Final

SAN JOAQUIN RIVER BASIN, LOWER SAN JOAQUIN RIVER, CA PROJECT - REACH TS30L LEVEE IMPROVEMENT PROJECT ALTERNATE CONSTRUCTION HAUL ROUTE

Addendum to the Final Environmental Impact Report
State Clearinghouse No. 2010012027

Prepared By
Environmental Science Associates Inc.
for
San Joaquin Area Flood Control Agency

November 2025

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2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
esassoc.com

201901301.01

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SECTION 1
Background and Purpose of this Addendum

1.1 Background

The San Joaquin River Basin, Lower San Joaquin River (LSJR) Integrated Interim Feasibility Report/Environmental Impact Statement/Environmental Impact Report (2018 LSJR IIFR/EIS/EIR) was prepared by the San Joaquin Area Flood Control Agency (SJAFCA), Central Valley Flood Protection Board (CVFPB), and U.S. Army Corps of Engineers (USACE). SJAFCA served as the lead agency under the California Environmental Quality Act (CEQA) and the 2018 LSJR IIFR/EIS/EIR was certified by the SJAFCA Board of Directors on November 8, 2018 and a Notice of Determination (NOD) was filed with the State Clearinghouse (SCH) on November 9, 2018. The 2018 LSJR IIFR/EIS/EIR evaluated the environmental impacts of seven alternative plans aimed at reducing flood risk in the Stockton area and ultimately identified Alterative 7a as the recommended alternative, which would repair and enhance the levees that surround Stockton (mitigating flood risk from the Delta Front, the Calaveras River, and the San Joaquin River).

Alternative 7a was divided into sub-reaches, with one of the sub-reaches being the LSJR Reach TS30L Levee Improvement Project (TS30L) evaluated in a 2023 Supplemental Final Environmental Impact Report (2023 TS30L Final SEIR). The 2023 TS30L Final SEIR was approved by the SJAFCA Board on September 29, 2023 and a NOD was filed with the SCH on October 3, 2023. The 2023 TS30L Final SEIR evaluated approximately 1 mile of cutoff wall construction, levee reshaping, and runoff erosion protection of the TS30L levee, as well as development of biological mitigation sites, a borrow site, barge off-haul site, two co-located staging and stockpile areas, and haul routes.

1.2 Purpose of the Addendum

The CEQA Guidelines (Sections 15162) require that a lead agency prepare an addendum to an EIR if some changes or additions to the environmental evaluation of a project are necessary but none of the following conditions occur:

1. Substantial changes in the project which require major revisions to previous EIR or a substantial increase in the severity of previously identified significant effects;
2. Substantial changes with respect to the circumstances under which the project is undertaken which require major revisions to the EIR; or

3. New information of substantial importance, which could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified, shows any of the following:
    i. the project will have one or more significant effects not discussed in the previous EIR,
    ii. the project will result in impacts substantially more severe than shown in the previous EIR,
    iii. mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponent declines to adopt them, or
    iv. mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponent declines to adopt them.

The purpose of this addendum to the 2018 LSJR IIFR/EIS/EIR and 2023 TS30L Final SEIR is to evaluate an alternate construction haul route compared to those described in those previous documents; and to provide documentation to support that the proposed changes would not result in effects that meet the criteria described in CEQA Guidelines Sections 15162. This addendum concludes that development and use of the alternate construction haul route does not trigger any of the CEQA Guidelines Section 15162 conditions described above, and that the preparation of an addendum is appropriate.

SECTION 2
Description of Project Changes

2.1 Project Overview

The 2018 LSJR IIFR/EIS/EIR stated that if Alternative 7a is authorized and funded, detailed evaluation of staging areas and borrow requirements, and identification and detailed technical evaluation of potential materials sources, would be completed during preconstruction engineering and design, including appropriate literature review, site visits, informal consultation with resource agencies, and surveys to determine the presence or potential presence of federally or state-listed species and their designated critical habitat. It also states that potential sites with listed species occurrences or with the potential for occurrences would be avoided. Details related to development of staging areas, borrow sites, and access routes have since been developed for TS30L and were outlined in the 2023 TS30L Final SEIR. As stated above, the 2023 TS30L Final SEIR evaluated approximately 1 mile of cutoff wall construction, levee reshaping, and runoff erosion protection of the TS30L levee, as well as development of biological mitigation sites, a borrow site, barge off-haul site, two co-located staging and stockpile areas, and haul routes.

The approximately 11-mile haul route described and evaluated in the 2023 TS30L Final SEIR (from the proposed Stockton East Water District [SEWD] borrow site, shown in **Figure 1**) utilizes SEWD-owned roads, then crosses over the Stockton Diverting Canal via a SEWD-maintained bridge (previously a railroad bridge) before using public streets to cross the city. The route follows Cardinal Avenue to State Route (SR) 26, then SR 99, SR 4, Interstate 5 (I-5), and the West March Lane exit. March Lane leads directly to the southern end of the TS30L levee. This addendum covers a proposed alternate haul route from the SEWD borrow site to TS30L (**Figure 2**), to allow for construction to move forward if the original planned haul route becomes unusable (due to the condition of the existing SEWD bridge across the Stockton Diverting Canal). This haul route, or portions of it, may also be used for future phases of the LSJR Project as needed.

2.2 Proposed Project Changes

The proposed alternate construction haul route from the SEWD borrow site to TS30L is approximately 22 miles long, which includes the use of surface streets and highways (Figure 2). The proposed alternate construction haul route would follow a private road on the west side of the SEWD property, then turn left onto the levee crown road parallelling the east side of Stockton Diverting Canal. The route then turns left onto East Main Street, which becomes Copperopolis Road, and heads east for approximately 3 miles. The route continues north on County Route J5

(CR J5)/Jack Tone Road for 2 miles until it connects with State Route (SR) 26/Fremont Street, on which it travels west for approximately 5.7 miles. At this point, the route follows the same path as the original haul route evaluated in the 2023 TS30L Final SEIR (Figure 1), continuing on SR 26 to its connection with SR 99, continuing west on SR 4 and north on Interstate 5 (I-5) for approximately 7 miles, then exiting at West March Lane, heading west for about 1.6 miles, which then leads directly onto the south end of TS30L at March Lane and Brookside Road.

All roads along the proposed alternate construction haul route (except the levee road on the east side of the Stockton Diverting Canal) are paved surface streets and highways. The Stockton Diverting Canal levee road is comprised of six inches of aggregate base. The additional roadways evaluated as part of the proposed alternate construction haul route (i.e., East Main Street, Copperopolis Road, and Jack Tone Road) are not designated truck routes; however, SR 26 is classified as a Surface Transportation Assistance Act (STAA) County Truck Route at the intersection with Cardinal Avenue to the interchange with SR 99. SR 99, SR 4, and I-5 are all designated as STAA State Truck Routes (Caltrans 2021 and 2023).

Some roads along the route are adjacent to operational PG&E electric transmission lines, including overhead lines crossing over East Main Street at the intersection with Alpine Road, along SR 26, crossing West March Lane at the exit from I-5, and overhead at the TS30L site (CEC 2023). However, the proposed alternate construction haul route would not cause any disruptions to utility resources and no relocation or installation of utility infrastructure is proposed.

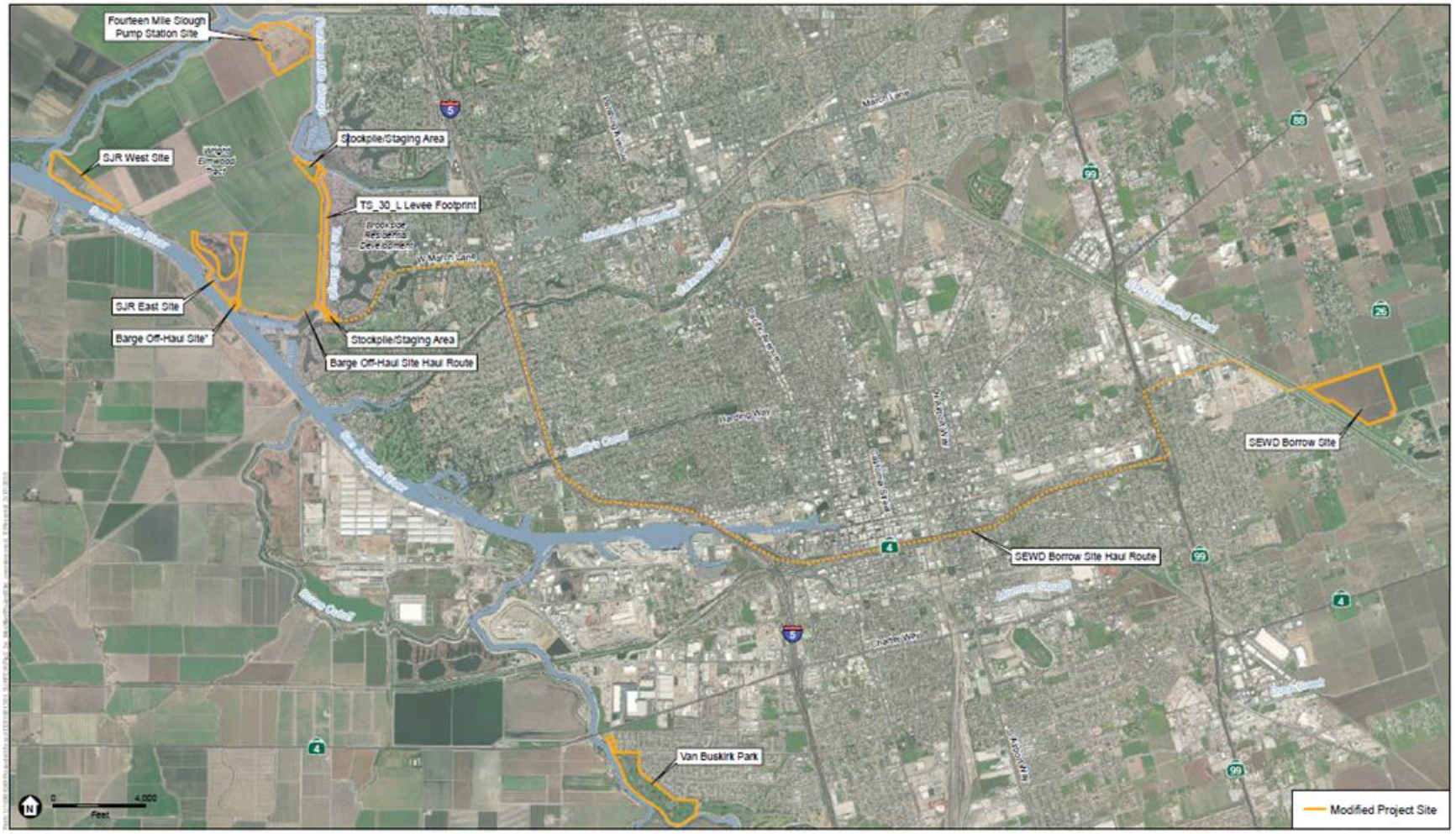
Use of the proposed alternate construction haul route is anticipated to occur over up to two approximately 6-month construction seasons (April through October), consistent with construction seasons and durations described in the 2023 TS30L Final SEIR (which included two September through March seasons and two May through August seasons). Work would occur between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, as described in the 2023 TS30L Final SEIR. The City of Stockton's standard encroachment permit, which would be required for work on the Modified Project, further limits truck haul hours to 8:00 a.m. to 4:00 p.m. unless special approval is granted. On March Lane, trucks are only allowed to use the middle lane in the west and east bound directions.

An anticipated 43,633 cubic yards (cy) of material are anticipated to be required for construction of the TS30L levee improvements. It is assumed that a minimum of 5% of the material would be delivered along the original haul route before the proposed alternative construction haul route is needed. This means that the proposed alternative construction haul route would be needed to transport approximately 52,000 cy of material. The contractor would use 12 cy trucks and/or 20 cy trucks.

In summary, the proposed alternate construction haul route includes the following elements that were not evaluated in the 2018 LSJR IIFR/EIS/EIR and 2023 TS30L Final SEIR:

- Addition of approximately 11 miles in length to the construction haul route from the previously identified and approved SEWD borrow site evaluated in the 2023 TS30L Final SEIR, to avoid using the existing railroad bridge crossing the Stockton Diverting Canal.

Figure 1 TS30L Project Area Overview with Original Construction Haul Route

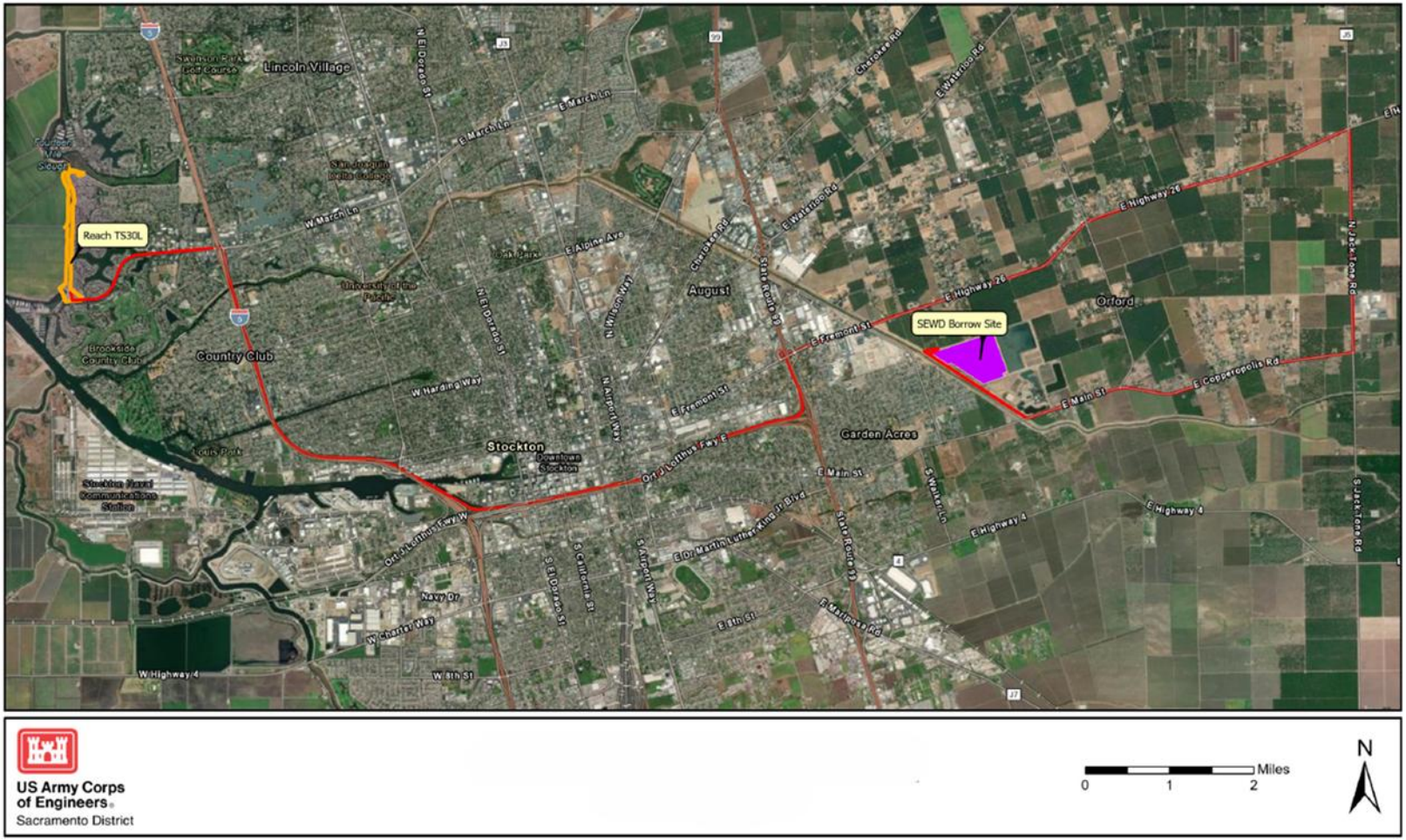


SOURCE: Maxar, 2022; CA DWR, 2022; ESA, 2023

LSJR Reach TS_30_L Levee Improvement Project

* The exact location of the barge off-haul site is yet to be determined.
The boundary depicted in this figure is a rough estimate based on draft PDF markups.

Figure 2 Proposed Alternate Construction Haul Route



SECTION 3
Analysis of Potential Environmental Effects

3.1 Introduction

The 2023 TS30L Final SEIR evaluated potential environmental impacts on the following resource categories: aesthetics; air quality and greenhouse gas (GHG) emissions; geology and geomorphology, seismicity, soils and mineral resources; hazardous materials and public safety; hydrology and hydraulics; water quality; groundwater; utilities, service systems, and public services; recreation; agricultural and forestry resources; biological resources; cultural and paleontological resources; energy; land use; noise and vibration; transportation; tribal cultural resources; and wildfire.

The analysis contained in this addendum is focused only on the alternate construction haul route for use at TS30L or other future LSJR Project levee sites. According to CEQA Guidelines Section 15163, this addendum needs to contain only the information needed to analyze the alternate construction haul route, including changed circumstances and new information requiring additional environmental review. Where existing information and analysis in the 2018 LSJR IIFR/EIS/EIR and/or the 2023 TS30L Final SEIR are sufficient to evaluate the impacts of the alternate construction haul route, no additional environmental review is warranted.

Section 5.23 of the 2018 LSJR IIFR/EIS/EIR and Section 3.2.10 and Sections 3.5 through 3.13 of the 2023 TS30L Final SEIR discuss the potential cumulative impacts from the LSJR and TS30L projects, respectively. As further discussed in Section 3.3 of this addendum, other direct impacts of the alternate construction haul route would be limited, mitigable, or very localized, or would not cause or contribute to additional cumulative impacts beyond those described in the 2018 LSJR IIFR/EIS/EIR and 2023 TS30L Final SEIR. Therefore, the alternate construction haul route would not result in additional cumulatively considerable impacts, and previous CEQA documentation adequately addresses potential cumulative impacts.

3.2 Environmental Issues not Requiring Further Analysis

General construction activities and equipment (hauling of material using 12 to 20-cy haul trucks) associated with the proposed alternate construction haul route are consistent with those analyzed in the 2018 LSJR IIFR/EIS/EIR and 2023 TS30L Final SEIR. In addition, the proposed alternate construction haul route is mainly contained within the study area boundary analyzed in the 2023 TS30L Final SEIR, or within existing paved surface streets that were not previously analyzed.

Only approximately one mile of the additional 11 miles in length being added to the previously evaluated construction haul route travels along a previously disturbed aggregate-base levee road, as opposed to a paved public roadway.

Use of the proposed alternate construction haul route would occur on previously disturbed and mostly paved roadways, and it would not include any grading, stripping, vegetation clearing, earth moving, or other excavation ground disturbance. Hauling activities in existing roadways would be short-term, consistent in nature to existing activities in those roadways, and would be done in accordance with local laws and regulations. Use of the alternate construction haul route does not overlap with vegetation or other sensitive habitat, including wetlands or alterations of any rivers or streams. Erosion control best management practices (BMPs) from the 2023 TS30L Final SEIR would apply to the proposed alternate construction haul route, and a Storm Water Pollution Prevention Plan (SWPPP) would be required as part of the National Pollutant Discharge Elimination System (NPDES) general permit; therefore, any erosion or deposition of materials beyond the project footprint from use of the unpaved levee road on the east side of the Stockton Diverting Canal would be avoided. Similarly, implementation of the Spill Prevention, Control and Counter Measure Plan (SPCCP) from the 2023 TS30L Final SEIR and compliance with applicable regulations would reduce the potential for accidental release of hazardous materials during transport of materials.

Based on the above, the only potential direct or indirect environmental effects that could result from use of the proposed alternate construction haul route that differ from those evaluated in the 2023 TS30L Final EIR would involve additional truck emissions, noise, and circulation and access issues from the lengthier route. Therefore, the impact determinations and mitigation measures provided in the 2023 TS30L Final SEIR related to the following resource categories would not be affected by the proposed project change: aesthetics; geology and geomorphology, seismicity, soils and mineral resources; hazardous materials and public safety; hydrology and hydraulics; water quality; groundwater; utilities, service systems, and public services; recreation; agricultural and forestry resources; biological resources; cultural and paleontological resources; energy; land use; tribal cultural resources; and wildfire.

3.3 Effects Related to Changes in the Proposed Project

The following resource topics have been re-evaluated to determine whether the proposed alternate construction haul route would result in any new significant impacts or substantially more severe impacts than those described in the 2018 LSJR IIFR/EIS/EIR and 2023 TS30L Final SEIR.

3.3.1 Air Quality and GHG Emissions

Section 5.8 of the 2018 LSJR IIFR/EIS/EIR and Section 3.3.2 of the 2023 TS30L Final SEIR analyzed impacts to air quality and greenhouse gas emissions and found that construction impacts would be less than significant with mitigation. No long-term operational impacts were identified.

Criteria air pollutants were modeled for the analysis in the 2018 LSJR FR/EIS/EIR using the Road Construction Emission Model (RCEM). This model is used to estimate emissions from linear construction projects and estimates emissions for both vehicle exhaust and fugitive dust. Modeled scenarios estimated fugitive dust based on the maximum area of land disturbed daily and accounted for fugitive dust reductions required by San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII (Fugitive PM_{10} Prohibitions). Since RCEM estimates CO_2 emissions but not CO_{2e} emissions (for evaluation of GHG emissions), CO_2 emissions estimates were conservatively increased by 5 percent to represent total CO_{2e} emissions for the 2018 LSJR FR/EIS/EIR analysis.

Table 5-9 in Section 5.8.10 of 2018 LSJR FR/EIS/EIR displays the quantitative results of this evaluation and shows that emissions from Alternative 7a construction would be below significance thresholds for all pollutants except NO_X, which would exceed SJVAPCD's significance thresholds in certain years, and this impact was found to be potentially significant. However, the 2018 LSJR FR/EIS/EIR determined that with implementation of the mitigation measure outlined in Section 5.8.10, which calls for the use of all Tier 3 vehicles, this impact would be reduced to a less-than-significant level. Table 5-11 in Section 5.8.10 displays the reduction in Alternative 7a NO_X emissions from the use of all Tier 3 vehicles against the SJVAPCD NO_X conformity threshold.

The 2023 TS30L Final SEIR described that TS30L would require construction methods similar to Alternative 7a, and that TS30L would also have to comply with SJVAPCD Regulation VIII; therefore, construction emissions generated by TS30L were anticipated to be consistent with those modeled and evaluated in the 2018 LSJR FR/EIS/EIR. For those emissions calculated in the 2018 LSJR FR/EIS/EIR that were below evaluated significance criteria thresholds for Alternative 7a as a whole (including all GHG emissions and criteria air pollutants), this existing information and analysis was found sufficient to evaluate the impacts of TS30L. Therefore, the air quality modeling completed for TS30L (included as Appendix D to the 2023 TS30L Final SEIR) focused only on potential NO_X emissions.

The analysis showed that TS30L had the potential to generate NO_X emissions over the SJVAPCD conformity threshold of 10 tons per year. Using Tier 0 equipment, construction of the levee improvements could generate up to 11.29 tons of NO_X per year, and if construction of the selected biological mitigation site overlapped this levee work, potential NO_X emissions would increase. However, TS30L included a mitigation measure (Mitigation Measure 3.2.2-1) with a requirement to use Tier 4 equipment that would reduce NO_X emissions below 10 tons per year (to 1.88 tons over the course of levee improvements and mitigation site development, combined).

For the proposed alternate construction haul route, as outlined in Section 2 of this addendum, *Description of Project Changes*, the contractor would use 12-cy trucks and/or 20-cy trucks. If only using the smaller capacity 12-cy trucks, which would involve the most trips and distance traveled, there would be 4,334 one-way trips required for a total of 95,333 miles traveled from the SEWD borrow site to the TS30L construction site, or 190,667 miles round trip. If 20-cy trucks are used instead of or along with the 12-cy trucks, this would reduce the number of trips and total distance travelled.

Air quality modeling completed for the proposed alternate construction haul route (using a mixture of 12-cy and 20-cy trucks) shows that the 11-mile increase in mileage from the original haul route would generate additional air quality emissions. The data output from the air quality modeling is included as **Appendix A** to this addendum. There would be an increase of 0.32 tons of NOx over the course of the project schedule from utilizing the alternate construction haul route; however, this does not cause the overall project to exceed SJVAPCD's significance thresholds. Therefore, similar to what was described in the 2023 TS30L Final SEIR, the proposed alternate construction haul route would not conflict with or obstruct implementation of the applicable air quality plan, violate air quality standards, or result in a cumulatively considerable net increase in any criteria pollutant. Mitigation Measure Mitigation Measure 3.2.2-1 *Reduce Construction-Related NO_X Emissions*, identified in the 2023 TS30L Final SEIR would continue to apply to the TS30L work with use of the proposed alternate construction haul route and would ensure that impacts related to air quality would be reduced to less than significant levels. No new impacts would occur and no additional mitigation measures are required.

Therefore, the proposed alternate construction haul route is consistent with and would not result in new or more severe potentially significant impacts than identified in the 2018 LSJR FR/EIS/EIR and 2023 TS30L Final SEIR and these previous CEQA documents adequately address potential impacts related to air quality emissions.

3.3.2 Noise and Vibration

Section 5.19 of the 2018 LSJR IIFR/EIS/EIR and Section 3.10 of the 2023 TS30L Final SEIR analyzed impacts related to noise and groundborne vibration and found that construction impacts would be significant and unavoidable. No long-term operational impacts were identified.

The 2018 LSJR IIFR/EIS/EIR determined that construction activities associated with Alternative 7a would result in a temporary increase in ambient noise levels at nearby sensitive receptors that would exceed the maximum allowable exterior noise standards for outdoor activity areas in the City of Stockton. In addition, evaluation of Alternative 7a found a temporary construction-related increase in groundborne noise and vibration levels at nearby sensitive receptors that would exceed the Federal Transit Administration (FTA) standard for vibration levels at Category 2 land uses, such as residences where people sleep. These impacts would be significant and unavoidable even with the implementation of mitigation measures detailed in Section 5.19.10 of the 2018 LSJR IIFR/EIS/EIR.

The 2023 TS30L Final SEIR found that implementation of TS30L would require a similar type and intensity of construction equipment as that evaluated for Alternative 7a in the 2018 LSJR IIFR/EIS/EIR. The evaluation included an analysis of the maximum noise levels associated with construction, including loaded haul trucks, and found that noise from construction activities associated with TS30L would be 77.8 dBA (A-weighted decibels) at 100 feet, and that residences within 740 feet of construction activities would experience noise levels in excess of the daytime maximum outdoor noise standard. In addition, the highest-vibration-generating construction equipment used for the used for TS30L would generate vibration levels of 86 to 87 VdB (vibration decibels) at 25 feet. Therefore, residences within 90 feet of such equipment would

experience vibration levels in excess of the 80 VdB FTA standard, and this would include residences along the original haul route. These impacts were found to be significant and unavoidable, consistent with Alternative 7a, even with implementation of Mitigation Measure 3.10-1, which outlines a suite of measures to reduce construction-related noise.

The proposed alternate construction haul route travels by rural residential areas along East Main Street, Copperopolis Road, Jack Tone Road, and SR 26 and could introduce noise impacts to these sensitive receptors; however, construction-related noise impacts related to loaded haul trucks traveling along haul routes were evaluated in the 2023 TS30 Final SEIR. Mitigation Measure Mitigation Measure 3.10-1 *Construction Noise Reduction*, identified in the 2023 TS30L Final SEIR would continue to apply to the TS30L work with use of the proposed alternate construction haul route and would minimize impacts related to noise the degree feasible. No new impacts would occur and no additional mitigation measures are required. Therefore, the proposed alternate construction haul route is consistent with and would not result in new or more severe potentially significant impacts than identified in the 2018 LSJR FR/EIS/EIR and 2023 TS30L Final SEIR and these previous CEQA documents adequately address potential impacts related to air quality emissions.

3.3.3 Transportation

Section 5.15 of the 2018 LSJR IIFR/EIS/EIR and Section 3.11 of the 2023 TS30L Final SEIR analyzed impacts to transportation/traffic and found significant and unavoidable impacts related to conflicts with plans and policies addressing the circulation system and emergency access.

The 2018 LSJR IIFR/EIS/EIR discussed that Alternative 7a would increase traffic on local roadways associated with construction haul trips, which could interfere with the use of main roadways for emergency evacuation routes. In addition, Alternative 7a could have haul routes that occur in the vicinity of schools or through residential areas that are not designated truck routes. These activities would conflict with local plans and policies and therefore were found to cause significant and unavoidable impacts.

Similarly, the 2023 TS30L Final SEIR found that haul routes associated with TS30L would run through residential and commercial areas, near residences and on roads that are not designated truck routes. This could interfere with the circulation system and disrupt emergency access, which could conflict with local plans and policies. These impacts were found to be significant and unavoidable, consistent with Alternative 7a, even with implementation of Mitigation Measure 3.11-1, which outlines requirements for a Traffic Safety Plan.

The analysis in the 2018 LSJR IIFR/EIS/EIR and the 2023 TS30L Final SEIR found that Alternative 7a and TS30L, respectively, would have potentially significant impacts related to construction traffic near schools and residences, interfering with the circulation system and use of surface streets for emergency evacuation routes, which would conflict with local plans and policies. Mitigation Measure Mitigation Measure 3.11-1 *Traffic Safety Plan*, identified in the 2023 TS30L Final SEIR would continue to apply to the TS30L work with use of the proposed alternate construction haul route and would minimize impacts related to transportation/traffic to

the degree feasible. No new impacts would occur and no additional mitigation measures are required. Therefore, the proposed alternate construction haul route is consistent with and would not result in new or more severe potentially significant impacts than identified in the 2018 LSJR FR/EIS/EIR and 2023 TS30L Final SEIR and these previous CEQA documents adequately address potential impacts related to traffic/transportation.

3.4 Conclusion

Based on the information above, the proposed alternate construction haul route would not result in effects that meet the criteria described in CEQA Guidelines Sections 15162. This addendum concludes that the use of the proposed alternate construction haul route does not trigger any of the CEQA Guidelines Section 15162 conditions described above, and that the preparation of an addendum therefore is appropriate.

3.5 References

California Department of Transportation (Caltrans). 2021. Local Truck Routes – STAA Truck Routes. Accessed 13 February 2025. Available at: https://dot.ca.gov/programs/traffic-operations/legal-truck-access/local-truck-routes

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Environmental Science Associates (ESA). 2023. Lower San Joaquin River Reach TS_30_L Levee Improvement Project. Prepared for the San Joaquin Area Flood Control Agency, Central Valley Flood Protection Board, and the US Army Corps of Engineers Sacramento District. May 2023.

APPENDIX A

Air Quality Modeling Data

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> TS30L Levee Project														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.03	35.04	4.33	100.22	0.22	100.00	20.99	0.19	20.80	0.07	6,572.18	2.05	0.08	6,648.68
Grading/Excavation	6.15	109.29	17.13	50.80	0.80	50.00	11.04	0.64	10.40	0.22	21,799.86	6.18	0.57	22,124.53
Drainage/Utilities/Sub-Grade	2.04	36.32	5.38	50.26	0.26	50.00	10.61	0.21	10.40	0.07	7,081.67	2.05	0.16	7,182.02
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	6.15	109.29	17.13	100.22	0.80	100.00	20.99	0.64	20.80	0.22	21,799.86	6.18	0.57	22,124.53
Total (tons/construction project)	0.74	13.10	2.04	7.60	0.10	7.50	1.64	0.08	1.56	0.03	2,606.27	0.74	0.07	2,644.80

Notes:

Project Start Year ->	2025
Project Length (months) ->	12
Total Project Area (acres) ->	55
Maximum Area Disturbed/Day (acres) ->	5
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	2	0	44	0	120	0
Grading/Excavation	111	0	528	0	300	150
Drainage/Utilities/Sub-Grade	22	0	132	0	120	50
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> TS30L Levee Project														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.21	0.03	0.60	0.00	0.60	0.13	0.00	0.12	0.00	39.43	0.01	0.00	36.19
Grading/Excavation	0.66	11.80	1.85	5.49	0.09	5.40	1.19	0.07	1.12	0.02	2,354.38	0.67	0.06	2,167.69
Drainage/Utilities/Sub-Grade	0.06	1.09	0.16	1.51	0.01	1.50	0.32	0.01	0.31	0.00	212.45	0.06	0.00	195.46
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.66	11.80	1.85	5.49	0.09	5.40	1.19	0.07	1.12	0.02	2354.38	0.67	0.06	2,167.69
Total (tons/construction project)	0.74	13.10	2.04	7.60	0.10	7.50	1.64	0.08	1.56	0.03	2606.27	0.74	0.07	2,399.35

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

Clear Data Input & User Overrides

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	TS30L Levee Project	
Construction Start Year	2025	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	12.00	months
Working Days per Month	24.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.20	miles
Total Project Area	55.00	acres
Maximum Area Disturbed/Day	5.00	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd³) (assume 20 if unknown)	Import Volume (yd³/day)	Export Volume (yd³/day)
Soil	Grubbing/Land Clearing	10.00		2.00
	Grading/Excavation	10.00	111.00	
	Drainage/Utilities/Sub-Grade	10.00	22.00	
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigation	2010 and Newer On-road Vehicles Fleet	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	Tier 4 Equipment	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard
Will all off-road equipment be tier 4?	All Tier 4 Equipment	

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.50	1.20		1/1/2025
Grading/Excavation	9.00	5.40		1/17/2025
Drainage/Utilities/Sub-Grade	2.50	3.60		10/18/2025
Paving		1.80		1/3/2026
Totals (Months)		14		

Please note: You have entered a different number of months than the project length shown in cell D16.
Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing	44.00			1	44.00
Miles/round trip: Grading/Excavation	44.00			12	528.00
Miles/round trip: Drainage/Utilities/Sub-Grade	44.00			3	132.00
Miles/round trip: Paving				0	0.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Grading/Excavation (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.34	0.00	0.26	1,750.71
Paving (grams/mile)	0.03	0.41	3.10	0.11	0.05	0.02	1,652.48	0.00	0.26	1,729.92
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.04	0.31	0.01	0.00	0.00	162.28	0.00	0.03	169.88
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00	1.02
Pounds per day - Grading/Excavation	0.03	0.48	3.68	0.13	0.06	0.02	1,947.31	0.00	0.31	2,038.56
Tons per const. Period - Grading/Excavation	0.00	0.05	0.40	0.01	0.01	0.00	210.31	0.00	0.03	220.16
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.12	0.92	0.03	0.01	0.00	486.67	0.00	0.08	509.47
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.03	0.00	0.00	0.00	14.60	0.00	0.00	15.28
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.06	0.43	0.02	0.01	0.00	225.88	0.00	0.04	236.47

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Grading/Excavation (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.34	0.00	0.26	1,750.71
Paving (grams/mile)	0.03	0.41	3.10	0.11	0.05	0.02	1,652.48	0.00	0.26	1,729.92
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
User Input				
Miles/ one-way trip	10			
One-way trips/day	2			
No. of employees: Grubbing/Land Clearing	6		12	120.00
No. of employees: Grading/Excavation	15		30	300.00
No. of employees: Drainage/Utilities/Sub-Grade	6		12	120.00
No. of employees: Paving			0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Grading/Excavation (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Draining/Utilities/Sub-Grade (grams/mile)	0.01	0.77	0.06	0.05	0.02	0.00	295.57	0.00	0.01	297.25
Paving (grams/mile)	0.01	0.72	0.05	0.05	0.02	0.00	285.85	0.00	0.01	287.41
Grubbing/Land Clearing (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Grading/Excavation (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Draining/Utilities/Sub-Grade (grams/trip)	0.92	2.56	0.25	0.00	0.00	0.00	63.67	0.06	0.03	73.69
Paving (grams/trip)	0.87	2.47	0.23	0.00	0.00	0.00	61.59	0.06	0.03	71.10
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.03	0.27	0.02	0.01	0.01	0.00	79.95	0.00	0.00	80.66
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.48
Pounds per day - Grading/Excavation	0.07	0.68	0.05	0.03	0.01	0.00	199.88	0.01	0.01	201.66
Tons per const. Period - Grading/Excavation	0.01	0.07	0.01	0.00	0.00	0.00	21.59	0.00	0.00	21.78
Pounds per day - Drainage/Utilities/Sub-Grade	0.03	0.27	0.02	0.01	0.01	0.00	79.88	0.00	0.00	80.59
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	2.40	0.00	0.00	2.42
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.01	0.08	0.01	0.00	0.00	0.00	24.46	0.00	0.00	24.68

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust	3		10.00			5.00		150.00
Drainage/Utilities/Subgrade	1		10.00			5.00		50.00
Paving								0.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Grading/Excavation (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.34	0.00	0.26	1,750.71
Paving (grams/mile)	0.03	0.41	3.10	0.11	0.05	0.02	1,652.48	0.00	0.26	1,729.92
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.01	0.14	1.31	0.04	0.02	0.01	553.21	0.00	0.09	579.14
Tons per const. Period - Grading/Excavation	0.00	0.01	0.14	0.00	0.00	0.00	59.75	0.00	0.01	62.55
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.05	0.44	0.01	0.01	0.00	184.34	0.00	0.03	192.98
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	5.53	0.00	0.00	5.79
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.02	0.15	0.00	0.00	0.00	65.28	0.00	0.01	68.34

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing	10.00		100.00	0.60	20.80	0.12
Fugitive Dust - Grading/Excavation			50.00	5.40	10.40	1.12
Fugitive Dust - Drainage/Utilities/Subgrade			50.00	1.50	10.40	0.31

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Tier 4	Off-Highway Trucks	1.61	28.02	3.23	0.16	0.15	0.05	5,118.71	1.66	0.05	5,173.81
			Tier 4	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Rubber Tired Loaders	0.39	6.70	0.77	0.04	0.04	0.01	1,211.24	0.39	0.01	1,224.32
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	2.00	34.72	4.01	0.20	0.18	0.07	6,329.95	2.05	0.06	6,398.14
Grubbing/Land Clearing	tons per phase	0.01	0.21	0.02	0.00	0.00	0.00	37.98	0.01	0.00	38.39

Reach TS30L Levee Improvements
Alternate Haul Route
Final Supplemental Environmental Assessment III

September 2025

Grading/Excavation	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Cranes	0.18	3.07	0.35	0.02	0.02	0.01	558.83	0.18	0.01	564.85
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Excavators	0.16	3.92	0.32	0.02	0.01	0.01	500.34	0.16	0.00	505.73
1.00			Tier 4	Forklifts	0.05	1.16	0.09	0.00	0.00	0.00	148.03	0.05	0.00	149.63
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00			Tier 4	Off-Highway Trucks	4.04	70.05	8.08	0.40	0.37	0.13	12,796.76	4.14	0.12	12,934.54
			Tier 4	Other Construction Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Tier 4	Rollers	0.24	5.95	0.48	0.02	0.02	0.01	762.19	0.25	0.01	770.40
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Rubber Tired Dozers	0.52	9.06	1.05	0.05	0.05	0.02	1,653.92	0.53	0.01	1,671.73
2.00			Tier 4	Rubber Tired Loaders	0.39	6.70	0.77	0.04	0.04	0.01	1,211.24	0.39	0.01	1,224.32
1.00			Tier 4	Scrapers	0.47	8.08	0.93	0.05	0.04	0.02	1,468.15	0.47	0.01	1,483.97
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation	pounds per day	6.03	107.99	12.08	0.60	0.56	0.20	19,099.46	6.18	0.17	19,305.18
Grading/Excavation	tons per phase	0.65	11.66	1.30	0.07	0.06	0.02	2,062.74	0.67	0.02	2,084.96

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Cranes	0.18	3.07	0.35	0.02	0.02	0.01	558.83	0.18	0.01	564.85
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Excavators	0.16	3.92	0.32	0.02	0.01	0.01	500.34	0.16	0.00	505.73
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Tier 4	Off-Highway Trucks	1.21	21.01	2.42	0.12	0.11	0.04	3,839.03	1.24	0.03	3,880.36
			Tier 4	Other Construction Equipmei	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Rubber Tired Dozers	0.26	4.53	0.52	0.03	0.02	0.01	826.96	0.27	0.01	835.87
1.00			Tier 4	Rubber Tired Loaders	0.19	3.35	0.39	0.02	0.02	0.01	605.62	0.20	0.01	612.16
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade	pounds per day	2.00	35.89	4.01	0.20	0.18	0.07	6,330.78	2.05	0.06	6,398.97
Drainage/Utilities/Sub-Grade	tons per phase	0.06	1.08	0.12	0.01	0.01	0.00	189.92	0.06	0.00	191.97