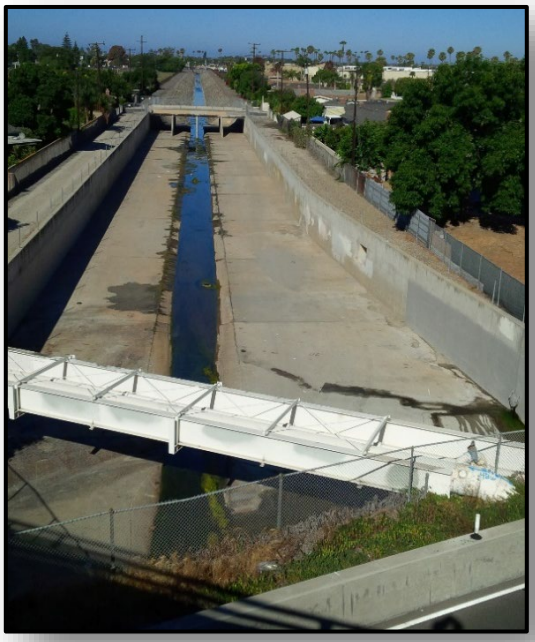
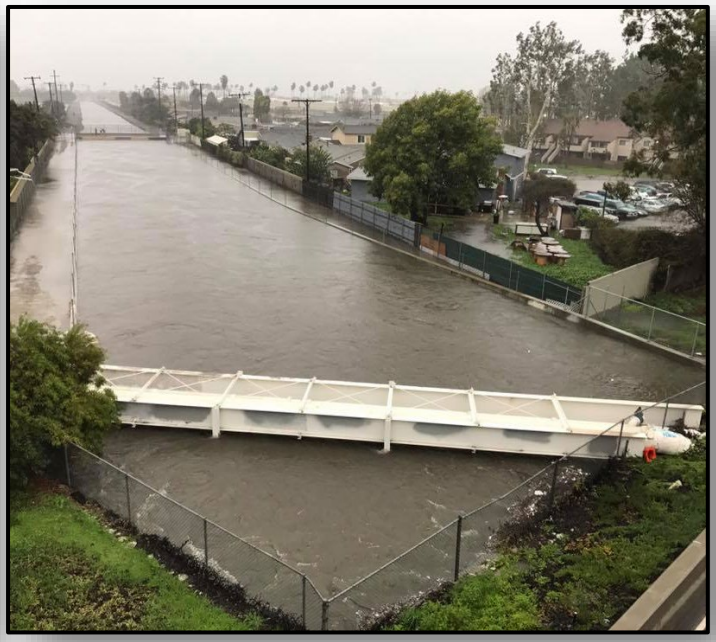
General Conformity Analysis

For

WESTMINSTER, EAST GARDEN GROVE

FLOOD RISK MANAGEMENT STUDY





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1.0 Introduction

1.1 Project Area and Scope

The Westminster Watershed is located in western Orange County, California, about 25 miles southeast of the City of Los Angeles. The watershed is about 74 square miles and heavily urbanized, including the cities of Anaheim, Stanton, Cypress, Garden Grove, Westminster, Fountain Valley, Los Alamitos, Seal Beach, and Huntington Beach. Local storm water runoff is collected by a number of drainage channels and conveyed to a system of receiving water bodies that outlet to the Pacific Ocean (Figure 1).

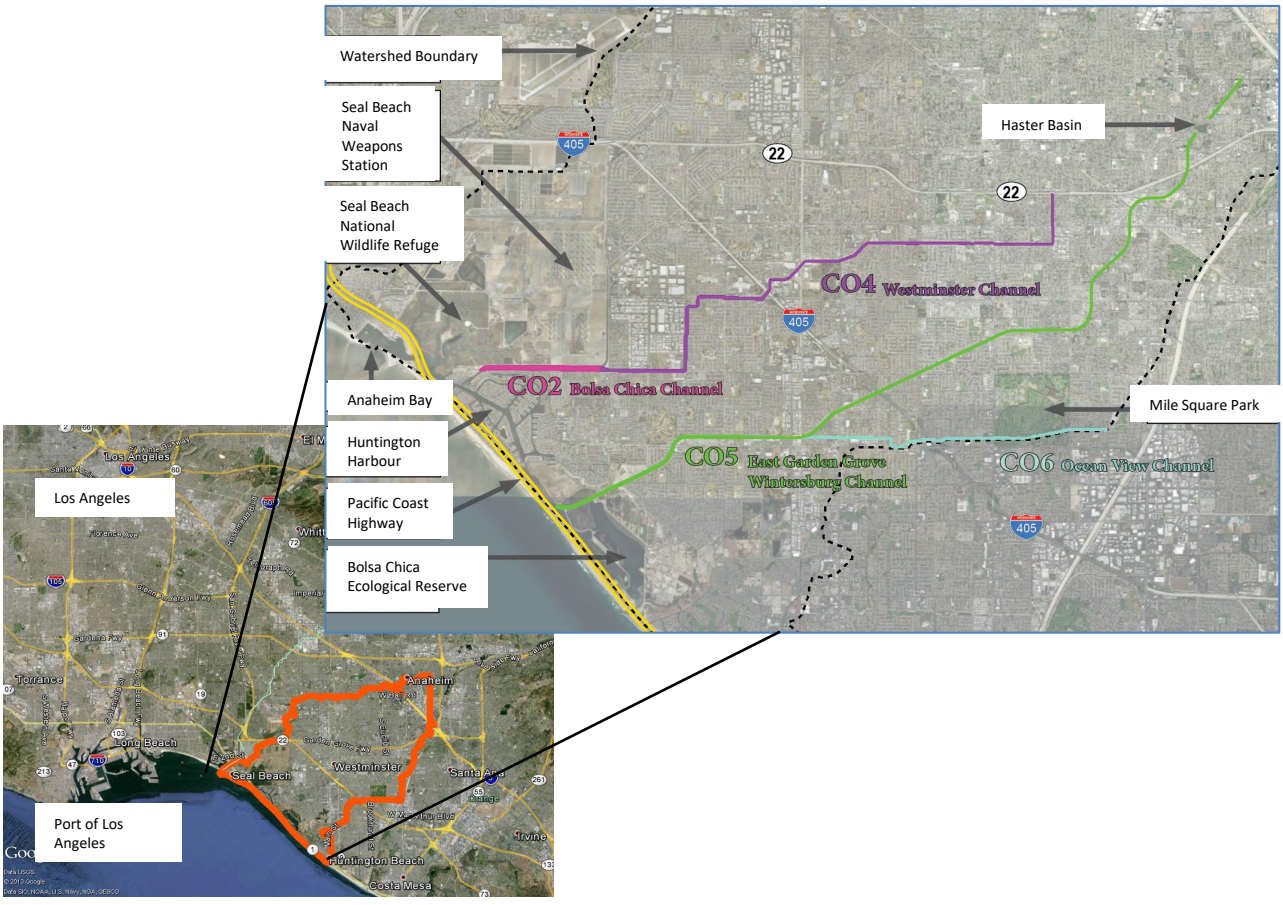

Figure 1: Westminster Watershed Drainage Channels C02, C04, C05, and C06 & Receiving Water Bodies.

The objective of the Westminster, East Garden Grove Feasibility Study is to investigate alternatives for flood risk reduction to communities of Orange County. This report focuses on the Locally Preferred Plan (LPP) because this alternative involves maximum channel modifications, produces the most construction emissions, and represents the worst possible air quality impacts. Modifications considered in channels C02, C04, C05, and C06 (Figure 1) include geometry and/or lining modification, sheet pile installation, road crossings, and floodwall construction. Modifications considered in downstream waters include Warner Avenue Bridge expansion and tide gate removal and replacement. Once construction is complete, the LPP would not produce any additional direct or indirect emissions since the final product will not result in new facilities or features that have on-going air emissions. Therefore construction emissions will be the focus of this analysis and long-term impacts are considered minimal.

1.2 Clean Air Act

The 1990 amendments to the Clean Air Act (CAA) [42 United States Code 7401 et seq.] require Federal agencies to ensure that their actions conform to the appropriate State Implementation Plan (SIP). A SIP is a plan that provides for the implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS), and includes emission limitations and control measures to attain and maintain the NAAQS. Conformity to a SIP, as defined in the CAA, means conformity to a SIP's purpose of reducing the severity and number of violations of the NAAQS to achieve attainment of such standards.

The Federal agency responsible for an action is required to determine if the action conforms to the applicable SIP. Section 176(c) of the Clean Air Act prohibits Federal entities from taking actions in nonattainment or maintenance areas which do not conform to the State implementation plan (SIP) for the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). Therefore, the purpose of conformity is to (1) ensure Federal activities do not interfere with the budgets in the SIPs; (2) ensure actions do not cause or contribute to new violations, and (3) ensure attainment and maintenance of the NAAQS.

1.3 General Conformity

On November 30, 1993, the United States Environmental Protection Agency (USEPA) promulgated regulations, known as the General Conformity Regulations, to ensure that other Federal actions (other than transportation projects, which are addressed separately) also conformed to the SIPs (58 FR 63214). With respect to General Conformity, all Federal Actions are covered unless otherwise exempt, e.g. actions covered by transportation conformity, actions with clearly *de minimis* emissions, exempt actions listed in rule, or actions covered by a Presumed to Conform demo (approved list). Conformity can be demonstrated by: (1) showing emission increases are included in SIP; (2) State agrees to include increases in SIP; (3) areas without SIPs, no new violations of NAAQS and/or no increase in frequency/severity of violations; (4) Offsets, and (5) Mitigation. Some emissions are excluded from conformity determination, such as those already subject to new source review; those covered by CERCLA or compliance with other environmental laws, actions not reasonably foreseeable, and those for which the Agency has no continuing program responsibility.

The purpose of this analysis is to document determination of conformity of Westminster Maximum Channel Modifications LPP, which could impact Orange County in California by emitting pollutants from off-road diesel-fueled construction equipment, on-road gasoline and diesel-fueled vehicles, material handling and grading, and paved surfaces. This conformity analysis has been prepared in accordance with the final rule of the USEPA, Determining Conformity of General Federal Actions to State or Federal Implementation Plans, published in the Federal Register on November 30, 1993. The general conformity rule [40 Code of Federal Regulations (CFR) Part 93, Subpart B] was effective January 31, 1994.

1.4 Criteria Air Pollutants

National Ambient Air Quality Standards (NAAQS) have been established for six common air pollutants considered harmful to public health and the environment. The criteria pollutants for which air quality standards have been established under the CAA are particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. Table 1 provides a summary of the current NAAQS for each pollutant.

Table 1: National Ambient Air Quality Standards for Six Critical Pollutants (NAAQS Table, https://www.epa.gov/criteria-air-pollutants/naaqs-table)

Pollutant		Primary/Secondary Pollutant Status	Averaging Time	Level	Form
Carbon Monoxide (CO)		Primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hours	35 ppm	
Lead (Pb)		Primary & secondary	Rolling 3 month average	0.15 ug/m^3	Not to be exceeded
Nitrogen Dioxide (NO_2)		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary & secondary	1 year	53 ppb	Annual Mean
Ozone (O_3)		Primary & secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particulate Matter (PM)	$PM_{2.5}$	Primary	1 year	12.0 ug/m^3	annual mean, averaged over 3 years
		Secondary	1 year	15.0 ug/m^3	annual mean, averaged over 3 years
		Primary & secondary	24 hours	35 ug/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary & secondary	24 hours	150 ug/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

1.5 Nonattainment Areas

Areas of the country where air pollution levels persistently exceed the NAAQS are designated as nonattainment areas. The general conformity rule applies to Federal actions occurring in air basins designated as nonattainment for criteria pollutants or in attainment areas subject to maintenance plans (maintenance areas). Table 2 summarizes the attainment status of the study area in Orange County, California that is potentially impacted by Westminster channel improvements (CA Nonattainment Status, 2019). The area is currently not attaining ozone and $PM_{2.5}$ national standards, and is maintaining carbon monoxide, nitrogen dioxide, and PM_{10} national standards.

Table 2: NAAQS Attainment Designations for Orange County, CA (Green Book, https://www3.epa.gov/airquality/greenbook/anayo_ca.html)

Pollutant	Federal Nonattainment Classification	Federal Maintenance Classification
Carbon Monoxide (CO)	Attainment	Yes
Lead (Pb)	Attainment	No
Nitrogen Dioxide (NO_2)	Attainment	Yes
Ozone (O_3) 8-hour	Extreme Nonattainment	No
Particulate Matter (PM) PM_{10}	Attainment	Yes
Particulate Matter (PM) $PM_{2.5}$	Nonattainment	No
Sulfur Dioxide (SO_2)	Attainment	No

2.0 General Conformity Determination Process

The general conformity rule consists of three major parts: applicability, analysis, and procedure. These three parts are described in the following sections.

2.1 Applicability

The general conformity rule ensures actions by federal agencies in nonattainment and maintenance areas do not interfere with a state's plan to meet national air quality standards. Westminster channel improvements would increase atmospheric emissions by operating construction equipment and vehicle, creating fugitive dust, and paving road surfaces in western Orange County, CA.

2.1.1 *De Minimis* Emissions Levels

To focus conformity requirements on those Federal actions with the potential to have significant air quality impacts, threshold (*de minimis*) rates of emissions (Table 3) were established in the final rule. With the exception of lead, the *de minimis* levels are based on the CAA's major stationary source definitions for the criteria pollutants (and precursors of criteria pollutants), and vary by the severity of the nonattainment area (NAA). A conformity determination is required when the annual net total of direct and indirect emissions from a Federal action, occurring in a nonattainment or maintenance area, equals or exceeds the annual *de minimis* levels. In this report, calculated emissions estimates are compared to *de minimis* levels to evaluate if a conformity determination is needed. The levels circled in red in Table 3 are applicable to this project.

Table 3: *De Minimis* Emission Levels (*De Minimis*, 2016).

Pollutant and Area Designation	Attainment Type	Tons per year[a]
Ozone (VOC's or NOx)	Serious NAA's	50
	Severe NAA's	25
	Extreme NAA's	10
	Other ozone NAA's outside an ozone transport region	100
Ozone (NOx)	Other NAA's inside an ozone transport region	100
	Maintenance areas inside an ozone transport region	100
Ozone (VOC's)	Other NAA's inside an ozone transport region	50
	Maintenance areas inside an ozone transport region	50
	Maintenance areas outside an ozone transport region	100
Carbon Monoxide, SO_2 or NO_2	All NAA's and maintenance areas	100
PM_{10}	Serious NAA's	70
	Moderate NAA's and maintenance areas	100
$PM_{2.5}$ Direct emissions, SO2, NOx,), VOC, and ammonia	Serious NAA's	70
	Moderate NAA's and maintenance areas	100
Lead (Pb)	All NAA's and maintenance areas	25

[a] Rates circled in red are those applicable to this conformity analysis.

2.1.2 Regional Significance

A Federal action that does not exceed the threshold of rates of criteria pollutants may still be subject to a general conformity determination. The direct and indirect emissions from the action must not exceed 10% of the total emissions inventory for a particular criteria pollutant(s) in a nonattainment or maintenance area. If the emissions exceed this 10% threshold, the Federal action is considered to be a "regionally significant" activity, and thus general conformity rules apply. The concept of regionally significant is to capture those Federal actions that fall below the *de minimis* emission levels, but have the potential to impact the air quality of a region.

2.2 Analysis

The conformity analysis for the Federal action examines the net impacts of the direct and indirect emissions from mobile and stationary sources, and emissions from any reasonably foreseeable Federal

action. Indirect emissions include those emissions the Federal agency can practicably control and has continuing program responsibility to maintain control, and emissions caused by the Federal action later in time and/or farther removed in distance from the action itself, but that are still reasonably foreseeable. Reasonably foreseeable emissions are those from projected Federal actions that can be quantified at the time of the conformity requirements and are included in the analysis.

Reasonably foreseeable emissions analyzed for Westminster LPP for the purposes of flood risk management include emissions from:

- Construction Equipment Engines
- Truck Hauling and Worker Vehicle Trips
- Dust from Grading, Construction, and Driving
- Asphalt Paving

The flood risk management project will not result in new facilities or features that have on-going direct or indirect air emissions, therefore operations and maintenance emissions will not be included and only short-term construction emissions are presented.

2.2.1 Emissions Calculation

CalEEMod

The California Emissions Estimator Model (CalEEMod Version 2016.3.2) is a modeling software supported by the South Coast Air Quality Management District (SCAQMD) that calculates potential emissions from construction and operation of land use projects (CAPCOA, 2017). It calculates the daily maximum and annual average for criteria pollutants as well as annual greenhouse gas (GHG) emissions, and combines user-defined data with default data when site-specific information is not available. It can also incorporate adjustments for mitigation. This model uses widely accepted methodologies for estimating emissions and quantifying air quality and climate change impacts as part of California Environmental Quality Act (CEQA) Environmental Impact Report preparation. In this report, CalEEMod is used to estimate annual emissions of criteria pollutants and compared to *de minimis* levels to assess whether a conformity determination is required.

Model inputs include project size and location, construction schedule and phasing, equipment types and activity hours, vehicle trips, and material quantities. This information is derived from project-specific data for the LPP, including Orange County Public Works (OCPW) LPP Formulation Project Schedule (OCPW, 2019), and Westminster – East Garden Grove LPP Equipment Log (USACE, 2018). Site-specific information is used to the maximum extent possible to obtain realistic, representative screening estimates.

Modeling approach. The model was run for five distinct projects in the LPP that have unique features, schedules, and equipment needs: Warner Avenue channel widening and bridge expansion, tide gate outlet structure removal and replacement, Reach 1 (C05) sheet pile and soil/cement mixing column installation, Reach 23 (C02) sheet pile and anchor column installation, and Reach 21 (C04) channel modification and diversion structure installation. Downstream reaches Reach 1 and Reach 23 and receiving water features Warner Avenue Bridge and tide gates will be constructed concurrently during the initial years of the project according to the LPP project schedule (OCPW, 2019) to manage efficiency and capacity increases upstream. Upstream reaches (Reaches 2-22) characterized by channel shaping, lining, and crossing activities will be constructed in series along the three Channels C04, C05, and C06 following downstream

activities, according to the schedule. Reach 21 includes creation of a new diversion channel, making it the most construction-intensive upstream reach by linear foot. Rather than model all individual upstream reaches, Reach 21 was chosen to represent the upstream since it is unlikely to underestimate emissions for other upstream projects.

Project location. The project resides in western Orange County, CA. All construction related emissions, including haul trips and worker trips are assumed to occur in Orange County.

Project area. Acreage information used to model the LPP is obtained from site-specific channel reach data and aerial imagery computations (Table 4). City Park land use is used to represent channels, waterways, and embankments; Other Asphalt Surfaces land use is chosen to represent maintenance roads (assumes one 15 foot maintenance road along upstream channels and two along downstream channels), tide gate crossing, and Warner Avenue Bridge extension.

Table 4: Maximum Channel Modification Project Areas (Acres).

Project Name	Total Area	City Park*	Other Asphalt Area*
Warner Avenue	1.15	0.92	0.23
Tide Gate	0.23	0.09	0.14
Reach 1	40.78	34.23	6.55
Reach 23	46.80	40.67	6.13
Reach 21	11.77	8.25	3.52

*CalEEMod Land Use input

Construction schedule. Start of construction is May 20, 2022 according to the schedule developed by OCPW (OCPW, 2019). Downstream improvements at Warner Avenue Bridge, tide gates, Reach 1 and Reach 23 are expected to occur the first two years (2022-2023), while improvements on upstream reaches are expected to occur between the second year (2023) and final year (2034) of construction (Table 5). The schedule includes no contingency (weather and tidal influences, material delivery lead time, presence of T&E species, funding availability, etc.) and therefore is likely to underestimate rather than overestimate actual construction periods. This provides assurance that calculated emissions rates are conservative and that actual emissions are likely to occur later and over a longer time period.

Table 5: Westminster LPP Construction Schedule.

Project Name	Start date	End date	Duration (calendar days)
Warner Avenue	5/20/2022	8/3/2023	440
Tide Gate	5/20/2022	12/22/2022	216
Reach 1	5/20/2022	8/3/2023	440
Reach 23	5/20/2022	12/22/2022	216
Upstream reaches on channel C04 (Reaches 20-22)	02/17/2023	1/13/2033	3618
Upstream reaches on channel C05 (Reaches 2-12)	9/29/2023	3/2/2034	3807
Upstream reaches on channel C06 (Reaches 13-19)	10/4/2024	10/26/2028	1483

Construction phases. The equipment log (USACE, 2018) breaks individual projects down into specific construction activities. Phase descriptions, numbers, and activities vary by project, but generally involve dust control, clearing/site preparation, demolition, excavation/grading, utility relocation, and building/construction. Construction phases for the modeled projects are shown in Tables 6-10. Phases are dated to overlap where possible to meet the rigorous construction schedule and allow for a start in one

area (e.g., the downstream end of a reach) while finishing a phase in another (e.g., the upstream end of a reach).

Table 6: Construction Phases for Warner Avenue Bridge Expansion.

Phase Name	Phase Type	Start	End	Work Days*
Demo existing bridge	Demolition	5/20/2022	2/19/2023	196
Relocate utilities throughout	Trenching	5/20/2022	8/3/2023	315
Traffic Control	Building Construction	5/20/2022	8/3/2023	315
Harbor wall armoring	Building Construction	5/20/2022	12/19/2022	152
Channel excavation and haul	Grading	6/20/2022	4/19/2023	218
New bridge structure	Building Construction	8/20/2022	8/3/2023	249
Road and parking raise	Paving	11/1/2022	8/3/2023	198

*Assume 5 working days a week.

Table 7: Construction Phases for Tide Gate Removal and Replacement.

Phase Name	Phase Type	Start	End	Work Days*
Relocate utilities	Trenching	5/20/2022	12/19/2022	152
Erosion Control and Turbidity Curtain	Trenching	5/20/2022	6/3/2022	11
Dewatering	Building Construction	6/4/2022	7/9/2022	25
Demolition and removal	Demolition	7/10/2022	9/1/2022	39
Earthwork and regrading	Grading	9/2/2022	9/17/2022	11
Bridge and roadway work	Building Construction	9/18/2022	12/19/2022	66

*Assume 5 working days a week.

Table 8: Construction Phases for Reach 1.

Phase Name	Phase Type	Start	End	Work Days*
Clear site and remove obstructions	Site Preparation	5/20/2022	12/3/2022	141
Dust control	Grading	5/20/2022	8/3/2023	315
Relocate utilities	Trenching	5/20/2022	8/3/2023	315
Road crossings	Building Construction	5/20/2022	8/3/2023	315
Dewatering	Building Construction	5/20/2022	8/3/2023	315
Concrete removal	Demolition	5/27/2022	12/30/2022	156
Sheet pile removal	Demolition	5/27/2022	12/30/2022	156
Sheet pile and soil cement mixing columns	Building Construction	6/1/2022	7/3/2023	284
Excavation	Grading	6/27/2022	7/19/2023	278
Temporary shoring	Building Construction	6/27/2022	7/19/2023	278
Aggregate base layer	Grading	7/15/2022	1/3/2023	123

Subsurface drain	Trenching	7/15/2022	12/3/2022	101
Concrete volume	Building Construction	7/20/2022	6/3/2023	228
Compacted fill	Grading	4/10/2023	8/3/2023	84

*Assume 5 working days a week.

Table 9: Construction Phases for Reach 23.

Phase Name	Phase Type	Start	End	Work Days*
Clear site and remove obstructions	Site Preparation	5/20/2022	9/1/2022	75
Dust Control	Grading	5/20/2022	12/22/2022	155
Dewatering	Building Construction	5/20/2022	12/22/2022	155
North levee slope protection	Grading	5/27/2022	12/22/2022	150
Sheet Pile & Anchor Column System	Building Construction	5/27/2022	12/22/2022	150
Excavation	Grading	6/1/2022	12/22/2022	147

*Assume 5 working days a week.

Table 10: Construction Phases for Reach 21.

Phase Name	Phase Type	Start *	End*	Work Days**
Dust control	Grading	2/17/2023	1/16/2025	500
Dewatering	Building Construction	2/17/2023	1/16/2025	500
Clear site and remove obstructions	Site Preparation	2/24/2023	6/12/2023	77
Concrete removal	Demolition	3/4/2023	2/16/2024	250
Gravel base removal	Grading	3/4/2023	2/16/2024	250
Excavation	Grading	3/20/2023	5/17/2024	305
Temporary shoring	Building Construction	3/20/2023	12/17/2024	457
Aggregate base layer	Grading	4/3/2023	8/2/2023	88
Concrete volume	Building Construction	4/17/2023	1/16/2025	459
Compacted fill	Grading	12/18/2023	1/16/2025	284
Paving	Paving	2/17/2024	1/16/2025	239

*Reach 21 dates are shifted to the earliest possible upstream start date for conservatism (all other inputs are based on original data). **Assume 5 working days a week.

Off-road equipment. The equipment log provides a list of equipment and activity hours for the phases of each project. Horsepower for specific pieces of equipment were identified using EP 1110-1-8 Volume 7 (USACE, 2016) and default CalEEMod engine load factors were used. Truck haul of excavation spoils and demolition debris was included in the equipment log, therefore highway haul-off trucks were approximated by off-road trucks. The number of pieces of equipment and hours per day of activity were calculated assuming operation every work day (5 days/week) in a phase, up to 8 hours of operation a day, and rounding up to the nearest full hour. The number of pieces of equipment calculated for each project are provided in Table 11 (note that the horsepower, number of days, and number of hours each piece of equipment works can be seen in calculation spreadsheets and CalEEMod output upon request).

Table 11: Equipment Numbers for each Project.

Equipment Type	Warner Avenue	Tide Gate	Reach 1	Reach 23	Reach 21

Air Compressors	1	1	6	0	1
Bore/Drill Rigs	0	9	1	0	0
Cement and Mortar Mixers	0	0	3	0	0
Concrete/Industrial Saws	2	0	1	0	0
Cranes	10	9	18	4	2
Crawler Tractors	1	5	8	2	6
Crushing/Proc. Equipment	0	0	0	2	0
Excavators	5	4	7	2	4
Generator Sets	1	0	4	4	1
Graders	1	3	2	1	1
Off-Highway Trucks	31	11	28	14	23
Other Construction Equipment	6	5	10	5	3
Pavers	1	1	1	0	1
Plate Compactors	1	1	1	0	0
Pumps	2	4	11	0	2
Rollers	4	5	6	0	4
Rubber Tired Dozers	0	0	0	0	0
Rubber Tired Loaders	1	1	0	0	0
Tractors/Loaders/Backhoes	5	4	11	6	9
Welders	1	1	2	0	0

Acres graded, material movement, demolition amount, haul trips, and worker trips.

All projects involve site grading. Total acreage of the project sites were assumed graded (from one to three passes) during excavation, earthwork, slope protection, and compacted fill construction phases.

All projects include removal of excess soil during excavation phase. Excavation spoil volumes are based on project-specific quantities being removed for disposal.

All projects (except Reach 23) included removal of concrete during demolition phase. Amounts of demolition debris are calculated from project-specific quantities of concrete removed for disposal.

All projects require import of construction materials such as concrete, steel, sheet pile, binder, temporary shoring, asphalt, and aggregate. These trips are included as separate off-site haul trips (they were not included in the equipment log or accounted for as off-road equipment) based on project-specific quantities of materials required for construction. The number of haul trips was calculated assuming 20 tons of material per trip (except concrete trucks assumed to transport eight cubic yards per trip).

Numbers of workers were estimated based on historic OCPW data for similar projects. No vendor trips were added, since they were included as haul trips instead. Additional trip data (lengths, speeds, fleet mix, etc.) were left as default.

Mitigation. Mitigation for construction equipment and construction dust was applied. All pieces of off-road construction equipment were considered ‘Tier 4 Final’ engines that meet more stringent USEPA emission standards than the statewide fleet mix, providing reductions in NOx, VOC, SO2 and PM

emissions. The construction site was also assumed to be frequently (3 times a day) exposed to water to minimize the release of fugitive dust.

2.2.2 Emission Results

Table 12 presents annual criteria pollutant emissions calculated in CalEEMod for each project assuming no mitigation. In general, Reach 1 produces the highest emission rates, followed by Reach 21 and Reach 23. Reach 1 emits 12 tons NOx in 2022, exceeding the *de minimis* threshold of 10 tons/year. However all projects must be considered together for a complete emissions analysis.

Table 12: CalEEMod Estimated Emissions with Unmitigated Construction for Modeled Projects.

	ROG	NOx	CO	SO2	PM10	PM2.5
Year	Tons/yr	Tons/yr	Tons/yr	Tons/yr	Tons/yr	Tons/yr
Warner Ave Bridge						
2022	0.4118	3.4704	2.8580	9.79e-003	0.2069	0.1365
2023	0.4187	3.2053	2.9444	0.0105	0.1582	0.1206
Tide Gate						
2022	0.1353	1.2116	1.0777	3.14e-003	0.1820	0.0798
Reach 1						
2022	1.3132	12.0025	10.0878	0.0316	3.1770	1.7950
2023	0.9502	7.8670	7.2441	0.0243	1.2348	0.7458
Reach 23						
2022	0.5323	4.3988	4.1435	0.0114	1.8926	1.0866
Reach 21						
2023	0.6569	5.0268	4.5021	0.0178	0.7755	0.4103
2024	0.8467	6.2784	6.2194	0.0222	0.4933	0.3332
2025	0.0265	0.1850	0.2123	7.60e-004	0.0290	0.0131
***De Minimis* Emission Levels**	10	10	100	100	100	70

Table 13 presents emissions estimates for the LPP compared with *de minimis* levels. Note that upstream reach construction emissions are estimated by applying Reach 21 emission rates to the full upstream construction periods of each channel (2/17/2023-1/13/2033 for C04, 9/29/2023-3/2/2034 for C05, and 10/4/2024-10/26/2028 for C06). Maximum emissions of NOx (21 tons) occur the first year of construction, about twice the *de minimis* level of 10 tons/year. NOx levels exceed the *de minimis* threshold all years except the last two. VOC, CO, SO_2, PM_{10} and $PM_{2.5}$ emissions are well below their respective *de minimis* pollutant levels.

Table 13: CalEEMod Estimated Emissions with Unmitigated Construction for the LPP.

	ROG	NOx	CO	SO2	PM10	PM2.5
Year	Tons/yr	Tons/yr	Tons/yr	Tons/yr	Tons/yr	Tons/yr
2022	2.39	21.08	18.17	0.06	5.46	3.10
2023	2.33	18.22	17.24	0.06	2.20	1.17
2024	1.90	14.21	14.01	0.05	1.61	0.61
2025	2.55	19.00	18.73	0.07	2.16	0.81
2026	2.55	19.00	18.73	0.07	2.16	0.81
2027	2.55	19.00	18.73	0.07	2.16	0.81
2028	2.39	17.87	17.62	0.06	2.03	0.77

2029	1.70	12.67	12.49	0.05	1.44	0.54
2030	1.70	12.67	12.49	0.05	1.44	0.54
2031	1.70	12.67	12.49	0.05	1.44	0.54
2032	1.70	12.67	12.49	0.05	1.44	0.54
2033	0.88	6.56	6.47	0.02	0.74	0.28
2034	0.14	1.06	1.04	0.00	0.12	0.05
Maximum Emissions	**2.55**	**21.08**	**18.73**	**0.07**	**5.46**	**3.10**
De Minimis Emission Levels	10	10	100	100	100	70

Emission estimates were also calculated assuming use of Tier 4 engines for off-road construction equipment and frequent watering of construction sites. Results (Table 14) show a significant reduction in NOx (77.7%), ROG (69.8%), PM_{10} (63.8%), and $PM_{2.5}$ (68.5%) emissions. CO emissions increase by about 50% with Tier 4 engine use.

Table 14 CalEEMod Estimated Emissions with Mitigated Construction for Modeled Projects.

	ROG	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Year	Tons/yr	Tons/yr	Tons/yr	Tons/yr	Tons/yr	Tons/yr
Warner Ave Bridge						
2022	0.1240	0.6912	4.3977	9.79e-003	0.0610	0.0254
2023	0.1314	0.7270	4.7018	0.0105	0.0447	0.0234
Tide Gate						
2022	0.0390	0.2326	1.5208	3.14e-003	0.0599	0.0189
Reach 1						
2022	0.3758	2.7535	14.0647	0.0316	1.1687	0.5937
2023	0.2845	1.7683	10.8239	0.0243	0.4524	0.2285
Reach 23						
2022	0.1450	0.8788	5.6556	0.0114	0.6959	0.3783
Reach 21						
2023	0.2129	1.1031	7.7049	0.0178	0.2879	0.1283
2024	0.2783	1.5357	10.1041	0.0222	0.1583	0.0843
2025	9.57e-003	0.0559	0.3446	7.60e-004	0.0172	5.61e-003
***De Minimis* Emission Levels**	10	10	100	100	100	70

With mitigation, NOx emissions fall below 10 tons/year for all years, peaking at 5.12 tons/yr from 2025 to 2027 (Table 15). The maximum CO emissions rate is still significantly less than the *de minimis* level of 100 tons/yr. With Tier 4 mitigation and frequent watering of construction sites, all emissions are considered *de minimis* and no general conformity determination is needed.

Table 15: CalEEMod Estimated Emissions with Mitigated Construction for the LPP.

	ROG	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Year	Tons/yr	Tons/yr	Tons/yr	Tons/yr	Tons/yr	Tons/yr
2022	0.684	4.556	25.639	0.056	1.986	1.016
2023	0.749	4.421	26.831	0.060	1.003	0.395
2024	0.661	3.828	22.474	0.050	0.733	0.216
2025	0.884	5.118	30.047	0.068	0.854	0.257
2026	0.884	5.118	30.047	0.068	0.854	0.257
2027	0.884	5.118	30.047	0.068	0.854	0.257
2028	0.832	4.814	28.264	0.063	0.826	0.247
2029	0.590	3.412	20.032	0.045	0.694	0.203
2030	0.590	3.412	20.032	0.045	0.694	0.203

2031	0.590	3.412	20.032	0.045	0.694	0.203
2032	0.590	3.412	20.032	0.045	0.694	0.203
2033	0.305	1.767	10.373	0.023	0.179	0.059
2034	0.049	0.285	1.674	0.004	0.027	0.009
Maximum Emissions	**0.884**	**5.12**	**30.05**	**0.07**	**1.99**	**1.02**
De Minimis Emission Levels	10	10	100	100	100	70
Conformity Determination Required?	No	No	No	No	No	No

Although Tier 4 standards apply only to off-road construction equipment in the model, similar mitigation can be achieved for on-road haul trucks meeting EPA emission standards for heavy-duty highway engines and vehicles produced after January 1, 2010 (EPA, 2016). By using highway trucks built (or repowered with new engines) after 2010, additional reductions may be achieved.

Sources of Error

Actual project emissions will vary from CalEEMod estimates due to sources of error within the model and input-related uncertainties, despite best efforts to provide accurate data and valid assumptions. This analysis is based on best-available Westminster LPP study data, including detailed construction schedule (OCPW, 2019) and equipment log (USACE, 2018). To safeguard against underestimating actual emissions, this analysis considers the 'worst-case' Maximum Channel Modifications LPP. Reach 21, the most construction-intensive of the upstream channel reaches, was chosen to represent upstream reaches. Export haul trucks (excavation spoils and demolition debris) provided in the equipment log were included as off-road construction equipment and mitigation by Tier 4 in the model, but since all highway trucks will be mitigated with engines built after 2010, similar reductions would be expected.

Although actual emissions will vary from those predicted by CalEEMod, there exists a large margin between the *de minimis* levels and the current emissions estimates. Therefore it is highly unlikely these sources of error would push emissions out of compliance.

2.3 Procedure

Procedural requirements of the conformity rule allow for public review of the Federal agency's conformity determination. Although the conformity determination is a Federal responsibility, state and local air agencies are provided notification and their expertise consulted. In Orange County, CA, the South Coast Air Quality Management District (SCAQMD) has review jurisdiction.

The Federal agency must provide a 30-day notice of the Federal action and draft conformity determination to the appropriate USEPA Region, and State and local air control agencies. The Federal agency must also make the draft determination available to the public to allow opportunity for review and comment. For the Westminster-East Garden Grove FRM Study, the public and agency review process will occur within the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) review framework.

3.0 Conclusions

This General Conformity analysis resulted in a *de minimis* determination for the Westminster LPP. Construction emissions were estimated using CalEEMod software with project-specific data. Without mitigation, emission estimates were *de minimis* for all criteria air pollutants except for NOx which exceeded the *de minimis* threshold multiple years. With Tier 4 mitigation, no criteria pollutants exceeded the *de minimis* threshold. Based on these findings, Westminster LPP does not require a General

Conformity determination with implementation of mitigation (Tier 4 off-road equipment and on-road haul trucks with engines built after 2010). This determination is subject to review by state and local authorities, and also by the public. This will take place as part of the Environmental Impact Report (EIR) review, which will allow an opportunity for review and comment by interested parties.

4.0 References

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