Ellis Lake Park Project

Initial Study – Mitigated Negative Declaration

prepared by

City of Concord
Engineering Division
1950 Parkside Drive
Concord, California 94519
Contact: Tianjun Cao, PE, Associate Civil Engineer

prepared with the assistance of

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

October 2021

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act
AFY	acre-feet per year
BAAQMD	Bay Area Air Quality Management District
BIOS	Biographic Information and Observation System
BMP	best management practice
Btu	British thermal unit
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CCR	California Code of Regulations
CCWD	Contra Costa Water District
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CH_4	methane
CMC	Concord Municipal Code
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide

CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSSA	California Species of Special Concern
CWA	Clean Water Act
dB	decibels
dBA	A-weighted sound pressure level
DOC	California Department of Conservation
DOF	California Department of Finance
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EIA	Energy Information Administration
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GHG	greenhouse gas
GWh	gigawatt hours
GWP	global warming potential
HCP	Habitat Conservation Plan
HREP	Habitat Restoration/Enhancement Plan
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt-hour
L_{dn}	Day-night average level
L_{eq}	equivalent noise level
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
$\mu g/m^3$	micrograms per cubic meter
MMBtu	millions of British thermal units

MPO	metropolitan planning organization
MT	metric tons
MTC	Metropolitan Transportation Commission
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
PG&E	Pacific Gas and Electric Company
$PM_{2.5}$	particulate matter with an aerodynamic diameter equal to or less than 2.5 microns
PM_{10}	particulate matter with an aerodynamic diameter equal to or less than 10 microns
ppm	parts per million
PPV	peak particle velocity
PQS	Professional Qualifications Standards
PRC	Public Resources Code
RCNM	Roadway Construction Noise Model
RMS	root-mean-square
ROG	reactive organic gases
RPS	Renewable Portfolio Standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCS	Sustainable Communities Strategy
SFBAAB	San Francisco Bay Area Air Basin
SLF	Sacred Lands File
SO2	Sulfur Dioxide
SRA	State Responsibility Area
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SVP	Society of Vertebrate Paleontology

TAC	toxic air contaminant
TCR	Tribal Cultural Resource
TDM	Transportation Demand Management
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
VMT	vehicle miles traveled
VOC	volatile organic compound
WEAP	Worker Environmental Awareness Training
WQCP	Water Quality Control Plan

Initial Study

1. Project Title

Ellis Lake Park Project

2. Lead Agency Name and Address

City of Concord
Engineering Division
1950 Parkside Drive
Concord, California 94519

3. Contact Person and Phone Number

Tianjun Cao, PE
Associate Civil Engineer/ADA Coordinator
(925) 671-3243
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4. Project Location

The project encompasses Ellis Lake Park, an existing approximately 9.6-acre (416,000 square foot) park (Assessor's Parcel Numbers 126-240-007, -008, -024, and -044) located in the City of Concord, California. The project site is located in southwesterly downtown Concord bound by Ellis Street to the west, Clayton Road to the north, and Laguna Street to the south. Figure 1 shows the regional location of the project area, and Figure 2 shows the project location and surrounding uses.

5. General Plan Designation

The project site has a General Plan land use designation of Parks and Recreation (P).

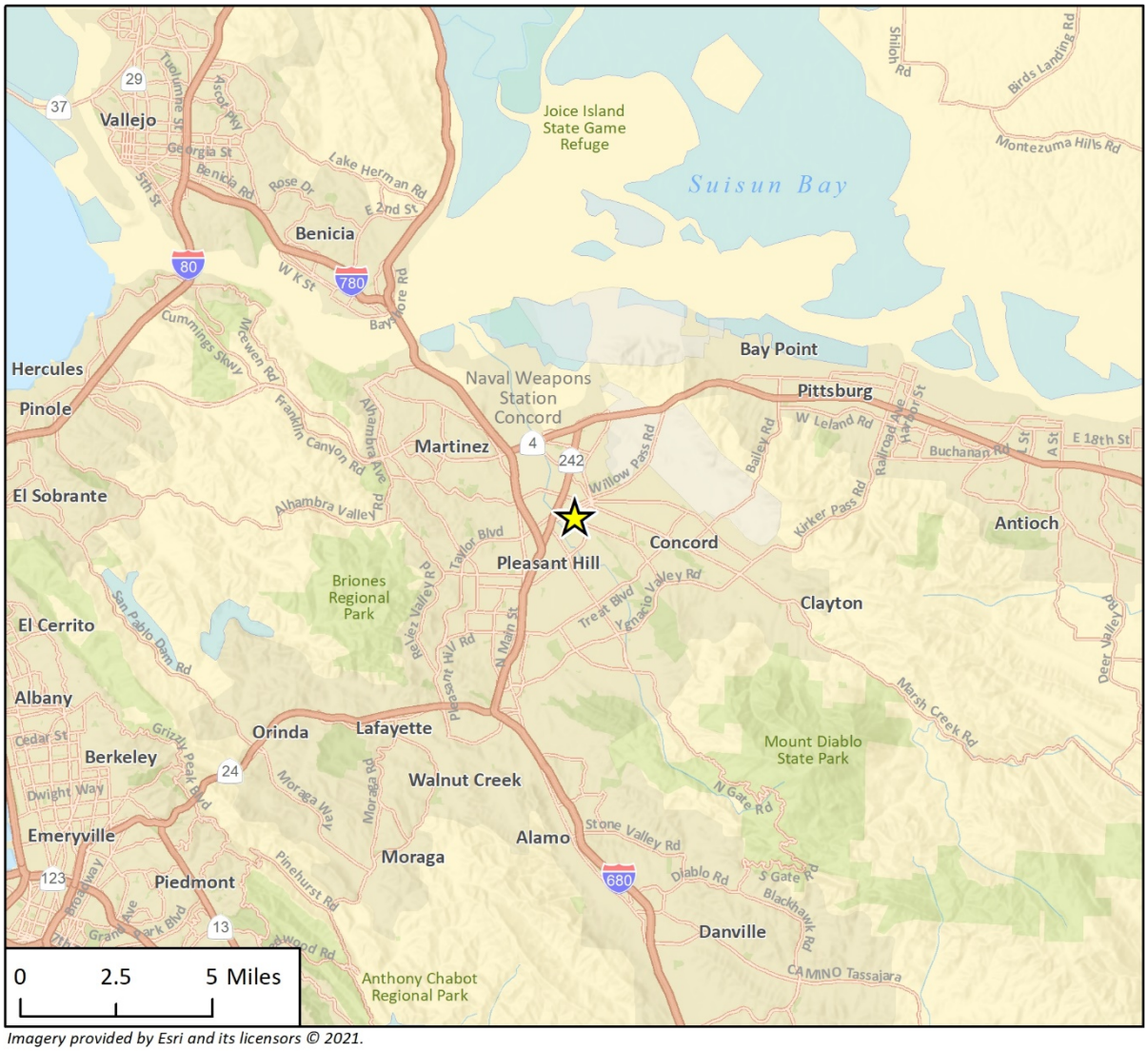
6. Zoning

The project site is zoned Parks and Recreation (PR) in the City's Zoning Code.

7. Description of Project

The project would include renovations and additions to Ellis Lake Park (Park) such as renewal of existing amenities, addition of new amenities, added security measures, and beautification of the Park's natural elements. The project objective is to increase access, security, and both passive and active enjoyment of Ellis Lake Park.

Figure 1 Regional Location



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Project Location

N

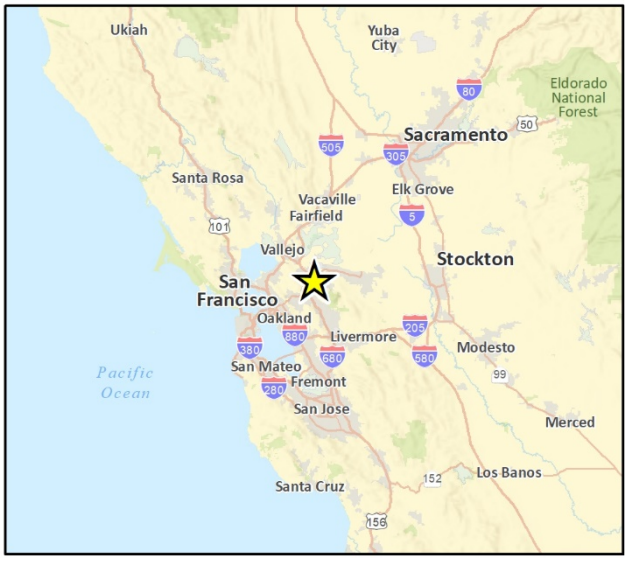

Figure 2 Project Site

Imagery provided by Microsoft Bing and its licensors © 2021.

Park Renovations

Park renovations include renewing and replacing the existing path throughout the Park by widening the existing path around Ellis Lake to a 15,000 square foot path. The project would also include the addition of 8,000 square feet of trail for biking and running that would connect Laguna Street to Clayton Road as shown on Figure 3. The project would renew existing pathways to provide 25,000 square feet of pathway for Americans with Disabilities Act (ADA) enhancements. Existing concrete paths would be replaced to accommodate ADA accessibility. The project would also include updates to the Park's playground amenities, including replacement of wood chips with softer foam surface material. The existing parking area would be expanded by approximately 6,400 square feet off Clayton Road. The expansion would include 17 new parking spaces.

Renovations would also include trimming unhealthy vegetation and "dredging" the lake to improve water quality. The dredging activity would include removing particles from the lake and improving water quality. Dredging would not disturb sediment at the bottom of the lake. Three safety barriers would be added to Ellis Lake during dredging, as show on Figure 4, to maintain the lake's shoreline. The safety barriers would occur outside of the dripline of trees, where feasible. Tree maintenance and trimming would occur at existing trees surrounding the northeastern portion of Ellis Lake as shown on Figure 4.

Existing earthen mounds would be leveled as part of the project. Existing mounds are 3 to 4 feet high located in four separate areas of the Park as shown on Figure 4. Remaining grassed areas would be graded to allow for full visibility throughout the Park for visitors and for security by Concord staff monitoring the Park. Areas identified for grading are shown on Figure 4. A total of 23,000 cubic yards of earthen material would be leveled and contoured throughout the Park (15,000 cubic yards for leveling the mounds and 8,000 cubic yards for contouring grassed areas).

New Amenities

The project would add new amenities to the Park including a basketball court, two community gardens, seating, and barbecue equipment. The proposed basketball court would be a 4,284 square foot concrete slab with lighting and fencing located east of the existing parking lot. The two community gardens would each include 15 to 20 filled 40 square foot garden beds with irrigation and fencing to offer community access to planting and gardening. One garden would be located in the southeast portion of the Park and the second garden would be located south of Clayton Road and west of the Keller House. The project would include six shaded seating tables throughout the Park as shown on Figure 3. The new barbecue area with three barbecues would be located east of Ellis Street at the northern portion of Ellis Lake. Two new playgrounds and one playground renovation are proposed within the Park as shown on Figure 3. In addition, an adult exercise area would be added east of the existing parking lot near a proposed playground. To address current security concerns security lighting would be added throughout the Park as shown on Figure 3. A total of 20 solar security lights would be added. To allow for larger hosted events, a stage area with a shaded cover would be constructed extending on piers into the lake's edge. The round stage would include up to six piles for a total of approximately 42.4 square feet of fill. Public art is proposed on and near the stage, as well as along the proposed fence screening the rear of the Ashbury Lane properties.

Figure 3 Project Site Plan

Source: City of Concord, 2021.

Figure 4 Grading and Maintenance Plan

Source: City of Concord, 2021.

Best Management Practices (BMPs)

The City would implement the following best management practices (BMPs) during project construction:

- Dredging activities will entail removing debris, algae, and organic materials from the water which would improve water quality and will not disturb sediment at the bottom of the lake.
- Maximum depth excavation for the new and renovated pathways will not exceed 1 foot.
- If tree roots of 3 or more inches in diameter are encountered during excavation the City arborist will evaluate potential tree impacts and establish and supervise tree protection zones as needed.
- The City arborist will ensure project fencing will be installed outside of the dripline to the extent feasible.

8. Surrounding Land Uses and Setting

The project site is currently used as a public park located in the middle of an urban environment. Ellis Lake is located at the center of the project site bordered by a concrete trail and open space. The site has two existing buildings on site, the historic Keller House to the north and another building to the south. The site is relatively varied in elevation with grass-covered mounds distributed around the Park of approximately 3 to 4 feet in height.

Surrounding land uses are mixed use, including commercial retail and offices, to the north, single-family residences to the east, and high-density residential apartments to the northwest, west, and south.

9. Other Public Agencies Whose Approval is Required

The City of Concord is the sole agency with the authority to approve the proposed project.

The following regional, state, and federal agencies may require their own permits, inspections, reporting and/or certifications prior to construction and/or completion of the project:

10. Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?

The City of Concord initiated the tribal consultation process, as required under Public Resources Code (PRC) Section 21080.3.1 and consistent with Assembly Bill (AB) 52. The City prepared and mailed letters to local Native Americans who have requested notification under AB 52 on September 7, 2021. Under AB 52, tribes have 30 days to respond and request consultation. The 30-day window for requesting consultation on the project elapsed in mid-October. The Confederated Villages of Lisian Tribe requested consultation.

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Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry Resources	■	Air Quality
■	Biological Resources	■	Cultural Resources	☐	Energy
■	Geology and Soils	☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
☐	Hydrology and Water Quality	☐	Land Use and Planning	☐	Mineral Resources
■	Noise	☐	Population and Housing	■	Public Services
■	Recreation	☐	Transportation	■	Tribal Cultural Resources
☐	Utilities and Service Systems	☐	Wildfire	■	Mandatory Findings of Significance

Determination

Based on this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

■ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "less than significant with mitigation incorporated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

10/28/2021

Date

Tianjun Cao

Printed Name

Associate Civil Engineer

Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	■
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c. Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	■	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	■	☐

Setting

The project site is a 9.6-acre park with elevations ranging from 35 to 50 feet above mean sea level. The site is maintained as a public space and contains several features of visual interest such as 3- to 4-foot-tall mounds, Ellis Lake toward the center of the project site, and the historical Keller House building on the northern edge of the site. One main concrete path borders the perimeter of the lake. The area surrounding the Park is urbanized with two- to four-story multi-family visible to the southeast, west, and south of the project site and single-story single-family residences partially obscured by chain-link and wood fencing directly adjacent to the eastern boundary of the project site.

a. Would the project have a substantial adverse effect on a scenic vista?

A scenic vista is a view from a public place (roadway, designated scenic viewing spot, etc.) that is expansive and considered important. It can be obtained from an elevated position (such as from the top of a hillside) or it can be seen from a roadway with a longer-range view of the landscape. An adverse effect would occur if the project would block or otherwise damage the scenic vista upon implementation.

The project is not within a designated scenic vista as identified on Figure 3.12-1 in the City of Concord General Plan Environmental Impact Report (EIR) (City of Concord 2006). Additionally, the project would not involve building any structures which would block a scenic vista. Since the project is not identified as a being within a designated scenic vista and the project would not propose any structures that would obstruct views, there would be no impact.

NO IMPACT

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The nearest officially designated state scenic highway is a section of Interstate 680 approximately 5.4 miles south of the project site (Caltrans 2018). The project site is not visible from a state scenic highway and there would be no impact on scenic resources within a state scenic highway.

NO IMPACT

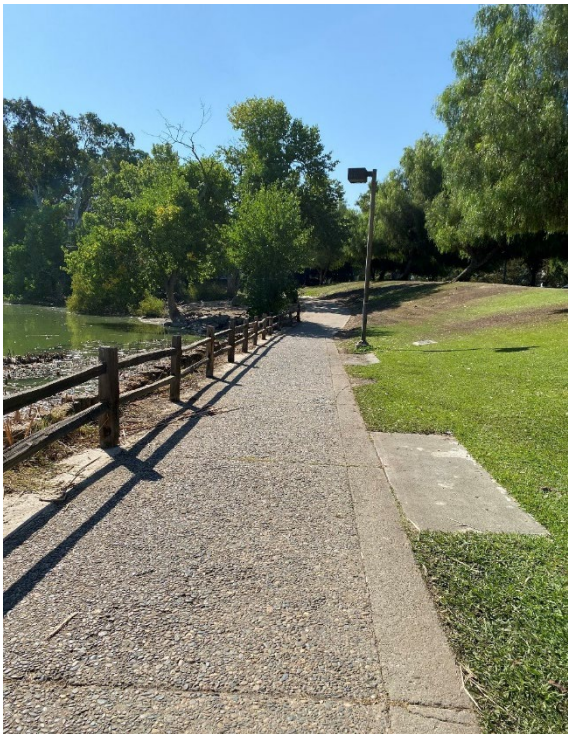
c. Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The mounds, vegetation, and lake features at Ellis Lake Park create a natural visual character in the foreground of the Park as shown on Figure 5. As the surrounding land uses are low- to mid-rise multi-family dwellings in earth tone colors to the north, west, and south and single-family dwellings in earth tone colors to the east, the project site is considered to have non-urbanized visual character.

The Park is currently visible from adjacent residences to the north, west, south, and east. Residences to the north have unblocked views to the Park. Residences to the west have partially filtered views of the project site through street trees along Ellis Street. Residences to the south have partially filtered views of the project site through trees in the Park and residences to the east have partially obstructed views of the project site through chain-link and wooden fencing.

The project would involve moving 23,000 cubic yards of earthen material to level existing 3- to 4-foot-tall mounds and contour grade other surface areas throughout the Park as identified on Figure 4. This would affect the visual character of the site which is currently heavily defined by the Park's mounds and varying elevations. The leveling and grading would temporarily expose adjacent residences to disturbed soil and construction equipment; however, this adverse effect on residential views would be temporary and limited to the initial site preparation and grading phases. In addition, removal of the mounds would result in improved public accessibility to views of the Park.

Figure 5 Site Photographs



Photograph 1. View looking South from western side of Ellis Lake

Photograph 2. View South Toward Laguna Street

Photograph 3. View West from Northeastern Ellis Lake

Photograph 4. View looking South from northern Ellis Lake across Project Site

The project would alter the visual character of the site through grading of the mounds and the addition of new amenities. As described above, grading the mounds would result in improved public accessibility to views of the Park and its visual characteristics such as Ellis Lake. In addition, the vegetation removal and dredging of Ellis Lake would further improve the visual character of the project site by removing obstructive vegetation. The project's improvements would include renovations to existing facilities such as the existing playground and pathways and amenities which are typical to features in a park, such as the basketball court and community gardens. Furthermore, the project would include amenities such as public artwork which would provide additional aesthetic qualities to the project site. Therefore, aesthetic impacts related to scenic quality would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The project site currently contains approximately 18 security lights located throughout the Park that provide nighttime lighting for park users. Figure 5, Photograph 3, shows a photo of a current light fixture on the project site. The project would add approximately 20 additional solar security lights throughout the Park. Proposed lighting locations are identified *on* Figure 3.

Because the project site already contains security lights, the proposed lights would not be a significant source of new light.

The Concord Municipal Code (CMC) contains lighting standards for community land uses such as the project site under CMC Section 18.60.030. CMC Section 18.60.030 refers to CMC Section 18.150.110, which outlines general standards and guidelines to ensure outdoor lighting is efficient, safe, and attractive while preventing nuisances caused by unnecessary light intensity, direct glare, and light trespass. CMC Section 18.60.030(3)(b) and (c) further detail the City's lighting standards.

The new lighting proposed by the project would be required to comply with lighting standards detailed in the CMC which would ensure that the outdoor lighting would improve safety while not adding a significant source of new light to the Park. The project's visual impacts from light and glare would be less than significant.

LESS THAN SIGNIFICANT IMPACT

2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	■

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

The project site is an existing park and is not zoned for agricultural, timberland, or forestry use (City of Concord 2006). In addition, the project site is identified as urban and built-up land in the Williamson Act Contract Land and Contra Costa County Important Farmland maps (DOC 2017; DOC 2018). Thus, no Williamson Land Contracts or other federal farmland program agreements are in place for the site. Agricultural lands would not be converted on the project site. The project is in an urbanized area and is not adjacent to any Farmland and the project would not have convert agricultural land to non-agricultural uses.

The trees on the site are not part of forest land or timberland. The project would retain and improve the site's existing use and would not involve other changes in the existing environment which, due to their location or nature, could result in the conversion of forest land to non-forest uses. Therefore, the project would have no impact on agriculture or forestry resources.

NO IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	■	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	■	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	■

Setting

Overview of Air Pollution

The federal and State Clean Air Acts (CAA) mandate the control and reduction of certain air pollutants. Under these laws, the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for "criteria pollutants" and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG),[1] nitrogen oxides (NO_X), particulate matter with diameters of ten microns or less (PM_{10}) and 2.5 microns or less ($PM_{2.5}$), sulfur dioxide, and lead. Other pollutants are created indirectly through chemical reactions in the atmosphere, such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between ROG and NO_X. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog).

Air pollutant emissions are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories:

- Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat.

[1] CARB defines VOC and ROG similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this IS-MND.

- Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and can also be divided into two major subcategories:

- On-road sources that may be legally operated on roadways and highways.
- Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

Air Quality Standards and Attainment

The project site is located within the San Francisco Bay Area Air Basin (the Basin), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). As the local air quality management agency, BAAQMD is required to monitor air pollutant levels to ensure that the NAAQS and CAAQS are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the U.S. EPA classifies specific geographic areas as "attainment area" or "nonattainment area" for each pollutant. Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. BAAQMD is in nonattainment for the ozone NAAQS and CAAQS, the $PM_{2.5}$ NAAQS and CAAQS, and the PM_{10} CAAQS and is required to prepare a plan for improvement (BAAQMD 2017c). The health effects associated with criteria pollutants for which the Basin is in non-attainment are described in Table 1.

Table 1 Health Effects Associated with Non-Attainment Criteria Pollutants

Pollutant	Adverse Effects
Ozone	(1) Short-term exposures: (a) pulmonary function decrements and localized lung edema in humans and animals and (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Suspended particulate matter (PM_{10})	(1) Excess deaths from short-term and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease (including asthma).[a]
Suspended particulate matter ($PM_{2.5}$)	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children, such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma.[1]

[1] More detailed discussion on the health effects associated with exposure to suspended particulate matter can be found in the following documents: EPA, Air Quality Criteria for Particulate Matter, October 2004.

Source: U.S. EPA 2021

Regulatory Setting

Air Quality Management

The Bay Area 2017 Clean Air Plan (the 2017 Plan) provides a plan to improve Bay Area air quality and protect public health as well as the climate. The legal impetus for the 2017 Plan is to update the most recent ozone plan - the 2010 Clean Air Plan - to comply with state air quality planning requirements as codified in the California Health & Safety Code. Although steady progress in reducing ozone levels in the Basin has been made, the region continues to be designated as non-attainment for both the one-hour and eight-hour ozone CAAQS. In addition, emissions of ozone precursors in the Bay Area contribute to air quality problems in neighboring air basins. Under these circumstances, state law requires the 2017 Plan to include all feasible measures to reduce emissions of ozone precursors (BAAQMD 2017b).

In 2006, the U.S. U.S. EPA reduced the 24-hour $PM_{2.5}$ NAAQS regarding short-term exposure to fine particulate matter from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$. Based on air quality monitoring data for the 2006-2008 cycle showing that the region was slightly above the standard, in December 2008 the U.S. EPA designated the Basin as non-attainment for the 24-hour $PM_{2.5}$ NAAQS. This triggered the requirement for the BAAQMD to prepare a State Implementation Plan (SIP) to demonstrate how the region would meet the standard. However, data for both the 2008-2010 and the 2009-2011 cycles showed that $PM_{2.5}$ levels in the Basin currently meet the standard. On October 29, 2012, the U.S. EPA issued a proposed rule-making to determine that the Basin now meets the 24-hour $PM_{2.5}$ NAAQS. The Basin will continue to be designated as nonattainment for the 24-hour $PM_{2.5}$ NAAQS until such time as the BAAQMD elects to submit a "redesignation request" and a "maintenance plan" to the U.S. EPA, and the U.S. EPA approves the proposed redesignation.

BAAQMD Significance Thresholds

The BAAQMD recommends that lead agencies determine appropriate air quality emissions thresholds of significance based on substantial evidence in the record. The BAAQMD's significance thresholds in the updated May 2017 CEQA Air Quality Guidelines for land use development projects within the Basin are the most appropriate thresholds for use in determining air quality impacts of the proposed project (BAAQMD 2017a). The BAAQMD has developed screening criteria to provide lead agencies and project applicants with a conservative indication of whether a project could result in potentially significant air quality impacts. If all the screening criteria are met by a project, the lead agency or applicant does not need to perform a detailed air quality assessment of the project's air pollutant emissions, and air quality impacts would be considered less than significant. These screening levels are generally representative of new development on greenfield sites without any form of mitigation measures taken into consideration. For redevelopment projects such as the proposed project, emissions would be less than the greenfield-type project on which the screening criteria are based; therefore, use of the screening criteria is a conservative approach (BAAQMD 2017a). The BAAQMD's screening level sizes for city parks are 37 acres for construction-related criteria pollutant emissions and 2,613 acres for operational criteria pollutant emissions (BAAQMD 2017a). In addition, for construction-related emissions to be considered less than significant, projects must meet the following criteria in addition to being below the applicable screening level (BAAQMD 2017a):

1. All Basic Construction Mitigation Measures would be included in the project design and implemented during construction; and

2. Construction-related activities would not include any of the following:
    - Demolition;
    - Simultaneous occurrence of more than two construction phases (e.g., paving and building construction would not occur simultaneously);
    - Simultaneous construction of more than one land use type (e.g., project would develop residential and commercial uses on the same site) (not applicable to high-density infill development);
    - Extensive site preparation (i.e., greater than default assumptions used by the Urban Land Use Emissions Model [URBEMIS] for grading, cut/fill, or earth movement); or
    - Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity.

The project meets the criteria for use of the operational screening size for criteria pollutant emissions; therefore, this analysis utilizes the screening size process to evaluate the significance of the project's operational criteria pollutant emissions. However, the project does not include implementation of all Basic Construction Mitigation Measures and would involve demolition of the existing land uses as well as extensive site preparation and dredging. Therefore, the project does not meet all of the screening criteria for construction emissions. For projects that do not meet the screening criteria, BAAQMD provides numeric significance thresholds. Table 2 presents the BAAQMD quantitative significance thresholds for criteria air pollutants. Projects that would result in criteria air pollutant emissions below these significance thresholds would not result in a cumulatively considerable net increase in criteria air pollutants for which the Basin is in non-attainment under applicable federal or state ambient air quality standards.

Table 2 Criteria Air Pollutant Significance Thresholds for Construction Activities

Pollutant	Average Daily Emissions (lbs/day)
ROG	54
NO_X	54
PM_{10}	82 (exhaust)
$PM_{2.5}$	54 (exhaust)
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices

ROG = reactive organic gases; NO_X = nitrogen oxides; PM_{10} = particulate matter 10 microns in diameter or less; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; lbs/day = pounds per day

Source: BAAQMD 2017c

The BAAQMD also provides a preliminary screening methodology to conservatively determine whether a proposed project would exceed CO thresholds. If the following criteria are met, a project would result in a less than significant impact related to local CO concentrations:

- Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

- Project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The BAAQMD has also established screening criteria applicable to projects that would introduce new stationary sources of toxic air contaminants (TAC) emissions. A project would result in significant impacts if TAC emissions would result in an increased cancer risk level of more than 10 in one million or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0.

Methodology

Land-Based Activities Modeling

The project's emissions associated with land-based construction activities (i.e., site preparation, grading, and construction) were estimated using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod uses project-specific information, including the project's land uses, square footages for different uses (e.g., city park, parking lot), and location, to model a project's construction emissions. The analysis reflects the construction of the project as described under the *Project Description* section. As discussed further under checklist item (b), operational emissions were screened out from further analysis using the BAAQMD screening criteria; therefore, operational air pollutant emissions were not modeled.

Construction was assumed to begin in 2023 and was modeled to commence in January 2023 and end in February 2024 using CalEEMod default assumptions. Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. CalEEMod estimates construction emissions by multiplying the amount of time equipment is in operation by emission factors. Construction of the proposed project was analyzed based on the CalEEMod default construction schedule and the CalEEMod default construction equipment list. It is assumed that all construction equipment used would be diesel-powered. There would be no import or export of graded soil as soil would be balanced on-site. Existing concrete paths would be demolished and transported off site and would be replaced by new, ADA-accessible concrete paths. The existing parking lot would be expanded from 26 to 43 spaces and a proposed basketball court would be paved onto the site. This analysis assumes the project would comply with all applicable regulatory standards. Full calculations can be found in Appendix AQ.

Watercraft Modeling

Because the project would include dredging of the lake, the Harborcraft, Dredge, and Barge Emission Factor Calculator (Harborcraft Model) was utilized to obtain emission factors associated with the possible use of a boat used in the process of dredging the lake (Sacramento Metropolitan Air Quality Management District [SMAQMD] 2021). Because the exact equipment and dredging schedule associated with the project has not been determined at this stage of planning, conservative assumptions were used to estimate emissions. Project information, vessel type, and engine type were input into the Harborcraft Model. It was assumed that dredging of the lake would require one work boat with two main engines and one auxiliary engine that would operate for 10 days for eight hours each day. Full calculations can be found in Appendix AQ.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The federal and state air quality laws require air districts to create air quality improvement plans describing how the jurisdiction will meet air quality standards. The most recently adopted air quality plan for BAAQMD is the 2017 Plan. The 2017 Plan is a roadmap showing how the San Francisco Bay Area will fulfill state ozone planning requirements and how the region will reduce transport of ozone and ozone precursors (ROG and NO_X) to neighboring air basins. The 2017 Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes stationary-source control measures to be implemented through the BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the Metropolitan Transportation Commission, local governments, transit agencies, and others (BAAQMD 2017b).

Under BAAQMD's methodology, a determination of consistency with the 2017 Plan should demonstrate that a project:

- Supports the primary goals of the air quality plan
- Includes applicable control measures from the air quality plan
- Does not disrupt or hinder implementation of any air quality plan control measures

A project that would not support the 2017 Plan's goals would not be considered consistent with the 2017 Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as the project supports the Clean Air Plan's goals. As discussed under criterion b below, the project would not exceed BAAQMD significance thresholds related to air quality emissions, the project would not result in exceedances of BAAQMD thresholds for criteria air pollutants and thus would not conflict with the 2017 Plan's goal to attain air quality standards. The 2017 Plan includes goals and measures reduce motor vehicle travel by promoting bicycling and walking through Transportation Control Measure TR9. The project includes features consistent with this measure as it would include a multipurpose path and a dedicated bike trail. The project would also include gap closure, connecting bike trails in the City. Therefore, the project would not conflict with or obstruct implementation of the 2017 Plan and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

As stated in the *Air Quality Standards and Attainment* section, the Basin is designated as nonattainment for the ozone NAAQS and CAAQS, $PM_{2.5}$ NAAQS and CAAQS, and the PM_{10} CAAQS (BAAQMD 2017c).

Construction Impacts

Project construction was modeled to occur over approximately 14 months and would generate air pollutants associated with fugitive dust and exhaust emissions from construction equipment. Construction activities would include grading; dredging of the lake; construction of a stage, basketball court, community gardens, and playgrounds; and replacement of existing paved paths with wider, ADA-accessible concrete paths.

Project construction would generate temporary air pollutant emissions associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction equipment, the work boat for dredging, and construction vehicles in addition to ROG emissions that would be released during the drying phase of parking lot striping. As shown in Table 3, BAAQMD thresholds would not be exceeded by project construction emissions. Therefore, construction-related air quality impacts would be less than significant.

Table 3 Estimated Daily Construction Emissions

	Average Daily Emissions (lbs/day)			
	ROG	NO_X	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
2023	2	19	1	1
2024	1	5	<1	<1
BAAQMD Thresholds	54	54	82	54
Threshold Exceeded?	No	No	No	No

lbs/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; CO = carbon monoxide; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur

Notes: All emissions modeling was completed using CalEEMod and the Harborcraft Model in accordance with City-provided information and conservative assumptions. See Appendix AQ for CalEEMod model output and Harborcraft Model output results. Average daily emissions were calculated by dividing annual construction emissions for each pollutant by the number of construction work days for each year. Harborcraft Model emissions were added to 2023 emissions as dredging would occur in the first year of construction. There would be 260 days of construction in 2023 and 40 days of construction in 2024.

Source: Appendix AQ

Site preparation and grading may cause wind-blown dust that could contribute particulate matter into the local atmosphere. The BAAQMD has not established a quantitative threshold for fugitive dust emissions but rather states that projects that incorporate BMPs for fugitive dust control during construction, such as watering exposed surfaces and limiting vehicle speeds to 15 miles per hour, would have a less than significant impact related to fugitive dust emissions. The project does not expressly include implementation of these BMPs; therefore, construction-related fugitive dust emissions would be potentially significant and Mitigation Measure AQ-1 would be required to mitigate construction-related fugitive dust impacts.

Operational Emissions

The BAAQMD operational screening level size for a city park is 2,613 acres. The proposed project includes renovations and new amenities for an approximately 9.6-acre park and therefore is well below the screening size. As a result, per BAAQMD guidance, a detailed air quality assessment of the project's operational criteria air pollutant emissions is not necessary, and project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. Operational impacts would be less than significant.

Mitigation Measure

AQ-1 Fugitive Dust Control Best Management Practices (BMPs)

The construction contractor(s) shall implement fugitive dust control BMPs during site preparation and grading activities, as recommended by the BAAQMD:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times daily.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly visible sign with the telephone number and person to contact at the City of Concord regarding dust complaints shall be posted. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
- The City shall confirm that BMPs are implemented during site preparation and grading activities through spot checks during construction.

Significance After Mitigation

With implementation of Mitigation Measure AQ-1, the proposed project would not result in individually or cumulatively significant impacts from construction to air quality. This impact would be less than significant with mitigation incorporated.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors refer to those segments of the population most susceptible to poor air quality, including children, the elderly, and those with pre-existing serious health problems affected by air quality. Therefore, sensitive receptors typically consist of residences, schools, parks and playgrounds, daycare centers, nursing homes, and medical facilities. The sensitive receptors closest to the project site are multi-family residences located adjacent to the southeast, multi-family residences located adjacent to the north, and single-family residences located adjacent to the eastern boundary of the site.

Carbon Monoxide Hotspot

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the national one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm (CARB 2021a).

As mentioned in the *BAAQMD Significance Thresholds* subsection above, the BAAQMD has a set of screening criteria to use as the first step to evaluate whether a project would result in the generation of localized CO concentrations that would substantially contribute to an exceedance of the CAAQS or NAAQS.

The project would involve conducting renovations and adding new amenities to an existing park. Therefore, the project would not generate a substantial amount of new vehicular trips to the site. The project would not cause or contribute to a localized CO hotspot, and impacts would be less than significant.

Toxic Air Contaminants

Construction Impacts

Construction-related activities would result in temporary emissions of diesel particulate matter (DPM) exhaust emissions from off-road, heavy duty diesel equipment for site preparation, grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998 (CARB 2021b).

Generation of DPM from construction projects typically occurs in a single area for a short period. Project construction would occur over approximately 14 months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the estimated 14-month duration of proposed construction activities is approximately two percent of the total exposure period used for health risk calculation. Current models and methodologies for conducting health-risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities, resulting in difficulties in producing accurate estimates of health risk (BAAQMD 2017a). Therefore, this analysis qualitatively discusses potential health risks associated with construction-related emissions of TACs, focusing on construction activities most likely to generate substantial TAC emissions and the duration of such activities relative to established, longer-term health risk exposure periods.

$PM_{2.5}$ exhaust emissions are often used as a surrogate for DPM, and all $PM_{2.5}$ exhaust emissions are considered as DPM. The maximum $PM_{2.5}$ exhaust emissions would occur during site preparation activities (including dredging of the lake). These activities would last for approximately two weeks. $PM_{2.5}$ emissions would decrease for the remaining construction period because construction

activities such as building construction and parking lot paving/striping would require less construction equipment. While the maximum DPM emissions associated with site preparation and grading activities would only occur for a portion of the overall construction period, these activities represent the maximum exposure condition for the total construction period. The duration of site preparation and grading activities would represent less than 0.1 percent of the total exposure period for a 70-year health risk calculation. Therefore, DPM generated by project construction would not create conditions where the probability is greater than 10 in one million of contracting cancer for the Maximally Exposed Individual or to generate ground-level concentrations of non-carcinogenic TACs that exceed a Hazard Index greater than one for the Maximally Exposed Individual. This impact would be less than significant.

OPERATIONAL IMPACTS

In the Bay Area, a number of urban or industrialized communities exist where the exposure to TACs is relatively high compared to other communities. According to the BAAQMD CEQA Air Quality Guidelines and the Community Air Risk Evaluation Program, the project site is located in an impacted community (BAAQMD 2017a; BAAQMD 2014). Sources of TACs include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. The project does not include construction of new gas stations, dry cleaners, highways, roadways, or other sources that could be considered new permitted or non-permitted source of TAC or $PM_{2.5}$ in proximity to receptors. In addition, the project would not introduce a new stationary source of emissions and would not result in particulate matter greater than the BAAQMD's operational thresholds, as discussed under criterion b, due to the project's size and use.

Therefore, the project would not expose nearby sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The project would not involve land uses considered by the 2017 BAAQMD CEQA Air Quality Guidelines to have greater potential to generate offensive odors, such as wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants; nor is the project located near any of these uses (BAAQMD 2017a). There would be no impact.

NO IMPACT

4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	■	☐	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	■	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	■	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

Setting

The project site, Ellis Lake Park, is located in an area dominated by residential development, with commercial development across Clayton Road. The 10-acre park has rolling slopes covered with turf surrounding Ellis Lake, which is set at a lower elevation in the center of the Park. Elevations at the site range from approximately 35 to 50 feet (10-16 meters) above mean sea level. The project site contains a paved pedestrian path and other developed areas that provide seating areas or access to the edge of the lake. Ellis Lake is partially surrounded by chain-link or wooden fencing. Ellis Lake is a man-made lake apparently fed by runoff from surrounding landscaped and paved areas. The lake banks have been reinforced with wooden pilings and concrete. Two culverts convey water into Ellis Lake and are likely connected to the stormwater system that drains surface runoff from the surrounding developed and landscaped areas. One is located at the northwest edge of the lake, near the path to the parking lot at Clayton Road. The second culvert is located at the east end of the lake.

Most of the site consists of frequently mowed lawns and ornamental landscaping or open water. A small, fragmented band of riparian woodland surrounds the lake. Small patches of wetland vegetation occur around the lake and upland trees have been planted on the turf surrounding the lake. Trees at the edge of the lake include Fremont cottonwood (*Populus fremontii*), pepper tree (*Schinus molle*), red willow (*Salix laevigata*) arroyo willow (*S. lasiolepis*), red gum eucalyptus (*Eucalyptus camaldulensis*), and palms. Shrubs and herbaceous understory at the edge of the lake include coyote brush (*Baccharis pilularis*), Himalayan blackberry (Rubus armeniacus), cheeseweed (*Malva parviflora*), and pampas grass (*Cortederia selloana*). Emergent wetland vegetation occurs in small patches at the lake's east end, west end, and northwest inflow culvert, and includes cattail (*Typha sp*.), tall flatsedge (*Cyperus eragrostis*), and giant reed (*Arundo donax*).

Trees planted in upland areas at the project site include coast live oak (*Quercus agrifolia*), pepper tree, Chinese elm (*Ulmus parvifolia*), crapemyrtle (*Lagerstroemia indica*), and pine (*Pinus sp*.). Other plants observed in upland areas include Algerian ivy (*Hedera canariensis*), greater plantain (*Plantago major*), and common purslane (*Portulaca oleracea*). Eastern gray squirrel (Sciurus carolinensis), red-eared slider (*Trachemys scripta elegans*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), Canada goose (*Branta canadensis*), red-breasted sapsucker (*Sphyrapicus ruber*), American robin (*Turdus migratorius*), western bluebird (*Sialia mexicana*), and mallard (*Anas platyrhynchos*) were observed within the site during the reconnaissance survey.

Regulatory Setting

Federal and State

Regulatory authority over biological resources is shared by federal, state, and local agencies under a variety of laws, ordinances, regulations, and statutes. Primary authority for biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, the City of Concord).

The California Department of Fish and Wildlife (CDFW) is a trustee agency for biological resources throughout the State under CEQA and has direct jurisdiction under the California Fish and Game Code (CFGC). Under the California Endangered Species Act (CESA) and the federal Endangered Species Act (FESA), the CDFW and the U.S. Fish and Wildlife Service (USFWS), respectively, have direct regulatory authority over species formally listed as threatened or endangered (and listed as rare for CDFW). Native and/or migratory bird species are protected under the CFGC Sections 3503, 3503.5, and 3511.

Statutes within the Clean Water Act (CWA), CFGC, and California Code of Regulations (CCR) protect wetlands and riparian habitat. The U.S. Army Corps of Engineers (USACE) has regulatory authority over wetlands and waters of the United States under Section 404 of the CWA. The State Water Resources Control Board and the nine Regional Water Quality Control Boards (RWQCBs) ensure water quality protection in California pursuant to Section 401 of the CWA and Section 13263 of the Porter-Cologne Water Quality Control Act. The CDFW regulates waters of the State under the CFGC Section 1600 et seq.

Special-status species are those plants and animals: 1) listed, proposed for listing, or candidates for listing as Threatened or Endangered by the USFWS and the National Marine Fisheries Service (NMFS) under the FESA; 2) listed or proposed for listing as Rare, Threatened, or Endangered by the CDFW under the CESA; 3) recognized as California Species of Special Concern (CSSC) by the CDFW; 4) afforded protection under MBTA or CFGC; and 5) occurring on Lists 1 and 2 of the CDFW California Rare Plant Rank (CRPR) system.

City of Concord

The City of Concord General Plan outlines conservation goals and policies for the City of Concord, including the project site (City of Concord 2007). Policies 3.1 (Preserve and Protect Water Quality) and 3.4 (Preserve and Protect Wildlife and Vegetation Resources) in the Parks, Open Space, and Conservation Element are relevant to protection of biological resources in the context of this project. Specifically, Policy 3.1.2 seeks to preserve and restore native riparian vegetation and wildlife and Policy 3.1.7 has the goal to improve water quality in coordination with agencies, including CDFW, RWQCB, and local water and water conservation districts. Policy 3.4.1 aims to conserve wildlife habitat and wildlife corridors and require appropriate mitigation for development impacts. Accordance with state and federal laws protecting rare, threatened, or endangered species is affirmed by Policy 3.4.2, and Policy 3.4.6 specifies that construction activities will be avoided during breeding and nesting seasons for special status species or surveys will be conducted in accordance with state and federal standards to ensure appropriate measures are followed for species protection.

CMC Section 18.310 contains the city's tree preservation ordinance, that requires an application for the removal of any protected tree. A protected tree is defined in CMC Section 18.310.020 as: any tree with a diameter of 24 inches or more as measured 54 inches above the ground, a tree with a diameter of 12 inches or more at the same height if it is one of six listed native species (e.g., coast live oak), a tree with a diameter of 6 inches or more if it is within a structure setback (as defined in CMC Section 18.305.040) from a channel, or if it is a designated heritage tree or has been preserved as a condition of approval for a discretionary permit. Tree removal related to new development requires a tree permit application including an arborist's report noting species, location, circumference, height, dripline radius, condition, and recommendations for all trees within the project site (CMC Section 18.310.040). This plan must be submitted to the city for review and approved prior to tree removal. Protected trees within the project site that are not planned for removal must be protected during construction and fenced around the dripline to prevent encroachment by construction (CMC Section 18.310.050).

Methods

Literature Review

Rincon Consultants biologists reviewed the following agency databases and relevant literature for baseline information on special-status species and other sensitive biological resources occurring or potentially occurring at the project site and in the immediate surrounding area.

- CDFW California Natural Diversity Database (CNDDB) (CDFW 2021a) and Biogeographic Information and Observation System (BIOS) (CDFW 2021b)
- CDFW Special Animals List (CDFW 2021c) and Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2021d)
- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS 2021)
- USFWS Information for Planning and Consultation (IPaC; USFWS 2021a)
- USFWS Critical Habitat Portal (USFWS 2021b)
- USFWS National Wetlands Inventory (NWI; USFWS 2021c)
- United States Geological Survey (USGS National Hydrography Dataset (NHD, USGS 2021)
- United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) Web Soil Survey (USDA 2020)
- eBird Online Database (Cornell Lab of Ornithology 2021)

Rincon Consultants biologists conducted a review of the CNDDB (CDFW 2020a) for recorded occurrences of special-status plant and wildlife taxa in the region prior to conducting the field survey. For this review, the search included all occurrences within the U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle encompassing the project site (*Walnut Creek*), and the eight surrounding quadrangles (*Las Trampas Ridge, Diablo, Clayton, Honker Bay, Vine Hill, Briones Valley, Benicia,* and *Oakland East*). Strictly marine and estuarine species were excluded from further analysis given that the body of water on site is a constructed and isolated freshwater lake. Plant species with specific habitat requirements not present at the site, such as vernal pools, alkali or serpentine soils, or higher elevation ranges, were also excluded from this analysis.

Rincon Consultants compiled the results of the background literature review into a list of regionally occurring special-status plants and animals and evaluated each species for potential to occur based on habitat conditions and proximity to known occurrences. Rincon Consultants also reviewed the NWI (USFWS 2020c) and the National Hydrography Datasets (USGS 2020) for potential aquatic resources, including jurisdictional waters of the United States or waters of the State.

Biological Survey

On September 16, 2021, a qualified biologist from Rincon Consultants conducted a reconnaissance-level survey of the project site to document site conditions, assess the presence of on-site habitat, and evaluate the potential for special-status species and other sensitive biological resources to occur on the project site.

Impact Analysis

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Special-status Plants

Sixty-one special-status plant species were identified to have occurrence records within the nine USGS quadrangles containing and surrounding the project site (CDFW 2021a; CNPS 2021; USFWS 2021a). All the reported species have specific habitat requirements (e.g., soil type, elevation, hydrologic condition, etc.). The existing conditions (surrounded by urban development and disturbed by regular mowing and anthropogenic use) and the lack of natural vegetation communities or suitable ecological conditions on the site preclude the potential for rare plants to occur within the site. No special-status plant species are expected and thus, no impacts to special-status plant species would occur.

Special-status Wildlife

Fifty special-status animal species were identified with known occurrence records within the nine USGS quadrangles containing and surrounding the project site (CDFW 2021a; CDFW 2021c; USFWS 2021a). This list was reviewed and refined according to the potential for species to occur on the project site based on the presence and quality of habitats within the project site. Of these, two species have a high potential to occur within the site: cackling (Aleutian) goose (*Branta hutchinsii leucopareia*) and Cooper's hawk (*Accipiter cooperii*). One species, American peregrine falcon (*Falco peregrinus anatum*), has a moderate potential to occur within the site. Two species have a low potential to occur within the site: pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*). Because these two bat species only have a low potential to occur, and were not observed on site, they are not analyzed further.

The Aleutian subspecies of the cackling goose is a federally delisted species and a State watch list species. This goose winters on lakes and inland prairies and can be found in the region surrounding the project site during its migration south from breeding grounds on the Aleutian Islands. No CNDDB occurrences have been recorded within five miles of the project site; however, sightings have been documented at Ellis Lake in citizen science databases such as eBird within the last 5 years (Cornell Lab of Ornithology 2021). The project site contains a lake and suitable vegetation for foraging. Numerous Canada geese, which have similar ecological requirements, were observed on the project site. Project activities, including addressing water quality issues in the lake and disturbance of surrounding upland foraging areas have the potential to displace geese who are stopping at the project site on their migration route; however, impacts to this species are unlikely to be significant due to other nearby lakes and landscaping that can provide suitable habitat for foraging and overwintering individuals, thus impacts to this species would be less than significant.

Cooper's hawk is a State watch list species that breeds in oak woodlands and deciduous riparian areas. Its nests are often constructed near water, and the species forages in a variety of woodland and edge habitats. An agile flier, the species is known to pursue small birds and mammals through thickets and woodlands, and generally occurs in wooded areas. During the winter months, the Cooper's hawk utilizes a wider variety of habitats for foraging including open fields and grasslands. Suitable riparian habitat is present within the project site and there are multiple occurrences

reported in eBird within five miles of the site. Due to the presence of suitable nesting trees and riparian habitat, this species has a high potential to nest in trees within the project site. The project includes tree-trimming of suitable nesting trees and potential removal of trees in areas planned for grading, thus project activities could cause potentially significant impacts such as nest destruction or abandonment. These impacts would be a violation of CFGC code and the MBTA. Therefore, Mitigation Measure BIO-1, Nesting Birds, would be required to mitigate impacts to less than significant levels.

The American peregrine falcon is a federal and State delisted species and a State fully-protected species that occurs in urban areas and open habitats, including coastlines, mudflats, lake edges, and mountain sides. Prey includes a wide variety of bird species and nest sites are typically in rocky cliffs faces, but can also be located on transmission towers, skyscrapers, bridges, or other human-made structures. There is no suitable nesting habitat for peregrine falcon on or adjacent to the project site; however, this species has a moderate potential to forage within or near the project site. No CNDDB occurrences have been recorded within five miles of the project site; however, sightings have been documented at Ellis Lake in citizen science databases such as eBird within the last 5 years (Cornell Lab of Ornithology 2021). Despite potential disturbance to habitat for prey species, project impacts are unlikely to have significant effects on foraging grounds for this species, which typically hunts in the air and can take advantage of other foraging sites in the project vicinity. Thus, impacts to this species would be less than significant.

In addition to the Cooper's hawk, the site could be used by numerous species of migratory birds as nesting habitat. Migratory birds are protected under CFGC Section 3503 and the MBTA. The nesting season generally extends from February 1 through August 31 in California but can vary based upon annual climatic conditions. Thus, construction activities could result in direct impacts to active nests during vegetation removal, or disturbance-related nest abandonment. Impacts to most non-listed bird species through nest destruction or abandonment would not be significant; however, this would be a violation of CFGC code and the MBTA. Therefore, impacts to non-listed special-status birds would be potentially significant and Mitigation Measure BIO-1 would be required to mitigate impacts to less than significant levels.

Mitigation Measure

BIO-1 Nesting Birds

- Project construction shall be conducted outside of the nesting season to the extent feasible (September 1 to January 31). If vegetation removal, grading, or initial ground-disturbing activities are conducted during the nesting season, a qualified biologist shall conduct a pre-construction nesting bird survey no more than 14 days prior to vegetation removal or initial ground disturbance. Nesting habitat may include grasslands, shrubs, trees, snags and open ground. The survey shall include all potential nesting habitat in the project site and within 300 feet of the proposed project grading boundaries to identify the location and status of any nests that could potentially be affected by project activities. The biologist shall submit a report of the preconstruction nesting bird survey to the City to document compliance within 30 days of its completion.
- If active nests of protected species are found within project impact areas or close enough to these areas to affect breeding success, the biologist shall establish a work exclusion zone around each nest that shall be followed by the contractor. Established exclusion zones shall remain in place until all young in the nest have fledged or the nest otherwise becomes inactive (e.g., due to predation). Appropriate exclusion zone sizes vary dependent upon bird species, nest location,

existing visual buffers, ambient sound levels, and other factors; an exclusion zone radius may be as small as 25 feet (for common, disturbance-adapted species) or as large as 250 feet or more for raptors. Exclusion zone size may also be reduced from established levels if supported with nest monitoring by a qualified biologist indicating that work activities outside the reduced radius are not adversely impacting the nest. The biologist shall submit a report of the success of the exclusion zone to the City to document compliance within 30 days of completion of project construction.

Significance After Mitigation

Implementation of Mitigation Measure BIO-1 would ensure protection of nesting birds that may be on-site during project activities. These measures would reduce impacts to special-status species to a less than significant level.

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b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The review of the resource agency databases for sensitive natural communities within the nine USGS quadrangles containing and surrounding the project site identified four sensitive natural communities: coastal brackish marsh, northern coastal salt marsh, northern maritime chaparral, and serpentine bunchgrass. None of these sensitive natural communities are present within the project site; however, Fremont cottonwoods are present along the western half of Ellis Lake. Fremont cottonwood forest and woodland is a CDFW sensitive natural community (S3). Although the small stand of trees at the western edge of the lake was likely planted and thus may not be considered a natural community, it does constitute riparian habitat, which is considered to be a jurisdictional wetland by CDFW and RWQCB. The eastern half of the lake contains additional trees and vegetation growing at the edge of the lake, including willow thickets and non-native eucalyptus and palm trees. Although the trees are not a natural community, they may still be considered riparian habitat by CDFW and RWQCB.

The project will be designed such that impacts to Fremont cottonwood trees or other riparian habitat would be avoided. Proposed path enhancements and safety barrier installation will occur outside the dripline of the trees when possible. If project impacts do occur within the dripline of the riparian canopy, ground disturbance would be no deeper than 12 inches and would avoid impacts to tree roots. A City arborist would evaluate all tree impacts and supervise the establishment of tree protection zones if needed to ensure that trees are not negatively impacted. In addition to the proposed path enhancements and lake safety barrier installations, tree maintenance is planned for the riparian woodland along the eastern half of the lake, which may also be subject to CDFW and RWQCB jurisdiction. Any tree maintenance of riparian woodland would be under the recommendation of a City arborist for tree health and public safety.

Design of the safety barriers, proposed lake water quality improvements, and tree maintenance could potentially impact jurisdictional features under the jurisdiction of CDFW and/or RWQCB. Best management practices (BMPs) would be implemented to avoid impacts to trees (e.g., ground disturbance would be no deeper than 12 inches and would avoid impacts to tree roots). However, if impacts are not avoidable and trees or tree roots must be removed, the City may need to obtain regulatory permits from RWQCB and/or CDFW. Therefore, Mitigation Measure BIO-2 would be required to determine the extent of potentially jurisdictional features and which agency could

require a full jurisdictional determination. Construction of path enhancements, safety barriers, and a stage over the lake as well as tree maintenance could result in both temporary and permanent impacts to CDFW and RWQCB jurisdictional riparian habitat. If impacts to CDFW and RWQCB-jurisdictional habitats cannot be avoided, Mitigation Measure BIO-3 would be required to offset impacts to riparian and open water habitat through habitat restoration or enhancement.

Mitigation Measures

BIO-2 Jurisdictional Delineation

Prior to project construction, the City shall direct a qualified biologist to delineate those areas on the project site that are under the jurisdiction of CDFW and RWQCB. The qualified biologist shall submit the jurisdictional delineation to the City, RWQCB, and/or CDFW, as appropriate, for review and approval. If the project cannot be designed to avoid impacts to jurisdictional resources, the City shall obtain appropriate regulatory permits and implement all required mitigation measures as directed by the regulating agency.

BIO-3 Habitat Restoration/Enhancement Plan (HREP)

If impacts to CDFW and RWQCB jurisdictional habitats cannot be avoided, then prior to issuance of a grading permit, the City shall prepare a site-specific Habitat Restoration/Enhancement Plan (HREP). Direct impacts to riparian habitat (i.e., Fremont cottonwood forest and woodland, riparian woodland, lake, and associated wetlands) shall be offset through purchase of credits at a RWQCB, and CDFW-approved mitigation bank for creation or enhancement of sensitive natural communities at a 2:1 ratio for permanent impacts and 0.5:1 for temporary impacts. If the project falls outside of RWQCB-, and CDFW-approved mitigation bank service areas, impacts to sensitive natural communities shall be offset through habitat restoration and/or enhancement at an off-site location at a minimum ratio of 1:1 (habitat restored and/or enhanced to habitat impacted). The location of restoration and/or enhancement shall be determined by a qualified biologist. The restoration and/or enhancement shall include locally native species approved by the City. The restoration and/or enhancement shall be incorporated into an Off-Site Habitat Restoration/Enhancement Plan to be developed by a qualified biologist pursuant to the requirements listed below. As identified in component (i) below, upon completion of restoration/enhancement, the City will notify relevant agencies and agencies will confirm that compensatory mitigation has been completed.

The HREP shall include, at a minimum, the following components:

a. Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type);
b. Goal(s) of the compensatory mitigation project (i.e., the type/types and area/areas of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type/types to be established, restored, enhanced, and/or preserved);
c. Description of the proposed compensatory mitigation-site (i.e., location and size, ownership status, existing functions and values of the compensatory mitigation-site);
d. Implementation plan for the compensatory mitigation site (the plan will include rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan, including plant species to be used, container sizes, and seeding rates);
e. Maintenance activities during the monitoring period, including weed removal and irrigation as appropriate (the plan will include activities, responsible parties, and schedule);

f. Monitoring plan for the compensatory mitigation-site, including no less than quarterly monitoring for the first year; the plan will include performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports;

g. Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type;

h. An adaptive management program and remedial measures to address negative impacts to restoration efforts;

i. Notification of completion of compensatory mitigation and agency confirmation; and

j. Contingency measures (e.g., initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism).

Significance After Mitigation

Implementation of Mitigation Measures BIO-2 and, if necessary, BIO-3 would reduce impacts to riparian habitat to a less than significant level.

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c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The project would involve construction of safety barriers at the edge of Ellis Lake, dredging filtration and water quality improvements in of the lake, and installation of up to six piers for the stage over the lake (resulting in up to 42.4 square feet of fill) and tree trimming, path enhancements, and grading in the immediate vicinity of the lake. Ellis Lake is manmade and does not connect to any natural drainages. It is apparently fed by stormwater and surface runoff. Ellis Lake may be hydrologically connected to another nearby manmade pond, Keller Lake, approximately 300 feet to the southeast, via a culvert under Laguna Street. Keller Lake also does not connect to any natural drainages. Small wetland areas at the edge of the lake are heavily impacted by human use and maintenance activities. In the largest vegetated wetland area at the west end of the lake, cattail appeared to have been cut just above the water level. Ellis Lake and any wetlands it contains may be under USACE, CDFW, and RWQCB jurisdictions. Due to Ellis Lake's isolation, lack of surface connectivity to any waters of the U.S., and the absence of commercial use, USACE is not expected to take jurisdiction. Areas up to the top of the bank as well as Fremont cottonwood forest and woodland and other riparian habitat are subject to CDFW jurisdiction pursuant to Section 1600 et seq. of the CFGC. Dredging Amelioration of water quality in the lake and installation of safety barriers at the lake edge and piers for the stage in the west end of the lake could cause potentially significant impacts to lake, wetland, and riparian habitat through removal and disturbance of sediment and placement of fill. Construction immediately adjacent to waters of the U.S. and waters of the State has the potential to significantly impact jurisdictional waters through discharge of sediment. Due to the proposed impacts to riparian habitat and the lake and associated wetlands, project impacts would be potentially significant. However, implementation of the required SWPPP, as discussed in Section 10, Hydrology and Water Quality, and Mitigation Measures BIO-2 and, if necessary, BIO-3 would reduce impacts to less than significant levels.

Significance After Mitigation

Implementation of Mitigation Measures BIO-2 and BIO-3 would ensure that impacts to sensitive riparian habitat and jurisdictional waters are avoided or mitigated through replacement and/or enhancement. This measure would reduce impacts to state or federally protected wetlands to a less than significant level.

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d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The project area consists of developed and disturbed areas with primarily ornamental and ruderal vegetation. Land use in the vicinity is primarily residential or commercial with no connectivity to natural habitats and is therefore not expected to support wildlife movement. Although migratory bird species may use Ellis Lake Park as a stopping point on their journey, other similar habitats exist in the area, and disturbance to the park would be temporary. No significant impacts to wildlife movement corridors would occur as a result of project activities.

LESS THAN SIGNIFICANT IMPACT

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Any project impacts to native riparian vegetation, water quality, and wildlife would be reduced to less than significant levels with implementation of Mitigation Measures BIO-1, BIO-2, and BIO-3 and thus would not conflict with the Parks, Open Space, and Conservation Element in the City's General Plan. Tree maintenance in riparian woodland areas would not conflict with the City's tree ordinance (CMC Section 18.310). If any protected trees are to be removed, relocated, or if ground disturbance encroaches on 20 percent or more of the area within the tree protection zone (dripline of protected trees), an application for tree permits would be submitted. No ground disturbance would occur prior to issuance of tree permits. A protected tree is defined in any tree with a diameter of 24 inches or more as measured 54 inches above the ground (at breast height), a tree with a diameter of 12 inches or more at breast height if it is one of six listed native species (e.g., coast live oak), a tree with a diameter of 6 inches or more at breast height if it is within a structure setback (as defined in CMC Section 18.305.040) from a channel, or if it is a designated heritage tree or has been preserved as a condition of approval for a discretionary permit. Coast live oak and other trees that occur in areas planned for grading and Fremont cottonwood along the inflow channel at the northwest edge of the lake may qualify as protected trees and would require a tree permit prior to initiation of ground disturbance. Protected trees within the project site that are not planned for removal would be protected during construction and fenced around the dripline to prevent encroachment by construction consistent with requirements in the CMC. Therefore, with implementation of Mitigation Measures BIO-1, BIO-2, and, if necessary, BIO-3; compliance with General Plan Policies 3.1 and 3.4; and compliance with CMC Section 18.310, the project would not conflict with local policies or ordinances and impacts would be less than significant with mitigation.

Significance After Mitigation

Implementation of Mitigation Measures BIO-1, BIO-2, and, if necessary, BIO-3 would ensure that the project does not conflict with the City's General Plan Policies. These measures would reduce impacts to native riparian vegetation, water quality, and special-status wildlife to a less than significant level

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g. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other similar plans that govern activities on the project site. Therefore, the proposed project would not conflict with any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved plan. There would be no impact.

NO IMPACT

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5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	■	☐

Setting

This section analyzes the project's potential impacts related to cultural resources, including historical and archeological resources as well as human remains. The analysis in this section is based, in part, on the Cultural Resources Assessment prepared for the Ellis Lake Park Project by Rincon in September 2021. The investigation consisted of a California Historical Resources Information System (CHRIS) records search of the project site as well as a 0.5-mile radius around the project site at the Northwest Information Center (NWIC), a search of the Sacred Lands File (SLF) with the Native American Heritage Commission (NAHC), a historic evaluation of Ellis Lake Park, and a pedestrian field survey conducted on September 9, 2021.

The NWIC records search identified 10 previously recorded cultural resources within a 0.5-mile radius of the project site. Background research also confirmed the Keller House, a City of Concord Landmark, is located within the boundaries of the project site, where it was relocated in 1984. No other previously recorded cultural resources are situated within or adjacent to the project site. One of the previously recorded resources located within the 0.5-mile radius of the project consists of a prehistoric site with several human burials. On October 13, 2021 the NAHC responded to Rincon's SLF request, stating that the results of the SLF search were negative.

No archaeological resources were observed within the project site during the survey. However, the field survey along with the background research resulted in the identification of two historic-age properties within the project site: Ellis Lake Park and the Keller House. As mentioned above, the Keller House is a City of Concord Landmark and therefore is considered a historical resource pursuant to Section 15064.5(a)(2) of the CEQA Guidelines. As documented in the cultural resources assessment, Ellis Lake Park was recorded and found ineligible for listing in the National Register of Historic Places, California Register of Historical Resources, or as a City of Concord Landmark under any designation criteria due to a lack of significant historical or architectural associations. As such, Ellis Lake is not considered a historical resource pursuant to Section 15064.5(a) of the CEQA Guidelines.

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

As detailed above, the project site contains one historical resource, the Keller House, which is a designated City of Concord Landmark. However, the project does not involve any direct modifications to the property and as it was relocated to its current site in 1984, its setting does not contribute to its overall significance. The proposed project would introduce a garden to the west of the former residence and an adult exercise area to the rear (south). Neither of these would obscure views of the building's principal northern façade or be inconsistent with the building's current setting as a park, which did not affect its landmark designation following its relocation to the site in 1984. As such, the property would not be materially impaired and the project would result in no impact to historical resources as defined in Section 15064.5(b) of the CEQA Guidelines.

NO IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

The cultural resources assessment conducted for the project did not identify any archaeological resources or archaeological deposits within the project site; however, the NWIC records search results identified a previously recorded historic-aged archaeological site and a previously recorded prehistoric burial site within the surrounding area.

The project site has been continuously disturbed with the development of Ellis Lake and the Park, as well as periodic utility updates, routine park maintenance, and landscaping. Although the project site has seen ongoing disturbance since at least 1946, the depth and extent of past ground disturbance is unknown and intact native soils and/or archaeological materials may be present at previously undisturbed depths. Additionally, the mounds are thought to be comprised of artificial fill materials; however, the origin of the soils used to produce the mounds are currently unknown and may be made of non-sterile soils that could contain archaeological remains.

As mentioned above, one prehistoric archaeological resource is situated within 0.25 mile of the project site. The prehistoric archaeological resource consists of a temporary camp with several burials. The close proximity of the project to a known archaeological resource with burials, along with the presence of historic-period archaeological remains within the immediate vicinity, indicates there is a high potential for encountering subsurface archaeological deposits. The following mitigation measures are required to ensure that potential impacts to archaeological resources are reduced to a less than significant level.

Mitigation Measures

CUL-1 Worker's Environmental Awareness Program

The City shall retain a qualified archaeologist to conduct a Worker's Environmental Awareness Program (WEAP) training on archaeological sensitivity for all construction personnel prior to the commencement of any ground-disturbing activities. The training shall be conducted by an archaeologist who meets or exceeds the Secretary of Interior's Professional Qualification Standards for archeology (National Park Service [NPS] 1983). Archaeological sensitivity training shall include a description of the types of cultural material that may be encountered, cultural sensitivity issues, the regulatory environment, and the proper protocol for treatment of the materials in the event of a

find. The archeologist shall submit a sign-in sheet for the WEAP training to the City to document compliance within 30 days of its completion.

CUL-2 Archaeological and Native American Monitoring

The City shall retain a qualified archaeologist and Native American consultant to monitor all project-related ground disturbing activities. The monitoring program shall include spot-checking of the earthen mounds to confirm they are comprised of artificial and/or culturally-sterile fill. Archaeological monitoring shall be performed under the direction of an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archeology (National Park Service 1983). Native American monitoring shall be provided by a locally affiliated tribal member(s). Monitors will have the authority to halt and redirect work should any archaeological resources be identified during monitoring. If archaeological resources are encountered during ground-disturbing activities, work in the immediate area must halt and the find will evaluated for listing in the CRHR and NRHP. Archaeological or Native American monitoring or both may be reduced or halted at the discretion of the monitors, in consultation with the lead agency, as warranted by conditions such as encountering bedrock, sediments being excavated are fill, or negative findings during the first 50 percent of ground-disturbance. If monitoring is reduced to spot-checking, spot-checking shall occur when ground-disturbance moves to a new location within the project site and when ground disturbance will extend to depths not previously reached (unless those depths are within bedrock). If the earthen mounds are confirmed to be artificial fill and/or culturally sterile, spot checking of the mound removal may be halted. The monitors shall submit a report to the City to document compliance within 30 days of completion of ground disturbing activities.

CUL-3 Unanticipated Discovery of Cultural Resources

In the unlikely event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archeology (National Park Service 1983) shall be contacted immediately to evaluate the find. If the find is prehistoric, then a Native American representative shall also be contacted to participate in the evaluation of the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be eligible for the CRHR and cannot be avoided by the modified project, additional work, such as data recovery excavation, may be warranted to mitigate any significant impacts to cultural resources. The City shall review and approval the treatment plan and archeological testing as appropriate.

Significance After Mitigation

The implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3 would reduce impacts to a less than significant level by ensuring archaeological resources are evaluated and treated accordingly.

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c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

No human remains are known to be present within the project site. However, a known prehistoric burial site has been documented within 0.5-mile of the project site increasing the probability that human remains may be present within the project site. Additionally, the discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the NAHC, which will determine and notify a MLD. The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the City shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, impacts to human remains would be less than significant.

LESS THAN SIGNIFICANT IMPACT

6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	■	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	■

Setting

As a state, California is one of the lowest per capita energy users in the United States, ranked 50th in the nation, due to its energy efficiency programs and mild climate (United States Energy Information Administration 2021). Electricity and natural gas are primarily consumed by the built environment for lighting, appliances, heating and cooling systems, fireplaces, and other uses such as industrial processes in addition to being consumed by alternative fuel vehicles. Most of California's electricity is generated in state with approximately 28 percent imported from the Northwest and Southwest in 2019; however, the state relies on out-of-state natural gas imports for nearly 90 percent of its supply (California Energy Commission [CEC] 2021a and 2021b). In addition, approximately 32 percent of California's electricity supply comes from renewable energy sources, such as wind, solar photovoltaic, geothermal, and biomass (CEC 2021a). In 2018, Senate Bill 100 accelerated the state's Renewable Portfolio Standards Program, codified in the Public Utilities Act, by requiring electricity providers to increase procurement from eligible renewable energy and zero-carbon resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. Electricity would be provided to the project by either Pacific Gas and Electric (PG&E) or MCE. Natural gas service would be provided to the project by Pacific Gas and Electric (PG&E). Table 4 summarizes the electricity and natural gas consumption for Contra Costa County, in which the project site would be located, and for PG&E, as compared to statewide consumption.

Table 4 2019 Electricity and Natural Gas Consumption

Energy Type	Contra Costa County	PG&E	California	Proportion of PG&E Consumption	Proportion of Statewide Consumption[1]
Electricity (GWh)	9,639	78,072	27,9402	12%	3%
Natural Gas (millions of therms)	1,205	4942	13,158	24%	9%

GWh = gigawatt-hours

[1] For reference, the population of Contra Costa County (1,153,854 persons) is approximately 1.5 percent of the population of California (78,933,710 persons) (California Department of Finance 2021).

Source: CEC 2021c

Petroleum fuels are primarily consumed by on-road and off-road equipment in addition to some industrial processes, with California being one of the top petroleum-producing states in the nation (CEC 2021d). Gasoline, which is used by light-duty cars, pickup trucks, and sport utility vehicles, is the most used transportation fuel in California with 15.4 billion gallons sold in 2019 (CEC 2020). Diesel, which is used primarily by heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, and heavy-duty construction and military vehicles, is the second most used fuel in California with 1.8 billion gallons sold in 2019 (CEC 2020). Table 5 summarizes the petroleum fuel consumption for Contra Costa County in which the project site would be located, as compared to statewide consumption.

Table 5 2019 Annual Gasoline and Diesel Consumption

Fuel Type	Contra Costa County (millions of gallons)	California (millions of gallons)	Proportion of Statewide Consumption[1]
Gasoline	427	15,365	3%
Diesel	27	1,756	2%

[1] For reference, the population of Contra Costa County ((1,153,854 persons) is approximately 1.5 percent of the population of California (78,933,710 persons) (California Department of Finance 2021).

Source: CEC 2020

Energy consumption is directly related to environmental quality in that the consumption of nonrenewable energy resources releases criteria air pollutant and greenhouse gas (GHG) emissions into the atmosphere. The environmental impacts of air pollutant and GHG emissions associated with the project's energy consumption are discussed in detail in Section 3, *Air Quality*, and Section 8, *Greenhouse Gas Emissions*, respectively.

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

The proposed project would use nonrenewable and renewable resources for construction and operation. The anticipated use of energy is detailed in the following subsections. City-provided information and the CalEEMod outputs for the air pollutant and GHG emissions modeling (Appendix AQ) were used to estimate energy consumption associated with the project.

Construction Energy Demand

The construction phase of the project would involve energy use for construction and paving activities. These activities would require the use of diesel-powered machinery and vehicles.

The project would require site preparation and grading, including pavement and asphalt installation; building construction; architectural coating; and landscaping and hardscaping. During project construction, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and vehicles used to deliver materials to the site. As shown in Table 6, project construction would require approximately 18,572 gallons of gasoline and approximately 58,775 gallons of diesel fuel. These construction energy estimates are conservative because they assume that the construction equipment used in each phase of construction is operating every day of construction.

Table 6 Estimated Fuel Consumption during Construction

	Fuel Consumption (gallons)	
Source	**Gasoline**	**Diesel**
Construction Equipment & Hauling Trips	–	58,688[1]
Construction Worker Vehicle Trips	18,572	–

[1] Fuel consumption associated with dredging activity added to the land-based Construction Equipment & Hauling Trips diesel consumption using the Maximum Engine Fuel Consumption formula and information provided in methodology section of Section 3, *Air Quality* (Becker 2019).

See Appendix ENG for energy calculation sheets.

Energy use during construction would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the region. In addition, construction contractors would be required to comply with the provisions of California Code of Regulations Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes and would minimize unnecessary fuel consumption. Construction equipment would be subject to the USEPA Construction Equipment Fuel Efficiency Standard, which would also minimize inefficient, wasteful, or unnecessary fuel consumption. Furthermore, pursuant to applicable regulatory requirements such as 2019 CALGreen, the project would comply with construction waste management practices to divert a minimum of 65 percent of construction debris. These practices would result in efficient use of energy necessary to construct the project. In the interest of cost-efficiency, construction contractors also would not utilize fuel in a manner that is wasteful or unnecessary. Therefore, the project would not involve the inefficient, wasteful, and unnecessary use of energy during construction, and construction impacts related to energy consumption would be less than significant.

Operational Energy Demand

Operation of the project would contribute to regional energy demand by consuming electricity and gasoline and diesel fuels. The operational phase of the project would involve electricity for operation of the sound equipment associated with the event stage, and landscape and garden irrigation. The project's lighting would not require off-site energy production because proposed lighting would consist of solar-powered security lighting. The barbecue areas would likely require non-renewable resources such as propane for operation. Gasoline and diesel consumption would be associated with vehicle trips generated by visitors and employees. Table 7 summarizes estimated operational energy consumption for the proposed project. As shown therein, project operation would require approximately 981 gallons of gasoline and 155 gallons of diesel for transportation fuels and 6,020 kilowatt-hours of electricity. Vehicle trips associated with future workers and visitors would represent the greatest operational use of energy associated with the project.

Table 7 Estimated Project Annual Operational Energy Consumption

Source	Energy Consumption[1]	
Transportation Fuels		
Gasoline	981 gallons	108 MMBtu
Diesel	155 gallons	20 MMBtu
Electricity	6,020 kWh	21 MMBtu

MMBtu = million metric British thermal units; GWh = gigawatt-hours

[1] Energy consumption is converted to MMBtu for each source

See Appendix ENG for energy calculation sheets and Appendix AQ for CalEEMod output results for electricity usage.

The project would increase the amount of multimodal transportation opportunities with the addition of a bicycle trail and multi-purpose path which would facilitate alternative transportation modes such as walking and biking. In addition, there are several bus stops located within 0.25 mile of the project site, including County Connection bus stops for routes 10, 11, 14, 20, 91X, 311, 314, 320, 611, and 613. The Concord Bay Area Rapid Transit (BART) station is also located approximately 0.5 mile east of the project site and is accessible via County Connection bus route 10. The proximity of the project site to public transportation and the project's bicycle trail and multi-purpose path improvements would reduce the potential of the project to result in wasteful, inefficient, or unnecessary consumption of vehicle fuels.

As such, the scope of project construction and operation would not represent a substantial consumption of local energy supplies that would be wasteful, inefficient, or unnecessary. Therefore, the project's energy consumption would not be wasteful or unnecessary. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The City of Concord's Citywide Climate Action Plan (CAP) was adopted by City Council in 2013. The CAP contains strategies focused on building performance, energy, water, waste transportation systems, land use, adaptation, and participation and quantifies the associated GHG emissions savings associated with these strategies.

The only energy-related policy in the Concord CAP applicable to the project is BE10, which focuses on reducing emissions from building construction by using cleaner fuels and equipment. The project would be consistent with this policy as it would utilize up-to-date construction equipment that is fuel-efficient pursuant to CARB's In-Use Off-Road Diesel-Fueled Vehicle Regulation, which requires fleets to meet certain specifications, and would prioritize energy use efficiency consistent with standard construction practices. As such, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	■	☐
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. Landslides?	☐	☐	☐	■
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Areas within Concord that are most likely to experience fault ruptures from movement on the Concord Fault are located within an Alquist-Priolo Earthquake Fault Zone. The project site is located within the Alquist-Priolo Fault Zone and directly atop the Concord Fault as shown on Figure 3.7-3 of the General Plan EIR (City of Concord 2006). Consequently, development of the project may expose people and structures to moderate intensity seismic ground shaking (City of Concord 2006). The project would include the addition of an event stage, community gardens, basketball court, and other small structures to the existing Park. The addition of these small structures would not substantially alter the existing level of on-site hazards related to strong seismic ground shaking. Therefore, the project's impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

The project site is not identified as being located in a high or very high liquefaction potential zone (City of Concord 2006). As described under item a.1 and a.2, the project would not substantially alter existing hazards related to seismic events. Therefore, the impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The project site is located on land identified to have a 0 to 15 percent slope (City of Concord 2006). The site and its surrounding and uses are currently developed. There are no steep slopes or exposed soil areas on or near the project site that could result in a landslide. There would be no impact.

NO IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

The potential for erosion generally increases after soil and vegetation have been disturbed via clearing and grading, with loose soils creating conditions that lead to erosion. The project would involve grading 3- to 4-foot-high mounds located in three separate areas of the Park and contour grading of the remaining grass-covered areas throughout the project site. These actions would result in the potential for soil erosion. Temporary erosion impacts during construction would be addressed by erosion control measures and erosion and sediment control plan required as part of CMC Section 16.10.030, such as the dust control measures. The project would be required to obtain a grading permit and submit grading plans and associated documents in support of the permit (CMC Section 16.10.030), which would be subject to review and approval by the City Engineer. The project construction plan would be required to comply with any conditions and requirements established by the National Pollution Discharge Elimination System (NPDES) permit or other permits reasonably related to the reduction or elimination of pollutants in stormwater from the construction site, including soils from grading, and any condition and/or requirements in place to protect specific

watersheds. This would include a Stormwater Pollution Prevention Plan (SWPPP), which is a site-specific written document that identifies potential sources of stormwater pollution at a construction site and describes practices to reduce pollutants in stormwater discharges from the construction site. SWPPP preparation is necessary in order for a project to receive NPDES permit coverage for stormwater discharges (USEPA 2007). Compliance with the project-related SWPPP and NPDES standards would have a dual benefit of reducing soil erosion. Compliance with applicable regulations would reduce erosion impacts to less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

As discussed under item a.4., the project site is not in a liquefaction zone and would not be subject directly to instability resulting from liquefaction, subsidence, spreading, landslide, or collapse. Furthermore, the project does not propose any habitable structures that would be at risk of collapse under unstable soil conditions. Therefore, the project would not be located on a site that is unstable or at risk of being unstable, nor would it place structures at risk of collapse under unstable soil conditions onto the project site. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

The project site is not identified as an area of Concord that is highly susceptible expansive soils (City of Concord 2006). Furthermore, the project includes only minor construction activity and would not increase the number of buildings or large habitable structures that would be significantly affected by the contraction and expansion of expansive soils. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The sole source of wastewater generation on the project site would be from the Keller House. The existing restroom would not be altered by the project and is already connected to the City's wastewater system. Therefore, the proposed project would not include the use or installation of a septic tank or alternative wastewater disposal system. There would be no impact.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

While no known significant paleontological resources exist within the City of Concord, fossils are considered to be nonrenewable resources. Due to the infrequency of fossil preservation, impacts such as the physical destruction of fossil remains would be considered a significant impact(City of Concord 2006). The project would require ground disturbance and grading of mounds on-site which could lead to the encounter of unknown paleontological resources during construction. According to

General Plan EIR Figure 3.7-1, the project site is located on alluvial fans and fluvial deposits from the Pleistocene (Qpaf) (City of Concord 2006). Quaternary old (Pleistocene) sedimentary deposits have produced extensive vertebrate, invertebrate, and plant fossil collections throughout California; therefore, Pleistocene deposits are assigned a high paleontological sensitivity (Savage 1951). Because the project site is located on a geological unit with potentially high paleontological sensitivity, Mitigation Measure GEO-1 is required to mitigate the potential risk of destroying unknown paleontological resources and would ensure that the potential impacts to paleontological resources would be less than significant.

Mitigation Measure

GEO-1 Unanticipated Discovery of Paleontological Resources

In the event that an unanticipated fossil discovery is made during the course of project construction, then in accordance with Society of Vertebrate Paleontology (SVP) guidelines (2010), it is the responsibility of any worker who observes fossils within the project site to stop work within 50 feet of the find and notify a qualified professional paleontologist who shall be retained to evaluate the discovery, determine its significance and if additional mitigation or treatment is warranted. Work in the area of the discovery will resume once the find is properly documented and authorization is given to resume construction work. Any significant paleontological resources found during construction monitoring will be prepared, identified, analyzed, and permanently curated in an approved regional museum repository. The paleontologist shall submit a report to the City to document compliance within 30 days of its completion.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐

Overview of Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of GHG emissions contributing to the "greenhouse effect," a natural occurrence which takes place in Earth's atmosphere and helps regulate the temperature of the planet. Most of the radiation from the sun hits Earth's surface and warms it. The surface, in turn, radiates heat back towards the atmosphere in the form of infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping into space and re-radiate it in all directions.

GHG emissions occur both naturally and as a result of human activities, such as fossil fuel burning, decomposition of landfill wastes, raising livestock, deforestation, and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change 2021).[2]

Anthropogenic activities since the beginning of the industrial revolution (approximately 250 years ago) are adding to the natural greenhouse effect by increasing the concentration of GHGs in the atmosphere that trap heat. Since the late 1700s, estimated concentrations of CO_2, methane, and nitrous oxide in the atmosphere have increased by over 43 percent, 156 percent, and 17 percent, respectively, primarily due to human activity (United States Environmental Protection Agency 2020).

[2] The Intergovernmental Panel on Climate Change's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

Emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature. Potential climate change impacts in California may include loss of snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (State of California 2018).

Regulatory Framework

In response to climate change, California implemented Assembly Bill (AB) 32, the "California Global Warming Solutions Act of 2006." AB 32 required the reduction of statewide GHG emissions to 1990 emissions levels (essentially a 15 percent reduction below 2005 emission levels) by 2020 and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. On September 8, 2016, the Governor signed Senate Bill 32 into law, extending AB 32 by requiring the State to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the California Air Resources Board (CARB) adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program and the Low Carbon Fuel Standard, and implementation of recently adopted policies and legislation, such as SB 1383 (aimed at reducing short-lived climate pollutants including methane, hydrofluorocarbon gases, and anthropogenic black carbon) and SB 100 (discussed further below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of six metric tons (MT) of CO_2e by 2030 and two MT of CO_2e by 2050 (CARB 2017).

Other relevant state and local laws and regulations include:

- **SB 375.** The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. Metropolitan Planning Organizations are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the Metropolitan Planning Organization's Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. MTC (Metropolitan Transportation Commission)/ABAG were assigned targets of a 10 percent reduction in per capita GHG emissions from passenger vehicles from 2005 levels by 2020 and a 19 percent reduction in per capita GHG emissions from passenger vehicles from 2005 levels by 2035. MTC/ABAG adopted its Plan Bay Area 2040: Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area on July 26, 2017, which meets the requirements of SB 375.
- **SB 100.** Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.
- **City of Concord Citywide Action Plan.** The City adopted its current CAP on July 23, 2013 in response to State mandates and regional guidance on reducing GHG emissions. The CAP contains strategies focused on building performance, energy, water, waste transportation

systems, land use, adaptation, and participation and quantifies the GHG emissions savings associated with these strategies.

BAAQMD Significance Thresholds

In the 2017 BAAQMD CEQA Air Quality Guidelines, the BAAQMD outlines an approach to determine the significance of projects. The BAAQMD recommends that lead agencies determine appropriate GHG emissions thresholds of significance based on substantial evidence in the record. The 2017 BAAQMD CEQA Air Quality Guidelines establishes the following significance thresholds for operational GHG emissions from land use development projects (BAAQMD 2017c):

- Compliance with a qualified GHG reduction strategy
- Annual emissions less than 1,100 MT of CO_2e per year
- Annual emissions less than 4.6 MT of CO_2e per service population (residents and employees) per year

The City of Concord's Citywide CAP is a qualified GHG reduction strategy per BAAQMD guidance as it includes a forecast of future GHG emissions and contains a goal for substantive GHG reductions (City of Concord 2013a). The CAP is consistent with the State's 2030 GHG reduction target of reducing emissions 40 percent below 1990 levels as Concord adopted the locally specific GHG reduction goal of 4.0 metric tons of CO_2e per person per year, which is approximately 40 percent below the BAAQMD's recommend plan-level threshold of 6.6 MT of CO_2e per year for year 2020 and is also below the 2017 Scoping Plan's statewide per capita goal of 6 MT of CO_2e per person per year for year 2030. The CAP also quantifies existing and forecasts communitywide GHG emissions by sector within Concord and specifies measures that substantial evidence demonstrates would collectively achieve the specified emissions level if implemented on a project-by-project basis. In addition, the CAP includes a GHG emissions inventory update to monitor the plan's progress toward achieving the GHG emission reduction target and to take corrective action if necessary (City of Concord 2013a). Furthermore, the City's CAP was adopted via public process and underwent CEQA review in the form of an Initial Study-Negative Declaration (City of Concord 2013b). As a result, the City's CAP is a qualified GHG reduction strategy in compliance with the requirements of CEQA Guidelines Section 15183.5(b)(1), and the first significance threshold recommended by BAAQMD is utilized in this analysis. The significance of the project's emissions is therefore determined based on whether the project would be consistent with the applicable measures of the City's CAP.

Methodology

Although the significance of the project's impacts related to GHG emissions are evaluated based on consistency with the City's CAP pursuant to CEQA Guidelines Section 15183.5, GHG emissions for project construction and operation were estimated for informational purposes using CalEEMod version 2020.4.0 and the Harborcraft Model in accordance with the assumptions outlined in the Methodology section of Section 3, *Air Quality* (Appendix AQ). CalEEMod calculates emissions of CO_2, CH_4, and N_2O associated with construction activities, energy use, area sources, waste generation, and water use and conveyance as well as emissions of CO_2 and CH_4 associated with project-generated vehicle trips (i.e., mobile sources). In addition, because the project would include dredging of the lake, the Harborcraft Model was utilized to obtain emission factors associated with the potential use of a work boat for dredging the lake (SMAQMD 2021). Full calculations can be found in Appendix AQ. Emissions of all GHGs are converted into their equivalent global warming potential in terms of CO_2 (i.e., CO_2e). Furthermore, for the GHG emissions analysis, operational

emissions were modeled for the year 2030 to be consistent with the State's next GHG emission reduction milestone target of achieving 40 percent reduction in 1990 GHG emission levels by 2030. To account for the continuing effects of the Renewables Portfolio Standard Program on reducing the GHG emissions intensity of electrical suage, the adjusted energy intensity factors shown in Table 8 for PG&E were used to calculate GHG emissions associated with the project's electricity usage. All CalEEMod outputs can be found in Appendix AQ.

Table 8 PG&E Energy Intensity Factors

	2021 (lbs/MWh)	2030 (lbs/MWh)[2]
Percent procurement	28.5%[1]	60%
Carbon dioxide (CO_2)	204	114.13
Methane (CH_4)	0.033	0.018
Nitrous oxide (N_2O)	0.004	0.002

[1] Source: California Energy Commission 2019; CAPCOA 2021

[2] RPS goal established by SB 100

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

CEQA Guidelines Section 15183.5 allows projects to tier from the programmatic GHG emissions analysis contained in a qualified GHG emissions reduction plan by identifying those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporating those requirements as mitigation measures applicable to the project (CEQA Guidelines Section 15183.5[a] and [b][2]). As discussed previously, the City's CAP is a qualified GHG emissions reduction plan under CEQA Guidelines Section 15183.5(b)(1). As a result, this analysis tiers from the GHG emissions analysis conducted for the City's CAP.

Table 9 evaluates the project's consistency with the City of Concord's CAP measures and General Plan policies related to reducing GHG emissions. As shown therein, the project would be consistent with these goals and policies. Therefore, pursuant to CEQA Guidelines Section 15183.5(b)(2), no impact related to consistency with GHG emissions reductions plans would occur.

GHG Emissions Quantification

As discussed earlier, the significance of the project's GHG emissions is determined in this analysis by evaluating the project's consistency with the applicable measures of the City's CAP pursuant to CEQA Guidelines Section 15183.5. The following quantification of the project's GHG emissions is provided for informational purposes only and is not used to evaluate the significance of project impacts, which were determined to be less-than-significant in the above analysis.

Construction of the proposed project would generate temporary GHG emissions primarily as a result of operation of construction equipment on-site as well as from vehicles transporting construction workers to and from the project site and dredging of the lake. As shown in Table 10, project construction would emit approximately 629 MT of CO_2e which would result in approximately 21 MT of CO_2e per year when amortized over 30 years. The amortized emissions from construction were added to the operational emissions to determine the total combined annual emissions.

Table 9 Project Consistency with Concord CAP and General Plan

Strategy/Policy	Is the Project Consistent?
Citywide Climate Action Plan	
BE10. Construction Energy Use: Reduce emissions from building construction by using cleaner fuels and equipment.	**Consistent.** The project would utilize up-to-date construction equipment that is fuel efficient pursuant to CARB's In-Use Off-Road Diesel-Fueled Vehicle Regulation which requires fleets to certain specifications and would prioritize energy use efficiency consistent with standard construction practices.
TL1. Pedestrian Master Plan: Develop a pedestrian master plan consistent with the Citywide Complete Streets Standards to minimize barriers to pedestrian access and maximize pedestrian interconnectivity throughout the City.	**Consistent**. The project would improve the paths located on the project site and make them ADA-accessible, which would minimize barriers to pedestrian access, maximum pedestrian interconnectivity on the project site, and connect the project with established routes identified as part of Concord's Bicycle, Pedestrian, and Safe Routes to Transit Master Plan.
TL4. Bicycle Master Plan: Develop a bicycle master plan to make it more convenient and safer to ride bicycles throughout the City and maximize connectivity. Leverage the off-road trails network and increase connections to the on-street network.	**Consistent.** The project would include construction of a bike lane within the Park which would connect established routes identified as part of Concord's Bicycle, Pedestrian, and Safe Routes to Transit Master Plan and increase connectivity of the existing bike network.
City of Concord General Plan	
Policy GM-4.1.1. Encourage new development to develop and implement transportation demand management (TDM) measures which reduce commuting by single occupant vehicles and instead promote and encourage transit, ridesharing, bicycling, walking, and other measures for the journey to work.	**Consistent.** The project would include a bike lane, which would encourage the use of alternative transportation and allow for bicycle connectivity from Laguna Street to Clayton Road, thereby reducing noise, pollution, and energy consumption related to single-occupant vehicles.
Policy LU-8.1.7. Follow community design principles which reduce greenhouse gas emissions and support environmental sustainability.	**Consistent.** The project would support bicycle usage by including construction of a dedicated bike lane to connect established routes identified as part of Concord's Bicycle, Pedestrian, and Safe Routes to Transit Master Plan and increase connectivity of the existing bike network. This feature would reduce GHG emissions associated with travel to and from the project site and support environmental sustainability. In addition, the project would include installation of 20 solar-powered security lights, which would reduce GHG emissions associated with electricity generation and support environmental sustainability.
Policy POS-1.1.6. Pursue the development of park and recreation facilities within reasonable walking distance of all residences.	**Consistent.** The project would restore and improve an existing public park that is surrounded by residential land uses and is therefore within reasonable walking distance of residences.
Policy T-1.8.1. Implement strategies and actions for enhanced bicycle circulation throughout the City.	**Consistent.** The project would include a bike lane, which would increase connectivity of the existing bike network and would connect established routes identified as part of Concord's Bicycle, Pedestrian, and Safe Routes to Transit Master Plan. Therefore, the project would implement strategies and actions for enhanced bicycle circulation.

Operation of the proposed project would generate GHG emissions associated with area sources (e.g., landscape maintenance), energy and water usage, vehicle trips, and wastewater and solid waste generation. The amortized emissions from construction were added to the operational emissions to determine the total combined annual emissions. Table 11 summarizes combined annual GHG emissions generated by project construction and operation. As shown therein, the project would generate approximately 30 MT of CO_2e per year. However, as previously discussed, the project would be consistent with the applicable GHG emission reduction measures of the CAP. Therefore, this impact would be less than significant pursuant to CEQA Guidelines Section 15183.5.

Table 10 Estimated Construction GHG Emissions

Year	Project Emissions (MT/yr CO_2e)
Total	629
Total Amortized over 30 Years	21

See Appendix AQ for CalEEMod worksheets and Harborcraft Model calculations

Table 11 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions (CO_2e in metric tons)
Construction	21
Operational	
Area	<1
Energy	<1
Mobile	6
Solid Waste	<1
Water	2
Total	**30**

Numbers may not add up due to rounding.
See Appendix AQ for CalEEMod worksheets.

LESS THAN SIGNIFICANT IMPACT

9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☐	■
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	■
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	■	☐
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	■	☐

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

The project site is an existing park and this use would continue with operations of the project. Parks do not involve the routine transport, use, or disposal of hazardous materials. Occasional use of small amounts of hazardous materials would likely occur for cleaning and maintaining facilities, such as household cleaners, paint, and landscaping products, similar to materials used on the site currently. Transport and use of such materials would be subject to all applicable state and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation Act, California Hazardous Materials Management Act, and the California Code of Regulations, Title 22.

Construction activities could use a limited amount of hazardous, flammable substances/oils during heavy equipment operation for site preparation and building construction. However, construction would be temporary and the transport, use, and storage of hazardous materials during construction of the project would be conducted in accordance with all applicable State and federal laws, such as those mentioned above. Therefore, the project would not create a significant hazard to the public or the environment through a foreseeable upset or accident, or the routine transport, use, or disposal of hazardous materials. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The project would renovate a public park. Ongoing and proposed uses at the Park, such as a basketball court, would not involve the routine transport, use, storage, or disposal of hazardous materials. Therefore, the project would not create a significant hazard through releasing hazardous materials into the environment. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

There are no proposed or existing schools within 0.25 mile of the project site. The nearest schools are Fortune School, 0.27 mile west, and Meadow Homes Elementary School, 0.35 mile southwest of the project site. The project would therefore not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of a school. There would be no impact.

NO IMPACT

d. Would the project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The following databases and listings compiled pursuant to Government Code Section 65962.5 were checked on August 25, 2021, for known hazardous materials contamination at the project site:

- **USEPA**
  - Comprehensive Environmental Response, Compensation, and Liability Information System
  - Superfund Enterprise Management System
  - Envirofacts Database
- **State Water Resources Control Board (SWRCB)**
  - GeoTracker search for leaking underground storage tanks and other clean-up sites
- **Department of Toxic Substances Control**
  - EnviroStor database for hazardous waste facilities or known contamination sites
  - Cortese list of Hazardous Waste and Substances Sites

The USEPA Envirofacts database returned one result in the project's vicinity based on data extracted on August 16, 2021 (USEPA 2021). The site identified was a Walgreens located approximately 0.38 mile north of the project site with records from 2001 reporting its handling of hazardous waste. Geotracker indicates that no SWRCB clean-up sites exist on or within 1,000 feet of the project site (SWRCB 2021). EnviroStor indicates there are no sites within 1,000 feet of the project site and the Cortese list returned negative results for the site (Department of Toxic Substances Control 2021). Because there are no active hazardous materials sites on or within 1,000 feet of the site, there would be no impact.

NO IMPACT

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The project site is located within the Buchanan Field Airport Influence Area according to Figure 3A of the Contra Costa County Airport Land Use Compatibility Plan (Contra Costa County Airport Land Use Commission 2000). However, the site is not located within the Composite Noise Contours associated with the airport or within one of the four identified Safety Zones. Therefore, the project would not result in a safety hazard or expose people working or recreating in the project area to excessive noise. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project would include expanding the parking lot and adding a new multi-purpose path to the project site, both of which would provide additional emergency access to the Park. The project would not involve changes to any area roadways. The project could result in traffic increases due to the predicted increase in public use. However, as discussed in Section 17, *Transportation*, the increase in traffic to the site would be minimal. The project would thus not interfere with an emergency response or evacuation plan. As emergency access would increase due to the proposed multi-purpose path and expanded parking lot and increase in traffic would not be substantial, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The project is located within a low to moderate fire hazard area surrounded by urban development. The project is not located in a very high fire hazard severity zone within the Local Responsibility Area (CAL FIRE 2007). In addition, the project would not include any new features or amenities that would increase wildfire risk on the site. Therefore, the project would be unlikely to expose people or structures to any risk associated with wildland fires. Refer to Section 20, *Wildfire*, for more detail about possible wildland fire impacts.

LESS THAN SIGNIFICANT IMPACT

10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	■	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	■	☐
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	■	☐
(iv) Impede or redirect flood flows?	☐	☐	■	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	■	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	■

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction

Ellis Lake is located on the project site. Leveling, contour grading, and demolition and construction of concrete paths would occur around the lake for project construction. Construction activities around the lake have the potential to result in erosion from grading, an accidental release of hazardous materials such as vehicle fuels and lubricant, or temporary siltation from stormwater runoff into the lake which would have the potential to impact water quality.

Project construction would need to obtain coverage under the NPDES General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-009-DWQ administered by the SWRCB because project construction would disturb more than one acre of land. The project would also be required to prepare a SWPPP that complies with the NPDES permit. Pursuant to CMC Section 16.05.090(e), the project would conform to the requirements of the California Stormwater Quality Association Stormwater (CASQA) Best Management Practices handbook for Construction Activities. The SWPPP may include BMPs such as scheduling construction activities. BMP implementation would incorporate the local climatic conditions to reduce the risk of runoff or erosion during soil-exposing activities, such as grading during the rainy season and creating a sandbag barrier around Ellis Lake to reduce the risk of sediment from runoff into the project site (CASQA 2003).

In compliance with CMC Section 16.05.090 the project would ensure that all construction conforms to the City's grading and erosion control ordinance and other generally accepted engineering practices for erosion control as discussed in further detail under Section 7, *Geology and Soils.* This would reduce the risk of sedimentation impacting water quality. Compliance with the NPDES General Permit and CMC Section 16.05.090 would reduce water quality and waste discharge impacts from runoff during temporary construction activities. Therefore, construction-related impacts to water quality would be less than significant.

Project construction activities would also include dredging Ellis Lake of accumulated non-native materials and trimming of overgrown and healthy tree and plant species from around the lake edge. These activities would provide beneficial impacts and improve water quality of the lake. In addition, the dredging activities that would occur would be required to comply with the NPDES and CMC Section 16.05.090 which would ensure that there would be less than significant impacts from dredging of the lake. Construction impacts would be less than significant.

Operation

Project operation would have the potential to affect water quality due to the increase of impervious surfaces on the site through reduced infiltration of water into the ground, higher stormwater runoff, and increased pollutant loads (National Oceanic and Atmospheric Administration [NOAA] 2021). Operational impacts would be regulated under the Municipal Storm Water Permitting Program administered by the SWRCB. In accordance with CMC Section 16.05.050, implementation of an approved stormwater control plan and submittal of an approved stormwater control operation and maintenance plan would be a condition approval for the project. These plans would ensure that project operation would not result in the degradation of surface or ground water quality by identifying appropriate source control and site design measures to reduce water quality impacts. The project would involve native plantings along the perimeter of Ellis Lake to aid in water runoff filtration consistent with General Plan Policy PF-1.3.1 requiring new development to incorporate

features which minimize surface runoff. In addition, compliance with CMC Section 16.05.090 requires best management practices and standards for project operation that would further reduce the potential for pollutants to affect water quality. As required by Municipal Regional Stormwater Permit (MRP) Provision C.3.h, the City would periodically verify that the BMPs and measures are maintained and continue to operate as designed (Contra Costa Clean Water Program 2017). With adherence to these requirements, project operation would result in less than significant impacts to surface or ground water quality.

LESS THAN SIGNIFICANT IMPACT

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The project site is located in an area overlapped by two groundwater basins: the Clayton Valley and Ygnacio Valley basins (City of Concord 2007). Both basins are ranked as very low priority basins (DWR 2019a). Neither basin has an approved groundwater management plan (DWR 2019b).

The project site's water would be supplied by the Contra Costa Water District (CCWD). The CCWD does not manage groundwater or use groundwater to meet water demands. Therefore, the project would not use groundwater supplies and thus decrease groundwater supplies (CCWD 2021).

The project would occur in a developed park and would increase the square footage of impervious surfaces. However, most of the project site would continue to be landscaped and pervious which would aid groundwater recharge. Furthermore, as the project site would comply with Contra Costa Clean Water Program Stormwater C.3 stormwater treatment techniques, such as low impact development methods to reduce impacts related to increase impervious surfaces on the site, the amount of impervious surfaces would be reduced to the extent possible which would further reduce surface runoff and aid in groundwater recharge (Contra Costa County Clean Water Program 2017)

Therefore, as most of the Park would remain to be landscaped and include pervious surfaces which would allow surface runoff to percolate and aid in groundwater recharge, impacts to groundwater would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.(i) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

c.(ii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

c.(iii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

c.(iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

The proposed project would not alter the course of any stream or river. However, the project may affect the overall drainage pattern of the Park with the addition of impervious surfaces and leveling and contour grading of mounds on the project site. Implementation of the project would have the potential to result in approximately 14 percent of the total project site being covered by impervious surfaces. The existing on-site drainage pattern is controlled by the landscaping and 3- to 4-foot-high mounds. One drainage pipe exists that borders the southeast side of Ellis Lake and feeds into the lake.

The project would not result in substantial erosion or siltation as the project would be required to comply with CMC Section 16.10.030(r) and (s) which detail erosion and sedimentation control measures, such as creating a sandbag barrier around the lake to prevent sedimentation of the lake and mulching to reduce erosion as mentioned on the CASQA Stormwater BMP Handbook (2003) and the project erosion and sediment control plan.

The project could increase the rate or amount of surface runoff as a result of increasing the amount of impervious surfaces being added to the site. However, adherence to guidelines set forth in the Contra Costa Clean Water Program Stormwater C.3 Guidebook would reduce the risk of flooding to less than significant. As stormwater management practices would reduce the risk of flooding, the same practices would reduce the impacts of impeding or redirecting flooding flows. In addition, adherence with the NPDES permit requiring implementation of appropriate source control and site design measures and stormwater treatment measures would ensure that stormwater drainage systems would not be overwhelmed or create additional sources of polluted runoff.

Proposed leveling of high rolling mounds on-site and contour grading of surface area throughout the Park would impact the existing drainage pattern of the site. The proposed leveling and grading could redirect surface water runoff to different discharge locations or concentrate runoff from sheet flow to channelized flow. The rate and amount of surface runoff is determined by precipitation rates and intensity and topography of the site. However, as mentioned above under criterion a, the project would be required to prepare a SWPPP and stormwater control plan to control surface water flow during construction and operation of the project. Therefore, the impacts associated with leveling and contour grading the project site and altering drainage patterns would not lead to increased surface runoff or flooding.

While the project would alter drainage patterns on the project site through the addition of impervious surfaces and site grading, compliance with the CASQA Stormwater BMP Handbook regarding construction practices and the Contra Costa Clean Water Program Stormwater C.3 Guidebook would reduce the risk of polluted runoff, flooding, erosion, and sedimentation. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

The project site is not identified as being within an area that could be affected by flooding or a tsunami (FEMA 2009; California Geological Survey et al. 2021). However, the project site includes a lake. A seiche may occur in any semi- or fully-enclosed body of water which experiences seismic waves from an earthquake. As discussed in Section 7, *Geology and Soils*, the project site is located directly atop of the Concord Fault and within the Alquist-Priolo Fault Zone and therefore has a high likelihood of experiencing seismic activity. Therefore, the project site could experience a seiche from Ellis Lake experiencing earthquake-related seismic waves. However, as discussed in Section 9, *Hazards and Hazardous Materials*, the project site would not likely deal with or otherwise store hazardous materials. Additionally, the project site would be unlikely to contain any other pollutants other than the ones analyzed in Section 9. Therefore, the impacts from the risk of pollutants due to project inundation would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

As described under item b, the project site is located on the border between the Clayton Valley and Ygnacio Valley Groundwater Basins, both of which are ranked as very low priority basins (DWR 2019a). As both basins are identified as very low priority basins, neither basin has been included in a sustainable groundwater management plan. Therefore, the project would not interfere with the implementation of a groundwater management plan, as such a plan does not exist for groundwater beneath the project site. There would be no impact.

NO IMPACT

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11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	■
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	■

a. Would the project physically divide an established community?

The project involves renovating and adding amenities to an existing park. The project would not change the land use of existing function of the site. The project would not expand the footprint of the existing Park. As such, the project would not divide an established community. The project would have no other additions or renovations which could physically divide an established community. Therefore, there would be no impact.

NO IMPACT

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The project would not require a change in zoning or land use. The project is proposed by the City of Concord to increase access, security, and passive and active recreation of the existing public space. As the project would be consistent with current the General Plan land use and zoning designation, there would be no impact.

NO IMPACT

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12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	■

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

There is no mining in the City of Concord (City of Concord 2007). Furthermore, no mineral resources have been identified on or near the project site (USGS 2019). Therefore, the project would have no impact on the availability of mineral resources.

NO IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	■	☐	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■

Overview of Noise and Vibration

Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

HUMAN PERCEPTION OF SOUND

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response. Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Caltrans 2013).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (10.5 times the sound energy) (Caltrans 2013).

SOUND PROPAGATION AND SHIELDING

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in the noise level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line), the path the sound will travel, site conditions, and obstructions.

Sound levels are described as either a "sound power level" or a "sound pressure level," which are two distinct characteristics of sound. Both share the same unit of measurement, the dB. However, sound power (expressed as L_{pw}) is the energy converted into sound by the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers, such as an eardrum or microphone, which is the sound pressure level. Sound measurement instruments only measure sound pressure, and noise level limits are typically expressed as sound pressure levels.

Noise levels from a point source (e.g., construction, industrial machinery, air conditioning units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, and man-made features, such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to noise as well. The FHWA's guidance indicates that modern building construction generally provides an exterior-to-interior noise level reduction of 10 dBA with open windows and an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows (FHWA 2011).

DESCRIPTORS

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. The noise descriptors used for this study are the equivalent noise level (L_{eq}), Day-Night Average Level (DNL; may also be symbolized as L_{dn}), and the community noise equivalent level (CNEL; may also be symbolized as L_{den}).

L_{eq} is one of the most frequently used noise metrics; it considers both duration and sound power level. The L_{eq} is defined as the single steady-state A-weighted sound level equal to the average sound energy over a time period. When no time period is specified, a 1-hour period is assumed. The L_{max} is the highest noise level within the sampling period, and the L_{min} is the lowest noise level within the measuring period. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (DNL or L_{DN}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.). Community noise can also be measured using Community Noise Equivalent Level (CNEL or L_{DEN}), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013).[3] The relationship between the peak-hour L_{eq} value and the L_{DN}/CNEL depends on the distribution of noise during the day, evening, and night; however noise levels described by L_{DN} and CNEL usually differ by 1 dBA or less. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 CNEL, while areas near arterial streets are in the 50 to 60+ CNEL range (FTA 2018).

Groundborne Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used as it corresponds to the stresses that are experienced by buildings (Caltrans 2020).

High levels of groundborne vibration may cause damage to nearby building or structures; at lower levels, groundborne vibration may cause minor cosmetic (i.e., non-structural damage) such as cracks. These vibration levels are nearly exclusively associated with high impact activities such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation. The American Association of State Highway and Transportation Officials (AASHTO) has determined vibration levels with potential to damage nearby buildings and structures; these levels are identified in Table 12.

Table 12 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

Source: Caltrans 2020

[3] Because DNL and CNEL are typically used to assess human exposure to noise, the use of A-weighted sound pressure level (dBA) is implicit. Therefore, when expressing noise levels in terms of DNL or CNEL, the dBA unit is not included.

Numerous studies have been conducted to characterize the human response to vibration. The vibration annoyance potential criteria recommended for use by Caltrans, which are based on the general human response to different levels of groundborne vibration velocity levels, are described in Table 13.

Table 13 Vibration Annoyance Potential Criteria

	Vibration Level (in/sec PPV)	
Human Response	**Transient Sources**	**Continuous/ Frequent Intermittent Sources[1]**
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

[1] Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment

in/sec = inches per second; PPV = peak particle velocity

Source: Caltrans 2020

Project Setting

Project Noise Setting

The primary noise source in the project area is motor vehicles along local roads and within the project site. To characterize ambient noise levels in the project area, three 15-minute sound level measurements were taken using an ANSI Type II Integrating sound level meter between 9:16 a.m. and 10:27 a.m. on August 26, 2021. Refer to Figure 6 for the noise measurement locations. Refer to Appendix NOI for sound measurement data. At each location, the sound level meter was placed away from walls and topographic features to avoid reflected noise. Noise Measurement (NM) 1 was taken approximately 10 feet to the south of the site parking lot to determine existing noise levels associated with existing park uses, on-site parking lot, and neighboring residential uses; NM 2 was taken at Laguna Street at the southern boundary of the project site to determine existing noise levels associated with traffic along Laguna Street; and NM 3 was taken at the western boundary of the project site along Ellis Street to determine existing noise levels associated with traffic along Ellis Street. Table 14 lists the average ambient noise level (L_{eq}) measured at each of these locations, which ranged from approximately 53 to 56 dBA.

Figure 6 Noise Measurement Locations

Imagery provided by Microsoft Bing and its licensors © 2021.

Fig 5 Noise Measurement Locations

Table 14 Noise Monitoring Results

Measurement Number	Measurement Location	Primary Noise Source	Sample Time	dBA L_{eq}
1	350 feet from Clayton Road	Existing Park Uses	9:16 a.m. to 9:31 a.m.	54.5
2	25 feet from Laguna Street	Traffic	10:12 a.m. to 10:27 a.m.	52.9
3	25 feet from Ellis Street	Traffic	9:44 a.m. to 9:59 a.m.	56.2

Source: Field visit using ANSI Type II Integrating sound level meter, August 26, 2021

Distances are from centerline of nearest road.

Appendix NOI provides noise monitoring data sheets and monitoring locations.

Sensitive Receivers

Noise exposure goals for various types of land users reflect the varying noise sensitivities associated with those uses. Noise-sensitive land uses typically include residences, schools, libraries, places of worship, and long-term care facilities such as hospitals and nursing homes. The nearest noise-sensitive receivers are multi-family residences located approximately 10 feet southwest of the project site. Additional sensitive receivers include multi-family residences approximately 25 feet north, and single-family residences approximately 30 feet to the east of the project site.

Regulatory Setting

Concord 2030 Urban Area General Plan Safety and Noise Element

The City of Concord's General Plan Safety and Noise Element contains goals and policies designed to include noise control in the planning process to maintain compatible land uses with acceptable environmental noise levels and protect Concord residents from excessive noise. The Safety and Noise Element establishes the following goals and policies that would apply to the proposed project:

Goal S-2: A Livable Noise Environment

Policy S-2.1.1: Use the community noise level exposure standards, shown below in Table 15, as review criteria for new land uses.

Policy S-2.1.2: Require a noise study and mitigation measures for all projects that have noise exposure greater than "normally acceptable" levels.

Policy S-2.1.3: Consider an increase of four or more dBA to be "significant" if the resulting noise level would exceed that described as "normally acceptable" in Figure 7-8 and summarized in Table 15.

Policy S-2.2.1 Provide for the mitigation of noise exposure in areas of the City exposed to noise levels in excess of the "normally acceptable" standards to the extent feasible.

Policy S-2.2.5: Require developers to reduce the noise impacts of new development on adjacent properties through appropriate means.

Table 15 City of Concord Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure (Ldn or CNEL, dB)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density Single Family, Duplex, Mobile Homes	50-60	60-70	70-75	75-85
Residential - Multifamily	50-65	65-70	70-75	75-85
Mixed-Use & High Density Residential	50-65	65-75	75-80	80-85
Transient Lodging - Motels, Hotels	50-65	65-70	70-80	80-85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-65	65-70	70-80	80-85
Auditoriums, Concerts, Halls, Amphitheaters	NA	50-70	NA	70-85
Sports Arena, Outdoor Spectator Sports	NA	50-75	NA	75-85
Playgrounds, Neighborhood Parks	50-72.5	72.5-75	NA	75-85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-70	70-80	80-85	NA
Office Buildings, Businesses – Commercial and Professional	50-70	70-75	N/A	75-85
Industrial, Manufacturing Utilities, Agriculture	50-70	70-75	75-85	N/A

Source: City of Concord 2007

Concord 2030 Urban Area General Plan EIR

Consistent with the methodology within the General Plan EIR, noise impacts would occur if ambient noise levels exceed the following City thresholds:

- 60 dB for low density single family, duplex, and mobile homes (70 dB during construction);
- 65 dB for multi-family residential, motels, and hotels (75 dB during construction), and high-density residential and mixed use (70 dB during construction);
- 70 dB for schools, libraries, churches, hospitals, and nursing homes (75 dB during construction);
- 72.5 dB for playgrounds and neighborhood parks (75 dB during construction); and
- 75 dB for golf courses, riding stables, water recreation, cemeteries, office buildings, business, commercial, professional uses, industrial, manufacturing utilities, and agriculture (80 dB during construction). (2030 General Plan Figure 7-8)

City of Concord Municipal Code

The City of Concord Municipal Code does not have a noise ordinance. CMC Section 18.150.130(O)(6) limits site preparation and construction activities to between the hours of 7:30 a.m. to 6 p.m. on weekdays (except on holidays) or as approved by the City as part of a planning permit. CMC Chapter 74 Article 2 prohibits amplified sound or music in City parks except by special permit, subject to a

public hearing process before the Parks, Recreation, and Open Space Commission. CMC Section 18.150.130(F) states that all activities, processes, and uses shall not generate ground vibrations that are perceptible by a reasonable person at the property line of a subject area except for vibration associated with construction activity as long as the construction activity abides by all conditions of any approved permit.

Noise Level Increases over Ambient Noise Levels

The operational and construction noise limits used in this analysis are set at reasonable levels at which a substantial noise level increase as compared to ambient noise levels would occur. Operational noise limits are lower than construction noise limits to account for the fact that permanent noise level increases associated with continuous operational noise sources typically result in adverse community reaction at lower magnitudes of increase than temporary noise level increases associated with construction activities that occur during daytime hours and do not affect sleep. Furthermore, these noise limits are tailored to specific land uses; for example, the noise limits for residential land uses are lower than those for commercial land uses. The difference in noise limits for each land use indicates that the noise limits inherently account for typical ambient noise levels associated with each land use. Therefore, an increase in ambient noise levels that exceeds these absolute limits would also be considered a substantial increase above ambient noise levels. As such, a separate evaluation of the magnitude of noise level increases over ambient noise levels would not provide additional analytical information regarding noise impacts and therefore is not included in this analysis.

Methodology

Construction Noise

Construction noise was estimated using the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2006). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise sensitive receivers near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation of 6 dBA per doubling of distance for stationary equipment.

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation (FTA 2018). Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some have higher continuous noise levels than others and some have high-impact noise levels. However, is it generally accepted that the loudest noise levels associated with construction are a result of a few of the loudest pieces of equipment on a construction site.

Construction activity would result in temporary noise in the project site vicinity, exposing surrounding sensitive receivers to increased noise levels. Construction noise would typically be higher during the heavier periods of initial construction (e.g., site preparation and grading) and would be lower during the later construction phases (e.g., building construction and paving). Typical heavy construction equipment during project grading could include dozers, excavators, loaders, and dump trucks. It is assumed that diesel engines would power all construction equipment.

Construction equipment would not all operate at the same time or location. In addition, construction equipment would not be in constant use during each workday.

Over the course of a typical day during grading, construction equipment would be located as close as 15 feet from the adjacent multi-family residences along the project site's southern boundary. However, over the course of a typical construction day, the equipment would operate at various distances on the site as construction equipment is mobile. Therefore, it is conservatively assumed for the noise analysis that over the course of a typical construction day the construction equipment would operate at an average distance of 50 feet from the nearest property lines with noise sensitive land uses.

The grading equipment would be constantly transporting soil from leveling and contour grading off-site. The grading activities would generate the greatest noise levels of the identified activities with operation of a dozer and front-end loader for a noise level of approximately 80 dBA L_{eq} at 50 feet from sensitive receivers to the south of the project site. This noise level was calculated assuming simultaneous use of a dozer and a front-end loader. RCNM calculations are included in Appendix NOI.

Vibration

The project does not include any substantial vibration sources associated with operation. Thus, construction activities have the greatest potential to generate ground-borne vibration affecting nearby receivers, especially during grading and excavation of the project site. Neither blasting nor pile driving would be required for project construction. Construction vibration estimates are based on vibration levels reported by Caltrans and the FTA (Caltrans 2020, FTA 2018). Table 16 shows typical vibration levels for various pieces of construction equipment used in the assessment of construction vibration.

Table 16 Vibration Levels Measured during Construction Activities

Equipment	PPV at 25 feet (in/sec)
Large Bulldozer	0.089
Loaded Trucks	0.076
Small Bulldozer	0.003

Source: FTA 2018

Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors; therefore, the vibration level threshold is assessed at occupied structures (FTA 2018). Therefore, all vibration impacts are assessed at the structure of an affected property.

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction Impacts

Construction activity would generate temporary noise in the project site vicinity, exposing surrounding sensitive receivers to increased noise levels. Project construction noise would be generated by heavy-duty diesel construction equipment used for site preparation, grading, building construction, paving, and architectural coating activities. Each phase of construction has a specific equipment mix and associated noise characteristics, depending on the equipment used during that phase. Construction noise would typically be higher during the more equipment-intensive phases of initial construction (i.e., site preparation and grading work) and would be lower during the later construction phases (i.e., building construction and paving). Construction noise was estimated using reference noise levels and equipment use factors from RCNM (2006). Construction noise levels over an 8-hour construction day were estimated to be approximately 80 dBA L_{eq} at a distance of 50 feet (RCNM calculations are included in Appendix NOI).

Pursuant to CMC Section 18.150.130, noise generated by construction activities is exempt from compliance with the noise level limits contained the City's General Plan if they occur between the hours of 7:30 a.m. to 6:00 p.m., Monday through Friday. However, for purposes of analyzing construction noise impacts from this project, the high-density residential land uses conditionally acceptable maximum of 75 dBA threshold as established in the City's General Plan EIR was used. In addition, as the project would also be located a similar distance away from single-family residential land uses, the single-family land uses conditionally acceptable maximum of 70 dBA threshold as established in the City's General Plan Safety and Noise Element was also used.

At an average distance of 50 feet throughout a typical construction day to the nearest sensitive receivers, construction noise levels would be approximately 80 dBA L_{eq}, which would exceed the conditionally acceptable noise threshold of 75 dBA L_{eq} for high-density residential land uses and the conditionally acceptable noise threshold of 70 dBA L_{eq} for single-family residential land uses. The distance at which construction noise levels would not exceed 75 dBA L_{eq} would be 85 feet. The distance at which construction noise levels would not exceed 70 dBA L_{eq} would be 155 feet. Therefore, construction noise impacts would be potentially significant if conducted within an average distance of 85 feet during a typical construction day, and Mitigation Measure NOI-1 would be required.

On-site Operational Noise Impacts

Maintenance activities (e.g., landscape maintenance and waste hauling) and general parking lot noise from operation of the project may increase in frequency but would not increase in absolute noise levels as a result of the project as the frequency of use of the project would be similar to its existing use. The addition of amenities such as the basketball court, adult exercise area, children's playground and event stage would add new sources of noise to the project site. These noise sources are analyzed below.

Active Recreation

Use of the basketball court would generate noise typical of human activity such as shouting, clapping and conversations by recreationalists. These noise sources would be intermittent during use of the facility, adding to background ambient noise from passive recreational use of the Park,

nearby traffic, aircraft overflights, and residential activities. However, in compliance with CMC Section 4.05.070, people cannot use any public park or recreation area in the City during darkness, where darkness is defined as any time from one-half hour after sunset to one-half hour before sunset. .

Noise from the proposed basketball court would occur as close as 65 feet from the single-family residences on Ashbury Drive to the east. However, the project would include the construction of a 6-foot tall wood fence that would attenuate noise associated with the Park. The fence would be located between the basketball court and the single-family residences and would act as a noise barrier, reducing the noise associated with recreational use of the basketball court at the adjacent single-family residences.

Use of the adult exercise equipment area and two additional playgrounds would generate noise. The primary noise sources associated with play areas are children and adult laughter and conversation, with occasional shouting or crying. The project site has an existing playground near the parking lot on the northern end of the project site. The proposed project would add an adult exercise equipment area located adjacent to the children's playground and basketball court as well as two additional children's playgrounds shown on Figure 3. One of the playgrounds would be located adjacent to the basketball court and the other would be located adjacent to one of the community gardens near the southern boundary of the project site. The noise from the adult exercise equipment area and two additional children's playgrounds would be similar to the existing ambient noise environment from the playground and other park activities. Therefore, the added noise from adults utilizing the exercise equipment area would be less than significant.

Passive Recreation

The proposed project would involve the construction of new passive recreational facilities including improved, ADA-accessible concrete paths, a multi-purpose path, and dedicated bike trail. Similar to existing paths at the Park, these features would provide opportunities for walking, bicycling, and human conversations, which are currently part of the existing noise environment at the project site. Therefore, since the proposed project would maintain the same use as the existing site, it would not result in increased noise levels from passive recreational activity.

Event Stage

The event stage would host infrequent, organized events at the Park. It is assumed that the use of the event stage could involve sound-amplifying equipment during events. The nearest noise sensitive receiver to the stage are multi-family residences located approximately 150 feet north and single-family residences located approximately 400 feet east. This analysis estimates noise levels at the proposed event stage based on reference noise levels reported in a comprehensive noise study prepared by Meridian Consultants for an outdoor wedding venue (Meridian Consultants 2020). The noise study simulated potential noise levels associated with amplified music events at a wedding with a noise level of approximately 78 dBA at 25 feet from the speakers. Using distance attenuation, the multi-family residences to the north would experience a noise level of approximately 63 dBA from the speakers and the single-family residences to the east would experience a noise level of approximately 54 dBA from the speakers. According to the appropriate noise levels for the City's different land uses, community noise exposure threshold for multi-family and high-density residences is 65 dBA and community noise exposure threshold for single-family residences is 60 dBA. As the noise level experienced by the multi-family residences to the north and the single-family residences to the east would be below the respective community noise exposure thresholds, the

temporary increase in noise levels attributed to event stage operation would be less than significant.

Off-site Roadway Noise

Traffic noise impacts are evaluated in consideration of the City's Noise and Land Use Compatibility Guidelines (see Table 15) and community response to changes in ambient noise levels. The average healthy ear can barely perceive an increase of up to 3 dBA in noise levels, and a change of 5 dBA is readily perceptible. Based on this information, off-site traffic noise impacts would be significant if project-related traffic would result if one of the following would occur:

- A noise level increase of 5 dBA or greater if noise levels remain within the same land use compatibility classification at the sensitive receiver;
- A noise level increase of 3 dBA or greater if noise levels change the land use compatibility classification of the sensitive receiver;
- Any increase in noise levels if existing noise levels fall within the "normally unacceptable" or "clearly unacceptable" ranges at the sensitive receiver.

As shown in Table 14, existing noise levels in the project vicinity range from approximately 53-56 dBA which falls within the "normally acceptable" range (see Table 15). Generally, a doubling of traffic (i.e., a doubling of the sound energy) would result in a 3 dBA increase. Clayton Road carries an average daily traffic volume of 33,980 (City of Concord 2006). Although additional amenities at the project site would increase vehicle trips to the Park, project traffic increases would not be of the volume to double roadway volumes of 33,980. Therefore, project-related traffic would not result in a 3 dBA increase in noise levels. Impacts to roadway noise levels would be less than significant.

Mitigation Measure

NOI-1 Construction Noise Reduction

The City shall reduce construction noise levels at the nearby single- and multi-family uses to the south of the project site to a noise level not to exceed the City's construction noise thresholds of 70 dBA for land zoned single-family residential and high-density residential. This shall be accomplished through the following required measures:

- Installation of temporary sound barriers/blankets along the southern project boundary line adjacent to the single-family and multi-family receivers. The temporary barriers/blankets shall be installed along the southern project boundary line when construction occurs within 85 feet of multi-family residential land uses and 155 feet of single-family residential land uses. The temporary barriers/blankets shall have a minimum sound transmission loss of 21 and noise reduction coefficient of 0.75. The temporary barriers/blankets will be of sufficient height to extend from the top of the temporary construction fence and drape on the ground or be sealed at the ground. The temporary barriers/blankets will have grommets along the top edge with exterior grade hooks, and loop fasteners along the vertical edges with overlapping seams, with a minimum overlap of 2 inches.
- Provide a sign at the yard entrance, or other conspicuous location, that includes a 24-hour telephone number for project information, and a procedure where a field engineer/construction manager will respond to and investigate noise complaints and take corrective action if necessary in a timely manner. The sign will have a minimum dimension of 48 inches wide by 24 inches high. The sign will be placed 5 feet above ground level.

- If a noise complaint(s) is registered, the contractor will retain a City-approved noise consultant to conduct noise measurements at the use(s) that registered the complaint. The noise measurements will be conducted for a minimum of 1 hour and will include 1-minute intervals. The consultant will prepare a letter report for code enforcement summarizing the measurements, calculation data used in determining impacts, and potential measures to reduce noise levels to the maximum extent feasible.

Significance After Mitigation

With implementation of Mitigation Measure NOI-1, construction noise levels would be reduced by at least 10 dBA. Therefore, construction noise levels would be as loud as approximately 69.6 dBA L_{eq} at 50 feet over the course of a typical construction day with mitigation, which would not exceed the City's construction noise thresholds, and impacts would be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction

Project construction would not involve activities typically associated with excessive groundborne vibration such as pile driving or blasting. The equipment utilized during project construction that would generate the highest levels of vibration would include rollers, loaded trucks, and bulldozers. The City of Concord has not adopted standards to assess vibration impacts during construction and operation. However, Caltrans has developed limits for the assessment of vibrations from transportation and construction sources. The Caltrans vibration limits are reflective of standard practice for analyzing vibration impacts on structures from continuous and intermittent sources. The thresholds of significance used in this analysis to evaluate vibration impacts are based on these impact criteria, as summarized in Table 13.

Project construction may require operation of vibratory equipment such as loaded trucks or bulldozers within 25 feet of the Keller House and 15 feet of off-site residences (e.g., the Lakeshore Apartments). As shown in Table 17, vibration levels from individual pieces of construction equipment would not exceed the threshold at which damage can occur to residential structures, 0.20 in/sec PPV, or exceed the threshold at which transient vibration sources would be distinctly perceptible to humans, 0.25 in/sec PPV. Similarly, as shown in Table 17, vibration levels from individual pieces of construction equipment would not exceed the threshold at which damage can occur to to a historic structure, or exceed the threshold at which transient vibration sources would be distinctly perceptible to humans, 0.25 in/sec PPV. Construction vibration levels at all other buildings in the immediate vicinity, including residences to the east, west, north, and south, would be less than the levels shown in Table 17 because vibration levels would attenuate with distance. Therefore, construction vibration impacts would be less than significant.

Table 17 Vibration Levels at Sensitive Receivers

Equipment	Estimated in/sec PPV at Nearest Residential Building (15 feet)	Estimated in/sec PPV at Nearest Historic Building (25 feet)
Large Bulldozer	0.191	0.089
Loaded Truck	0.164	0.076
Residential Building Damage Threshold	**0.2**	**–**
Threshold Exceeded?	No	–
Historic Building Damage Threshold	**–**	**0.1**
Threshold Exceeded?	–	No
Human Annoyance Potential Threshold	**0.25**	**0.25**
Threshold Exceeded?	No	No

See Appendix NOI for vibration analysis worksheets.

Operation

As a park, the proposed project would not generate significant stationary sources of vibration, such as manufacturing or heavy equipment operations. No operational vibration impact would occur.

LESS THAN SIGNIFICANT IMPACT

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Buchanan Field Airport is the closest airport, located approximately 1.6 miles to the northwest of the project site. The project site is not located within the airport influence area or noise contour boundaries of this airport (Contra Costa County Airport Land Use Commission 2000). Therefore, construction workers, users, or employees of the project would not experience substantial noise exposure from airport noise, and there would be no impact.

NO IMPACT

14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	■
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The project would involve renovating and adding amenities to an existing park. The project would not involve residential or commercial development. Thus, the project would not displace any existing housing or people or create a long-term source of new employment. There would be an expected increase in recreation on the project site associated with the improvements to the Park, but this would not lead to any direct impacts to population, housing, or displacement of people or housing. There would be no impact.

NO IMPACT

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15 Public Services

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	1 Fire protection?	☐	☐	☐	■
	2 Police protection?	☐	☐	☐	■
	3 Schools?	☐	☐	☐	■
	4 Parks?	☐	■	☐	☐
	5 Other public facilities?	☐	☐	☐	■

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The project involves renovating and adding amenities to an existing park. All renovations and amenities included in the project are not anticipated to significantly increase Park usage in such a way that would require additional public services or increase police and fire response needs. The project would not add new residents, permanent employees, or students to the City, and would not change the land use of the Park. As such, the project would not result in the need for new schools or other public facilities such as libraries. The project site is served by the Concord Police Department and Contra Costa County Fire Protection District. The project would not increase demand for police or fire service or result in a need for new facilities; therefore, there would be no impact.

NO IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, public facilities, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

As an active park, the project site is part of the City's parks and recreation system (City of Concord 2021a). The City currently has approximately 330.7 acres of land that make up the 22 neighborhood and community parks. The current ratio of neighborhood and community park recreational area acreage is 2.6 acres per 1,000 residents, which is below the City's citywide goal of 6 acres per 1,000 residents (DOF 2021; City of Concord 2007).[4] Because the project consists of physical improvements to, and expansion of, the Park, the project would not result in adverse physical impacts to parks, or the need for new parks or other public facilities. The project's environmental impacts are discussed throughout this document, and addressed through mitigation, where appropriate. Impacts would be less than significant with mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

[4] Current ratio of park acreage for current residents calculated based on the City's estimated 2021 population of 129,273 (DOF 2021).

16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	■	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	■	☐	☐

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The project site is an existing park that is part of the City's parks system (City of Concord 2021a). The project site is currently used for passive and active recreation. The project would include the renovation and addition of amenities such as a basketball court, adult exercise area, two playgrounds, and ADA-accessible paths anticipated to increase the use of the existing Park. The purpose of the project is to increase access, security, and passive and active use of Ellis Lake Park. Due to the nature of the proposed renovations and new amenities, substantial numbers of increased visitors are not anticipated. As discussed in Section 14, *Population and Housing*, the project would not add residential or commercial uses that would increase population or employment opportunities that would result in increased use of existing recreational facilities on or near the project site. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The project would include addition of the following recreational facilities to the Park: two new children's playgrounds, an adult exercise area with equipment, a basketball court, a bike and running trail, and expanded ADA accessible lake path. Environmental effects evaluated in this IS-MND indicate that potential project-related impacts are either less than significant or less than significant with mitigation incorporated. With integration of these mitigation measures into project design, all potentially significant impacts related to the project's recreational facilities would be reduced to a less than significant level.

The project includes recreational facilities and would not require the construction or expansion of other recreational facilities that may have adverse physical effects. The project's environmental

impacts are discussed throughout this document, and addressed through mitigation, where appropriate. Impacts would be less than significant with mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	■	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	■	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☐	☐	■
d. Result in inadequate emergency access?	☐	☐	☐	■

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The City of Concord has a number of applicable plans addressing the circulation system including the Concord Trails Master Plan; Bicycle, Pedestrian, and Safe Routes to Transit Master Plan; and Contra Costa Countywide Bicycle and Pedestrian Plan.

The project does not include changes to any of the streets surrounding the project site. The project would create a bike trail through the project site from Laguna Street to Clayton Road that would connect established routes identified as part of Concord's Bicycle, Pedestrian, and Safe Routes to Transit Master Plan. The proposed bike trail is shown on Figure 3. Because the project would not be expected to substantially increase vehicle trips to the site the project would not alter traffic patterns or volume and would not conflict with existing programs, plans, ordinances, or policies addressing circulation, the impacts of the project on the circulation system would be less than significant.

NO IMPACT

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

On July 14, 2020, City Council voted unanimously to adopt Resolution No. 20-45 that included VMT screening criteria. The VMT screening criteria presumes projects that meet certain requirements would be considered to have a less than significant VMT impact. The resolution identified locally serving public facilities, such as passive parks[5], as meeting the screening criteria for a less than

[5] Passive parks are defined as a lot of land that is landscaped, maintained as open space, serves a neighborhood, and is used as an informal gathering space for relaxation and play (Law Insider 2021).

significant VMT impact. Since the proposed project would be a locally serving public facility, the project would have a less than significant impact.

LESS THAN SIGNIFICANT IMPACT

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The project would not incorporate new geometric design features or incompatible uses. The project would include the expansion of the parking area by approximately 17 spaces. The proposed parking expansion would not change the ingress or egress into the site and would not increase hazards on the site. Additionally, the project would include ADA access within the Park improving accessibility. There would be no impact.

NO IMPACT

d. Would the project result in inadequate emergency access?

The proposed project would not diminish existing roadway emergency access to the project site or its surroundings. The project would include expanding the parking lot and adding a new multi-purpose path to the project site which would improve emergency access to the site. The project would additionally not introduce barriers or other obstacles which would result in inadequate emergency access. There would be no impact on emergency access.

NO IMPACT

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	■	☐	☐
b. 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 Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	■	☐	☐

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted and expands CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes 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" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
2. 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 Public Resources Code Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

The City of Concord prepared and mailed letters to local Native Americans who have requested notification under AB 52 on September 7, 2021. Under AB 52, tribes have 30 days to respond and request consultation. The City received one response from the Confederated Villages of Lisjan Tribe on October 6, 2021 in which the Tribal Chair requested a copy of the full CHRIS records search, the cultural resources assessment report, and the CEQA document for the project. Coordination and communication are ongoing. No other tribes responded during the 30-day period to request consultation, which elapsed in mid-October.

Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

c. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is 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 Public Resources Code Section 5024.1?

The City received one response requesting consultation from the Confederated Villages of Lisjan Tribe. To date consultation has been completed. Though there are no known tribal cultural resources present within the project site, it is possible that ground disturbance during project construction could encounter unknown tribal cultural resources or known cultural resources that may be identified as tribal cultural resources. Therefore, the project has the potential to significantly impact tribal cultural resources through ground disturbance and looting or vandalism of encountered resources. Implementation of Mitigation Measure TCR-1 would ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, mitigated to a less than significant level.

Mitigation Measure

TCR-1 Suspension of Work Around Tribal Cultural Resources

In the event that cultural resources of Native American origin are identified during implementation of the proposed project, all earth-disturbing work within 50 feet of the find shall be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find as a cultural resource and an appropriate local Native American representative is consulted. If the City, in consultation with local Native Americans, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s). The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, the plan shall outline the appropriate treatment of the resource in coordination with the appropriate local Native

American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.

Significance After Mitigation

Implementation of Mitigation Measure TCR-1 would protect tribal cultural resources in the event of their discovery during implementation of the proposed project, reducing the potential impact on such resources to a less-than-significant level.

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19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	■
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	■	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	■
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	■	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	■	☐

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The proposed project would include renovation and additional recreational amenities none of which would include the construction of any new permanent building that would require water, electricity, natural gas, or other expanded or new utility service. Additional amenities proposed at the Park, such as the community gardens, could increase water use on the project site. The community gardens would consume an estimated 25,917 gallons of water per year or approximately 0.08 acre-

feet per year.[6] This would account for less than 0.01 percent of the City's estimated water demand per year (City of Concord 2006). In addition, the project site would level and contour grade the existing grassy mounds and pave over some of the existing vegetation which would decrease the amount of irrigation which would be needed on the site compared to the current coverage of grass in the Park. As such, because the community gardens would constitute less than 0.01 percent of the City's annual estimated water demand and irrigation related to the lawn areas of the Park would decrease, these amenities would not create a large enough demand to warrant new or expanded water infrastructure. In addition, the security lighting that would be added as part of the project would be solar-powered and would therefore not require construction of a new or expanded electric power facility. Therefore, the project would not result in the need for the construction or expansion of utility facilities. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The CCWD provides water to the project area. Projected development in Concord consistent with the City's General Plan is anticipated to increase water demand from 6,900 acre-feet per year to 25,690 acre-feet per year by 2030 (City of Concord 2006). The City is on target to meet future water demands while accounting for future growth. CCWD's 2020 Urban Water Management Plan analyzed water service reliability during normal, dry, and multiple dry year conditions and determined that CCWD would have sufficient water supplies available to meet demand in normal years, single-dry years, and the first and second years of a multiple-dry year period. In the case of a longer-term multiple-dry year period, CCWD developed appropriate responses to water shortages such as its Water Shortage Contingency Plan, an annual supply and demand assessment required to be submitted to the Department of Water Resources starting in 2022, and other related measures which would ensure that sufficient water supplies would be available to serve the project and future development (CCWD 2021).

The project would not significantly increase the water consumption associated with the project site. Water demand for the project would largely be for landscaping, watering which currently exists, and new water use associated with the proposed community gardens calculated above. The increased demand on the Park's water supply for the community gardens would be approximately 25,917 gallons per year or 0.08 acre-feet per year which would be less than 0.01 percent of the City's water demand (City of Concord 2006). Therefore, there is sufficient water supply to meet this demand. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

[6] Water consumption of the community gardens was done using conservative water consumption rates estimated by the University of California Cooperative Extension Master Gardener Program under the assumption that the rate of water consumption would be 0.623 gallons per square foot (UCCE Master Gardener Program 2014). It was assumed that all 20 40-square-foot garden beds would be built.

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The City of Concord provides wastewater collection service, and the Central Contra Costa Sanitary District's wastewater treatment plant treats the collected wastewater. The project does not include the expansion of any use on the project site that would result in increased wastewater production nor does the project propose any new amenities which would produce wastewater. Therefore, the project would have no impact to wastewater generation or to the wastewater treatment provider's ability to treat wastewater generated by the project. There would be no impact.

NO IMPACT

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The City of Concord's solid waste collection and disposal services are provided by Mt. Diablo Resource Recovery. Construction activity associated with the project would generate solid waste due to project renovation including replacement of existing concrete paths. In compliance with CALGreen Section 5.408.1, 75 percent of construction and demolition waste is required to be diverted from landfill disposal through recycling or reuse. The project would adhere to these requirements; therefore, impacts related to solid waste generation and disposal from construction would be less than significant.

The project would continue to operate as a public park. The project would be expected to experience more use due to the addition of amenities which could increase the amount of solid waste generated and disposed of on site. As described in Sections 15 and 16, Public Services and Recreation respectively, due to the nature of the proposed renovations and new amenities, substantial numbers of increased visitors are not anticipated. As the number of increased visitors would not be substantial, the amount of waste they would produce would also not be substantial. In addition, due to the land use associated with the project site, the only waste generated on the project site would be trash from community members. Therefore, the amount of solid waste generated and disposed of on the project site would be less than significant.

Solid waste collection and disposal services by Mt. Diablo Resource Recovery also provides recycling services. In partnership with Mt. Diablo Resource Recovery, the City has developed several programs to encourage recycling and reuse in Concord which the project would participate in, such as construction and demolition waste recycling pursuant to CAP Measure BW1 focused on expanding the City's waste reduction programs. Furthermore, the project applicant is the City of Concord which is required to comply with applicable federal and state regulations regarding solid waste. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	■
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	■
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	■

a. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

The project site is located in an urban area of the City of Concord. The entire City is located within a Local Responsibility Area and within lands identified as having low to moderate fire hazard severity levels (CAL FIRE 2007; City of Concord 2006). The project would not result in alterations to existing streets or substantially alter traffic patterns in a manner that would impair emergency response. There would be no impact.

NO IMPACT

b. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

The project site is not in or near a state responsibility area and is not classified as having a high fire hazard (CAL FIRE 2007). The project varies in elevation; however, it is in an urbanized area with a lake on site. In addition, the project would switch the playground flooring playgrounds from wood chips to a softer foam surface material and trim excess vegetation around the lake which would further reduce wildfire risks. The proposed project would not exacerbate wildfire risks, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

The project site is not in or near a state responsibility area and is not classified as having a high fire hazard (CAL FIRE 2007). The project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Therefore, there would be no impact.

NO IMPACT

d. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The project site is not in or near a state responsibility area and is not classified as having a high fire hazard (CAL FIRE 2007). The project site is not located near any geological feature susceptible to landslides and the project would be unlikely to experience downstream flooding as both Ellis Lake and the neighboring Keller Lake approximately 150 feet southeast of the project site would be unlikely to be affected by post-fire slope instability or drainage changes. There would be no impact.

NO IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially 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, substantially 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?	☐	■	☐	☐
b. 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)?	☐	☐	■	☐
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	■	☐	☐

a. Does the project have the potential to substantially 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, substantially 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?

The project would include renovations and additions to an existing park, including replacement of paths, minor construction, and the addition of amenities such as barbecue sets. As discussed in Section 4, *Biological Resources*, the project would have the potential to disturb potential bird nesting sites and riparian habitat. However, through implementation of Mitigation Measure BIO-1, impacts to potential nesting bird sites would be mitigated by scheduling project construction outside of the nesting season to the extent feasible, conducting a pre-construction nesting bird survey, and establishing a work exclusion zone to protect the active nests of protected species.

Mitigation Measure BIO-2 and Mitigation Measure BIO-3 which would determine which entities have jurisdiction over all or part of the project and require the preparation of a site-specific Habitat Restoration/Enhancement Plan, would reduce the impacts related to the project's impacts to potentially jurisdictional features and riparian habitat. The project would not change the land use of the project site and would not substantially alter the existing habitat value of the site which is limited due to the site's small size.

As described in Section 5, *Cultural Resources,* project implementation would not impact historical resources, such as the Keller House. Archaeological resources have the potential to be discovered on the site during ground disturbing activities. If unanticipated archaeological resources are uncovered during project construction, impacts would be reduced to less than significant levels through implementation of Mitigation Measure CUL-1, Mitigation Measure CUL-2, Mitigation Measure CUL-3, and Mitigation Measure TCR-1. These mitigation measures focus on workers' education, site monitoring for cultural resources, and procedures to follow in the event unanticipated cultural or tribal cultural resources are found. Implementation of required mitigation would reduce potential damage to cultural resources that could be attributed to workers' lack of knowledge of cultural resources or the lack of adequate monitoring for potential resources. These mitigation measures would further ensure that important examples of prehistory or history, if encountered during project construction, would not be eliminated.

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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)?

As concluded in Sections 1 through 20, the project would have no impact, less than significant impact, or less than significant impact with mitigation incorporated, with respect to all environmental issues considered in this document. Cumulative impacts related to several resource areas have been addressed in the individual resource sections of this IS-MND, including air quality, GHG emissions, noise, and transportation (see CEQA Guidelines Section 15064(h)(3)). As discussed in Section 3, *Air Quality*, and in Section 8, *Greenhouse Gas Emissions*, the proposed project would result in less than significant impacts with mitigation, less than significant, or no impacts associated with air quality and GHG emissions during project construction and operation. Mitigation Measure AQ-1, which would implement fugitive dust control BMPs, would ensure that the project would not result in individually or cumulatively significant impacts from construction to air quality. The impact analysis in these sections uses thresholds that already account for cumulative (regional impacts). Therefore, air quality and GHG emissions associated with operation and construction would be less than significant and would not be cumulatively considerable.

As discussed in Section 13, *Noise*, the project would not generate significant construction noise impacts because construction would occur during the hours of 7:30 a.m. to 6:00 p.m. on weekdays, consistent with the CMC Section 18.150.130(O)(6). The noise and traffic analyses in this IS-MND both considered increases in traffic and traffic noise under Existing plus Project conditions and contribution to traffic and concluded that impacts would be less than significant and would not add to cumulatively significant impacts.

This IS-MND determined that, for some of the other resource areas (e.g., agriculture, mineral), the proposed project would have no impact compared to existing conditions. Therefore, the project

would not contribute to cumulative impacts related to these issues. Other issues (e.g., biological resources, cultural resources, geology, hazards and hazardous materials, and tribal cultural resources) are by their nature project-specific and impacts at one location do not add to impacts at other locations or create additive impacts. As such, cumulative impacts would be less than significant (not cumulatively considerable).

LESS THAN SIGNIFICANT IMPACT

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

In general, impacts to human beings are attributed to impacts from air quality, hazards and hazardous materials, and noise. As detailed in Section 3, *Air Quality,* and Section 13, *Noise,* activities associated with the project would not result in significant air quality or noise impacts with implementation of Mitigation Measure AQ-1 and Mitigation Measure NOI-1 which focused on reducing fugitive dust and noise from construction. Similarly, as discussed in Section 9, *Hazards and Hazardous Materials,* activities associated with the project would not result in significant adverse hazards related to hazardous materials. The project would include renovation and additions to an existing community park for active and passive recreational use by residents and visitors. After mitigation, there would be no substantial impacts resulting from project implementation that would cause substantial adverse effects on human beings either directly or indirectly. Therefore, the project would have a less than significant impact from adverse effects on human beings.

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Appendix AQ

CalEEMod Model, Harborcraft Model, and Emissions Calculations

Ellis Lake Park Project AQ Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Ellis Lake Park Project AQ Analysis

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	4.28	1000sqft	0.10	4,284.00	0
Parking Lot	43.00	Space	0.39	17,200.00	0
City Park	9.11	Acre	9.11	396,831.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on applicant-provided information. Other Asphalt Surfaces refers to proposed basketball court. Parking Lot refers to proposed parking lot expansion from 26 to 43 total spaces.

Construction Phase -

Grading -

Water And Wastewater - No septic tanks planned for or present on site. There are no facultative lagoons at the Central Contra Costa Sanitary District's Wastewater Treatment Plant.

Construction Off-road Equipment Mitigation - Based on General Plan Policy S-1.1.7

Mobile Land Use Mitigation -

Trips and VMT - Based on applicant-provided information. Soil would be balanced on-site, so no hauling trips would be needed.

Ellis Lake Park Project AQ Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LandUseSquareFeet	4,280.00	4,284.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

Ellis Lake Park Project AQ Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
2023	0.2721	2.3599	2.6713	6.5600e-003	0.3830	0.0975	0.4805	0.1429	0.0914	0.2343	0.0000	592.8271	592.8271	0.0841	0.0267	602.8715
2024	0.0180	0.1082	0.1747	2.9000e-004	3.9500e-003	5.3100e-003	9.2600e-003	1.0500e-003	4.9400e-003	5.9900e-003	0.0000	25.5999	25.5999	6.7000e-003	8.0000e-005	25.7910
Maximum	**0.2721**	**2.3599**	**2.6713**	**6.5600e-003**	**0.3830**	**0.0975**	**0.4805**	**0.1429**	**0.0914**	**0.2343**	**0.0000**	**592.8271**	**592.8271**	**0.0841**	**0.0267**	**602.8715**

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					
2023	0.2721	2.3599	2.6713	6.5600e-003	0.2900	0.0975	0.3874	0.0963	0.0914	0.1877	0.0000	592.8268	592.8268	0.0841	0.0267	602.8711
2024	0.0180	0.1082	0.1747	2.9000e-004	3.9500e-003	5.3100e-003	9.2600e-003	1.0500e-003	4.9400e-003	5.9900e-003	0.0000	25.5999	25.5999	6.7000e-003	8.0000e-005	25.7910
Maximum	**0.2721**	**2.3599**	**2.6713**	**6.5600e-003**	**0.2900**	**0.0975**	**0.3874**	**0.0963**	**0.0914**	**0.1877**	**0.0000**	**592.8268**	**592.8268**	**0.0841**	**0.0267**	**602.8711**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	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**	**24.04**	**0.00**	**18.99**	**32.39**	**0.00**	**19.40**	**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	**1-1-2023**	**3-31-2023**	0.6875	0.6875
2	**4-1-2023**	**6-30-2023**	0.6416	0.6416
3	**7-1-2023**	**9-30-2023**	0.6487	0.6487
4	**10-1-2023**	**12-31-2023**	0.6506	0.6506
5	**1-1-2024**	**3-31-2024**	0.1188	0.1188
		Highest	0.6875	0.6875

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	5.6200e-003	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.5570	0.5570	9.0000e-005	1.0000e-005	0.5625
Mobile	4.2200e-003	4.6200e-003	0.0382	8.0000e-005	8.2400e-003	6.0000e-005	8.3000e-003	2.2000e-003	5.0000e-005	2.2600e-003	0.0000	7.2338	7.2338	5.0000e-004	3.6000e-004	7.3527
Waste						0.0000	0.0000		0.0000	0.0000	0.1583	0.0000	0.1583	9.3600e-003	0.0000	0.3923
Water						0.0000	0.0000		0.0000	0.0000	0.0000	3.5150	3.5150	5.7000e-004	7.0000e-005	3.5498
Total	**9.8400e-003**	**4.6200e-003**	**0.0387**	**8.0000e-005**	**8.2400e-003**	**6.0000e-005**	**8.3000e-003**	**2.2000e-003**	**5.0000e-005**	**2.2600e-003**	**0.1583**	**11.3068**	**11.4651**	**0.0105**	**4.4000e-004**	**11.8583**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	5.6200e-003	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.5570	0.5570	9.0000e-005	1.0000e-005	0.5625
Mobile	4.2200e-003	4.6200e-003	0.0382	8.0000e-005	8.2400e-003	6.0000e-005	8.3000e-003	2.2000e-003	5.0000e-005	2.2600e-003	0.0000	7.2338	7.2338	5.0000e-004	3.6000e-004	7.3527
Waste						0.0000	0.0000		0.0000	0.0000	0.1583	0.0000	0.1583	9.3600e-003	0.0000	0.3923
Water						0.0000	0.0000		0.0000	0.0000	0.0000	3.5150	3.5150	5.7000e-004	7.0000e-005	3.5498
Total	**9.8400e-003**	**4.6200e-003**	**0.0387**	**8.0000e-005**	**8.2400e-003**	**6.0000e-005**	**8.3000e-003**	**2.2000e-003**	**5.0000e-005**	**2.2600e-003**	**0.1583**	**11.3068**	**11.4651**	**0.0105**	**4.4000e-004**	**11.8583**

	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	Site Preparation	Site Preparation	1/1/2023	1/13/2023	5	10	
2	Grading	Grading	1/14/2023	2/10/2023	5	20	
3	Building Construction	Building Construction	2/11/2023	12/29/2023	5	230	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	12/30/2023	1/26/2024	5	20	
5	Architectural Coating	Architectural Coating	1/27/2024	2/23/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0.49

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,289 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	176.00	69.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

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	2.3000e-004	1.6000e-004	2.0000e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5574	0.5574	2.0000e-005	2.0000e-005	0.5623
Total	**2.3000e-004**	**1.6000e-004**	**2.0000e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5574**	**0.5574**	**2.0000e-005**	**2.0000e-005**	**0.5623**

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					0.0442	0.0000	0.0442	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0442**	**6.3300e-003**	**0.0506**	**0.0227**	**5.8200e-003**	**0.0286**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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3.2 Site Preparation - 2023

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	2.3000e-004	1.6000e-004	2.0000e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5574	0.5574	2.0000e-005	2.0000e-005	0.5623
Total	**2.3000e-004**	**1.6000e-004**	**2.0000e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5574**	**0.5574**	**2.0000e-005**	**2.0000e-005**	**0.5623**

3.3 Grading - 2023

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					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0708**	**7.7500e-003**	**0.0786**	**0.0343**	**7.1300e-003**	**0.0414**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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3.3 Grading - 2023

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	3.8000e-004	2.6000e-004	3.3300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9290	0.9290	3.0000e-005	3.0000e-005	0.9372
Total	**3.8000e-004**	**2.6000e-004**	**3.3300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9290**	**0.9290**	**3.0000e-005**	**3.0000e-005**	**0.9372**

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					0.0319	0.0000	0.0319	0.0154	0.0000	0.0154	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0319**	**7.7500e-003**	**0.0396**	**0.0154**	**7.1300e-003**	**0.0225**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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3.3 Grading - 2023

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	3.8000e-004	2.6000e-004	3.3300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9290	0.9290	3.0000e-005	3.0000e-005	0.9372
Total	**3.8000e-004**	**2.6000e-004**	**3.3300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9290**	**0.9290**	**3.0000e-005**	**3.0000e-005**	**0.9372**

3.4 Building Construction - 2023

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	0.1809	1.6543	1.8681	3.1000e-003		0.0805	0.0805		0.0757	0.0757	0.0000	266.5755	266.5755	0.0634	0.0000	268.1608
Total	**0.1809**	**1.6543**	**1.8681**	**3.1000e-003**		**0.0805**	**0.0805**		**0.0757**	**0.0757**	**0.0000**	**266.5755**	**266.5755**	**0.0634**	**0.0000**	**268.1608**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

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	8.4600e-003	0.3528	0.1104	1.6100e-003	0.0521	2.0600e-003	0.0541	0.0151	1.9700e-003	0.0170	0.0000	156.6333	156.6333	3.2000e-003	0.0232	163.6181
Worker	0.0518	0.0355	0.4489	1.3500e-003	0.1599	8.2000e-004	0.1608	0.0426	7.6000e-004	0.0433	0.0000	125.3461	125.3461	3.6100e-003	3.4400e-003	126.4611
Total	**0.0603**	**0.3883**	**0.5592**	**2.9600e-003**	**0.2120**	**2.8800e-003**	**0.2149**	**0.0576**	**2.7300e-003**	**0.0603**	**0.0000**	**281.9794**	**281.9794**	**6.8100e-003**	**0.0266**	**290.0792**

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	0.1809	1.6543	1.8681	3.1000e-003		0.0805	0.0805		0.0757	0.0757	0.0000	266.5751	266.5751	0.0634	0.0000	268.1605
Total	**0.1809**	**1.6543**	**1.8681**	**3.1000e-003**		**0.0805**	**0.0805**		**0.0757**	**0.0757**	**0.0000**	**266.5751**	**266.5751**	**0.0634**	**0.0000**	**268.1605**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

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	8.4600e-003	0.3528	0.1104	1.6100e-003	0.0521	2.0600e-003	0.0541	0.0151	1.9700e-003	0.0170	0.0000	156.6333	156.6333	3.2000e-003	0.0232	163.6181
Worker	0.0518	0.0355	0.4489	1.3500e-003	0.1599	8.2000e-004	0.1608	0.0426	7.6000e-004	0.0433	0.0000	125.3461	125.3461	3.6100e-003	3.4400e-003	126.4611
Total	**0.0603**	**0.3883**	**0.5592**	**2.9600e-003**	**0.2120**	**2.8800e-003**	**0.2149**	**0.0576**	**2.7300e-003**	**0.0603**	**0.0000**	**281.9794**	**281.9794**	**6.8100e-003**	**0.0266**	**290.0792**

3.5 Paving - 2023

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	0.0000	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
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**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**

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3.5 Paving - 2023

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	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
Total	**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**

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	0.0000	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
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**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**

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3.5 Paving - 2023

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	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
Total	**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**

3.5 Paving - 2024

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	6.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0105**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	3.6000e-004	2.3000e-004	3.1100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9060	0.9060	2.0000e-005	2.0000e-005	0.9137
Total	**3.6000e-004**	**2.3000e-004**	**3.1100e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9060**	**0.9060**	**2.0000e-005**	**2.0000e-005**	**0.9137**

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	6.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0105**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	3.6000e-004	2.3000e-004	3.1100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9060	0.9060	2.0000e-005	2.0000e-005	0.9137
Total	**3.6000e-004**	**2.3000e-004**	**3.1100e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9060**	**0.9060**	**2.0000e-005**	**2.0000e-005**	**0.9137**

3.6 Architectural Coating - 2024

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	4.4800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**6.2900e-003**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

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	8.4000e-004	5.5000e-004	7.2500e-003	2.0000e-005	2.7700e-003	1.0000e-005	2.7800e-003	7.4000e-004	1.0000e-005	7.5000e-004	0.0000	2.1141	2.1141	6.0000e-005	6.0000e-005	2.1320
Total	**8.4000e-004**	**5.5000e-004**	**7.2500e-003**	**2.0000e-005**	**2.7700e-003**	**1.0000e-005**	**2.7800e-003**	**7.4000e-004**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**2.1141**	**2.1141**	**6.0000e-005**	**6.0000e-005**	**2.1320**

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	4.4800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**6.2900e-003**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

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	8.4000e-004	5.5000e-004	7.2500e-003	2.0000e-005	2.7700e-003	1.0000e-005	2.7800e-003	7.4000e-004	1.0000e-005	7.5000e-004	0.0000	2.1141	2.1141	6.0000e-005	6.0000e-005	2.1320
Total	**8.4000e-004**	**5.5000e-004**	**7.2500e-003**	**2.0000e-005**	**2.7700e-003**	**1.0000e-005**	**2.7800e-003**	**7.4000e-004**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**2.1141**	**2.1141**	**6.0000e-005**	**6.0000e-005**	**2.1320**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	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	4.2200e-003	4.6200e-003	0.0382	8.0000e-005	8.2400e-003	6.0000e-005	8.3000e-003	2.2000e-003	5.0000e-005	2.2600e-003	0.0000	7.2338	7.2338	5.0000e-004	3.6000e-004	7.3527
Unmitigated	4.2200e-003	4.6200e-003	0.0382	8.0000e-005	8.2400e-003	6.0000e-005	8.3000e-003	2.2000e-003	5.0000e-005	2.2600e-003	0.0000	7.2338	7.2338	5.0000e-004	3.6000e-004	7.3527

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	7.11	17.86	19.95	22,366	22,366
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	7.11	17.86	19.95	22,366	22,366

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.553342	0.058522	0.188738	0.121080	0.023016	0.005623	0.010412	0.007562	0.000987	0.000568	0.026444	0.000834	0.002871
Other Asphalt Surfaces	0.553342	0.058522	0.188738	0.121080	0.023016	0.005623	0.010412	0.007562	0.000987	0.000568	0.026444	0.000834	0.002871

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Parking Lot	0.553342	0.058522	0.188738	0.121080	0.023016	0.005623	0.010412	0.007562	0.000987	0.000568	0.026444	0.000834	0.002871

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	0.5570	0.5570	9.0000e-005	1.0000e-005	0.5625
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.5570	0.5570	9.0000e-005	1.0000e-005	0.5625
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
City Park	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
Other Asphalt Surfaces	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
Parking Lot	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
Total		**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**

Ellis Lake Park Project AQ Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
City Park	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
Other Asphalt Surfaces	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
Parking Lot	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
Total		**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**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	6020	0.5570	9.0000e-005	1.0000e-005	0.5625
Total		**0.5570**	**9.0000e-005**	**1.0000e-005**	**0.5625**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	6020	0.5570	9.0000e-005	1.0000e-005	0.5625
Total		**0.5570**	**9.0000e-005**	**1.0000e-005**	**0.5625**

6.0 Area Detail

6.1 Mitigation Measures Area

Ellis Lake Park Project AQ Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	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	5.6200e-003	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Unmitigated	5.6200e-003	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003

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	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Total	**5.6200e-003**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0100e-003**	**1.0100e-003**	**0.0000**	**0.0000**	**1.0700e-003**

Ellis Lake Park Project AQ Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Total	**5.6200e-003**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0100e-003**	**1.0100e-003**	**0.0000**	**0.0000**	**1.0700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.5150	5.7000e-004	7.0000e-005	3.5498
Unmitigated	3.5150	5.7000e-004	7.0000e-005	3.5498

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.8544	3.5150	5.7000e-004	7.0000e-005	3.5498
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.5150**	**5.7000e-004**	**7.0000e-005**	**3.5498**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.8544	3.5150	5.7000e-004	7.0000e-005	3.5498
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.5150**	**5.7000e-004**	**7.0000e-005**	**3.5498**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1583	9.3600e-003	0.0000	0.3923
Unmitigated	0.1583	9.3600e-003	0.0000	0.3923

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.78	0.1583	9.3600e-003	0.0000	0.3923
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.1583**	**9.3600e-003**	**0.0000**	**0.3923**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.78	0.1583	9.3600e-003	0.0000	0.3923
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.1583**	**9.3600e-003**	**0.0000**	**0.3923**

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Ellis Lake Park Project GHG Analysis

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	4.28	1000sqft	0.10	4,284.00	0
Parking Lot	43.00	Space	0.39	17,200.00	0
City Park	9.11	Acre	9.11	396,831.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2030
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	114.13	**CH4 Intensity (lb/MWhr)**	0.018	**N2O Intensity (lb/MWhr)**	0.002

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on 2030 RPS.

Land Use - Based on applicant-provided information. Other Asphalt Surfaces refers to proposed basketball court. Parking Lot refers to proposed parking lot expansion from 26 to 43 total spaces.

Construction Phase -

Trips and VMT - Based on applicant-provided information. Soil would be balanced on-site, so no hauling trips would be needed.

Grading -

Water And Wastewater - No septic tanks planned for or present on site. There are no facultative lagoons at the Central Contra Costa Sanitary District's Wastewater Treatment Plant.

Construction Off-road Equipment Mitigation - Based on General Plan Policy S-1.1.7

Mobile Land Use Mitigation -

Ellis Lake Park Project GHG Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LandUseSquareFeet	4,280.00	4,284.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.018
tblProjectCharacteristics	CO2IntensityFactor	203.98	114.13
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.002
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

Ellis Lake Park Project GHG Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
2023	0.2721	2.3599	2.6713	6.5600e-003	0.3830	0.0975	0.4805	0.1429	0.0914	0.2343	0.0000	592.8271	592.8271	0.0841	0.0267	602.8715
2024	0.0180	0.1082	0.1747	2.9000e-004	3.9500e-003	5.3100e-003	9.2600e-003	1.0500e-003	4.9400e-003	5.9900e-003	0.0000	25.5999	25.5999	6.7000e-003	8.0000e-005	25.7910
Maximum	**0.2721**	**2.3599**	**2.6713**	**6.5600e-003**	**0.3830**	**0.0975**	**0.4805**	**0.1429**	**0.0914**	**0.2343**	**0.0000**	**592.8271**	**592.8271**	**0.0841**	**0.0267**	**602.8715**

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					
2023	0.2721	2.3599	2.6713	6.5600e-003	0.2900	0.0975	0.3874	0.0963	0.0914	0.1877	0.0000	592.8268	592.8268	0.0841	0.0267	602.8711
2024	0.0180	0.1082	0.1747	2.9000e-004	3.9500e-003	5.3100e-003	9.2600e-003	1.0500e-003	4.9400e-003	5.9900e-003	0.0000	25.5999	25.5999	6.7000e-003	8.0000e-005	25.7910
Maximum	**0.2721**	**2.3599**	**2.6713**	**6.5600e-003**	**0.2900**	**0.0975**	**0.3874**	**0.0963**	**0.0914**	**0.1877**	**0.0000**	**592.8268**	**592.8268**	**0.0841**	**0.0267**	**602.8711**

Ellis Lake Park Project GHG Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	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**	**24.04**	**0.00**	**18.99**	**32.39**	**0.00**	**19.40**	**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	**1-1-2023**	**3-31-2023**	0.6875	0.6875
2	**4-1-2023**	**6-30-2023**	0.6416	0.6416
3	**7-1-2023**	**9-30-2023**	0.6487	0.6487
4	**10-1-2023**	**12-31-2023**	0.6506	0.6506
5	**1-1-2024**	**3-31-2024**	0.1188	0.1188
		Highest	0.6875	0.6875

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	5.6200e-003	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.3117	0.3117	5.0000e-005	1.0000e-005	0.3145
Mobile	3.3900e-003	3.5800e-003	0.0318	7.0000e-005	8.2500e-003	4.0000e-005	8.2900e-003	2.2000e-003	4.0000e-005	2.2400e-003	0.0000	6.4003	6.4003	4.0000e-004	3.0000e-004	6.4994
Waste						0.0000	0.0000		0.0000	0.0000	0.1583	0.0000	0.1583	9.3600e-003	0.0000	0.3923
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.9667	1.9667	3.1000e-004	3.0000e-005	1.9847
Total	**9.0100e-003**	**3.5800e-003**	**0.0323**	**7.0000e-005**	**8.2500e-003**	**4.0000e-005**	**8.2900e-003**	**2.2000e-003**	**4.0000e-005**	**2.2400e-003**	**0.1583**	**8.6797**	**8.8380**	**0.0101**	**3.4000e-004**	**9.1920**

Ellis Lake Park Project GHG Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	5.6200e-003	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.3117	0.3117	5.0000e-005	1.0000e-005	0.3145
Mobile	3.3900e-003	3.5800e-003	0.0318	7.0000e-005	8.2500e-003	4.0000e-005	8.2900e-003	2.2000e-003	4.0000e-005	2.2400e-003	0.0000	6.4003	6.4003	4.0000e-004	3.0000e-004	6.4994
Waste						0.0000	0.0000		0.0000	0.0000	0.1583	0.0000	0.1583	9.3600e-003	0.0000	0.3923
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.9667	1.9667	3.1000e-004	3.0000e-005	1.9847
Total	**9.0100e-003**	**3.5800e-003**	**0.0323**	**7.0000e-005**	**8.2500e-003**	**4.0000e-005**	**8.2900e-003**	**2.2000e-003**	**4.0000e-005**	**2.2400e-003**	**0.1583**	**8.6797**	**8.8380**	**0.0101**	**3.4000e-004**	**9.1920**

	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	Site Preparation	Site Preparation	1/1/2023	1/13/2023	5	10	
2	Grading	Grading	1/14/2023	2/10/2023	5	20	
3	Building Construction	Building Construction	2/11/2023	12/29/2023	5	230	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	12/30/2023	1/26/2024	5	20	
5	Architectural Coating	Architectural Coating	1/27/2024	2/23/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0.49

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,289 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	176.00	69.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

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	2.3000e-004	1.6000e-004	2.0000e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5574	0.5574	2.0000e-005	2.0000e-005	0.5623
Total	**2.3000e-004**	**1.6000e-004**	**2.0000e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5574**	**0.5574**	**2.0000e-005**	**2.0000e-005**	**0.5623**

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					0.0442	0.0000	0.0442	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0442**	**6.3300e-003**	**0.0506**	**0.0227**	**5.8200e-003**	**0.0286**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

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	2.3000e-004	1.6000e-004	2.0000e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5574	0.5574	2.0000e-005	2.0000e-005	0.5623
Total	**2.3000e-004**	**1.6000e-004**	**2.0000e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5574**	**0.5574**	**2.0000e-005**	**2.0000e-005**	**0.5623**

3.3 Grading - 2023

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					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0708**	**7.7500e-003**	**0.0786**	**0.0343**	**7.1300e-003**	**0.0414**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

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	3.8000e-004	2.6000e-004	3.3300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9290	0.9290	3.0000e-005	3.0000e-005	0.9372
Total	**3.8000e-004**	**2.6000e-004**	**3.3300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9290**	**0.9290**	**3.0000e-005**	**3.0000e-005**	**0.9372**

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					0.0319	0.0000	0.0319	0.0154	0.0000	0.0154	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0319**	**7.7500e-003**	**0.0396**	**0.0154**	**7.1300e-003**	**0.0225**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

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	3.8000e-004	2.6000e-004	3.3300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9290	0.9290	3.0000e-005	3.0000e-005	0.9372
Total	**3.8000e-004**	**2.6000e-004**	**3.3300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9290**	**0.9290**	**3.0000e-005**	**3.0000e-005**	**0.9372**

3.4 Building Construction - 2023

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	0.1809	1.6543	1.8681	3.1000e-003		0.0805	0.0805		0.0757	0.0757	0.0000	266.5755	266.5755	0.0634	0.0000	268.1608
Total	**0.1809**	**1.6543**	**1.8681**	**3.1000e-003**		**0.0805**	**0.0805**		**0.0757**	**0.0757**	**0.0000**	**266.5755**	**266.5755**	**0.0634**	**0.0000**	**268.1608**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

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	8.4600e-003	0.3528	0.1104	1.6100e-003	0.0521	2.0600e-003	0.0541	0.0151	1.9700e-003	0.0170	0.0000	156.6333	156.6333	3.2000e-003	0.0232	163.6181
Worker	0.0518	0.0355	0.4489	1.3500e-003	0.1599	8.2000e-004	0.1608	0.0426	7.6000e-004	0.0433	0.0000	125.3461	125.3461	3.6100e-003	3.4400e-003	126.4611
Total	**0.0603**	**0.3883**	**0.5592**	**2.9600e-003**	**0.2120**	**2.8800e-003**	**0.2149**	**0.0576**	**2.7300e-003**	**0.0603**	**0.0000**	**281.9794**	**281.9794**	**6.8100e-003**	**0.0266**	**290.0792**

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	0.1809	1.6543	1.8681	3.1000e-003		0.0805	0.0805		0.0757	0.0757	0.0000	266.5751	266.5751	0.0634	0.0000	268.1605
Total	**0.1809**	**1.6543**	**1.8681**	**3.1000e-003**		**0.0805**	**0.0805**		**0.0757**	**0.0757**	**0.0000**	**266.5751**	**266.5751**	**0.0634**	**0.0000**	**268.1605**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

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	8.4600e-003	0.3528	0.1104	1.6100e-003	0.0521	2.0600e-003	0.0541	0.0151	1.9700e-003	0.0170	0.0000	156.6333	156.6333	3.2000e-003	0.0232	163.6181
Worker	0.0518	0.0355	0.4489	1.3500e-003	0.1599	8.2000e-004	0.1608	0.0426	7.6000e-004	0.0433	0.0000	125.3461	125.3461	3.6100e-003	3.4400e-003	126.4611
Total	**0.0603**	**0.3883**	**0.5592**	**2.9600e-003**	**0.2120**	**2.8800e-003**	**0.2149**	**0.0576**	**2.7300e-003**	**0.0603**	**0.0000**	**281.9794**	**281.9794**	**6.8100e-003**	**0.0266**	**290.0792**

3.5 Paving - 2023

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	0.0000	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
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**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**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

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	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
Total	**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**

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	0.0000	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
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**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**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

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	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
Total	**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**

3.5 Paving - 2024

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	6.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0105**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	3.6000e-004	2.3000e-004	3.1100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9060	0.9060	2.0000e-005	2.0000e-005	0.9137
Total	**3.6000e-004**	**2.3000e-004**	**3.1100e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9060**	**0.9060**	**2.0000e-005**	**2.0000e-005**	**0.9137**

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	6.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0105**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	3.6000e-004	2.3000e-004	3.1100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9060	0.9060	2.0000e-005	2.0000e-005	0.9137
Total	**3.6000e-004**	**2.3000e-004**	**3.1100e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9060**	**0.9060**	**2.0000e-005**	**2.0000e-005**	**0.9137**

3.6 Architectural Coating - 2024

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	4.4800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**6.2900e-003**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

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	8.4000e-004	5.5000e-004	7.2500e-003	2.0000e-005	2.7700e-003	1.0000e-005	2.7800e-003	7.4000e-004	1.0000e-005	7.5000e-004	0.0000	2.1141	2.1141	6.0000e-005	6.0000e-005	2.1320
Total	**8.4000e-004**	**5.5000e-004**	**7.2500e-003**	**2.0000e-005**	**2.7700e-003**	**1.0000e-005**	**2.7800e-003**	**7.4000e-004**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**2.1141**	**2.1141**	**6.0000e-005**	**6.0000e-005**	**2.1320**

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	4.4800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**6.2900e-003**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

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	8.4000e-004	5.5000e-004	7.2500e-003	2.0000e-005	2.7700e-003	1.0000e-005	2.7800e-003	7.4000e-004	1.0000e-005	7.5000e-004	0.0000	2.1141	2.1141	6.0000e-005	6.0000e-005	2.1320
Total	**8.4000e-004**	**5.5000e-004**	**7.2500e-003**	**2.0000e-005**	**2.7700e-003**	**1.0000e-005**	**2.7800e-003**	**7.4000e-004**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**2.1141**	**2.1141**	**6.0000e-005**	**6.0000e-005**	**2.1320**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Ellis Lake Park Project GHG Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	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	3.3900e-003	3.5800e-003	0.0318	7.0000e-005	8.2500e-003	4.0000e-005	8.2900e-003	2.2000e-003	4.0000e-005	2.2400e-003	0.0000	6.4003	6.4003	4.0000e-004	3.0000e-004	6.4994
Unmitigated	3.3900e-003	3.5800e-003	0.0318	7.0000e-005	8.2500e-003	4.0000e-005	8.2900e-003	2.2000e-003	4.0000e-005	2.2400e-003	0.0000	6.4003	6.4003	4.0000e-004	3.0000e-004	6.4994

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	7.11	17.86	19.95	22,366	22,366
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	7.11	17.86	19.95	22,366	22,366

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.555148	0.059467	0.187500	0.120419	0.022094	0.005825	0.011277	0.007430	0.000952	0.000505	0.025870	0.000875	0.002638
Other Asphalt Surfaces	0.555148	0.059467	0.187500	0.120419	0.022094	0.005825	0.011277	0.007430	0.000952	0.000505	0.025870	0.000875	0.002638

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Parking Lot	0.555148	0.059467	0.187500	0.120419	0.022094	0.005825	0.011277	0.007430	0.000952	0.000505	0.025870	0.000875	0.002638

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	0.3117	0.3117	5.0000e-005	1.0000e-005	0.3145
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.3117	0.3117	5.0000e-005	1.0000e-005	0.3145
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
City Park	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
Other Asphalt Surfaces	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
Parking Lot	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
Total		**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**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
City Park	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
Other Asphalt Surfaces	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
Parking Lot	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
Total		**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**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	6020	0.3117	5.0000e-005	1.0000e-005	0.3145
Total		**0.3117**	**5.0000e-005**	**1.0000e-005**	**0.3145**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	6020	0.3117	5.0000e-005	1.0000e-005	0.3145
Total		**0.3117**	**5.0000e-005**	**1.0000e-005**	**0.3145**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	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	5.6200e-003	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Unmitigated	5.6200e-003	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003

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	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Total	**5.6200e-003**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0100e-003**	**1.0100e-003**	**0.0000**	**0.0000**	**1.0700e-003**

Ellis Lake Park Project GHG Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0100e-003	1.0100e-003	0.0000	0.0000	1.0700e-003
Total	**5.6200e-003**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0100e-003**	**1.0100e-003**	**0.0000**	**0.0000**	**1.0700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.9667	3.1000e-004	3.0000e-005	1.9847
Unmitigated	1.9667	3.1000e-004	3.0000e-005	1.9847

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.8544	1.9667	3.1000e-004	3.0000e-005	1.9847
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.9667**	**3.1000e-004**	**3.0000e-005**	**1.9847**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.8544	1.9667	3.1000e-004	3.0000e-005	1.9847
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.9667**	**3.1000e-004**	**3.0000e-005**	**1.9847**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Ellis Lake Park Project GHG Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1583	9.3600e-003	0.0000	0.3923
Unmitigated	0.1583	9.3600e-003	0.0000	0.3923

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.78	0.1583	9.3600e-003	0.0000	0.3923
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.1583**	**9.3600e-003**	**0.0000**	**0.3923**

Ellis Lake Park Project GHG Analysis - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.78	0.1583	9.3600e-003	0.0000	0.3923
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.1583**	**9.3600e-003**	**0.0000**	**0.3923**

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

11.0 Vegetation

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - Instructions

Introduction: This tool estimates emission rates for harbor craft engines based on California Air Resources Board emission estimation databases.

How to start using this tool:

1. Review the Instructions tab
2. Enter data in the Inputs tab
3. View final results in the MainEngineEmissRates and AuxEngineEmissRates tabs

Tab Descriptions:

- Instructions: The current tab with brief description of all tabs and calculator functions.
- Input: This is the only tab that requires user input. Not all fields in this tab are required for the calculations to be completed. Different colors are used to indicate which fields are required and which are optional. *If using this tool for environmental planning purposes, the engine model year, engine rated power, vessel number and location for Main Engine Inputs and Auxiliary Engine Inputs are optional since during the planning phase of a project the User is not expected to know this information. If this tool is being used for calculating emissions for construction mitigation purposes, the User must provide ALL Main Engine Inputs and Auxiliary Engine Inputs. The engine model year, engine rated power, vessel number and location information is expected to be accessible for the construction phase of a project.*
- MainEngineEmissRates: This tab contains final results (emission rates and emission factors) for the main engine(s) of each vessel specified in the "A2. Main Engine" input table in the "Inputs" tab.
- AuxEngineEmissRates: This tab contains final results (emission rates and emission factors) for each auxiliary engine specified in the "A3. Auxiliary Engine" input table in the "Inputs" tab.
- VesselDesc: This tab includes brief descriptions of harbor craft vessel types.
- Documentation: This tab documents calculator version information.
- Calculations: Contains all emission factor and emission rate calculations. The "MainEngineEmissRates" and "AuxEngineEmissRates" tabs reference cells in this tab.
- CARB_EFs: Contains reference emission factors.
- CARB_Defaults: Contains default information such as useful life, load factors, average usage, rated horsepower, and model year.

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - Input Data Page

INSTRUCTIONS:
1. Enter inputs into tables A1, A2, A3, and A4 below. Required inputs must be entered to estimate emission rates, optional inputs should be entered if available.
2. After entering inputs, review status and error messages (cell E14); make changes as necessary until this cell is green indicating that inputs are ready.
3. Results may be reviewed in "MainEngineEmissRates" and "AuxEngineEmissRates" tabs, both colored yellow.

Inputs and Status

Inputs color legend	Required Input
	Optional Input
Status and error messages	OK. Default values will be applied to blank model year and HP

A1. Inventory Calendar year

Inventory Calendar Year	2023

A4. Project Information

Inputs	
Date (mm/dd/yyyy):	9/27/2021
Project Name:	Ellis Lake Park Project
Project Location:	Concord
Contact Person:	
Company Name:	Rincon Consultants
Mailing Address:	
Phone Number:	
Email Address:	

A2. Main Engine Inputs

Required Inputs			Optional Inputs			
Vessel Name	**Vessel Type**	**No. of Engines**	**Engine Model Year**	**Engine Rated Power (hp)**	**Vessel Number**	**Home Port**
Dredging Boat	Work Boats	2				

A3. Auxiliary Engine Inputs

Required Inputs			Optional Inputs	
Vessel Name	**Auxiliary Engine Type**	**No. of Engines**	**Engine Model Year**	**Engine Rated Power (hp)**
Dredging Boat	Dredger	1		

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - Main Engine Emission Rates

Calendar Year: 2023 **Number of Entries:** 1

Vessel/Engine Information								Emission Rates (lb/hr; estimates for each row are totals over the number of engines listed in column J for that row)										Emission Rates for a Single Engine (g/bhp-hr)									
Vessel Name	Vessel Number	Home Port	Vessel Type	Engine Model Year	Engine Rated Power (hp)	Engine Load Factor	Number of engines	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	SO_2	CO_2	CH_4	N_2O	CO_2e
Dredging Boat			Work Boats	2006	364	0.45	2	0.145	0.129	4.231	0.510	3.371	0.004	427.320	0.017	0.003	428.786	0.200	0.178	5.852	0.705	4.663	0.006	591.045	0.024	0.005	593.1

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - Auxiliary Engine Emission Rates

Calendar Year: 2023 **Number of Entries:** 1

Vessel/Engine Information									Emission Rates (lb/hr; estimates for each row are totals over the number of engines listed in column K for that row)										Emission Rates for a Single Engine (g/bhp-hr)									
Vessel Name	Vessel Number	Home Port	Vessel Type	Auxiliary Engine Type	Engine Model Year	Engine Rated Power (hp)	Engine Load Factor	Number of Engines	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	SO_2	CO_2	CH_4	N_2O	CO_2e
Dredging Boat			Work Boats	Dredger	2007	425	0.51	1	0.070	0.063	2.193	0.060	0.550	0.003	285.215	0.012	0.002	286.193	0.15	0.13	4.59	0.13	1.15	0.006	596.87	0.02	0.00	598.9

Emissions Calculations

Input Parameters	
Daily Hours of Operation	8
Total Days of Operation	10
Total Days of Construction (2023)	260

Main Engine Emissions

	PM10	PM2.5	NOx	ROG	CO	SO2	CO2	CH4	N2O	CO2e
Emission Rates (lbs/hr)	0	0	4	1	3	0	427	0.02	0.003	429
Total Daily Emissions (lbs/day)	1	1	34	4	27	0	3419	0.1	0.03	3430
Total Annual Emissions (lbs/yr)	12	10	338	41	270	0	34186	1	0.3	34303
Total Annual Emissions (MT/yr)	0	0	0	0	0	0	16	0	0	16

Auxiliary Engine Emissions

	PM10	PM2.5	NOx	ROG	CO	SO2	CO2	CH4	N2O	CO2e
Emission Rates (lbs/hr)	0	0	2	0	1	0	285	0.01	0.002	286
Total Daily Emissions (lbs/day)	1	1	18	0	4	0	2282	0.1	0.02	2290
Total Annual Emissions (lbs/yr)	6	5	175	5	44	0	22817	1	0.2	22895
Total Annual Emissions (MT/yr)	0	0	0	0	0	0	10	0	0	10

Total Emissions

	PM10	PM2.5	NOx	ROG	CO	SO2	CO2	CH4	N2O	CO2e
Total Daily Emissions (lbs/day)	2	2	51	5	31	0	5700	0.2	0.05	5720
Average Daily Emissions (lbs/day)	0.02	0.02	1	0.02	0.2	0.001	88	0.004	0.001	88
Total Annual Emissions (lbs/yr)	17	15	514	46	314	1	57003	2	0	57198
Total Annual Emissions (MT/yr)	0	0	0	0	0	0	26	0	0	26

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - Brief Vessel Descriptions

Reference Sources for Vessel Descriptions and Pictures Below:

1. South Coast Air Quality Management District, 2015, Draft Technology Assessment: Commercial Harbor Craft, http://www.arb.ca.gov/msprog/tech/techreport/draft_chc_technology_assessment.pdf
2. California Air Resources Board, 2004, Statewide Commercial Harbor Craft Survey: Final Report, https://www.arb.ca.gov/ports/marinevess/harborcraft/documents/hcsurveyrep0304.pdf
3. San Francisco Bay Crossings, Dutra in the Delta, http://www.baycrossings.com/dispnews.php?id=2538
4. Dutra Group Inc, Fleet http://www.dutragroup.com/equipment-aggregates-dredging-marine-construction.html?id=39

Vessel Descriptions (Pictures and Descriptions Sourced from SCAQMD and CARB Reports)		
Barges		Cargo barges carry liquid, bulk, and containerized cargo within and between harbors. Work barges may carry construction materials or equipment.
Commercial Fishing		Vessels used in the search and collection of fish for the purpose of sale at market
Charter Fishing		Vessels available for hire by the general public and used for the search and collection of fish for the purpose of personal consumption
Crew and Supply		Vessels used for carrying personnel and supplies to and from offshore and in-harbor locations
Dredges	 	Special purpose barges used to construct and maintain channels, berths, docks, breakwaters and other facilities in harbors and ports
Ferries		Vessels used for public use in the transportation of persons or property
Pilot Vessels		Vessels used to guide ocean-going vessels into and out of a port or harbor
Tug Boats		Vessels used for the towing and pushing of ships or other floating structures such as barges
Tow Boats / Push Boats		Vessels used to tow barges and pontoons. The hull of these vessels is usually rectangular in plan and has little freeboard.
Work Boats		Vessels used to perform duties such as fire/rescue, law enforcement, hydrographic surveys, spill/response research, training, and construction
Others		Vessels used in various commercial operations that do not fit into any other category such as vessels used to dispose of cremated remains

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - Documentation

Version 1.0

1. User provides vessel type; the following inputs for main engines: model year, horsepower, engine count; the following inputs for auxiliary engines: engine type, model year, horsepower, engine count. If engine horsepower or model year are not provided an average estimate from the CARB source calculators will be used to develop emission rates.
2. Calculator looks up zero-hour emission factors, deterioration factors, load factor, and useful life.
3. Calculator calculates emission rates (lb/hr) and emission factors (g/bhp-hr).
4. Additional documentation available in June (2017) Ramboll Environ Memorandum

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - Emission Factor Calculations

Main Engine Emission Factor Calculator

Calendar Year: 2023 **Number of Entries:** 1

Vessel/Engine Information												Activity			Zero-Hour Emission Factors (g/hp-hr)					Deterioration Factors (g/hp - hr)					Emission Rates (g/bhp-hr)								Emission Rates (g/hr)								Fuel Correction Factor			
Vessel Name	Vessel Type	Engine Type	Engine Category	Engine Model Year	MdlYr Group	Engine HP	HP Category	FCF HP Category	Engine Load Factor	BSFC (g/hp-hr)	No. of engines	Annual Hours	Age	Useful Life	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	SO_2	CO_2	CH_4	N_2O	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	SO_2	CO_2	CH_4	N_2O	NOx	PM	ROG	MY Bin
Dredging Boat	Work Boats	Main	A1	2006	2006	364	5	4	0.45	184.16	2	1,250	17	17	0.150	0.138	5.102	0.680	3.730	0.67	0.62	0.21	0.44	0.25	0.200	0.178	5.852	0.705	4.663	0.006	591.045	0.024	0.005	65.7	58.5	1,919.1	231.2	1,529.0	1.8	193,828.8	7.9	1.6	0.95	0.80	0.72	1996

Auxiliary Engine Emission Factor Calculator

Calendar Year: 2023 **Number of Entries:** 1

Vessel/Engine Information												Activity			Zero-Hour Emission Factors (g/hp-hr)					Deterioration Factors (g/hp - hr)					Emission Rates (g/bhp-hr)								Emission Rates (g/hr)								Fuel Correction Factor			
Vessel Name	Vessel Type	Engine Type	Engine Category	Engine Model Year	MdlYr Group	Engine HP	HP Category	FCF HP Category	Engine Load Factor	BSFC (g/hp-hr)	No. of engines	Annual Hours	Age	Useful Life	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	SO_2	CO_2	CH_4	N_2O	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	SO_2	CO_2	CH_4	N_2O	NOx	PM	ROG	MY Bin
Dredging Boat	Dredger	Aux	C2	2007	2007	425	7	4	0.51	185.97	1	360	16	16	0.110	0.101	4.000	0.121	0.920	0.67	0.62	0.21	0.44	0.25	0.147	0.131	4.588	0.125	1.150	0.006	596.868	0.024	0.005	31.9	28.4	994.5	27.2	249.3	1.2	129,371.1	5.2	1.0	0.9	0.8	0.7	1996

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - CARB Emission Factors Inputs

Data sources:

https://www.arb.ca.gov/msei/california_harbor_craft_emissions_inventory_database_10072011.mdb

https://www.arb.ca.gov/msei/california_crew_supply_emissions_inventory_database_10072011.mdb

https://www.arb.ca.gov/msei/california_barge_dredge_emissions_inventory_database_10072011.mdb

				Zero-Hour Emission Factor (g/hp-hr)					
LOOKUP	Engine Category	HP Category	Model Year	ROG	CO	NOx	PM10	PM2.5	BSFC
A1_1_1987	A1	1	1987	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1988	A1	1	1988	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1989	A1	1	1989	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1990	A1	1	1990	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1991	A1	1	1991	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1992	A1	1	1992	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1993	A1	1	1993	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1994	A1	1	1994	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1995	A1	1	1995	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1996	A1	1	1996	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1997	A1	1	1997	1.84	3.65	8.142	0.722	0.664	184.158502
A1_1_1998	A1	1	1998	1.8	3.65	8.142	0.722	0.664	184.158502
A1_1_1999	A1	1	1999	1.8	3.65	8.142	0.722	0.664	184.158502
A1_1_2000	A1	1	2000	1.8	3.65	7.31	0.722	0.664	184.158502
A1_1_2001	A1	1	2001	1.8	3.65	7.31	0.722	0.664	184.158502
A1_1_2002	A1	1	2002	1.8	3.65	7.31	0.722	0.664	184.158502
A1_1_2003	A1	1	2003	1.8	3.65	7.31	0.722	0.664	184.158502
A1_1_2004	A1	1	2004	1.8	3.65	7.31	0.722	0.664	184.158502
A1_1_2005	A1	1	2005	1.8	3.73	5.32	0.3	0.276	184.158502
A1_1_2006	A1	1	2006	1.8	3.73	5.32	0.3	0.276	184.158502
A1_1_2007	A1	1	2007	1.8	3.73	5.32	0.3	0.276	184.158502
A1_1_2008	A1	1	2008	1.8	3.73	5.32	0.3	0.276	184.158502
A1_1_2009	A1	1	2009	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2010	A1	1	2010	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2011	A1	1	2011	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2012	A1	1	2012	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2013	A1	1	2013	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2014	A1	1	2014	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2015	A1	1	2015	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2016	A1	1	2016	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2017	A1	1	2017	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2018	A1	1	2018	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2019	A1	1	2019	1.8	3.73	5.32	0.22	0.202	184.158502
A1_1_2020	A1	1	2020	1.8	3.73	5.32	0.22	0.202	184.158502
A1_2_1987	A1	2	1987	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1988	A1	2	1988	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1989	A1	2	1989	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1990	A1	2	1990	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1991	A1	2	1991	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1992	A1	2	1992	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1993	A1	2	1993	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1994	A1	2	1994	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1995	A1	2	1995	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1996	A1	2	1996	1.44	3.504	15.34	0.798	0.734	184.158502
A1_2_1997	A1	2	1997	0.99	2.5477	10.325	0.6555	0.603	184.158502
A1_2_1998	A1	2	1998	0.99	2.5477	10.325	0.6555	0.603	184.158502
A1_2_1999	A1	2	1999	0.99	2.5477	10.325	0.6555	0.603	184.158502
A1_2_2000	A1	2	2000	0.99	2.5477	7.31	0.6555	0.603	184.158502
A1_2_2001	A1	2	2001	0.99	2.5477	7.31	0.6555	0.603	184.158502
A1_2_2002	A1	2	2002	0.99	2.5477	7.31	0.6555	0.603	184.158502
A1_2_2003	A1	2	2003	0.99	2.5477	7.31	0.6555	0.603	184.158502
A1_2_2004	A1	2	2004	0.99	2.5477	7.31	0.6555	0.603	184.158502
A1_2_2005	A1	2	2005	0.99	3.73	5.32	0.3	0.276	184.158502
A1_2_2006	A1	2	2006	0.99	3.73	5.32	0.3	0.276	184.158502
A1_2_2007	A1	2	2007	0.99	3.73	5.32	0.3	0.276	184.158502
A1_2_2008	A1	2	2008	0.99	3.73	5.32	0.3	0.276	184.158502
A1_2_2009	A1	2	2009	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2010	A1	2	2010	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2011	A1	2	2011	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2012	A1	2	2012	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2013	A1	2	2013	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2014	A1	2	2014	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2015	A1	2	2015	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2016	A1	2	2016	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2017	A1	2	2017	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2018	A1	2	2018	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2019	A1	2	2019	0.99	3.73	5.32	0.22	0.202	184.158502
A1_2_2020	A1	2	2020	0.99	3.73	5.32	0.22	0.202	184.158502
A1_3_1969	A1	3	1969	1.32	3.212	16.52	0.7315	0.673	184.158502
A1_3_1970	A1	3	1970	1.32	3.212	16.52	0.7315	0.673	184.158502
A1_3_1971	A1	3	1971	1.1	3.212	15.34	0.627	0.577	184.158502
A1_3_1972	A1	3	1972	1.1	3.212	15.34	0.627	0.577	184.158502
A1_3_1973	A1	3	1973	1.1	3.212	15.34	0.627	0.577	184.158502
A1_3_1974	A1	3	1974	1.1	3.212	15.34	0.627	0.577	184.158502
A1_3_1975	A1	3	1975	1.1	3.212	15.34	0.627	0.577	184.158502
A1_3_1976	A1	3	1976	1.1	3.212	15.34	0.627	0.577	184.158502
A1_3_1977	A1	3	1977	1.1	3.212	15.34	0.627	0.577	184.158502

			Deterioration Factor (g/hp-hr)					
LOOKUP	Engine Category	HP Category	ROG	HC	CO	NOx	PM	PM2.5
A1_1	A1	1	0.51	0.51	0.41	0.06	0.31	0.2852
A1_2	A1	2	0.28	0.28	0.16	0.14	0.44	0.4048
A1_3	A1	3	0.28	0.28	0.16	0.14	0.44	0.4048
A1_4	A1	4	0.28	0.28	0.16	0.14	0.44	0.4048
A1_5	A1	5	0.44	0.44	0.25	0.21	0.67	0.6164
A1_6	A1	6	0.44	0.44	0.25	0.21	0.67	0.6164
A1_7	A1	7	0.44	0.44	0.25	0.21	0.67	0.6164
A1_8	A1	8	0.44	0.44	0.25	0.21	0.67	0.6164
A1_9	A1	9	0.44	0.44	0.25	0.21	0.67	0.6164
A2_1	A2	1	0.51	0.51	0.41	0.06	0.31	0.2852
A2_2	A2	2	0.28	0.28	0.16	0.14	0.44	0.4048
A2_3	A2	3	0.28	0.28	0.16	0.14	0.44	0.4048
A2_4	A2	4	0.28	0.28	0.16	0.14	0.44	0.4048
A2_5	A2	5	0.44	0.44	0.25	0.21	0.67	0.6164
A2_6	A2	6	0.44	0.44	0.25	0.21	0.67	0.6164
A2_7	A2	7	0.44	0.44	0.25	0.21	0.67	0.6164
A2_8	A2	8	0.44	0.44	0.25	0.21	0.67	0.6164
A2_9	A2	9	0.44	0.44	0.25	0.21	0.67	0.6164
B1_1	B1	1	0.51	0.51	0.41	0.06	0.31	0.2852
B1_2	B1	2	0.28	0.28	0.16	0.14	0.44	0.4048
B1_3	B1	3	0.28	0.28	0.16	0.14	0.44	0.4048
B1_4	B1	4	0.28	0.28	0.16	0.14	0.44	0.4048
B1_5	B1	5	0.44	0.44	0.25	0.21	0.67	0.6164
B1_6	B1	6	0.44	0.44	0.25	0.21	0.67	0.6164
B1_7	B1	7	0.44	0.44	0.25	0.21	0.67	0.6164
B1_8	B1	8	0.44	0.44	0.25	0.21	0.67	0.6164
B1_9	B1	9	0.44	0.44	0.25	0.21	0.67	0.6164
B2_1	B2	1	0.51	0.51	0.41	0.06	0.31	0.2852
B2_2	B2	2	0.28	0.28	0.16	0.14	0.44	0.4048
B2_3	B2	3	0.28	0.28	0.16	0.14	0.44	0.4048
B2_4	B2	4	0.28	0.28	0.16	0.14	0.44	0.4048
B2_5	B2	5	0.44	0.44	0.25	0.21	0.67	0.6164
B2_6	B2	6	0.44	0.44	0.25	0.21	0.67	0.6164
B2_7	B2	7	0.44	0.44	0.25	0.21	0.67	0.6164
B2_8	B2	8	0.44	0.44	0.25	0.21	0.67	0.6164
B2_9	B2	9	0.44	0.44	0.25	0.21	0.67	0.6164
C1_1	C1	1	0.51	0.51	0.41	0.06	0.31	0.2852
C1_2	C1	2	0.51	0.51	0.41	0.06	0.31	0.2852
C1_3	C1	3	0.51	0.51	0.41	0.06	0.31	0.2852
C1_4	C1	4	0.28	0.28	0.16	0.14	0.44	0.4048
C1_5	C1	5	0.28	0.28	0.16	0.14	0.44	0.4048
C1_6	C1	6	0.28	0.28	0.16	0.14	0.44	0.4048
C1_7	C1	7	0.44	0.44	0.25	0.21	0.67	0.6164
C1_8	C1	8	0.44	0.44	0.25	0.21	0.67	0.6164
C1_9	C1	9	0.44	0.44	0.25	0.21	0.67	0.6164
C1_10	C1	10	0.44	0.44	0.25	0.21	0.67	0.6164
C2_1	C2	1	0.51	0.51	0.41	0.06	0.31	0.2852
C2_2	C2	2	0.51	0.51	0.41	0.06	0.31	0.2852
C2_3	C2	3	0.51	0.51	0.41	0.06	0.31	0.2852
C2_4	C2	4	0.28	0.28	0.16	0.14	0.44	0.4048
C2_5	C2	5	0.28	0.28	0.16	0.14	0.44	0.4048
C2_6	C2	6	0.28	0.28	0.16	0.14	0.44	0.4048
C2_7	C2	7	0.44	0.44	0.25	0.21	0.67	0.6164
C2_8	C2	8	0.44	0.44	0.25	0.21	0.67	0.6164
C2_9	C2	9	0.44	0.44	0.25	0.21	0.67	0.6164
C2_10	C2	10	0.44	0.44	0.25	0.21	0.67	0.6164

				Fuel Correction Factor		
FCF HP Category	Max HP	Model Year Bin		NOx	PM	ROG
1	50	1960	1998	0.93	0.72	0.72
1	50	1999	2010	0.948	0.8	0.72
1	50	2011	2040	0.948	0.852	0.72
2	100	1960	1997	0.93	0.72	0.72
2	100	1998	2010	0.948	0.8	0.72
2	100	2011	2040	0.948	0.852	0.72
3	175	1960	1996	0.93	0.72	0.72
3	175	1997	2010	0.948	0.8	0.72
3	175	2011	2040	0.948	0.852	0.72
4	9999	1960	1995	0.93	0.72	0.72
4	9999	1996	2010	0.948	0.8	0.72
4	9999	2011	2040	0.948	0.852	0.72

A1_3_1978	A1	3	1978	1.1	3.212	15.34	0.627	0.577	184.158502
A1_3_1979	A1	3	1979	1	3.212	14.16	0.5225	0.481	184.158502
A1_3_1980	A1	3	1980	1	3.212	14.16	0.5225	0.481	184.158502
A1_3_1981	A1	3	1981	1	3.212	14.16	0.5225	0.481	184.158502
A1_3_1982	A1	3	1982	1	3.212	14.16	0.5225	0.481	184.158502
A1_3_1983	A1	3	1983	1	3.212	14.16	0.5225	0.481	184.158502
A1_3_1984	A1	3	1984	0.94	3.139	12.98	0.5225	0.481	184.158502
A1_3_1985	A1	3	1985	0.94	3.139	12.98	0.5225	0.481	184.158502
A1_3_1986	A1	3	1986	0.94	3.139	12.98	0.5225	0.481	184.158502
A1_3_1987	A1	3	1987	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_3_1988	A1	3	1988	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_3_1989	A1	3	1989	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_3_1990	A1	3	1990	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_3_1991	A1	3	1991	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_3_1992	A1	3	1992	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_3_1993	A1	3	1993	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_3_1994	A1	3	1994	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_3_1995	A1	3	1995	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_3_1996	A1	3	1996	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_3_1997	A1	3	1997	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_3_1998	A1	3	1998	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_3_1999	A1	3	1999	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_3_2000	A1	3	2000	0.68	1.971	7.31	0.361	0.332	184.158502
A1_3_2001	A1	3	2001	0.68	1.971	7.31	0.361	0.332	184.158502
A1_3_2002	A1	3	2002	0.68	1.971	7.31	0.361	0.332	184.158502
A1_3_2003	A1	3	2003	0.68	1.971	7.31	0.361	0.332	184.158502
A1_3_2004	A1	3	2004	0.68	3.73	5.1015	0.22	0.202	184.158502
A1_3_2005	A1	3	2005	0.68	3.73	5.1015	0.22	0.202	184.158502
A1_3_2006	A1	3	2006	0.68	3.73	5.1015	0.22	0.202	184.158502
A1_3_2007	A1	3	2007	0.68	3.73	5.1015	0.22	0.202	184.158502
A1_3_2008	A1	3	2008	0.68	3.73	5.1015	0.22	0.202	184.158502
A1_3_2009	A1	3	2009	0.68	3.73	5.1015	0.22	0.202	184.158502
A1_3_2010	A1	3	2010	0.68	3.73	5.1015	0.22	0.202	184.158502
A1_3_2011	A1	3	2011	0.68	3.73	5.1015	0.22	0.202	184.158502
A1_3_2012	A1	3	2012	0.68	3.73	5.1015	0.22	0.202	184.158502
A1_3_2013	A1	3	2013	0.68	3.73	3.8	0.09	0.083	184.158502
A1_3_2014	A1	3	2014	0.68	3.73	3.8	0.09	0.083	184.158502
A1_3_2015	A1	3	2015	0.68	3.73	3.8	0.09	0.083	184.158502
A1_3_2016	A1	3	2016	0.68	3.73	3.8	0.09	0.083	184.158502
A1_3_2017	A1	3	2017	0.68	3.73	3.8	0.09	0.083	184.158502
A1_3_2018	A1	3	2018	0.68	3.73	3.8	0.09	0.083	184.158502
A1_3_2019	A1	3	2019	0.68	3.73	3.8	0.09	0.083	184.158502
A1_3_2020	A1	3	2020	0.68	3.73	3.8	0.09	0.083	184.158502
A1_4_1969	A1	4	1969	1.32	3.212	16.52	0.7315	0.673	184.158502
A1_4_1970	A1	4	1970	1.32	3.212	16.52	0.7315	0.673	184.158502
A1_4_1971	A1	4	1971	1.1	3.212	15.34	0.627	0.577	184.158502
A1_4_1972	A1	4	1972	1.1	3.212	15.34	0.627	0.577	184.158502
A1_4_1973	A1	4	1973	1.1	3.212	15.34	0.627	0.577	184.158502
A1_4_1974	A1	4	1974	1.1	3.212	15.34	0.627	0.577	184.158502
A1_4_1975	A1	4	1975	1.1	3.212	15.34	0.627	0.577	184.158502
A1_4_1976	A1	4	1976	1.1	3.212	15.34	0.627	0.577	184.158502
A1_4_1977	A1	4	1977	1.1	3.212	15.34	0.627	0.577	184.158502
A1_4_1978	A1	4	1978	1.1	3.212	15.34	0.627	0.577	184.158502
A1_4_1979	A1	4	1979	1	3.212	14.16	0.5225	0.481	184.158502
A1_4_1980	A1	4	1980	1	3.212	14.16	0.5225	0.481	184.158502
A1_4_1981	A1	4	1981	1	3.212	14.16	0.5225	0.481	184.158502
A1_4_1982	A1	4	1982	1	3.212	14.16	0.5225	0.481	184.158502
A1_4_1983	A1	4	1983	1	3.212	14.16	0.5225	0.481	184.158502
A1_4_1984	A1	4	1984	0.94	3.139	12.98	0.5225	0.481	184.158502
A1_4_1985	A1	4	1985	0.94	3.139	12.98	0.5225	0.481	184.158502
A1_4_1986	A1	4	1986	0.94	3.139	12.98	0.5225	0.481	184.158502
A1_4_1987	A1	4	1987	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_4_1988	A1	4	1988	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_4_1989	A1	4	1989	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_4_1990	A1	4	1990	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_4_1991	A1	4	1991	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_4_1992	A1	4	1992	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_4_1993	A1	4	1993	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_4_1994	A1	4	1994	0.88	3.066	12.98	0.5225	0.481	184.158502
A1_4_1995	A1	4	1995	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_4_1996	A1	4	1996	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_4_1997	A1	4	1997	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_4_1998	A1	4	1998	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_4_1999	A1	4	1999	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_4_2000	A1	4	2000	0.68	1.971	7.31	0.361	0.332	184.158502
A1_4_2001	A1	4	2001	0.68	1.971	7.31	0.361	0.332	184.158502
A1_4_2002	A1	4	2002	0.68	1.971	7.31	0.361	0.332	184.158502
A1_4_2003	A1	4	2003	0.68	1.971	7.31	0.361	0.332	184.158502
A1_4_2004	A1	4	2004	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_4_2005	A1	4	2005	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_4_2006	A1	4	2006	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_4_2007	A1	4	2007	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_4_2008	A1	4	2008	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_4_2009	A1	4	2009	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_4_2010	A1	4	2010	0.68	3.73	5.1015	0.15	0.138	184.158502

A1_4_2011	A1	4	2011	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_4_2012	A1	4	2012	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_4_2013	A1	4	2013	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_4_2014	A1	4	2014	0.68	3.73	3.99	0.08	0.074	184.158502
A1_4_2015	A1	4	2015	0.68	3.73	3.99	0.08	0.074	184.158502
A1_4_2016	A1	4	2016	0.68	3.73	3.99	0.08	0.074	184.158502
A1_4_2017	A1	4	2017	0.68	3.73	3.99	0.08	0.074	184.158502
A1_4_2018	A1	4	2018	0.68	3.73	3.99	0.08	0.074	184.158502
A1_4_2019	A1	4	2019	0.68	3.73	3.99	0.08	0.074	184.158502
A1_4_2020	A1	4	2020	0.68	3.73	3.99	0.08	0.074	184.158502
A1_5_1969	A1	5	1969	1.26	3.066	16.52	0.703	0.647	184.158502
A1_5_1970	A1	5	1970	1.26	3.066	16.52	0.703	0.647	184.158502
A1_5_1971	A1	5	1971	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_5_1972	A1	5	1972	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_5_1973	A1	5	1973	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_5_1974	A1	5	1974	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_5_1975	A1	5	1975	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_5_1976	A1	5	1976	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_5_1977	A1	5	1977	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_5_1978	A1	5	1978	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_5_1979	A1	5	1979	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_5_1980	A1	5	1980	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_5_1981	A1	5	1981	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_5_1982	A1	5	1982	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_5_1983	A1	5	1983	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_5_1984	A1	5	1984	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_5_1985	A1	5	1985	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_5_1986	A1	5	1986	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_5_1987	A1	5	1987	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_5_1988	A1	5	1988	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_5_1989	A1	5	1989	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_5_1990	A1	5	1990	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_5_1991	A1	5	1991	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_5_1992	A1	5	1992	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_5_1993	A1	5	1993	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_5_1994	A1	5	1994	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_5_1995	A1	5	1995	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_5_1996	A1	5	1996	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_5_1997	A1	5	1997	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_5_1998	A1	5	1998	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_5_1999	A1	5	1999	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_5_2000	A1	5	2000	0.68	1.971	7.31	0.361	0.332	184.158502
A1_5_2001	A1	5	2001	0.68	1.971	7.31	0.361	0.332	184.158502
A1_5_2002	A1	5	2002	0.68	1.971	7.31	0.361	0.332	184.158502
A1_5_2003	A1	5	2003	0.68	1.971	7.31	0.361	0.332	184.158502
A1_5_2004	A1	5	2004	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2005	A1	5	2005	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2006	A1	5	2006	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2007	A1	5	2007	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2008	A1	5	2008	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2009	A1	5	2009	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2010	A1	5	2010	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2011	A1	5	2011	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2012	A1	5	2012	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2013	A1	5	2013	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_5_2014	A1	5	2014	0.68	3.73	3.99	0.08	0.074	184.158502
A1_5_2015	A1	5	2015	0.68	3.73	3.99	0.08	0.074	184.158502
A1_5_2016	A1	5	2016	0.68	3.73	3.99	0.08	0.074	184.158502
A1_5_2017	A1	5	2017	0.68	3.73	3.99	0.08	0.074	184.158502
A1_5_2018	A1	5	2018	0.68	3.73	3.99	0.08	0.074	184.158502
A1_5_2019	A1	5	2019	0.68	3.73	3.99	0.08	0.074	184.158502
A1_5_2020	A1	5	2020	0.68	3.73	3.99	0.08	0.074	184.158502
A1_6_1969	A1	6	1969	1.26	3.066	16.52	0.703	0.647	184.158502
A1_6_1970	A1	6	1970	1.26	3.066	16.52	0.703	0.647	184.158502
A1_6_1971	A1	6	1971	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_6_1972	A1	6	1972	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_6_1973	A1	6	1973	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_6_1974	A1	6	1974	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_6_1975	A1	6	1975	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_6_1976	A1	6	1976	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_6_1977	A1	6	1977	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_6_1978	A1	6	1978	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_6_1979	A1	6	1979	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_6_1980	A1	6	1980	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_6_1981	A1	6	1981	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_6_1982	A1	6	1982	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_6_1983	A1	6	1983	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_6_1984	A1	6	1984	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_6_1985	A1	6	1985	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_6_1986	A1	6	1986	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_6_1987	A1	6	1987	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_6_1988	A1	6	1988	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_6_1989	A1	6	1989	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_6_1990	A1	6	1990	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_6_1991	A1	6	1991	0.84	2.993	12.98	0.5035	0.463	184.158502

A1_6_1992	A1	6	1992	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_6_1993	A1	6	1993	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_6_1994	A1	6	1994	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_6_1995	A1	6	1995	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_6_1996	A1	6	1996	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_6_1997	A1	6	1997	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_6_1998	A1	6	1998	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_6_1999	A1	6	1999	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_6_2000	A1	6	2000	0.68	1.971	7.31	0.361	0.332	184.158502
A1_6_2001	A1	6	2001	0.68	1.971	7.31	0.361	0.332	184.158502
A1_6_2002	A1	6	2002	0.68	1.971	7.31	0.361	0.332	184.158502
A1_6_2003	A1	6	2003	0.68	1.971	7.31	0.361	0.332	184.158502
A1_6_2004	A1	6	2004	0.68	1.971	7.31	0.361	0.332	184.158502
A1_6_2005	A1	6	2005	0.68	1.971	7.31	0.361	0.332	184.158502
A1_6_2006	A1	6	2006	0.68	1.971	7.31	0.361	0.332	184.158502
A1_6_2007	A1	6	2007	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_6_2008	A1	6	2008	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_6_2009	A1	6	2009	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_6_2010	A1	6	2010	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_6_2011	A1	6	2011	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_6_2012	A1	6	2012	0.68	3.73	5.1015	0.15	0.138	184.158502
A1_6_2013	A1	6	2013	0.68	3.73	3.99	0.08	0.074	184.158502
A1_6_2014	A1	6	2014	0.68	3.73	3.99	0.08	0.074	184.158502
A1_6_2015	A1	6	2015	0.68	3.73	3.99	0.08	0.074	184.158502
A1_6_2016	A1	6	2016	0.68	3.73	3.99	0.08	0.074	184.158502
A1_6_2017	A1	6	2017	0.68	3.73	3.99	0.08	0.074	184.158502
A1_6_2018	A1	6	2018	0.68	3.73	3.99	0.08	0.074	184.158502
A1_6_2019	A1	6	2019	0.68	3.73	3.99	0.08	0.074	184.158502
A1_6_2020	A1	6	2020	0.68	3.73	3.99	0.08	0.074	184.158502
A1_7_1969	A1	7	1969	1.26	3.066	16.52	0.703	0.647	184.158502
A1_7_1970	A1	7	1970	1.26	3.066	16.52	0.703	0.647	184.158502
A1_7_1971	A1	7	1971	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_7_1972	A1	7	1972	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_7_1973	A1	7	1973	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_7_1974	A1	7	1974	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_7_1975	A1	7	1975	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_7_1976	A1	7	1976	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_7_1977	A1	7	1977	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_7_1978	A1	7	1978	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_7_1979	A1	7	1979	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_7_1980	A1	7	1980	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_7_1981	A1	7	1981	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_7_1982	A1	7	1982	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_7_1983	A1	7	1983	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_7_1984	A1	7	1984	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_7_1985	A1	7	1985	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_7_1986	A1	7	1986	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_7_1987	A1	7	1987	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1988	A1	7	1988	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1989	A1	7	1989	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1990	A1	7	1990	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1991	A1	7	1991	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1992	A1	7	1992	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1993	A1	7	1993	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1994	A1	7	1994	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1995	A1	7	1995	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1996	A1	7	1996	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1997	A1	7	1997	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1998	A1	7	1998	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_7_1999	A1	7	1999	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_7_2000	A1	7	2000	0.68	1.971	7.31	0.361	0.332	184.158502
A1_7_2001	A1	7	2001	0.68	1.971	7.31	0.361	0.332	184.158502
A1_7_2002	A1	7	2002	0.68	1.971	7.31	0.361	0.332	184.158502
A1_7_2003	A1	7	2003	0.68	1.971	7.31	0.361	0.332	184.158502
A1_7_2004	A1	7	2004	0.68	1.971	7.31	0.361	0.332	184.158502
A1_7_2005	A1	7	2005	0.68	1.971	7.31	0.361	0.332	184.158502
A1_7_2006	A1	7	2006	0.68	1.971	7.31	0.361	0.332	184.158502
A1_7_2007	A1	7	2007	0.68	3.73	5.529	0.2	0.184	184.158502
A1_7_2008	A1	7	2008	0.68	3.73	5.529	0.2	0.184	184.158502
A1_7_2009	A1	7	2009	0.68	3.73	5.529	0.2	0.184	184.158502
A1_7_2010	A1	7	2010	0.68	3.73	5.529	0.2	0.184	184.158502
A1_7_2011	A1	7	2011	0.68	3.73	5.529	0.2	0.184	184.158502
A1_7_2012	A1	7	2012	0.68	3.73	4.085	0.08	0.074	184.158502
A1_7_2013	A1	7	2013	0.68	3.73	4.085	0.08	0.074	184.158502
A1_7_2014	A1	7	2014	0.68	3.73	4.085	0.08	0.074	184.158502
A1_7_2015	A1	7	2015	0.68	3.73	4.085	0.08	0.074	184.158502
A1_7_2016	A1	7	2016	0.68	3.73	4.085	0.08	0.074	184.158502
A1_7_2017	A1	7	2017	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_7_2018	A1	7	2018	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_7_2019	A1	7	2019	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_7_2020	A1	7	2020	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_8_1969	A1	8	1969	1.26	3.066	16.52	0.703	0.647	184.158502
A1_8_1970	A1	8	1970	1.26	3.066	16.52	0.703	0.647	184.158502
A1_8_1971	A1	8	1971	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_8_1972	A1	8	1972	1.05	3.066	15.34	0.5985	0.551	184.158502

A1_8_1973	A1	8	1973	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_8_1974	A1	8	1974	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_8_1975	A1	8	1975	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_8_1976	A1	8	1976	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_8_1977	A1	8	1977	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_8_1978	A1	8	1978	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_8_1979	A1	8	1979	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_8_1980	A1	8	1980	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_8_1981	A1	8	1981	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_8_1982	A1	8	1982	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_8_1983	A1	8	1983	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_8_1984	A1	8	1984	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_8_1985	A1	8	1985	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_8_1986	A1	8	1986	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_8_1987	A1	8	1987	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1988	A1	8	1988	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1989	A1	8	1989	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1990	A1	8	1990	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1991	A1	8	1991	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1992	A1	8	1992	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1993	A1	8	1993	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1994	A1	8	1994	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1995	A1	8	1995	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1996	A1	8	1996	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1997	A1	8	1997	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1998	A1	8	1998	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_8_1999	A1	8	1999	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_8_2000	A1	8	2000	0.68	1.971	7.31	0.361	0.332	184.158502
A1_8_2001	A1	8	2001	0.68	1.971	7.31	0.361	0.332	184.158502
A1_8_2002	A1	8	2002	0.68	1.971	7.31	0.361	0.332	184.158502
A1_8_2003	A1	8	2003	0.68	1.971	7.31	0.361	0.332	184.158502
A1_8_2004	A1	8	2004	0.68	1.971	7.31	0.361	0.332	184.158502
A1_8_2005	A1	8	2005	0.68	1.971	7.31	0.361	0.332	184.158502
A1_8_2006	A1	8	2006	0.68	1.971	7.31	0.361	0.332	184.158502
A1_8_2007	A1	8	2007	0.68	3.73	5.529	0.2	0.184	184.158502
A1_8_2008	A1	8	2008	0.68	3.73	5.529	0.2	0.184	184.158502
A1_8_2009	A1	8	2009	0.68	3.73	5.529	0.2	0.184	184.158502
A1_8_2010	A1	8	2010	0.68	3.73	5.529	0.2	0.184	184.158502
A1_8_2011	A1	8	2011	0.68	3.73	5.529	0.2	0.184	184.158502
A1_8_2012	A1	8	2012	0.68	3.73	5.529	0.2	0.184	184.158502
A1_8_2013	A1	8	2013	0.68	3.73	4.37	0.1	0.092	184.158502
A1_8_2014	A1	8	2014	0.68	3.73	4.37	0.1	0.092	184.158502
A1_8_2015	A1	8	2015	0.68	3.73	4.37	0.1	0.092	184.158502
A1_8_2016	A1	8	2016	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_8_2017	A1	8	2017	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_8_2018	A1	8	2018	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_8_2019	A1	8	2019	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_8_2020	A1	8	2020	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_9_1969	A1	9	1969	1.26	3.066	16.52	0.703	0.647	184.158502
A1_9_1970	A1	9	1970	1.26	3.066	16.52	0.703	0.647	184.158502
A1_9_1971	A1	9	1971	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_9_1972	A1	9	1972	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_9_1973	A1	9	1973	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_9_1974	A1	9	1974	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_9_1975	A1	9	1975	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_9_1976	A1	9	1976	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_9_1977	A1	9	1977	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_9_1978	A1	9	1978	1.05	3.066	15.34	0.5985	0.551	184.158502
A1_9_1979	A1	9	1979	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_9_1980	A1	9	1980	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_9_1981	A1	9	1981	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_9_1982	A1	9	1982	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_9_1983	A1	9	1983	0.95	3.066	14.16	0.5035	0.463	184.158502
A1_9_1984	A1	9	1984	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_9_1985	A1	9	1985	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_9_1986	A1	9	1986	0.9	3.066	12.98	0.5035	0.463	184.158502
A1_9_1987	A1	9	1987	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1988	A1	9	1988	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1989	A1	9	1989	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1990	A1	9	1990	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1991	A1	9	1991	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1992	A1	9	1992	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1993	A1	9	1993	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1994	A1	9	1994	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1995	A1	9	1995	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1996	A1	9	1996	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1997	A1	9	1997	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1998	A1	9	1998	0.84	2.993	12.98	0.5035	0.463	184.158502
A1_9_1999	A1	9	1999	0.68	1.971	9.6406	0.361	0.332	184.158502
A1_9_2000	A1	9	2000	0.68	1.971	7.31	0.361	0.332	184.158502
A1_9_2001	A1	9	2001	0.68	1.971	7.31	0.361	0.332	184.158502
A1_9_2002	A1	9	2002	0.68	1.971	7.31	0.361	0.332	184.158502
A1_9_2003	A1	9	2003	0.68	1.971	7.31	0.361	0.332	184.158502
A1_9_2004	A1	9	2004	0.68	1.971	7.31	0.361	0.332	184.158502
A1_9_2005	A1	9	2005	0.68	1.971	7.31	0.361	0.332	184.158502

A1_9_2006	A1	9	2006	0.68	1.971	7.31	0.361	0.332	184.158502
A1_9_2007	A1	9	2007	0.68	3.73	5.529	0.2	0.184	184.158502
A1_9_2008	A1	9	2008	0.68	3.73	5.529	0.2	0.184	184.158502
A1_9_2009	A1	9	2009	0.68	3.73	5.529	0.2	0.184	184.158502
A1_9_2010	A1	9	2010	0.68	3.73	5.529	0.2	0.184	184.158502
A1_9_2011	A1	9	2011	0.68	3.73	5.529	0.2	0.184	184.158502
A1_9_2012	A1	9	2012	0.68	3.73	5.529	0.2	0.184	184.158502
A1_9_2013	A1	9	2013	0.68	3.73	5.529	0.2	0.184	184.158502
A1_9_2014	A1	9	2014	0.68	3.73	4.94	0.25	0.230	184.158502
A1_9_2015	A1	9	2015	0.68	3.73	4.94	0.25	0.230	184.158502
A1_9_2016	A1	9	2016	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_9_2017	A1	9	2017	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_9_2018	A1	9	2018	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_9_2019	A1	9	2019	0.1772946	3.73	1.3	0.03	0.028	184.158502
A1_9_2020	A1	9	2020	0.1772946	3.73	1.3	0.03	0.028	184.158502
A2_1_1987	A2	1	1987	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1988	A2	1	1988	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1989	A2	1	1989	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1990	A2	1	1990	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1991	A2	1	1991	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1992	A2	1	1992	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1993	A2	1	1993	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1994	A2	1	1994	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1995	A2	1	1995	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1996	A2	1	1996	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1997	A2	1	1997	2.1896	5.15	6.9	0.6384	0.587	184.158502
A2_1_1998	A2	1	1998	2.142	5.15	6.9	0.6384	0.587	184.158502
A2_1_1999	A2	1	1999	2.142	5.15	6.9	0.6384	0.587	184.158502
A2_1_2000	A2	1	2000	2.142	5.15	6.9	0.6384	0.587	184.158502
A2_1_2001	A2	1	2001	2.142	5.15	6.9	0.6384	0.587	184.158502
A2_1_2002	A2	1	2002	2.142	5.15	6.9	0.6384	0.587	184.158502
A2_1_2003	A2	1	2003	2.142	5.15	6.9	0.6384	0.587	184.158502
A2_1_2004	A2	1	2004	2.142	5.15	6.9	0.6384	0.587	184.158502
A2_1_2005	A2	1	2005	2.142	3.73	5.32	0.3	0.276	184.158502
A2_1_2006	A2	1	2006	2.142	3.73	5.32	0.3	0.276	184.158502
A2_1_2007	A2	1	2007	2.142	3.73	5.32	0.3	0.276	184.158502
A2_1_2008	A2	1	2008	2.142	3.73	5.32	0.3	0.276	184.158502
A2_1_2009	A2	1	2009	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2010	A2	1	2010	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2011	A2	1	2011	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2012	A2	1	2012	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2013	A2	1	2013	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2014	A2	1	2014	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2015	A2	1	2015	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2016	A2	1	2016	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2017	A2	1	2017	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2018	A2	1	2018	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2019	A2	1	2019	2.142	3.73	5.32	0.22	0.202	184.158502
A2_1_2020	A2	1	2020	2.142	3.73	5.32	0.22	0.202	184.158502
A2_2_1987	A2	2	1987	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1988	A2	2	1988	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1989	A2	2	1989	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1990	A2	2	1990	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1991	A2	2	1991	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1992	A2	2	1992	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1993	A2	2	1993	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1994	A2	2	1994	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1995	A2	2	1995	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1996	A2	2	1996	1.7136	4.944	13	0.7056	0.649	184.158502
A2_2_1997	A2	2	1997	1.1781	3.5947	8.75	0.5796	0.533	184.158502
A2_2_1998	A2	2	1998	1.1781	3.5947	8.75	0.5796	0.533	184.158502
A2_2_1999	A2	2	1999	1.1781	3.5947	8.75	0.5796	0.533	184.158502
A2_2_2000	A2	2	2000	1.1781	3.5947	7.31	0.5796	0.533	184.158502
A2_2_2001	A2	2	2001	1.1781	3.5947	7.31	0.5796	0.533	184.158502
A2_2_2002	A2	2	2002	1.1781	3.5947	7.31	0.5796	0.533	184.158502
A2_2_2003	A2	2	2003	1.1781	3.5947	7.31	0.5796	0.533	184.158502
A2_2_2004	A2	2	2004	1.1781	3.5947	7.31	0.5796	0.533	184.158502
A2_2_2005	A2	2	2005	1.1781	3.73	5.32	0.3	0.276	184.158502
A2_2_2006	A2	2	2006	1.1781	3.73	5.32	0.3	0.276	184.158502
A2_2_2007	A2	2	2007	1.1781	3.73	5.32	0.3	0.276	184.158502
A2_2_2008	A2	2	2008	1.1781	3.73	5.32	0.3	0.276	184.158502
A2_2_2009	A2	2	2009	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2010	A2	2	2010	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2011	A2	2	2011	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2012	A2	2	2012	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2013	A2	2	2013	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2014	A2	2	2014	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2015	A2	2	2015	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2016	A2	2	2016	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2017	A2	2	2017	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2018	A2	2	2018	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2019	A2	2	2019	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_2_2020	A2	2	2020	1.1781	3.73	5.32	0.22	0.202	184.158502
A2_3_1969	A2	3	1969	1.5708	4.532	14	0.6468	0.595	184.158502
A2_3_1970	A2	3	1970	1.5708	4.532	14	0.6468	0.595	184.158502

A2_3_1971	A2	3	1971	1.309	4.532	13	0.5544	0.510	184.158502
A2_3_1972	A2	3	1972	1.309	4.532	13	0.5544	0.510	184.158502
A2_3_1973	A2	3	1973	1.309	4.532	13	0.5544	0.510	184.158502
A2_3_1974	A2	3	1974	1.309	4.532	13	0.5544	0.510	184.158502
A2_3_1975	A2	3	1975	1.309	4.532	13	0.5544	0.510	184.158502
A2_3_1976	A2	3	1976	1.309	4.532	13	0.5544	0.510	184.158502
A2_3_1977	A2	3	1977	1.309	4.532	13	0.5544	0.510	184.158502
A2_3_1978	A2	3	1978	1.309	4.532	13	0.5544	0.510	184.158502
A2_3_1979	A2	3	1979	1.19	4.532	12	0.462	0.425	184.158502
A2_3_1980	A2	3	1980	1.19	4.532	12	0.462	0.425	184.158502
A2_3_1981	A2	3	1981	1.19	4.532	12	0.462	0.425	184.158502
A2_3_1982	A2	3	1982	1.19	4.532	12	0.462	0.425	184.158502
A2_3_1983	A2	3	1983	1.19	4.532	12	0.462	0.425	184.158502
A2_3_1984	A2	3	1984	1.1186	4.429	11	0.462	0.425	184.158502
A2_3_1985	A2	3	1985	1.1186	4.429	11	0.462	0.425	184.158502
A2_3_1986	A2	3	1986	1.1186	4.429	11	0.462	0.425	184.158502
A2_3_1987	A2	3	1987	1.0472	4.326	11	0.462	0.425	184.158502
A2_3_1988	A2	3	1988	1.0472	4.326	11	0.462	0.425	184.158502
A2_3_1989	A2	3	1989	1.0472	4.326	11	0.462	0.425	184.158502
A2_3_1990	A2	3	1990	1.0472	4.326	11	0.462	0.425	184.158502
A2_3_1991	A2	3	1991	1.0472	4.326	11	0.462	0.425	184.158502
A2_3_1992	A2	3	1992	1.0472	4.326	11	0.462	0.425	184.158502
A2_3_1993	A2	3	1993	1.0472	4.326	11	0.462	0.425	184.158502
A2_3_1994	A2	3	1994	1.0472	4.326	11	0.462	0.425	184.158502
A2_3_1995	A2	3	1995	1.0472	4.326	11	0.462	0.425	184.158502
A2_3_1996	A2	3	1996	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_3_1997	A2	3	1997	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_3_1998	A2	3	1998	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_3_1999	A2	3	1999	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_3_2000	A2	3	2000	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_3_2001	A2	3	2001	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_3_2002	A2	3	2002	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_3_2003	A2	3	2003	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_3_2004	A2	3	2004	0.8092	3.73	5.1015	0.22	0.202	184.158502
A2_3_2005	A2	3	2005	0.8092	3.73	5.1015	0.22	0.202	184.158502
A2_3_2006	A2	3	2006	0.8092	3.73	5.1015	0.22	0.202	184.158502
A2_3_2007	A2	3	2007	0.8092	3.73	5.1015	0.22	0.202	184.158502
A2_3_2008	A2	3	2008	0.8092	3.73	5.1015	0.22	0.202	184.158502
A2_3_2009	A2	3	2009	0.8092	3.73	5.1015	0.22	0.202	184.158502
A2_3_2010	A2	3	2010	0.8092	3.73	5.1015	0.22	0.202	184.158502
A2_3_2011	A2	3	2011	0.8092	3.73	5.1015	0.22	0.202	184.158502
A2_3_2012	A2	3	2012	0.8092	3.73	5.1015	0.22	0.202	184.158502
A2_3_2013	A2	3	2013	0.8092	3.73	3.8	0.09	0.083	184.158502
A2_3_2014	A2	3	2014	0.8092	3.73	3.8	0.09	0.083	184.158502
A2_3_2015	A2	3	2015	0.8092	3.73	3.8	0.09	0.083	184.158502
A2_3_2016	A2	3	2016	0.8092	3.73	3.8	0.09	0.083	184.158502
A2_3_2017	A2	3	2017	0.8092	3.73	3.8	0.09	0.083	184.158502
A2_3_2018	A2	3	2018	0.8092	3.73	3.8	0.09	0.083	184.158502
A2_3_2019	A2	3	2019	0.8092	3.73	3.8	0.09	0.083	184.158502
A2_3_2020	A2	3	2020	0.8092	3.73	3.8	0.09	0.083	184.158502
A2_4_1969	A2	4	1969	1.5708	4.532	14	0.6468	0.595	184.158502
A2_4_1970	A2	4	1970	1.5708	4.532	14	0.6468	0.595	184.158502
A2_4_1971	A2	4	1971	1.309	4.532	13	0.5544	0.510	184.158502
A2_4_1972	A2	4	1972	1.309	4.532	13	0.5544	0.510	184.158502
A2_4_1973	A2	4	1973	1.309	4.532	13	0.5544	0.510	184.158502
A2_4_1974	A2	4	1974	1.309	4.532	13	0.5544	0.510	184.158502
A2_4_1975	A2	4	1975	1.309	4.532	13	0.5544	0.510	184.158502
A2_4_1976	A2	4	1976	1.309	4.532	13	0.5544	0.510	184.158502
A2_4_1977	A2	4	1977	1.309	4.532	13	0.5544	0.510	184.158502
A2_4_1978	A2	4	1978	1.309	4.532	13	0.5544	0.510	184.158502
A2_4_1979	A2	4	1979	1.19	4.532	12	0.462	0.425	184.158502
A2_4_1980	A2	4	1980	1.19	4.532	12	0.462	0.425	184.158502
A2_4_1981	A2	4	1981	1.19	4.532	12	0.462	0.425	184.158502
A2_4_1982	A2	4	1982	1.19	4.532	12	0.462	0.425	184.158502
A2_4_1983	A2	4	1983	1.19	4.532	12	0.462	0.425	184.158502
A2_4_1984	A2	4	1984	1.1186	4.429	11	0.462	0.425	184.158502
A2_4_1985	A2	4	1985	1.1186	4.429	11	0.462	0.425	184.158502
A2_4_1986	A2	4	1986	1.1186	4.429	11	0.462	0.425	184.158502
A2_4_1987	A2	4	1987	1.0472	4.326	11	0.462	0.425	184.158502
A2_4_1988	A2	4	1988	1.0472	4.326	11	0.462	0.425	184.158502
A2_4_1989	A2	4	1989	1.0472	4.326	11	0.462	0.425	184.158502
A2_4_1990	A2	4	1990	1.0472	4.326	11	0.462	0.425	184.158502
A2_4_1991	A2	4	1991	1.0472	4.326	11	0.462	0.425	184.158502
A2_4_1992	A2	4	1992	1.0472	4.326	11	0.462	0.425	184.158502
A2_4_1993	A2	4	1993	1.0472	4.326	11	0.462	0.425	184.158502
A2_4_1994	A2	4	1994	1.0472	4.326	11	0.462	0.425	184.158502
A2_4_1995	A2	4	1995	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_4_1996	A2	4	1996	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_4_1997	A2	4	1997	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_4_1998	A2	4	1998	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_4_1999	A2	4	1999	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_4_2000	A2	4	2000	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_4_2001	A2	4	2001	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_4_2002	A2	4	2002	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_4_2003	A2	4	2003	0.8092	2.781	7.31	0.3192	0.294	184.158502

A2_4_2004	A2	4	2004	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2005	A2	4	2005	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2006	A2	4	2006	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2007	A2	4	2007	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2008	A2	4	2008	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2009	A2	4	2009	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2010	A2	4	2010	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2011	A2	4	2011	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2012	A2	4	2012	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2013	A2	4	2013	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_4_2014	A2	4	2014	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_4_2015	A2	4	2015	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_4_2016	A2	4	2016	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_4_2017	A2	4	2017	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_4_2018	A2	4	2018	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_4_2019	A2	4	2019	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_4_2020	A2	4	2020	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_5_1969	A2	5	1969	1.4994	4.326	14	0.6216	0.572	184.158502
A2_5_1970	A2	5	1970	1.4994	4.326	14	0.6216	0.572	184.158502
A2_5_1971	A2	5	1971	1.2495	4.326	13	0.5292	0.487	184.158502
A2_5_1972	A2	5	1972	1.2495	4.326	13	0.5292	0.487	184.158502
A2_5_1973	A2	5	1973	1.2495	4.326	13	0.5292	0.487	184.158502
A2_5_1974	A2	5	1974	1.2495	4.326	13	0.5292	0.487	184.158502
A2_5_1975	A2	5	1975	1.2495	4.326	13	0.5292	0.487	184.158502
A2_5_1976	A2	5	1976	1.2495	4.326	13	0.5292	0.487	184.158502
A2_5_1977	A2	5	1977	1.2495	4.326	13	0.5292	0.487	184.158502
A2_5_1978	A2	5	1978	1.2495	4.326	13	0.5292	0.487	184.158502
A2_5_1979	A2	5	1979	1.1305	4.326	12	0.4452	0.410	184.158502
A2_5_1980	A2	5	1980	1.1305	4.326	12	0.4452	0.410	184.158502
A2_5_1981	A2	5	1981	1.1305	4.326	12	0.4452	0.410	184.158502
A2_5_1982	A2	5	1982	1.1305	4.326	12	0.4452	0.410	184.158502
A2_5_1983	A2	5	1983	1.1305	4.326	12	0.4452	0.410	184.158502
A2_5_1984	A2	5	1984	1.071	4.326	11	0.4452	0.410	184.158502
A2_5_1985	A2	5	1985	1.071	4.326	11	0.4452	0.410	184.158502
A2_5_1986	A2	5	1986	1.071	4.326	11	0.4452	0.410	184.158502
A2_5_1987	A2	5	1987	0.9996	4.223	11	0.4452	0.410	184.158502
A2_5_1988	A2	5	1988	0.9996	4.223	11	0.4452	0.410	184.158502
A2_5_1989	A2	5	1989	0.9996	4.223	11	0.4452	0.410	184.158502
A2_5_1990	A2	5	1990	0.9996	4.223	11	0.4452	0.410	184.158502
A2_5_1991	A2	5	1991	0.9996	4.223	11	0.4452	0.410	184.158502
A2_5_1992	A2	5	1992	0.9996	4.223	11	0.4452	0.410	184.158502
A2_5_1993	A2	5	1993	0.9996	4.223	11	0.4452	0.410	184.158502
A2_5_1994	A2	5	1994	0.9996	4.223	11	0.4452	0.410	184.158502
A2_5_1995	A2	5	1995	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_5_1996	A2	5	1996	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_5_1997	A2	5	1997	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_5_1998	A2	5	1998	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_5_1999	A2	5	1999	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_5_2000	A2	5	2000	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_5_2001	A2	5	2001	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_5_2002	A2	5	2002	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_5_2003	A2	5	2003	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_5_2004	A2	5	2004	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2005	A2	5	2005	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2006	A2	5	2006	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2007	A2	5	2007	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2008	A2	5	2008	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2009	A2	5	2009	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2010	A2	5	2010	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2011	A2	5	2011	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2012	A2	5	2012	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2013	A2	5	2013	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_5_2014	A2	5	2014	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_5_2015	A2	5	2015	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_5_2016	A2	5	2016	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_5_2017	A2	5	2017	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_5_2018	A2	5	2018	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_5_2019	A2	5	2019	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_5_2020	A2	5	2020	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_6_1969	A2	6	1969	1.4994	4.326	14	0.6216	0.572	184.158502
A2_6_1970	A2	6	1970	1.4994	4.326	14	0.6216	0.572	184.158502
A2_6_1971	A2	6	1971	1.2495	4.326	13	0.5292	0.487	184.158502
A2_6_1972	A2	6	1972	1.2495	4.326	13	0.5292	0.487	184.158502
A2_6_1973	A2	6	1973	1.2495	4.326	13	0.5292	0.487	184.158502
A2_6_1974	A2	6	1974	1.2495	4.326	13	0.5292	0.487	184.158502
A2_6_1975	A2	6	1975	1.2495	4.326	13	0.5292	0.487	184.158502
A2_6_1976	A2	6	1976	1.2495	4.326	13	0.5292	0.487	184.158502
A2_6_1977	A2	6	1977	1.2495	4.326	13	0.5292	0.487	184.158502
A2_6_1978	A2	6	1978	1.2495	4.326	13	0.5292	0.487	184.158502
A2_6_1979	A2	6	1979	1.1305	4.326	12	0.4452	0.410	184.158502
A2_6_1980	A2	6	1980	1.1305	4.326	12	0.4452	0.410	184.158502
A2_6_1981	A2	6	1981	1.1305	4.326	12	0.4452	0.410	184.158502
A2_6_1982	A2	6	1982	1.1305	4.326	12	0.4452	0.410	184.158502
A2_6_1983	A2	6	1983	1.1305	4.326	12	0.4452	0.410	184.158502
A2_6_1984	A2	6	1984	1.071	4.326	11	0.4452	0.410	184.158502

A2_6_1985	A2	6	1985	1.071	4.326	11	0.4452	0.410	184.158502
A2_6_1986	A2	6	1986	1.071	4.326	11	0.4452	0.410	184.158502
A2_6_1987	A2	6	1987	0.9996	4.223	11	0.4452	0.410	184.158502
A2_6_1988	A2	6	1988	0.9996	4.223	11	0.4452	0.410	184.158502
A2_6_1989	A2	6	1989	0.9996	4.223	11	0.4452	0.410	184.158502
A2_6_1990	A2	6	1990	0.9996	4.223	11	0.4452	0.410	184.158502
A2_6_1991	A2	6	1991	0.9996	4.223	11	0.4452	0.410	184.158502
A2_6_1992	A2	6	1992	0.9996	4.223	11	0.4452	0.410	184.158502
A2_6_1993	A2	6	1993	0.9996	4.223	11	0.4452	0.410	184.158502
A2_6_1994	A2	6	1994	0.9996	4.223	11	0.4452	0.410	184.158502
A2_6_1995	A2	6	1995	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_6_1996	A2	6	1996	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_6_1997	A2	6	1997	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_6_1998	A2	6	1998	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_6_1999	A2	6	1999	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_6_2000	A2	6	2000	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_6_2001	A2	6	2001	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_6_2002	A2	6	2002	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_6_2003	A2	6	2003	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_6_2004	A2	6	2004	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_6_2005	A2	6	2005	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_6_2006	A2	6	2006	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_6_2007	A2	6	2007	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_6_2008	A2	6	2008	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_6_2009	A2	6	2009	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_6_2010	A2	6	2010	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_6_2011	A2	6	2011	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_6_2012	A2	6	2012	0.8092	3.73	5.1015	0.15	0.138	184.158502
A2_6_2013	A2	6	2013	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_6_2014	A2	6	2014	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_6_2015	A2	6	2015	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_6_2016	A2	6	2016	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_6_2017	A2	6	2017	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_6_2018	A2	6	2018	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_6_2019	A2	6	2019	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_6_2020	A2	6	2020	0.8092	3.73	3.99	0.08	0.074	184.158502
A2_7_1969	A2	7	1969	1.4994	4.326	14	0.6216	0.572	184.158502
A2_7_1970	A2	7	1970	1.4994	4.326	14	0.6216	0.572	184.158502
A2_7_1971	A2	7	1971	1.2495	4.326	13	0.5292	0.487	184.158502
A2_7_1972	A2	7	1972	1.2495	4.326	13	0.5292	0.487	184.158502
A2_7_1973	A2	7	1973	1.2495	4.326	13	0.5292	0.487	184.158502
A2_7_1974	A2	7	1974	1.2495	4.326	13	0.5292	0.487	184.158502
A2_7_1975	A2	7	1975	1.2495	4.326	13	0.5292	0.487	184.158502
A2_7_1976	A2	7	1976	1.2495	4.326	13	0.5292	0.487	184.158502
A2_7_1977	A2	7	1977	1.2495	4.326	13	0.5292	0.487	184.158502
A2_7_1978	A2	7	1978	1.2495	4.326	13	0.5292	0.487	184.158502
A2_7_1979	A2	7	1979	1.1305	4.326	12	0.4452	0.410	184.158502
A2_7_1980	A2	7	1980	1.1305	4.326	12	0.4452	0.410	184.158502
A2_7_1981	A2	7	1981	1.1305	4.326	12	0.4452	0.410	184.158502
A2_7_1982	A2	7	1982	1.1305	4.326	12	0.4452	0.410	184.158502
A2_7_1983	A2	7	1983	1.1305	4.326	12	0.4452	0.410	184.158502
A2_7_1984	A2	7	1984	1.071	4.326	11	0.4452	0.410	184.158502
A2_7_1985	A2	7	1985	1.071	4.326	11	0.4452	0.410	184.158502
A2_7_1986	A2	7	1986	1.071	4.326	11	0.4452	0.410	184.158502
A2_7_1987	A2	7	1987	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1988	A2	7	1988	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1989	A2	7	1989	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1990	A2	7	1990	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1991	A2	7	1991	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1992	A2	7	1992	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1993	A2	7	1993	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1994	A2	7	1994	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1995	A2	7	1995	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1996	A2	7	1996	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1997	A2	7	1997	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1998	A2	7	1998	0.9996	4.223	11	0.4452	0.410	184.158502
A2_7_1999	A2	7	1999	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_7_2000	A2	7	2000	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_7_2001	A2	7	2001	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_7_2002	A2	7	2002	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_7_2003	A2	7	2003	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_7_2004	A2	7	2004	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_7_2005	A2	7	2005	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_7_2006	A2	7	2006	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_7_2007	A2	7	2007	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_7_2008	A2	7	2008	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_7_2009	A2	7	2009	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_7_2010	A2	7	2010	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_7_2011	A2	7	2011	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_7_2012	A2	7	2012	0.8092	3.73	4.085	0.08	0.074	184.158502
A2_7_2013	A2	7	2013	0.8092	3.73	4.085	0.08	0.074	184.158502
A2_7_2014	A2	7	2014	0.8092	3.73	4.085	0.08	0.074	184.158502
A2_7_2015	A2	7	2015	0.8092	3.73	4.085	0.08	0.074	184.158502
A2_7_2016	A2	7	2016	0.8092	3.73	4.085	0.08	0.074	184.158502
A2_7_2017	A2	7	2017	0.1772946	3.73	1.3	0.03	0.028	184.158502

A2_7_2018	A2	7	2018	0.1772946	3.73	1.3	0.03	0.028	184.158502
A2_7_2019	A2	7	2019	0.1772946	3.73	1.3	0.03	0.028	184.158502
A2_7_2020	A2	7	2020	0.1772946	3.73	1.3	0.03	0.028	184.158502
A2_8_1969	A2	8	1969	1.4994	4.326	14	0.6216	0.572	184.158502
A2_8_1970	A2	8	1970	1.4994	4.326	14	0.6216	0.572	184.158502
A2_8_1971	A2	8	1971	1.2495	4.326	13	0.5292	0.487	184.158502
A2_8_1972	A2	8	1972	1.2495	4.326	13	0.5292	0.487	184.158502
A2_8_1973	A2	8	1973	1.2495	4.326	13	0.5292	0.487	184.158502
A2_8_1974	A2	8	1974	1.2495	4.326	13	0.5292	0.487	184.158502
A2_8_1975	A2	8	1975	1.2495	4.326	13	0.5292	0.487	184.158502
A2_8_1976	A2	8	1976	1.2495	4.326	13	0.5292	0.487	184.158502
A2_8_1977	A2	8	1977	1.2495	4.326	13	0.5292	0.487	184.158502
A2_8_1978	A2	8	1978	1.2495	4.326	13	0.5292	0.487	184.158502
A2_8_1979	A2	8	1979	1.1305	4.326	12	0.4452	0.410	184.158502
A2_8_1980	A2	8	1980	1.1305	4.326	12	0.4452	0.410	184.158502
A2_8_1981	A2	8	1981	1.1305	4.326	12	0.4452	0.410	184.158502
A2_8_1982	A2	8	1982	1.1305	4.326	12	0.4452	0.410	184.158502
A2_8_1983	A2	8	1983	1.1305	4.326	12	0.4452	0.410	184.158502
A2_8_1984	A2	8	1984	1.071	4.326	11	0.4452	0.410	184.158502
A2_8_1985	A2	8	1985	1.071	4.326	11	0.4452	0.410	184.158502
A2_8_1986	A2	8	1986	1.071	4.326	11	0.4452	0.410	184.158502
A2_8_1987	A2	8	1987	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1988	A2	8	1988	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1989	A2	8	1989	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1990	A2	8	1990	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1991	A2	8	1991	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1992	A2	8	1992	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1993	A2	8	1993	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1994	A2	8	1994	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1995	A2	8	1995	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1996	A2	8	1996	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1997	A2	8	1997	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1998	A2	8	1998	0.9996	4.223	11	0.4452	0.410	184.158502
A2_8_1999	A2	8	1999	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_8_2000	A2	8	2000	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_8_2001	A2	8	2001	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_8_2002	A2	8	2002	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_8_2003	A2	8	2003	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_8_2004	A2	8	2004	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_8_2005	A2	8	2005	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_8_2006	A2	8	2006	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_8_2007	A2	8	2007	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_8_2008	A2	8	2008	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_8_2009	A2	8	2009	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_8_2010	A2	8	2010	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_8_2011	A2	8	2011	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_8_2012	A2	8	2012	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_8_2013	A2	8	2013	0.8092	3.73	4.37	0.1	0.092	184.158502
A2_8_2014	A2	8	2014	0.8092	3.73	4.37	0.1	0.092	184.158502
A2_8_2015	A2	8	2015	0.8092	3.73	4.37	0.1	0.092	184.158502
A2_8_2016	A2	8	2016	0.1772946	3.73	1.3	0.03	0.028	184.158502
A2_8_2017	A2	8	2017	0.1772946	3.73	1.3	0.03	0.028	184.158502
A2_8_2018	A2	8	2018	0.1772946	3.73	1.3	0.03	0.028	184.158502
A2_8_2019	A2	8	2019	0.1772946	3.73	1.3	0.03	0.028	184.158502
A2_8_2020	A2	8	2020	0.1772946	3.73	1.3	0.03	0.028	184.158502
A2_9_1969	A2	9	1969	1.4994	4.326	14	0.6216	0.572	184.158502
A2_9_1970	A2	9	1970	1.4994	4.326	14	0.6216	0.572	184.158502
A2_9_1971	A2	9	1971	1.2495	4.326	13	0.5292	0.487	184.158502
A2_9_1972	A2	9	1972	1.2495	4.326	13	0.5292	0.487	184.158502
A2_9_1973	A2	9	1973	1.2495	4.326	13	0.5292	0.487	184.158502
A2_9_1974	A2	9	1974	1.2495	4.326	13	0.5292	0.487	184.158502
A2_9_1975	A2	9	1975	1.2495	4.326	13	0.5292	0.487	184.158502
A2_9_1976	A2	9	1976	1.2495	4.326	13	0.5292	0.487	184.158502
A2_9_1977	A2	9	1977	1.2495	4.326	13	0.5292	0.487	184.158502
A2_9_1978	A2	9	1978	1.2495	4.326	13	0.5292	0.487	184.158502
A2_9_1979	A2	9	1979	1.1305	4.326	12	0.4452	0.410	184.158502
A2_9_1980	A2	9	1980	1.1305	4.326	12	0.4452	0.410	184.158502
A2_9_1981	A2	9	1981	1.1305	4.326	12	0.4452	0.410	184.158502
A2_9_1982	A2	9	1982	1.1305	4.326	12	0.4452	0.410	184.158502
A2_9_1983	A2	9	1983	1.1305	4.326	12	0.4452	0.410	184.158502
A2_9_1984	A2	9	1984	1.071	4.326	11	0.4452	0.410	184.158502
A2_9_1985	A2	9	1985	1.071	4.326	11	0.4452	0.410	184.158502
A2_9_1986	A2	9	1986	1.071	4.326	11	0.4452	0.410	184.158502
A2_9_1987	A2	9	1987	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1988	A2	9	1988	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1989	A2	9	1989	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1990	A2	9	1990	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1991	A2	9	1991	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1992	A2	9	1992	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1993	A2	9	1993	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1994	A2	9	1994	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1995	A2	9	1995	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1996	A2	9	1996	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1997	A2	9	1997	0.9996	4.223	11	0.4452	0.410	184.158502
A2_9_1998	A2	9	1998	0.9996	4.223	11	0.4452	0.410	184.158502

A2_9_1999	A2	9	1999	0.8092	2.781	8.17	0.3192	0.294	184.158502
A2_9_2000	A2	9	2000	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_9_2001	A2	9	2001	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_9_2002	A2	9	2002	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_9_2003	A2	9	2003	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_9_2004	A2	9	2004	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_9_2005	A2	9	2005	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_9_2006	A2	9	2006	0.8092	2.781	7.31	0.3192	0.294	184.158502
A2_9_2007	A2	9	2007	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_9_2008	A2	9	2008	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_9_2009	A2	9	2009	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_9_2010	A2	9	2010	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_9_2011	A2	9	2011	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_9_2012	A2	9	2012	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_9_2013	A2	9	2013	0.8092	3.73	5.529	0.2	0.184	184.158502
A2_9_2014	A2	9	2014	0.8092	3.75	4.94	0.25	0.230	184.158502
A2_9_2015	A2	9	2015	0.8092	3.75	4.94	0.25	0.230	184.158502
A2_9_2016	A2	9	2016	0.1772946	3.75	1.3	0.03	0.028	184.158502
A2_9_2017	A2	9	2017	0.1772946	3.75	1.3	0.03	0.028	184.158502
A2_9_2018	A2	9	2018	0.1772946	3.75	1.3	0.03	0.028	184.158502
A2_9_2019	A2	9	2019	0.1772946	3.75	1.3	0.03	0.028	184.158502
A2_9_2020	A2	9	2020	0.1772946	3.75	1.3	0.03	0.028	184.158502
B1_1_1987	B1	1	1987	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1988	B1	1	1988	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1989	B1	1	1989	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1990	B1	1	1990	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1991	B1	1	1991	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1992	B1	1	1992	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1993	B1	1	1993	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1994	B1	1	1994	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1995	B1	1	1995	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1996	B1	1	1996	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1997	B1	1	1997	2.2264	3.65	8.142	0.722	0.664	184.158502
B1_1_1998	B1	1	1998	2.178	3.65	8.142	0.722	0.664	184.158502
B1_1_1999	B1	1	1999	2.178	3.65	8.142	0.722	0.664	184.158502
B1_1_2000	B1	1	2000	2.178	3.65	7.31	0.722	0.664	184.158502
B1_1_2001	B1	1	2001	2.178	3.65	7.31	0.722	0.664	184.158502
B1_1_2002	B1	1	2002	2.178	3.65	7.31	0.722	0.664	184.158502
B1_1_2003	B1	1	2003	2.178	3.65	7.31	0.722	0.664	184.158502
B1_1_2004	B1	1	2004	2.178	3.65	7.31	0.722	0.664	184.158502
B1_1_2005	B1	1	2005	2.178	3.73	5.32	0.3	0.276	184.158502
B1_1_2006	B1	1	2006	2.178	3.73	5.32	0.3	0.276	184.158502
B1_1_2007	B1	1	2007	2.178	3.73	5.32	0.3	0.276	184.158502
B1_1_2008	B1	1	2008	2.178	3.73	5.32	0.3	0.276	184.158502
B1_1_2009	B1	1	2009	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2010	B1	1	2010	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2011	B1	1	2011	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2012	B1	1	2012	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2013	B1	1	2013	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2014	B1	1	2014	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2015	B1	1	2015	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2016	B1	1	2016	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2017	B1	1	2017	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2018	B1	1	2018	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2019	B1	1	2019	2.178	3.73	5.32	0.22	0.202	184.158502
B1_1_2020	B1	1	2020	2.178	3.73	5.32	0.22	0.202	184.158502
B1_2_1987	B1	2	1987	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1988	B1	2	1988	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1989	B1	2	1989	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1990	B1	2	1990	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1991	B1	2	1991	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1992	B1	2	1992	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1993	B1	2	1993	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1994	B1	2	1994	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1995	B1	2	1995	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1996	B1	2	1996	1.7424	3.504	15.34	0.798	0.734	184.158502
B1_2_1997	B1	2	1997	1.1979	2.5477	10.325	0.6555	0.603	184.158502
B1_2_1998	B1	2	1998	1.1979	2.5477	10.325	0.6555	0.603	184.158502
B1_2_1999	B1	2	1999	1.1979	2.5477	10.325	0.6555	0.603	184.158502
B1_2_2000	B1	2	2000	1.1979	2.5477	7.31	0.6555	0.603	184.158502
B1_2_2001	B1	2	2001	1.1979	2.5477	7.31	0.6555	0.603	184.158502
B1_2_2002	B1	2	2002	1.1979	2.5477	7.31	0.6555	0.603	184.158502
B1_2_2003	B1	2	2003	1.1979	2.5477	7.31	0.6555	0.603	184.158502
B1_2_2004	B1	2	2004	1.1979	2.5477	7.31	0.6555	0.603	184.158502
B1_2_2005	B1	2	2005	1.1979	3.73	5.32	0.3	0.276	184.158502
B1_2_2006	B1	2	2006	1.1979	3.73	5.32	0.3	0.276	184.158502
B1_2_2007	B1	2	2007	1.1979	3.73	5.32	0.3	0.276	184.158502
B1_2_2008	B1	2	2008	1.1979	3.73	5.32	0.3	0.276	184.158502
B1_2_2009	B1	2	2009	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2010	B1	2	2010	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2011	B1	2	2011	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2012	B1	2	2012	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2013	B1	2	2013	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2014	B1	2	2014	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2015	B1	2	2015	1.1979	3.73	5.32	0.22	0.202	184.158502

B1_2_2016	B1	2	2016	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2017	B1	2	2017	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2018	B1	2	2018	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2019	B1	2	2019	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_2_2020	B1	2	2020	1.1979	3.73	5.32	0.22	0.202	184.158502
B1_3_1969	B1	3	1969	1.5972	3.212	16.52	0.7315	0.673	184.158502
B1_3_1970	B1	3	1970	1.5972	3.212	16.52	0.7315	0.673	184.158502
B1_3_1971	B1	3	1971	1.331	3.212	15.34	0.627	0.577	184.158502
B1_3_1972	B1	3	1972	1.331	3.212	15.34	0.627	0.577	184.158502
B1_3_1973	B1	3	1973	1.331	3.212	15.34	0.627	0.577	184.158502
B1_3_1974	B1	3	1974	1.331	3.212	15.34	0.627	0.577	184.158502
B1_3_1975	B1	3	1975	1.331	3.212	15.34	0.627	0.577	184.158502
B1_3_1976	B1	3	1976	1.331	3.212	15.34	0.627	0.577	184.158502
B1_3_1977	B1	3	1977	1.331	3.212	15.34	0.627	0.577	184.158502
B1_3_1978	B1	3	1978	1.331	3.212	15.34	0.627	0.577	184.158502
B1_3_1979	B1	3	1979	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_3_1980	B1	3	1980	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_3_1981	B1	3	1981	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_3_1982	B1	3	1982	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_3_1983	B1	3	1983	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_3_1984	B1	3	1984	1.1374	3.139	12.98	0.5225	0.481	184.158502
B1_3_1985	B1	3	1985	1.1374	3.139	12.98	0.5225	0.481	184.158502
B1_3_1986	B1	3	1986	1.1374	3.139	12.98	0.5225	0.481	184.158502
B1_3_1987	B1	3	1987	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_3_1988	B1	3	1988	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_3_1989	B1	3	1989	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_3_1990	B1	3	1990	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_3_1991	B1	3	1991	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_3_1992	B1	3	1992	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_3_1993	B1	3	1993	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_3_1994	B1	3	1994	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_3_1995	B1	3	1995	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_3_1996	B1	3	1996	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_3_1997	B1	3	1997	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_3_1998	B1	3	1998	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_3_1999	B1	3	1999	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_3_2000	B1	3	2000	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_3_2001	B1	3	2001	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_3_2002	B1	3	2002	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_3_2003	B1	3	2003	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_3_2004	B1	3	2004	0.8228	3.73	5.1015	0.22	0.202	184.158502
B1_3_2005	B1	3	2005	0.8228	3.73	5.1015	0.22	0.202	184.158502
B1_3_2006	B1	3	2006	0.8228	3.73	5.1015	0.22	0.202	184.158502
B1_3_2007	B1	3	2007	0.8228	3.73	5.1015	0.22	0.202	184.158502
B1_3_2008	B1	3	2008	0.8228	3.73	5.1015	0.22	0.202	184.158502
B1_3_2009	B1	3	2009	0.8228	3.73	5.1015	0.22	0.202	184.158502
B1_3_2010	B1	3	2010	0.8228	3.73	5.1015	0.22	0.202	184.158502
B1_3_2011	B1	3	2011	0.8228	3.73	5.1015	0.22	0.202	184.158502
B1_3_2012	B1	3	2012	0.8228	3.73	5.1015	0.22	0.202	184.158502
B1_3_2013	B1	3	2013	0.8228	3.73	3.8	0.09	0.083	184.158502
B1_3_2014	B1	3	2014	0.8228	3.73	3.8	0.09	0.083	184.158502
B1_3_2015	B1	3	2015	0.8228	3.73	3.8	0.09	0.083	184.158502
B1_3_2016	B1	3	2016	0.8228	3.73	3.8	0.09	0.083	184.158502
B1_3_2017	B1	3	2017	0.8228	3.73	3.8	0.09	0.083	184.158502
B1_3_2018	B1	3	2018	0.8228	3.73	3.8	0.09	0.083	184.158502
B1_3_2019	B1	3	2019	0.8228	3.73	3.8	0.09	0.083	184.158502
B1_3_2020	B1	3	2020	0.8228	3.73	3.8	0.09	0.083	184.158502
B1_4_1969	B1	4	1969	1.5972	3.212	16.52	0.7315	0.673	184.158502
B1_4_1970	B1	4	1970	1.5972	3.212	16.52	0.7315	0.673	184.158502
B1_4_1971	B1	4	1971	1.331	3.212	15.34	0.627	0.577	184.158502
B1_4_1972	B1	4	1972	1.331	3.212	15.34	0.627	0.577	184.158502
B1_4_1973	B1	4	1973	1.331	3.212	15.34	0.627	0.577	184.158502
B1_4_1974	B1	4	1974	1.331	3.212	15.34	0.627	0.577	184.158502
B1_4_1975	B1	4	1975	1.331	3.212	15.34	0.627	0.577	184.158502
B1_4_1976	B1	4	1976	1.331	3.212	15.34	0.627	0.577	184.158502
B1_4_1977	B1	4	1977	1.331	3.212	15.34	0.627	0.577	184.158502
B1_4_1978	B1	4	1978	1.331	3.212	15.34	0.627	0.577	184.158502
B1_4_1979	B1	4	1979	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_4_1980	B1	4	1980	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_4_1981	B1	4	1981	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_4_1982	B1	4	1982	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_4_1983	B1	4	1983	1.21	3.212	14.16	0.5225	0.481	184.158502
B1_4_1984	B1	4	1984	1.1374	3.139	12.98	0.5225	0.481	184.158502
B1_4_1985	B1	4	1985	1.1374	3.139	12.98	0.5225	0.481	184.158502
B1_4_1986	B1	4	1986	1.1374	3.139	12.98	0.5225	0.481	184.158502
B1_4_1987	B1	4	1987	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_4_1988	B1	4	1988	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_4_1989	B1	4	1989	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_4_1990	B1	4	1990	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_4_1991	B1	4	1991	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_4_1992	B1	4	1992	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_4_1993	B1	4	1993	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_4_1994	B1	4	1994	1.0648	3.066	12.98	0.5225	0.481	184.158502
B1_4_1995	B1	4	1995	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_4_1996	B1	4	1996	0.8228	1.971	9.6406	0.361	0.332	184.158502

B1_4_1997	B1	4	1997	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_4_1998	B1	4	1998	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_4_1999	B1	4	1999	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_4_2000	B1	4	2000	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_4_2001	B1	4	2001	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_4_2002	B1	4	2002	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_4_2003	B1	4	2003	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_4_2004	B1	4	2004	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2005	B1	4	2005	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2006	B1	4	2006	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2007	B1	4	2007	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2008	B1	4	2008	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2009	B1	4	2009	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2010	B1	4	2010	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2011	B1	4	2011	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2012	B1	4	2012	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2013	B1	4	2013	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_4_2014	B1	4	2014	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_4_2015	B1	4	2015	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_4_2016	B1	4	2016	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_4_2017	B1	4	2017	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_4_2018	B1	4	2018	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_4_2019	B1	4	2019	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_4_2020	B1	4	2020	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_5_1969	B1	5	1969	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_5_1970	B1	5	1970	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_5_1971	B1	5	1971	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_5_1972	B1	5	1972	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_5_1973	B1	5	1973	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_5_1974	B1	5	1974	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_5_1975	B1	5	1975	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_5_1976	B1	5	1976	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_5_1977	B1	5	1977	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_5_1978	B1	5	1978	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_5_1979	B1	5	1979	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_5_1980	B1	5	1980	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_5_1981	B1	5	1981	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_5_1982	B1	5	1982	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_5_1983	B1	5	1983	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_5_1984	B1	5	1984	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_5_1985	B1	5	1985	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_5_1986	B1	5	1986	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_5_1987	B1	5	1987	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_5_1988	B1	5	1988	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_5_1989	B1	5	1989	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_5_1990	B1	5	1990	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_5_1991	B1	5	1991	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_5_1992	B1	5	1992	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_5_1993	B1	5	1993	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_5_1994	B1	5	1994	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_5_1995	B1	5	1995	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_5_1996	B1	5	1996	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_5_1997	B1	5	1997	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_5_1998	B1	5	1998	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_5_1999	B1	5	1999	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_5_2000	B1	5	2000	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_5_2001	B1	5	2001	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_5_2002	B1	5	2002	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_5_2003	B1	5	2003	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_5_2004	B1	5	2004	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2005	B1	5	2005	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2006	B1	5	2006	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2007	B1	5	2007	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2008	B1	5	2008	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2009	B1	5	2009	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2010	B1	5	2010	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2011	B1	5	2011	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2012	B1	5	2012	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2013	B1	5	2013	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_5_2014	B1	5	2014	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_5_2015	B1	5	2015	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_5_2016	B1	5	2016	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_5_2017	B1	5	2017	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_5_2018	B1	5	2018	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_5_2019	B1	5	2019	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_5_2020	B1	5	2020	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_6_1969	B1	6	1969	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_6_1970	B1	6	1970	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_6_1971	B1	6	1971	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_6_1972	B1	6	1972	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_6_1973	B1	6	1973	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_6_1974	B1	6	1974	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_6_1975	B1	6	1975	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_6_1976	B1	6	1976	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_6_1977	B1	6	1977	1.2705	3.066	15.34	0.5985	0.551	184.158502

B1_6_1978	B1	6	1978	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_6_1979	B1	6	1979	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_6_1980	B1	6	1980	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_6_1981	B1	6	1981	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_6_1982	B1	6	1982	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_6_1983	B1	6	1983	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_6_1984	B1	6	1984	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_6_1985	B1	6	1985	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_6_1986	B1	6	1986	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_6_1987	B1	6	1987	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_6_1988	B1	6	1988	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_6_1989	B1	6	1989	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_6_1990	B1	6	1990	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_6_1991	B1	6	1991	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_6_1992	B1	6	1992	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_6_1993	B1	6	1993	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_6_1994	B1	6	1994	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_6_1995	B1	6	1995	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_6_1996	B1	6	1996	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_6_1997	B1	6	1997	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_6_1998	B1	6	1998	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_6_1999	B1	6	1999	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_6_2000	B1	6	2000	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_6_2001	B1	6	2001	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_6_2002	B1	6	2002	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_6_2003	B1	6	2003	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_6_2004	B1	6	2004	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_6_2005	B1	6	2005	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_6_2006	B1	6	2006	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_6_2007	B1	6	2007	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_6_2008	B1	6	2008	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_6_2009	B1	6	2009	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_6_2010	B1	6	2010	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_6_2011	B1	6	2011	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_6_2012	B1	6	2012	0.8228	3.73	5.1015	0.15	0.138	184.158502
B1_6_2013	B1	6	2013	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_6_2014	B1	6	2014	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_6_2015	B1	6	2015	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_6_2016	B1	6	2016	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_6_2017	B1	6	2017	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_6_2018	B1	6	2018	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_6_2019	B1	6	2019	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_6_2020	B1	6	2020	0.8228	3.73	3.99	0.08	0.074	184.158502
B1_7_1969	B1	7	1969	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_7_1970	B1	7	1970	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_7_1971	B1	7	1971	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_7_1972	B1	7	1972	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_7_1973	B1	7	1973	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_7_1974	B1	7	1974	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_7_1975	B1	7	1975	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_7_1976	B1	7	1976	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_7_1977	B1	7	1977	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_7_1978	B1	7	1978	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_7_1979	B1	7	1979	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_7_1980	B1	7	1980	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_7_1981	B1	7	1981	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_7_1982	B1	7	1982	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_7_1983	B1	7	1983	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_7_1984	B1	7	1984	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_7_1985	B1	7	1985	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_7_1986	B1	7	1986	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_7_1987	B1	7	1987	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1988	B1	7	1988	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1989	B1	7	1989	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1990	B1	7	1990	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1991	B1	7	1991	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1992	B1	7	1992	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1993	B1	7	1993	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1994	B1	7	1994	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1995	B1	7	1995	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1996	B1	7	1996	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1997	B1	7	1997	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1998	B1	7	1998	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_7_1999	B1	7	1999	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_7_2000	B1	7	2000	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_7_2001	B1	7	2001	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_7_2002	B1	7	2002	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_7_2003	B1	7	2003	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_7_2004	B1	7	2004	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_7_2005	B1	7	2005	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_7_2006	B1	7	2006	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_7_2007	B1	7	2007	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_7_2008	B1	7	2008	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_7_2009	B1	7	2009	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_7_2010	B1	7	2010	0.8228	3.73	5.529	0.2	0.184	184.158502

B1_7_2011	B1	7	2011	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_7_2012	B1	7	2012	0.8228	3.73	4.085	0.08	0.074	184.158502
B1_7_2013	B1	7	2013	0.8228	3.73	4.085	0.08	0.074	184.158502
B1_7_2014	B1	7	2014	0.8228	3.73	4.085	0.08	0.074	184.158502
B1_7_2015	B1	7	2015	0.8228	3.73	4.085	0.08	0.074	184.158502
B1_7_2016	B1	7	2016	0.8228	3.73	4.085	0.08	0.074	184.158502
B1_7_2017	B1	7	2017	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_7_2018	B1	7	2018	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_7_2019	B1	7	2019	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_7_2020	B1	7	2020	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_8_1969	B1	8	1969	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_8_1970	B1	8	1970	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_8_1971	B1	8	1971	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_8_1972	B1	8	1972	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_8_1973	B1	8	1973	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_8_1974	B1	8	1974	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_8_1975	B1	8	1975	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_8_1976	B1	8	1976	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_8_1977	B1	8	1977	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_8_1978	B1	8	1978	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_8_1979	B1	8	1979	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_8_1980	B1	8	1980	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_8_1981	B1	8	1981	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_8_1982	B1	8	1982	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_8_1983	B1	8	1983	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_8_1984	B1	8	1984	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_8_1985	B1	8	1985	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_8_1986	B1	8	1986	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_8_1987	B1	8	1987	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1988	B1	8	1988	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1989	B1	8	1989	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1990	B1	8	1990	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1991	B1	8	1991	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1992	B1	8	1992	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1993	B1	8	1993	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1994	B1	8	1994	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1995	B1	8	1995	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1996	B1	8	1996	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1997	B1	8	1997	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1998	B1	8	1998	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_8_1999	B1	8	1999	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_8_2000	B1	8	2000	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_8_2001	B1	8	2001	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_8_2002	B1	8	2002	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_8_2003	B1	8	2003	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_8_2004	B1	8	2004	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_8_2005	B1	8	2005	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_8_2006	B1	8	2006	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_8_2007	B1	8	2007	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_8_2008	B1	8	2008	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_8_2009	B1	8	2009	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_8_2010	B1	8	2010	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_8_2011	B1	8	2011	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_8_2012	B1	8	2012	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_8_2013	B1	8	2013	0.8228	3.73	4.37	0.1	0.092	184.158502
B1_8_2014	B1	8	2014	0.8228	3.73	4.37	0.1	0.092	184.158502
B1_8_2015	B1	8	2015	0.8228	3.73	4.37	0.1	0.092	184.158502
B1_8_2016	B1	8	2016	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_8_2017	B1	8	2017	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_8_2018	B1	8	2018	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_8_2019	B1	8	2019	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_8_2020	B1	8	2020	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_9_1969	B1	9	1969	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_9_1970	B1	9	1970	1.5246	3.066	16.52	0.703	0.647	184.158502
B1_9_1971	B1	9	1971	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_9_1972	B1	9	1972	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_9_1973	B1	9	1973	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_9_1974	B1	9	1974	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_9_1975	B1	9	1975	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_9_1976	B1	9	1976	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_9_1977	B1	9	1977	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_9_1978	B1	9	1978	1.2705	3.066	15.34	0.5985	0.551	184.158502
B1_9_1979	B1	9	1979	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_9_1980	B1	9	1980	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_9_1981	B1	9	1981	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_9_1982	B1	9	1982	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_9_1983	B1	9	1983	1.1495	3.066	14.16	0.5035	0.463	184.158502
B1_9_1984	B1	9	1984	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_9_1985	B1	9	1985	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_9_1986	B1	9	1986	1.089	3.066	12.98	0.5035	0.463	184.158502
B1_9_1987	B1	9	1987	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1988	B1	9	1988	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1989	B1	9	1989	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1990	B1	9	1990	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1991	B1	9	1991	1.0164	2.993	12.98	0.5035	0.463	184.158502

B1_9_1992	B1	9	1992	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1993	B1	9	1993	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1994	B1	9	1994	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1995	B1	9	1995	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1996	B1	9	1996	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1997	B1	9	1997	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1998	B1	9	1998	1.0164	2.993	12.98	0.5035	0.463	184.158502
B1_9_1999	B1	9	1999	0.8228	1.971	9.6406	0.361	0.332	184.158502
B1_9_2000	B1	9	2000	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_9_2001	B1	9	2001	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_9_2002	B1	9	2002	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_9_2003	B1	9	2003	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_9_2004	B1	9	2004	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_9_2005	B1	9	2005	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_9_2006	B1	9	2006	0.8228	1.971	7.31	0.361	0.332	184.158502
B1_9_2007	B1	9	2007	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_9_2008	B1	9	2008	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_9_2009	B1	9	2009	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_9_2010	B1	9	2010	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_9_2011	B1	9	2011	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_9_2012	B1	9	2012	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_9_2013	B1	9	2013	0.8228	3.73	5.529	0.2	0.184	184.158502
B1_9_2014	B1	9	2014	0.8228	3.73	4.94	0.25	0.230	184.158502
B1_9_2015	B1	9	2015	0.8228	3.73	4.94	0.25	0.230	184.158502
B1_9_2016	B1	9	2016	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_9_2017	B1	9	2017	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_9_2018	B1	9	2018	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_9_2019	B1	9	2019	0.21452647	3.73	1.3	0.03	0.028	184.158502
B1_9_2020	B1	9	2020	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_1_1987	B2	1	1987	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1988	B2	1	1988	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1989	B2	1	1989	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1990	B2	1	1990	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1991	B2	1	1991	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1992	B2	1	1992	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1993	B2	1	1993	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1994	B2	1	1994	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1995	B2	1	1995	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1996	B2	1	1996	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1997	B2	1	1997	2.649416	5.15	6.9	0.6384	0.587	184.158502
B2_1_1998	B2	1	1998	2.59182	5.15	6.9	0.6384	0.587	184.158502
B2_1_1999	B2	1	1999	2.59182	5.15	6.9	0.6384	0.587	184.158502
B2_1_2000	B2	1	2000	2.59182	5.15	6.9	0.6384	0.587	184.158502
B2_1_2001	B2	1	2001	2.59182	5.15	6.9	0.6384	0.587	184.158502
B2_1_2002	B2	1	2002	2.59182	5.15	6.9	0.6384	0.587	184.158502
B2_1_2003	B2	1	2003	2.59182	5.15	6.9	0.6384	0.587	184.158502
B2_1_2004	B2	1	2004	2.59182	5.15	6.9	0.6384	0.587	184.158502
B2_1_2005	B2	1	2005	2.59182	3.73	5.32	0.3	0.276	184.158502
B2_1_2006	B2	1	2006	2.59182	3.73	5.32	0.3	0.276	184.158502
B2_1_2007	B2	1	2007	2.59182	3.73	5.32	0.3	0.276	184.158502
B2_1_2008	B2	1	2008	2.59182	3.73	5.32	0.3	0.276	184.158502
B2_1_2009	B2	1	2009	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2010	B2	1	2010	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2011	B2	1	2011	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2012	B2	1	2012	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2013	B2	1	2013	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2014	B2	1	2014	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2015	B2	1	2015	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2016	B2	1	2016	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2017	B2	1	2017	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2018	B2	1	2018	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2019	B2	1	2019	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_1_2020	B2	1	2020	2.59182	3.73	5.32	0.22	0.202	184.158502
B2_2_1987	B2	2	1987	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1988	B2	2	1988	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1989	B2	2	1989	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1990	B2	2	1990	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1991	B2	2	1991	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1992	B2	2	1992	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1993	B2	2	1993	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1994	B2	2	1994	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1995	B2	2	1995	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1996	B2	2	1996	2.073456	4.944	13	0.7056	0.649	184.158502
B2_2_1997	B2	2	1997	1.425501	3.5947	8.75	0.5796	0.533	184.158502
B2_2_1998	B2	2	1998	1.425501	3.5947	8.75	0.5796	0.533	184.158502
B2_2_1999	B2	2	1999	1.425501	3.5947	8.75	0.5796	0.533	184.158502
B2_2_2000	B2	2	2000	1.425501	3.5947	7.31	0.5796	0.533	184.158502
B2_2_2001	B2	2	2001	1.425501	3.5947	7.31	0.5796	0.533	184.158502
B2_2_2002	B2	2	2002	1.425501	3.5947	7.31	0.5796	0.533	184.158502
B2_2_2003	B2	2	2003	1.425501	3.5947	7.31	0.5796	0.533	184.158502
B2_2_2004	B2	2	2004	1.425501	3.5947	7.31	0.5796	0.533	184.158502
B2_2_2005	B2	2	2005	1.425501	3.73	5.32	0.3	0.276	184.158502
B2_2_2006	B2	2	2006	1.425501	3.73	5.32	0.3	0.276	184.158502
B2_2_2007	B2	2	2007	1.425501	3.73	5.32	0.3	0.276	184.158502
B2_2_2008	B2	2	2008	1.425501	3.73	5.32	0.3	0.276	184.158502

B2_2_2009	B2	2	2009	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2010	B2	2	2010	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2011	B2	2	2011	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2012	B2	2	2012	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2013	B2	2	2013	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2014	B2	2	2014	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2015	B2	2	2015	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2016	B2	2	2016	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2017	B2	2	2017	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2018	B2	2	2018	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2019	B2	2	2019	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_2_2020	B2	2	2020	1.425501	3.73	5.32	0.22	0.202	184.158502
B2_3_1969	B2	3	1969	1.900668	4.532	14	0.6468	0.595	184.158502
B2_3_1970	B2	3	1970	1.900668	4.532	14	0.6468	0.595	184.158502
B2_3_1971	B2	3	1971	1.58389	4.532	13	0.5544	0.510	184.158502
B2_3_1972	B2	3	1972	1.58389	4.532	13	0.5544	0.510	184.158502
B2_3_1973	B2	3	1973	1.58389	4.532	13	0.5544	0.510	184.158502
B2_3_1974	B2	3	1974	1.58389	4.532	13	0.5544	0.510	184.158502
B2_3_1975	B2	3	1975	1.58389	4.532	13	0.5544	0.510	184.158502
B2_3_1976	B2	3	1976	1.58389	4.532	13	0.5544	0.510	184.158502
B2_3_1977	B2	3	1977	1.58389	4.532	13	0.5544	0.510	184.158502
B2_3_1978	B2	3	1978	1.58389	4.532	13	0.5544	0.510	184.158502
B2_3_1979	B2	3	1979	1.4399	4.532	12	0.462	0.425	184.158502
B2_3_1980	B2	3	1980	1.4399	4.532	12	0.462	0.425	184.158502
B2_3_1981	B2	3	1981	1.4399	4.532	12	0.462	0.425	184.158502
B2_3_1982	B2	3	1982	1.4399	4.532	12	0.462	0.425	184.158502
B2_3_1983	B2	3	1983	1.4399	4.532	12	0.462	0.425	184.158502
B2_3_1984	B2	3	1984	1.353506	4.429	11	0.462	0.425	184.158502
B2_3_1985	B2	3	1985	1.353506	4.429	11	0.462	0.425	184.158502
B2_3_1986	B2	3	1986	1.353506	4.429	11	0.462	0.425	184.158502
B2_3_1987	B2	3	1987	1.267112	4.326	11	0.462	0.425	184.158502
B2_3_1988	B2	3	1988	1.267112	4.326	11	0.462	0.425	184.158502
B2_3_1989	B2	3	1989	1.267112	4.326	11	0.462	0.425	184.158502
B2_3_1990	B2	3	1990	1.267112	4.326	11	0.462	0.425	184.158502
B2_3_1991	B2	3	1991	1.267112	4.326	11	0.462	0.425	184.158502
B2_3_1992	B2	3	1992	1.267112	4.326	11	0.462	0.425	184.158502
B2_3_1993	B2	3	1993	1.267112	4.326	11	0.462	0.425	184.158502
B2_3_1994	B2	3	1994	1.267112	4.326	11	0.462	0.425	184.158502
B2_3_1995	B2	3	1995	1.267112	4.326	11	0.462	0.425	184.158502
B2_3_1996	B2	3	1996	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_3_1997	B2	3	1997	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_3_1998	B2	3	1998	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_3_1999	B2	3	1999	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_3_2000	B2	3	2000	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_3_2001	B2	3	2001	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_3_2002	B2	3	2002	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_3_2003	B2	3	2003	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_3_2004	B2	3	2004	0.979132	3.73	5.1015	0.22	0.202	184.158502
B2_3_2005	B2	3	2005	0.979132	3.73	5.1015	0.22	0.202	184.158502
B2_3_2006	B2	3	2006	0.979132	3.73	5.1015	0.22	0.202	184.158502
B2_3_2007	B2	3	2007	0.979132	3.73	5.1015	0.22	0.202	184.158502
B2_3_2008	B2	3	2008	0.979132	3.73	5.1015	0.22	0.202	184.158502
B2_3_2009	B2	3	2009	0.979132	3.73	5.1015	0.22	0.202	184.158502
B2_3_2010	B2	3	2010	0.979132	3.73	5.1015	0.22	0.202	184.158502
B2_3_2011	B2	3	2011	0.979132	3.73	5.1015	0.22	0.202	184.158502
B2_3_2012	B2	3	2012	0.979132	3.73	5.1015	0.22	0.202	184.158502
B2_3_2013	B2	3	2013	0.979132	3.73	3.8	0.09	0.083	184.158502
B2_3_2014	B2	3	2014	0.979132	3.73	3.8	0.09	0.083	184.158502
B2_3_2015	B2	3	2015	0.979132	3.73	3.8	0.09	0.083	184.158502
B2_3_2016	B2	3	2016	0.979132	3.73	3.8	0.09	0.083	184.158502
B2_3_2017	B2	3	2017	0.979132	3.73	3.8	0.09	0.083	184.158502
B2_3_2018	B2	3	2018	0.979132	3.73	3.8	0.09	0.083	184.158502
B2_3_2019	B2	3	2019	0.979132	3.73	3.8	0.09	0.083	184.158502
B2_3_2020	B2	3	2020	0.979132	3.73	3.8	0.09	0.083	184.158502
B2_4_1969	B2	4	1969	1.900668	4.532	14	0.6468	0.595	184.158502
B2_4_1970	B2	4	1970	1.900668	4.532	14	0.6468	0.595	184.158502
B2_4_1971	B2	4	1971	1.58389	4.532	13	0.5544	0.510	184.158502
B2_4_1972	B2	4	1972	1.58389	4.532	13	0.5544	0.510	184.158502
B2_4_1973	B2	4	1973	1.58389	4.532	13	0.5544	0.510	184.158502
B2_4_1974	B2	4	1974	1.58389	4.532	13	0.5544	0.510	184.158502
B2_4_1975	B2	4	1975	1.58389	4.532	13	0.5544	0.510	184.158502
B2_4_1976	B2	4	1976	1.58389	4.532	13	0.5544	0.510	184.158502
B2_4_1977	B2	4	1977	1.58389	4.532	13	0.5544	0.510	184.158502
B2_4_1978	B2	4	1978	1.58389	4.532	13	0.5544	0.510	184.158502
B2_4_1979	B2	4	1979	1.4399	4.532	12	0.462	0.425	184.158502
B2_4_1980	B2	4	1980	1.4399	4.532	12	0.462	0.425	184.158502
B2_4_1981	B2	4	1981	1.4399	4.532	12	0.462	0.425	184.158502
B2_4_1982	B2	4	1982	1.4399	4.532	12	0.462	0.425	184.158502
B2_4_1983	B2	4	1983	1.4399	4.532	12	0.462	0.425	184.158502
B2_4_1984	B2	4	1984	1.353506	4.429	11	0.462	0.425	184.158502
B2_4_1985	B2	4	1985	1.353506	4.429	11	0.462	0.425	184.158502
B2_4_1986	B2	4	1986	1.353506	4.429	11	0.462	0.425	184.158502
B2_4_1987	B2	4	1987	1.267112	4.326	11	0.462	0.425	184.158502
B2_4_1988	B2	4	1988	1.267112	4.326	11	0.462	0.425	184.158502
B2_4_1989	B2	4	1989	1.267112	4.326	11	0.462	0.425	184.158502

B2_4_1990	B2	4	1990	1.267112	4.326	11	0.462	0.425	184.158502
B2_4_1991	B2	4	1991	1.267112	4.326	11	0.462	0.425	184.158502
B2_4_1992	B2	4	1992	1.267112	4.326	11	0.462	0.425	184.158502
B2_4_1993	B2	4	1993	1.267112	4.326	11	0.462	0.425	184.158502
B2_4_1994	B2	4	1994	1.267112	4.326	11	0.462	0.425	184.158502
B2_4_1995	B2	4	1995	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_4_1996	B2	4	1996	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_4_1997	B2	4	1997	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_4_1998	B2	4	1998	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_4_1999	B2	4	1999	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_4_2000	B2	4	2000	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_4_2001	B2	4	2001	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_4_2002	B2	4	2002	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_4_2003	B2	4	2003	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_4_2004	B2	4	2004	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2005	B2	4	2005	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2006	B2	4	2006	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2007	B2	4	2007	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2008	B2	4	2008	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2009	B2	4	2009	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2010	B2	4	2010	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2011	B2	4	2011	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2012	B2	4	2012	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2013	B2	4	2013	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_4_2014	B2	4	2014	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_4_2015	B2	4	2015	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_4_2016	B2	4	2016	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_4_2017	B2	4	2017	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_4_2018	B2	4	2018	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_4_2019	B2	4	2019	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_4_2020	B2	4	2020	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_5_1969	B2	5	1969	1.814274	4.326	14	0.6216	0.572	184.158502
B2_5_1970	B2	5	1970	1.814274	4.326	14	0.6216	0.572	184.158502
B2_5_1971	B2	5	1971	1.511895	4.326	13	0.5292	0.487	184.158502
B2_5_1972	B2	5	1972	1.511895	4.326	13	0.5292	0.487	184.158502
B2_5_1973	B2	5	1973	1.511895	4.326	13	0.5292	0.487	184.158502
B2_5_1974	B2	5	1974	1.511895	4.326	13	0.5292	0.487	184.158502
B2_5_1975	B2	5	1975	1.511895	4.326	13	0.5292	0.487	184.158502
B2_5_1976	B2	5	1976	1.511895	4.326	13	0.5292	0.487	184.158502
B2_5_1977	B2	5	1977	1.511895	4.326	13	0.5292	0.487	184.158502
B2_5_1978	B2	5	1978	1.511895	4.326	13	0.5292	0.487	184.158502
B2_5_1979	B2	5	1979	1.367905	4.326	12	0.4452	0.410	184.158502
B2_5_1980	B2	5	1980	1.367905	4.326	12	0.4452	0.410	184.158502
B2_5_1981	B2	5	1981	1.367905	4.326	12	0.4452	0.410	184.158502
B2_5_1982	B2	5	1982	1.367905	4.326	12	0.4452	0.410	184.158502
B2_5_1983	B2	5	1983	1.367905	4.326	12	0.4452	0.410	184.158502
B2_5_1984	B2	5	1984	1.29591	4.326	11	0.4452	0.410	184.158502
B2_5_1985	B2	5	1985	1.29591	4.326	11	0.4452	0.410	184.158502
B2_5_1986	B2	5	1986	1.29591	4.326	11	0.4452	0.410	184.158502
B2_5_1987	B2	5	1987	1.209516	4.223	11	0.4452	0.410	184.158502
B2_5_1988	B2	5	1988	1.209516	4.223	11	0.4452	0.410	184.158502
B2_5_1989	B2	5	1989	1.209516	4.223	11	0.4452	0.410	184.158502
B2_5_1990	B2	5	1990	1.209516	4.223	11	0.4452	0.410	184.158502
B2_5_1991	B2	5	1991	1.209516	4.223	11	0.4452	0.410	184.158502
B2_5_1992	B2	5	1992	1.209516	4.223	11	0.4452	0.410	184.158502
B2_5_1993	B2	5	1993	1.209516	4.223	11	0.4452	0.410	184.158502
B2_5_1994	B2	5	1994	1.209516	4.223	11	0.4452	0.410	184.158502
B2_5_1995	B2	5	1995	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_5_1996	B2	5	1996	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_5_1997	B2	5	1997	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_5_1998	B2	5	1998	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_5_1999	B2	5	1999	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_5_2000	B2	5	2000	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_5_2001	B2	5	2001	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_5_2002	B2	5	2002	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_5_2003	B2	5	2003	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_5_2004	B2	5	2004	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2005	B2	5	2005	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2006	B2	5	2006	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2007	B2	5	2007	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2008	B2	5	2008	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2009	B2	5	2009	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2010	B2	5	2010	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2011	B2	5	2011	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2012	B2	5	2012	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2013	B2	5	2013	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_5_2014	B2	5	2014	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_5_2015	B2	5	2015	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_5_2016	B2	5	2016	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_5_2017	B2	5	2017	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_5_2018	B2	5	2018	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_5_2019	B2	5	2019	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_5_2020	B2	5	2020	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_6_1969	B2	6	1969	1.814274	4.326	14	0.6216	0.572	184.158502
B2_6_1970	B2	6	1970	1.814274	4.326	14	0.6216	0.572	184.158502

B2_6_1971	B2	6	1971	1.511895	4.326	13	0.5292	0.487	184.158502
B2_6_1972	B2	6	1972	1.511895	4.326	13	0.5292	0.487	184.158502
B2_6_1973	B2	6	1973	1.511895	4.326	13	0.5292	0.487	184.158502
B2_6_1974	B2	6	1974	1.511895	4.326	13	0.5292	0.487	184.158502
B2_6_1975	B2	6	1975	1.511895	4.326	13	0.5292	0.487	184.158502
B2_6_1976	B2	6	1976	1.511895	4.326	13	0.5292	0.487	184.158502
B2_6_1977	B2	6	1977	1.511895	4.326	13	0.5292	0.487	184.158502
B2_6_1978	B2	6	1978	1.511895	4.326	13	0.5292	0.487	184.158502
B2_6_1979	B2	6	1979	1.367905	4.326	12	0.4452	0.410	184.158502
B2_6_1980	B2	6	1980	1.367905	4.326	12	0.4452	0.410	184.158502
B2_6_1981	B2	6	1981	1.367905	4.326	12	0.4452	0.410	184.158502
B2_6_1982	B2	6	1982	1.367905	4.326	12	0.4452	0.410	184.158502
B2_6_1983	B2	6	1983	1.367905	4.326	12	0.4452	0.410	184.158502
B2_6_1984	B2	6	1984	1.29591	4.326	11	0.4452	0.410	184.158502
B2_6_1985	B2	6	1985	1.29591	4.326	11	0.4452	0.410	184.158502
B2_6_1986	B2	6	1986	1.29591	4.326	11	0.4452	0.410	184.158502
B2_6_1987	B2	6	1987	1.209516	4.223	11	0.4452	0.410	184.158502
B2_6_1988	B2	6	1988	1.209516	4.223	11	0.4452	0.410	184.158502
B2_6_1989	B2	6	1989	1.209516	4.223	11	0.4452	0.410	184.158502
B2_6_1990	B2	6	1990	1.209516	4.223	11	0.4452	0.410	184.158502
B2_6_1991	B2	6	1991	1.209516	4.223	11	0.4452	0.410	184.158502
B2_6_1992	B2	6	1992	1.209516	4.223	11	0.4452	0.410	184.158502
B2_6_1993	B2	6	1993	1.209516	4.223	11	0.4452	0.410	184.158502
B2_6_1994	B2	6	1994	1.209516	4.223	11	0.4452	0.410	184.158502
B2_6_1995	B2	6	1995	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_6_1996	B2	6	1996	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_6_1997	B2	6	1997	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_6_1998	B2	6	1998	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_6_1999	B2	6	1999	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_6_2000	B2	6	2000	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_6_2001	B2	6	2001	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_6_2002	B2	6	2002	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_6_2003	B2	6	2003	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_6_2004	B2	6	2004	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_6_2005	B2	6	2005	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_6_2006	B2	6	2006	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_6_2007	B2	6	2007	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_6_2008	B2	6	2008	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_6_2009	B2	6	2009	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_6_2010	B2	6	2010	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_6_2011	B2	6	2011	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_6_2012	B2	6	2012	0.979132	3.73	5.1015	0.15	0.138	184.158502
B2_6_2013	B2	6	2013	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_6_2014	B2	6	2014	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_6_2015	B2	6	2015	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_6_2016	B2	6	2016	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_6_2017	B2	6	2017	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_6_2018	B2	6	2018	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_6_2019	B2	6	2019	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_6_2020	B2	6	2020	0.979132	3.73	3.99	0.08	0.074	184.158502
B2_7_1969	B2	7	1969	1.814274	4.326	14	0.6216	0.572	184.158502
B2_7_1970	B2	7	1970	1.814274	4.326	14	0.6216	0.572	184.158502
B2_7_1971	B2	7	1971	1.511895	4.326	13	0.5292	0.487	184.158502
B2_7_1972	B2	7	1972	1.511895	4.326	13	0.5292	0.487	184.158502
B2_7_1973	B2	7	1973	1.511895	4.326	13	0.5292	0.487	184.158502
B2_7_1974	B2	7	1974	1.511895	4.326	13	0.5292	0.487	184.158502
B2_7_1975	B2	7	1975	1.511895	4.326	13	0.5292	0.487	184.158502
B2_7_1976	B2	7	1976	1.511895	4.326	13	0.5292	0.487	184.158502
B2_7_1977	B2	7	1977	1.511895	4.326	13	0.5292	0.487	184.158502
B2_7_1978	B2	7	1978	1.511895	4.326	13	0.5292	0.487	184.158502
B2_7_1979	B2	7	1979	1.367905	4.326	12	0.4452	0.410	184.158502
B2_7_1980	B2	7	1980	1.367905	4.326	12	0.4452	0.410	184.158502
B2_7_1981	B2	7	1981	1.367905	4.326	12	0.4452	0.410	184.158502
B2_7_1982	B2	7	1982	1.367905	4.326	12	0.4452	0.410	184.158502
B2_7_1983	B2	7	1983	1.367905	4.326	12	0.4452	0.410	184.158502
B2_7_1984	B2	7	1984	1.29591	4.326	11	0.4452	0.410	184.158502
B2_7_1985	B2	7	1985	1.29591	4.326	11	0.4452	0.410	184.158502
B2_7_1986	B2	7	1986	1.29591	4.326	11	0.4452	0.410	184.158502
B2_7_1987	B2	7	1987	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1988	B2	7	1988	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1989	B2	7	1989	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1990	B2	7	1990	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1991	B2	7	1991	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1992	B2	7	1992	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1993	B2	7	1993	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1994	B2	7	1994	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1995	B2	7	1995	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1996	B2	7	1996	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1997	B2	7	1997	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1998	B2	7	1998	1.209516	4.223	11	0.4452	0.410	184.158502
B2_7_1999	B2	7	1999	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_7_2000	B2	7	2000	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_7_2001	B2	7	2001	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_7_2002	B2	7	2002	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_7_2003	B2	7	2003	0.979132	2.781	7.31	0.3192	0.294	184.158502

B2_7_2004	B2	7	2004	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_7_2005	B2	7	2005	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_7_2006	B2	7	2006	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_7_2007	B2	7	2007	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_7_2008	B2	7	2008	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_7_2009	B2	7	2009	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_7_2010	B2	7	2010	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_7_2011	B2	7	2011	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_7_2012	B2	7	2012	0.979132	3.73	4.085	0.08	0.074	184.158502
B2_7_2013	B2	7	2013	0.979132	3.73	4.085	0.08	0.074	184.158502
B2_7_2014	B2	7	2014	0.979132	3.73	4.085	0.08	0.074	184.158502
B2_7_2015	B2	7	2015	0.979132	3.73	4.085	0.08	0.074	184.158502
B2_7_2016	B2	7	2016	0.979132	3.73	4.085	0.08	0.074	184.158502
B2_7_2017	B2	7	2017	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_7_2018	B2	7	2018	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_7_2019	B2	7	2019	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_7_2020	B2	7	2020	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_8_1969	B2	8	1969	1.814274	4.326	14	0.6216	0.572	184.158502
B2_8_1970	B2	8	1970	1.814274	4.326	14	0.6216	0.572	184.158502
B2_8_1971	B2	8	1971	1.511895	4.326	13	0.5292	0.487	184.158502
B2_8_1972	B2	8	1972	1.511895	4.326	13	0.5292	0.487	184.158502
B2_8_1973	B2	8	1973	1.511895	4.326	13	0.5292	0.487	184.158502
B2_8_1974	B2	8	1974	1.511895	4.326	13	0.5292	0.487	184.158502
B2_8_1975	B2	8	1975	1.511895	4.326	13	0.5292	0.487	184.158502
B2_8_1976	B2	8	1976	1.511895	4.326	13	0.5292	0.487	184.158502
B2_8_1977	B2	8	1977	1.511895	4.326	13	0.5292	0.487	184.158502
B2_8_1978	B2	8	1978	1.511895	4.326	13	0.5292	0.487	184.158502
B2_8_1979	B2	8	1979	1.367905	4.326	12	0.4452	0.410	184.158502
B2_8_1980	B2	8	1980	1.367905	4.326	12	0.4452	0.410	184.158502
B2_8_1981	B2	8	1981	1.367905	4.326	12	0.4452	0.410	184.158502
B2_8_1982	B2	8	1982	1.367905	4.326	12	0.4452	0.410	184.158502
B2_8_1983	B2	8	1983	1.367905	4.326	12	0.4452	0.410	184.158502
B2_8_1984	B2	8	1984	1.29591	4.326	11	0.4452	0.410	184.158502
B2_8_1985	B2	8	1985	1.29591	4.326	11	0.4452	0.410	184.158502
B2_8_1986	B2	8	1986	1.29591	4.326	11	0.4452	0.410	184.158502
B2_8_1987	B2	8	1987	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1988	B2	8	1988	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1989	B2	8	1989	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1990	B2	8	1990	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1991	B2	8	1991	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1992	B2	8	1992	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1993	B2	8	1993	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1994	B2	8	1994	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1995	B2	8	1995	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1996	B2	8	1996	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1997	B2	8	1997	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1998	B2	8	1998	1.209516	4.223	11	0.4452	0.410	184.158502
B2_8_1999	B2	8	1999	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_8_2000	B2	8	2000	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_8_2001	B2	8	2001	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_8_2002	B2	8	2002	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_8_2003	B2	8	2003	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_8_2004	B2	8	2004	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_8_2005	B2	8	2005	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_8_2006	B2	8	2006	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_8_2007	B2	8	2007	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_8_2008	B2	8	2008	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_8_2009	B2	8	2009	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_8_2010	B2	8	2010	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_8_2011	B2	8	2011	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_8_2012	B2	8	2012	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_8_2013	B2	8	2013	0.979132	3.73	4.37	0.1	0.092	184.158502
B2_8_2014	B2	8	2014	0.979132	3.73	4.37	0.1	0.092	184.158502
B2_8_2015	B2	8	2015	0.979132	3.73	4.37	0.1	0.092	184.158502
B2_8_2016	B2	8	2016	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_8_2017	B2	8	2017	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_8_2018	B2	8	2018	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_8_2019	B2	8	2019	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_8_2020	B2	8	2020	0.21452647	3.73	1.3	0.03	0.028	184.158502
B2_9_1969	B2	9	1969	1.814274	4.326	14	0.6216	0.572	184.158502
B2_9_1970	B2	9	1970	1.814274	4.326	14	0.6216	0.572	184.158502
B2_9_1971	B2	9	1971	1.511895	4.326	13	0.5292	0.487	184.158502
B2_9_1972	B2	9	1972	1.511895	4.326	13	0.5292	0.487	184.158502
B2_9_1973	B2	9	1973	1.511895	4.326	13	0.5292	0.487	184.158502
B2_9_1974	B2	9	1974	1.511895	4.326	13	0.5292	0.487	184.158502
B2_9_1975	B2	9	1975	1.511895	4.326	13	0.5292	0.487	184.158502
B2_9_1976	B2	9	1976	1.511895	4.326	13	0.5292	0.487	184.158502
B2_9_1977	B2	9	1977	1.511895	4.326	13	0.5292	0.487	184.158502
B2_9_1978	B2	9	1978	1.511895	4.326	13	0.5292	0.487	184.158502
B2_9_1979	B2	9	1979	1.367905	4.326	12	0.4452	0.410	184.158502
B2_9_1980	B2	9	1980	1.367905	4.326	12	0.4452	0.410	184.158502
B2_9_1981	B2	9	1981	1.367905	4.326	12	0.4452	0.410	184.158502
B2_9_1982	B2	9	1982	1.367905	4.326	12	0.4452	0.410	184.158502
B2_9_1983	B2	9	1983	1.367905	4.326	12	0.4452	0.410	184.158502
B2_9_1984	B2	9	1984	1.29591	4.326	11	0.4452	0.410	184.158502

B2_9_1985	B2	9	1985	1.29591	4.326	11	0.4452	0.410	184.158502
B2_9_1986	B2	9	1986	1.29591	4.326	11	0.4452	0.410	184.158502
B2_9_1987	B2	9	1987	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1988	B2	9	1988	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1989	B2	9	1989	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1990	B2	9	1990	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1991	B2	9	1991	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1992	B2	9	1992	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1993	B2	9	1993	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1994	B2	9	1994	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1995	B2	9	1995	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1996	B2	9	1996	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1997	B2	9	1997	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1998	B2	9	1998	1.209516	4.223	11	0.4452	0.410	184.158502
B2_9_1999	B2	9	1999	0.979132	2.781	8.17	0.3192	0.294	184.158502
B2_9_2000	B2	9	2000	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_9_2001	B2	9	2001	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_9_2002	B2	9	2002	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_9_2003	B2	9	2003	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_9_2004	B2	9	2004	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_9_2005	B2	9	2005	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_9_2006	B2	9	2006	0.979132	2.781	7.31	0.3192	0.294	184.158502
B2_9_2007	B2	9	2007	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_9_2008	B2	9	2008	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_9_2009	B2	9	2009	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_9_2010	B2	9	2010	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_9_2011	B2	9	2011	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_9_2012	B2	9	2012	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_9_2013	B2	9	2013	0.979132	3.73	5.529	0.2	0.184	184.158502
B2_9_2014	B2	9	2014	0.979132	3.75	4.94	0.25	0.230	184.158502
B2_9_2015	B2	9	2015	0.979132	3.75	4.94	0.25	0.230	184.158502
B2_9_2016	B2	9	2016	0.21452647	3.75	1.3	0.03	0.028	184.158502
B2_9_2017	B2	9	2017	0.21452647	3.75	1.3	0.03	0.028	184.158502
B2_9_2018	B2	9	2018	0.21452647	3.75	1.3	0.03	0.028	184.158502
B2_9_2019	B2	9	2019	0.21452647	3.75	1.3	0.03	0.028	184.158502
B2_9_2020	B2	9	2020	0.21452647	3.75	1.3	0.03	0.028	184.158502
C1_1_1994	C1	1	1994	1.815	5	10	1	0.920	244.93988
C1_1_1995	C1	1	1995	1.815	5	10	1	0.920	244.93988
C1_1_1996	C1	1	1996	1.815	5	10	1	0.920	244.93988
C1_1_1997	C1	1	1997	1.815	5	10	1	0.920	244.93988
C1_1_1998	C1	1	1998	1.815	5	10	1	0.920	244.93988
C1_1_1999	C1	1	1999	1.2705	5	9.35	0.57	0.524	244.93988
C1_1_2000	C1	1	2000	1.2705	5	9.35	0.57	0.524	244.93988
C1_1_2001	C1	1	2001	1.2705	5	9.35	0.57	0.524	244.93988
C1_1_2002	C1	1	2002	1.2705	5	9.35	0.57	0.524	244.93988
C1_1_2003	C1	1	2003	1.2705	5	9.35	0.57	0.524	244.93988
C1_1_2004	C1	1	2004	0.8228	3.47	6.08	0.47	0.432	244.93988
C1_1_2005	C1	1	2005	0.8228	3.47	6.08	0.47	0.432	244.93988
C1_1_2006	C1	1	2006	0.8228	3.47	6.08	0.47	0.432	244.93988
C1_1_2007	C1	1	2007	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2008	C1	1	2008	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2009	C1	1	2009	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2010	C1	1	2010	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2011	C1	1	2011	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2012	C1	1	2012	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2013	C1	1	2013	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2014	C1	1	2014	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2015	C1	1	2015	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2016	C1	1	2016	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2017	C1	1	2017	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2018	C1	1	2018	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2019	C1	1	2019	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2020	C1	1	2020	0.5929	3.47	4.37	0.38	0.350	244.93988
C1_1_2040	C1	1	2040	0.5929	3.47	4.37	0.19	0.175	244.93988
C1_2_1994	C1	2	1994	2.2264	5	6.92	0.76	0.699	244.93988
C1_2_1995	C1	2	1995	2.2264	5	6.92	0.76	0.699	244.93988
C1_2_1996	C1	2	1996	2.2264	5	6.92	0.76	0.699	244.93988
C1_2_1997	C1	2	1997	2.2264	5	6.92	0.76	0.699	244.93988
C1_2_1998	C1	2	1998	2.2264	5	6.92	0.76	0.699	244.93988
C1_2_1999	C1	2	1999	1.089	5	6.92	0.57	0.524	244.93988
C1_2_2000	C1	2	2000	1.089	5	6.92	0.57	0.524	244.93988
C1_2_2001	C1	2	2001	1.089	5	6.92	0.57	0.524	244.93988
C1_2_2002	C1	2	2002	1.089	5	6.92	0.57	0.524	244.93988
C1_2_2003	C1	2	2003	1.089	5	6.92	0.57	0.524	244.93988
C1_2_2004	C1	2	2004	0.7744	2.34	5.79	0.38	0.350	244.93988
C1_2_2005	C1	2	2005	0.7744	2.34	5.79	0.38	0.350	244.93988
C1_2_2006	C1	2	2006	0.7744	2.34	5.79	0.38	0.350	244.93988
C1_2_2007	C1	2	2007	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2008	C1	2	2008	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2009	C1	2	2009	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2010	C1	2	2010	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2011	C1	2	2011	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2012	C1	2	2012	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2013	C1	2	2013	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2014	C1	2	2014	0.6897	2.34	4.57	0.38	0.350	244.93988

C1_2_2015	C1	2	2015	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2016	C1	2	2016	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2017	C1	2	2017	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2018	C1	2	2018	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2019	C1	2	2019	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2020	C1	2	2020	0.6897	2.34	4.57	0.38	0.350	244.93988
C1_2_2040	C1	2	2040	0.6897	2.34	4.57	0.19	0.175	244.93988
C1_3_1987	C1	3	1987	2.2264	5	7	0.76	0.699	244.93988
C1_3_1988	C1	3	1988	2.2264	5	7	0.76	0.699	244.93988
C1_3_1989	C1	3	1989	2.2264	5	7	0.76	0.699	244.93988
C1_3_1990	C1	3	1990	2.2264	5	7	0.76	0.699	244.93988
C1_3_1991	C1	3	1991	2.2264	5	7	0.76	0.699	244.93988
C1_3_1992	C1	3	1992	2.2264	5	7	0.76	0.699	244.93988
C1_3_1993	C1	3	1993	2.2264	5	7	0.76	0.699	244.93988
C1_3_1994	C1	3	1994	2.2264	5	7	0.76	0.699	244.93988
C1_3_1995	C1	3	1995	2.2264	5	7	0.76	0.699	244.93988
C1_3_1996	C1	3	1996	2.2264	5	7	0.76	0.699	244.93988
C1_3_1997	C1	3	1997	2.2264	5	7	0.76	0.699	244.93988
C1_3_1998	C1	3	1998	2.178	5	6.9	0.76	0.699	244.93988
C1_3_1999	C1	3	1999	2.178	5	6.9	0.76	0.699	244.93988
C1_3_2000	C1	3	2000	2.178	5	6.9	0.76	0.699	244.93988
C1_3_2001	C1	3	2001	2.178	5	6.9	0.76	0.699	244.93988
C1_3_2002	C1	3	2002	2.178	5	6.9	0.76	0.699	244.93988
C1_3_2003	C1	3	2003	1.7545	4.1	5.55	0.6	0.552	244.93988
C1_3_2004	C1	3	2004	0.7744	3.27	5.1	0.43	0.396	244.93988
C1_3_2005	C1	3	2005	0.4477	3	4.95	0.38	0.350	244.93988
C1_3_2006	C1	3	2006	0.4477	3	4.95	0.38	0.350	244.93988
C1_3_2007	C1	3	2007	0.2904	2.86	4.88	0.35	0.322	244.93988
C1_3_2008	C1	3	2008	0.2904	2.86	4.88	0.35	0.322	244.93988
C1_3_2009	C1	3	2009	0.2904	2.86	4.88	0.35	0.322	244.93988
C1_3_2010	C1	3	2010	0.2904	2.86	4.88	0.35	0.322	244.93988
C1_3_2011	C1	3	2011	0.2904	2.86	4.88	0.35	0.322	244.93988
C1_3_2012	C1	3	2012	0.121	2.72	4.8	0.16	0.147	244.93988
C1_3_2013	C1	3	2013	0.121	2.72	4.8	0.16	0.147	244.93988
C1_3_2014	C1	3	2014	0.121	2.72	4.8	0.16	0.147	244.93988
C1_3_2015	C1	3	2015	0.121	2.72	4.8	0.16	0.147	244.93988
C1_3_2016	C1	3	2016	0.121	2.72	4.8	0.16	0.147	244.93988
C1_3_2017	C1	3	2017	0.121	2.72	4.8	0.16	0.147	244.93988
C1_3_2018	C1	3	2018	0.121	2.72	4.8	0.16	0.147	244.93988
C1_3_2019	C1	3	2019	0.121	2.72	4.8	0.16	0.147	244.93988
C1_3_2020	C1	3	2020	0.121	2.72	4.8	0.16	0.147	244.93988
C1_3_2040	C1	3	2040	0.121	2.72	2.9	0.01	0.009	244.93988
C1_4_1987	C1	4	1987	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1988	C1	4	1988	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1989	C1	4	1989	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1990	C1	4	1990	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1991	C1	4	1991	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1992	C1	4	1992	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1993	C1	4	1993	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1994	C1	4	1994	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1995	C1	4	1995	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1996	C1	4	1996	1.7424	4.8	13	0.84	0.773	222.260261
C1_4_1997	C1	4	1997	1.1979	3.49	8.75	0.69	0.635	222.260261
C1_4_1998	C1	4	1998	1.1979	3.49	8.75	0.69	0.635	222.260261
C1_4_1999	C1	4	1999	1.1979	3.49	8.75	0.69	0.635	222.260261
C1_4_2000	C1	4	2000	1.1979	3.49	8.75	0.69	0.635	222.260261
C1_4_2001	C1	4	2001	1.1979	3.49	8.75	0.69	0.635	222.260261
C1_4_2002	C1	4	2002	1.1979	3.49	8.75	0.69	0.635	222.260261
C1_4_2003	C1	4	2003	1.1979	3.49	6.9	0.69	0.635	222.260261
C1_4_2004	C1	4	2004	0.5566	3.23	5.64	0.39	0.359	222.260261
C1_4_2005	C1	4	2005	0.3388	3.14	5.22	0.29	0.267	222.260261
C1_4_2006	C1	4	2006	0.3388	3.14	5.22	0.29	0.267	222.260261
C1_4_2007	C1	4	2007	0.2299	3.09	5.01	0.24	0.221	222.260261
C1_4_2008	C1	4	2008	0.2299	3.09	5.01	0.24	0.221	222.260261
C1_4_2009	C1	4	2009	0.2299	3.09	5.01	0.24	0.221	222.260261
C1_4_2010	C1	4	2010	0.2299	3.09	5.01	0.24	0.221	222.260261
C1_4_2011	C1	4	2011	0.121	3.05	2.89	0.2	0.184	222.260261
C1_4_2012	C1	4	2012	0.1089	3.05	2.53	0.07	0.064	222.260261
C1_4_2013	C1	4	2013	0.1089	3.05	2.53	0.07	0.064	222.260261
C1_4_2014	C1	4	2014	0.1089	3.05	2.53	0.01	0.009	222.260261
C1_4_2015	C1	4	2015	0.1089	3.05	2.53	0.01	0.009	222.260261
C1_4_2016	C1	4	2016	0.1089	3.05	2.53	0.01	0.009	222.260261
C1_4_2017	C1	4	2017	0.1089	3.05	2.53	0.01	0.009	222.260261
C1_4_2018	C1	4	2018	0.1089	3.05	2.53	0.01	0.009	222.260261
C1_4_2019	C1	4	2019	0.1089	3.05	2.53	0.01	0.009	222.260261
C1_4_2020	C1	4	2020	0.1089	3.05	2.53	0.01	0.009	222.260261
C1_4_2040	C1	4	2040	0.0847	3.05	1.4	0.01	0.009	222.260261
C1_5_1969	C1	5	1969	1.5972	4.4	14	0.77	0.708	213.188414
C1_5_1970	C1	5	1970	1.5972	4.4	14	0.77	0.708	213.188414
C1_5_1971	C1	5	1971	1.331	4.4	13	0.66	0.607	213.188414
C1_5_1972	C1	5	1972	1.331	4.4	13	0.66	0.607	213.188414
C1_5_1973	C1	5	1973	1.331	4.4	13	0.66	0.607	213.188414
C1_5_1974	C1	5	1974	1.331	4.4	13	0.66	0.607	213.188414
C1_5_1975	C1	5	1975	1.331	4.4	13	0.66	0.607	213.188414
C1_5_1976	C1	5	1976	1.331	4.4	13	0.66	0.607	213.188414

C1_5_1977	C1	5	1977	1.331	4.4	13	0.66	0.607	213.188414
C1_5_1978	C1	5	1978	1.331	4.4	13	0.66	0.607	213.188414
C1_5_1979	C1	5	1979	1.21	4.4	12	0.55	0.506	213.188414
C1_5_1980	C1	5	1980	1.21	4.4	12	0.55	0.506	213.188414
C1_5_1981	C1	5	1981	1.21	4.4	12	0.55	0.506	213.188414
C1_5_1982	C1	5	1982	1.21	4.4	12	0.55	0.506	213.188414
C1_5_1983	C1	5	1983	1.21	4.4	12	0.55	0.506	213.188414
C1_5_1984	C1	5	1984	1.1374	4.3	11	0.55	0.506	213.188414
C1_5_1985	C1	5	1985	1.1374	4.3	11	0.55	0.506	213.188414
C1_5_1986	C1	5	1986	1.1374	4.3	11	0.55	0.506	213.188414
C1_5_1987	C1	5	1987	1.0648	4.2	11	0.55	0.506	213.188414
C1_5_1988	C1	5	1988	1.0648	4.2	11	0.55	0.506	213.188414
C1_5_1989	C1	5	1989	1.0648	4.2	11	0.55	0.506	213.188414
C1_5_1990	C1	5	1990	1.0648	4.2	11	0.55	0.506	213.188414
C1_5_1991	C1	5	1991	1.0648	4.2	11	0.55	0.506	213.188414
C1_5_1992	C1	5	1992	1.0648	4.2	11	0.55	0.506	213.188414
C1_5_1993	C1	5	1993	1.0648	4.2	11	0.55	0.506	213.188414
C1_5_1994	C1	5	1994	1.0648	4.2	11	0.55	0.506	213.188414
C1_5_1995	C1	5	1995	1.0648	4.2	11	0.55	0.506	213.188414
C1_5_1996	C1	5	1996	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_5_1997	C1	5	1997	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_5_1998	C1	5	1998	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_5_1999	C1	5	1999	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_5_2000	C1	5	2000	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_5_2001	C1	5	2001	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_5_2002	C1	5	2002	0.8228	2.7	6.9	0.38	0.350	213.188414
C1_5_2003	C1	5	2003	0.3993	2.7	5.26	0.24	0.221	213.188414
C1_5_2004	C1	5	2004	0.2662	2.7	4.72	0.19	0.175	213.188414
C1_5_2005	C1	5	2005	0.2662	2.7	4.72	0.19	0.175	213.188414
C1_5_2006	C1	5	2006	0.1936	2.7	4.44	0.16	0.147	213.188414
C1_5_2007	C1	5	2007	0.1936	2.7	4.44	0.16	0.147	213.188414
C1_5_2008	C1	5	2008	0.1936	2.7	4.44	0.16	0.147	213.188414
C1_5_2009	C1	5	2009	0.1936	2.7	4.44	0.16	0.147	213.188414
C1_5_2010	C1	5	2010	0.1936	2.7	4.44	0.16	0.147	213.188414
C1_5_2011	C1	5	2011	0.121	2.7	2.45	0.14	0.129	213.188414
C1_5_2012	C1	5	2012	0.121	2.7	2.45	0.14	0.129	213.188414
C1_5_2013	C1	5	2013	0.121	2.7	2.45	0.14	0.129	213.188414
C1_5_2014	C1	5	2014	0.1089	2.7	2.27	0.01	0.009	213.188414
C1_5_2015	C1	5	2015	0.1089	2.7	2.27	0.01	0.009	213.188414
C1_5_2016	C1	5	2016	0.1089	2.7	2.27	0.01	0.009	213.188414
C1_5_2017	C1	5	2017	0.1089	2.7	2.27	0.01	0.009	213.188414
C1_5_2018	C1	5	2018	0.1089	2.7	2.27	0.01	0.009	213.188414
C1_5_2019	C1	5	2019	0.1089	2.7	2.27	0.01	0.009	213.188414
C1_5_2020	C1	5	2020	0.1089	2.7	2.27	0.01	0.009	213.188414
C1_5_2040	C1	5	2040	0.0605	2.7	0.27	0.01	0.009	213.188414
C1_6_1969	C1	6	1969	1.5972	4.4	14	0.77	0.708	213.188414
C1_6_1970	C1	6	1970	1.5972	4.4	14	0.77	0.708	213.188414
C1_6_1971	C1	6	1971	1.331	4.4	13	0.66	0.607	213.188414
C1_6_1972	C1	6	1972	1.331	4.4	13	0.66	0.607	213.188414
C1_6_1973	C1	6	1973	1.331	4.4	13	0.66	0.607	213.188414
C1_6_1974	C1	6	1974	1.331	4.4	13	0.66	0.607	213.188414
C1_6_1975	C1	6	1975	1.331	4.4	13	0.66	0.607	213.188414
C1_6_1976	C1	6	1976	1.331	4.4	13	0.66	0.607	213.188414
C1_6_1977	C1	6	1977	1.331	4.4	13	0.66	0.607	213.188414
C1_6_1978	C1	6	1978	1.331	4.4	13	0.66	0.607	213.188414
C1_6_1979	C1	6	1979	1.21	4.4	12	0.55	0.506	213.188414
C1_6_1980	C1	6	1980	1.21	4.4	12	0.55	0.506	213.188414
C1_6_1981	C1	6	1981	1.21	4.4	12	0.55	0.506	213.188414
C1_6_1982	C1	6	1982	1.21	4.4	12	0.55	0.506	213.188414
C1_6_1983	C1	6	1983	1.21	4.4	12	0.55	0.506	213.188414
C1_6_1984	C1	6	1984	1.1374	4.3	11	0.55	0.506	213.188414
C1_6_1985	C1	6	1985	1.1374	4.3	11	0.55	0.506	213.188414
C1_6_1986	C1	6	1986	1.1374	4.3	11	0.55	0.506	213.188414
C1_6_1987	C1	6	1987	1.0648	4.2	11	0.55	0.506	213.188414
C1_6_1988	C1	6	1988	1.0648	4.2	11	0.55	0.506	213.188414
C1_6_1989	C1	6	1989	1.0648	4.2	11	0.55	0.506	213.188414
C1_6_1990	C1	6	1990	1.0648	4.2	11	0.55	0.506	213.188414
C1_6_1991	C1	6	1991	1.0648	4.2	11	0.55	0.506	213.188414
C1_6_1992	C1	6	1992	1.0648	4.2	11	0.55	0.506	213.188414
C1_6_1993	C1	6	1993	1.0648	4.2	11	0.55	0.506	213.188414
C1_6_1994	C1	6	1994	1.0648	4.2	11	0.55	0.506	213.188414
C1_6_1995	C1	6	1995	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_6_1996	C1	6	1996	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_6_1997	C1	6	1997	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_6_1998	C1	6	1998	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_6_1999	C1	6	1999	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_6_2000	C1	6	2000	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_6_2001	C1	6	2001	0.8228	2.7	8.17	0.38	0.350	213.188414
C1_6_2002	C1	6	2002	0.3872	0.92	6.25	0.15	0.138	213.188414
C1_6_2003	C1	6	2003	0.2299	0.92	5	0.12	0.110	213.188414
C1_6_2004	C1	6	2004	0.1694	0.92	4.58	0.11	0.101	213.188414
C1_6_2005	C1	6	2005	0.1694	0.92	4.58	0.11	0.101	213.188414
C1_6_2006	C1	6	2006	0.1452	0.92	4.38	0.11	0.101	213.188414
C1_6_2007	C1	6	2007	0.1452	0.92	4.38	0.11	0.101	213.188414
C1_6_2008	C1	6	2008	0.1452	0.92	4.38	0.11	0.101	213.188414

C1_6_2009	C1	6	2009	0.1452	0.92	4.38	0.11	0.101	213.188414
C1_6_2010	C1	6	2010	0.121	0.92	2.45	0.11	0.101	213.188414
C1_6_2011	C1	6	2011	0.121	0.92	2.45	0.11	0.101	213.188414
C1_6_2012	C1	6	2012	0.121	0.92	2.45	0.11	0.101	213.188414
C1_6_2013	C1	6	2013	0.0847	0.92	1.36	0.01	0.009	213.188414
C1_6_2014	C1	6	2014	0.0847	0.92	1.36	0.01	0.009	213.188414
C1_6_2015	C1	6	2015	0.0847	0.92	1.36	0.01	0.009	213.188414
C1_6_2016	C1	6	2016	0.0847	0.92	1.36	0.01	0.009	213.188414
C1_6_2017	C1	6	2017	0.0847	0.92	1.36	0.01	0.009	213.188414
C1_6_2018	C1	6	2018	0.0847	0.92	1.36	0.01	0.009	213.188414
C1_6_2019	C1	6	2019	0.0847	0.92	1.36	0.01	0.009	213.188414
C1_6_2020	C1	6	2020	0.0847	0.92	1.36	0.01	0.009	213.188414
C1_6_2040	C1	6	2040	0.0605	0.92	0.27	0.01	0.009	213.188414
C1_7_1969	C1	7	1969	1.5246	4.2	14	0.74	0.681	185.972872
C1_7_1970	C1	7	1970	1.5246	4.2	14	0.74	0.681	185.972872
C1_7_1971	C1	7	1971	1.2705	4.2	13	0.63	0.580	185.972872
C1_7_1972	C1	7	1972	1.2705	4.2	13	0.63	0.580	185.972872
C1_7_1973	C1	7	1973	1.2705	4.2	13	0.63	0.580	185.972872
C1_7_1974	C1	7	1974	1.2705	4.2	13	0.63	0.580	185.972872
C1_7_1975	C1	7	1975	1.2705	4.2	13	0.63	0.580	185.972872
C1_7_1976	C1	7	1976	1.2705	4.2	13	0.63	0.580	185.972872
C1_7_1977	C1	7	1977	1.2705	4.2	13	0.63	0.580	185.972872
C1_7_1978	C1	7	1978	1.2705	4.2	13	0.63	0.580	185.972872
C1_7_1979	C1	7	1979	1.1495	4.2	12	0.53	0.488	185.972872
C1_7_1980	C1	7	1980	1.1495	4.2	12	0.53	0.488	185.972872
C1_7_1981	C1	7	1981	1.1495	4.2	12	0.53	0.488	185.972872
C1_7_1982	C1	7	1982	1.1495	4.2	12	0.53	0.488	185.972872
C1_7_1983	C1	7	1983	1.1495	4.2	12	0.53	0.488	185.972872
C1_7_1984	C1	7	1984	1.089	4.2	11	0.53	0.488	185.972872
C1_7_1985	C1	7	1985	1.089	4.2	11	0.53	0.488	185.972872
C1_7_1986	C1	7	1986	1.089	4.2	11	0.53	0.488	185.972872
C1_7_1987	C1	7	1987	1.0164	4.1	11	0.53	0.488	185.972872
C1_7_1988	C1	7	1988	1.0164	4.1	11	0.53	0.488	185.972872
C1_7_1989	C1	7	1989	1.0164	4.1	11	0.53	0.488	185.972872
C1_7_1990	C1	7	1990	1.0164	4.1	11	0.53	0.488	185.972872
C1_7_1991	C1	7	1991	1.0164	4.1	11	0.53	0.488	185.972872
C1_7_1992	C1	7	1992	1.0164	4.1	11	0.53	0.488	185.972872
C1_7_1993	C1	7	1993	1.0164	4.1	11	0.53	0.488	185.972872
C1_7_1994	C1	7	1994	1.0164	4.1	11	0.53	0.488	185.972872
C1_7_1995	C1	7	1995	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_7_1996	C1	7	1996	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_7_1997	C1	7	1997	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_7_1998	C1	7	1998	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_7_1999	C1	7	1999	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_7_2000	C1	7	2000	0.3872	0.92	6.25	0.15	0.138	185.972872
C1_7_2001	C1	7	2001	0.2299	0.92	4.95	0.12	0.110	185.972872
C1_7_2002	C1	7	2002	0.1694	0.92	4.51	0.11	0.101	185.972872
C1_7_2003	C1	7	2003	0.1694	0.92	4.51	0.11	0.101	185.972872
C1_7_2004	C1	7	2004	0.1452	0.92	4.29	0.11	0.101	185.972872
C1_7_2005	C1	7	2005	0.121	0.92	4	0.11	0.101	185.972872
C1_7_2006	C1	7	2006	0.121	0.92	4	0.11	0.101	185.972872
C1_7_2007	C1	7	2007	0.121	0.92	4	0.11	0.101	185.972872
C1_7_2008	C1	7	2008	0.121	0.92	4	0.11	0.101	185.972872
C1_7_2009	C1	7	2009	0.121	0.92	4	0.11	0.101	185.972872
C1_7_2010	C1	7	2010	0.121	0.92	2.45	0.11	0.101	185.972872
C1_7_2011	C1	7	2011	0.121	0.92	2.45	0.11	0.101	185.972872
C1_7_2012	C1	7	2012	0.121	0.92	2.45	0.11	0.101	185.972872
C1_7_2013	C1	7	2013	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_7_2014	C1	7	2014	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_7_2015	C1	7	2015	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_7_2016	C1	7	2016	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_7_2017	C1	7	2017	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_7_2018	C1	7	2018	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_7_2019	C1	7	2019	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_7_2020	C1	7	2020	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_7_2040	C1	7	2040	0.0605	0.92	0.27	0.01	0.009	185.972872
C1_8_1969	C1	8	1969	1.5246	4.2	14	0.74	0.681	185.972872
C1_8_1970	C1	8	1970	1.5246	4.2	14	0.74	0.681	185.972872
C1_8_1971	C1	8	1971	1.2705	4.2	13	0.63	0.580	185.972872
C1_8_1972	C1	8	1972	1.2705	4.2	13	0.63	0.580	185.972872
C1_8_1973	C1	8	1973	1.2705	4.2	13	0.63	0.580	185.972872
C1_8_1974	C1	8	1974	1.2705	4.2	13	0.63	0.580	185.972872
C1_8_1975	C1	8	1975	1.2705	4.2	13	0.63	0.580	185.972872
C1_8_1976	C1	8	1976	1.2705	4.2	13	0.63	0.580	185.972872
C1_8_1977	C1	8	1977	1.2705	4.2	13	0.63	0.580	185.972872
C1_8_1978	C1	8	1978	1.2705	4.2	13	0.63	0.580	185.972872
C1_8_1979	C1	8	1979	1.1495	4.2	12	0.53	0.488	185.972872
C1_8_1980	C1	8	1980	1.1495	4.2	12	0.53	0.488	185.972872
C1_8_1981	C1	8	1981	1.1495	4.2	12	0.53	0.488	185.972872
C1_8_1982	C1	8	1982	1.1495	4.2	12	0.53	0.488	185.972872
C1_8_1983	C1	8	1983	1.1495	4.2	12	0.53	0.488	185.972872
C1_8_1984	C1	8	1984	1.089	4.2	11	0.53	0.488	185.972872
C1_8_1985	C1	8	1985	1.089	4.2	11	0.53	0.488	185.972872
C1_8_1986	C1	8	1986	1.089	4.2	11	0.53	0.488	185.972872
C1_8_1987	C1	8	1987	1.0164	4.1	11	0.53	0.488	185.972872

C1_8_1988	C1	8	1988	1.0164	4.1	11	0.53	0.488	185.972872
C1_8_1989	C1	8	1989	1.0164	4.1	11	0.53	0.488	185.972872
C1_8_1990	C1	8	1990	1.0164	4.1	11	0.53	0.488	185.972872
C1_8_1991	C1	8	1991	1.0164	4.1	11	0.53	0.488	185.972872
C1_8_1992	C1	8	1992	1.0164	4.1	11	0.53	0.488	185.972872
C1_8_1993	C1	8	1993	1.0164	4.1	11	0.53	0.488	185.972872
C1_8_1994	C1	8	1994	1.0164	4.1	11	0.53	0.488	185.972872
C1_8_1995	C1	8	1995	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_8_1996	C1	8	1996	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_8_1997	C1	8	1997	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_8_1998	C1	8	1998	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_8_1999	C1	8	1999	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_8_2000	C1	8	2000	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_8_2001	C1	8	2001	0.3872	0.92	6.25	0.15	0.138	185.972872
C1_8_2002	C1	8	2002	0.2299	0.92	4.95	0.12	0.110	185.972872
C1_8_2003	C1	8	2003	0.1694	0.92	4.51	0.11	0.101	185.972872
C1_8_2004	C1	8	2004	0.1694	0.92	4.51	0.11	0.101	185.972872
C1_8_2005	C1	8	2005	0.1452	0.92	4.29	0.11	0.101	185.972872
C1_8_2006	C1	8	2006	0.1452	0.92	4.29	0.11	0.101	185.972872
C1_8_2007	C1	8	2007	0.1452	0.92	4.29	0.11	0.101	185.972872
C1_8_2008	C1	8	2008	0.1452	0.92	4.29	0.11	0.101	185.972872
C1_8_2009	C1	8	2009	0.1452	0.92	4.29	0.11	0.101	185.972872
C1_8_2010	C1	8	2010	0.121	0.92	2.45	0.11	0.101	185.972872
C1_8_2011	C1	8	2011	0.121	0.92	2.45	0.11	0.101	185.972872
C1_8_2012	C1	8	2012	0.121	0.92	2.45	0.11	0.101	185.972872
C1_8_2013	C1	8	2013	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_8_2014	C1	8	2014	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_8_2015	C1	8	2015	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_8_2016	C1	8	2016	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_8_2017	C1	8	2017	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_8_2018	C1	8	2018	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_8_2019	C1	8	2019	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_8_2020	C1	8	2020	0.0847	0.92	1.36	0.01	0.009	185.972872
C1_8_2040	C1	8	2040	0.0605	0.92	0.27	0.01	0.009	185.972872
C1_9_1969	C1	9	1969	1.5246	4.2	14	0.74	0.681	185.972872
C1_9_1970	C1	9	1970	1.5246	4.2	14	0.74	0.681	185.972872
C1_9_1971	C1	9	1971	1.2705	4.2	13	0.63	0.580	185.972872
C1_9_1972	C1	9	1972	1.2705	4.2	13	0.63	0.580	185.972872
C1_9_1973	C1	9	1973	1.2705	4.2	13	0.63	0.580	185.972872
C1_9_1974	C1	9	1974	1.2705	4.2	13	0.63	0.580	185.972872
C1_9_1975	C1	9	1975	1.2705	4.2	13	0.63	0.580	185.972872
C1_9_1976	C1	9	1976	1.2705	4.2	13	0.63	0.580	185.972872
C1_9_1977	C1	9	1977	1.2705	4.2	13	0.63	0.580	185.972872
C1_9_1978	C1	9	1978	1.2705	4.2	13	0.63	0.580	185.972872
C1_9_1979	C1	9	1979	1.1495	4.2	12	0.53	0.488	185.972872
C1_9_1980	C1	9	1980	1.1495	4.2	12	0.53	0.488	185.972872
C1_9_1981	C1	9	1981	1.1495	4.2	12	0.53	0.488	185.972872
C1_9_1982	C1	9	1982	1.1495	4.2	12	0.53	0.488	185.972872
C1_9_1983	C1	9	1983	1.1495	4.2	12	0.53	0.488	185.972872
C1_9_1984	C1	9	1984	1.089	4.2	11	0.53	0.488	185.972872
C1_9_1985	C1	9	1985	1.089	4.2	11	0.53	0.488	185.972872
C1_9_1986	C1	9	1986	1.089	4.2	11	0.53	0.488	185.972872
C1_9_1987	C1	9	1987	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1988	C1	9	1988	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1989	C1	9	1989	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1990	C1	9	1990	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1991	C1	9	1991	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1992	C1	9	1992	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1993	C1	9	1993	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1994	C1	9	1994	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1995	C1	9	1995	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1996	C1	9	1996	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1997	C1	9	1997	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1998	C1	9	1998	1.0164	4.1	11	0.53	0.488	185.972872
C1_9_1999	C1	9	1999	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_9_2000	C1	9	2000	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_9_2001	C1	9	2001	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_9_2002	C1	9	2002	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_9_2003	C1	9	2003	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_9_2004	C1	9	2004	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_9_2005	C1	9	2005	0.3872	0.92	6.25	0.15	0.138	185.972872
C1_9_2006	C1	9	2006	0.2299	0.92	4.95	0.12	0.110	185.972872
C1_9_2007	C1	9	2007	0.1694	0.92	4.51	0.11	0.101	185.972872
C1_9_2008	C1	9	2008	0.1694	0.92	4.51	0.11	0.101	185.972872
C1_9_2009	C1	9	2009	0.1452	0.92	4.29	0.11	0.101	185.972872
C1_9_2010	C1	9	2010	0.121	0.92	4.08	0.11	0.101	185.972872
C1_9_2011	C1	9	2011	0.121	0.92	4.08	0.11	0.101	185.972872
C1_9_2012	C1	9	2012	0.121	0.92	4.08	0.11	0.101	185.972872
C1_9_2013	C1	9	2013	0.121	0.92	4.08	0.11	0.101	185.972872
C1_9_2014	C1	9	2014	0.0847	0.92	2.36	0.06	0.055	185.972872
C1_9_2015	C1	9	2015	0.0847	0.92	2.36	0.06	0.055	185.972872
C1_9_2016	C1	9	2016	0.0847	0.92	2.36	0.06	0.055	185.972872
C1_9_2017	C1	9	2017	0.0847	0.92	2.36	0.06	0.055	185.972872
C1_9_2018	C1	9	2018	0.0847	0.92	2.36	0.06	0.055	185.972872
C1_9_2019	C1	9	2019	0.0847	0.92	2.36	0.06	0.055	185.972872

C1_9_2020	C1	9	2020	0.0847	0.92	2.36	0.06	0.055	185.972872
C1_9_2040	C1	9	2040	0.0605	0.92	2.36	0.02	0.018	185.972872
C1_10_1969	C1	10	1969	1.5246	4.2	14	0.74	0.681	185.972872
C1_10_1970	C1	10	1970	1.5246	4.2	14	0.74	0.681	185.972872
C1_10_1971	C1	10	1971	1.2705	4.2	13	0.63	0.580	185.972872
C1_10_1972	C1	10	1972	1.2705	4.2	13	0.63	0.580	185.972872
C1_10_1973	C1	10	1973	1.2705	4.2	13	0.63	0.580	185.972872
C1_10_1974	C1	10	1974	1.2705	4.2	13	0.63	0.580	185.972872
C1_10_1975	C1	10	1975	1.2705	4.2	13	0.63	0.580	185.972872
C1_10_1976	C1	10	1976	1.2705	4.2	13	0.63	0.580	185.972872
C1_10_1977	C1	10	1977	1.2705	4.2	13	0.63	0.580	185.972872
C1_10_1978	C1	10	1978	1.2705	4.2	13	0.63	0.580	185.972872
C1_10_1979	C1	10	1979	1.1495	4.2	12	0.53	0.488	185.972872
C1_10_1980	C1	10	1980	1.1495	4.2	12	0.53	0.488	185.972872
C1_10_1981	C1	10	1981	1.1495	4.2	12	0.53	0.488	185.972872
C1_10_1982	C1	10	1982	1.1495	4.2	12	0.53	0.488	185.972872
C1_10_1983	C1	10	1983	1.1495	4.2	12	0.53	0.488	185.972872
C1_10_1984	C1	10	1984	1.089	4.2	11	0.53	0.488	185.972872
C1_10_1985	C1	10	1985	1.089	4.2	11	0.53	0.488	185.972872
C1_10_1986	C1	10	1986	1.089	4.2	11	0.53	0.488	185.972872
C1_10_1987	C1	10	1987	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1988	C1	10	1988	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1989	C1	10	1989	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1990	C1	10	1990	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1991	C1	10	1991	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1992	C1	10	1992	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1993	C1	10	1993	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1994	C1	10	1994	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1995	C1	10	1995	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1996	C1	10	1996	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1997	C1	10	1997	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1998	C1	10	1998	1.0164	4.1	11	0.53	0.488	185.972872
C1_10_1999	C1	10	1999	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_10_2000	C1	10	2000	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_10_2001	C1	10	2001	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_10_2002	C1	10	2002	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_10_2003	C1	10	2003	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_10_2004	C1	10	2004	0.8228	2.7	8.17	0.38	0.350	185.972872
C1_10_2005	C1	10	2005	0.3872	0.92	6.25	0.15	0.138	185.972872
C1_10_2006	C1	10	2006	0.2299	0.92	4.95	0.12	0.110	185.972872
C1_10_2007	C1	10	2007	0.1694	0.92	4.51	0.11	0.101	185.972872
C1_10_2008	C1	10	2008	0.1694	0.92	4.51	0.11	0.101	185.972872
C1_10_2009	C1	10	2009	0.1452	0.92	4.29	0.11	0.101	185.972872
C1_10_2010	C1	10	2010	0.121	0.92	4.08	0.11	0.101	185.972872
C1_10_2011	C1	10	2011	0.121	0.92	4.08	0.11	0.101	185.972872
C1_10_2012	C1	10	2012	0.121	0.92	4.08	0.11	0.101	185.972872
C1_10_2013	C1	10	2013	0.121	0.92	4.08	0.11	0.101	185.972872
C1_10_2014	C1	10	2014	0.121	0.92	2.36	0.06	0.055	185.972872
C1_10_2015	C1	10	2015	0.121	0.92	2.36	0.06	0.055	185.972872
C1_10_2016	C1	10	2016	0.121	0.92	2.36	0.06	0.055	185.972872
C1_10_2017	C1	10	2017	0.121	0.92	2.36	0.06	0.055	185.972872
C1_10_2018	C1	10	2018	0.121	0.92	2.36	0.06	0.055	185.972872
C1_10_2019	C1	10	2019	0.121	0.92	2.36	0.06	0.055	185.972872
C1_10_2020	C1	10	2020	0.121	0.92	2.36	0.06	0.055	185.972872
C1_10_2040	C1	10	2040	0.0605	0.92	2.36	0.02	0.018	185.972872
C2_1_1994	C2	1	1994	1.815	5	10	1	0.920	244.93988
C2_1_1995	C2	1	1995	1.815	5	10	1	0.920	244.93988
C2_1_1996	C2	1	1996	1.815	5	10	1	0.920	244.93988
C2_1_1997	C2	1	1997	1.815	5	10	1	0.920	244.93988
C2_1_1998	C2	1	1998	1.815	5	10	1	0.920	244.93988
C2_1_1999	C2	1	1999	1.2705	5	9.35	0.57	0.524	244.93988
C2_1_2000	C2	1	2000	1.2705	5	9.35	0.57	0.524	244.93988
C2_1_2001	C2	1	2001	1.2705	5	9.35	0.57	0.524	244.93988
C2_1_2002	C2	1	2002	1.2705	5	9.35	0.57	0.524	244.93988
C2_1_2003	C2	1	2003	1.2705	5	9.35	0.57	0.524	244.93988
C2_1_2004	C2	1	2004	0.8228	3.47	6.08	0.47	0.432	244.93988
C2_1_2005	C2	1	2005	0.8228	3.47	6.08	0.47	0.432	244.93988
C2_1_2006	C2	1	2006	0.8228	3.47	6.08	0.47	0.432	244.93988
C2_1_2007	C2	1	2007	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2008	C2	1	2008	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2009	C2	1	2009	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2010	C2	1	2010	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2011	C2	1	2011	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2012	C2	1	2012	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2013	C2	1	2013	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2014	C2	1	2014	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2015	C2	1	2015	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2016	C2	1	2016	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2017	C2	1	2017	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2018	C2	1	2018	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2019	C2	1	2019	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2020	C2	1	2020	0.5929	3.47	4.37	0.38	0.350	244.93988
C2_1_2040	C2	1	2040	0.5929	3.47	4.37	0.19	0.175	244.93988
C2_2_1994	C2	2	1994	2.2264	5	6.92	0.76	0.699	244.93988
C2_2_1995	C2	2	1995	2.2264	5	6.92	0.76	0.699	244.93988

C2_2_1996	C2	2	1996	2.2264	5	6.92	0.76	0.699	244.93988
C2_2_1997	C2	2	1997	2.2264	5	6.92	0.76	0.699	244.93988
C2_2_1998	C2	2	1998	2.2264	5	6.92	0.76	0.699	244.93988
C2_2_1999	C2	2	1999	1.089	5	6.92	0.57	0.524	244.93988
C2_2_2000	C2	2	2000	1.089	5	6.92	0.57	0.524	244.93988
C2_2_2001	C2	2	2001	1.089	5	6.92	0.57	0.524	244.93988
C2_2_2002	C2	2	2002	1.089	5	6.92	0.57	0.524	244.93988
C2_2_2003	C2	2	2003	1.089	5	6.92	0.57	0.524	244.93988
C2_2_2004	C2	2	2004	0.7744	2.34	5.79	0.38	0.350	244.93988
C2_2_2005	C2	2	2005	0.7744	2.34	5.79	0.38	0.350	244.93988
C2_2_2006	C2	2	2006	0.7744	2.34	5.79	0.38	0.350	244.93988
C2_2_2007	C2	2	2007	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2008	C2	2	2008	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2009	C2	2	2009	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2010	C2	2	2010	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2011	C2	2	2011	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2012	C2	2	2012	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2013	C2	2	2013	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2014	C2	2	2014	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2015	C2	2	2015	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2016	C2	2	2016	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2017	C2	2	2017	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2018	C2	2	2018	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2019	C2	2	2019	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2020	C2	2	2020	0.6897	2.34	4.57	0.38	0.350	244.93988
C2_2_2040	C2	2	2040	0.6897	2.34	4.57	0.19	0.175	244.93988
C2_3_1987	C2	3	1987	2.2264	5	7	0.76	0.699	244.93988
C2_3_1988	C2	3	1988	2.2264	5	7	0.76	0.699	244.93988
C2_3_1989	C2	3	1989	2.2264	5	7	0.76	0.699	244.93988
C2_3_1990	C2	3	1990	2.2264	5	7	0.76	0.699	244.93988
C2_3_1991	C2	3	1991	2.2264	5	7	0.76	0.699	244.93988
C2_3_1992	C2	3	1992	2.2264	5	7	0.76	0.699	244.93988
C2_3_1993	C2	3	1993	2.2264	5	7	0.76	0.699	244.93988
C2_3_1994	C2	3	1994	2.2264	5	7	0.76	0.699	244.93988
C2_3_1995	C2	3	1995	2.2264	5	7	0.76	0.699	244.93988
C2_3_1996	C2	3	1996	2.2264	5	7	0.76	0.699	244.93988
C2_3_1997	C2	3	1997	2.2264	5	7	0.76	0.699	244.93988
C2_3_1998	C2	3	1998	2.178	5	6.9	0.76	0.699	244.93988
C2_3_1999	C2	3	1999	2.178	5	6.9	0.76	0.699	244.93988
C2_3_2000	C2	3	2000	2.178	5	6.9	0.76	0.699	244.93988
C2_3_2001	C2	3	2001	2.178	5	6.9	0.76	0.699	244.93988
C2_3_2002	C2	3	2002	2.178	5	6.9	0.76	0.699	244.93988
C2_3_2003	C2	3	2003	1.7545	4.1	5.55	0.6	0.552	244.93988
C2_3_2004	C2	3	2004	0.7744	3.27	5.1	0.43	0.396	244.93988
C2_3_2005	C2	3	2005	0.4477	3	4.95	0.38	0.350	244.93988
C2_3_2006	C2	3	2006	0.4477	3	4.95	0.38	0.350	244.93988
C2_3_2007	C2	3	2007	0.2904	2.86	4.88	0.35	0.322	244.93988
C2_3_2008	C2	3	2008	0.2904	2.86	4.88	0.35	0.322	244.93988
C2_3_2009	C2	3	2009	0.2904	2.86	4.88	0.35	0.322	244.93988
C2_3_2010	C2	3	2010	0.2904	2.86	4.88	0.35	0.322	244.93988
C2_3_2011	C2	3	2011	0.2904	2.86	4.88	0.35	0.322	244.93988
C2_3_2012	C2	3	2012	0.121	2.72	4.8	0.16	0.147	244.93988
C2_3_2013	C2	3	2013	0.121	2.72	4.8	0.16	0.147	244.93988
C2_3_2014	C2	3	2014	0.121	2.72	4.8	0.16	0.147	244.93988
C2_3_2015	C2	3	2015	0.121	2.72	4.8	0.16	0.147	244.93988
C2_3_2016	C2	3	2016	0.121	2.72	4.8	0.16	0.147	244.93988
C2_3_2017	C2	3	2017	0.121	2.72	4.8	0.16	0.147	244.93988
C2_3_2018	C2	3	2018	0.121	2.72	4.8	0.16	0.147	244.93988
C2_3_2019	C2	3	2019	0.121	2.72	4.8	0.16	0.147	244.93988
C2_3_2020	C2	3	2020	0.121	2.72	4.8	0.16	0.147	244.93988
C2_3_2040	C2	3	2040	0.121	2.72	2.9	0.01	0.009	244.93988
C2_4_1987	C2	4	1987	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1988	C2	4	1988	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1989	C2	4	1989	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1990	C2	4	1990	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1991	C2	4	1991	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1992	C2	4	1992	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1993	C2	4	1993	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1994	C2	4	1994	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1995	C2	4	1995	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1996	C2	4	1996	1.7424	4.8	13	0.84	0.773	222.260261
C2_4_1997	C2	4	1997	1.1979	3.49	8.75	0.69	0.635	222.260261
C2_4_1998	C2	4	1998	1.1979	3.49	8.75	0.69	0.635	222.260261
C2_4_1999	C2	4	1999	1.1979	3.49	8.75	0.69	0.635	222.260261
C2_4_2000	C2	4	2000	1.1979	3.49	8.75	0.69	0.635	222.260261
C2_4_2001	C2	4	2001	1.1979	3.49	8.75	0.69	0.635	222.260261
C2_4_2002	C2	4	2002	1.1979	3.49	8.75	0.69	0.635	222.260261
C2_4_2003	C2	4	2003	1.1979	3.49	6.9	0.69	0.635	222.260261
C2_4_2004	C2	4	2004	0.5566	3.23	5.64	0.39	0.359	222.260261
C2_4_2005	C2	4	2005	0.3388	3.14	5.22	0.29	0.267	222.260261
C2_4_2006	C2	4	2006	0.3388	3.14	5.22	0.29	0.267	222.260261
C2_4_2007	C2	4	2007	0.2299	3.09	5.01	0.24	0.221	222.260261
C2_4_2008	C2	4	2008	0.2299	3.09	5.01	0.24	0.221	222.260261
C2_4_2009	C2	4	2009	0.2299	3.09	5.01	0.24	0.221	222.260261
C2_4_2010	C2	4	2010	0.2299	3.09	5.01	0.24	0.221	222.260261

C2_4_2011	C2	4	2011	0.121	3.05	2.89	0.2	0.184	222.260261
C2_4_2012	C2	4	2012	0.1089	3.05	2.53	0.07	0.064	222.260261
C2_4_2013	C2	4	2013	0.1089	3.05	2.53	0.07	0.064	222.260261
C2_4_2014	C2	4	2014	0.1089	3.05	2.53	0.01	0.009	222.260261
C2_4_2015	C2	4	2015	0.1089	3.05	2.53	0.01	0.009	222.260261
C2_4_2016	C2	4	2016	0.1089	3.05	2.53	0.01	0.009	222.260261
C2_4_2017	C2	4	2017	0.1089	3.05	2.53	0.01	0.009	222.260261
C2_4_2018	C2	4	2018	0.1089	3.05	2.53	0.01	0.009	222.260261
C2_4_2019	C2	4	2019	0.1089	3.05	2.53	0.01	0.009	222.260261
C2_4_2020	C2	4	2020	0.1089	3.05	2.53	0.01	0.009	222.260261
C2_4_2040	C2	4	2040	0.0847	3.05	1.4	0.01	0.009	222.260261
C2_5_1969	C2	5	1969	1.5972	4.4	14	0.77	0.708	213.188414
C2_5_1970	C2	5	1970	1.5972	4.4	14	0.77	0.708	213.188414
C2_5_1971	C2	5	1971	1.331	4.4	13	0.66	0.607	213.188414
C2_5_1972	C2	5	1972	1.331	4.4	13	0.66	0.607	213.188414
C2_5_1973	C2	5	1973	1.331	4.4	13	0.66	0.607	213.188414
C2_5_1974	C2	5	1974	1.331	4.4	13	0.66	0.607	213.188414
C2_5_1975	C2	5	1975	1.331	4.4	13	0.66	0.607	213.188414
C2_5_1976	C2	5	1976	1.331	4.4	13	0.66	0.607	213.188414
C2_5_1977	C2	5	1977	1.331	4.4	13	0.66	0.607	213.188414
C2_5_1978	C2	5	1978	1.331	4.4	13	0.66	0.607	213.188414
C2_5_1979	C2	5	1979	1.21	4.4	12	0.55	0.506	213.188414
C2_5_1980	C2	5	1980	1.21	4.4	12	0.55	0.506	213.188414
C2_5_1981	C2	5	1981	1.21	4.4	12	0.55	0.506	213.188414
C2_5_1982	C2	5	1982	1.21	4.4	12	0.55	0.506	213.188414
C2_5_1983	C2	5	1983	1.21	4.4	12	0.55	0.506	213.188414
C2_5_1984	C2	5	1984	1.1374	4.3	11	0.55	0.506	213.188414
C2_5_1985	C2	5	1985	1.1374	4.3	11	0.55	0.506	213.188414
C2_5_1986	C2	5	1986	1.1374	4.3	11	0.55	0.506	213.188414
C2_5_1987	C2	5	1987	1.0648	4.2	11	0.55	0.506	213.188414
C2_5_1988	C2	5	1988	1.0648	4.2	11	0.55	0.506	213.188414
C2_5_1989	C2	5	1989	1.0648	4.2	11	0.55	0.506	213.188414
C2_5_1990	C2	5	1990	1.0648	4.2	11	0.55	0.506	213.188414
C2_5_1991	C2	5	1991	1.0648	4.2	11	0.55	0.506	213.188414
C2_5_1992	C2	5	1992	1.0648	4.2	11	0.55	0.506	213.188414
C2_5_1993	C2	5	1993	1.0648	4.2	11	0.55	0.506	213.188414
C2_5_1994	C2	5	1994	1.0648	4.2	11	0.55	0.506	213.188414
C2_5_1995	C2	5	1995	1.0648	4.2	11	0.55	0.506	213.188414
C2_5_1996	C2	5	1996	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_5_1997	C2	5	1997	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_5_1998	C2	5	1998	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_5_1999	C2	5	1999	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_5_2000	C2	5	2000	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_5_2001	C2	5	2001	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_5_2002	C2	5	2002	0.8228	2.7	6.9	0.38	0.350	213.188414
C2_5_2003	C2	5	2003	0.3993	2.7	5.26	0.24	0.221	213.188414
C2_5_2004	C2	5	2004	0.2662	2.7	4.72	0.19	0.175	213.188414
C2_5_2005	C2	5	2005	0.2662	2.7	4.72	0.19	0.175	213.188414
C2_5_2006	C2	5	2006	0.1936	2.7	4.44	0.16	0.147	213.188414
C2_5_2007	C2	5	2007	0.1936	2.7	4.44	0.16	0.147	213.188414
C2_5_2008	C2	5	2008	0.1936	2.7	4.44	0.16	0.147	213.188414
C2_5_2009	C2	5	2009	0.1936	2.7	4.44	0.16	0.147	213.188414
C2_5_2010	C2	5	2010	0.1936	2.7	4.44	0.16	0.147	213.188414
C2_5_2011	C2	5	2011	0.121	2.7	2.45	0.14	0.129	213.188414
C2_5_2012	C2	5	2012	0.121	2.7	2.45	0.14	0.129	213.188414
C2_5_2013	C2	5	2013	0.121	2.7	2.45	0.14	0.129	213.188414
C2_5_2014	C2	5	2014	0.1089	2.7	2.27	0.01	0.009	213.188414
C2_5_2015	C2	5	2015	0.1089	2.7	2.27	0.01	0.009	213.188414
C2_5_2016	C2	5	2016	0.1089	2.7	2.27	0.01	0.009	213.188414
C2_5_2017	C2	5	2017	0.1089	2.7	2.27	0.01	0.009	213.188414
C2_5_2018	C2	5	2018	0.1089	2.7	2.27	0.01	0.009	213.188414
C2_5_2019	C2	5	2019	0.1089	2.7	2.27	0.01	0.009	213.188414
C2_5_2020	C2	5	2020	0.1089	2.7	2.27	0.01	0.009	213.188414
C2_5_2040	C2	5	2040	0.0605	2.7	0.27	0.01	0.009	213.188414
C2_6_1969	C2	6	1969	1.5972	4.4	14	0.77	0.708	213.188414
C2_6_1970	C2	6	1970	1.5972	4.4	14	0.77	0.708	213.188414
C2_6_1971	C2	6	1971	1.331	4.4	13	0.66	0.607	213.188414
C2_6_1972	C2	6	1972	1.331	4.4	13	0.66	0.607	213.188414
C2_6_1973	C2	6	1973	1.331	4.4	13	0.66	0.607	213.188414
C2_6_1974	C2	6	1974	1.331	4.4	13	0.66	0.607	213.188414
C2_6_1975	C2	6	1975	1.331	4.4	13	0.66	0.607	213.188414
C2_6_1976	C2	6	1976	1.331	4.4	13	0.66	0.607	213.188414
C2_6_1977	C2	6	1977	1.331	4.4	13	0.66	0.607	213.188414
C2_6_1978	C2	6	1978	1.331	4.4	13	0.66	0.607	213.188414
C2_6_1979	C2	6	1979	1.21	4.4	12	0.55	0.506	213.188414
C2_6_1980	C2	6	1980	1.21	4.4	12	0.55	0.506	213.188414
C2_6_1981	C2	6	1981	1.21	4.4	12	0.55	0.506	213.188414
C2_6_1982	C2	6	1982	1.21	4.4	12	0.55	0.506	213.188414
C2_6_1983	C2	6	1983	1.21	4.4	12	0.55	0.506	213.188414
C2_6_1984	C2	6	1984	1.1374	4.3	11	0.55	0.506	213.188414
C2_6_1985	C2	6	1985	1.1374	4.3	11	0.55	0.506	213.188414
C2_6_1986	C2	6	1986	1.1374	4.3	11	0.55	0.506	213.188414
C2_6_1987	C2	6	1987	1.0648	4.2	11	0.55	0.506	213.188414
C2_6_1988	C2	6	1988	1.0648	4.2	11	0.55	0.506	213.188414
C2_6_1989	C2	6	1989	1.0648	4.2	11	0.55	0.506	213.188414

C2_6_1990	C2	6	1990	1.0648	4.2	11	0.55	0.506	213.188414
C2_6_1991	C2	6	1991	1.0648	4.2	11	0.55	0.506	213.188414
C2_6_1992	C2	6	1992	1.0648	4.2	11	0.55	0.506	213.188414
C2_6_1993	C2	6	1993	1.0648	4.2	11	0.55	0.506	213.188414
C2_6_1994	C2	6	1994	1.0648	4.2	11	0.55	0.506	213.188414
C2_6_1995	C2	6	1995	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_6_1996	C2	6	1996	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_6_1997	C2	6	1997	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_6_1998	C2	6	1998	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_6_1999	C2	6	1999	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_6_2000	C2	6	2000	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_6_2001	C2	6	2001	0.8228	2.7	8.17	0.38	0.350	213.188414
C2_6_2002	C2	6	2002	0.3872	0.92	6.25	0.15	0.138	213.188414
C2_6_2003	C2	6	2003	0.2299	0.92	5	0.12	0.110	213.188414
C2_6_2004	C2	6	2004	0.1694	0.92	4.58	0.11	0.101	213.188414
C2_6_2005	C2	6	2005	0.1694	0.92	4.58	0.11	0.101	213.188414
C2_6_2006	C2	6	2006	0.1452	0.92	4.38	0.11	0.101	213.188414
C2_6_2007	C2	6	2007	0.1452	0.92	4.38	0.11	0.101	213.188414
C2_6_2008	C2	6	2008	0.1452	0.92	4.38	0.11	0.101	213.188414
C2_6_2009	C2	6	2009	0.1452	0.92	4.38	0.11	0.101	213.188414
C2_6_2010	C2	6	2010	0.121	0.92	2.45	0.11	0.101	213.188414
C2_6_2011	C2	6	2011	0.121	0.92	2.45	0.11	0.101	213.188414
C2_6_2012	C2	6	2012	0.121	0.92	2.45	0.11	0.101	213.188414
C2_6_2013	C2	6	2013	0.0847	0.92	1.36	0.01	0.009	213.188414
C2_6_2014	C2	6	2014	0.0847	0.92	1.36	0.01	0.009	213.188414
C2_6_2015	C2	6	2015	0.0847	0.92	1.36	0.01	0.009	213.188414
C2_6_2016	C2	6	2016	0.0847	0.92	1.36	0.01	0.009	213.188414
C2_6_2017	C2	6	2017	0.0847	0.92	1.36	0.01	0.009	213.188414
C2_6_2018	C2	6	2018	0.0847	0.92	1.36	0.01	0.009	213.188414
C2_6_2019	C2	6	2019	0.0847	0.92	1.36	0.01	0.009	213.188414
C2_6_2020	C2	6	2020	0.0847	0.92	1.36	0.01	0.009	213.188414
C2_6_2040	C2	6	2040	0.0605	0.92	0.27	0.01	0.009	213.188414
C2_7_1969	C2	7	1969	1.5246	4.2	14	0.74	0.681	185.972872
C2_7_1970	C2	7	1970	1.5246	4.2	14	0.74	0.681	185.972872
C2_7_1971	C2	7	1971	1.2705	4.2	13	0.63	0.580	185.972872
C2_7_1972	C2	7	1972	1.2705	4.2	13	0.63	0.580	185.972872
C2_7_1973	C2	7	1973	1.2705	4.2	13	0.63	0.580	185.972872
C2_7_1974	C2	7	1974	1.2705	4.2	13	0.63	0.580	185.972872
C2_7_1975	C2	7	1975	1.2705	4.2	13	0.63	0.580	185.972872
C2_7_1976	C2	7	1976	1.2705	4.2	13	0.63	0.580	185.972872
C2_7_1977	C2	7	1977	1.2705	4.2	13	0.63	0.580	185.972872
C2_7_1978	C2	7	1978	1.2705	4.2	13	0.63	0.580	185.972872
C2_7_1979	C2	7	1979	1.1495	4.2	12	0.53	0.488	185.972872
C2_7_1980	C2	7	1980	1.1495	4.2	12	0.53	0.488	185.972872
C2_7_1981	C2	7	1981	1.1495	4.2	12	0.53	0.488	185.972872
C2_7_1982	C2	7	1982	1.1495	4.2	12	0.53	0.488	185.972872
C2_7_1983	C2	7	1983	1.1495	4.2	12	0.53	0.488	185.972872
C2_7_1984	C2	7	1984	1.089	4.2	11	0.53	0.488	185.972872
C2_7_1985	C2	7	1985	1.089	4.2	11	0.53	0.488	185.972872
C2_7_1986	C2	7	1986	1.089	4.2	11	0.53	0.488	185.972872
C2_7_1987	C2	7	1987	1.0164	4.1	11	0.53	0.488	185.972872
C2_7_1988	C2	7	1988	1.0164	4.1	11	0.53	0.488	185.972872
C2_7_1989	C2	7	1989	1.0164	4.1	11	0.53	0.488	185.972872
C2_7_1990	C2	7	1990	1.0164	4.1	11	0.53	0.488	185.972872
C2_7_1991	C2	7	1991	1.0164	4.1	11	0.53	0.488	185.972872
C2_7_1992	C2	7	1992	1.0164	4.1	11	0.53	0.488	185.972872
C2_7_1993	C2	7	1993	1.0164	4.1	11	0.53	0.488	185.972872
C2_7_1994	C2	7	1994	1.0164	4.1	11	0.53	0.488	185.972872
C2_7_1995	C2	7	1995	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_7_1996	C2	7	1996	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_7_1997	C2	7	1997	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_7_1998	C2	7	1998	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_7_1999	C2	7	1999	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_7_2000	C2	7	2000	0.3872	0.92	6.25	0.15	0.138	185.972872
C2_7_2001	C2	7	2001	0.2299	0.92	4.95	0.12	0.110	185.972872
C2_7_2002	C2	7	2002	0.1694	0.92	4.51	0.11	0.101	185.972872
C2_7_2003	C2	7	2003	0.1694	0.92	4.51	0.11	0.101	185.972872
C2_7_2004	C2	7	2004	0.1452	0.92	4.29	0.11	0.101	185.972872
C2_7_2005	C2	7	2005	0.121	0.92	4	0.11	0.101	185.972872
C2_7_2006	C2	7	2006	0.121	0.92	4	0.11	0.101	185.972872
C2_7_2007	C2	7	2007	0.121	0.92	4	0.11	0.101	185.972872
C2_7_2008	C2	7	2008	0.121	0.92	4	0.11	0.101	185.972872
C2_7_2009	C2	7	2009	0.121	0.92	4	0.11	0.101	185.972872
C2_7_2010	C2	7	2010	0.121	0.92	2.45	0.11	0.101	185.972872
C2_7_2011	C2	7	2011	0.121	0.92	2.45	0.11	0.101	185.972872
C2_7_2012	C2	7	2012	0.121	0.92	2.45	0.11	0.101	185.972872
C2_7_2013	C2	7	2013	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_7_2014	C2	7	2014	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_7_2015	C2	7	2015	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_7_2016	C2	7	2016	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_7_2017	C2	7	2017	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_7_2018	C2	7	2018	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_7_2019	C2	7	2019	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_7_2020	C2	7	2020	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_7_2040	C2	7	2040	0.0605	0.92	0.27	0.01	0.009	185.972872

C2_8_1969	C2	8	1969	1.5246	4.2	14	0.74	0.681	185.972872
C2_8_1970	C2	8	1970	1.5246	4.2	14	0.74	0.681	185.972872
C2_8_1971	C2	8	1971	1.2705	4.2	13	0.63	0.580	185.972872
C2_8_1972	C2	8	1972	1.2705	4.2	13	0.63	0.580	185.972872
C2_8_1973	C2	8	1973	1.2705	4.2	13	0.63	0.580	185.972872
C2_8_1974	C2	8	1974	1.2705	4.2	13	0.63	0.580	185.972872
C2_8_1975	C2	8	1975	1.2705	4.2	13	0.63	0.580	185.972872
C2_8_1976	C2	8	1976	1.2705	4.2	13	0.63	0.580	185.972872
C2_8_1977	C2	8	1977	1.2705	4.2	13	0.63	0.580	185.972872
C2_8_1978	C2	8	1978	1.2705	4.2	13	0.63	0.580	185.972872
C2_8_1979	C2	8	1979	1.1495	4.2	12	0.53	0.488	185.972872
C2_8_1980	C2	8	1980	1.1495	4.2	12	0.53	0.488	185.972872
C2_8_1981	C2	8	1981	1.1495	4.2	12	0.53	0.488	185.972872
C2_8_1982	C2	8	1982	1.1495	4.2	12	0.53	0.488	185.972872
C2_8_1983	C2	8	1983	1.1495	4.2	12	0.53	0.488	185.972872
C2_8_1984	C2	8	1984	1.089	4.2	11	0.53	0.488	185.972872
C2_8_1985	C2	8	1985	1.089	4.2	11	0.53	0.488	185.972872
C2_8_1986	C2	8	1986	1.089	4.2	11	0.53	0.488	185.972872
C2_8_1987	C2	8	1987	1.0164	4.1	11	0.53	0.488	185.972872
C2_8_1988	C2	8	1988	1.0164	4.1	11	0.53	0.488	185.972872
C2_8_1989	C2	8	1989	1.0164	4.1	11	0.53	0.488	185.972872
C2_8_1990	C2	8	1990	1.0164	4.1	11	0.53	0.488	185.972872
C2_8_1991	C2	8	1991	1.0164	4.1	11	0.53	0.488	185.972872
C2_8_1992	C2	8	1992	1.0164	4.1	11	0.53	0.488	185.972872
C2_8_1993	C2	8	1993	1.0164	4.1	11	0.53	0.488	185.972872
C2_8_1994	C2	8	1994	1.0164	4.1	11	0.53	0.488	185.972872
C2_8_1995	C2	8	1995	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_8_1996	C2	8	1996	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_8_1997	C2	8	1997	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_8_1998	C2	8	1998	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_8_1999	C2	8	1999	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_8_2000	C2	8	2000	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_8_2001	C2	8	2001	0.3872	0.92	6.25	0.15	0.138	185.972872
C2_8_2002	C2	8	2002	0.2299	0.92	4.95	0.12	0.110	185.972872
C2_8_2003	C2	8	2003	0.1694	0.92	4.51	0.11	0.101	185.972872
C2_8_2004	C2	8	2004	0.1694	0.92	4.51	0.11	0.101	185.972872
C2_8_2005	C2	8	2005	0.1452	0.92	4.29	0.11	0.101	185.972872
C2_8_2006	C2	8	2006	0.1452	0.92	4.29	0.11	0.101	185.972872
C2_8_2007	C2	8	2007	0.1452	0.92	4.29	0.11	0.101	185.972872
C2_8_2008	C2	8	2008	0.1452	0.92	4.29	0.11	0.101	185.972872
C2_8_2009	C2	8	2009	0.1452	0.92	4.29	0.11	0.101	185.972872
C2_8_2010	C2	8	2010	0.121	0.92	2.45	0.11	0.101	185.972872
C2_8_2011	C2	8	2011	0.121	0.92	2.45	0.11	0.101	185.972872
C2_8_2012	C2	8	2012	0.121	0.92	2.45	0.11	0.101	185.972872
C2_8_2013	C2	8	2013	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_8_2014	C2	8	2014	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_8_2015	C2	8	2015	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_8_2016	C2	8	2016	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_8_2017	C2	8	2017	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_8_2018	C2	8	2018	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_8_2019	C2	8	2019	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_8_2020	C2	8	2020	0.0847	0.92	1.36	0.01	0.009	185.972872
C2_8_2040	C2	8	2040	0.0605	0.92	0.27	0.01	0.009	185.972872
C2_9_1969	C2	9	1969	1.5246	4.2	14	0.74	0.681	185.972872
C2_9_1970	C2	9	1970	1.5246	4.2	14	0.74	0.681	185.972872
C2_9_1971	C2	9	1971	1.2705	4.2	13	0.63	0.580	185.972872
C2_9_1972	C2	9	1972	1.2705	4.2	13	0.63	0.580	185.972872
C2_9_1973	C2	9	1973	1.2705	4.2	13	0.63	0.580	185.972872
C2_9_1974	C2	9	1974	1.2705	4.2	13	0.63	0.580	185.972872
C2_9_1975	C2	9	1975	1.2705	4.2	13	0.63	0.580	185.972872
C2_9_1976	C2	9	1976	1.2705	4.2	13	0.63	0.580	185.972872
C2_9_1977	C2	9	1977	1.2705	4.2	13	0.63	0.580	185.972872
C2_9_1978	C2	9	1978	1.2705	4.2	13	0.63	0.580	185.972872
C2_9_1979	C2	9	1979	1.1495	4.2	12	0.53	0.488	185.972872
C2_9_1980	C2	9	1980	1.1495	4.2	12	0.53	0.488	185.972872
C2_9_1981	C2	9	1981	1.1495	4.2	12	0.53	0.488	185.972872
C2_9_1982	C2	9	1982	1.1495	4.2	12	0.53	0.488	185.972872
C2_9_1983	C2	9	1983	1.1495	4.2	12	0.53	0.488	185.972872
C2_9_1984	C2	9	1984	1.089	4.2	11	0.53	0.488	185.972872
C2_9_1985	C2	9	1985	1.089	4.2	11	0.53	0.488	185.972872
C2_9_1986	C2	9	1986	1.089	4.2	11	0.53	0.488	185.972872
C2_9_1987	C2	9	1987	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1988	C2	9	1988	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1989	C2	9	1989	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1990	C2	9	1990	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1991	C2	9	1991	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1992	C2	9	1992	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1993	C2	9	1993	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1994	C2	9	1994	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1995	C2	9	1995	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1996	C2	9	1996	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1997	C2	9	1997	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1998	C2	9	1998	1.0164	4.1	11	0.53	0.488	185.972872
C2_9_1999	C2	9	1999	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_9_2000	C2	9	2000	0.8228	2.7	8.17	0.38	0.350	185.972872

C2_9_2001	C2	9	2001	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_9_2002	C2	9	2002	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_9_2003	C2	9	2003	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_9_2004	C2	9	2004	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_9_2005	C2	9	2005	0.3872	0.92	6.25	0.15	0.138	185.972872
C2_9_2006	C2	9	2006	0.2299	0.92	4.95	0.12	0.110	185.972872
C2_9_2007	C2	9	2007	0.1694	0.92	4.51	0.11	0.101	185.972872
C2_9_2008	C2	9	2008	0.1694	0.92	4.51	0.11	0.101	185.972872
C2_9_2009	C2	9	2009	0.1452	0.92	4.29	0.11	0.101	185.972872
C2_9_2010	C2	9	2010	0.121	0.92	4.08	0.11	0.101	185.972872
C2_9_2011	C2	9	2011	0.121	0.92	4.08	0.11	0.101	185.972872
C2_9_2012	C2	9	2012	0.121	0.92	4.08	0.11	0.101	185.972872
C2_9_2013	C2	9	2013	0.121	0.92	4.08	0.11	0.101	185.972872
C2_9_2014	C2	9	2014	0.0847	0.92	2.36	0.06	0.055	185.972872
C2_9_2015	C2	9	2015	0.0847	0.92	2.36	0.06	0.055	185.972872
C2_9_2016	C2	9	2016	0.0847	0.92	2.36	0.06	0.055	185.972872
C2_9_2017	C2	9	2017	0.0847	0.92	2.36	0.06	0.055	185.972872
C2_9_2018	C2	9	2018	0.0847	0.92	2.36	0.06	0.055	185.972872
C2_9_2019	C2	9	2019	0.0847	0.92	2.36	0.06	0.055	185.972872
C2_9_2020	C2	9	2020	0.0847	0.92	2.36	0.06	0.055	185.972872
C2_9_2040	C2	9	2040	0.0605	0.92	2.36	0.02	0.018	185.972872
C2_10_1969	C2	10	1969	1.5246	4.2	14	0.74	0.681	185.972872
C2_10_1970	C2	10	1970	1.5246	4.2	14	0.74	0.681	185.972872
C2_10_1971	C2	10	1971	1.2705	4.2	13	0.63	0.580	185.972872
C2_10_1972	C2	10	1972	1.2705	4.2	13	0.63	0.580	185.972872
C2_10_1973	C2	10	1973	1.2705	4.2	13	0.63	0.580	185.972872
C2_10_1974	C2	10	1974	1.2705	4.2	13	0.63	0.580	185.972872
C2_10_1975	C2	10	1975	1.2705	4.2	13	0.63	0.580	185.972872
C2_10_1976	C2	10	1976	1.2705	4.2	13	0.63	0.580	185.972872
C2_10_1977	C2	10	1977	1.2705	4.2	13	0.63	0.580	185.972872
C2_10_1978	C2	10	1978	1.2705	4.2	13	0.63	0.580	185.972872
C2_10_1979	C2	10	1979	1.1495	4.2	12	0.53	0.488	185.972872
C2_10_1980	C2	10	1980	1.1495	4.2	12	0.53	0.488	185.972872
C2_10_1981	C2	10	1981	1.1495	4.2	12	0.53	0.488	185.972872
C2_10_1982	C2	10	1982	1.1495	4.2	12	0.53	0.488	185.972872
C2_10_1983	C2	10	1983	1.1495	4.2	12	0.53	0.488	185.972872
C2_10_1984	C2	10	1984	1.089	4.2	11	0.53	0.488	185.972872
C2_10_1985	C2	10	1985	1.089	4.2	11	0.53	0.488	185.972872
C2_10_1986	C2	10	1986	1.089	4.2	11	0.53	0.488	185.972872
C2_10_1987	C2	10	1987	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1988	C2	10	1988	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1989	C2	10	1989	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1990	C2	10	1990	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1991	C2	10	1991	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1992	C2	10	1992	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1993	C2	10	1993	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1994	C2	10	1994	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1995	C2	10	1995	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1996	C2	10	1996	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1997	C2	10	1997	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1998	C2	10	1998	1.0164	4.1	11	0.53	0.488	185.972872
C2_10_1999	C2	10	1999	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_10_2000	C2	10	2000	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_10_2001	C2	10	2001	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_10_2002	C2	10	2002	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_10_2003	C2	10	2003	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_10_2004	C2	10	2004	0.8228	2.7	8.17	0.38	0.350	185.972872
C2_10_2005	C2	10	2005	0.3872	0.92	6.25	0.15	0.138	185.972872
C2_10_2006	C2	10	2006	0.2299	0.92	4.95	0.12	0.110	185.972872
C2_10_2007	C2	10	2007	0.1694	0.92	4.51	0.11	0.101	185.972872
C2_10_2008	C2	10	2008	0.1694	0.92	4.51	0.11	0.101	185.972872
C2_10_2009	C2	10	2009	0.1452	0.92	4.29	0.11	0.101	185.972872
C2_10_2010	C2	10	2010	0.121	0.92	4.08	0.11	0.101	185.972872
C2_10_2011	C2	10	2011	0.121	0.92	4.08	0.11	0.101	185.972872
C2_10_2012	C2	10	2012	0.121	0.92	4.08	0.11	0.101	185.972872
C2_10_2013	C2	10	2013	0.121	0.92	4.08	0.11	0.101	185.972872
C2_10_2014	C2	10	2014	0.121	0.92	2.36	0.06	0.055	185.972872
C2_10_2015	C2	10	2015	0.121	0.92	2.36	0.06	0.055	185.972872
C2_10_2016	C2	10	2016	0.121	0.92	2.36	0.06	0.055	185.972872
C2_10_2017	C2	10	2017	0.121	0.92	2.36	0.06	0.055	185.972872
C2_10_2018	C2	10	2018	0.121	0.92	2.36	0.06	0.055	185.972872
C2_10_2019	C2	10	2019	0.121	0.92	2.36	0.06	0.055	185.972872
C2_10_2020	C2	10	2020	0.121	0.92	2.36	0.06	0.055	185.972872
C2_10_2040	C2	10	2040	0.0605	0.92	2.36	0.02	0.018	185.972872

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - CARB Defaults

Data sources for all tables below except GHG Parameters:

https://www.arb.ca.gov/msei/california_harbor_craft_emissions_inventory_database_10072011.mdb
https://www.arb.ca.gov/msei/california_crew_supply_emissions_inventory_database_10072011.mdb
https://www.arb.ca.gov/msei/california_barge_dredge_emissions_inventory_database_10072011.mdb

HP Category

Vessel Type ID	HP Category ID	Min HP	Max HP
A/B	1	25	50
A/B	2	51	120
A/B	3	121	175
A/B	4	176	250
A/B	5	251	500
A/B	6	501	750
A/B	7	751	1900
A/B	8	1901	3300
A/B	9	3301	5000
C	1	0	15
C	2	16	25
C	3	26	50
C	4	51	120
C	5	121	175
C	6	176	250
C	7	251	500
C	8	501	750
C	9	751	1000
C	10	1001	9999

Engine Category

Combined Vessel Type and Engine Type ID	Engine Type	Description
A1	Main	Harbor Craft main engine
A2	Aux	Harbor Craft auxiliary engine
B1	Main	Crew and Supply Vessel main engine
B2	Aux	Crew and Supply Vessel auxiliary engine
C1	Main	Barge and Dredge main engine
C2	Aux	Barge and Dredge auxiliary engine
Combined Vessel Type and Engine Type ID	**Engine Type**	**Description**
C1	Main	Barge
C1	Main	Dredge
A1	Main	Ferries
B1	Main	Crew and Supply
A1	Main	Pilot Vessels
A1	Main	Tug Boats
A1	Main	Tow Boats / Push Boats
A1	Main	Work Boats
A1	Main	Others
A1	Main	Commercial Fishing
A1	Main	Charter Fishing
A2	Aux	Commercial Fishing Generator
A2	Aux	Charter Fishing Generator
A2	Aux	Ferries Generator
B2	Aux	Crew and Supply Generator
A2	Aux	Pilot Vessels Generator
A2	Aux	Tug Boats Generator
A2	Aux	Tow Boats / Push Boats Generator
A2	Aux	Work Boats Generator
A2	Aux	Others Generator
C2	Aux	Compressor
C2	Aux	Crane
C2	Aux	Deck_door_engine
C2	Aux	Dredger
C2	Aux	Barge/Dredge Generator
C2	Aux	Hoist_swing_winch
C2	Aux	Other
C2	Aux	Pump

GHG Parameters

GHG Type	GHG Emitted per Unit Activity (g/gal)	Global Warming Potential
CO2	10206	1
CH4	0.414	25
N2O	0.0828	298

Fuel Density	3180	g/gal

Vessel Default Parameters

Combined Vessel Type and Engine Type ID	Vessel_Type	Load Factor	Useful Life	Average Annual Hours	Average HP
A1	Commercial Fishing	0.27	21	1250	192
A1	Charter Fishing	0.52	16	1622	373
A1	Ferries	0.42	20	1843	392
B1	Crew and Supply	0.38	28	788	384
A1	Pilot Vessels	0.51	19	1031	547
A1	Tug Boats	0.5	21	2274	1167
A1	Tow Boats / Push Boats	0.68	26	1993	331
A1	Work Boats	0.45	17	675	364
A1	Others	0.52	23	779	192
A2	Commercial Fishing Generator	0.43	15	1633	30
A2	Charter Fishing Generator	0.43	15	2077	30
A2	Ferries Generator	0.43	20	1254	82
B2	Crew and Supply Generator	0.32	28	3036	83
A2	Pilot Vessels Generator	0.43	25	994	30
A2	Tug Boats Generator	0.31	22.5	2486	86
A2	Tow Boats / Push Boats Generator	0.43	25	2965	79
A2	Work Boats Generator	0.43	23	750	190
A2	Others Generator	0.43	22	805	29
C2	Compressor	0.54	19.5	360	472
C2	Crane	0.42	9	1050	349
C2	Deck_door_engine	0.89	16	1400	86
C2	Dredger	0.51	16	561	425
C2	Barge/Dredge Generator	0.75	22.5	561	410
C2	Hoist_swing_winch	0.31	27	82	216
C2	Other	0.80	16	575	344
C2	Pump	0.71	21	413	383
C1	Barge	0.45	17	1776	2883
C1	Dredge	0.45	17	1776	2883

Calendar Year Range
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050

Average Daily Emissions 1 ton= 2000

Days of Operation

2023	260
2024	40

Year	ROG	NOx	Exhaust PM10	Exhaust PM2.5
2023				
tons/year	0.2721	2.3599	0.0975	0.0914
pounds/day	2.093077	18.15308	0.75	0.703077
2024				
tons/year	0.018	0.1082	0.00531	0.00105
pounds/day	0.9	5.41	0.2655	0.0525

Total Emissions Calculations

	2023	ROG	Nox	Exhaust PM	Exhaust PM2.5
CalEEMod (lb/day)		2.093077	18.15308	0.75	0.703077
Harborcraft (lb/day)		0.018446	0.674628	0.021608	0.019241
Total		2.1	18.8	0.8	0.7
	2024				
CalEEMod (lb/day)		0.9	5.41	0.2655	0.0525
Total					

Appendix ENG

Energy Calculation Sheets

Ellis Lake Park

Last Updated: 9/28/2021

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors **[1]**:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Rubber Tired Dozers	3	8	247	0.4	Site Preparation Phase	1,253.39
Tractors/Loaders/Backhoes	4	8	97	0.37	Site Preparation Phase	674.90
Excavators	1	8	158	0.38	Grading Phase	507.78
Graders	1	8	187	0.41	Grading Phase	648.43
Rubber Tired Dozers	1	8	247	0.4	Grading Phase	835.59
Tractors/Loaders/Backhoes	3	8	97	0.37	Grading Phase	1,012.34
Cranes	1	7	231	0.29	Building Construction Phase	5,701.05
Forklifts	3	8	89	0.2	Building Construction Phase	5,773.94
Generator Sets	1	8	84	0.74	Building Construction Phase	6,721.12
Tractors/Loaders/Backhoes	3	7	97	0.37	Building Construction Phase	10,186.70
Welders	1	8	46	0.45	Building Construction Phase	2,238.21
Air Compressors	1	6	78	0.48	Architectural Coating Phase	264.02
Pavers	2	8	130	0.42	Paving Phase	923.55
Paving Equipment	2	8	132	0.36	Paving Phase	803.80
Rollers	2	8	80	0.38	Paving Phase	571.66
					Total Fuel Used	**38,116.49**
						(Gallons)

Construction Phase	Days of Operation
Site Preparation Phase	10
Grading Phase	20
Building Construction Phase	230
Paving Phase	20
Architectural Coating Phase	20
Total Days	300

WORKER TRIPS

Constuction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
Site Preparation Phase	24.4	18	10.8	79.67
Grading Phase	24.4	15	10.8	132.79
Building Construction Phase	24.4	176	10.8	17917.38
Paving Phase	24.4	15	10.8	132.79
Architectural Coating Phase	24.4	35	10.8	309.84
		Total		**18,572.46**

HAULING AND VENDOR TRIPS

Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
VENDOR TRIPS				
Site Preparation Phase	7.5	0	7.3	0.00
Grading Phase	7.5	0	7.3	0.00
Building Construction Phase	7.5	69	7.3	15446.80

Paving Phase	7.5	0	7.3	0.00
Architectural Coating Phase	7.5	0	7.3	0.00
			Total	**15,446.80**

Total Gasoline Consumption (gallons)	**18,572.46**
Total Diesel Consumption (gallons)	**53,563.29**

Sources:

[1] United States Environmental Protection Agency. 2018. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b* . July 2018. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100UXEN.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2019. *National Transportation Statistics 2019* . Available at: https://www.bts.gov/topics/national-transportation-statistics.

Dredging

Total Fuel Consumption

	Horsepower	Specific Fuel Consumption	Fuel Specific Weight	Gallons/Hour	Number of Engines	Total Gallons/Hour
Main Engine	364	0.4	7.2	20.22222222	2	40.44444444
Aux Engine	425	0.4	7.2	23.61111111		23.61111111
						64.05555556
Total Hours of Operation	80					
Total Gallons Consumed	5124.444444					

Ellis Lake Park

Last Updated: 9/28/2921

Populate one of the following tables (Leave the other blank):

Annual VMT		OR	Daily Vehicle Trips	
Annual VMT:	22,366		Daily Vehicle Trips:	
			Average Trip Distance:	

Fleet Class	Fleet Mix
Light Duty Auto (LDA)	0.553342
Light Duty Truck 1 (LDT1)	0.058522
Light Duty Truck 2 (LDT2)	0.188738
Medium Duty Vehicle (MDV)	0.121080
Light Heavy Duty 1 (LHD1)	0.023016
Light Heavy Duty 2 (LHD2)	0.005623
Medium Heavy Duty (MHD)	0.010412
Heavy Heavy Duty (HHD)	0.007562
Other Bus (OBUS)	0.000987
Urban Bus (UBUS)	0.000568
Motorcycle (MCY)	0.026444
School Bus (SBUS)	0.000834
Motorhome (MH)	0.002871

Fuel Economy (MPG) [1]	
Passenger Vehicles	24.4
Light-Med Duty Trucks	17.9
Heavy Trucks/Other	7.5
Motorcycles	44

Fleet Mix

Vehicle Type	Percent	Fuel Type	Annual VMT: VMT	Vehicle Trips: VMT	Fuel Consumption (Gallons)
Passenger Vehicles	*55.33%*	*Gasoline*	12376	0.00	507.22
Light-Medium Duty Trucks	*36.83%*	*Gasoline*	8238	0.00	460.24
Heavy Trucks/Other	*5.19%*	*Diesel*	1160	0.00	154.69
Motorcycle	*2.64%*	*Gasoline*	591	0.00	13.44

Total Gasoline Consumption (gallons)	**980.90**
Total Diesel Consumption (gallons)	**154.69**

Sources:

[1] United States Department of Transportation, Bureau of Transportation Statistics. 2019. National Transportation Statistics 2019. Available at: https://www.bts.gov/topics/national-transportation-statistics.

Equipment	Horsepower	Load Factor
Aerial Lifts	63	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	221	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	231	0.29
Crawler Tractors	212	0.43
Crushing/Proc. Equipment	85	0.78
Dumpers/Tenders	16	0.38
Excavators	158	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	187	0.41
Off-Highway Tractors	124	0.44
Off-Highway Trucks	402	0.38
Other Construction Equipment	172	0.42
Other General Industrial Equipment	88	0.34
Other Material Handling Equipment	168	0.4
Pavers	130	0.42
Paving Equipment	132	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.3
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	247	0.4
Rubber Tired Loaders	203	0.36
Scrapers	367	0.48
Signal Boards	6	0.82
Skid Steer Loaders	65	0.37
Surfacing Equipment	263	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	78	0.5
Welders	46	0.45

Appendix NOI

Sound Measurement Data, RCNM Calculations, Construction Site Sound Blankets Information, and Technical Sound Analysis Study

Noise Measurement 1

Data Logger 2	
Duration (seconds)	3
Weighting	A
Response	SLOW
Range	40-100
L05	75.1
L10	74.2
L50	69
L90	58.5
L95	55.4
Lmax	79.7
Time	7/1/2019 11:15
SEL	99.5
Leq	**54.5**

No.s	Date Time	Time	dB	Sound Energy
1	8/26/2021 9:16	9:16 AM	47.1	153858.4152
2	8/26/2021 9:16	9:16 AM	47.3	161109.5389
3	8/26/2021 9:16	9:16 AM	44.9	92708.86298
4	8/26/2021 9:16	9:16 AM	45	94868.32981
5	8/26/2021 9:16	9:16 AM	46.7	140320.5424
6	8/26/2021 9:16	9:16 AM	48.4	207549.2913
7	8/26/2021 9:16	9:16 AM	48.1	193696.2687
8	8/26/2021 9:16	9:16 AM	51.2	395477.0216
9	8/26/2021 9:16	9:16 AM	52.4	521340.2486
10	8/26/2021 9:16	9:16 AM	53.1	612521.3834
11	8/26/2021 9:16	9:16 AM	51.7	443732.5165
12	8/26/2021 9:16	9:16 AM	49.9	293171.1663
13	8/26/2021 9:16	9:16 AM	49.1	243849.1548
14	8/26/2021 9:16	9:16 AM	48.8	227573.2725
15	8/26/2021 9:16	9:16 AM	48.1	193696.2687
16	8/26/2021 9:16	9:16 AM	47.7	176653.0966
17	8/26/2021 9:16	9:16 AM	46.3	127973.8556
18	8/26/2021 9:16	9:16 AM	46.1	122214.0833
19	8/26/2021 9:16	9:16 AM	46.4	130954.7497
20	8/26/2021 9:17	9:17 AM	46.7	140320.5424
21	8/26/2021 9:17	9:17 AM	46.6	137126.4569
22	8/26/2021 9:17	9:17 AM	46.6	137126.4569
23	8/26/2021 9:17	9:17 AM	48.9	232874.135
24	8/26/2021 9:17	9:17 AM	49.7	279976.2902
25	8/26/2021 9:17	9:17 AM	50.5	336605.5363
26	8/26/2021 9:17	9:17 AM	48.1	193696.2687
27	8/26/2021 9:17	9:17 AM	47.2	157442.2381
28	8/26/2021 9:17	9:17 AM	46	119432.1512

29	8/26/2021 9:17	9:17 AM	52.2	497876.0722
30	8/26/2021 9:17	9:17 AM	49.4	261289.077
31	8/26/2021 9:17	9:17 AM	48.5	212383.7353
32	8/26/2021 9:17	9:17 AM	47.4	164862.2622
33	8/26/2021 9:17	9:17 AM	47.4	164862.2622
34	8/26/2021 9:17	9:17 AM	47.1	153858.4152
35	8/26/2021 9:17	9:17 AM	46.7	140320.5424
36	8/26/2021 9:17	9:17 AM	47.8	180767.8758
37	8/26/2021 9:17	9:17 AM	49.8	286497.7758
38	8/26/2021 9:17	9:17 AM	50.7	352469.2665
39	8/26/2021 9:17	9:17 AM	50.9	369080.6312
40	8/26/2021 9:18	9:18 AM	50.2	314138.5644
41	8/26/2021 9:18	9:18 AM	49.2	249529.1313
42	8/26/2021 9:18	9:18 AM	50.1	306987.8977
43	8/26/2021 9:18	9:18 AM	49.2	249529.1313
44	8/26/2021 9:18	9:18 AM	49.1	243849.1548
45	8/26/2021 9:18	9:18 AM	46.5	134005.0776
46	8/26/2021 9:18	9:18 AM	46.4	130954.7497
47	8/26/2021 9:18	9:18 AM	46	119432.1512
48	8/26/2021 9:18	9:18 AM	46.2	125060.815
49	8/26/2021 9:18	9:18 AM	45.6	108923.4164
50	8/26/2021 9:18	9:18 AM	45.4	104021.0551
51	8/26/2021 9:18	9:18 AM	46.8	143589.0277
52	8/26/2021 9:18	9:18 AM	47.3	161109.5389
53	8/26/2021 9:18	9:18 AM	47.2	157442.2381
54	8/26/2021 9:18	9:18 AM	50	300000
55	8/26/2021 9:18	9:18 AM	52.7	558626.141
56	8/26/2021 9:18	9:18 AM	52	475467.9577
57	8/26/2021 9:18	9:18 AM	49.8	286497.7758
58	8/26/2021 9:18	9:18 AM	49	238298.4704
59	8/26/2021 9:18	9:18 AM	48.3	202824.8926
60	8/26/2021 9:19	9:19 AM	48.2	198208.0344
61	8/26/2021 9:19	9:19 AM	49.9	293171.1663
62	8/26/2021 9:19	9:19 AM	50.9	369080.6312
63	8/26/2021 9:19	9:19 AM	52.2	497876.0722
64	8/26/2021 9:19	9:19 AM	50.9	369080.6312
65	8/26/2021 9:19	9:19 AM	49.8	286497.7758
66	8/26/2021 9:19	9:19 AM	49.3	255341.4115
67	8/26/2021 9:19	9:19 AM	47.4	164862.2622
68	8/26/2021 9:19	9:19 AM	49.1	243849.1548
69	8/26/2021 9:19	9:19 AM	49.2	249529.1313
70	8/26/2021 9:19	9:19 AM	49.2	249529.1313
71	8/26/2021 9:19	9:19 AM	50.6	344446.0864
72	8/26/2021 9:19	9:19 AM	49.9	293171.1663
73	8/26/2021 9:19	9:19 AM	50.5	336605.5363
74	8/26/2021 9:19	9:19 AM	51.1	386474.8655
75	8/26/2021 9:19	9:19 AM	50.4	328943.4588

76	8/26/2021 9:19	9:19 AM	49.8	286497.7758
77	8/26/2021 9:19	9:19 AM	49.8	286497.7758
78	8/26/2021 9:19	9:19 AM	48.8	227573.2725
79	8/26/2021 9:19	9:19 AM	49.9	293171.1663
80	8/26/2021 9:20	9:20 AM	49.8	286497.7758
81	8/26/2021 9:20	9:20 AM	50.1	306987.8977
82	8/26/2021 9:20	9:20 AM	49	238298.4704
83	8/26/2021 9:20	9:20 AM	47.4	164862.2622
84	8/26/2021 9:20	9:20 AM	48.1	193696.2687
85	8/26/2021 9:20	9:20 AM	46.7	140320.5424
86	8/26/2021 9:20	9:20 AM	47.5	168702.3976
87	8/26/2021 9:20	9:20 AM	47.3	161109.5389
88	8/26/2021 9:20	9:20 AM	46.7	140320.5424
89	8/26/2021 9:20	9:20 AM	47	150356.1701
90	8/26/2021 9:20	9:20 AM	46.6	137126.4569
91	8/26/2021 9:20	9:20 AM	46.2	125060.815
92	8/26/2021 9:20	9:20 AM	46.8	143589.0277
93	8/26/2021 9:20	9:20 AM	48.6	217330.788
94	8/26/2021 9:20	9:20 AM	48.1	193696.2687
95	8/26/2021 9:20	9:20 AM	48.9	232874.135
96	8/26/2021 9:20	9:20 AM	48.5	212383.7353
97	8/26/2021 9:20	9:20 AM	50.6	344446.0864
98	8/26/2021 9:20	9:20 AM	51.2	395477.0216
99	8/26/2021 9:20	9:20 AM	51.9	464644.9857
100	8/26/2021 9:21	9:21 AM	50.8	360679.3304
101	8/26/2021 9:21	9:21 AM	51.6	433631.9312
102	8/26/2021 9:21	9:21 AM	51.9	464644.9857
103	8/26/2021 9:21	9:21 AM	51.6	433631.9312
104	8/26/2021 9:21	9:21 AM	51.7	443732.5165
105	8/26/2021 9:21	9:21 AM	50.4	328943.4588
106	8/26/2021 9:21	9:21 AM	49.4	261289.077
107	8/26/2021 9:21	9:21 AM	50.5	336605.5363
108	8/26/2021 9:21	9:21 AM	48.8	227573.2725
109	8/26/2021 9:21	9:21 AM	47.8	180767.8758
110	8/26/2021 9:21	9:21 AM	47.9	184978.5006
111	8/26/2021 9:21	9:21 AM	49	238298.4704
112	8/26/2021 9:21	9:21 AM	47.3	161109.5389
113	8/26/2021 9:21	9:21 AM	46	119432.1512
114	8/26/2021 9:21	9:21 AM	46	119432.1512
115	8/26/2021 9:21	9:21 AM	46.2	125060.815
116	8/26/2021 9:21	9:21 AM	47.3	161109.5389
117	8/26/2021 9:21	9:21 AM	46	119432.1512
118	8/26/2021 9:21	9:21 AM	46.4	130954.7497
119	8/26/2021 9:21	9:21 AM	45.7	111460.5687
120	8/26/2021 9:22	9:22 AM	48.1	193696.2687
121	8/26/2021 9:22	9:22 AM	45.9	116713.5435
122	8/26/2021 9:22	9:22 AM	45.7	111460.5687

123	8/26/2021 9:22	9:22 AM	46.3	127973.8556
124	8/26/2021 9:22	9:22 AM	47.2	157442.2381
125	8/26/2021 9:22	9:22 AM	48.2	198208.0344
126	8/26/2021 9:22	9:22 AM	49	238298.4704
127	8/26/2021 9:22	9:22 AM	50.8	360679.3304
128	8/26/2021 9:22	9:22 AM	52.1	486543.0292
129	8/26/2021 9:22	9:22 AM	51.6	433631.9312
130	8/26/2021 9:22	9:22 AM	50.5	336605.5363
131	8/26/2021 9:22	9:22 AM	49.4	261289.077
132	8/26/2021 9:22	9:22 AM	50.4	328943.4588
133	8/26/2021 9:22	9:22 AM	48.7	222393.0724
134	8/26/2021 9:22	9:22 AM	47.6	172631.9812
135	8/26/2021 9:22	9:22 AM	48	189287.2033
136	8/26/2021 9:22	9:22 AM	48.3	202824.8926
137	8/26/2021 9:22	9:22 AM	47.8	180767.8758
138	8/26/2021 9:22	9:22 AM	47.9	184978.5006
139	8/26/2021 9:22	9:22 AM	48.1	193696.2687
140	8/26/2021 9:23	9:23 AM	49.3	255341.4115
141	8/26/2021 9:23	9:23 AM	50.7	352469.2665
142	8/26/2021 9:23	9:23 AM	51	377677.6235
143	8/26/2021 9:23	9:23 AM	48.9	232874.135
144	8/26/2021 9:23	9:23 AM	46.8	143589.0277
145	8/26/2021 9:23	9:23 AM	46.7	140320.5424
146	8/26/2021 9:23	9:23 AM	47.5	168702.3976
147	8/26/2021 9:23	9:23 AM	47.3	161109.5389
148	8/26/2021 9:23	9:23 AM	45.9	116713.5435
149	8/26/2021 9:23	9:23 AM	46	119432.1512
150	8/26/2021 9:23	9:23 AM	46.6	137126.4569
151	8/26/2021 9:23	9:23 AM	47.8	180767.8758
152	8/26/2021 9:23	9:23 AM	48.1	193696.2687
153	8/26/2021 9:23	9:23 AM	48.9	232874.135
154	8/26/2021 9:23	9:23 AM	51	377677.6235
155	8/26/2021 9:23	9:23 AM	52	475467.9577
156	8/26/2021 9:23	9:23 AM	50.4	328943.4588
157	8/26/2021 9:23	9:23 AM	49.7	279976.2902
158	8/26/2021 9:23	9:23 AM	49.1	243849.1548
159	8/26/2021 9:23	9:23 AM	49.2	249529.1313
160	8/26/2021 9:24	9:24 AM	49.1	243849.1548
161	8/26/2021 9:24	9:24 AM	47	150356.1701
162	8/26/2021 9:24	9:24 AM	46.1	122214.0833
163	8/26/2021 9:24	9:24 AM	46	119432.1512
164	8/26/2021 9:24	9:24 AM	46.7	140320.5424
165	8/26/2021 9:24	9:24 AM	47.6	172631.9812
166	8/26/2021 9:24	9:24 AM	49.9	293171.1663
167	8/26/2021 9:24	9:24 AM	50.6	344446.0864
168	8/26/2021 9:24	9:24 AM	51.6	433631.9312
169	8/26/2021 9:24	9:24 AM	50.4	328943.4588

170	8/26/2021 9:24	9:24 AM	49	238298.4704
171	8/26/2021 9:24	9:24 AM	49.1	243849.1548
172	8/26/2021 9:24	9:24 AM	48.9	232874.135
173	8/26/2021 9:24	9:24 AM	49.9	293171.1663
174	8/26/2021 9:24	9:24 AM	49.5	267375.2814
175	8/26/2021 9:24	9:24 AM	48.1	193696.2687
176	8/26/2021 9:24	9:24 AM	49.2	249529.1313
177	8/26/2021 9:24	9:24 AM	50.4	328943.4588
178	8/26/2021 9:24	9:24 AM	53.4	656328.4872
179	8/26/2021 9:24	9:24 AM	54	753565.9295
180	8/26/2021 9:25	9:25 AM	56.9	1469336.458
181	8/26/2021 9:25	9:25 AM	55.4	1040210.551
182	8/26/2021 9:25	9:25 AM	53.8	719649.8757
183	8/26/2021 9:25	9:25 AM	54.3	807460.4412
184	8/26/2021 9:25	9:25 AM	55.8	1140568.189
185	8/26/2021 9:25	9:25 AM	57.2	1574422.381
186	8/26/2021 9:25	9:25 AM	61.4	4141152.794
187	8/26/2021 9:25	9:25 AM	60.7	3524692.665
188	8/26/2021 9:25	9:25 AM	61.4	4141152.794
189	8/26/2021 9:25	9:25 AM	62.1	4865430.292
190	8/26/2021 9:25	9:25 AM	58.6	2173307.88
191	8/26/2021 9:25	9:25 AM	66.9	14693364.58
192	8/26/2021 9:25	9:25 AM	61.4	4141152.794
193	8/26/2021 9:25	9:25 AM	63.3	6413886.269
194	8/26/2021 9:25	9:25 AM	59.1	2438491.548
195	8/26/2021 9:25	9:25 AM	59.8	2864977.758
196	8/26/2021 9:25	9:25 AM	56.7	1403205.424
197	8/26/2021 9:25	9:25 AM	55.4	1040210.551
198	8/26/2021 9:25	9:25 AM	55.5	1064440.168
199	8/26/2021 9:25	9:25 AM	55.9	1167135.435
200	8/26/2021 9:26	9:26 AM	52.4	521340.2486
201	8/26/2021 9:26	9:26 AM	51.8	454068.3745
202	8/26/2021 9:26	9:26 AM	49.7	279976.2902
203	8/26/2021 9:26	9:26 AM	50.8	360679.3304
204	8/26/2021 9:26	9:26 AM	50	300000
205	8/26/2021 9:26	9:26 AM	49.6	273603.2518
206	8/26/2021 9:26	9:26 AM	47.9	184978.5006
207	8/26/2021 9:26	9:26 AM	48.9	232874.135
208	8/26/2021 9:26	9:26 AM	50.4	328943.4588
209	8/26/2021 9:26	9:26 AM	50.3	321455.7916
210	8/26/2021 9:26	9:26 AM	49.7	279976.2902
211	8/26/2021 9:26	9:26 AM	51.1	386474.8655
212	8/26/2021 9:26	9:26 AM	53.3	641388.6269
213	8/26/2021 9:26	9:26 AM	52.5	533483.823
214	8/26/2021 9:26	9:26 AM	52.5	533483.823
215	8/26/2021 9:26	9:26 AM	50.1	306987.8977
216	8/26/2021 9:26	9:26 AM	49.3	255341.4115

217	8/26/2021 9:26	9:26 AM	49.9	293171.1663
218	8/26/2021 9:26	9:26 AM	50.1	306987.8977
219	8/26/2021 9:26	9:26 AM	49.9	293171.1663
220	8/26/2021 9:27	9:27 AM	48.8	227573.2725
221	8/26/2021 9:27	9:27 AM	50.3	321455.7916
222	8/26/2021 9:27	9:27 AM	48.3	202824.8926
223	8/26/2021 9:27	9:27 AM	46.8	143589.0277
224	8/26/2021 9:27	9:27 AM	48.8	227573.2725
225	8/26/2021 9:27	9:27 AM	48.5	212383.7353
226	8/26/2021 9:27	9:27 AM	49.7	279976.2902
227	8/26/2021 9:27	9:27 AM	53	598578.6945
228	8/26/2021 9:27	9:27 AM	49.1	243849.1548
229	8/26/2021 9:27	9:27 AM	48.3	202824.8926
230	8/26/2021 9:27	9:27 AM	49.8	286497.7758
231	8/26/2021 9:27	9:27 AM	48	189287.2033
232	8/26/2021 9:27	9:27 AM	47	150356.1701
233	8/26/2021 9:27	9:27 AM	47.7	176653.0966
234	8/26/2021 9:27	9:27 AM	48.4	207549.2913
235	8/26/2021 9:27	9:27 AM	49.9	293171.1663
236	8/26/2021 9:27	9:27 AM	50.3	321455.7916
237	8/26/2021 9:27	9:27 AM	51.1	386474.8655
238	8/26/2021 9:27	9:27 AM	52.3	509473.0957
239	8/26/2021 9:27	9:27 AM	51.1	386474.8655
240	8/26/2021 9:28	9:28 AM	54	753565.9295
241	8/26/2021 9:28	9:28 AM	53.7	703268.6446
242	8/26/2021 9:28	9:28 AM	52.5	533483.823
243	8/26/2021 9:28	9:28 AM	52.3	509473.0957
244	8/26/2021 9:28	9:28 AM	52.1	486543.0292
245	8/26/2021 9:28	9:28 AM	52	475467.9577
246	8/26/2021 9:28	9:28 AM	51.5	423761.2634
247	8/26/2021 9:28	9:28 AM	53	598578.6945
248	8/26/2021 9:28	9:28 AM	53.4	656328.4872
249	8/26/2021 9:28	9:28 AM	51.8	454068.3745
250	8/26/2021 9:28	9:28 AM	50.1	306987.8977
251	8/26/2021 9:28	9:28 AM	48.3	202824.8926
252	8/26/2021 9:28	9:28 AM	46.3	127973.8556
253	8/26/2021 9:28	9:28 AM	48.1	193696.2687
254	8/26/2021 9:28	9:28 AM	47.6	172631.9812
255	8/26/2021 9:28	9:28 AM	51.7	443732.5165
256	8/26/2021 9:28	9:28 AM	50.6	344446.0864
257	8/26/2021 9:28	9:28 AM	48.2	198208.0344
258	8/26/2021 9:28	9:28 AM	47.7	176653.0966
259	8/26/2021 9:28	9:28 AM	49.9	293171.1663
260	8/26/2021 9:29	9:29 AM	51.9	464644.9857
261	8/26/2021 9:29	9:29 AM	51.4	414115.2794
262	8/26/2021 9:29	9:29 AM	52.5	533483.823
263	8/26/2021 9:29	9:29 AM	53.1	612521.3834

264	8/26/2021 9:29	9:29 AM	52.2	497876.0722
265	8/26/2021 9:29	9:29 AM	50.5	336605.5363
266	8/26/2021 9:29	9:29 AM	50	300000
267	8/26/2021 9:29	9:29 AM	48.4	207549.2913
268	8/26/2021 9:29	9:29 AM	48.1	193696.2687
269	8/26/2021 9:29	9:29 AM	49	238298.4704
270	8/26/2021 9:29	9:29 AM	49.5	267375.2814
271	8/26/2021 9:29	9:29 AM	49.4	261289.077
272	8/26/2021 9:29	9:29 AM	48.7	222393.0724
273	8/26/2021 9:29	9:29 AM	50	300000
274	8/26/2021 9:29	9:29 AM	48.1	193696.2687
275	8/26/2021 9:29	9:29 AM	48.9	232874.135
276	8/26/2021 9:29	9:29 AM	48.8	227573.2725
277	8/26/2021 9:29	9:29 AM	49.3	255341.4115
278	8/26/2021 9:29	9:29 AM	49.2	249529.1313
279	8/26/2021 9:29	9:29 AM	48.9	232874.135
280	8/26/2021 9:30	9:30 AM	50.6	344446.0864
281	8/26/2021 9:30	9:30 AM	52.1	486543.0292
282	8/26/2021 9:30	9:30 AM	52.4	521340.2486
283	8/26/2021 9:30	9:30 AM	52.9	584953.3799
284	8/26/2021 9:30	9:30 AM	54.7	885362.768
285	8/26/2021 9:30	9:30 AM	53.9	736412.6747
286	8/26/2021 9:30	9:30 AM	55.3	1016532.468
287	8/26/2021 9:30	9:30 AM	53.8	719649.8757
288	8/26/2021 9:30	9:30 AM	55.4	1040210.551
289	8/26/2021 9:30	9:30 AM	60.6	3444460.864
290	8/26/2021 9:30	9:30 AM	63.9	7364126.747
291	8/26/2021 9:30	9:30 AM	66.7	14032054.24
292	8/26/2021 9:30	9:30 AM	71	37767762.35
293	8/26/2021 9:30	9:30 AM	68	18928720.33
294	8/26/2021 9:30	9:30 AM	66.7	14032054.24
295	8/26/2021 9:30	9:30 AM	61.5	4237612.634
296	8/26/2021 9:30	9:30 AM	58.5	2123837.353
297	8/26/2021 9:30	9:30 AM	60.4	3289434.588
298	8/26/2021 9:30	9:30 AM	59.8	2864977.758
299	8/26/2021 9:30	9:30 AM	60.1	3069878.977
300	8/26/2021 9:31	9:31 AM	60.2	3141385.644

Noise Measurement 2

Data Logger 2	
Duration (seconds)	3
Weighting	A
Response	SLOW
Range	40-100
L05	75.1
L10	74.2
L50	69
L90	58.5
L95	55.4
Lmax	79.7
Time	7/1/2019 11:15
SEL	99.5
Leq	**52.9**

No.s	Date Time	Time	dB	Sound Energy
1	8/26/2021 10:12	10:12 AM	49.6	273603.2518
2	8/26/2021 10:12	10:12 AM	47	150356.1701
3	8/26/2021 10:12	10:12 AM	47.9	184978.5006
4	8/26/2021 10:12	10:12 AM	47.2	157442.2381
5	8/26/2021 10:12	10:12 AM	47.6	172631.9812
6	8/26/2021 10:12	10:12 AM	47.5	168702.3976
7	8/26/2021 10:12	10:12 AM	47.9	184978.5006
8	8/26/2021 10:12	10:12 AM	47.5	168702.3976
9	8/26/2021 10:12	10:12 AM	47.4	164862.2622
10	8/26/2021 10:12	10:12 AM	47.4	164862.2622
11	8/26/2021 10:12	10:12 AM	48	189287.2033
12	8/26/2021 10:12	10:12 AM	47.4	164862.2622
13	8/26/2021 10:12	10:12 AM	48.3	202824.8926
14	8/26/2021 10:12	10:12 AM	52.4	521340.2486
15	8/26/2021 10:12	10:12 AM	59.6	2736032.518
16	8/26/2021 10:12	10:12 AM	59.8	2864977.758
17	8/26/2021 10:12	10:12 AM	52.9	584953.3799
18	8/26/2021 10:12	10:12 AM	54.6	865209.4509
19	8/26/2021 10:12	10:12 AM	58.3	2028248.926
20	8/26/2021 10:13	10:13 AM	59.5	2673752.814
21	8/26/2021 10:13	10:13 AM	57.5	1687023.976
22	8/26/2021 10:13	10:13 AM	55.1	970780.9708
23	8/26/2021 10:13	10:13 AM	49.5	267375.2814
24	8/26/2021 10:13	10:13 AM	47	150356.1701
25	8/26/2021 10:13	10:13 AM	46.8	143589.0277
26	8/26/2021 10:13	10:13 AM	46.7	140320.5424
27	8/26/2021 10:13	10:13 AM	47	150356.1701
28	8/26/2021 10:13	10:13 AM	47.3	161109.5389

29	8/26/2021 10:13	10:13 AM	47	150356.1701
30	8/26/2021 10:13	10:13 AM	47.6	172631.9812
31	8/26/2021 10:13	10:13 AM	52.7	558626.141
32	8/26/2021 10:13	10:13 AM	63.8	7196498.757
33	8/26/2021 10:13	10:13 AM	61.5	4237612.634
34	8/26/2021 10:13	10:13 AM	53	598578.6945
35	8/26/2021 10:13	10:13 AM	48.4	207549.2913
36	8/26/2021 10:13	10:13 AM	47.8	180767.8758
37	8/26/2021 10:13	10:13 AM	47.9	184978.5006
38	8/26/2021 10:13	10:13 AM	47.6	172631.9812
39	8/26/2021 10:13	10:13 AM	47.3	161109.5389
40	8/26/2021 10:14	10:14 AM	47.8	180767.8758
41	8/26/2021 10:14	10:14 AM	49.8	286497.7758
42	8/26/2021 10:14	10:14 AM	61.7	4437325.165
43	8/26/2021 10:14	10:14 AM	59.6	2736032.518
44	8/26/2021 10:14	10:14 AM	52.6	545910.2576
45	8/26/2021 10:14	10:14 AM	49.7	279976.2902
46	8/26/2021 10:14	10:14 AM	48.3	202824.8926
47	8/26/2021 10:14	10:14 AM	46.9	146933.6458
48	8/26/2021 10:14	10:14 AM	47.5	168702.3976
49	8/26/2021 10:14	10:14 AM	51.5	423761.2634
50	8/26/2021 10:14	10:14 AM	52.6	545910.2576
51	8/26/2021 10:14	10:14 AM	53.8	719649.8757
52	8/26/2021 10:14	10:14 AM	51	377677.6235
53	8/26/2021 10:14	10:14 AM	48.8	227573.2725
54	8/26/2021 10:14	10:14 AM	47.7	176653.0966
55	8/26/2021 10:14	10:14 AM	48.1	193696.2687
56	8/26/2021 10:14	10:14 AM	48.6	217330.788
57	8/26/2021 10:14	10:14 AM	48.4	207549.2913
58	8/26/2021 10:14	10:14 AM	47.3	161109.5389
59	8/26/2021 10:14	10:14 AM	48	189287.2033
60	8/26/2021 10:15	10:15 AM	47.8	180767.8758
61	8/26/2021 10:15	10:15 AM	47	150356.1701
62	8/26/2021 10:15	10:15 AM	47.8	180767.8758
63	8/26/2021 10:15	10:15 AM	47.9	184978.5006
64	8/26/2021 10:15	10:15 AM	48.2	198208.0344
65	8/26/2021 10:15	10:15 AM	48.4	207549.2913
66	8/26/2021 10:15	10:15 AM	47.6	172631.9812
67	8/26/2021 10:15	10:15 AM	47.4	164862.2622
68	8/26/2021 10:15	10:15 AM	50.5	336605.5363
69	8/26/2021 10:15	10:15 AM	51.6	433631.9312
70	8/26/2021 10:15	10:15 AM	48.9	232874.135
71	8/26/2021 10:15	10:15 AM	47.5	168702.3976
72	8/26/2021 10:15	10:15 AM	46.9	146933.6458
73	8/26/2021 10:15	10:15 AM	47.6	172631.9812
74	8/26/2021 10:15	10:15 AM	46.8	143589.0277
75	8/26/2021 10:15	10:15 AM	47.6	172631.9812

76	8/26/2021 10:15	10:15 AM	47.7	176653.0966
77	8/26/2021 10:15	10:15 AM	47.5	168702.3976
78	8/26/2021 10:15	10:15 AM	50.5	336605.5363
79	8/26/2021 10:15	10:15 AM	50.6	344446.0864
80	8/26/2021 10:16	10:16 AM	49	238298.4704
81	8/26/2021 10:16	10:16 AM	50.7	352469.2665
82	8/26/2021 10:16	10:16 AM	51.3	404688.8648
83	8/26/2021 10:16	10:16 AM	51.1	386474.8655
84	8/26/2021 10:16	10:16 AM	53.5	671616.3416
85	8/26/2021 10:16	10:16 AM	52.5	533483.823
86	8/26/2021 10:16	10:16 AM	51.1	386474.8655
87	8/26/2021 10:16	10:16 AM	49.8	286497.7758
88	8/26/2021 10:16	10:16 AM	48	189287.2033
89	8/26/2021 10:16	10:16 AM	49.9	293171.1663
90	8/26/2021 10:16	10:16 AM	47.6	172631.9812
91	8/26/2021 10:16	10:16 AM	48.2	198208.0344
92	8/26/2021 10:16	10:16 AM	47.8	180767.8758
93	8/26/2021 10:16	10:16 AM	53.8	719649.8757
94	8/26/2021 10:16	10:16 AM	57.9	1849785.006
95	8/26/2021 10:16	10:16 AM	53.8	719649.8757
96	8/26/2021 10:16	10:16 AM	59	2382984.704
97	8/26/2021 10:16	10:16 AM	60.5	3366055.363
98	8/26/2021 10:16	10:16 AM	58.8	2275732.725
99	8/26/2021 10:16	10:16 AM	58.9	2328741.35
100	8/26/2021 10:17	10:17 AM	58.3	2028248.926
101	8/26/2021 10:17	10:17 AM	52.9	584953.3799
102	8/26/2021 10:17	10:17 AM	47	150356.1701
103	8/26/2021 10:17	10:17 AM	45.1	97078.09708
104	8/26/2021 10:17	10:17 AM	44.6	86520.94509
105	8/26/2021 10:17	10:17 AM	47.1	153858.4152
106	8/26/2021 10:17	10:17 AM	49.7	279976.2902
107	8/26/2021 10:17	10:17 AM	51.4	414115.2794
108	8/26/2021 10:17	10:17 AM	49.5	267375.2814
109	8/26/2021 10:17	10:17 AM	47.4	164862.2622
110	8/26/2021 10:17	10:17 AM	50.1	306987.8977
111	8/26/2021 10:17	10:17 AM	47.8	180767.8758
112	8/26/2021 10:17	10:17 AM	46.4	130954.7497
113	8/26/2021 10:17	10:17 AM	44.5	84551.48794
114	8/26/2021 10:17	10:17 AM	43.3	64138.86269
115	8/26/2021 10:17	10:17 AM	44.2	78908.03976
116	8/26/2021 10:17	10:17 AM	43.6	68726.02958
117	8/26/2021 10:17	10:17 AM	48.5	212383.7353
118	8/26/2021 10:17	10:17 AM	49.4	261289.077
119	8/26/2021 10:17	10:17 AM	51.2	395477.0216
120	8/26/2021 10:18	10:18 AM	50	300000
121	8/26/2021 10:18	10:18 AM	45.6	108923.4164
122	8/26/2021 10:18	10:18 AM	46.2	125060.815

123	8/26/2021 10:18	10:18 AM	53.4	656328.4872
124	8/26/2021 10:18	10:18 AM	60.8	3606793.304
125	8/26/2021 10:18	10:18 AM	58.7	2223930.724
126	8/26/2021 10:18	10:18 AM	52.7	558626.141
127	8/26/2021 10:18	10:18 AM	49.1	243849.1548
128	8/26/2021 10:18	10:18 AM	48.2	198208.0344
129	8/26/2021 10:18	10:18 AM	49.4	261289.077
130	8/26/2021 10:18	10:18 AM	49.8	286497.7758
131	8/26/2021 10:18	10:18 AM	48.3	202824.8926
132	8/26/2021 10:18	10:18 AM	50.6	344446.0864
133	8/26/2021 10:18	10:18 AM	47.6	172631.9812
134	8/26/2021 10:18	10:18 AM	47.5	168702.3976
135	8/26/2021 10:18	10:18 AM	48.5	212383.7353
136	8/26/2021 10:18	10:18 AM	49.6	273603.2518
137	8/26/2021 10:18	10:18 AM	48.8	227573.2725
138	8/26/2021 10:18	10:18 AM	48.2	198208.0344
139	8/26/2021 10:18	10:18 AM	47.8	180767.8758
140	8/26/2021 10:19	10:19 AM	47.8	180767.8758
141	8/26/2021 10:19	10:19 AM	48.8	227573.2725
142	8/26/2021 10:19	10:19 AM	50.4	328943.4588
143	8/26/2021 10:19	10:19 AM	49.1	243849.1548
144	8/26/2021 10:19	10:19 AM	48	189287.2033
145	8/26/2021 10:19	10:19 AM	49.2	249529.1313
146	8/26/2021 10:19	10:19 AM	49.2	249529.1313
147	8/26/2021 10:19	10:19 AM	48.4	207549.2913
148	8/26/2021 10:19	10:19 AM	47.5	168702.3976
149	8/26/2021 10:19	10:19 AM	47.5	168702.3976
150	8/26/2021 10:19	10:19 AM	46.6	137126.4569
151	8/26/2021 10:19	10:19 AM	44.9	92708.86298
152	8/26/2021 10:19	10:19 AM	46.6	137126.4569
153	8/26/2021 10:19	10:19 AM	48.7	222393.0724
154	8/26/2021 10:19	10:19 AM	47.5	168702.3976
155	8/26/2021 10:19	10:19 AM	46.7	140320.5424
156	8/26/2021 10:19	10:19 AM	45	94868.32981
157	8/26/2021 10:19	10:19 AM	45.1	97078.09708
158	8/26/2021 10:19	10:19 AM	45.5	106444.0168
159	8/26/2021 10:19	10:19 AM	45	94868.32981
160	8/26/2021 10:20	10:20 AM	46.6	137126.4569
161	8/26/2021 10:20	10:20 AM	44.6	86520.94509
162	8/26/2021 10:20	10:20 AM	48.5	212383.7353
163	8/26/2021 10:20	10:20 AM	48.5	212383.7353
164	8/26/2021 10:20	10:20 AM	48.2	198208.0344
165	8/26/2021 10:20	10:20 AM	49	238298.4704
166	8/26/2021 10:20	10:20 AM	53.8	719649.8757
167	8/26/2021 10:20	10:20 AM	56.7	1403205.424
168	8/26/2021 10:20	10:20 AM	54.3	807460.4412
169	8/26/2021 10:20	10:20 AM	52	475467.9577

170	8/26/2021 10:20	10:20 AM	47.2	157442.2381
171	8/26/2021 10:20	10:20 AM	46.2	125060.815
172	8/26/2021 10:20	10:20 AM	48	189287.2033
173	8/26/2021 10:20	10:20 AM	49.5	267375.2814
174	8/26/2021 10:20	10:20 AM	57.8	1807678.758
175	8/26/2021 10:20	10:20 AM	58.1	1936962.687
176	8/26/2021 10:20	10:20 AM	61.1	3864748.655
177	8/26/2021 10:20	10:20 AM	54.8	905985.5161
178	8/26/2021 10:20	10:20 AM	47.7	176653.0966
179	8/26/2021 10:20	10:20 AM	45.5	106444.0168
180	8/26/2021 10:21	10:21 AM	46.8	143589.0277
181	8/26/2021 10:21	10:21 AM	46.2	125060.815
182	8/26/2021 10:21	10:21 AM	44.9	92708.86298
183	8/26/2021 10:21	10:21 AM	45.4	104021.0551
184	8/26/2021 10:21	10:21 AM	45.5	106444.0168
185	8/26/2021 10:21	10:21 AM	45.7	111460.5687
186	8/26/2021 10:21	10:21 AM	45.4	104021.0551
187	8/26/2021 10:21	10:21 AM	44.9	92708.86298
188	8/26/2021 10:21	10:21 AM	46.5	134005.0776
189	8/26/2021 10:21	10:21 AM	45.6	108923.4164
190	8/26/2021 10:21	10:21 AM	45.6	108923.4164
191	8/26/2021 10:21	10:21 AM	45.9	116713.5435
192	8/26/2021 10:21	10:21 AM	46.4	130954.7497
193	8/26/2021 10:21	10:21 AM	45.9	116713.5435
194	8/26/2021 10:21	10:21 AM	46.9	146933.6458
195	8/26/2021 10:21	10:21 AM	43.9	73641.26747
196	8/26/2021 10:21	10:21 AM	43.3	64138.86269
197	8/26/2021 10:21	10:21 AM	44.9	92708.86298
198	8/26/2021 10:21	10:21 AM	46	119432.1512
199	8/26/2021 10:21	10:21 AM	47.6	172631.9812
200	8/26/2021 10:22	10:22 AM	45.7	111460.5687
201	8/26/2021 10:22	10:22 AM	43.6	68726.02958
202	8/26/2021 10:22	10:22 AM	44.6	86520.94509
203	8/26/2021 10:22	10:22 AM	52.1	486543.0292
204	8/26/2021 10:22	10:22 AM	51.5	423761.2634
205	8/26/2021 10:22	10:22 AM	49.3	255341.4115
206	8/26/2021 10:22	10:22 AM	52.6	545910.2576
207	8/26/2021 10:22	10:22 AM	52.7	558626.141
208	8/26/2021 10:22	10:22 AM	55.7	1114605.687
209	8/26/2021 10:22	10:22 AM	56.9	1469336.458
210	8/26/2021 10:22	10:22 AM	54.6	865209.4509
211	8/26/2021 10:22	10:22 AM	51.9	464644.9857
212	8/26/2021 10:22	10:22 AM	50.2	314138.5644
213	8/26/2021 10:22	10:22 AM	49.5	267375.2814
214	8/26/2021 10:22	10:22 AM	48.4	207549.2913
215	8/26/2021 10:22	10:22 AM	47.9	184978.5006
216	8/26/2021 10:22	10:22 AM	46.1	122214.0833

217	8/26/2021 10:22	10:22 AM	45.8	114056.8189
218	8/26/2021 10:22	10:22 AM	47.6	172631.9812
219	8/26/2021 10:22	10:22 AM	46.5	134005.0776
220	8/26/2021 10:23	10:23 AM	57.6	1726319.812
221	8/26/2021 10:23	10:23 AM	57.5	1687023.976
222	8/26/2021 10:23	10:23 AM	56.3	1279738.556
223	8/26/2021 10:23	10:23 AM	50.9	369080.6312
224	8/26/2021 10:23	10:23 AM	49.5	267375.2814
225	8/26/2021 10:23	10:23 AM	46.1	122214.0833
226	8/26/2021 10:23	10:23 AM	44.7	88536.2768
227	8/26/2021 10:23	10:23 AM	44.2	78908.03976
228	8/26/2021 10:23	10:23 AM	43.7	70326.86446
229	8/26/2021 10:23	10:23 AM	46.2	125060.815
230	8/26/2021 10:23	10:23 AM	49.8	286497.7758
231	8/26/2021 10:23	10:23 AM	60.3	3214557.916
232	8/26/2021 10:23	10:23 AM	58.1	1936962.687
233	8/26/2021 10:23	10:23 AM	55.9	1167135.435
234	8/26/2021 10:23	10:23 AM	50.3	321455.7916
235	8/26/2021 10:23	10:23 AM	47.2	157442.2381
236	8/26/2021 10:23	10:23 AM	47.8	180767.8758
237	8/26/2021 10:23	10:23 AM	49.7	279976.2902
238	8/26/2021 10:23	10:23 AM	50.2	314138.5644
239	8/26/2021 10:23	10:23 AM	51.5	423761.2634
240	8/26/2021 10:24	10:24 AM	56.6	1371264.569
241	8/26/2021 10:24	10:24 AM	59.8	2864977.758
242	8/26/2021 10:24	10:24 AM	53.4	656328.4872
243	8/26/2021 10:24	10:24 AM	60.6	3444460.864
244	8/26/2021 10:24	10:24 AM	57.1	1538584.152
245	8/26/2021 10:24	10:24 AM	59.9	2931711.663
246	8/26/2021 10:24	10:24 AM	61.1	3864748.655
247	8/26/2021 10:24	10:24 AM	57.9	1849785.006
248	8/26/2021 10:24	10:24 AM	56.5	1340050.776
249	8/26/2021 10:24	10:24 AM	49.5	267375.2814
250	8/26/2021 10:24	10:24 AM	50.7	352469.2665
251	8/26/2021 10:24	10:24 AM	48.1	193696.2687
252	8/26/2021 10:24	10:24 AM	46	119432.1512
253	8/26/2021 10:24	10:24 AM	45.8	114056.8189
254	8/26/2021 10:24	10:24 AM	53	598578.6945
255	8/26/2021 10:24	10:24 AM	53.3	641388.6269
256	8/26/2021 10:24	10:24 AM	49.8	286497.7758
257	8/26/2021 10:24	10:24 AM	48.5	212383.7353
258	8/26/2021 10:24	10:24 AM	48.5	212383.7353
259	8/26/2021 10:24	10:24 AM	50.7	352469.2665
260	8/26/2021 10:25	10:25 AM	49.6	273603.2518
261	8/26/2021 10:25	10:25 AM	51.8	454068.3745
262	8/26/2021 10:25	10:25 AM	53.3	641388.6269
263	8/26/2021 10:25	10:25 AM	54.8	905985.5161

264	8/26/2021 10:25	10:25 AM	60	3000000
265	8/26/2021 10:25	10:25 AM	59.6	2736032.518
266	8/26/2021 10:25	10:25 AM	53.7	703268.6446
267	8/26/2021 10:25	10:25 AM	52.4	521340.2486
268	8/26/2021 10:25	10:25 AM	57.7	1766530.966
269	8/26/2021 10:25	10:25 AM	60	3000000
270	8/26/2021 10:25	10:25 AM	54.3	807460.4412
271	8/26/2021 10:25	10:25 AM	50.7	352469.2665
272	8/26/2021 10:25	10:25 AM	50.3	321455.7916
273	8/26/2021 10:25	10:25 AM	48.7	222393.0724
274	8/26/2021 10:25	10:25 AM	48.1	193696.2687
275	8/26/2021 10:25	10:25 AM	47.3	161109.5389
276	8/26/2021 10:25	10:25 AM	46.4	130954.7497
277	8/26/2021 10:25	10:25 AM	46.7	140320.5424
278	8/26/2021 10:25	10:25 AM	46.4	130954.7497
279	8/26/2021 10:25	10:25 AM	46.8	143589.0277
280	8/26/2021 10:26	10:26 AM	51	377677.6235
281	8/26/2021 10:26	10:26 AM	51.1	386474.8655
282	8/26/2021 10:26	10:26 AM	49.9	293171.1663
283	8/26/2021 10:26	10:26 AM	48.2	198208.0344
284	8/26/2021 10:26	10:26 AM	47.7	176653.0966
285	8/26/2021 10:26	10:26 AM	49.2	249529.1313
286	8/26/2021 10:26	10:26 AM	48.2	198208.0344
287	8/26/2021 10:26	10:26 AM	47.2	157442.2381
288	8/26/2021 10:26	10:26 AM	50.1	306987.8977
289	8/26/2021 10:26	10:26 AM	50.9	369080.6312
290	8/26/2021 10:26	10:26 AM	50.7	352469.2665
291	8/26/2021 10:26	10:26 AM	48.6	217330.788
292	8/26/2021 10:26	10:26 AM	48.6	217330.788
293	8/26/2021 10:26	10:26 AM	56.6	1371264.569
294	8/26/2021 10:26	10:26 AM	56	1194321.512
295	8/26/2021 10:26	10:26 AM	54.4	826268.611
296	8/26/2021 10:26	10:26 AM	51.5	423761.2634
297	8/26/2021 10:26	10:26 AM	47.5	168702.3976
298	8/26/2021 10:26	10:26 AM	47.2	157442.2381
299	8/26/2021 10:26	10:26 AM	50.8	360679.3304
300	8/26/2021 10:27	10:27 AM	57.9	1849785.006

Noise Measurement 3

Data Logger 2	
Duration (seconds)	3
Weighting	A
Response	SLOW
Range	40-100
L05	75.1
L10	74.2
L50	69
L90	58.5
L95	55.4
Lmax	79.7
Time	7/1/2019 11:15
SEL	99.5
Leq	**56.2**

No.s	Date Time	Time	dB	Sound Energy
1	8/26/2021 9:44	9:44 AM	47.5	168702.3976
2	8/26/2021 9:44	9:44 AM	47.8	180767.8758
3	8/26/2021 9:44	9:44 AM	49	238298.4704
4	8/26/2021 9:44	9:44 AM	49	238298.4704
5	8/26/2021 9:44	9:44 AM	48.8	227573.2725
6	8/26/2021 9:44	9:44 AM	48.6	217330.788
7	8/26/2021 9:44	9:44 AM	50.7	352469.2665
8	8/26/2021 9:44	9:44 AM	55.9	1167135.435
9	8/26/2021 9:44	9:44 AM	56	1194321.512
10	8/26/2021 9:44	9:44 AM	57.3	1611095.389
11	8/26/2021 9:44	9:44 AM	57.9	1849785.006
12	8/26/2021 9:44	9:44 AM	56.2	1250608.15
13	8/26/2021 9:44	9:44 AM	51	377677.6235
14	8/26/2021 9:45	9:45 AM	49.4	261289.077
15	8/26/2021 9:45	9:45 AM	49.8	286497.7758
16	8/26/2021 9:45	9:45 AM	50.7	352469.2665
17	8/26/2021 9:45	9:45 AM	50.7	352469.2665
18	8/26/2021 9:45	9:45 AM	52.1	486543.0292
19	8/26/2021 9:45	9:45 AM	55.5	1064440.168
20	8/26/2021 9:45	9:45 AM	57	1503561.701
21	8/26/2021 9:45	9:45 AM	53.2	626788.8393
22	8/26/2021 9:45	9:45 AM	48.5	212383.7353
23	8/26/2021 9:45	9:45 AM	48	189287.2033
24	8/26/2021 9:45	9:45 AM	46.2	125060.815
25	8/26/2021 9:45	9:45 AM	45.9	116713.5435
26	8/26/2021 9:45	9:45 AM	46	119432.1512
27	8/26/2021 9:45	9:45 AM	45.7	111460.5687
28	8/26/2021 9:45	9:45 AM	45.5	106444.0168

29	8/26/2021 9:45	9:45 AM	45.3	101653.2468
30	8/26/2021 9:45	9:45 AM	46.5	134005.0776
31	8/26/2021 9:45	9:45 AM	45.8	114056.8189
32	8/26/2021 9:45	9:45 AM	47.8	180767.8758
33	8/26/2021 9:45	9:45 AM	54.4	826268.611
34	8/26/2021 9:46	9:46 AM	54.7	885362.768
35	8/26/2021 9:46	9:46 AM	52.7	558626.141
36	8/26/2021 9:46	9:46 AM	52.6	545910.2576
37	8/26/2021 9:46	9:46 AM	60.7	3524692.665
38	8/26/2021 9:46	9:46 AM	61.8	4540683.745
39	8/26/2021 9:46	9:46 AM	60.4	3289434.588
40	8/26/2021 9:46	9:46 AM	59.2	2495291.313
41	8/26/2021 9:46	9:46 AM	60.9	3690806.312
42	8/26/2021 9:46	9:46 AM	61.4	4141152.794
43	8/26/2021 9:46	9:46 AM	59	2382984.704
44	8/26/2021 9:46	9:46 AM	61.1	3864748.655
45	8/26/2021 9:46	9:46 AM	58.7	2223930.724
46	8/26/2021 9:46	9:46 AM	57.7	1766530.966
47	8/26/2021 9:46	9:46 AM	55.6	1089234.164
48	8/26/2021 9:46	9:46 AM	55.2	993393.3644
49	8/26/2021 9:46	9:46 AM	54.9	927088.6298
50	8/26/2021 9:46	9:46 AM	53.3	641388.6269
51	8/26/2021 9:46	9:46 AM	52.1	486543.0292
52	8/26/2021 9:46	9:46 AM	53.6	687260.2958
53	8/26/2021 9:46	9:46 AM	52.1	486543.0292
54	8/26/2021 9:47	9:47 AM	53.2	626788.8393
55	8/26/2021 9:47	9:47 AM	57.6	1726319.812
56	8/26/2021 9:47	9:47 AM	57.5	1687023.976
57	8/26/2021 9:47	9:47 AM	56.3	1279738.556
58	8/26/2021 9:47	9:47 AM	57.1	1538584.152
59	8/26/2021 9:47	9:47 AM	59.1	2438491.548
60	8/26/2021 9:47	9:47 AM	59.6	2736032.518
61	8/26/2021 9:47	9:47 AM	60.3	3214557.916
62	8/26/2021 9:47	9:47 AM	60.6	3444460.864
63	8/26/2021 9:47	9:47 AM	59.7	2799762.902
64	8/26/2021 9:47	9:47 AM	57.2	1574422.381
65	8/26/2021 9:47	9:47 AM	56.1	1222140.833
66	8/26/2021 9:47	9:47 AM	55.4	1040210.551
67	8/26/2021 9:47	9:47 AM	52.3	509473.0957
68	8/26/2021 9:47	9:47 AM	52.8	571638.2154
69	8/26/2021 9:47	9:47 AM	50.4	328943.4588
70	8/26/2021 9:47	9:47 AM	51.7	443732.5165
71	8/26/2021 9:47	9:47 AM	49.5	267375.2814
72	8/26/2021 9:47	9:47 AM	50.6	344446.0864
73	8/26/2021 9:47	9:47 AM	52.8	571638.2154
74	8/26/2021 9:48	9:48 AM	52.6	545910.2576
75	8/26/2021 9:48	9:48 AM	49.7	279976.2902

76	8/26/2021 9:48	9:48 AM	50.2	314138.5644
77	8/26/2021 9:48	9:48 AM	49.6	273603.2518
78	8/26/2021 9:48	9:48 AM	49.7	279976.2902
79	8/26/2021 9:48	9:48 AM	51.4	414115.2794
80	8/26/2021 9:48	9:48 AM	52.2	497876.0722
81	8/26/2021 9:48	9:48 AM	54.1	771118.7348
82	8/26/2021 9:48	9:48 AM	51.7	443732.5165
83	8/26/2021 9:48	9:48 AM	50	300000
84	8/26/2021 9:48	9:48 AM	49.8	286497.7758
85	8/26/2021 9:48	9:48 AM	49	238298.4704
86	8/26/2021 9:48	9:48 AM	48	189287.2033
87	8/26/2021 9:48	9:48 AM	47.4	164862.2622
88	8/26/2021 9:48	9:48 AM	48.9	232874.135
89	8/26/2021 9:48	9:48 AM	49	238298.4704
90	8/26/2021 9:48	9:48 AM	49.8	286497.7758
91	8/26/2021 9:48	9:48 AM	50.7	352469.2665
92	8/26/2021 9:48	9:48 AM	49.2	249529.1313
93	8/26/2021 9:48	9:48 AM	49.1	243849.1548
94	8/26/2021 9:49	9:49 AM	49.3	255341.4115
95	8/26/2021 9:49	9:49 AM	49.3	255341.4115
96	8/26/2021 9:49	9:49 AM	49.7	279976.2902
97	8/26/2021 9:49	9:49 AM	54.9	927088.6298
98	8/26/2021 9:49	9:49 AM	56	1194321.512
99	8/26/2021 9:49	9:49 AM	54.3	807460.4412
100	8/26/2021 9:49	9:49 AM	51.7	443732.5165
101	8/26/2021 9:49	9:49 AM	49	238298.4704
102	8/26/2021 9:49	9:49 AM	47.8	180767.8758
103	8/26/2021 9:49	9:49 AM	47.8	180767.8758
104	8/26/2021 9:49	9:49 AM	47.8	180767.8758
105	8/26/2021 9:49	9:49 AM	45.8	114056.8189
106	8/26/2021 9:49	9:49 AM	45.4	104021.0551
107	8/26/2021 9:49	9:49 AM	50.2	314138.5644
108	8/26/2021 9:49	9:49 AM	47.1	153858.4152
109	8/26/2021 9:49	9:49 AM	45.9	116713.5435
110	8/26/2021 9:49	9:49 AM	45.4	104021.0551
111	8/26/2021 9:49	9:49 AM	44.4	82626.8611
112	8/26/2021 9:49	9:49 AM	45.5	106444.0168
113	8/26/2021 9:49	9:49 AM	46.1	122214.0833
114	8/26/2021 9:50	9:50 AM	51.7	443732.5165
115	8/26/2021 9:50	9:50 AM	48	189287.2033
116	8/26/2021 9:50	9:50 AM	47	150356.1701
117	8/26/2021 9:50	9:50 AM	46.5	134005.0776
118	8/26/2021 9:50	9:50 AM	46.6	137126.4569
119	8/26/2021 9:50	9:50 AM	49	238298.4704
120	8/26/2021 9:50	9:50 AM	54.5	845514.8794
121	8/26/2021 9:50	9:50 AM	61.7	4437325.165
122	8/26/2021 9:50	9:50 AM	55.3	1016532.468

123	8/26/2021 9:50	9:50 AM	51.7	443732.5165
124	8/26/2021 9:50	9:50 AM	56.3	1279738.556
125	8/26/2021 9:50	9:50 AM	54	753565.9295
126	8/26/2021 9:50	9:50 AM	49.2	249529.1313
127	8/26/2021 9:50	9:50 AM	48.9	232874.135
128	8/26/2021 9:50	9:50 AM	47.6	172631.9812
129	8/26/2021 9:50	9:50 AM	49.3	255341.4115
130	8/26/2021 9:50	9:50 AM	48.3	202824.8926
131	8/26/2021 9:50	9:50 AM	48.9	232874.135
132	8/26/2021 9:50	9:50 AM	49	238298.4704
133	8/26/2021 9:50	9:50 AM	49.1	243849.1548
134	8/26/2021 9:51	9:51 AM	52.6	545910.2576
135	8/26/2021 9:51	9:51 AM	51.7	443732.5165
136	8/26/2021 9:51	9:51 AM	50.7	352469.2665
137	8/26/2021 9:51	9:51 AM	50.4	328943.4588
138	8/26/2021 9:51	9:51 AM	51.3	404688.8648
139	8/26/2021 9:51	9:51 AM	57.9	1849785.006
140	8/26/2021 9:51	9:51 AM	55.1	970780.9708
141	8/26/2021 9:51	9:51 AM	52.4	521340.2486
142	8/26/2021 9:51	9:51 AM	50.1	306987.8977
143	8/26/2021 9:51	9:51 AM	51.3	404688.8648
144	8/26/2021 9:51	9:51 AM	53.6	687260.2958
145	8/26/2021 9:51	9:51 AM	53.1	612521.3834
146	8/26/2021 9:51	9:51 AM	55.8	1140568.189
147	8/26/2021 9:51	9:51 AM	59.6	2736032.518
148	8/26/2021 9:51	9:51 AM	54.8	905985.5161
149	8/26/2021 9:51	9:51 AM	51.9	464644.9857
150	8/26/2021 9:51	9:51 AM	49.8	286497.7758
151	8/26/2021 9:51	9:51 AM	51.9	464644.9857
152	8/26/2021 9:51	9:51 AM	53.8	719649.8757
153	8/26/2021 9:51	9:51 AM	59.2	2495291.313
154	8/26/2021 9:52	9:52 AM	59.5	2673752.814
155	8/26/2021 9:52	9:52 AM	58.1	1936962.687
156	8/26/2021 9:52	9:52 AM	58.4	2075492.913
157	8/26/2021 9:52	9:52 AM	55.7	1114605.687
158	8/26/2021 9:52	9:52 AM	53.3	641388.6269
159	8/26/2021 9:52	9:52 AM	53.8	719649.8757
160	8/26/2021 9:52	9:52 AM	52.7	558626.141
161	8/26/2021 9:52	9:52 AM	51.4	414115.2794
162	8/26/2021 9:52	9:52 AM	50	300000
163	8/26/2021 9:52	9:52 AM	47.4	164862.2622
164	8/26/2021 9:52	9:52 AM	47.3	161109.5389
165	8/26/2021 9:52	9:52 AM	49.5	267375.2814
166	8/26/2021 9:52	9:52 AM	51.5	423761.2634
167	8/26/2021 9:52	9:52 AM	49.7	279976.2902
168	8/26/2021 9:52	9:52 AM	47.4	164862.2622
169	8/26/2021 9:52	9:52 AM	47.8	180767.8758

170	8/26/2021 9:52	9:52 AM	49	238298.4704
171	8/26/2021 9:52	9:52 AM	49.8	286497.7758
172	8/26/2021 9:52	9:52 AM	49.2	249529.1313
173	8/26/2021 9:52	9:52 AM	50.1	306987.8977
174	8/26/2021 9:53	9:53 AM	51	377677.6235
175	8/26/2021 9:53	9:53 AM	53.1	612521.3834
176	8/26/2021 9:53	9:53 AM	56.2	1250608.15
177	8/26/2021 9:53	9:53 AM	54.9	927088.6298
178	8/26/2021 9:53	9:53 AM	51	377677.6235
179	8/26/2021 9:53	9:53 AM	53.4	656328.4872
180	8/26/2021 9:53	9:53 AM	61.1	3864748.655
181	8/26/2021 9:53	9:53 AM	53.4	656328.4872
182	8/26/2021 9:53	9:53 AM	48.4	207549.2913
183	8/26/2021 9:53	9:53 AM	47.2	157442.2381
184	8/26/2021 9:53	9:53 AM	46.6	137126.4569
185	8/26/2021 9:53	9:53 AM	47.3	161109.5389
186	8/26/2021 9:53	9:53 AM	51.8	454068.3745
187	8/26/2021 9:53	9:53 AM	54.2	789080.3976
188	8/26/2021 9:53	9:53 AM	56.2	1250608.15
189	8/26/2021 9:53	9:53 AM	60.2	3141385.644
190	8/26/2021 9:53	9:53 AM	63.1	6125213.834
191	8/26/2021 9:53	9:53 AM	64	7535659.295
192	8/26/2021 9:53	9:53 AM	68.6	21733078.8
193	8/26/2021 9:53	9:53 AM	66.9	14693364.58
194	8/26/2021 9:54	9:54 AM	63.6	6872602.958
195	8/26/2021 9:54	9:54 AM	61.1	3864748.655
196	8/26/2021 9:54	9:54 AM	62.8	5716382.154
197	8/26/2021 9:54	9:54 AM	60.8	3606793.304
198	8/26/2021 9:54	9:54 AM	60.6	3444460.864
199	8/26/2021 9:54	9:54 AM	59	2382984.704
200	8/26/2021 9:54	9:54 AM	59.6	2736032.518
201	8/26/2021 9:54	9:54 AM	57.8	1807678.758
202	8/26/2021 9:54	9:54 AM	54.5	845514.8794
203	8/26/2021 9:54	9:54 AM	50.4	328943.4588
204	8/26/2021 9:54	9:54 AM	51.1	386474.8655
205	8/26/2021 9:54	9:54 AM	51.3	404688.8648
206	8/26/2021 9:54	9:54 AM	50.7	352469.2665
207	8/26/2021 9:54	9:54 AM	53.9	736412.6747
208	8/26/2021 9:54	9:54 AM	52.8	571638.2154
209	8/26/2021 9:54	9:54 AM	54.7	885362.768
210	8/26/2021 9:54	9:54 AM	51.5	423761.2634
211	8/26/2021 9:54	9:54 AM	50.6	344446.0864
212	8/26/2021 9:54	9:54 AM	56	1194321.512
213	8/26/2021 9:54	9:54 AM	56.1	1222140.833
214	8/26/2021 9:55	9:55 AM	55.6	1089234.164
215	8/26/2021 9:55	9:55 AM	51.8	454068.3745
216	8/26/2021 9:55	9:55 AM	49.8	286497.7758

217	8/26/2021 9:55	9:55 AM	48.3	202824.8926
218	8/26/2021 9:55	9:55 AM	52.4	521340.2486
219	8/26/2021 9:55	9:55 AM	46.9	146933.6458
220	8/26/2021 9:55	9:55 AM	45.5	106444.0168
221	8/26/2021 9:55	9:55 AM	45.4	104021.0551
222	8/26/2021 9:55	9:55 AM	44.9	92708.86298
223	8/26/2021 9:55	9:55 AM	45.4	104021.0551
224	8/26/2021 9:55	9:55 AM	45.5	106444.0168
225	8/26/2021 9:55	9:55 AM	45.6	108923.4164
226	8/26/2021 9:55	9:55 AM	45.1	97078.09708
227	8/26/2021 9:55	9:55 AM	45.8	114056.8189
228	8/26/2021 9:55	9:55 AM	46.7	140320.5424
229	8/26/2021 9:55	9:55 AM	47.9	184978.5006
230	8/26/2021 9:55	9:55 AM	50.4	328943.4588
231	8/26/2021 9:55	9:55 AM	49.1	243849.1548
232	8/26/2021 9:55	9:55 AM	49.2	249529.1313
233	8/26/2021 9:55	9:55 AM	49.5	267375.2814
234	8/26/2021 9:56	9:56 AM	51.2	395477.0216
235	8/26/2021 9:56	9:56 AM	49.7	279976.2902
236	8/26/2021 9:56	9:56 AM	52.5	533483.823
237	8/26/2021 9:56	9:56 AM	54.6	865209.4509
238	8/26/2021 9:56	9:56 AM	56.7	1403205.424
239	8/26/2021 9:56	9:56 AM	59.5	2673752.814
240	8/26/2021 9:56	9:56 AM	62.7	5586261.41
241	8/26/2021 9:56	9:56 AM	68.1	19369626.87
242	8/26/2021 9:56	9:56 AM	70.2	31413856.44
243	8/26/2021 9:56	9:56 AM	65	9486832.981
244	8/26/2021 9:56	9:56 AM	61.4	4141152.794
245	8/26/2021 9:56	9:56 AM	57.6	1726319.812
246	8/26/2021 9:56	9:56 AM	55.3	1016532.468
247	8/26/2021 9:56	9:56 AM	51.9	464644.9857
248	8/26/2021 9:56	9:56 AM	52.9	584953.3799
249	8/26/2021 9:56	9:56 AM	51.9	464644.9857
250	8/26/2021 9:56	9:56 AM	52.4	521340.2486
251	8/26/2021 9:56	9:56 AM	52.9	584953.3799
252	8/26/2021 9:56	9:56 AM	53.6	687260.2958
253	8/26/2021 9:56	9:56 AM	52.1	486543.0292
254	8/26/2021 9:57	9:57 AM	52.4	521340.2486
255	8/26/2021 9:57	9:57 AM	52.6	545910.2576
256	8/26/2021 9:57	9:57 AM	54	753565.9295
257	8/26/2021 9:57	9:57 AM	53.5	671616.3416
258	8/26/2021 9:57	9:57 AM	51.8	454068.3745
259	8/26/2021 9:57	9:57 AM	52.4	521340.2486
260	8/26/2021 9:57	9:57 AM	53.7	703268.6446
261	8/26/2021 9:57	9:57 AM	54.3	807460.4412
262	8/26/2021 9:57	9:57 AM	52.7	558626.141
263	8/26/2021 9:57	9:57 AM	58.6	2173307.88

264	8/26/2021 9:57	9:57 AM	62.7	5586261.41
265	8/26/2021 9:57	9:57 AM	57.7	1766530.966
266	8/26/2021 9:57	9:57 AM	51	377677.6235
267	8/26/2021 9:57	9:57 AM	47	150356.1701
268	8/26/2021 9:57	9:57 AM	46.9	146933.6458
269	8/26/2021 9:57	9:57 AM	48.6	217330.788
270	8/26/2021 9:57	9:57 AM	47.8	180767.8758
271	8/26/2021 9:57	9:57 AM	47	150356.1701
272	8/26/2021 9:57	9:57 AM	47.4	164862.2622
273	8/26/2021 9:57	9:57 AM	48.3	202824.8926
274	8/26/2021 9:58	9:58 AM	49.7	279976.2902
275	8/26/2021 9:58	9:58 AM	48.5	212383.7353
276	8/26/2021 9:58	9:58 AM	51.9	464644.9857
277	8/26/2021 9:58	9:58 AM	55.2	993393.3644
278	8/26/2021 9:58	9:58 AM	51.7	443732.5165
279	8/26/2021 9:58	9:58 AM	49.9	293171.1663
280	8/26/2021 9:58	9:58 AM	50.4	328943.4588
281	8/26/2021 9:58	9:58 AM	52	475467.9577
282	8/26/2021 9:58	9:58 AM	55.6	1089234.164
283	8/26/2021 9:58	9:58 AM	59.1	2438491.548
284	8/26/2021 9:58	9:58 AM	53.3	641388.6269
285	8/26/2021 9:58	9:58 AM	50.7	352469.2665
286	8/26/2021 9:58	9:58 AM	50.9	369080.6312
287	8/26/2021 9:58	9:58 AM	50.1	306987.8977
288	8/26/2021 9:58	9:58 AM	47.7	176653.0966
289	8/26/2021 9:58	9:58 AM	48	189287.2033
290	8/26/2021 9:58	9:58 AM	46.5	134005.0776
291	8/26/2021 9:58	9:58 AM	51.6	433631.9312
292	8/26/2021 9:58	9:58 AM	56.2	1250608.15
293	8/26/2021 9:58	9:58 AM	57.2	1574422.381
294	8/26/2021 9:59	9:59 AM	57.7	1766530.966
295	8/26/2021 9:59	9:59 AM	65.7	11146056.87
296	8/26/2021 9:59	9:59 AM	54.9	927088.6298
297	8/26/2021 9:59	9:59 AM	47.5	168702.3976
298	8/26/2021 9:59	9:59 AM	46.5	134005.0776
299	8/26/2021 9:59	9:59 AM	47.1	153858.4152
300	8/26/2021 9:59	9:59 AM	50.5	336605.5363

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descri Ellis Lake Park Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Southern A	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	50	0
Front End Loader	No	40		79.1	50	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	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	81.7	79.6	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.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Northern A	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	65	0
Front End Loader	No	40		79.1	65	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	79.4	75.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	76.8	72.9	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	79.4	77.3	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.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Eastern Sin	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	50	0
Front End Loader	No	40		79.1	50	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	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	81.7	79.6	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.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Western A	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	100	0
Front End Loader	No	40		79.1	100	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	75.6	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	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	75.6	73.6	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.

Model CSSB-2
Construction Site Sound Blankets

eNoise Control
129 Penn St, Westfield, IN 46074
Phone 888.213.4711 Fax 317-774-1911

Product Features:

- Weatherproof
- Outdoor use/Sheds water
- 2” thick, quilted exterior rated facing
- Grommets for easy attachment to a fence
- STC-21, estimated 10-20 decibel reduction
- In-stock option for quick ship

eNoise Control’s Construction Site Sound Blankets are used to block noise on construction sites, drilling sites, compressor stations, and other outdoor noise sources. Our Model CSSB-2 consists of a UV resistant, heavy duty 10 ounce per square yard vinyl coated polyester (VCP) facing on both sides of a nominal 2” thick quilted fiberglass. Sound Blankets are constructed with grommets and sewn with Gore Tenara exterior grade thread for maximum longevity. The sound blankets can simply be zip-tied to your existing chain link perimeter fence, wood fence, jersey barrier fencing, or support framing.

Specification:

Supply weatherproof, exterior-rated quilted sound blankets for sound barrier and visual barrier at construction site perimeter. Material shall be nominal 2” thick, diamond stitched UV resistant 10 ounce per square yard vinyl coated polyester (VCP) faced both sides. Sewn using exterior-rated Gore Tenara thread. Grommets integrated into blankets for securing to job site fencing. Minimum STC-21 rating. Minimum NRC-0.75 rating. Secure blankets with no visual gaps at joints and tight to ground level, complying to manufacturers installation guidelines. Use Model CSSB-2, Construction Site Sound Blanket manufactured by eNoise Control, 129 Penn St, Westfield, IN 46074, 888.213.4711, info@enoisecontrol.com.

Technical Data:

Facing	UV resistant, weather proof VCP both sides
Thickness	Nominal 2.00” [1.5” post fabrication]
Standard Width	48”
Weight	0.50 lb-psf
Temperature Range	-40° to +180°F
Sound Data Summary	STC-21, NRC-0.75

SOUND ABSORPTION (ASTM C-423)						
125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	NRC
.46	.94	.85	.64	.47	.33	.75

SOUND TRANSMISSION LOSS (ASTM E-90 & E-413)						
125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	STC
9	14	19	21	27	34	21