8	54.7	58.9	40	54.7	3.7	12.2
4th Street	N Street	P Street	360	96	345.6	3	10.8	1	3.6	25	40	25	40	25	40	55.5	52.1	55.0	59.2	40	54.9	3.9	12.9
J street	3rd Street	5th Street	2110	96	2025.6	3	63.3	1	21.1	30	48	30	48	30	48	65.4	61.0	63.4	68.4	40	64.2	32.9	108.0
L Street	5th Street	7th Street	1620	96	1555.2	3	48.6	1	16.2	25	40	25	40	25	40	62.0	58.6	61.5	65.7	40	61.5	17.7	58.1
Capital M	3rd Street	4th Street	2020	96	1939.2	3	60.6	1	20.2	30	48	30	48	30	48	65.3	60.8	63.2	68.2	40	64.0	31.5	103.4
N Street	3rd Street	5th Street	450	96	432	3	13.5	1	4.5	25	40	25	40	25	40	56.5	53.1	55.9	60.2	40	55.9	4.9	16.1
N Street	5th Street	6th Street	1110	96	1065.6	3	33.3	1	11.1	25	40	25	40	25	40	60.4	57.0	59.9	64.1	40	59.8	12.1	39.8
P Street	3rd Street	4th Street	2340	96	2246.4	3	70.2	1	23.4	25	40	25	40	25	40	63.6	60.2	63.1	67.3	40	63.1	25.6	83.9
Q Street	3rd Street	4th Street	1120	96	1075.2	3	33.6	1	11.2	25	40	25	40	25	40	60.4	57.0	59.9	64.1	40	59.9	12.2	40.1

Assumptions: AM peak hour traffic data from Fehr & Peers

Appendix G
Transportation

ESA

G-1 Site Access Evaluation and Recommendations

ESA

Site Access Evaluation and Recommendations

This section includes recommendations regarding access to the proposed project based upon a review of the project application materials and site plan.

3rd Street Vehicular Access

As previously documented, the proposed project would include three vehicular access points, each located roughly midblock on 3rd Street, 4th Street, and L Street. Of these three locations, the 3rd Street access is forecasted to handle the highest amount of inbound vehicular traffic (see Figures 4.6-8 and 4.6-12). This is expected because of the proximity of the 3rd Street access point to the I-5 northbound and southbound off-ramps located 2.5 blocks to the north. Due in part to relatively high demand for inbound travel, the 3rd Street access is proposed to be inbound only (with two lanes).

The 3rd Street access point is located adjacent to the planned Downtown/Riverfront streetcar line that will run bi-directional service on a single track adjacent to the proposed project. Therefore, all trips utilizing the 3rd Street access would cross the streetcar track to gain entry to the project site. This access point would also be located just south of the planned streetcar platform located on the east side of 3rd Street south of L Street.

To limit potential conflicts between motor vehicles and streetcars, it is recommended that 3rd Street access to the project be controlled using a traffic signal. Further, a dedicated southbound left-turn lane should be constructed so that vehicles waiting to turn into the project do not obstruct vehicles continuing southbound on 3rd Street, which would allow for the installation of a "half signal" that controls southbound left-turning vehicles while allowing southbound-through vehicles to proceed uncontrolled through this location.

This configuration would result in this access point serving inbound vehicles only, as allowing vehicles to exit at this location would require a full traffic signal controlling all movements, which would result in additional delay on 3rd Street as well as internal to the project. Installation of a full traffic signal would result in queuing within the project parking garage that would prevent the flow of vehicles through the gated exit.

Further, limiting this access location to inbound only would result in more efficient traffic circulation within the parking structure on the ground level. This is due in part to the ability to stripe two inbound entry lanes, one that would direct drivers to the gated portion of the parking garage (with approximately 60 feet of storage for queueing vehicles back to the sidewalk), and another that would allow drivers to proceed east through the structure to the proposed internal pick-up/drop-off location as well as to the second gated entry located adjacent to 4th Street. This would also allow for additional capacity for eastbound traffic to pass vehicles that are utilizing the internal passenger loading zone (since there would be no westbound traffic traveling to the 3rd Street access location).

The traffic operations microsimulation analysis accounted for the internal site circulation of the access roadway, parking control gates, and the expected delay at the parking control system.

During the AM and PM peak hours, most vehicular traffic entering the gates would be comprised of office workers or residents of the housing component of the proposed project. These users would have familiarity with the parking control system and would likely have access cards allowing for relatively quick entry (about 4 seconds per user).

Based upon this analysis, the southbound left-turn lane to the 3rd Street access should provide at least 100 feet of storage. This would be consistent with providing sufficient space before vehicle queueing extends to the existing travel lanes on 3rd Street, and it would not interfere with the planned streetcar platform at the southeast corner of the 3rd Street/L Street intersection.

Site access and internal circulation recommendations are reflected in **Figure G-1**.

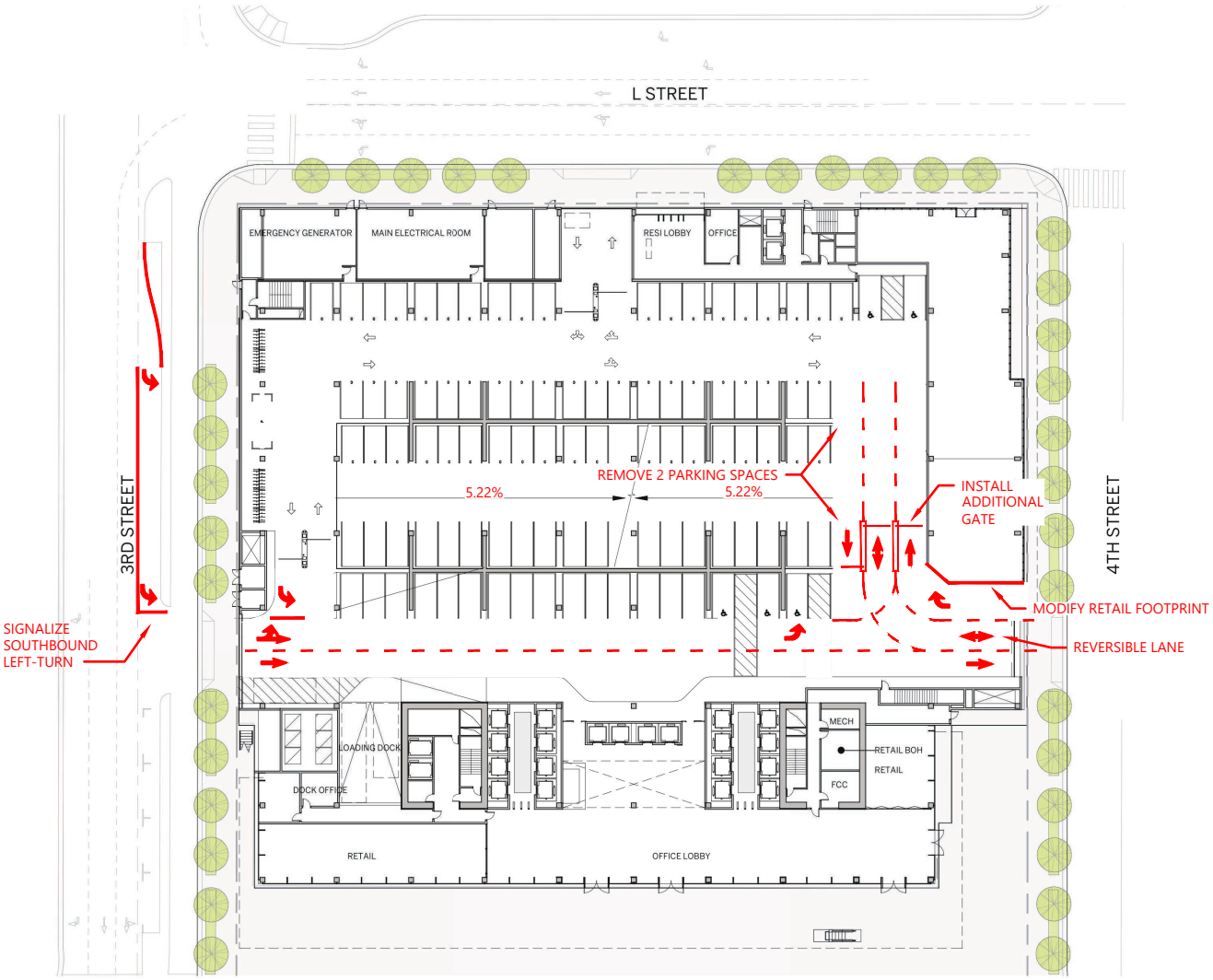
Final design of the access improvements and recommended traffic signal would be reviewed and approved by the City Traffic Engineer.

4th Street Vehicular Access

Traffic operations microsimulation analysis at the 4th Street vehicular access also account for the internal site circulation of the access roadway, parking control gates, and expected delay at the parking control system (4 seconds per user during the AM and PM peak hours based on regular users with familiarity of the parking control system). The analysis showed that the 4th Street access location would generally operate with relatively low levels of delay and would not cause queue spillback onto City streets under typical weekday peak hour conditions, given the approximately 70 feet of storage for vehicle queuing from the parking gate to the sidewalk.

Given the location of the proposed project in the heart of the Central Business District and proximity to various attractions (e.g., DoCo, Old Sacramento, and Golden 1 Center), it is highly likely that there would be off-peak parking demand for the 1,304 parking spaces located internal to the project once office workers depart and make parking available in the evenings. Unlike employees and residents, these users of the parking would not have the same level of familiarity and are unlikely to have access cards for quick entry; thereby, taking about 7 seconds per user.

Therefore, if the internal parking associated with project is open to the public during evenings, it is recommended that the 4th Street vehicular access be expanded from two to three travel lanes with one reversible lane. Similarly, it is recommended that the parking control gates adjacent to the 4th Street entry be expanded to include three lanes including one reversible lane. The reversible lane would increase capacity at this location to limit the potential for queues to extend onto City streets and impede the flow of through traffic. This recommendation is shown in Figure G-1.



Not to scale

SOURCE: Fehr & Peers, 2019

Tower 301

Figure G-1
Project Site Access Recommendations

ESA

L Street Vehicular Access

Consistent with the site plan provided by the project applicant, it is recommended that the L Street vehicular entry include one inbound and one outbound travel lane, with a minimum of 45 feet of storage for queueing vehicle entering the parking garage from the parking control gate to the sidewalk.

Passenger Loading

The proposed project includes an internal passenger loading zone located on the ground-level. As documented above, it is recommended that the two travel lanes serving this area be converted to one-way eastbound (consistent with previous recommendation to allow inbound-only access from 3rd Street).

In addition to this eastbound passenger loading zone located internal to the project, it is recommended that a westbound passenger loading zone (white curb) be designated along the project frontage on Capitol Mall. This would help to limit out-of-direction vehicle travel and would provide additional capacity for passenger pick-up/drop-off activities.

Based upon output from a nested statistical (regression) model developed by Fehr & Peers in January 2019 that estimates simultaneous curb events,[1] if two passenger loading areas are provided for the proposed project, each loading area should be large enough to accommodate three simultaneous curb events in the near-term. However, the number of vehicle trips comprised of transportation network company (TNC) and/or autonomous vehicles (AV) is expected to increase in the future. The AV Planning Tool indicates that this would result in an increase to five simultaneous curb events at each location. Therefore, it is recommended that the project accommodate space to load five vehicles at the eastbound internal ground-level passenger loading zone, and space to load five vehicles at the westbound Capitol Mall project frontage.

Commercial Loading

The proposed project includes an internal loading dock with two truck berths. Access to the loading dock would be provided via the 3rd Street and 4th Street access points. Currently, no commercial vehicle loading areas exist along the frontage of the proposed project. As previously documented, the proposed project includes ground-level retail along 4th Street. Therefore, it is recommended that a portion of the existing on-street parking located on the west side of 4th Street be converted to a commercial vehicle loading zone (yellow curb).

Transportation Management Plan

To assist in managing the number of motor vehicles using the project access points, the proposed project should participate in the City's Transportation Systems Management Program (consistent with *Sacramento City Code 17.700.060*). This program requires major projects to prepare a Transportation Management Plan (TMP) to facilitate multimodal travel to and from the site in a

[1] "Simultaneous Curb Event Estimation Model" was derived from over 600 individual TNC, taxi, and private vehicle drop-offs and pick-ups at five different locations in San Francisco in 2018. See Appendix X – *Autonomous Vehicle Effects on Trips Generated, Parking, and Curb Activity – The AV Planning Tool* (Fehr & Peers 2019) for additional information.

safe and efficient manner. Subsequent adaptations or refinements should be made to the TMP that respond to changing event types and schedules, new transportation access and parking opportunities, and planned transportation improvements that are implemented near the project.

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G-2 Transportation Analysis Data

ESA

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	135	141	104.3%	15.4	2.1	B
	Through	550	552	100.3%	20.7	4.5	C
	Right Turn						
	Subtotal	685	692	101.1%	19.7	3.8	B
SB	Left Turn						
	Through						
	Right Turn	155	181	116.6%	22.6	4.0	C
	Subtotal	155	181	116.6%	22.6	4.0	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through	928	952	102.5%	3.6	0.5	A
	Right Turn	79	75	94.7%	3.9	0.8	A
	Subtotal	1,007	1,026	101.9%	3.6	0.4	A
Total		1,847	1,900	102.8%	11.4	1.7	B

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	48	43	89.2%	36.4	6.0	D
	Subtotal	48	43	89.2%	36.4	6.0	D
SB	Left Turn	81	80	98.3%	44.9	4.2	D
	Through	151	151	100.1%	51.1	9.8	D
	Right Turn						
	Subtotal	232	231	99.5%	49.1	7.5	D
SE	Left Turn	1,430	1,429	99.9%	24.8	1.5	C
	Through						
	Right Turn	686	674	98.3%	43.1	8.8	D
	Subtotal	2,116	2,103	99.4%	30.8	3.0	C
EB	Left Turn	41	36	88.8%	37.5	10.5	D
	Through	1,091	1,060	97.1%	32.5	2.5	C
	Right Turn	163	169	103.6%	25.2	2.9	C
	Subtotal	1,295	1,265	97.7%	31.7	2.5	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,691	3,641	98.7%	32.4	1.5	C

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	170	162	95.5%	26.0	2.7	C
	Right Turn	193	182	94.5%	12.0	1.6	B
	Subtotal	363	345	95.0%	18.7	1.7	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	515	535	103.8%	15.5	7.5	B
	Through	2,017	1,968	97.6%	7.3	1.5	A
	Right Turn	60	58	97.3%	3.4	2.0	A
	Subtotal	2,592	2,561	98.8%	8.9	2.6	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,955	2,906	98.3%	10.1	2.4	B

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	993	983	99.0%	5.1	0.6	A
	Right Turn	7	7	102.9%	2.2	2.2	A
	Subtotal	1,000	990	99.0%	5.1	0.6	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	200	200	100.0%	9.5	0.7	A
	Through	243	251	103.4%	13.7	1.0	B
	Right Turn	159	149	93.8%	6.4	0.4	A
	Subtotal	602	600	99.7%	10.5	0.8	B
Total		1,602	1,590	99.3%	7.2	0.6	A

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	38	38	101.1%	7.4	4.2	A
	Through						
	Right Turn						
	Subtotal	38	38	101.1%	7.4	4.2	A
SB	Left Turn						
	Through	9	10	111.1%	5.7	5.3	A
	Right Turn	11	14	123.6%	2.6	2.1	A
	Subtotal	20	24	118.0%	4.3	2.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	157	167	106.5%	23.2	2.3	C
	Through	612	611	99.9%	22.4	1.3	C
	Right Turn						
	Subtotal	769	778	101.2%	22.6	1.0	C
Total		827	840	101.6%	21.4	1.2	C

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	233	233	99.9%	5.4	0.9	A
	Through	296	286	96.8%	6.7	1.2	A
	Right Turn						
	Subtotal	529	519	98.1%	6.1	0.8	A
SB	Left Turn						
	Through						
	Right Turn	60	58	97.3%	3.6	1.4	A
	Subtotal	60	58	97.3%	3.6	1.4	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through	482	483	100.2%	15.6	1.2	B
	Right Turn	67	62	92.5%	10.4	3.0	B
	Subtotal	549	545	99.3%	15.1	1.1	B
Total		1,138	1,123	98.7%	10.3	0.6	B

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	386	375	97.2%	13.1	1.0	B
	Right Turn	141	145	103.0%	7.3	1.0	A
	Subtotal	527	520	98.7%	11.5	0.8	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	215	214	99.7%	5.5	1.1	A
	Through	502	496	98.9%	4.6	0.9	A
	Right Turn						
	Subtotal	717	711	99.1%	4.9	0.5	A
Total		1,244	1,231	99.0%	7.7	0.5	A

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	4	4	110.0%	20.4	22.7	C
	Through	1	2	160.0%	3.7	6.2	A
	Right Turn	19	19	101.1%	21.2	6.0	C
	Subtotal	24	25	105.0%	23.6	7.0	C
SB	Left Turn	12	11	93.3%	38.2	10.0	D
	Through	2	1	60.0%	15.6	25.3	B
	Right Turn	28	20	71.4%	12.4	7.0	B
	Subtotal	42	32	77.1%	22.4	7.9	C
EB	Left Turn						
	Through	1,397	1,398	100.1%	36.4	14.2	D
	Right Turn	5	9	184.0%	35.1	23.1	D
	Subtotal	1,402	1,408	100.4%	36.4	14.2	D
WB	Left Turn	17	15	89.4%	29.2	9.8	C
	Through	579	593	102.4%	8.3	1.8	A
	Right Turn	135	148	109.9%	4.3	1.3	A
	Subtotal	731	756	103.5%	7.9	1.5	A
Total		2,199	2,222	101.0%	26.3	8.9	C

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	22	17	76.4%	21.3	8.6	C
	Through						
	Right Turn	17	19	112.9%	25.2	10.5	C
	Subtotal	39	36	92.3%	24.1	6.6	C
EB	Left Turn	66	60	91.5%	39.6	3.9	D
	Through	1,369	1,364	99.6%	12.8	2.3	B
	Right Turn						
	Subtotal	1,435	1,424	99.2%	14.0	2.2	B
WB	Left Turn						
	Through	714	745	104.3%	11.7	2.3	B
	Right Turn	23	22	97.4%	10.2	5.1	B
	Subtotal	737	767	104.1%	11.6	2.2	B
Total		2,211	2,227	100.7%	13.3	1.1	B

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	172	170	98.6%	21.7	2.2	C
	Through	512	512	100.0%	19.3	2.4	B
	Right Turn	509	507	99.6%	9.4	2.7	A
	Subtotal	1,193	1,188	99.6%	15.5	1.7	B
EB	Left Turn	20	19	96.0%	36.9	19.1	D
	Through	868	853	98.2%	35.5	5.8	D
	Right Turn	503	477	94.8%	32.3	7.6	C
	Subtotal	1,391	1,349	97.0%	34.5	6.1	C
WB	Left Turn	125	125	99.8%	26.1	4.1	C
	Through	208	236	113.7%	5.4	1.1	A
	Right Turn						
	Subtotal	333	361	108.5%	12.7	2.4	B
Total		2,917	2,898	99.4%	24.0	2.8	C

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	23	20	85.2%	19.7	6.2	B
	Through	16	18	110.0%	15.0	9.8	B
	Right Turn	7	10	142.9%	11.6	7.2	B
	Subtotal	46	47	102.6%	16.2	5.2	B
SB	Left Turn	27	26	96.3%	36.7	6.7	D
	Through	100	108	107.6%	32.6	5.1	C
	Right Turn	12	15	123.3%	19.8	8.5	B
	Subtotal	139	148	106.8%	31.7	5.0	C
EB	Left Turn						
	Through	904	887	98.1%	18.2	1.3	B
	Right Turn	149	140	94.2%	18.0	2.2	B
	Subtotal	1,053	1,027	97.5%	18.1	1.3	B
WB	Left Turn						
	Through	298	324	108.9%	2.5	0.6	A
	Right Turn	56	59	105.7%	3.8	1.0	A
	Subtotal	354	384	108.4%	2.6	0.6	A
Total		1,592	1,606	100.9%	15.6	1.4	B

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	194	217	111.8%	31.8	2.2	C
	Through	295	284	96.4%	26.4	1.8	C
	Right Turn	103	96	93.6%	8.9	1.4	A
	Subtotal	592	598	100.9%	25.5	1.1	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	393	378	96.3%	13.2	1.2	B
	Through	545	548	100.5%	2.2	0.2	A
	Right Turn						
	Subtotal	938	926	98.7%	6.7	0.4	A
WB	Left Turn						
	Through	135	142	104.9%	6.2	1.7	A
	Right Turn	49	40	82.4%	4.0	1.7	A
	Subtotal	184	182	98.9%	5.7	1.4	A
Total		1,714	1,706	99.5%	13.2	0.7	B

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	613	583	95.1%	10.0	1.4	A
	Through	514	517	100.6%	14.3	1.3	B
	Right Turn						
	Subtotal	1,127	1,100	97.6%	12.0	1.2	B
EB	Left Turn						
	Through	58	54	93.8%	12.4	6.4	B
	Right Turn	1	2	160.0%	1.0	2.2	A
	Subtotal	59	56	94.9%	12.1	5.9	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,186	1,156	97.5%	12.0	1.2	B

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	36	36	100.0%	7.8	1.2	A
	Right Turn	21	19	89.5%	3.6	1.1	A
	Subtotal	57	55	96.1%	6.3	1.0	A
SB	Left Turn	58	54	93.8%	6.8	1.0	A
	Through	28	32	114.3%	8.4	1.1	A
	Right Turn						
	Subtotal	86	86	100.5%	7.4	0.7	A
EB	Left Turn	29	26	91.0%	0.9	0.3	A
	Through	354	350	99.0%	0.8	0.1	A
	Right Turn	51	47	92.5%	0.7	0.1	A
	Subtotal	434	424	97.7%	0.8	0.1	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		577	565	98.0%	2.3	0.3	A

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	691	698	101.0%	18.4	2.9	B
	Right Turn	360	362	100.7%	17.7	6.7	B
	Subtotal	1,051	1,060	100.9%	18.1	4.0	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	24	23	95.0%	10.1	2.5	B
	Through	409	404	98.8%	11.2	1.1	B
	Right Turn						
	Subtotal	433	427	98.6%	11.1	0.9	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,484	1,487	100.2%	16.2	2.9	B

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	254	247	97.2%	14.5	1.7	B
	Right Turn	218	228	104.4%	8.3	1.2	A
	Subtotal	472	474	100.5%	11.5	1.2	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	83	89	107.0%	4.0	0.6	A
	Through	591	598	101.2%	5.8	0.5	A
	Right Turn						
	Subtotal	674	687	101.9%	5.6	0.3	A
Total		1,146	1,161	101.3%	8.0	0.7	A

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	141	141	99.9%	19.5	5.3	B
	Through	196	191	97.3%	27.2	2.6	C
	Right Turn						
	Subtotal	337	332	98.4%	23.9	2.9	C
EB	Left Turn						
	Through	2,343	2,309	98.6%	21.7	1.8	C
	Right Turn	304	299	98.4%	23.8	2.4	C
	Subtotal	2,647	2,608	98.5%	22.0	1.8	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,984	2,940	98.5%	22.2	1.5	C

Intersection 2 **3rd St & I-5 NB Off-Ramp & J St**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left/Through	1,026	301	29	401	51	398	60	0%	0%
	Through	1,026	257	34	351	49	348	54	1%	0%
	Through/Right	315	180	30	269	29	265	31	0%	0%
NB	Right Turn	323	8	5	24	15	27	18	0%	0%
SB	Left Turn	283	50	15	89	27	88	29	0%	0%
	Left/Through	283	93	28	160	60	164	66	32%	0%
	Through	55	47	13	88	19	75	15	10%	0%
SE	Left Turns	658	243	19	327	31	329	30	0%	0%
	Left Turn	658	245	23	330	30	327	28	0%	0%
	Right Turn	2,658	436	78	618	89	805	108	0%	0%

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	312	104	23	179	50	199	69	0%	0%
	Through/Right	312	213	25	283	47	286	50	0%	0%
NB	Shared	236	27	8	56	11	47	12	0%	0%
SB	Shared	128	86	17	140	17	137	27	0%	5%
WB	Through	335	6	4	23	11	30	13	0%	0%
	Through/Right	335	29	12	61	25	62	32	0%	0%

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	145	75	13	124	28	126	25	0%	0%
	Left Turn	335	68	13	117	32	117	32	0%	0%
	Through	335	9	5	27	12	26	12	0%	0%
NB	Left Turn	204	64	9	97	18	97	20	0%	0%
	Through	204	69	17	127	21	127	24	0%	0%
	Right Turn	204	40	8	67	15	65	15	0%	0%
WB	Through	324	10	4	33	9	35	14	0%	0%
	Through/Right	324	18	5	48	13	51	15	0%	0%

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Existing Conditions**
Queue Length **AM Peak Hour**

Intersection 17 **3rd St/Q St** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	314	198	22	272	50	268	51	0%	0%
	Through/Right	314	207	19	287	42	273	47	0%	0%
SB	Left/Through	353	81	10	129	21	127	17	0%	0%
	Through	353	41	7	76	14	80	26	0%	0%

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	320	266	83.0%	128.1	35.4	F
	Through	520	468	90.0%	67.7	12.9	E
	Right Turn						
	Subtotal	840	734	87.3%	89.2	17.8	F
SB	Left Turn						
	Through						
	Right Turn	223	187	83.9%	72.9	26.2	E
	Subtotal	223	187	83.9%	72.9	26.2	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through	2,359	2,246	95.2%	11.8	4.4	B
	Right Turn	66	58	87.9%	14.4	7.8	B
	Subtotal	2,425	2,304	95.0%	11.8	4.4	B
Total		3,488	3,225	92.5%	32.7	5.4	C

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	162	145	89.4%	20.1	6.9	C
	Subtotal	162	145	89.4%	20.1	6.9	C
SB	Left Turn	179	169	94.5%	21.3	4.2	C
	Through	375	378	100.8%	31.4	10.8	C
	Right Turn						
	Subtotal	554	547	98.8%	28.4	8.7	C
SE	Left Turn	701	699	99.7%	15.7	2.3	B
	Through						
	Right Turn	351	334	95.3%	21.7	14.7	C
	Subtotal	1,052	1,033	98.2%	17.5	5.5	B
EB	Left Turn	25	21	84.8%	26.4	10.0	C
	Through	170	188	110.8%	26.1	5.2	C
	Right Turn	31	35	113.5%	26.2	22.1	C
	Subtotal	226	245	108.3%	25.8	6.5	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,994	1,970	98.8%	21.7	5.8	C

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	630	551	87.4%	77.6	50.2	E
	Right Turn	353	306	86.7%	48.8	39.0	D
	Subtotal	983	857	87.2%	67.0	43.3	E
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	210	192	91.6%	46.6	48.2	D
	Through	930	908	97.7%	10.2	0.5	B
	Right Turn	33	35	106.7%	5.7	1.5	A
	Subtotal	1,173	1,136	96.8%	16.4	9.0	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,156	1,993	92.4%	37.8	20.9	D

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	706	662	93.7%	51.0	21.8	D
	Right Turn	51	46	89.4%	95.0	38.2	F
	Subtotal	757	707	93.4%	53.9	23.1	D
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	448	370	82.7%	53.1	4.0	D
	Through	833	587	70.4%	87.5	4.8	F
	Right Turn	167	144	86.5%	36.8	3.7	D
	Subtotal	1,448	1,102	76.1%	69.3	4.4	E
Total		2,205	1,809	82.0%	62.7	9.4	E

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	233	195	83.8%	107.2	36.9	F
	Through						
	Right Turn						
	Subtotal	233	195	83.8%	107.2	36.9	F
SB	Left Turn						
	Through	38	14	35.8%	288.4	158.5	F
	Right Turn	80	31	38.5%	298.6	154.6	F
	Subtotal	118	44	37.6%	296.2	144.5	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	163	157	96.2%	39.6	11.9	D
	Through	1,174	919	78.3%	76.4	21.1	E
	Right Turn						
	Subtotal	1,337	1,076	80.5%	71.0	19.8	E
Total		1,688	1,316	77.9%	81.4	17.3	F

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	180	182	100.9%	29.3	13.0	C
	Through	719	692	96.3%	38.2	11.2	D
	Right Turn						
	Subtotal	899	874	97.2%	36.6	10.9	D
SB	Left Turn						
	Through						
	Right Turn	33	35	106.7%	17.0	8.6	B
	Subtotal	33	35	106.7%	17.0	8.6	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through	1,040	872	83.8%	49.0	29.9	D
	Right Turn	264	236	89.5%	22.2	10.2	C
	Subtotal	1,304	1,108	85.0%	43.3	25.8	D
Total		2,236	2,018	90.2%	39.1	15.0	D

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	408	414	101.4%	14.3	2.0	B
	Right Turn	101	103	101.8%	10.6	4.3	B
	Subtotal	509	516	101.5%	13.7	2.3	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	185	167	90.4%	14.0	17.8	B
	Through	1,032	997	96.6%	11.4	15.8	B
	Right Turn						
	Subtotal	1,217	1,164	95.6%	11.8	16.1	B
Total		1,726	1,680	97.4%	12.3	11.3	B

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	4	4	90.0%	7.4	14.4	A
	Through						
	Right Turn	4	3	70.0%	10.9	15.6	B
	Subtotal	8	6	80.0%	15.9	17.2	B
SB	Left Turn	93	92	98.5%	26.8	7.4	C
	Through	4	4	90.0%	18.1	19.9	B
	Right Turn	71	69	96.9%	17.4	4.2	B
	Subtotal	168	164	97.6%	22.9	5.9	C
EB	Left Turn	1	2	200.0%	7.1	11.2	A
	Through	1,007	999	99.2%	17.7	4.4	B
	Right Turn	9	7	75.6%	14.8	14.0	B
	Subtotal	1,017	1,008	99.1%	17.7	4.4	B
WB	Left Turn	20	19	94.0%	39.5	10.9	D
	Through	933	822	88.1%	10.4	1.1	B
	Right Turn	69	57	82.3%	4.2	0.7	A
	Subtotal	1,022	897	87.8%	10.6	0.9	B
Total		2,215	2,076	93.7%	15.1	2.3	B

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	58	58	99.3%	23.1	7.4	C
	Through						
	Right Turn	60	53	88.0%	22.0	7.4	C
	Subtotal	118	110	93.6%	22.5	5.9	C
EB	Left Turn	48	42	87.5%	38.5	6.1	D
	Through	1,061	1,049	98.9%	8.1	1.9	A
	Right Turn						
	Subtotal	1,109	1,091	98.4%	9.2	1.9	A
WB	Left Turn						
	Through	962	861	89.5%	21.7	2.1	C
	Right Turn	48	50	105.0%	18.1	2.1	B
	Subtotal	1,010	911	90.2%	21.5	2.0	C
Total		2,237	2,112	94.4%	15.2	1.3	B

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	72	60	82.8%	7.8	3.2	A
	Through	681	630	92.6%	8.5	5.4	A
	Right Turn	401	332	82.7%	10.9	1.8	B
	Subtotal	1,154	1,022	88.5%	9.3	3.7	A
EB	Left Turn	22	20	92.7%	40.7	10.1	D
	Through	616	607	98.5%	20.5	3.6	C
	Right Turn	481	448	93.1%	21.3	7.7	C
	Subtotal	1,119	1,075	96.1%	21.1	5.2	C
WB	Left Turn	149	149	99.9%	24.0	6.0	C
	Through	587	544	92.7%	9.4	1.3	A
	Right Turn						
	Subtotal	736	693	94.1%	12.6	2.7	B
Total		3,009	2,790	92.7%	14.7	3.7	B

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	72	64	88.3%	36.5	20.2	D
	Through	138	126	91.3%	39.8	19.0	D
	Right Turn	24	24	101.7%	24.2	17.3	C
	Subtotal	234	214	91.5%	37.1	18.5	D
SB	Left Turn	35	32	92.6%	23.7	12.6	C
	Through	96	86	89.2%	16.9	7.2	B
	Right Turn	70	55	78.9%	14.8	8.7	B
	Subtotal	201	173	86.2%	17.4	7.9	B
EB	Left Turn						
	Through	652	625	95.9%	14.1	1.8	B
	Right Turn	46	44	95.7%	15.4	5.8	B
	Subtotal	698	669	95.9%	14.2	1.9	B
WB	Left Turn						
	Through	594	577	97.2%	7.8	5.7	A
	Right Turn	111	112	100.9%	15.4	13.9	B
	Subtotal	705	689	97.8%	9.0	5.8	A
Total		1,838	1,746	95.0%	15.3	3.6	B

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	288	284	98.6%	28.1	1.9	C
	Through	539	533	98.8%	25.9	2.2	C
	Right Turn	62	52	83.2%	6.1	1.0	A
	Subtotal	889	868	97.7%	25.5	1.3	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	268	249	93.0%	14.2	6.1	B
	Through	443	438	98.8%	2.4	0.5	A
	Right Turn						
	Subtotal	711	687	96.6%	6.6	2.1	A
WB	Left Turn						
	Through	405	416	102.7%	6.1	1.5	A
	Right Turn	99	112	112.7%	9.4	6.0	A
	Subtotal	504	528	104.7%	6.8	1.8	A
Total		2,104	2,083	99.0%	14.5	0.9	B

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	235	221	94.0%	9.5	7.9	A
	Through	1,175	1,072	91.2%	13.9	12.0	B
	Right Turn						
	Subtotal	1,410	1,292	91.7%	13.1	11.1	B
EB	Left Turn						
	Through	93	100	107.5%	18.6	3.7	B
	Right Turn	61	65	106.2%	15.3	7.6	B
	Subtotal	154	165	107.0%	17.3	4.8	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,564	1,457	93.2%	13.6	10.3	B

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	66	71	107.3%	8.5	1.7	A
	Right Turn	27	27	99.3%	4.4	2.1	A
	Subtotal	93	98	104.9%	7.5	1.6	A
SB	Left Turn	87	89	102.1%	9.0	1.0	A
	Through	126	114	90.8%	10.3	1.0	B
	Right Turn						
	Subtotal	213	203	95.4%	9.7	0.7	A
EB	Left Turn	102	87	85.1%	0.9	0.2	A
	Through	308	318	103.1%	1.0	0.1	A
	Right Turn	63	57	90.2%	0.9	0.2	A
	Subtotal	473	461	97.5%	0.9	0.1	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		779	762	97.8%	4.1	0.5	A

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	723	712	98.4%	15.5	2.4	B
	Right Turn	141	148	104.7%	9.1	2.5	A
	Subtotal	864	859	99.4%	14.4	2.2	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	67	60	89.0%	12.3	3.0	B
	Through	355	372	104.7%	12.5	1.1	B
	Right Turn						
	Subtotal	422	431	102.2%	12.4	0.9	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,286	1,290	100.3%	13.7	1.6	B

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	556	472	84.9%	87.2	26.5	F
	Right Turn	720	547	76.0%	163.0	47.5	F
	Subtotal	1,276	1,019	79.9%	128.0	36.9	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	103	82	79.2%	46.1	2.7	D
	Through	1,917	1,454	75.8%	65.0	4.4	E
	Right Turn						
	Subtotal	2,020	1,535	76.0%	63.9	4.1	E
Total		3,296	2,554	77.5%	89.0	14.4	F

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	155	137	88.3%	13.2	1.2	B
	Through	504	415	82.4%	14.5	0.9	B
	Right Turn						
	Subtotal	659	552	83.8%	14.2	0.9	B
EB	Left Turn						
	Through	650	682	104.9%	13.6	0.5	B
	Right Turn	81	74	91.4%	10.6	1.3	B
	Subtotal	731	756	103.4%	13.3	0.5	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,390	1,308	94.1%	13.7	0.4	B

Intersection 2 **3rd St & I-5 NB Off-Ramp & J St**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left/Through	1,026	64	11	121	29	123	29	0%	0%
	Through	1,026	26	12	71	31	75	37	0%	0%
	Through/Right	315	29	10	59	19	55	22	0%	0%
NB	Right Turn	323	29	12	62	24	66	28	0%	0%
SB	Left Turn	283	64	19	116	32	119	31	0%	0%
	Left/Through	283	181	30	302	43	281	27	36%	5%
	Through	55	61	12	92	6	79	2	13%	0%
SE	Left Turns	658	114	15	164	20	170	31	0%	0%
	Left Turn	658	105	16	155	27	157	22	0%	0%
	Right Turn	2,658	154	48	255	102	281	163	0%	0%

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	312	67	17	127	26	123	30	0%	0%
	Through/Right	312	133	20	204	28	200	34	0%	0%
WB	Through	335	45	27	104	74	115	90	0%	0%
	Through/Right	335	68	27	135	74	155	89	0%	1%

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	145	42	10	89	23	94	32	0%	0%
	Left Turn	335	47	17	105	58	118	85	1%	0%
	Through	335	21	10	50	17	55	18	0%	0%
WB	Through	324	10	9	33	29	54	36	0%	0%
	Through/Right	324	36	10	79	28	87	32	0%	0%

Intersection 17 **3rd St/Q St** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	314	66	9	105	20	111	29	0%	0%
	Through/Right	314	58	6	97	16	96	19	0%	0%
SB	Left/Through	353	108	7	139	12	134	16	0%	0%
	Through	353	101	12	128	18	126	11	0%	0%

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	135	132	97.5%	14.0	3.0	B
	Through	556	561	100.9%	23.9	5.2	C
	Right Turn						
	Subtotal	691	692	100.2%	22.1	4.3	C
SB	Left Turn						
	Through						
	Right Turn	155	153	98.6%	22.6	3.1	C
	Subtotal	155	153	98.6%	22.6	3.1	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through	935	967	103.4%	3.8	0.2	A
	Right Turn	79	85	107.8%	4.5	1.4	A
	Subtotal	1,014	1,052	103.8%	3.8	0.2	A
Total		1,860	1,898	102.0%	12.0	1.9	B

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	54	49	91.1%	36.6	5.1	D
	Subtotal	54	49	91.1%	36.6	5.1	D
SB	Left Turn	81	80	98.8%	66.7	14.6	E
	Through	158	155	98.2%	68.6	18.7	E
	Right Turn						
	Subtotal	239	235	98.4%	68.2	16.9	E
SE	Left Turn	1,455	1,420	97.6%	27.6	1.7	C
	Through						
	Right Turn	762	729	95.6%	88.0	9.1	F
	Subtotal	2,217	2,149	96.9%	48.2	3.5	D
EB	Left Turn	41	32	79.0%	37.7	9.2	D
	Through	1,091	1,080	99.0%	36.0	5.2	D
	Right Turn	246	248	100.8%	29.9	5.3	C
	Subtotal	1,378	1,361	98.8%	34.9	5.1	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,888	3,794	97.6%	44.6	2.2	D

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
NB	Left Turn						
	Through	173	176	101.5%	25.6	2.5	C
	Right Turn	196	181	92.2%	11.2	3.0	B
	Subtotal	369	356	96.6%	18.3	2.2	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	518	518	100.1%	14.4	6.5	B
	Through	2,020	2,004	99.2%	7.9	1.2	A
	Right Turn	85	71	83.8%	4.0	2.0	A
	Subtotal	2,623	2,594	98.9%	9.1	2.0	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,992	2,950	98.6%	10.2	1.8	B

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	1,159	1,118	96.5%	5.4	1.0	A
	Right Turn	7	8	108.6%	3.9	4.2	A
	Subtotal	1,166	1,126	96.6%	5.4	1.0	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	207	214	103.4%	10.6	0.8	B
	Through	265	263	99.3%	16.3	1.4	B
	Right Turn	165	164	99.6%	6.6	0.5	A
	Subtotal	637	642	100.7%	12.0	1.1	B
Total		1,803	1,768	98.0%	7.8	0.6	A

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	58	62	107.6%	9.5	3.9	A
	Through						
	Right Turn						
	Subtotal	58	62	107.6%	9.5	3.9	A
SB	Left Turn						
	Through	9	11	124.4%	4.9	4.4	A
	Right Turn	11	13	120.0%	3.1	3.9	A
	Subtotal	20	24	122.0%	4.6	2.7	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	188	184	98.1%	23.6	1.6	C
	Through	680	679	99.8%	24.1	1.4	C
	Right Turn						
	Subtotal	868	863	99.4%	23.9	1.1	C
Total		946	950	100.4%	22.5	1.4	C

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	246	240	97.6%	5.7	1.4	A
	Through	302	289	95.8%	6.9	1.2	A
	Right Turn						
	Subtotal	548	529	96.6%	6.4	0.8	A
SB	Left Turn						
	Through						
	Right Turn	85	71	83.8%	3.9	1.5	A
	Subtotal	85	71	83.8%	3.9	1.5	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through	544	550	101.2%	16.7	1.9	B
	Right Turn	67	66	99.1%	11.6	2.7	B
	Subtotal	611	617	100.9%	16.1	1.8	B
Total		1,244	1,217	97.8%	11.2	1.2	B

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	386	382	98.9%	14.0	1.7	B
	Right Turn	166	174	104.6%	8.5	1.3	A
	Subtotal	552	555	100.6%	12.3	1.1	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	215	227	105.5%	5.6	1.0	A
	Through	539	527	97.7%	5.1	0.7	A
	Right Turn						
	Subtotal	754	754	99.9%	5.3	0.6	A
Total		1,306	1,309	100.2%	8.2	0.7	A

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	4	4	90.0%	19.8	18.1	B
	Through	1	0	0.0%	0.0	0.0	A
	Right Turn	19	19	98.9%	14.4	7.6	B
	Subtotal	24	22	93.3%	19.6	9.1	B
SB	Left Turn	12	11	93.3%	41.7	18.1	D
	Through	2	4	180.0%	10.3	11.4	B
	Right Turn	28	26	94.3%	13.1	10.2	B
	Subtotal	42	41	98.1%	20.2	8.6	C
EB	Left Turn						
	Through	1,448	1,397	96.5%	29.0	9.5	C
	Right Turn	5	6	120.0%	27.9	17.8	C
	Subtotal	1,453	1,403	96.5%	29.0	9.5	C
WB	Left Turn	17	18	105.9%	33.4	9.2	C
	Through	589	582	98.9%	7.9	2.2	A
	Right Turn	135	131	97.2%	3.6	0.9	A
	Subtotal	741	732	98.7%	7.7	2.0	A
Total		2,260	2,198	97.3%	21.8	6.9	C

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	22	26	118.2%	25.4	8.9	C
	Through						
	Right Turn	17	18	108.2%	27.4	13.9	C
	Subtotal	39	44	113.8%	24.6	6.2	C
EB	Left Turn	66	74	112.1%	36.4	7.4	D
	Through	1,420	1,357	95.6%	9.9	2.2	A
	Right Turn						
	Subtotal	1,486	1,431	96.3%	11.2	2.4	B
WB	Left Turn						
	Through	724	706	97.5%	10.9	1.7	B
	Right Turn	23	21	92.2%	8.9	5.1	A
	Subtotal	747	727	97.3%	10.8	1.8	B
Total		2,272	2,202	96.9%	11.4	1.6	B

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	172	165	96.0%	19.7	2.0	B
	Through	517	511	98.8%	19.0	2.3	B
	Right Turn	511	492	96.2%	9.7	1.3	A
	Subtotal	1,200	1,168	97.3%	15.2	1.6	B
EB	Left Turn	20	18	90.0%	53.3	16.2	D
	Through	919	853	92.8%	28.0	6.5	C
	Right Turn	503	491	97.7%	26.8	6.5	C
	Subtotal	1,442	1,362	94.5%	27.9	6.3	C
WB	Left Turn	134	127	94.6%	24.4	3.0	C
	Through	216	218	101.1%	5.9	1.3	A
	Right Turn						
	Subtotal	350	345	98.6%	12.7	2.0	B
Total		2,992	2,875	96.1%	20.9	3.2	C

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	23	19	81.7%	22.0	5.8	C
	Through	30	26	86.7%	16.6	6.8	B
	Right Turn	7	7	102.9%	11.2	8.2	B
	Subtotal	60	52	86.7%	17.5	2.7	B
SB	Left Turn	36	35	96.7%	32.2	7.9	C
	Through	111	108	97.3%	28.9	4.2	C
	Right Turn	29	28	96.6%	18.6	5.5	B
	Subtotal	176	171	97.0%	27.9	3.1	C
EB	Left Turn						
	Through	955	887	92.9%	16.9	1.8	B
	Right Turn	149	142	95.6%	15.1	2.5	B
	Subtotal	1,104	1,029	93.2%	16.7	1.7	B
WB	Left Turn						
	Through	298	303	101.7%	3.0	0.9	A
	Right Turn	137	137	99.9%	5.3	3.7	A
	Subtotal	435	440	101.1%	3.7	1.4	A
Total		1,775	1,692	95.3%	14.5	1.4	B

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	230	232	100.7%	31.0	1.9	C
	Through	295	284	96.3%	26.9	1.7	C
	Right Turn	103	105	101.7%	10.3	1.1	B
	Subtotal	628	620	98.8%	25.7	0.9	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	450	416	92.4%	14.8	4.8	B
	Through	548	514	93.7%	2.4	0.3	A
	Right Turn						
	Subtotal	998	929	93.1%	8.0	2.6	A
WB	Left Turn						
	Through	142	152	107.0%	5.7	2.0	A
	Right Turn	49	48	97.1%	4.0	1.4	A
	Subtotal	191	200	104.5%	5.2	1.6	A
Total		1,817	1,749	96.3%	14.0	1.4	B

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	613	604	98.5%	9.6	0.8	A
	Through	528	513	97.1%	14.3	0.7	B
	Right Turn						
	Subtotal	1,141	1,117	97.9%	11.8	0.6	B
EB	Left Turn						
	Through	58	56	97.2%	13.5	2.6	B
	Right Turn	1	1	80.0%	2.1	6.7	A
	Subtotal	59	57	96.9%	13.4	2.5	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,200	1,174	97.8%	11.8	0.7	B

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
NB	Left Turn						
	Through	50	43	85.6%	6.9	1.5	A
	Right Turn	21	19	91.4%	3.0	0.7	A
	Subtotal	71	62	87.3%	5.7	1.1	A
SB	Left Turn	65	61	93.5%	7.0	0.8	A
	Through	32	30	95.0%	8.6	1.6	A
	Right Turn						
	Subtotal	97	91	94.0%	7.5	1.1	A
EB	Left Turn	29	24	82.8%	0.8	0.3	A
	Through	354	348	98.2%	0.7	0.1	A
	Right Turn	51	58	114.5%	0.7	0.2	A
	Subtotal	434	430	99.1%	0.7	0.1	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		602	583	96.9%	2.3	0.4	A

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	727	720	99.1%	19.4	3.2	B
	Right Turn	360	364	101.0%	18.7	5.1	B
	Subtotal	1,087	1,084	99.7%	19.2	3.8	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	24	20	83.3%	9.2	4.0	A
	Through	416	412	99.1%	11.0	1.5	B
	Right Turn						
	Subtotal	440	432	98.3%	10.9	1.5	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,527	1,516	99.3%	16.8	2.9	B

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	256	249	97.3%	15.2	1.3	B
	Right Turn	230	229	99.5%	8.4	1.5	A
	Subtotal	486	478	98.4%	12.0	1.1	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	83	88	106.5%	4.1	0.6	A
	Through	595	590	99.1%	5.9	0.5	A
	Right Turn						
	Subtotal	678	678	100.0%	5.7	0.4	A
Total		1,164	1,156	99.3%	8.3	0.8	A

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Existing Plus Project**
Volume and Delay by Movement **AM Peak Hour**

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	141	138	97.6%	21.0	6.8	C
	Through	198	195	98.6%	27.2	3.5	C
	Right Turn						
	Subtotal	339	333	98.2%	24.5	4.5	C
EB	Left Turn						
	Through	2,368	2,351	99.3%	21.5	1.4	C
	Right Turn	304	289	95.0%	23.8	2.6	C
	Subtotal	2,672	2,640	98.8%	21.8	1.5	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,011	2,973	98.7%	22.1	1.4	C

Intersection 2 **3rd St & I-5 NB Off-Ramp & J St**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left/Through	1,026	318	47	418	79	418	80	0%	0%
	Through	1,026	275	45	381	78	378	91	2%	0%
	Through/Right	315	212	30	299	53	296	46	0%	0%
NB	Right Turn	323	9	7	23	18	24	19	0%	0%
SB	Left Turn	283	48	16	92	24	92	21	0%	0%
	Left/Through	283	89	31	160	57	167	60	27%	0%
	Through	55	44	14	82	11	75	8	11%	0%
SE	Left Turns	658	293	45	366	61	385	36	0%	0%
	Left Turn	658	293	39	373	58	383	53	0%	0%
	Right Turn	2,658	1,053	264	1,332	308	1,318	280	0%	0%

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	312	120	19	199	63	209	73	0%	0%
	Through/Right	312	198	23	266	36	255	43	0%	0%
WB	Through	335	8	7	28	22	36	30	0%	0%
	Through/Right	335	45	12	83	20	86	30	0%	0%

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	145	81	26	127	37	126	28	2%	0%
	Left Turn	335	78	36	136	73	130	72	0%	0%
	Through	335	13	6	36	19	32	23	0%	0%
WB	Through	324	8	5	24	5	24	1	0%	0%
	Through/Right	324	19	10	46	22	50	23	0%	0%

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Existing Plus Project**
Queue Length **AM Peak Hour**

Intersection 17 **3rd St/Q St** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	314	196	36	282	65	287	71	0%	0%
	Through/Right	314	209	25	291	33	287	39	0%	0%
SB	Left/Through	353	83	17	139	42	145	47	0%	0%
	Through	353	48	10	77	16	78	25	0%	0%

Intersection: 700: 3rd St/Project Dwy

Movement	SB
Directions Served	L
Maximum Queue (ft)	60
Average Queue (ft)	24
95th Queue (ft)	75
Link Distance (ft)	
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	125
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Existing Plus Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	320	244	76.1%	124.8	43.0	F
	Through	558	458	82.2%	68.8	14.1	E
	Right Turn						
	Subtotal	878	702	80.0%	88.9	16.2	F
SB	Left Turn						
	Through						
	Right Turn	223	178	79.8%	88.6	35.9	F
	Subtotal	223	178	79.8%	88.6	35.9	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through	2,361	2,221	94.1%	13.8	3.7	B
	Right Turn	66	62	93.9%	17.5	7.9	B
	Subtotal	2,427	2,283	94.1%	13.9	3.8	B
Total		3,528	3,163	89.6%	34.4	6.5	C

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	197	178	90.4%	22.3	8.7	C
	Subtotal	197	178	90.4%	22.3	8.7	C
SB	Left Turn	179	171	95.6%	26.9	10.7	C
	Through	377	342	90.8%	37.1	19.9	D
	Right Turn						
	Subtotal	556	514	92.4%	33.7	16.4	C
SE	Left Turn	707	701	99.2%	17.3	4.6	B
	Through						
	Right Turn	370	358	96.8%	29.4	23.3	C
	Subtotal	1,077	1,059	98.3%	21.4	10.3	C
EB	Left Turn	25	23	91.2%	24.5	8.5	C
	Through	170	178	104.9%	27.3	5.5	C
	Right Turn	51	50	97.3%	35.9	24.4	D
	Subtotal	246	251	102.0%	28.8	9.4	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,076	2,002	96.4%	25.5	11.2	C

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	649	522	80.4%	94.0	55.0	F
	Right Turn	370	328	88.8%	49.5	32.9	D
	Subtotal	1,019	850	83.4%	76.8	45.8	E
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	229	186	81.0%	66.0	53.9	E
	Through	947	926	97.8%	9.9	1.1	A
	Right Turn	39	31	80.0%	5.7	1.4	A
	Subtotal	1,215	1,143	94.1%	18.6	7.7	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,234	1,993	89.2%	42.6	20.9	D

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	747	707	94.7%	35.5	16.1	D
	Right Turn	51	36	70.6%	81.2	42.1	F
	Subtotal	798	743	93.1%	38.1	17.7	D
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	565	424	75.0%	61.7	5.8	E
	Through	947	596	62.9%	91.7	5.0	F
	Right Turn	202	180	89.1%	43.0	4.0	D
	Subtotal	1,714	1,199	70.0%	73.8	5.4	E
Total		2,512	1,942	77.3%	60.2	8.9	E

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	307	187	61.0%	202.7	54.3	F
	Through						
	Right Turn						
	Subtotal	307	187	61.0%	202.7	54.3	F
SB	Left Turn						
	Through	38	12	31.6%	477.3	161.2	F
	Right Turn	80	22	27.5%	416.4	155.0	F
	Subtotal	118	34	28.8%	429.8	148.5	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	165	126	76.4%	64.7	18.6	E
	Through	1,197	907	75.8%	94.4	19.0	F
	Right Turn						
	Subtotal	1,362	1,033	75.8%	90.8	17.8	F
Total		1,787	1,254	70.2%	113.4	20.3	F

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	183	169	92.2%	30.8	13.1	C
	Through	755	698	92.5%	45.0	20.0	D
	Right Turn						
	Subtotal	938	867	92.5%	42.4	18.8	D
SB	Left Turn						
	Through						
	Right Turn	39	28	72.8%	22.7	17.5	C
	Subtotal	39	28	72.8%	22.7	17.5	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through	1,056	802	75.9%	60.6	28.2	E
	Right Turn	264	228	86.5%	22.8	6.3	C
	Subtotal	1,320	1,030	78.0%	51.7	21.5	D
Total		2,297	1,926	83.8%	46.1	10.4	D

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	408	398	97.6%	13.6	1.1	B
	Right Turn	107	111	103.6%	11.8	5.6	B
	Subtotal	515	509	98.9%	13.2	1.7	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	185	176	95.4%	9.6	6.1	A
	Through	1,042	953	91.5%	10.8	10.1	B
	Right Turn						
	Subtotal	1,227	1,130	92.1%	10.6	9.4	B
Total		1,742	1,639	94.1%	11.3	6.7	B

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	4	3	70.0%	16.1	19.8	B
	Through						
	Right Turn	4	3	80.0%	18.7	44.2	B
	Subtotal	8	6	75.0%	19.2	25.4	B
SB	Left Turn	93	76	81.3%	40.5	16.9	D
	Through	4	5	120.0%	31.3	25.8	C
	Right Turn	71	58	81.7%	34.0	23.7	C
	Subtotal	168	138	82.4%	37.0	19.4	D
EB	Left Turn	1	1	120.0%	6.1	13.1	A
	Through	1,019	994	97.5%	32.7	20.8	C
	Right Turn	9	12	133.3%	35.2	26.3	D
	Subtotal	1,029	1,007	97.9%	32.8	20.8	C
WB	Left Turn	20	16	78.0%	36.0	8.9	D
	Through	991	816	82.3%	8.8	1.6	A
	Right Turn	69	52	75.4%	3.8	1.5	A
	Subtotal	1,080	884	81.8%	9.1	1.4	A
Total		2,285	2,035	89.1%	22.5	10.4	C

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	58	62	107.6%	27.2	17.8	C
	Through						
	Right Turn	60	51	85.3%	27.1	8.7	C
	Subtotal	118	114	96.3%	27.9	14.6	C
EB	Left Turn	48	36	74.2%	40.8	6.8	D
	Through	1,073	1,014	94.5%	16.3	7.5	B
	Right Turn						
	Subtotal	1,121	1,050	93.7%	17.0	7.2	B
WB	Left Turn						
	Through	1,020	840	82.4%	19.3	3.0	B
	Right Turn	48	37	77.5%	15.9	3.7	B
	Subtotal	1,068	878	82.2%	19.2	3.0	B
Total		2,307	2,041	88.5%	18.4	4.0	B

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	72	57	79.4%	21.3	20.5	C
	Through	734	649	88.4%	17.6	10.2	B
	Right Turn	430	356	82.7%	10.7	3.4	B
	Subtotal	1,236	1,062	85.9%	15.4	7.5	B
EB	Left Turn	22	21	94.5%	47.9	16.8	D
	Through	628	571	90.9%	30.5	8.8	C
	Right Turn	481	417	86.7%	48.3	19.0	D
	Subtotal	1,131	1,009	89.2%	38.2	12.4	D
WB	Left Turn	179	160	89.4%	36.3	16.5	D
	Through	616	489	79.4%	11.4	1.6	B
	Right Turn						
	Subtotal	795	649	81.7%	17.9	7.1	B
Total		3,162	2,720	86.0%	24.3	6.1	C

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	72	35	48.9%	380.6	405.3	F
	Through	142	65	45.6%	380.9	400.3	F
	Right Turn	24	10	43.3%	260.2	301.9	F
	Subtotal	238	110	46.4%	256.0	296.2	F
SB	Left Turn	90	70	77.3%	75.1	36.7	E
	Through	159	123	77.5%	73.4	35.2	E
	Right Turn	129	95	73.8%	68.5	37.4	E
	Subtotal	378	288	76.2%	72.2	36.2	E
EB	Left Turn						
	Through	664	595	89.6%	14.8	1.9	B
	Right Turn	46	48	103.5%	12.5	3.8	B
	Subtotal	710	643	90.5%	14.6	1.9	B
WB	Left Turn						
	Through	594	528	88.8%	20.7	12.5	C
	Right Turn	131	109	83.1%	88.1	58.4	F
	Subtotal	725	636	87.8%	32.7	20.0	C
Total		2,051	1,678	81.8%	41.5	7.6	D

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	297	275	92.5%	32.1	6.4	C
	Through	539	509	94.5%	29.4	8.7	C
	Right Turn	62	60	97.4%	7.5	1.1	A
	Subtotal	898	844	94.0%	28.6	6.0	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	315	277	88.0%	19.7	21.9	B
	Through	463	404	87.3%	2.7	0.3	A
	Right Turn						
	Subtotal	778	681	87.6%	8.9	6.1	A
WB	Left Turn						
	Through	407	380	93.4%	16.4	16.4	B
	Right Turn	99	90	90.9%	19.6	23.6	B
	Subtotal	506	470	92.9%	17.0	17.4	B
Total		2,182	1,996	91.5%	19.0	8.8	B

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	235	192	81.5%	32.3	20.6	C
	Through	1,258	998	79.3%	37.4	22.7	D
	Right Turn						
	Subtotal	1,493	1,189	79.7%	36.3	21.3	D
EB	Left Turn						
	Through	93	84	89.9%	25.4	12.1	C
	Right Turn	61	66	107.5%	21.1	9.8	C
	Subtotal	154	149	96.9%	23.4	9.6	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,647	1,338	81.3%	34.9	19.3	C

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	70	46	65.1%	103.3	99.0	F
	Right Turn	27	22	83.0%	88.5	94.7	F
	Subtotal	97	68	70.1%	97.4	96.8	F
SB	Left Turn	127	92	72.1%	32.4	52.5	D
	Through	149	98	65.8%	32.7	42.4	D
	Right Turn						
	Subtotal	276	190	68.7%	32.1	46.3	D
EB	Left Turn	102	62	60.8%	128.6	210.9	F
	Through	308	246	79.7%	19.9	29.6	C
	Right Turn	63	55	87.6%	10.8	21.9	B
	Subtotal	473	363	76.7%	27.3	40.3	D
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		846	620	73.3%	33.7	41.8	D

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	732	712	97.2%	14.6	2.0	B
	Right Turn	141	146	103.8%	9.6	1.9	A
	Subtotal	873	858	98.3%	13.8	1.8	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	67	45	67.5%	33.0	32.7	C
	Through	395	315	79.7%	31.5	30.8	C
	Right Turn						
	Subtotal	462	360	77.9%	31.7	31.0	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,335	1,218	91.2%	17.6	6.0	B

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	568	473	83.2%	123.0	30.5	F
	Right Turn	791	530	67.0%	209.2	47.0	F
	Subtotal	1,359	1,003	73.8%	168.9	37.5	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	103	81	78.8%	44.5	5.4	D
	Through	1,940	1,461	75.3%	65.1	5.9	E
	Right Turn						
	Subtotal	2,043	1,542	75.5%	64.0	5.9	E
Total		3,402	2,545	74.8%	104.8	14.8	F

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	155	124	80.0%	13.0	1.7	B
	Through	516	431	83.5%	15.1	0.7	B
	Right Turn						
	Subtotal	671	555	82.7%	14.6	0.8	B
EB	Left Turn						
	Through	656	654	99.8%	13.4	0.6	B
	Right Turn	81	93	115.1%	9.7	1.0	A
	Subtotal	737	748	101.4%	13.0	0.6	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,408	1,302	92.5%	13.7	0.4	B

Intersection 2 **3rd St & I-5 NB Off-Ramp & J St**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left/Through	1,026	64	9	112	19	116	21	0%	0%
	Through	1,026	24	6	70	26	77	34	0%	0%
	Through/Right	315	43	17	82	32	81	34	0%	0%
NB	Right Turn	323	41	14	82	28	82	35	0%	0%
SB	Left Turn	283	76	20	137	50	143	47	0%	0%
	Left/Through	283	179	52	286	56	287	40	40%	12%
	Through	55	53	9	94	8	80	0	8%	0%
SE	Left Turns	658	119	18	179	45	181	50	0%	0%
	Left Turn	658	113	21	178	45	173	48	0%	0%
	Right Turn	2,658	195	86	347	185	348	189	0%	0%

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	312	70	21	129	30	125	23	0%	0%
	Through/Right	312	125	37	198	69	183	66	0%	0%
WB	Through	335	130	75	273	140	262	119	0%	4%
	Through/Right	335	175	78	294	104	293	83	0%	6%

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	145	51	18	94	37	95	36	0%	0%
	Left Turn	335	59	22	106	61	112	82	4%	0%
	Through	335	20	7	45	11	41	12	0%	0%
WB	Through	324	35	43	107	115	137	123	0%	1%
	Through/Right	324	55	33	128	85	163	114	0%	0%

Intersection 17 **3rd St/Q St** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	314	70	9	100	20	100	21	0%	0%
	Through/Right	314	60	9	95	15	95	14	0%	0%
SB	Left/Through	353	108	10	145	18	146	24	0%	0%
	Through	353	107	19	150	69	155	98	0%	0%

Intersection: 700: 3rd St/Project Dwy

Movement	SB
Directions Served	L
Maximum Queue (ft)	34
Average Queue (ft)	7
95th Queue (ft)	34
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	125
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	172	166	96.5%	17.6	1.1	B
	Through	517	489	94.6%	17.5	1.5	B
	Right Turn	511	502	98.3%	9.3	1.0	A
	Subtotal	1,200	1,158	96.5%	14.0	0.9	B
EB	Left Turn	20	16	80.0%	47.0	11.5	D
	Through	919	876	95.3%	33.2	6.7	C
	Right Turn	503	486	96.7%	31.4	6.6	C
	Subtotal	1,442	1,378	95.6%	32.8	6.2	C
WB	Left Turn	134	131	97.9%	24.4	6.5	C
	Through	216	200	92.8%	4.9	1.4	A
	Right Turn						
	Subtotal	350	332	94.7%	12.9	3.9	B
Total		2,992	2,867	95.8%	22.9	3.1	C

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	23	25	107.8%	19.6	8.4	B
	Through	30	24	80.0%	14.3	9.4	B
	Right Turn	7	7	102.9%	10.4	8.3	B
	Subtotal	60	56	93.3%	16.9	6.9	B
SB	Left Turn	36	31	86.7%	39.8	11.8	D
	Through	111	106	95.1%	38.8	4.5	D
	Right Turn	29	25	85.5%	26.9	14.7	C
	Subtotal	176	162	91.8%	36.6	4.6	D
EB	Left Turn	63	59	94.0%	28.9	5.1	C
	Through	892	866	97.0%	14.6	1.2	B
	Right Turn	149	128	85.6%	13.3	3.0	B
	Subtotal	1,104	1,052	95.3%	15.3	1.1	B
WB	Left Turn						
	Through	298	287	96.2%	7.6	0.6	A
	Right Turn	74	71	96.2%	5.4	1.0	A
	Subtotal	372	358	96.2%	7.2	0.5	A
Total		1,712	1,628	95.1%	15.7	1.3	B

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	230	232	101.0%	31.5	2.2	C
	Through	295	296	100.2%	26.8	2.9	C
	Right Turn	103	100	97.5%	9.8	1.0	A
	Subtotal	628	628	100.1%	25.9	2.0	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	387	367	94.9%	14.1	1.2	B
	Through	548	536	97.8%	2.7	0.2	A
	Right Turn						
	Subtotal	935	903	96.6%	7.3	0.6	A
WB	Left Turn						
	Through	142	130	91.5%	6.6	1.6	A
	Right Turn	49	56	113.5%	4.6	2.1	A
	Subtotal	191	186	97.2%	6.0	1.4	A
Total		1,754	1,717	97.9%	14.0	0.8	B

Intersection: 11: 4th St & Capitol Mall

Movement	EB
Directions Served	L
Maximum Queue (ft)	95
Average Queue (ft)	49
95th Queue (ft)	104
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	72	58	80.0%	17.3	13.2	B
	Through	734	611	83.3%	19.6	15.5	B
	Right Turn	430	353	82.0%	12.0	3.0	B
	Subtotal	1,236	1,022	82.7%	16.9	11.1	B
EB	Left Turn	22	20	89.1%	43.1	8.1	D
	Through	628	615	98.0%	23.4	5.5	C
	Right Turn	481	399	83.0%	33.1	18.6	C
	Subtotal	1,131	1,034	91.4%	27.3	9.6	C
WB	Left Turn	179	150	84.0%	22.2	10.4	C
	Through	616	532	86.4%	7.1	1.7	A
	Right Turn						
	Subtotal	795	683	85.9%	10.4	3.3	B
Total		3,162	2,738	86.6%	19.2	7.6	B

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	72	40	55.0%	228.8	177.6	F
	Through	142	73	51.5%	242.6	138.4	F
	Right Turn	24	14	56.7%	195.3	129.8	F
	Subtotal	238	126	53.1%	236.6	152.9	F
SB	Left Turn	90	78	86.7%	50.6	14.3	D
	Through	159	125	78.7%	46.3	13.8	D
	Right Turn	129	100	77.2%	38.1	13.6	D
	Subtotal	378	303	80.1%	44.8	13.7	D
EB	Left Turn	21	6	30.5%	425.9	223.6	F
	Through	643	607	94.4%	16.8	2.1	B
	Right Turn	46	42	90.4%	14.4	4.0	B
	Subtotal	710	655	92.3%	20.4	2.9	C
WB	Left Turn						
	Through	594	538	90.6%	24.3	10.1	C
	Right Turn	110	94	85.8%	67.1	44.3	E
	Subtotal	704	632	89.8%	30.5	14.7	C
Total		2,030	1,717	84.6%	40.6	9.2	D

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	297	287	96.6%	29.7	2.3	C
	Through	539	506	93.9%	28.3	5.7	C
	Right Turn	62	68	109.0%	6.8	1.6	A
	Subtotal	898	860	95.8%	27.1	3.3	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	294	273	92.9%	21.9	17.0	C
	Through	463	428	92.5%	3.5	2.1	A
	Right Turn						
	Subtotal	757	702	92.7%	10.4	5.5	B
WB	Left Turn						
	Through	407	369	90.6%	11.7	4.6	B
	Right Turn	99	88	88.9%	18.1	12.2	B
	Subtotal	506	457	90.3%	13.0	5.9	B
Total		2,161	2,019	93.4%	18.0	3.9	B

Intersection: 11: 4th St & Capitol Mall

Movement	EB
Directions Served	L
Maximum Queue (ft)	94
Average Queue (ft)	56
95th Queue (ft)	150
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Cumulative No Project Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	100	70	70.0%	18.0	1.8	B
	Through	880	658	74.8%	43.1	15.6	D
	Right Turn						
	Subtotal	980	728	74.3%	40.7	14.3	D
SB	Left Turn						
	Through	350	253	72.3%	61.7	9.7	E
	Right Turn	250	180	72.0%	47.4	8.4	D
	Subtotal	600	433	72.2%	55.8	9.3	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	160	149	93.3%	6.3	1.8	A
	Through	1,240	1,225	98.8%	4.6	0.8	A
	Right Turn	120	112	93.7%	13.1	5.0	B
	Subtotal	1,520	1,486	97.8%	5.4	0.9	A
Total		3,100	2,648	85.4%	23.4	4.5	C

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	8	105.0%	38.9	25.6	D
	Right Turn	90	79	87.6%	61.6	27.4	E
	Subtotal	98	87	89.0%	59.7	24.7	E
SB	Left Turn	80	86	107.0%	128.2	54.4	F
	Through	280	267	95.4%	150.4	54.9	F
	Right Turn						
	Subtotal	360	353	98.0%	145.6	48.5	F
SE	Left Turn	1,500	1,364	90.9%	104.4	38.8	F
	Through						
	Right Turn	670	652	97.3%	31.9	3.8	C
	Subtotal	2,170	2,016	92.9%	80.9	26.3	F
EB	Left Turn	40	22	55.0%	194.1	27.0	F
	Through	1,600	880	55.0%	209.9	8.9	F
	Right Turn	130	82	62.8%	216.5	25.5	F
	Subtotal	1,770	984	55.6%	210.2	8.4	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,398	3,440	78.2%	123.8	21.6	F

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	300	228	76.1%	29.2	7.6	C
	Right Turn	350	271	77.4%	22.3	2.3	C
	Subtotal	650	499	76.8%	25.7	3.2	C
SB	Left Turn	40	29	73.0%	36.6	10.1	D
	Through	470	377	80.2%	36.8	7.6	D
	Right Turn						
	Subtotal	510	406	79.6%	36.9	7.6	D
EB	Left Turn	680	504	74.1%	37.1	3.4	D
	Through	2,480	1,838	74.1%	33.0	1.0	C
	Right Turn	100	79	79.2%	29.4	3.3	C
	Subtotal	3,260	2,421	74.3%	33.8	0.8	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,420	3,326	75.3%	33.0	1.4	C

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	4	50.0%	4.6	5.9	A
	Right Turn						
	Subtotal	8	4	50.0%	4.6	5.9	A
SB	Left Turn						
	Through	1,020	942	92.3%	7.7	1.7	A
	Right Turn	10	12	116.0%	4.5	3.9	A
	Subtotal	1,030	953	92.5%	7.6	1.7	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	80	63	78.5%	29.2	3.9	C
	Through	750	595	79.4%	29.5	2.1	C
	Right Turn	200	166	82.8%	9.4	1.6	A
	Subtotal	1,030	824	80.0%	25.4	1.4	C
Total		2,068	1,781	86.1%	15.8	1.2	B

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	190	164	86.5%	16.7	2.4	B
	Through						
	Right Turn						
	Subtotal	190	164	86.5%	16.7	2.4	B
SB	Left Turn						
	Through	50	54	108.0%	9.1	5.4	A
	Right Turn	70	64	90.9%	3.2	1.2	A
	Subtotal	120	118	98.0%	6.0	3.0	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	180	134	74.2%	12.9	2.2	B
	Through	840	645	76.8%	14.2	0.9	B
	Right Turn						
	Subtotal	1,020	779	76.4%	14.0	0.8	B
Total		1,330	1,061	79.8%	13.6	0.6	B

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	470	331	70.4%	36.7	8.5	D
	Through	580	425	73.3%	10.4	3.2	B
	Right Turn						
	Subtotal	1,050	756	72.0%	22.0	5.9	C
SB	Left Turn						
	Through	460	355	77.1%	71.6	32.5	E
	Right Turn	110	83	75.6%	62.7	32.1	E
	Subtotal	570	438	76.8%	69.8	32.1	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	210	121	57.7%	266.8	25.5	F
	Through	450	373	82.9%	31.7	3.6	C
	Right Turn	70	71	101.1%	17.2	5.0	B
	Subtotal	730	565	77.4%	80.0	3.7	F
Total		2,350	1,759	74.9%	52.7	8.6	D

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	770	808	104.9%	19.6	4.6	B
	Right Turn	150	145	96.8%	63.0	49.1	E
	Subtotal	920	953	103.6%	26.1	10.8	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	240	129	53.8%	89.4	39.4	F
	Through	650	486	74.8%	57.7	16.9	E
	Right Turn						
	Subtotal	890	615	69.1%	63.8	17.2	E
Total		1,810	1,568	86.7%	40.7	10.4	D

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	9	88.0%	24.1	15.1	C
	Through						
	Right Turn	20	24	118.0%	32.2	17.4	C
	Subtotal	30	32	108.0%	31.2	11.5	C
SB	Left Turn	20	14	72.0%	51.1	20.1	D
	Through	5	4	88.0%	23.0	20.4	C
	Right Turn	30	32	106.7%	19.2	9.2	B
	Subtotal	55	51	92.4%	30.8	12.8	C
EB	Left Turn						
	Through	1,310	872	66.5%	131.7	14.0	F
	Right Turn	20	12	60.0%	125.6	26.4	F
	Subtotal	1,330	884	66.4%	131.7	13.7	F
WB	Left Turn	20	18	88.0%	44.3	11.2	D
	Through	620	516	83.3%	5.3	1.1	A
	Right Turn	140	126	90.3%	2.5	0.4	A
	Subtotal	780	660	84.7%	5.9	1.2	A
Total		2,195	1,627	74.1%	75.2	5.5	E

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	5	52.0%	20.4	20.9	C
	Through	10	6	56.0%	22.3	17.8	C
	Right Turn	58	42	73.1%	14.6	6.5	B
	Subtotal	78	53	68.2%	16.4	6.8	B
SB	Left Turn	30	30	100.0%	28.7	8.0	C
	Through	10	13	132.0%	25.9	10.9	C
	Right Turn	40	44	111.0%	25.7	4.8	C
	Subtotal	80	88	109.5%	27.1	3.8	C
EB	Left Turn	70	38	54.9%	48.3	8.9	D
	Through	1,270	868	68.3%	13.6	3.3	B
	Right Turn	20	9	44.0%	7.7	5.6	A
	Subtotal	1,360	915	67.3%	14.9	3.5	B
WB	Left Turn	10	6	64.0%	51.3	23.9	D
	Through	730	607	83.1%	14.3	3.1	B
	Right Turn	20	19	96.0%	9.7	5.6	A
	Subtotal	760	632	83.2%	14.5	3.0	B
Total		2,278	1,688	74.1%	15.4	3.1	B

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	220	205	93.3%	30.5	5.4	C
	Through	440	399	90.7%	26.7	5.1	C
	Right Turn	440	396	90.0%	8.9	1.4	A
	Subtotal	1,100	1,000	90.9%	20.3	2.3	C
EB	Left Turn	8	4	50.0%	28.4	43.4	C
	Through	1,030	663	64.3%	48.3	16.4	D
	Right Turn	320	214	67.0%	30.8	15.3	C
	Subtotal	1,358	881	64.9%	44.0	16.1	D
WB	Left Turn	150	115	76.8%	39.9	7.9	D
	Through	320	242	75.6%	13.9	2.4	B
	Right Turn						
	Subtotal	470	357	76.0%	22.2	3.9	C
Total		2,928	2,239	76.5%	29.5	5.4	C

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	10	96.0%	9.8	7.4	A
	Through	110	106	96.7%	14.9	5.3	B
	Right Turn	20	22	110.0%	18.0	8.7	B
	Subtotal	140	138	98.6%	15.3	5.1	B
SB	Left Turn	120	101	84.0%	20.2	7.0	C
	Through	50	45	90.4%	20.5	11.9	C
	Right Turn	40	33	82.0%	14.3	10.2	B
	Subtotal	210	179	85.1%	19.2	8.3	B
EB	Left Turn						
	Through	1,120	768	68.6%	21.0	4.2	C
	Right Turn	130	92	70.5%	26.1	7.8	C
	Subtotal	1,250	860	68.8%	21.6	4.4	C
WB	Left Turn						
	Through	420	310	73.7%	10.2	0.8	B
	Right Turn	110	86	78.2%	5.4	1.0	A
	Subtotal	530	396	74.6%	9.2	0.7	A
Total		2,130	1,572	73.8%	17.6	3.2	B

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	180	144	80.0%	45.1	6.6	D
	Through	780	584	74.9%	32.2	3.3	C
	Right Turn	110	80	72.7%	28.9	7.2	C
	Subtotal	1,070	808	75.5%	34.2	3.2	C
SB	Left Turn	10	7	72.0%	54.6	24.5	D
	Through	450	324	72.1%	51.9	5.3	D
	Right Turn	200	134	67.0%	46.5	5.6	D
	Subtotal	660	466	70.5%	50.5	5.4	D
EB	Left Turn	500	340	68.0%	57.6	5.7	E
	Through	560	416	74.3%	44.4	4.7	D
	Right Turn	200	145	72.6%	40.0	5.1	D
	Subtotal	1,260	901	71.5%	48.7	3.9	D
WB	Left Turn	10	13	128.0%	125.6	121.3	F
	Through	110	96	86.9%	97.4	63.4	F
	Right Turn	10	9	88.0%	94.9	66.6	F
	Subtotal	130	117	90.2%	104.5	72.4	F
Total		3,120	2,292	73.5%	46.8	5.2	D

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	230	188	81.7%	27.4	6.8	C
	Through	640	500	78.1%	28.4	5.3	C
	Right Turn	50	42	83.2%	21.8	3.7	C
	Subtotal	920	730	79.3%	27.7	5.0	C
EB	Left Turn						
	Through	390	361	92.6%	21.7	17.9	C
	Right Turn	10	9	92.0%	10.3	17.0	B
	Subtotal	400	370	92.6%	21.4	17.7	C
WB	Left Turn	40	36	91.0%	28.9	11.8	C
	Through	150	117	78.1%	21.0	8.9	C
	Right Turn						
	Subtotal	190	154	80.8%	22.6	9.1	C
Total		1,510	1,254	83.0%	25.0	8.2	C

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	80	73	91.0%	24.3	11.8	C
	Through	80	94	118.0%	24.7	13.6	C
	Right Turn	30	34	112.0%	18.3	16.1	C
	Subtotal	190	201	105.7%	23.1	12.6	C
SB	Left Turn	10	6	60.0%	12.7	20.8	B
	Through	20	17	86.0%	15.0	6.7	C
	Right Turn	30	22	72.0%	6.4	1.3	A
	Subtotal	60	45	74.7%	10.0	3.2	B
EB	Left Turn	80	63	79.0%	11.6	10.8	B
	Through	420	372	88.5%	10.9	11.3	B
	Right Turn	10	6	60.0%	1.5	4.1	A
	Subtotal	510	441	86.4%	10.9	11.0	B
WB	Left Turn	10	11	108.0%	4.2	2.2	A
	Through	190	164	86.1%	2.5	1.9	A
	Right Turn	10	8	76.0%	1.4	0.5	A
	Subtotal	210	182	86.7%	2.6	1.8	A
Total		970	868	89.5%	11.8	8.1	B

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	30	24	80.0%	104.0	30.0	F
	Through	750	496	66.1%	108.1	14.0	F
	Right Turn	300	206	68.7%	85.4	10.9	F
	Subtotal	1,080	726	67.2%	101.7	14.0	F
SB	Left Turn	160	110	68.8%	53.5	5.4	D
	Through	460	338	73.5%	5.7	1.1	A
	Right Turn	40	30	75.0%	1.5	1.1	A
	Subtotal	660	478	72.4%	16.6	2.7	B
EB	Left Turn	140	125	89.4%	114.5	50.3	F
	Through	280	255	91.1%	64.9	34.0	E
	Right Turn	40	38	94.0%	55.3	30.9	E
	Subtotal	460	418	90.9%	80.0	38.5	F
WB	Left Turn	70	61	87.4%	161.8	12.1	F
	Through	140	128	91.7%	150.7	14.8	F
	Right Turn	310	277	89.4%	140.1	13.4	F
	Subtotal	520	467	89.8%	145.9	11.9	F
Total		2,720	2,089	76.8%	87.2	7.1	F

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	300	256	85.2%	16.8	1.8	B
	Right Turn	380	304	80.1%	11.7	1.8	B
	Subtotal	680	560	82.4%	14.0	1.3	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	40	39	97.0%	5.5	1.1	A
	Through	940	970	103.2%	6.7	0.4	A
	Right Turn						
	Subtotal	980	1,009	102.9%	6.6	0.4	A
Total		1,660	1,569	94.5%	9.2	0.7	A

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	20	22	110.0%	8.2	5.7	A
	Subtotal	20	22	110.0%	8.2	5.7	A
SB	Left Turn	220	186	84.5%	24.2	6.4	C
	Through	120	106	88.7%	30.4	4.1	C
	Right Turn						
	Subtotal	340	292	86.0%	26.6	4.7	C
EB	Left Turn						
	Through	2,790	2,698	96.7%	94.7	21.2	F
	Right Turn	410	387	94.3%	101.9	21.4	F
	Subtotal	3,200	3,085	96.4%	95.6	21.2	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,560	3,400	95.5%	89.2	19.5	F

Intersection 2 **3rd St & I-5 NB Off-Ramp & J St**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left/Through	1,009	1,028	6	1,045	11	1,044	12	0%	45%
	Through	1,009	1,031	5	1,049	10	1,047	10	66%	53%
	Through/Right	315	340	1	341	1	340	0	37%	0%
NB	Through	100	3	2	11	9	14	12	0%	0%
	Right Turn	323	20	10	48	20	48	16	0%	0%
SB	Left Turn	283	70	26	129	40	126	38	0%	0%
	Through	283	214	67	306	61	279	46	65%	26%
SE	Left Turns	4,083	1,040	355	1,532	480	1,696	497	0%	0%
	Left Turn	4,083	1,102	363	1,631	481	1,745	501	0%	0%
	Right Turn	658	391	77	612	139	596	107	0%	4%

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	293	121	70	227	90	230	91	0%	3%
	Through/Right	293	265	51	341	19	317	23	0%	19%
WB	Through	329	45	14	86	22	84	22	0%	0%
	Through/Right	329	83	9	128	11	122	18	0%	0%

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	145	139	18	191	15	169	0	22%	0%
	Left Turn	329	173	42	285	58	289	43	14%	3%
	Through/Right	329	317	24	358	15	344	5	0%	12%
SB	Left Turn	150	10	14	38	52	65	76	0%	0%
	Through/Right	202	203	19	237	29	219	1	44%	32%
WB	Shared	339	144	49	270	99	251	88	0%	1%

Intersection 17 **3rd St/Q St** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	2,252	441	53	503	54	505	55	0%	0%
	Through/Right	2,100	753	390	941	450	905	438	0%	0%
NB	Right Turn	335	18	11	41	19	42	23	0%	0%
SB	Left Turn	353	96	21	166	40	172	43	0%	0%
	Through	353	40	9	71	15	72	18	0%	0%

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Cumulative No Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	120	72	59.7%	27.0	12.2	C
	Through	1,010	705	69.8%	84.6	8.4	F
	Right Turn						
	Subtotal	1,130	777	68.7%	79.3	9.1	E
SB	Left Turn						
	Through	350	106	30.4%	187.0	83.9	F
	Right Turn	310	96	30.8%	133.0	47.9	F
	Subtotal	660	202	30.6%	162.6	70.9	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	200	134	66.8%	22.8	18.9	C
	Through	2,760	1,929	69.9%	14.1	4.4	B
	Right Turn	100	66	66.0%	19.0	6.3	B
	Subtotal	3,060	2,129	69.6%	14.7	5.1	B
Total		4,850	3,108	64.1%	39.5	6.0	D

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	4	50.0%	41.3	56.7	D
	Right Turn	230	131	56.9%	58.7	8.7	E
	Subtotal	238	135	56.6%	59.8	9.3	E
SB	Left Turn	170	77	45.2%	147.1	73.6	F
	Through	510	208	40.9%	191.4	49.9	F
	Right Turn						
	Subtotal	680	285	41.9%	180.5	42.0	F
SE	Left Turn	780	674	86.5%	78.5	42.4	E
	Through						
	Right Turn	450	272	60.4%	156.9	71.9	F
	Subtotal	1,230	946	76.9%	96.8	33.0	F
EB	Left Turn	20	15	76.0%	96.6	77.3	F
	Through	870	652	74.9%	138.7	75.6	F
	Right Turn	40	25	62.0%	169.3	99.9	F
	Subtotal	930	692	74.4%	138.5	75.2	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,078	2,058	66.8%	117.3	36.9	F

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	700	476	68.0%	21.6	5.4	C
	Right Turn	480	275	57.3%	15.4	6.0	B
	Subtotal	1,180	751	63.6%	19.3	5.0	B
SB	Left Turn	30	10	34.7%	43.9	47.9	D
	Through	520	222	42.6%	54.1	45.5	D
	Right Turn						
	Subtotal	550	232	42.2%	53.6	44.8	D
EB	Left Turn	430	296	68.8%	126.1	32.2	F
	Through	1,550	1,179	76.1%	38.4	8.4	D
	Right Turn	80	51	64.0%	47.4	22.4	D
	Subtotal	2,060	1,526	74.1%	55.6	8.7	E
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,790	2,509	66.2%	44.0	8.2	D

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	7	85.0%	15.0	10.3	B
	Right Turn						
	Subtotal	8	7	85.0%	15.0	10.3	B
SB	Left Turn						
	Through	850	325	38.2%	156.5	66.2	F
	Right Turn	50	24	47.2%	44.9	28.1	D
	Subtotal	900	348	38.7%	147.1	56.9	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	120	50	41.3%	156.3	68.3	F
	Through	1,400	607	43.3%	108.1	4.8	F
	Right Turn	230	128	55.5%	53.4	3.1	D
	Subtotal	1,750	784	44.8%	100.9	5.6	F
Total		2,658	1,139	42.9%	110.1	15.4	F

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	380	156	41.1%	275.7	58.4	F
	Through						
	Right Turn						
	Subtotal	380	156	41.1%	275.7	58.4	F
SB	Left Turn						
	Through	140	17	12.0%	437.0	211.6	F
	Right Turn	80	12	15.0%	497.5	192.6	F
	Subtotal	220	29	13.1%	429.7	136.3	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	200	88	44.2%	54.6	16.3	D
	Through	1,340	660	49.2%	116.6	22.1	F
	Right Turn						
	Subtotal	1,540	748	48.6%	109.3	20.8	F
Total		2,140	933	43.6%	143.0	15.7	F

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	250	141	56.3%	57.4	17.6	E
	Through	910	572	62.9%	15.6	12.1	B
	Right Turn						
	Subtotal	1,160	713	61.5%	23.8	12.7	C
SB	Left Turn						
	Through	490	185	37.8%	205.1	103.0	F
	Right Turn	110	46	42.2%	208.7	116.7	F
	Subtotal	600	232	38.6%	205.9	105.8	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	230	102	44.2%	194.2	53.5	F
	Through	1,100	511	46.4%	143.0	49.6	F
	Right Turn	270	162	60.0%	51.6	13.8	D
	Subtotal	1,600	774	48.4%	129.5	33.8	F
Total		3,360	1,719	51.2%	92.8	17.7	F

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	910	921	101.2%	19.5	2.3	B
	Right Turn	80	73	91.5%	79.8	35.5	E
	Subtotal	990	994	100.4%	24.3	4.3	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	250	75	29.9%	153.5	46.6	F
	Through	1,250	647	51.8%	105.6	38.2	F
	Right Turn						
	Subtotal	1,500	722	48.1%	109.1	33.3	F
Total		2,490	1,716	68.9%	59.0	10.9	E

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	7	68.0%	56.6	86.0	E
	Through						
	Right Turn	10	8	80.0%	113.3	81.4	F
	Subtotal	20	15	74.0%	81.5	73.7	F
SB	Left Turn	100	31	31.2%	347.9	141.9	F
	Through	10	3	28.0%	136.3	205.4	F
	Right Turn	80	32	39.5%	321.9	157.8	F
	Subtotal	190	66	34.5%	336.3	147.1	F
EB	Left Turn						
	Through	680	430	63.3%	189.3	85.0	F
	Right Turn	10	4	36.0%	78.6	76.6	E
	Subtotal	690	434	62.9%	189.0	84.8	F
WB	Left Turn	30	12	40.0%	70.8	49.4	E
	Through	780	344	44.1%	5.0	0.9	A
	Right Turn	70	34	49.1%	2.8	0.6	A
	Subtotal	880	390	44.3%	6.7	1.1	A
Total		1,780	904	50.8%	114.3	45.0	F

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	6	60.0%	143.8	124.3	F
	Through	10	8	80.0%	146.9	144.3	F
	Right Turn	118	92	77.6%	230.0	180.2	F
	Subtotal	138	106	76.5%	215.0	162.1	F
SB	Left Turn	50	26	52.0%	159.2	92.1	F
	Through	10	6	64.0%	243.0	216.7	F
	Right Turn	90	70	77.3%	161.1	127.9	F
	Subtotal	150	102	68.0%	161.5	113.6	F
EB	Left Turn	50	28	56.8%	75.4	23.4	E
	Through	730	423	58.0%	46.2	16.7	D
	Right Turn	20	16	78.0%	29.7	43.7	C
	Subtotal	800	467	58.4%	47.4	15.7	D
WB	Left Turn	20	7	34.0%	24.8	23.1	C
	Through	780	312	40.0%	23.9	4.4	C
	Right Turn	60	26	42.7%	19.9	4.9	B
	Subtotal	860	344	40.0%	23.6	3.8	C
Total		1,948	1,019	52.3%	64.7	26.9	E

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	210	97	46.3%	201.4	104.4	F
	Through	700	344	49.2%	111.7	56.0	F
	Right Turn	60	34	56.0%	6.1	4.8	A
	Subtotal	970	475	49.0%	122.2	39.1	F
EB	Left Turn	8	8	100.0%	147.7	181.5	F
	Through	630	356	56.4%	132.3	48.4	F
	Right Turn	260	144	55.2%	146.5	47.3	F
	Subtotal	898	507	56.5%	137.2	45.7	F
WB	Left Turn	280	92	32.9%	56.9	51.0	E
	Through	800	299	37.4%	15.8	10.3	B
	Right Turn						
	Subtotal	1,080	391	36.2%	26.9	21.5	C
Total		2,948	1,374	46.6%	99.3	27.2	F

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	40	7	17.0%	740.0	334.6	F
	Through	150	20	13.1%	702.6	248.9	F
	Right Turn	30	4	14.7%	474.2	322.0	F
	Subtotal	220	31	14.0%	692.9	258.9	F
SB	Left Turn	130	36	28.0%	177.9	87.7	F
	Through	20	9	44.0%	145.8	102.0	F
	Right Turn	190	42	21.9%	131.8	69.5	F
	Subtotal	340	87	25.5%	152.6	71.5	F
EB	Left Turn						
	Through	790	448	56.7%	55.4	34.4	E
	Right Turn	50	28	55.2%	54.5	45.8	D
	Subtotal	840	475	56.6%	55.3	34.6	E
WB	Left Turn						
	Through	850	343	40.4%	89.3	54.2	F
	Right Turn	230	102	44.2%	135.9	80.2	F
	Subtotal	1,080	445	41.2%	99.5	58.7	F
Total		2,480	1,038	41.8%	92.6	29.3	F

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	340	198	58.4%	105.6	36.6	F
	Through	920	562	61.1%	48.3	11.8	D
	Right Turn	80	53	66.5%	48.2	21.2	D
	Subtotal	1,340	814	60.7%	62.8	13.2	E
SB	Left Turn	10	2	20.0%	37.2	24.0	D
	Through	460	183	39.7%	103.2	32.8	F
	Right Turn	270	113	41.9%	93.1	29.3	F
	Subtotal	740	298	40.3%	98.9	30.5	F
EB	Left Turn	250	126	50.6%	39.6	15.4	D
	Through	470	246	52.3%	44.7	26.9	D
	Right Turn	230	116	50.6%	39.7	26.0	D
	Subtotal	950	488	51.4%	42.7	19.1	D
WB	Left Turn	20	8	40.0%	77.8	71.7	E
	Through	430	232	54.0%	80.9	63.0	F
	Right Turn	20	10	52.0%	50.1	58.8	D
	Subtotal	470	250	53.3%	80.4	62.1	F
Total		3,500	1,850	52.9%	64.3	14.9	E

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	60	15	24.7%	250.3	111.1	F
	Through	1,290	504	39.0%	150.3	48.4	F
	Right Turn	90	38	41.8%	132.5	61.5	F
	Subtotal	1,440	556	38.6%	150.5	48.0	F
EB	Left Turn						
	Through	440	152	34.6%	263.9	83.7	F
	Right Turn	70	28	39.4%	213.5	176.9	F
	Subtotal	510	180	35.3%	248.4	77.0	F
WB	Left Turn	220	53	24.2%	317.8	208.5	F
	Through	230	64	28.0%	278.9	186.5	F
	Right Turn						
	Subtotal	450	118	26.1%	296.5	194.2	F
Total		2,400	854	35.6%	178.4	47.0	F

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	100	20	20.4%	468.6	179.8	F
	Through	60	9	14.7%	499.5	176.9	F
	Right Turn	40	9	23.0%	455.5	242.5	F
	Subtotal	200	38	19.2%	393.4	212.7	F
SB	Left Turn	10	2	16.0%	94.1	148.4	F
	Through	70	16	22.9%	248.1	215.9	F
	Right Turn	70	15	21.7%	215.7	244.4	F
	Subtotal	150	33	21.9%	236.7	231.5	F
EB	Left Turn	120	33	27.3%	194.6	130.1	F
	Through	350	94	26.9%	157.4	110.5	F
	Right Turn	50	10	20.8%	154.1	189.0	F
	Subtotal	520	137	26.4%	164.5	114.7	F
WB	Left Turn	10	4	44.0%	110.1	166.6	F
	Through	280	99	35.3%	131.0	118.4	F
	Right Turn						
	Subtotal	290	103	35.6%	132.9	119.3	F
Total		1,160	312	26.9%	142.9	45.1	F

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	40	19	48.0%	158.8	42.6	F
	Through	660	423	64.1%	160.4	32.1	F
	Right Turn	60	43	71.3%	121.8	21.7	F
	Subtotal	760	485	63.8%	157.1	29.8	F
SB	Left Turn	170	74	43.5%	42.7	10.8	D
	Through	530	228	43.1%	6.7	1.3	A
	Right Turn	10	4	44.0%	3.6	8.3	A
	Subtotal	710	307	43.2%	15.9	4.5	B
EB	Left Turn	180	81	45.1%	327.6	137.9	F
	Through	170	69	40.5%	277.7	147.4	F
	Right Turn	50	18	36.0%	265.8	126.4	F
	Subtotal	400	168	42.0%	300.9	137.2	F
WB	Left Turn	30	17	57.3%	186.6	43.5	F
	Through	240	121	50.5%	212.7	60.3	F
	Right Turn	390	207	53.1%	202.1	58.3	F
	Subtotal	660	346	52.4%	205.1	56.4	F
Total		2,530	1,305	51.6%	149.3	25.2	F

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	610	250	41.0%	190.2	66.7	F
	Right Turn	980	414	42.3%	194.4	66.9	F
	Subtotal	1,590	664	41.8%	192.9	66.7	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	50	37	74.4%	47.4	4.0	D
	Through	2,270	1,606	70.8%	58.5	3.2	E
	Right Turn						
	Subtotal	2,320	1,644	70.8%	58.3	3.2	E
Total		3,910	2,308	59.0%	97.5	20.9	F

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Cumulative No Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	20	23	114.0%	4.1	1.7	A
	Subtotal	20	23	114.0%	4.1	1.7	A
SB	Left Turn	210	72	34.3%	9.4	1.9	A
	Through	450	206	45.7%	31.4	2.2	C
	Right Turn						
	Subtotal	660	278	42.1%	25.7	1.7	C
EB	Left Turn						
	Through	880	878	99.8%	28.7	1.8	C
	Right Turn	240	230	96.0%	17.8	1.9	B
	Subtotal	1,120	1,108	99.0%	26.4	1.7	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,800	1,409	78.3%	25.9	1.0	C

Intersection 2 **3rd St & I-5 NB Off-Ramp & J St**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left/Through	1,010	470	176	868	297	851	265	0%	3%
	Through	1,010	514	176	918	290	880	261	39%	4%
	Through/Right	315	274	47	357	36	331	23	10%	0%
NB	Through	100	1	1	5	6	8	8	0%	0%
	Right Turn	323	34	14	79	35	83	41	2%	0%
SB	Left Turn	283	109	64	212	111	186	89	0%	6%
	Through	283	293	22	318	26	313	26	83%	83%
SE	Left Turns	658	239	71	368	105	351	98	0%	0%
	Left Turn	658	276	75	388	113	379	113	0%	0%
	Right Turn	658	558	93	1,179	116	1,072	97	0%	17%

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	293	133	62	266	84	265	74	0%	8%
	Through/Right	293	253	54	369	43	323	7	0%	29%
WB	Through	329	257	50	390	22	336	12	0%	12%
	Through/Right	329	292	44	389	33	353	13	0%	32%

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	145	68	24	132	44	119	37	9%	0%
	Left Turn	329	71	45	155	97	145	78	1%	1%
	Through/Right	329	189	96	317	115	286	90	0%	19%
SB	Left Turn	150	13	18	52	67	62	79	0%	0%
	Through/Right	202	210	2	220	1	217	1	83%	68%
WB	Shared	339	228	123	309	127	285	109	0%	23%

Intersection 17 **3rd St/Q St** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	320	136	17	196	32	185	31	0%	0%
	Through/Right	320	128	20	195	30	196	27	0%	0%
NB	Right Turn	335	16	5	46	11	45	13	0%	0%
SB	Left Turn	353	43	11	96	21	106	31	0%	0%
	Through	353	77	15	129	27	125	26	0%	0%

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	100	74	74.0%	17.2	2.9	B
	Through	900	658	73.1%	27.8	17.5	C
	Right Turn						
	Subtotal	1,000	732	73.2%	27.0	16.1	C
SB	Left Turn						
	Through	370	245	66.3%	65.9	14.6	E
	Right Turn	250	166	66.2%	51.4	12.9	D
	Subtotal	620	411	66.3%	60.2	14.2	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	160	144	90.3%	7.8	5.2	A
	Through	1,260	1,191	94.5%	3.8	0.7	A
	Right Turn	120	104	86.7%	9.4	5.1	A
	Subtotal	1,540	1,439	93.5%	4.6	1.0	A
Total		3,160	2,582	81.7%	19.8	4.3	B

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	7	85.0%	48.8	32.9	D
	Right Turn	100	84	84.4%	49.5	13.5	D
	Subtotal	108	91	84.4%	50.4	13.0	D
SB	Left Turn	80	66	82.5%	75.2	21.3	E
	Through	300	267	89.1%	123.8	35.6	F
	Right Turn						
	Subtotal	380	333	87.7%	114.7	31.8	F
SE	Left Turn	1,520	1,396	91.9%	76.4	25.5	E
	Through						
	Right Turn	740	725	97.9%	37.5	11.8	D
	Subtotal	2,260	2,121	93.9%	63.1	14.5	E
EB	Left Turn	40	22	55.0%	202.0	39.7	F
	Through	1,600	904	56.5%	199.8	11.7	F
	Right Turn	220	116	52.9%	197.7	12.8	F
	Subtotal	1,860	1,042	56.0%	199.6	11.0	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,608	3,588	77.9%	107.1	11.0	F

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	310	230	74.1%	25.3	3.5	C
	Right Turn	360	262	72.9%	20.8	3.5	C
	Subtotal	670	492	73.4%	22.9	2.3	C
SB	Left Turn	40	26	64.0%	46.0	21.9	D
	Through	490	361	73.6%	45.6	16.6	D
	Right Turn						
	Subtotal	530	386	72.9%	45.6	16.7	D
EB	Left Turn	690	501	72.6%	34.9	1.0	C
	Through	2,480	1,846	74.4%	33.1	1.8	C
	Right Turn	120	94	78.7%	29.0	4.2	C
	Subtotal	3,290	2,441	74.2%	33.3	1.4	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,490	3,319	73.9%	33.3	2.5	C

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	7	90.0%	34.9	28.1	C
	Right Turn						
	Subtotal	8	7	90.0%	34.9	28.1	C
SB	Left Turn						
	Through	1,190	1,054	88.6%	12.9	6.6	B
	Right Turn	10	9	88.0%	8.4	9.9	A
	Subtotal	1,200	1,063	88.6%	12.9	6.6	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	100	86	86.0%	30.3	4.0	C
	Through	770	625	81.1%	29.8	1.6	C
	Right Turn	210	174	83.0%	9.6	1.5	A
	Subtotal	1,080	885	82.0%	25.9	1.2	C
Total		2,288	1,955	85.5%	18.9	3.8	B

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	220	179	81.3%	19.1	5.0	B
	Through						
	Right Turn						
	Subtotal	220	179	81.3%	19.1	5.0	B
SB	Left Turn						
	Through	50	49	97.6%	7.6	4.8	A
	Right Turn	70	88	125.1%	5.4	2.9	A
	Subtotal	120	136	113.7%	6.3	3.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	220	176	80.0%	15.3	2.2	B
	Through	910	710	78.1%	13.8	1.2	B
	Right Turn						
	Subtotal	1,130	886	78.4%	14.1	0.9	B
Total		1,470	1,202	81.7%	13.9	0.8	B

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	490	351	71.6%	35.8	6.0	D
	Through	600	433	72.1%	10.6	2.7	B
	Right Turn						
	Subtotal	1,090	784	71.9%	21.9	4.4	C
SB	Left Turn						
	Through	460	344	74.8%	102.8	42.7	F
	Right Turn	150	103	68.8%	96.6	41.0	F
	Subtotal	610	447	73.3%	101.6	42.5	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	210	126	59.8%	233.0	48.5	F
	Through	500	443	88.6%	40.6	6.1	D
	Right Turn	70	61	87.4%	19.7	8.7	B
	Subtotal	780	630	80.7%	75.5	6.6	E
Total		2,480	1,860	75.0%	59.6	12.1	E

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	770	755	98.1%	18.7	5.7	B
	Right Turn	170	168	98.8%	51.8	36.0	D
	Subtotal	940	923	98.2%	25.1	8.3	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	240	166	69.0%	63.4	30.1	E
	Through	690	554	80.3%	41.4	16.8	D
	Right Turn						
	Subtotal	930	720	77.4%	46.0	19.3	D
Total		1,870	1,643	87.9%	33.8	11.1	C

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	6	64.0%	26.8	22.5	C
	Through						
	Right Turn	20	21	104.0%	33.2	15.2	C
	Subtotal	30	27	90.7%	33.4	11.6	C
SB	Left Turn	20	18	92.0%	58.6	28.0	E
	Through	5	4	72.0%	8.2	11.6	A
	Right Turn	30	29	97.3%	25.5	32.7	C
	Subtotal	55	51	93.1%	34.7	28.5	C
EB	Left Turn						
	Through	1,370	856	62.5%	131.8	7.8	F
	Right Turn	20	16	82.0%	134.5	18.8	F
	Subtotal	1,390	872	62.8%	131.8	7.8	F
WB	Left Turn	20	18	88.0%	47.1	7.3	D
	Through	640	525	82.1%	5.8	1.1	A
	Right Turn	140	110	78.9%	2.3	0.6	A
	Subtotal	800	653	81.7%	6.3	0.9	A
Total		2,275	1,604	70.5%	75.9	2.6	E

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	8	80.0%	22.1	15.9	C
	Through	10	8	80.0%	23.0	6.1	C
	Right Turn	58	56	97.2%	15.6	6.9	B
	Subtotal	78	72	92.8%	17.1	5.8	B
SB	Left Turn	30	24	81.3%	29.0	11.1	C
	Through	10	12	124.0%	22.7	14.4	C
	Right Turn	40	39	97.0%	24.7	9.6	C
	Subtotal	80	76	94.5%	27.5	8.0	C
EB	Left Turn	70	41	58.9%	46.6	7.7	D
	Through	1,330	846	63.6%	13.6	1.8	B
	Right Turn	20	14	70.0%	9.1	5.9	A
	Subtotal	1,420	901	63.4%	15.1	2.1	B
WB	Left Turn	10	8	76.0%	44.2	22.9	D
	Through	750	599	79.8%	13.3	3.6	B
	Right Turn	20	20	98.0%	9.7	7.3	A
	Subtotal	780	626	80.3%	13.7	3.4	B
Total		2,358	1,675	71.0%	15.2	2.2	B

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	220	193	87.6%	31.1	7.5	C
	Through	450	402	89.3%	26.0	2.9	C
	Right Turn	450	406	90.3%	11.5	1.9	B
	Subtotal	1,120	1,001	89.4%	21.1	2.9	C
EB	Left Turn	8	6	70.0%	61.6	44.1	E
	Through	1,090	717	65.8%	46.5	20.8	D
	Right Turn	320	198	61.9%	26.6	15.6	C
	Subtotal	1,418	921	64.9%	42.4	19.8	D
WB	Left Turn	160	118	73.8%	38.3	3.6	D
	Through	330	248	75.3%	15.3	1.3	B
	Right Turn						
	Subtotal	490	366	74.8%	22.7	2.0	C
Total		3,028	2,288	75.6%	29.7	8.0	C

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	9	92.0%	12.0	8.7	B
	Through	130	127	97.8%	16.1	3.4	B
	Right Turn	20	25	126.0%	17.2	7.3	B
	Subtotal	160	162	101.0%	16.2	3.6	B
SB	Left Turn	140	113	80.6%	34.5	8.8	C
	Through	60	58	96.7%	39.8	12.6	D
	Right Turn	50	44	87.2%	28.2	11.2	C
	Subtotal	250	214	85.8%	34.5	9.6	C
EB	Left Turn						
	Through	1,180	810	68.7%	24.0	6.3	C
	Right Turn	130	90	69.5%	26.9	9.5	C
	Subtotal	1,310	901	68.8%	24.2	6.0	C
WB	Left Turn						
	Through	430	317	73.7%	10.3	0.7	B
	Right Turn	190	141	74.3%	6.2	0.8	A
	Subtotal	620	458	73.9%	9.0	0.6	A
Total		2,340	1,735	74.1%	20.8	4.4	C

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	220	165	74.9%	51.4	11.2	D
	Through	790	577	73.0%	32.4	2.5	C
	Right Turn	110	86	78.5%	30.0	4.6	C
	Subtotal	1,120	828	73.9%	36.1	3.6	D
SB	Left Turn	10	9	92.0%	45.7	16.4	D
	Through	450	311	69.2%	53.5	4.8	D
	Right Turn	200	143	71.6%	47.1	6.8	D
	Subtotal	660	464	70.2%	51.5	5.1	D
EB	Left Turn	560	382	68.2%	72.3	17.5	E
	Through	570	396	69.5%	46.4	4.1	D
	Right Turn	210	151	71.8%	42.6	4.0	D
	Subtotal	1,340	929	69.3%	56.7	8.0	E
WB	Left Turn	10	8	76.0%	113.3	82.9	F
	Through	120	101	84.3%	82.4	39.1	F
	Right Turn	10	8	80.0%	45.8	39.6	D
	Subtotal	140	117	83.4%	83.5	38.7	F
Total		3,260	2,337	71.7%	49.9	4.8	D

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	230	167	72.7%	24.6	3.3	C
	Through	660	515	78.1%	26.9	2.0	C
	Right Turn	50	42	84.0%	19.7	4.0	B
	Subtotal	940	724	77.1%	25.9	1.9	C
EB	Left Turn						
	Through	390	389	99.8%	14.6	2.3	B
	Right Turn	10	11	108.0%	4.0	3.7	A
	Subtotal	400	400	100.0%	14.3	2.2	B
WB	Left Turn	40	34	84.0%	27.3	8.8	C
	Through	150	118	78.7%	19.0	3.7	B
	Right Turn						
	Subtotal	190	152	79.8%	20.8	4.9	C
Total		1,530	1,276	83.4%	21.7	1.3	C

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	80	66	82.5%	16.0	5.9	C
	Through	100	106	106.0%	16.1	5.6	C
	Right Turn	30	41	137.3%	13.5	4.8	B
	Subtotal	210	213	101.5%	15.5	5.3	C
SB	Left Turn	20	17	84.0%	12.8	4.8	B
	Through	30	22	74.7%	11.2	4.4	B
	Right Turn	30	23	76.0%	6.4	2.4	A
	Subtotal	80	62	77.5%	9.9	2.3	A
EB	Left Turn	80	68	85.0%	4.4	1.8	A
	Through	420	377	89.8%	4.4	3.7	A
	Right Turn	10	8	76.0%	0.8	1.1	A
	Subtotal	510	453	88.8%	4.4	3.4	A
WB	Left Turn	10	3	32.0%	2.5	1.5	A
	Through	190	147	77.3%	1.9	0.2	A
	Right Turn	20	16	82.0%	1.3	0.3	A
	Subtotal	220	166	75.6%	1.9	0.2	A
Total		1,020	894	87.7%	6.9	1.9	A

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	30	21	69.3%	92.7	15.5	F
	Through	800	532	66.5%	105.0	9.7	F
	Right Turn	300	184	61.2%	83.4	6.1	F
	Subtotal	1,130	736	65.2%	99.4	9.0	F
SB	Left Turn	160	107	66.8%	50.3	3.6	D
	Through	470	340	72.4%	5.3	1.3	A
	Right Turn	40	26	66.0%	2.2	2.5	A
	Subtotal	670	474	70.7%	15.4	1.6	B
EB	Left Turn	140	124	88.9%	102.4	28.5	F
	Through	290	272	93.9%	42.9	10.5	D
	Right Turn	40	36	91.0%	36.6	13.9	D
	Subtotal	470	433	92.2%	59.5	14.9	E
WB	Left Turn	70	55	78.9%	139.2	32.3	F
	Through	150	120	80.3%	120.0	32.1	F
	Right Turn	310	277	89.3%	117.3	32.8	F
	Subtotal	530	452	85.4%	120.3	32.4	F
Total		2,800	2,096	74.8%	76.6	6.9	E

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	310	269	86.8%	16.8	2.5	B
	Right Turn	400	326	81.4%	10.5	1.3	B
	Subtotal	710	595	83.8%	13.4	1.2	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	40	39	98.0%	5.0	1.5	A
	Through	950	953	100.3%	6.5	0.4	A
	Right Turn						
	Subtotal	990	992	100.2%	6.5	0.4	A
Total		1,700	1,587	93.3%	9.1	0.6	A

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	20	16	78.0%	7.3	3.9	A
	Subtotal	20	16	78.0%	7.3	3.9	A
SB	Left Turn	220	194	88.4%	22.1	3.3	C
	Through	130	117	89.8%	32.2	3.8	C
	Right Turn						
	Subtotal	350	311	88.9%	26.1	1.7	C
EB	Left Turn						
	Through	2,820	2,738	97.1%	109.9	20.8	F
	Right Turn	410	381	92.9%	117.0	21.4	F
	Subtotal	3,230	3,118	96.5%	110.7	20.9	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,600	3,445	95.7%	102.7	19.3	F

Intersection 2 **3rd St & I-5 NB Off-Ramp & J St**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left/Through	1,010	1,023	2	1,036	5	1,036	6	0%	43%
	Through	1,010	1,026	5	1,042	10	1,044	11	67%	54%
	Through/Right	315	340	1	341	1	340	0	36%	0%
NB	Through	100	3	3	13	9	15	10	0%	0%
	Right Turn	323	23	12	52	24	55	24	0%	0%
SB	Left Turn	283	52	23	101	53	114	53	0%	0%
	Through	283	285	37	311	21	318	17	80%	64%
SE	Left Turns	4,083	1,144	485	1,665	587	1,745	610	0%	0%
	Left Turn	4,083	1,203	497	1,734	592	1,808	604	0%	0%
	Right Turn	658	412	123	569	106	553	111	0%	5%

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	293	115	64	218	114	234	83	0%	3%
	Through/Right	293	265	47	347	40	316	24	0%	21%
WB	Through	329	47	12	86	23	84	32	0%	0%
	Through/Right	329	91	14	134	21	138	24	0%	0%

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	145	146	18	183	19	168	4	33%	0%
	Left Turn	329	194	57	313	80	297	51	13%	6%
	Through/Right	329	325	11	360	18	345	5	0%	14%
SB	Left Turn	150	15	24	45	60	44	47	0%	0%
	Through/Right	202	210	9	230	28	219	2	50%	37%
WB	Shared	339	164	61	290	94	275	80	0%	8%

Intersection 17 **3rd St/Q St** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	670	396	42	463	52	479	49	0%	0%
	Through/Right	2,100	800	283	1,018	334	1,000	331	0%	0%
NB	Right Turn	335	17	9	41	18	43	15	0%	0%
SB	Left Turn	353	90	20	131	29	131	26	0%	0%
	Through	353	40	13	66	27	64	21	0%	0%

Intersection: 700: 3rd St/Project Dwy

Movement	SB
Directions Served	L
Maximum Queue (ft)	43
Average Queue (ft)	15
95th Queue (ft)	47
Link Distance (ft)	116
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	100	68	67.6%	24.1	8.4	C
	Through	900	697	77.4%	78.1	18.5	E
	Right Turn						
	Subtotal	1,000	764	76.4%	73.1	16.1	E
SB	Left Turn						
	Through	370	112	30.3%	175.6	54.9	F
	Right Turn	250	100	39.8%	122.4	32.5	F
	Subtotal	620	212	34.1%	151.8	47.1	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	160	135	84.5%	18.7	13.8	B
	Through	1,260	1,950	154.8%	12.7	2.1	B
	Right Turn	120	81	67.3%	14.8	6.5	B
	Subtotal	1,540	2,166	140.6%	13.1	2.5	B
Total		3,160	3,142	99.4%	36.4	4.2	D

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	310	419	135.2%	22.4	7.1	C
	Right Turn	360	254	70.6%	14.3	4.0	B
	Subtotal	670	673	100.5%	19.5	4.9	B
SB	Left Turn	40	9	22.0%	47.5	50.7	D
	Through	490	232	47.3%	54.9	39.2	D
	Right Turn						
	Subtotal	530	241	45.4%	54.9	39.3	D
EB	Left Turn	690	317	45.9%	118.6	51.3	F
	Through	2,480	1,143	46.1%	35.1	11.0	D
	Right Turn	120	46	38.7%	46.8	39.2	D
	Subtotal	3,290	1,506	45.8%	52.3	11.6	D
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,490	2,420	53.9%	42.9	8.6	D

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	6	80.0%	14.3	10.0	B
	Right Turn						
	Subtotal	8	6	80.0%	14.3	10.0	B
SB	Left Turn						
	Through	1,190	356	29.9%	155.5	84.0	F
	Right Turn	10	26	260.0%	58.1	55.6	E
	Subtotal	1,200	382	31.8%	148.5	78.1	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	100	70	70.4%	162.5	112.5	F
	Through	770	596	77.4%	115.3	14.0	F
	Right Turn	210	129	61.3%	58.9	11.6	E
	Subtotal	1,080	795	73.6%	108.8	16.0	F
Total		2,288	1,183	51.7%	115.9	26.3	F

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	220	160	72.7%	287.8	77.3	F
	Through						
	Right Turn						
	Subtotal	220	160	72.7%	287.8	77.3	F
SB	Left Turn						
	Through	50	32	64.0%	361.8	153.3	F
	Right Turn	70	16	22.9%	335.1	141.2	F
	Subtotal	120	48	40.0%	344.7	111.7	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	220	67	30.5%	101.1	81.8	F
	Through	910	576	63.3%	122.1	41.7	F
	Right Turn						
	Subtotal	1,130	643	56.9%	118.5	40.6	F
Total		1,470	851	57.9%	158.2	36.6	F

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	490	136	27.8%	57.5	14.5	E
	Through	600	512	85.3%	13.9	6.1	B
	Right Turn						
	Subtotal	1,090	648	59.4%	23.2	9.0	C
SB	Left Turn						
	Through	460	176	38.2%	240.9	84.9	F
	Right Turn	150	50	33.3%	242.5	97.3	F
	Subtotal	610	226	37.0%	241.9	88.3	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	210	76	36.4%	261.0	94.2	F
	Through	500	441	88.2%	127.3	54.6	F
	Right Turn	70	131	187.4%	33.4	15.4	C
	Subtotal	780	648	83.1%	121.6	35.0	F
Total		2,480	1,522	61.4%	95.6	22.2	F

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	770	932	121.1%	21.4	4.6	C
	Right Turn	170	72	42.6%	157.1	119.9	F
	Subtotal	940	1,005	106.9%	29.9	8.3	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	240	57	23.7%	248.6	149.9	F
	Through	690	475	68.9%	151.8	56.7	F
	Right Turn						
	Subtotal	930	532	57.2%	159.9	62.7	F
Total		1,870	1,537	82.2%	70.8	11.1	E

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	12	116.0%	35.6	31.8	D
	Through						
	Right Turn	10	10	100.0%	93.3	69.1	F
	Subtotal	20	22	108.0%	74.8	60.1	E
SB	Left Turn	100	31	31.2%	331.1	177.5	F
	Through	10	2	24.0%	118.0	171.6	F
	Right Turn	80	35	44.0%	262.3	125.7	F
	Subtotal	190	69	36.2%	290.6	142.5	F
EB	Left Turn						
	Through	700	392	56.1%	214.2	115.1	F
	Right Turn	10	6	60.0%	254.0	151.5	F
	Subtotal	710	398	56.1%	214.6	114.9	F
WB	Left Turn	30	9	29.3%	72.6	83.7	E
	Through	850	349	41.0%	4.9	1.1	A
	Right Turn	70	29	41.1%	2.3	0.8	A
	Subtotal	950	386	40.7%	6.5	2.0	A
Total		1,870	875	46.8%	116.4	49.0	F

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	8	84.0%	133.5	123.8	F
	Through	10	7	72.0%	112.2	115.8	F
	Right Turn	118	89	75.6%	164.0	124.8	F
	Subtotal	138	105	75.9%	161.9	120.9	F
SB	Left Turn	50	32	64.8%	119.8	86.9	F
	Through	10	9	92.0%	99.7	113.8	F
	Right Turn	90	70	77.3%	117.7	98.3	F
	Subtotal	150	111	74.1%	116.4	92.6	F
EB	Left Turn	50	22	43.2%	65.3	16.9	E
	Through	750	394	52.5%	58.5	37.0	E
	Right Turn	20	14	68.0%	19.4	20.1	B
	Subtotal	820	429	52.3%	57.9	34.6	E
WB	Left Turn	20	4	18.0%	22.9	26.6	C
	Through	850	298	35.1%	19.9	5.3	B
	Right Turn	60	18	29.3%	12.0	9.5	B
	Subtotal	930	319	34.3%	19.4	5.3	B
Total		2,038	964	47.3%	60.0	25.7	E

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	210	76	36.2%	184.2	78.6	F
	Through	760	280	36.8%	161.5	54.1	F
	Right Turn	90	48	53.8%	79.2	25.5	E
	Subtotal	1,060	404	38.2%	153.1	45.2	F
EB	Left Turn	8	6	75.0%	77.6	70.2	E
	Through	650	345	53.1%	144.4	102.4	F
	Right Turn	260	136	52.3%	180.0	73.7	F
	Subtotal	918	487	53.1%	151.1	82.8	F
WB	Left Turn	320	103	32.3%	61.4	48.5	E
	Through	840	256	30.5%	22.0	14.1	C
	Right Turn						
	Subtotal	1,160	359	31.0%	33.3	13.1	C
Total		3,138	1,251	39.9%	118.2	50.1	F

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	40	4	9.0%	725.7	290.2	F
	Through	160	15	9.3%	855.1	265.2	F
	Right Turn	30	2	6.7%	798.2	437.9	F
	Subtotal	230	20	8.9%	847.0	269.2	F
SB	Left Turn	210	65	30.9%	242.1	179.3	F
	Through	60	22	36.7%	159.1	65.0	F
	Right Turn	250	80	32.2%	200.8	133.4	F
	Subtotal	520	167	32.2%	205.7	129.6	F
EB	Left Turn						
	Through	810	410	50.6%	71.2	45.4	E
	Right Turn	50	26	51.2%	137.3	145.1	F
	Subtotal	860	436	50.7%	74.0	49.6	E
WB	Left Turn						
	Through	870	279	32.1%	139.3	113.2	F
	Right Turn	240	82	34.0%	165.5	92.9	F
	Subtotal	1,110	361	32.5%	141.8	94.8	F
Total		2,720	984	36.2%	131.1	73.5	F

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	220	155	70.4%	137.3	70.1	F
	Through	790	458	58.0%	56.1	11.5	E
	Right Turn	110	43	38.9%	61.6	25.6	E
	Subtotal	1,120	656	58.6%	74.3	18.8	E
SB	Left Turn	10	2	24.0%	48.5	20.3	D
	Through	450	160	35.6%	114.4	18.5	F
	Right Turn	200	97	48.4%	116.6	34.1	F
	Subtotal	660	259	39.3%	115.0	24.6	F
EB	Left Turn	560	152	27.1%	53.3	24.0	D
	Through	570	238	41.7%	37.8	30.0	D
	Right Turn	210	130	62.1%	31.0	22.8	C
	Subtotal	1,340	520	38.8%	41.2	18.4	D
WB	Left Turn	10	5	48.0%	94.0	82.4	F
	Through	120	170	141.7%	93.5	65.3	F
	Right Turn	10	4	44.0%	71.4	61.1	E
	Subtotal	140	179	128.0%	94.0	64.2	F
Total		3,260	1,614	49.5%	73.1	15.9	E

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	60	8	13.3%	380.3	182.2	F
	Through	1,390	493	35.5%	168.1	45.2	F
	Right Turn	90	35	38.7%	133.4	40.0	F
	Subtotal	1,540	536	34.8%	168.1	43.4	F
EB	Left Turn						
	Through	440	92	20.9%	446.5	194.5	F
	Right Turn	70	17	24.0%	384.2	228.6	F
	Subtotal	510	109	21.3%	434.8	196.0	F
WB	Left Turn	220	44	20.0%	423.5	291.0	F
	Through	230	38	16.3%	423.0	324.8	F
	Right Turn						
	Subtotal	450	82	18.1%	324.2	258.4	F
Total		2,500	726	29.1%	193.9	57.9	F

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	100	5	4.8%	660.9	230.9	F
	Through	70	4	5.1%	698.6	196.6	F
	Right Turn	40	4	10.0%	585.3	320.8	F
	Subtotal	210	12	5.9%	247.5	301.8	F
SB	Left Turn	40	8	20.0%	210.8	282.6	F
	Through	90	15	16.4%	283.4	523.8	F
	Right Turn	70	19	27.4%	285.4	536.0	F
	Subtotal	200	42	21.0%	109.6	135.7	F
EB	Left Turn	120	19	15.7%	310.4	212.5	F
	Through	350	63	17.9%	269.5	148.7	F
	Right Turn	50	7	13.6%	207.4	241.9	F
	Subtotal	520	88	17.0%	270.2	151.7	F
WB	Left Turn	10	2	20.0%	102.0	190.1	F
	Through	280	64	22.7%	220.9	226.2	F
	Right Turn	20	6	28.0%	327.5	237.8	F
	Subtotal	310	71	23.0%	222.1	223.0	F
Total		1,240	214	17.3%	125.8	70.2	F

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	30	15	49.3%	215.3	67.2	F
	Through	800	360	45.0%	191.2	32.9	F
	Right Turn	300	30	10.1%	138.5	38.9	F
	Subtotal	1,130	405	35.8%	188.6	33.7	F
SB	Left Turn	160	61	38.0%	42.3	12.5	D
	Through	470	240	51.1%	7.2	1.2	A
	Right Turn	40	4	9.0%	6.1	12.6	A
	Subtotal	670	304	45.4%	14.0	2.8	B
EB	Left Turn	140	46	33.1%	725.3	472.5	F
	Through	290	44	15.2%	688.0	503.2	F
	Right Turn	40	8	21.0%	658.7	495.9	F
	Subtotal	470	99	21.0%	704.6	489.1	F
WB	Left Turn	70	9	13.1%	193.7	114.9	F
	Through	150	116	77.3%	243.4	59.8	F
	Right Turn	310	162	52.4%	242.8	63.5	F
	Subtotal	530	288	54.3%	241.8	60.1	F
Total		2,800	1,096	39.1%	177.2	38.7	F

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	630	216	34.2%	216.1	65.2	F
	Right Turn	1,070	418	39.0%	223.6	63.9	F
	Subtotal	1,700	633	37.2%	220.9	64.0	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	50	32	64.0%	45.8	5.3	D
	Through	2,290	1,547	67.6%	61.8	5.7	E
	Right Turn						
	Subtotal	2,340	1,579	67.5%	61.5	5.7	E
Total		4,040	2,212	54.8%	107.7	23.2	F

SimTraffic Post-Processor **301 Capitol Mall TIS**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	20	23	116.0%	3.6	0.8	A
	Subtotal	20	23	116.0%	3.6	0.8	A
SB	Left Turn	220	75	34.2%	11.2	5.7	B
	Through	130	178	137.2%	32.7	3.2	C
	Right Turn						
	Subtotal	350	254	72.5%	26.6	3.1	C
EB	Left Turn						
	Through	2,820	854	30.3%	28.6	1.4	C
	Right Turn	410	248	60.5%	19.8	2.5	B
	Subtotal	3,230	1,102	34.1%	26.6	1.5	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,600	1,378	38.3%	26.2	1.6	C

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	5	65.0%	55.5	75.5	E
	Right Turn	100	134	134.0%	68.6	19.6	E
	Subtotal	108	139	128.9%	69.3	21.0	E
SB	Left Turn	80	65	81.5%	241.9	133.2	F
	Through	300	195	64.9%	236.7	78.1	F
	Right Turn						
	Subtotal	380	260	68.4%	243.4	83.0	F
SE	Left Turn	1,520	634	41.7%	105.0	94.9	F
	Through						
	Right Turn	740	258	34.8%	222.5	139.2	F
	Subtotal	2,260	892	39.5%	120.0	52.4	F
EB	Left Turn	40	11	28.0%	121.2	99.4	F
	Through	1,600	580	36.3%	196.1	116.3	F
	Right Turn	220	44	19.8%	169.5	75.2	F
	Subtotal	1,860	635	34.2%	192.5	109.3	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,608	1,926	41.8%	150.0	52.7	F

Intersection 2 **3rd St & I-5 NB Off-Ramp & J St**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left/Through	1,010	695	133	1,306	155	1,315	110	0%	14%
	Through	1,010	740	114	1,323	145	1,332	92	57%	17%
	Through/Right	315	308	26	381	18	340	0	27%	0%
NB	Through	100	1	1	7	6	9	8	0%	0%
	Right Turn	323	45	21	96	35	94	32	4%	0%
SB	Left Turn	283	117	91	199	96	195	91	0%	13%
	Through	283	285	34	327	36	309	30	84%	79%
SE	Left Turns	658	240	51	372	95	369	117	0%	0%
	Left Turn	658	295	56	458	157	472	172	0%	1%
	Right Turn	658	823	78	1,562	79	1,612	25	0%	39%

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	293	116	56	229	82	224	64	0%	4%
	Through/Right	293	256	51	370	44	323	10	0%	32%
WB	Through	329	279	63	352	41	338	31	0%	17%
	Through/Right	329	308	47	353	9	345	8	0%	39%

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	U/Left Turns	145	57	11	125	22	125	32	0%	0%
	Left Turn	329	71	27	140	58	143	68	1%	0%
	Through/Right	329	203	103	308	105	275	84	0%	20%
SB	Left Turn	150	11	12	50	54	82	80	0%	0%
	Through/Right	202	206	11	232	22	217	2	76%	60%
WB	Shared	339	247	111	338	114	322	93	0%	25%

Intersection 17 **3rd St/Q St** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	320	135	18	179	28	178	33	0%	0%
	Through/Right	320	120	16	194	36	195	44	0%	0%
NB	Right Turn	335	12	5	37	6	35	6	0%	0%
SB	Left Turn	353	41	10	86	24	95	29	0%	0%
	Through	353	62	19	107	25	101	15	0%	0%

Intersection: 700: 3rd St/Project Dwy

Movement	SB
Directions Served	L
Maximum Queue (ft)	31
Average Queue (ft)	12
95th Queue (ft)	68
Link Distance (ft)	116
Upstream Blk Time (%)	4
Queuing Penalty (veh)	11
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	100	77	76.8%	18.9	3.7	B
	Through	900	639	71.0%	36.4	23.6	D
	Right Turn						
	Subtotal	1,000	716	71.6%	34.6	21.3	C
SB	Left Turn						
	Through	370	256	69.2%	64.2	7.1	E
	Right Turn	250	177	70.9%	51.8	9.6	D
	Subtotal	620	433	69.9%	59.0	8.5	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	160	145	90.5%	9.8	9.6	A
	Through	1,260	1,183	93.9%	4.9	1.6	A
	Right Turn	120	112	93.3%	13.9	11.0	B
	Subtotal	1,540	1,440	93.5%	6.2	2.5	A
Total		3,160	2,589	81.9%	22.7	6.8	C

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	5	65.0%	51.1	34.5	D
	Right Turn	100	80	80.0%	45.9	7.9	D
	Subtotal	108	85	78.9%	47.0	8.0	D
SB	Left Turn	80	75	94.0%	70.6	12.0	E
	Through	300	246	82.1%	126.0	27.3	F
	Right Turn						
	Subtotal	380	322	84.6%	114.2	24.9	F
SE	Left Turn	1,520	1,310	86.2%	156.2	50.5	F
	Through						
	Right Turn	740	626	84.6%	110.4	37.7	F
	Subtotal	2,260	1,936	85.7%	140.7	34.9	F
EB	Left Turn	40	24	59.0%	512.3	38.9	F
	Through	1,600	924	57.7%	531.0	26.7	F
	Right Turn	220	114	51.6%	528.8	32.3	F
	Subtotal	1,860	1,061	57.0%	530.3	26.5	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,608	3,404	73.9%	256.9	21.6	F

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	310	226	72.8%	28.0	11.6	C
	Right Turn	360	253	70.3%	21.7	3.7	C
	Subtotal	670	479	71.5%	24.4	6.1	C
SB	Left Turn	40	26	66.0%	37.0	19.3	D
	Through	490	366	74.8%	40.3	11.7	D
	Right Turn						
	Subtotal	530	393	74.1%	40.3	11.9	D
EB	Left Turn	690	496	71.9%	37.5	8.2	D
	Through	2,480	1,791	72.2%	32.1	2.5	C
	Right Turn	120	90	74.7%	27.7	3.3	C
	Subtotal	3,290	2,377	72.3%	33.1	2.7	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,490	3,249	72.4%	32.6	3.3	C

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	4	45.0%	42.6	38.9	D
	Right Turn						
	Subtotal	8	4	45.0%	34.5	38.5	C
SB	Left Turn						
	Through	1,190	932	78.3%	22.2	22.0	C
	Right Turn	10	8	84.0%	5.4	8.0	A
	Subtotal	1,200	940	78.4%	22.0	21.8	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	100	69	68.8%	35.9	5.1	D
	Through	770	588	76.4%	33.3	2.5	C
	Right Turn	210	179	85.3%	4.2	1.0	A
	Subtotal	1,080	836	77.4%	27.2	2.4	C
Total		2,288	1,780	77.8%	24.1	10.8	C

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	220	163	74.2%	21.4	6.4	C
	Through						
	Right Turn						
	Subtotal	220	163	74.2%	21.4	6.4	C
SB	Left Turn						
	Through	50	52	104.8%	31.5	31.6	C
	Right Turn	70	73	104.0%	12.2	7.8	B
	Subtotal	120	125	104.3%	19.6	14.6	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	220	174	79.3%	15.6	18.4	B
	Through	910	690	75.8%	9.4	2.8	A
	Right Turn						
	Subtotal	1,130	864	76.5%	10.9	6.4	B
Total		1,470	1,153	78.4%	13.3	6.3	B

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	490	342	69.8%	42.9	16.9	D
	Through	600	420	70.1%	14.9	7.8	B
	Right Turn						
	Subtotal	1,090	762	69.9%	27.5	12.0	C
SB	Left Turn						
	Through	460	319	69.3%	102.5	37.8	F
	Right Turn	150	110	73.1%	97.7	39.5	F
	Subtotal	610	428	70.2%	101.2	38.1	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	210	128	61.1%	243.3	62.4	F
	Through	500	426	85.2%	38.6	7.0	D
	Right Turn	70	64	90.9%	16.5	5.1	B
	Subtotal	780	618	79.2%	76.3	5.5	E
Total		2,480	1,809	72.9%	61.6	13.3	E

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	770	749	97.2%	18.6	3.8	B
	Right Turn	170	156	91.5%	72.3	48.9	E
	Subtotal	940	904	96.2%	26.6	7.3	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	240	155	64.7%	65.2	30.3	E
	Through	690	529	76.6%	45.5	16.9	D
	Right Turn						
	Subtotal	930	684	73.5%	49.9	18.2	D
Total		1,870	1,588	84.9%	36.4	10.0	D

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	9	92.0%	27.8	12.5	C
	Through						
	Right Turn	20	20	100.0%	30.4	10.0	C
	Subtotal	30	29	97.3%	31.0	7.7	C
SB	Left Turn	20	19	94.0%	50.2	20.2	D
	Through	5	3	56.0%	27.9	32.4	C
	Right Turn	30	36	118.7%	21.3	11.5	C
	Subtotal	55	57	104.0%	33.4	13.9	C
EB	Left Turn						
	Through	1,370	888	64.8%	127.2	6.5	F
	Right Turn	20	11	56.0%	132.0	24.1	F
	Subtotal	1,390	899	64.7%	127.3	6.5	F
WB	Left Turn	20	15	76.0%	57.0	60.2	E
	Through	640	508	79.4%	4.8	0.7	A
	Right Turn	140	119	84.9%	2.4	0.7	A
	Subtotal	800	642	80.3%	5.6	1.8	A
Total		2,275	1,627	71.5%	74.3	4.5	E

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	7	72.0%	25.8	15.3	C
	Through	10	12	124.0%	23.4	14.1	C
	Right Turn	58	61	105.5%	13.9	3.6	B
	Subtotal	78	81	103.6%	16.8	4.5	B
SB	Left Turn	30	36	120.0%	29.8	6.8	C
	Through	10	10	104.0%	23.9	18.0	C
	Right Turn	40	38	96.0%	23.3	6.4	C
	Subtotal	80	85	106.0%	27.0	5.0	C
EB	Left Turn	70	45	64.6%	47.9	4.6	D
	Through	1,330	874	65.7%	13.5	1.7	B
	Right Turn	20	14	70.0%	10.0	8.5	B
	Subtotal	1,420	933	65.7%	15.1	1.6	B
WB	Left Turn	10	8	80.0%	39.1	22.2	D
	Through	750	587	78.2%	13.9	3.7	B
	Right Turn	20	12	62.0%	10.2	9.5	B
	Subtotal	780	607	77.8%	14.2	3.6	B
Total		2,358	1,706	72.3%	15.5	1.6	B

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	220	172	78.4%	41.5	26.5	D
	Through	450	331	73.5%	29.7	15.9	C
	Right Turn	450	354	78.7%	13.8	6.7	B
	Subtotal	1,120	857	76.5%	25.3	13.6	C
EB	Left Turn	8	6	75.0%	32.1	20.3	C
	Through	1,090	733	67.2%	25.2	5.9	C
	Right Turn	320	216	67.5%	12.6	3.3	B
	Subtotal	1,418	955	67.3%	22.4	5.2	C
WB	Left Turn	160	116	72.8%	58.7	3.7	E
	Through	330	253	76.7%	5.2	0.8	A
	Right Turn						
	Subtotal	490	370	75.4%	22.3	3.0	C
Total		3,028	2,182	72.0%	23.3	6.8	C

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	12	116.0%	33.6	20.6	C
	Through	130	106	81.8%	29.5	17.2	C
	Right Turn	20	20	100.0%	36.9	32.0	D
	Subtotal	160	138	86.3%	31.5	17.8	C
SB	Left Turn	140	118	84.3%	78.5	62.2	E
	Through	60	57	94.7%	45.6	22.0	D
	Right Turn	50	40	80.0%	34.0	32.9	C
	Subtotal	250	215	85.9%	61.1	44.2	E
EB	Left Turn	80	54	67.0%	41.0	7.1	D
	Through	1,100	755	68.7%	25.9	7.3	C
	Right Turn	130	94	72.0%	28.2	7.9	C
	Subtotal	1,310	902	68.9%	27.1	6.9	C
WB	Left Turn						
	Through	430	320	74.3%	28.0	1.6	C
	Right Turn	110	80	73.1%	20.2	6.2	C
	Subtotal	540	400	74.1%	26.4	2.4	C
Total		2,260	1,655	73.2%	31.6	9.6	C

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	220	162	73.5%	53.0	12.7	D
	Through	790	560	70.8%	35.6	12.8	D
	Right Turn	110	71	64.7%	29.7	7.7	C
	Subtotal	1,120	792	70.8%	38.8	10.6	D
SB	Left Turn	10	9	92.0%	45.0	22.7	D
	Through	450	298	66.2%	55.7	11.4	E
	Right Turn	200	136	68.0%	46.9	11.3	D
	Subtotal	660	443	67.2%	52.9	11.0	D
EB	Left Turn	480	332	69.2%	53.2	14.8	D
	Through	570	414	72.7%	47.2	12.5	D
	Right Turn	210	148	70.7%	42.8	11.0	D
	Subtotal	1,260	895	71.0%	48.9	11.5	D
WB	Left Turn	10	12	116.0%	157.0	97.8	F
	Through	120	98	82.0%	86.9	52.6	F
	Right Turn	10	6	56.0%	50.8	59.2	D
	Subtotal	140	116	82.6%	93.4	57.8	F
Total		3,180	2,246	70.6%	48.3	11.4	D

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	230	166	72.2%	24.4	4.3	C
	Through	660	473	71.6%	24.7	1.6	C
	Right Turn	50	40	80.0%	22.3	4.9	C
	Subtotal	940	679	72.2%	24.4	2.1	C
EB	Left Turn						
	Through	390	374	95.8%	21.3	16.0	C
	Right Turn	10	9	88.0%	2.7	3.5	A
	Subtotal	400	382	95.6%	20.8	15.6	C
WB	Left Turn	40	30	74.0%	49.5	6.8	D
	Through	150	126	83.7%	41.3	4.9	D
	Right Turn						
	Subtotal	190	155	81.7%	42.7	4.8	D
Total		1,530	1,216	79.5%	25.4	5.7	C

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	80	75	94.0%	22.9	4.4	C
	Through	100	91	90.8%	20.3	4.7	C
	Right Turn	30	32	105.3%	11.4	4.4	B
	Subtotal	210	198	94.1%	20.0	3.3	C
SB	Left Turn	20	12	60.0%	23.5	19.3	C
	Through	30	24	81.3%	22.9	5.9	C
	Right Turn	30	27	90.7%	9.2	5.5	A
	Subtotal	80	64	79.5%	17.2	6.7	C
EB	Left Turn	80	68	84.5%	45.1	8.2	E
	Through	420	371	88.3%	20.5	8.1	C
	Right Turn	10	6	56.0%	10.5	11.8	B
	Subtotal	510	444	87.1%	24.3	7.5	C
WB	Left Turn	10	6	60.0%	43.2	32.7	E
	Through	190	148	77.9%	28.1	2.1	D
	Right Turn	20	16	80.0%	18.7	8.9	C
	Subtotal	220	170	77.3%	27.8	2.1	D
Total		1,020	875	85.8%	23.5	3.9	C

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	30	16	52.0%	91.2	39.3	F
	Through	800	518	64.8%	107.3	16.8	F
	Right Turn	300	196	65.3%	84.8	10.4	F
	Subtotal	1,130	730	64.6%	101.4	15.6	F
SB	Left Turn	160	106	66.5%	72.6	19.2	E
	Through	470	318	67.6%	21.6	13.8	C
	Right Turn	40	32	80.0%	21.2	15.5	C
	Subtotal	670	456	68.1%	33.9	17.9	C
EB	Left Turn	140	120	86.0%	105.5	38.2	F
	Through	290	254	87.7%	57.2	13.3	E
	Right Turn	40	32	81.0%	51.2	15.5	D
	Subtotal	470	407	86.6%	71.4	22.0	E
WB	Left Turn	70	67	96.0%	166.9	48.2	F
	Through	150	126	84.0%	141.9	40.6	F
	Right Turn	310	248	80.1%	140.0	42.2	F
	Subtotal	530	442	83.3%	144.5	41.7	F
Total		2,800	2,035	72.7%	89.0	13.3	F

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	310	230	74.2%	16.9	1.8	B
	Right Turn	400	316	78.9%	11.5	1.8	B
	Subtotal	710	546	76.8%	13.8	1.6	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	40	40	100.0%	5.5	1.5	A
	Through	950	960	101.1%	6.6	0.4	A
	Right Turn						
	Subtotal	990	1,000	101.1%	6.6	0.4	A
Total		1,700	1,546	90.9%	9.1	0.6	A

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	20	18	90.0%	8.9	2.8	A
	Subtotal	20	18	90.0%	8.9	2.8	A
SB	Left Turn	220	172	78.2%	23.9	4.3	C
	Through	130	98	75.7%	30.5	4.3	C
	Right Turn						
	Subtotal	350	270	77.3%	26.5	2.6	C
EB	Left Turn						
	Through	2,820	2,692	95.5%	136.7	26.8	F
	Right Turn	410	406	99.0%	144.5	27.3	F
	Subtotal	3,230	3,098	95.9%	137.7	26.8	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,600	3,386	94.1%	128.1	24.2	F

Intersection: 5: 4th St & L St

Movement	NB	NB
Directions Served	L	L
Maximum Queue (ft)	86	84
Average Queue (ft)	49	28
95th Queue (ft)	93	91
Link Distance (ft)		162
Upstream Blk Time (%)		0
Queuing Penalty (veh)		1
Storage Bay Dist (ft)	75	
Storage Blk Time (%)	3	0
Queuing Penalty (veh)	4	0

Intersection: 11: 4th St & Capitol Mall

Movement	EB	NB	SB
Directions Served	L	L	L
Maximum Queue (ft)	99	28	130
Average Queue (ft)	49	10	81
95th Queue (ft)	116	36	159
Link Distance (ft)			125
Upstream Blk Time (%)	0		16
Queuing Penalty (veh)	0		20
Storage Bay Dist (ft)	250	200	
Storage Blk Time (%)			
Queuing Penalty (veh)			

** NOTE: The southbound left-turn (SBL) information shown above is incomplete, since intersection 128 (next page) is the upstream node of intersection 11. To estimate the maximum southbound left-turn queue, add the length shown above (130') to the southbound left-turn/through maximum queue from intersection 128 (36').

Intersection: 128: 4th St & Project Dwy

Movement	SB
Directions Served	LT
Maximum Queue (ft)	36
Average Queue (ft)	12
95th Queue (ft)	52
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	50
Storage Blk Time (%)	9
Queuing Penalty (veh)	13

Intersection: 700: 3rd St/Project Dwy

Movement	SB
Directions Served	L
Maximum Queue (ft)	102
Average Queue (ft)	26
95th Queue (ft)	92
Link Distance (ft)	
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	125
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection 1 **5th St/I St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	120	64	53.0%	24.7	9.7	C
	Through	1,100	650	59.1%	81.8	65.3	F
	Right Turn						
	Subtotal	1,220	713	58.5%	76.4	58.4	E
SB	Left Turn						
	Through	360	76	21.1%	280.0	153.1	F
	Right Turn	310	72	23.4%	205.3	103.7	F
	Subtotal	670	148	22.1%	243.5	126.5	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	200	106	53.2%	53.0	56.2	D
	Through	2,770	1,828	66.0%	17.7	6.5	B
	Right Turn	100	61	60.8%	34.1	61.9	C
	Subtotal	3,070	1,996	65.0%	19.5	8.7	B
Total		4,960	2,857	57.6%	40.8	14.1	D

Intersection 2 **3rd St/I-5 SB Off-Ramp-J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	4	45.0%	63.0	90.6	E
	Right Turn	270	117	43.4%	63.9	33.5	E
	Subtotal	278	121	43.5%	64.8	34.1	E
SB	Left Turn	170	71	41.6%	135.5	117.0	F
	Through	520	194	37.4%	191.8	72.9	F
	Right Turn						
	Subtotal	690	265	38.4%	177.6	70.4	F
SE	Left Turn	780	656	84.2%	105.4	32.6	F
	Through						
	Right Turn	480	280	58.4%	226.5	120.7	F
	Subtotal	1,260	937	74.3%	133.1	44.9	F
EB	Left Turn	20	14	72.0%	123.7	77.7	F
	Through	870	633	72.7%	189.4	95.6	F
	Right Turn	60	36	60.7%	210.8	110.6	F
	Subtotal	950	684	72.0%	189.1	94.9	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,178	2,006	63.1%	146.8	33.9	F

Intersection 3 **5th St/J St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	780	349	44.7%	44.6	71.1	D
	Right Turn	450	203	45.1%	31.0	54.9	C
	Subtotal	1,230	552	44.8%	39.8	65.1	D
SB	Left Turn	30	6	21.3%	143.0	159.6	F
	Through	530	163	30.8%	137.5	83.9	F
	Right Turn						
	Subtotal	560	170	30.3%	137.4	85.4	F
EB	Left Turn	440	351	79.7%	108.4	60.7	F
	Through	1,590	1,128	71.0%	43.5	11.6	D
	Right Turn	80	50	63.0%	83.4	63.3	F
	Subtotal	2,110	1,530	72.5%	56.7	9.2	E
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,900	2,251	57.7%	57.1	20.0	E

Intersection 4 **3rd St/I-5 NB On-Ramp-L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	8	4	55.0%	8.5	7.7	A
	Right Turn						
	Subtotal	8	4	55.0%	8.5	7.7	A
SB	Left Turn						
	Through	900	362	40.2%	146.5	79.1	F
	Right Turn	50	22	44.8%	41.8	36.1	D
	Subtotal	950	384	40.5%	139.8	75.4	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	230	83	36.2%	156.1	58.2	F
	Through	1,510	612	40.5%	115.7	9.2	F
	Right Turn	270	118	43.6%	59.4	5.5	E
	Subtotal	2,010	812	40.4%	110.6	11.2	F
Total		2,968	1,201	40.5%	112.6	22.8	F

Intersection 5 **DOCO Dwy-4th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	450	169	37.5%	266.6	41.5	F
	Through						
	Right Turn						
	Subtotal	450	169	37.5%	266.6	41.5	F
SB	Left Turn						
	Through	140	29	20.9%	360.0	171.0	F
	Right Turn	80	18	22.0%	393.0	140.3	F
	Subtotal	220	47	21.3%	370.4	143.1	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	200	68	33.8%	78.4	13.4	E
	Through	1,370	572	41.8%	147.6	19.0	F
	Right Turn						
	Subtotal	1,570	640	40.8%	140.2	17.7	F
Total		2,240	856	38.2%	173.5	16.9	F

Intersection 6 **5th St/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	260	134	51.4%	69.3	26.2	E
	Through	960	445	46.4%	23.1	17.4	C
	Right Turn						
	Subtotal	1,220	579	47.4%	33.7	20.2	C
SB	Left Turn						
	Through	490	155	31.7%	321.7	64.4	F
	Right Turn	120	31	26.0%	305.2	69.5	F
	Subtotal	610	186	30.6%	319.7	63.5	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	230	84	36.3%	178.1	71.8	F
	Through	1,120	422	37.7%	175.7	51.5	F
	Right Turn	270	119	44.0%	41.8	14.8	D
	Subtotal	1,620	625	38.6%	150.2	32.8	F
Total		3,450	1,390	40.3%	123.0	17.2	F

Intersection 7 **7th/L St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	910	889	97.7%	23.6	8.1	C
	Right Turn	90	76	84.4%	160.4	128.3	F
	Subtotal	1,000	965	96.5%	33.0	6.5	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	250	42	16.8%	213.3	55.1	F
	Through	1,260	470	37.3%	186.7	79.5	F
	Right Turn						
	Subtotal	1,510	512	33.9%	187.5	74.4	F
Total		2,510	1,476	58.8%	81.6	13.3	F

Intersection 8 **Front St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	13	128.0%	50.1	53.4	D
	Through						
	Right Turn	10	4	40.0%	88.6	154.1	F
	Subtotal	20	17	84.0%	49.1	46.7	D
SB	Left Turn	100	25	25.2%	394.5	147.6	F
	Through	10	2	24.0%	168.0	199.6	F
	Right Turn	80	20	25.5%	313.5	77.4	F
	Subtotal	190	48	25.3%	338.6	94.0	F
EB	Left Turn						
	Through	700	316	45.1%	262.2	102.6	F
	Right Turn	10	7	68.0%	182.2	145.7	F
	Subtotal	710	322	45.4%	260.6	101.6	F
WB	Left Turn	30	12	41.3%	109.3	76.5	F
	Through	850	383	45.0%	4.8	1.4	A
	Right Turn	70	28	39.4%	2.4	0.5	A
	Subtotal	950	423	44.5%	7.3	4.1	A
Total		1,870	810	43.3%	118.2	21.0	F

Intersection 9 **2nd St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	4	36.0%	93.7	94.9	F
	Through	10	4	40.0%	146.5	181.2	F
	Right Turn	118	70	59.7%	166.9	102.8	F
	Subtotal	138	78	56.5%	163.1	104.4	F
SB	Left Turn	50	30	60.8%	184.9	144.2	F
	Through	10	8	84.0%	149.9	118.7	F
	Right Turn	90	65	72.4%	131.7	109.1	F
	Subtotal	150	104	69.3%	150.8	121.1	F
EB	Left Turn	50	18	36.8%	81.1	42.4	F
	Through	750	313	41.8%	73.4	42.0	E
	Right Turn	20	9	44.0%	36.4	46.3	D
	Subtotal	820	340	41.5%	73.0	39.1	E
WB	Left Turn	20	8	42.0%	16.6	9.4	B
	Through	850	349	41.1%	24.7	0.6	C
	Right Turn	60	26	44.0%	20.4	5.2	C
	Subtotal	930	384	41.3%	24.2	0.8	C
Total		2,038	906	44.5%	63.5	19.4	E

Intersection 10 **3rd/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	210	77	36.6%	198.8	113.3	F
	Through	760	292	38.4%	175.2	106.3	F
	Right Turn	90	39	43.6%	84.9	50.3	F
	Subtotal	1,060	408	38.5%	164.8	89.2	F
EB	Left Turn	8	5	60.0%	118.5	150.4	F
	Through	650	261	40.2%	182.2	79.0	F
	Right Turn	260	113	43.5%	212.7	91.8	F
	Subtotal	918	379	41.3%	189.6	71.8	F
WB	Left Turn	320	120	37.6%	54.7	33.0	D
	Through	840	338	40.3%	17.6	16.4	B
	Right Turn						
	Subtotal	1,160	459	39.6%	26.9	12.5	C
Total		3,138	1,246	39.7%	108.3	28.6	F

Intersection 11 **4th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	40	15	38.0%	431.5	204.3	F
	Through	160	42	26.0%	494.8	183.1	F
	Right Turn	30	13	42.7%	521.1	193.4	F
	Subtotal	230	70	30.3%	484.3	181.6	F
SB	Left Turn	210	84	40.2%	78.5	40.7	E
	Through	60	21	34.7%	57.2	30.9	E
	Right Turn	250	101	40.5%	39.1	23.5	D
	Subtotal	520	206	39.7%	55.5	23.1	E
EB	Left Turn						
	Through	810	312	38.5%	60.9	38.5	E
	Right Turn	50	22	43.2%	44.8	70.2	D
	Subtotal	860	333	38.7%	59.9	38.5	E
WB	Left Turn						
	Through	870	363	41.7%	84.2	47.6	F
	Right Turn	240	82	34.0%	118.8	67.9	F
	Subtotal	1,110	445	40.1%	90.7	51.5	F
Total		2,720	1,054	38.8%	93.8	24.4	F

Intersection 12 **5th St/Capitol Mall** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	350	165	47.2%	147.7	78.8	F
	Through	920	461	50.1%	56.0	14.1	E
	Right Turn	80	42	52.5%	57.0	35.5	E
	Subtotal	1,350	668	49.5%	79.3	22.3	E
SB	Left Turn	10	2	24.0%	43.3	32.8	D
	Through	460	169	36.7%	113.2	43.8	F
	Right Turn	270	90	33.2%	98.0	29.0	F
	Subtotal	740	261	35.2%	107.4	35.1	F
EB	Left Turn	300	83	27.7%	41.7	10.5	D
	Through	490	237	48.3%	42.2	29.0	D
	Right Turn	260	118	45.2%	34.4	22.8	C
	Subtotal	1,050	438	41.7%	39.3	19.7	D
WB	Left Turn	20	8	38.0%	119.2	134.9	F
	Through	440	182	41.5%	111.5	96.9	F
	Right Turn	20	10	52.0%	95.0	126.3	F
	Subtotal	480	200	41.8%	111.0	97.0	F
Total		3,620	1,567	43.3%	74.7	16.8	E

Intersection 13 **3rd St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	60	10	16.7%	343.1	301.2	F
	Through	1,390	514	36.9%	164.9	85.7	F
	Right Turn	90	35	38.7%	131.4	70.7	F
	Subtotal	1,540	558	36.3%	163.1	83.8	F
EB	Left Turn						
	Through	440	172	39.1%	327.5	248.8	F
	Right Turn	70	30	43.4%	332.8	278.1	F
	Subtotal	510	202	39.7%	323.7	245.3	F
WB	Left Turn	220	63	28.7%	375.1	271.3	F
	Through	230	71	30.8%	322.7	203.6	F
	Right Turn						
	Subtotal	450	134	29.8%	342.7	224.0	F
Total		2,500	895	35.8%	169.2	56.2	F

Intersection 14 **4th St/N St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	100	48	48.0%	293.1	188.6	F
	Through	70	30	43.4%	303.2	192.8	F
	Right Turn	40	32	80.0%	266.4	160.8	F
	Subtotal	210	110	52.6%	282.0	164.6	F
SB	Left Turn	40	11	28.0%	89.4	158.0	F
	Through	90	23	25.3%	68.0	103.7	F
	Right Turn	70	15	21.7%	74.0	120.2	F
	Subtotal	200	49	24.6%	75.1	118.2	F
EB	Left Turn	120	36	29.7%	452.8	252.0	F
	Through	350	114	32.6%	74.9	58.9	F
	Right Turn	50	20	39.2%	74.2	93.5	F
	Subtotal	520	169	32.5%	145.1	87.2	F
WB	Left Turn	10	3	32.0%	165.1	144.5	F
	Through	280	82	29.3%	208.8	149.1	F
	Right Turn	20	4	20.0%	94.5	130.9	F
	Subtotal	310	89	28.8%	199.9	130.9	F
Total		1,240	418	33.7%	168.3	80.1	F

Intersection 15 **5th St/N St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	40	20	49.0%	183.7	70.0	F
	Through	670	373	55.7%	194.2	48.9	F
	Right Turn	60	29	48.7%	153.7	61.8	F
	Subtotal	770	422	54.8%	191.4	48.4	F
SB	Left Turn	170	64	37.6%	56.7	13.9	E
	Through	560	227	40.5%	21.0	5.8	C
	Right Turn	10	4	40.0%	14.5	7.0	B
	Subtotal	740	295	39.8%	28.9	8.2	C
EB	Left Turn	180	83	46.2%	446.1	255.3	F
	Through	200	74	36.8%	338.2	235.1	F
	Right Turn	50	16	32.8%	327.0	230.9	F
	Subtotal	430	173	40.3%	388.6	241.6	F
WB	Left Turn	30	9	30.7%	276.5	194.8	F
	Through	260	84	32.3%	307.1	70.6	F
	Right Turn	390	140	35.8%	277.4	98.4	F
	Subtotal	680	233	34.2%	289.1	83.1	F
Total		2,620	1,123	42.9%	183.2	44.2	F

Intersection 16 **3rd St/P St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through	630	261	41.4%	216.7	60.8	F
	Right Turn	1,070	438	40.9%	223.4	66.9	F
	Subtotal	1,700	698	41.1%	221.2	64.8	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	50	37	73.6%	49.8	8.6	D
	Through	2,290	1,484	64.8%	65.3	4.0	E
	Right Turn						
	Subtotal	2,340	1,520	65.0%	64.9	4.1	E
Total		4,040	2,219	54.9%	113.4	19.5	F

Intersection 17 **3rd St/Q St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	20	24	122.0%	3.6	1.0	A
	Subtotal	20	24	122.0%	3.6	1.0	A
SB	Left Turn	210	88	41.9%	9.7	1.9	A
	Through	470	211	44.9%	33.9	5.0	C
	Right Turn						
	Subtotal	680	299	43.9%	26.8	3.4	C
EB	Left Turn						
	Through	890	897	100.8%	29.7	1.5	C
	Right Turn	240	243	101.2%	19.3	2.0	B
	Subtotal	1,130	1,140	100.8%	27.5	1.3	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,830	1,463	79.9%	26.9	1.4	C

Intersection: 5: 4th St & L St

Movement	NB	NB
Directions Served	L	L
Maximum Queue (ft)	140	58
Average Queue (ft)	120	19
95th Queue (ft)	157	57
Link Distance (ft)	73	73
Upstream Blk Time (%)	93	2
Queuing Penalty (veh)	210	5
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: 4th St & Capitol Mall

Movement	EB	NB	SB
Directions Served	L	L	L
Maximum Queue (ft)	180	48	168
Average Queue (ft)	130	15	101
95th Queue (ft)	230	57	204
Link Distance (ft)		184	127
Upstream Blk Time (%)			31
Queuing Penalty (veh)			81
Storage Bay Dist (ft)	250		
Storage Blk Time (%)	6		
Queuing Penalty (veh)	24		

** NOTE: The southbound left-turn (SBL) information shown above is incomplete, since intersection 128 (next page) is the upstream node of intersection 11. To estimate the maximum southbound left-turn queue, add the length shown above (168') to the southbound left-turn/through maximum queue from intersection 128 (62').

Intersection: 128: 4th St & Parking Garage

Movement	SB
Directions Served	LT
Maximum Queue (ft)	62
Average Queue (ft)	22
95th Queue (ft)	80
Link Distance (ft)	54
Upstream Blk Time (%)	14
Queuing Penalty (veh)	23
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 700: 3rd St

Movement	SB
Directions Served	L
Maximum Queue (ft)	25
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	114
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

FEHR PEERS

Project	301 Capitol Mall TIS
Scenario	Existing Plus Project Conditions
Peak Hour	AM
Major Street	N St
Minor Street	4th St

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	65	29	0
Through	50	32	354	0
Right	21	0	51	0
Total	71	97	434	0

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.5
Approach with Worst Case Delay	SB
Total Vehicles on Approach	97

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing Plus Project Conditions	**0.2**	**97**	**602**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR & PEERS

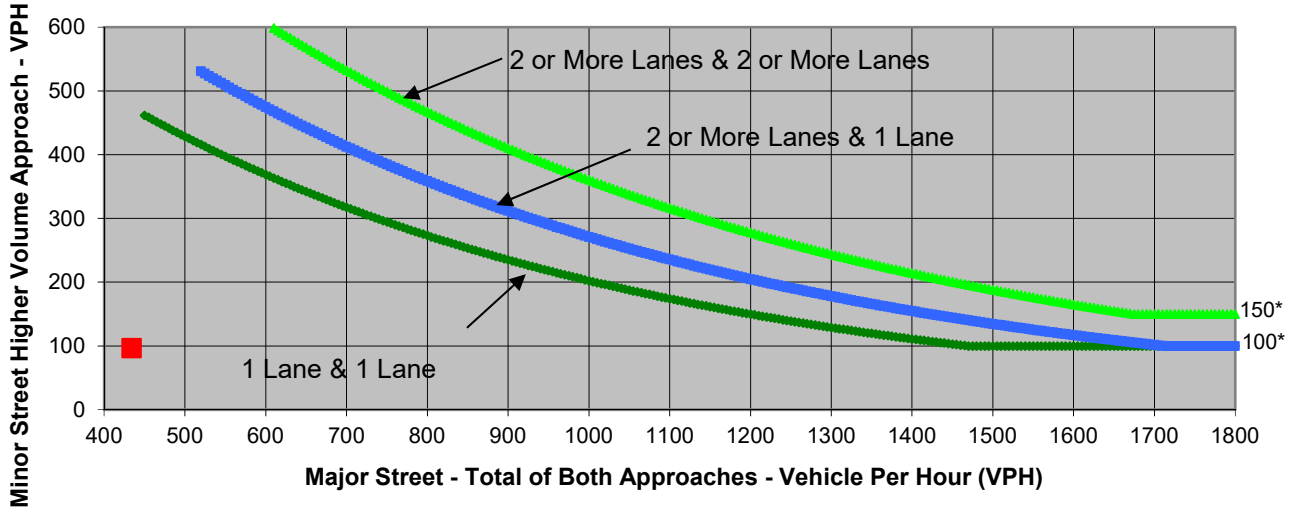
Project	301 Capitol Mall TIS
Scenario	Existing Plus Project Conditions
Peak Hour	AM
Major Street	N St
Minor Street	4th St

Turn Movement Volumes

	NB	SB	EB	WB
Left		65	29	
Through	50	32	354	
Right	21		51	
Total	71	97	434	0

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	N St	4th St	
Number of Approach Lanes	**3**	**1**	**NO**
Traffic Volume (VPH) *	**434**	**97**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	N St	Project	301 Capitol Mall TIS
Minor Street	4th St	Scenario	Existing Plus Project Conditions
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	127	102	0
Through	70	149	308	0
Right	27	0	63	0
Total	97	276	473	0

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	97.4
Approach with Worst Case Delay	NB
Total Vehicles on Approach	97

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing Plus Project Conditions	**2.6**	**276**	**846**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

Major Street	N St
Minor Street	4th St

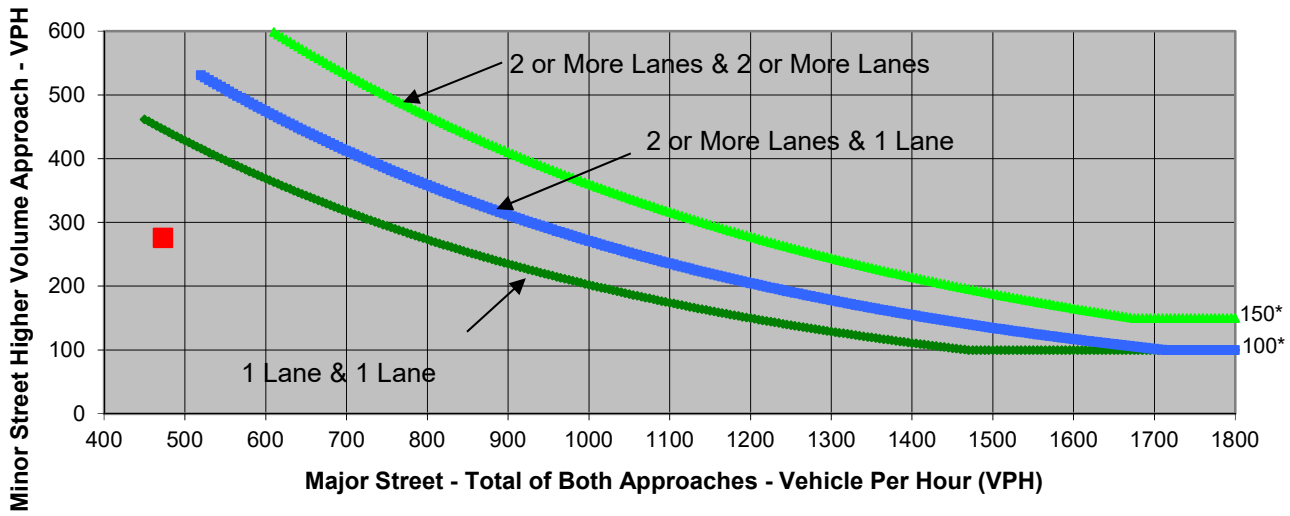
Project	301 Capitol Mall TIS
Scenario	Existing Plus Project Conditions
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left		127	102	
Through	70	149	308	
Right	27		63	
Total	97	276	473	0

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	N St	4th St	
Number of Approach Lanes	**3**	**1**	**NO**
Traffic Volume (VPH) *	**473**	**276**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	301 Capitol Mall TIS
Scenario	Cumulative Conditions
Peak Hour	AM
Major Street	N St
Minor Street	4th St

Turn Movement Volumes

	NB	SB	EB	WB
Left	80	10	80	10
Through	80	20	420	190
Right	30	30	10	10
Total	190	60	510	210

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	23.1
Approach with Worst Case Delay	NB
Total Vehicles on Approach	190

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Cumulative Conditions	**1.2**	**190**	**970**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

Major Street	N St
Minor Street	4th St

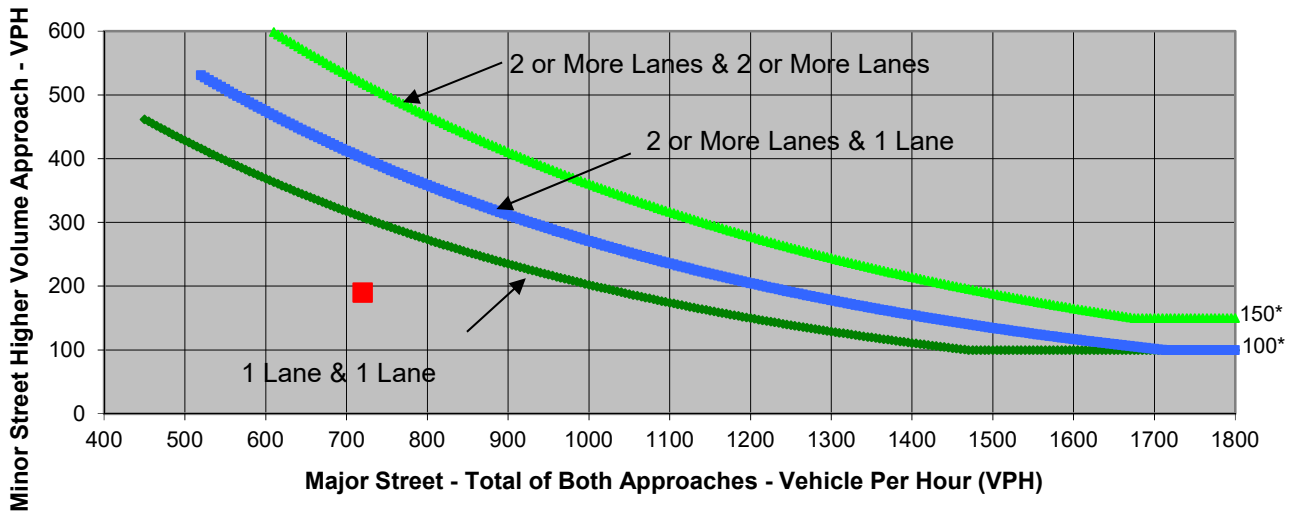
Project	301 Capitol Mall TIS
Scenario	Cumulative Conditions
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	80	10	80	10
Through	80	20	420	190
Right	30	30	10	10
Total	190	60	510	210

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	N St	4th St	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**720**	**190**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	301 Capitol Mall TIS
Scenario	Cumulative Conditions
Peak Hour	PM

Major Street	N St
Minor Street	4th St

Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	20	10
Through	60	70	350	280
Right	40	70	50	10
Total	110	150	420	300

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	393.4
Approach with Worst Case Delay	NB
Total Vehicles on Approach	110

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Cumulative Conditions	**12**	**150**	**980**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR & PEERS

Major Street	N St
Minor Street	4th St

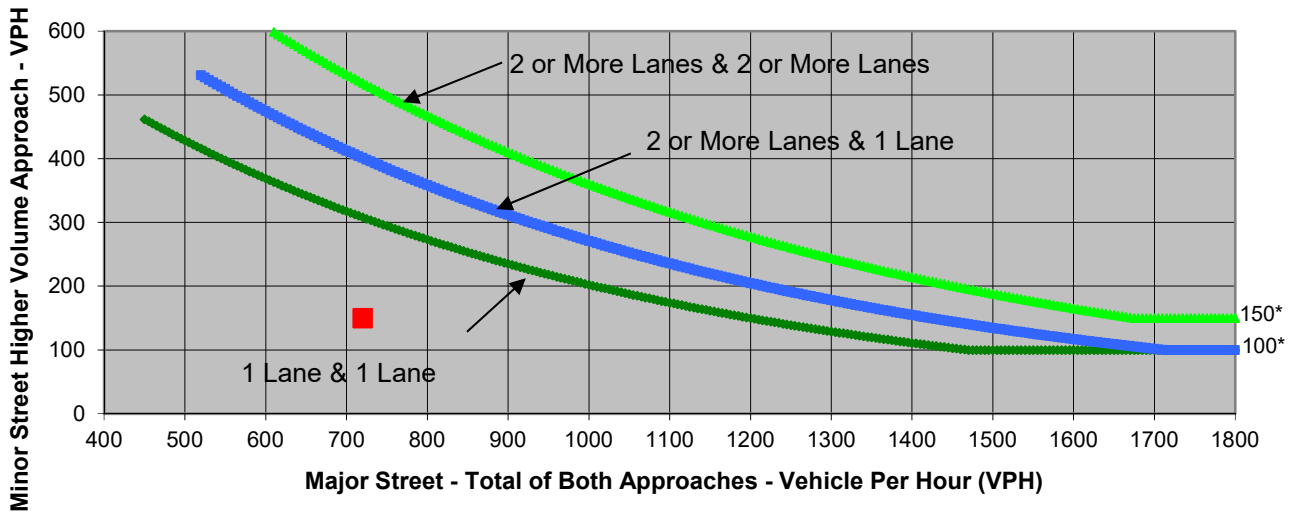
Project	301 Capitol Mall TIS
Scenario	Cumulative Conditions
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	20	10
Through	60	70	350	280
Right	40	70	50	10
Total	110	150	420	300

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	N St	4th St	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**720**	**150**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	301 Capitol Mall TIS
Scenario	Cumulative Plus Project Conditions
Peak Hour	AM

Major Street	N St
Minor Street	4th St

Turn Movement Volumes

	NB	SB	EB	WB
Left	80	20	80	10
Through	100	30	420	190
Right	30	30	10	20
Total	210	80	510	220

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	15.5
Approach with Worst Case Delay	NB
Total Vehicles on Approach	210

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Cumulative Plus Project Conditions	**0.9**	**210**	**1,020**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

Major Street	N St
Minor Street	4th St

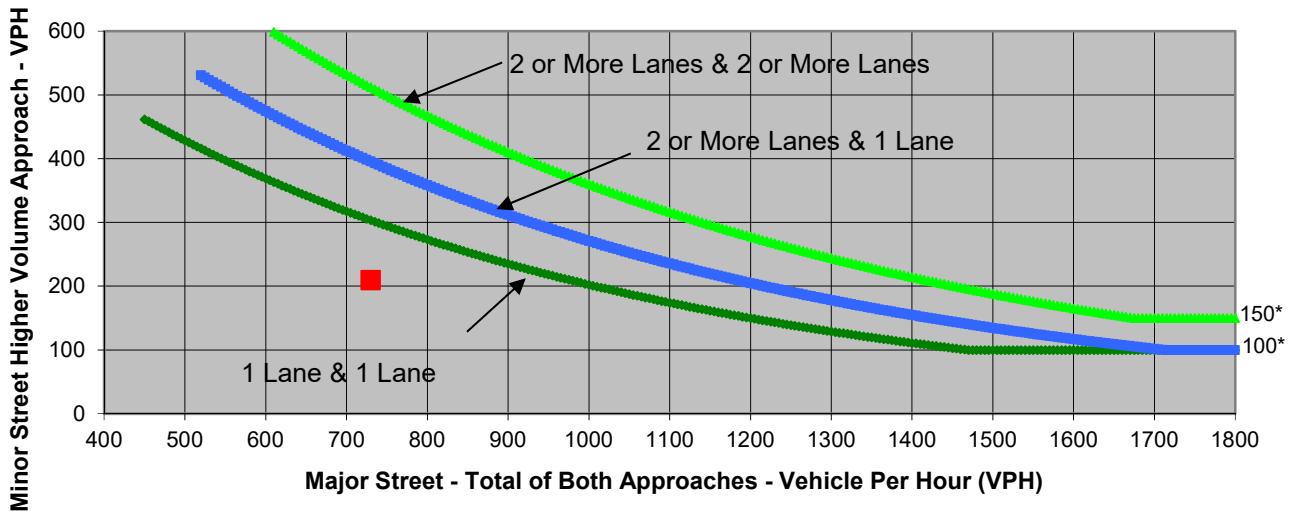
Project	301 Capitol Mall TIS
Scenario	Cumulative Plus Project Conditions
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	80	20	80	10
Through	100	30	420	190
Right	30	30	10	20
Total	210	80	510	220

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	N St	4th St	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**730**	**210**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	301 Capitol Mall TIS
Scenario	Cumulative Plus Project Conditions
Peak Hour	PM

Major Street	N St
Minor Street	4th St

Turn Movement Volumes

	NB	SB	EB	WB
Left	100	40	120	10
Through	70	80	350	280
Right	40	70	50	20
Total	210	190	520	310

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	247.5
Approach with Worst Case Delay	NB
Total Vehicles on Approach	210

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Cumulative Plus Project Conditions	**14.4**	**210**	**1,230**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR & PEERS

Major Street	N St
Minor Street	4th St

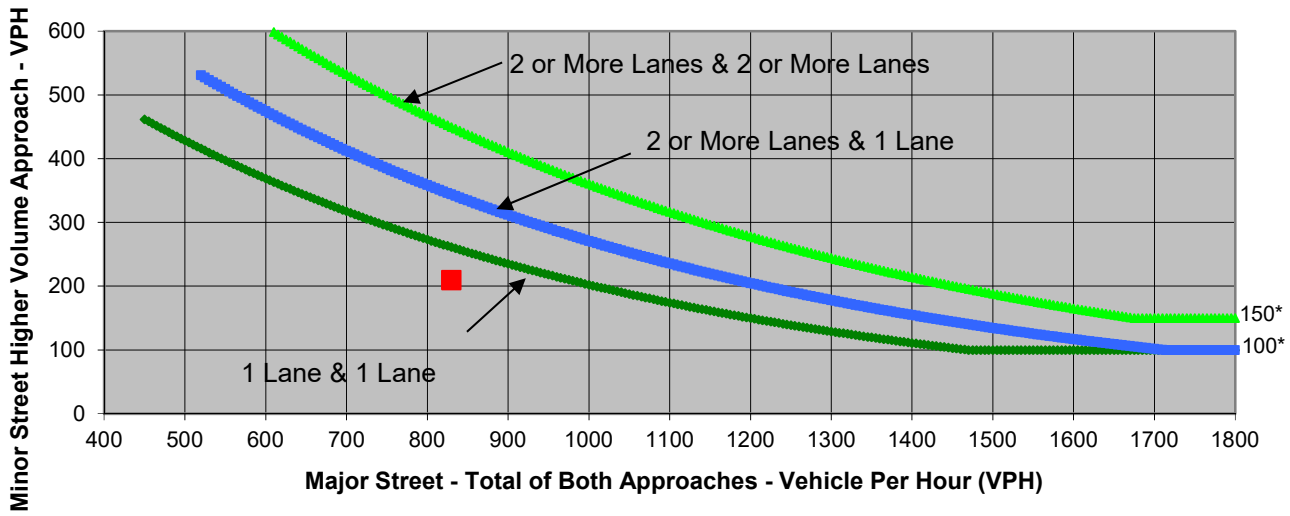
Project	301 Capitol Mall TIS
Scenario	Cumulative Plus Project Conditions
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	100	40	120	10
Through	70	80	350	280
Right	40	70	50	20
Total	210	190	520	310

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	N St	4th St	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**830**	**210**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

MEMORANDUM

Date: December 13, 2018

To: Aelita Milatzo (City of Sacramento)

From: Jimmy Fong and David Carter (Fehr & Peers)

Subject: 301 Capitol Mall – Project Travel Characteristics

RS18-3716

The memorandum documents the expected travel characteristics of the proposed 301 Capitol Mall project, including trip generation and trip distribution.

Proposed Project

The proposed project site is bounded by 3rd Street, 4th Street, L Street, and Capitol Mall in Downtown Sacramento, and the project would encompass the entire block. The mixed-use building project would include 816,300 square feet of general office space and 100 residential dwelling units. The project would also provide 1,304 vehicle parking spaces and 234 bicycle parking spaces.

Trip Generation

Vehicle trip generation estimates were developed based on data published in the *Trip Generation Manual, 10th Edition* (Institute of Transportation Engineers, 2017). The General Office Building land use category (Code 710) was used to develop trips associated with the office, retail, and restaurant land uses for the project. Based on the small amount of restaurant and retail space proposed with the relatively large amount of office space, it is appropriate to use this land use category given the description provided in the manual:

> "An office building or buildings may contain a mixture of tenants including professional services, insurance companies, investment brokers, and tenant services, such as a bank or savings and loan institution, a restaurant, or cafeteria and service retail facilities."

The Multifamily Housing (High-Rise) land use category (Code 222) was used to estimate trips for the residential component of the project.

The manual also provides separate trip rates based on the setting/location. The Center City Core setting is appropriate for this project based on the project location being reflective of the description provided in the manual:

"Center City Core – the downtown area for a major metropolitan region at the focal point of a regional light- or heavy-rail transit system. This area type is typified by multi-storied buildings, a wide range of land uses, an extensive pedestrian network, and shared and priced parking both on-street and in structured garages or surface lots. The area typically has more jobs than residents and therefore is typically an employment destination. The area also includes the immediate vicinity of the commercial core."

Vehicle trip rates for the Center City Core land use category already consider the higher levels of walking, biking, and transit use typically present in this setting; therefore, no additional shifts to these modes are necessary to develop the vehicle trip generation.

Table 1 presents the vehicle trip generation rates for the office and residential land uses of the project during the AM peak hour, PM peak hour, and daily on an average weekday.

Table 1
Vehicle Trip Rates

Land Use	ITE Land Use Code	Daily	AM Peak Hour			PM Peak Hour		
		Rates	Rates	In %	Out %	Rates	In %	Out %
Office	710	4.91 [1]	0.50	86% [2]	14% [2]	0.58	16% [2]	84% [2]
Residential	222	2.16	0.22	38%	62%	0.23	58%	42%

Notes:

[1] Office land use in the Center City Core setting does not include a daily trip rate. The daily trip rate is determined using the PM peak hour to Daily k-factor established from the Office land use in the General Urban/Suburban setting, applied to the PM peak hour rate from the Center City Core setting.

[2] Office inbound and outbound directional percentages are not provided for the Office land use in the Center City Core setting during the AM and PM peak hours. The percentages shown are for the Office land use in the Suburban/Urban setting.

Source: *Trip Generation Manual, 10th Edition* (Institute of Transportation Engineers, 2017)

Table 2 shows the estimated number of vehicle trips for the proposed project.

Table 2
Project Vehicle Trip Generation

Land Use	ITE Land Use Code	Quantity	Daily	AM Peak Hour			PM Peak Hour		
			Trips	Trips	In	Out	Trips	In	Out
Office	710	816.3 KSF	4,009	408	351	57	473	76	397
Residential	222	100 DU	216	22	8	14	23	13	10
Total Vehicle Trips			4,225	430	359	71	496	89	407

Notes: KSF = thousand square feet. DU = dwelling unit.
Source: Fehr & Peers, 2018.

As shown, the project is expected to generate 430 vehicle trips during the AM peak hour, about 500 vehicle trips during the PM peak hour, and approximately 4,250 vehicle daily trips.

Although there is expected to be some internalization of trips between the residential and office land uses, the amount of dwelling units is small compared to the office space proposed; therefore, any internalization would be minimal compared to the overall vehicle trip generation. This analysis conservatively assumes no further reduction for internalization than what is already factored into the trip generation rates.

Trip Distribution

The project's expected vehicle trip distribution was based on the following sources:

- Existing travel patterns in the area
- Travel time comparison from Google Maps during peak commute times
- SACMET regional travel demand model select zone analysis

Figures 1 and 2 display the expected distribution of inbound and outbound vehicle trips, respectively, to the project. It was necessary to develop separate inbound and outbound percentages due to the presence of one-way roadways within the study area, and different locations and travel patterns to/from freeway on- and off-ramps. The figures reflect the distribution of project trips entering and leaving the study area.

Inbound trips from Interstate 5 (I-5) Northbound are split between the Q street and J Street off-ramps due similar travel times between the two routes. In addition, there are slightly different inbound and outbound distributions due to multiple regional parallel routes, including trips to/from the north split between I-5 and State Route 160 (SR 160), and trips to/from the east along United States Route 50 (US 50) split between accessing the freeway via I-5 at P Street/Q Street ramps or US 50 directly at ramps located along X Street.

Next Steps

The precise distribution of project trips between each of the access driveways will be refined as part of the traffic operations microsimulation analysis and will be presented separately. Additional cumulative year trip distribution figures will also be developed as part of the travel demand forecasting analysis, accounting for transportation network changes (i.e. Grid 3.0), as well as changes to land use patterns.

Emerging Mobility Access Planning Tool (EMAP)

Land Use	Units	Quantity	AV Testing Vehicle Mix
Residential	DUs	100	0%
Office	KSF	816.3	0%
Retail	KSF	0	0%
Other: Health Club	KSF	0	0%

Developed by:

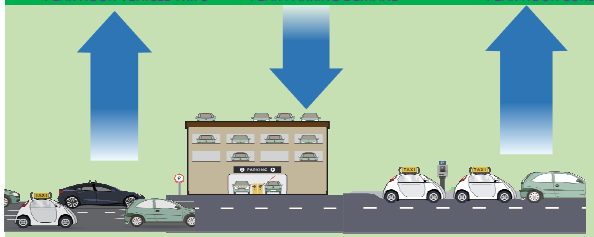
FEHR & PEERS

Scenario: Baseline with no AVs
Analyst: Fehr & Peers
Date: 2/18/2019

Curb Space Evaluation under AV Scenario

Percent of Curb Events at.....	Street Block (f)	Percent of Persons With Bags (%) (g)	Avg. Dwell Time Exceed 60 seconds? (Yes or No) (h)	Highly Peaked Condition? (Yes or No) (i)	Peak Hour Curb Events	Max Simultaneous Curb Events (j) (k)
50%	A	0%	No	Yes	25	3
50%	B	0%	No	Yes	25	3
0%	C	0%	Yes	no	0	#NUM!
0%	D	0%	no	no	0	#NUM!
100%						

PEAK HOUR VEHICLE TRIPS	PEAK PARKING DEMAND	PEAK HOUR CURB EVENTS	
546	328	50	Non-AV Scenario
546	328	50	AV Scenario
0%	0%	N / A	Percent Change (e)



General Notes
- Vehicle trip rate and parking demand inputs should already consider internal trips, shared parking, and external travel by non-auto modes.
- A TNC/Taxi trip generates two trip ends but only one curb event. TNC/Taxi AVO excludes driver.
- Methodology on this tab does not allow for AV matching of inbound trip ends, with outbound trip starts due to the unknown effects it would have on dwell time and curb space usage.
- For analysis purposes, all private non-AV vehicles are assumed to park on-site.
- Methodology can be applied for any peak hour if appropriate inputs are available.

Input Specific Notes
(a) Under AV scenario, vehicle fleet mix should be entered based on expected use of each vehicle type as a percentage of persons.
(b) For curb activity trips, AVO represents occupancy during 'loaded' end of trip (and excludes driver if TNC/Taxi).
(c) Unless specified different by input in cell directly below, private AV that park on-site do not generate a curb event.
(d) Induced travel by AVs applies only to the proportion of vehicle fleet mix that are AVs.
(e) Curb space events should not be expressed on a percent increase basis because that value is not meaningful.
(f) User may specify percent usage of up to four different street blocks used for pick-up/drop-off activity.
(g) 'Percent with Bags' represents passengers with multiple bags of groceries or overnight luggage (and not simply a briefcase or backpack).
(h) To put this variable in perspective, the average dwell times were 24 seconds for drop-offs, and 35 seconds for pick-ups.
(i) A highly peaked condition could consist of curb access to an office building, train station, etc. These conditions typically have PHF of 0.60 or less.
(j) Maximum number of simultaneous curb events based on empirical measurements of curb activity and statistical modeling (see tech memo).
(k) "Use with Caution" warning appears in upper right corner when number of curb events per hour exceeds the model's range of observations (i.e., more than 82 per hour). Use results with caution.

	Non-AV Scenario	AV Scenario	
	Residential		
# of DUs	100	100	
Peak Hour Vehicle Trip Rate per DU	0.23		
Peak Parking Demand per DU	0.13		
VEHICLE FLEET MIX			
Private Auto	90%	90%	(a)
TNC/Taxi (non-AV)	10%	10%	
Privately Owned AV		0%	
Pooled AV		0%	
Mode Split Sum	100%	100%	
AVERAGE VEHICLE OCCUPANCY (AVO) (b)			
Private Auto	1.00	1.00	
TNC/Taxi (non-AV)	1.00	1.00	
Privately Owned AV		1.00	
Pooled AV		1.00	
Share of Private AV Assumed to Park at Site (c)		100%	
Share of Private AV Parking On-Site that Pick-up/Drop-off Passenger(s) at Curb		100%	
Induced Person Travel due to Avs (d)		0%	
NUMBER OF VEHICLES (PEAK HOUR)			
Private Auto		21	
TNC/Taxi (non-AV)		2	
Privately Owned AV (Garage)		0	
Privately Owned AV (Curb)		0	
Pooled AV		0	
VEHICLE TRIP GENERATION (PEAK HOUR)			
Private Auto	20.7	20.7	
TNC/Taxi (non-AV)	4.6	4.6	
Privately Owned AV		0.0	
Pooled AV		0.0	
Person Trips	23	23	
Vehicle Trips	25.3	25.3	
Peak Hour Curb Events	2	2	
Peak Parking Demand (Spaces)	11.7	12	

	Non-AV Scenario	AV Scenario	
	Office		
# of KSF	816.3	816.3	
Peak Hour Vehicle Trip Rate per KSF	0.58		
Peak Parking Demand per DU	0.43		
VEHICLE FLEET MIX			
Private Auto	90%	90%	(a)
TNC/Taxi (non-AV)	10%	10%	
Privately Owned AV		0%	
Pooled AV		0%	
Mode Split Sum	100%	100%	
AVERAGE VEHICLE OCCUPANCY (AVO) (b)			
Private Auto	1.00	1.00	
TNC/Taxi (non-AV)	1.00	1.00	
Privately Owned AV		1.00	
Pooled AV		1.00	
Share of Private AV Assumed to Park at Site (c)		50%	
Share of Private AV Parking On-Site that Pick-up/Drop-off Passenger(s) at Curb		100%	
Induced Person Travel due to Avs (d)		0%	
NUMBER OF VEHICLES (PEAK HOUR)			
Private Auto		426	
TNC/Taxi (non-AV)		47	
Privately Owned AV (Garage)		0	
Privately Owned AV (Curb)		0	
Pooled AV		0	
VEHICLE TRIP GENERATION (PEAK HOUR)			
Private Auto	426.1	426.1	
TNC/Taxi (non-AV)	94.7	94.7	
Privately Owned AV		0.0	
Pooled AV		0.0	
Person Trips	473.454	473	
Vehicle Trips	520.8	520.8	
Peak Hour Curb Events	47	47	
Peak Parking Demand (Spaces)	315.9081	316	

	Non-AV Scenario	AV Scenario
	Retail	
# of KSF	0	0
Peak Hour Vehicle Trip Rate per KSF	1	
Peak Parking Demand per DU	1	

	Non-AV Scenario	AV Scenario
	Other: Health Club	
# of KSF/DU	0	0
Peak Hour Vehicle Trip Rate per KSF/DU	1	
Peak Parking Demand per KSF/DU	1	

Emerging Mobility Access Planning Tool (EMAP)

Land Use	Units	Quantity	AV Testing Vehicle Mix
Residential	DUs	100	0%
Office	KSF	816.3	0%
Retail	KSF	0	0%
Other: Health Club	KSF	0	0%

Developed by:

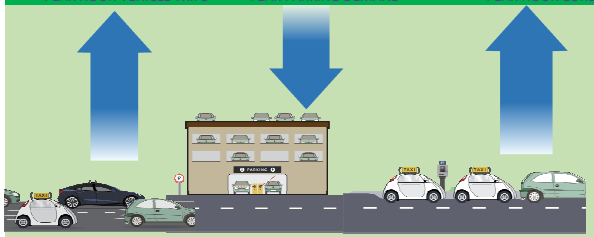
FEHR & PEERS

Scenario:	Future w/AVs	
Analyst:	Fehr & Peers	
Date:	2/18/2019	

Curb Space Evaluation under AV Scenario

Percent of Curb Events at.....	Street Block (f)	Percent of Persons With Bags (%) (g)	Avg. Dwell Time Exceed 60 seconds? (Yes or No) (h)	Highly Peaked Condition? (Yes or No) (i)	Peak Hour Curb Events	Max Simultaneous Curb Events (j)	(k)
50%	A	0%	No	Yes	174	5	USE WITH CAUTION
50%	B	0%	No	Yes	174	5	USE WITH CAUTION
0%	C	0%	Yes	no	0	#NUM!	
0%	D	0%	no	no	0	#NUM!	
100%							

546	328	50 Non-AV Scenario
844	109	348 AV Scenario
55%	67%	N / A Percent Change (e)
PEAK HOUR VEHICLE TRIPS	PEAK PARKING DEMAND	PEAK HOUR CURB EVENTS



General Notes

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- Methodology can be applied for any peak hour if appropriate inputs are available.

Input Specific Notes

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(b) For curb activity trips, AVO represents occupancy during 'loaded' end of trip (and excludes driver if TNC/Taxi).
(c) Unless specified different by input in cell directly below, private AV that park on-site do not generate a curb event.
(d) Induced travel by AVs applies only to the proportion of vehicle fleet mix that are AVs.
(e) Curb space events should not be expressed on a percent increase basis because that value is not meaningful.
(f) User may specify percent usage of up to four different street blocks used for pick-up/drop-off activity.
(g) 'Percent with Bags' represents passengers with multiple bags of groceries or overnight luggage (and not simply a briefcase or backpack).
(h) To put this variable in perspective, the average dwell times were 24 seconds for drop-offs, and 35 seconds for pick-ups.
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(j) Maximum number of simultaneous curb events based on empirical measurements of curb activity and statistical modeling (see tech memo).
(k) "Use with Caution" warning appears in upper right corner when number of curb events per hour exceeds the model's range of observations (i.e., more than 82 per hour). Use results with caution.

	Non-AV Scenario	AV Scenario	
	Residential		
# of DUs	100	100	
Peak Hour Vehicle Trip Rate per DU	0.23		
Peak Parking Demand per DU	0.13		
VEHICLE FLEET MIX			
Private Auto	90%	30%	(a)
TNC/Taxi (non-AV)	10%	70%	
Privately Owned AV		0%	
Pooled AV		0%	
Mode Split Sum	100%	100%	
AVERAGE VEHICLE OCCUPANCY (AVO) (b)			
Private Auto	1.00	1.00	
TNC/Taxi (non-AV)	1.00	1.00	
Privately Owned AV		1.00	
Pooled AV		1.00	
Share of Private AV Assumed to Park at Site (c)		100%	
Share of Private AV Parking On-Site that Pick-up/Drop-off Passenger(s) at Curb		100%	
Induced Person Travel due to Avs (d)		0%	
NUMBER OF VEHICLES (PEAK HOUR)			
Private Auto		7	
TNC/Taxi (non-AV)		16	
Privately Owned AV (Garage)		0	
Privately Owned AV (Curb)		0	
Pooled AV		0	
VEHICLE TRIP GENERATION (PEAK HOUR)			
Private Auto	20.7	6.9	
TNC/Taxi (non-AV)	4.6	32.2	
Privately Owned AV		0.0	
Pooled AV		0.0	
Person Trips	23	23	
Vehicle Trips	25.3	39.1	
Peak Hour Curb Events	2	16	
Peak Parking Demand (Spaces)	11.7	4	

	Non-AV Scenario	AV Scenario	
	Office		
# of KSF	816.3	816.3	
Peak Hour Vehicle Trip Rate per KSF	0.58		
Peak Parking Demand per DU	0.43		
VEHICLE FLEET MIX			
Private Auto	90%	30%	(a)
TNC/Taxi (non-AV)	10%	70%	
Privately Owned AV		0%	
Pooled AV		0%	
Mode Split Sum	100%	100%	
AVERAGE VEHICLE OCCUPANCY (AVO) (b)			
Private Auto	1.00	1.00	
TNC/Taxi (non-AV)	1.00	1.00	
Privately Owned AV		1.00	
Pooled AV		1.00	
Share of Private AV Assumed to Park at Site (c)		50%	
Share of Private AV Parking On-Site that Pick-up/Drop-off Passenger(s) at Curb		100%	
Induced Person Travel due to Avs (d)		0%	
NUMBER OF VEHICLES (PEAK HOUR)			
Private Auto		142	
TNC/Taxi (non-AV)		331	
Privately Owned AV (Garage)		0	
Privately Owned AV (Curb)		0	
Pooled AV		0	
VEHICLE TRIP GENERATION (PEAK HOUR)			
Private Auto	426.1	142.0	
TNC/Taxi (non-AV)	94.7	662.8	
Privately Owned AV		0.0	
Pooled AV		0.0	
Person Trips	473.454	473	
Vehicle Trips	520.8	804.9	
Peak Hour Curb Events	47	331	
Peak Parking Demand (Spaces)	315.9081	105	

	Non-AV Scenario	AV Scenario
	Retail	
# of KSF	0	0
Peak Hour Vehicle Trip Rate per KSF	1	
Peak Parking Demand per DU	1	

	Non-AV Scenario	AV Scenario
	Other: Health Club	
# of KSF/DU	0	0
Peak Hour Vehicle Trip Rate per KSF/DU	1	
Peak Parking Demand per KSF/DU	1	