

CHAPTER 5.

MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

A Mitigation Measure Monitoring and Reporting Program (MMRP) is a required step in the CEQA compliance process. The purpose of an MMRP is to ensure the implementation of mitigation measures and project approval conditions that avoid or reduce project impacts that could otherwise be significant adverse environmental impacts. Final mitigation measures as well as project approval conditions that avoid or reduce significant adverse impacts are included in this MMRP. This EIR also includes improvement measures to further minimize less-than-significant Project impacts; improvement measures are also included in this MMRP.

The MMRP for the Modernization Project includes the following required information:

- A list of mitigation and improvement measures, including mitigation measures mandating implementation of Project Design Features;
- The party responsible for implementing the measures;
- The agency/city department responsible for monitoring the implementation;
- The timing for implementation of the measure; and
- The monitoring action and frequency.

The MMRP approach for each of these required components is addressed below and the MMRP is included as Table 5-1. The Draft EIR included the planned template for the MMRP in Chapter 9.

5.1 List of Measures

The list of measures included in this EIR is presented in Table 5-1.

5.2 Measure Implementation

Chevron is responsible for implementing all measures, and for funding the Community Greenhouse Gas Reduction Program and Air Quality Improvement Fund. The City is responsible for using such funding for eligible measures.

5.3 Agency Responsible for Mitigation Monitoring

The City is responsible for monitoring and reporting the implementation of Mitigation Measures and Improvement Measures. The City will

collaborate with the Bay Area Air Quality Management District (BAAQMD) for Mitigation Measures relating to Air Quality and Greenhouse Gas emissions and emission reduction measures (as further described in *Section 4.3, Air Quality* and *Section 4.11, Greenhouse Gases* of the Draft EIR, and with Contra Costa Health Services (CCHS) for Mitigation Measures relating to Facility safety and related issues (as further described in *Section 4.13, Public Safety* of the Draft EIR).

5.4 Timing of Measure Implementation

Mitigation Measures included in this Draft EIR generally prescribe Mitigation Measure timing requirements relative to Project-related milestones (e.g., prior to commencing construction, or prior to commencing operation). These implementation triggers are also subject to review as part of the public comment process, and may be adjusted or clarified in the final MMRP.

A number of improvement measures are also recommended in *Chapter 4, Environmental Setting, Impacts, and Mitigation Measures* of the Draft EIR. Although not required by CEQA, the preparers of this EIR recommend, and Chevron has agreed to implement these improvement measures, which will further minimize already less-than-significant impacts. These measures are listed in Table 5-2. Mitigation measures from the Richmond Long Wharf EIR that are incorporated into the Modernization Project Draft EIR are detailed in Table 5-3.

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
4.1 AESTHETICS				
<i>Construction or operation of the Modernization Project would result in no significant impacts to Aesthetics. No mitigation is required or recommended.</i>				
4.2 AGRICULTURAL RESOURCES				
<i>Construction or operation of the Modernization Project would result in no impacts to agricultural or forestry resources. No mitigation is required.</i>				
4.3 AIR QUALITY				
4.3-1: All remaining construction activities for the Modernization Project shall comply with the following Bay Area Air Quality Management District (BAAQMD) construction mitigation measures:	Chevron/Project Contractor	During construction activities	Chevron, BAAQMD and, City of Richmond Planning and Building Services Department	BMPs shall be listed on Plans submitted for building permits, Review and verification by building inspectors, regularly during construction.
<u>1a:</u> All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12%. Moisture content can be verified by lab samples or moisture probe.				
<u>1b:</u> All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 miles per hour.				
<u>1c:</u> Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50% air porosity.				
<u>1d:</u> Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.				

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<p><u>1e</u>: The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.</p>				
<p><u>1f</u>: All trucks and equipment, including their tires, shall be washed off prior to leaving the site.</p>				
<p><u>1g</u>: Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.</p>				
<p><u>1h</u>: Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than 1%.</p>				
<p><u>1i</u>: All haul trucks transporting soil, sand, or other loose material off-site shall be covered.</p>				
<p><u>1j</u>: 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 shall be prohibited.</p>				
<p><u>1k</u>: All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.</p>				
<p><u>1l</u>: All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.</p>				

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<p><u>1m</u>: Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 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.</p>				
<p><u>1n</u>: All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified visible emissions evaluator.</p>				
<p><u>1o</u>: A publicly visible sign shall be posted providing the telephone number and person to contact at the lead agency regarding dust complaints. 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.</p>				
<p>4.3-2a: Chevron shall reduce construction-related NO_x emissions to less-than-significant levels by implementing one or more of the following feasible mitigation measures, all of which have been found to result in emissions reduction for construction projects:</p> <ul style="list-style-type: none"> ▪ Using lower emitting construction equipment, increasing carpooling or otherwise reducing construction-worker automobile use in daily commutes, extending the duration of construction by 1 year by delaying the modifications required to increase the throughput capacity of the FCC FHT until after construction of the hydrogen plant and amine contactor, or reducing the hours of use of construction equipment; ▪ Reducing operations and/or emissions from 	Chevron/Project Contractor	During construction activities	Chevron, BAAQMD, and City of Richmond Building Division and Engineering Services Department	Review and verification, continuous during construction. Chevron shall submit for City review and verification quarterly mitigation measure compliance reports reasonably demonstrating compliance with this mitigation measure. Such reports shall be submitted to Building and reviewed and verified in consultation with BAAQMD.

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<p>portable generators at the Facility during the construction period, and thereby reducing NO_x emissions;</p> <ul style="list-style-type: none"> ▪ Installing the low-NO_x burners included in the Modernization Project in the first 6 months of the construction period, thereby reducing net NO_x emissions from the Facility while construction of the Modernization Project continues; ▪ Retiring permanent NO_x emission reduction credits to offset this temporary NO_x construction increase, in an amount sufficient to offset construction period NO_x emissions; or ▪ Implementing a combination of two or more of the above measures, in an amount sufficient to offset construction-period NO_x emissions to less-than-significant levels. 	Chevron/Project Contractor	During construction activities	Chevron, BAAQMD, and City of Richmond Building Division and Engineering Services Department	Review and verification, continuous during construction. Chevron shall submit for City review and verification, in consultation with BAAQMD, quarterly Mitigation measure compliance reports demonstrating compliance with this mitigation measure. Such reports shall be submitted to Building.
<p>4.3-2b: Chevron shall reduce construction-related ROG emissions to less-than-significant levels by implementing one or more of the following feasible mitigation measures, all of which have been found to result in emissions reduction for construction projects:</p> <ul style="list-style-type: none"> ▪ Installing the tank dome Project Design Feature, and installing one additional tank dome, in the first 6 months of Project construction, thereby reducing net ROG emissions from the Facility before completing construction of the hydrogen plant or sulfur removal components of the Modernization Project; ▪ Using lower emitting construction equipment, increasing carpooling or otherwise reducing construction-worker automobile use in daily commutes, extending the duration of construction by 1 year by delaying the 				

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<p>modifications required to increase the throughput capacity of the FCC FHT until after construction of the hydrogen plant and amine contactor, or reducing the hours of use of construction equipment;</p> <ul style="list-style-type: none"> ▪ Retiring permanent ROG emission reduction credits to offset this temporary ROG construction increase, in an amount sufficient to offset construction-period ROG emissions; or ▪ Implementing a combination of the above measures, in an amount sufficient to offset construction-period ROG emissions to less-than-significant levels. 	Chevron	Immediately following 1-year exceedance of the Baseline and continuous thereafter	BAAQMD and City of Richmond Building Division and Engineering Services Department	Verification of reduction in annual report and validation study prepared by Chevron and reviewed and verified by City, in consultation with BAAQMD, after 1-year exceedance of the Baseline and annually thereafter
<p>4.3-5: Chevron shall implement feasible mitigation measures to reduce CAP emissions below applicable BAAQMD significance thresholds and to ensure no net increase in Project CAP emissions over Baseline levels, as follows:</p> <p>5a: NO_x Mitigation. Chevron shall implement the following measures in an amount sufficient to reduce NO_x emissions to below the BAAQMD NO_x significance threshold and to ensure no net increase in Project NO_x emissions above Baseline NO_x emission levels:</p> <p>(i) Chevron shall increase the average parcel size—the average ship cargo volume that is delivered or picked up from the Long Wharf—to reduce the number of ship calls, and thereby reduce NO_x emissions from shipping.</p> <p>(ii) Chevron shall fund and require installation of cleaner main and auxiliary engines on up to six tug boats serving the Long Wharf. Tugs are used to push barges, escort ships and barges, and assisting ships and barges into berths. Chevron</p>				

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<p>shall fund the installation of new, cleaner Tier 4 main engines and Tier 3 auxiliary engines for the number of tugs required to remain below the BAAQMD NO_x significance threshold, and achieve the mandatory requirement that there be no net increase in Project NO_x emissions above Baseline NO_x emission levels.</p> <p>(iii) If, after implementing Mitigation Measures 4.3-5(a)(i) and 4.3-5(a)(ii), either Project NO_x emissions have not been reduced below the BAAQMD NO_x significance threshold, or if such emissions remain above Baseline levels on a net basis, then Chevron shall permanently retire BAAQMD-verified emission reduction credits in quantities sufficient to fully offset Project NO_x emissions to Baseline levels on a net basis.</p> <p>(iv) If, after implementing Mitigation Measure 4.3-5(a)(iii), above, Project NO_x emissions remain above Baseline levels on a net basis, then Chevron shall curtail Facility operations such that Project NO_x emissions are reduced to Baseline levels on a net basis.</p>	Chevron	Immediately following 1-year exceedance of the Baseline and continuous thereafter	Chevron, BAAQMD, and City of Richmond Building Division and Engineering Services Department	Verification of reduction in annual report and validation study prepared by Chevron and reviewed and verified by City, in consultation with BAAQMD, after 1-year exceedance of the Baseline and annually thereafter
<p><u>5b: PM₁₀ Mitigation.</u> Chevron shall implement the following feasible mitigation measures in an amount sufficient to reduce PM₁₀ emissions to below the BAAQMD significance thresholds and to ensure no net increase in Project PM₁₀ emissions above Baseline PM₁₀ emission levels:</p> <p>(i) Chevron shall increase the size of the Fluid Catalytic Cracking Electrostatic Precipitator (ESP) by approximately 50% to eliminate an existing NH₃ injection process in the flue gas in the Fluid Catalytic Cracking unit.</p> <p>(ii) If, after implementing Mitigation Measure 4.3-5b(i), above, PM₁₀ emissions have not been reduced below the BAAQMD significance</p>				

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<p>threshold, or if such emissions remain above Baseline levels on a net basis, then Chevron shall permanently retire BAAQMD-verified emission reduction credits in quantities sufficient to reduce Project PM₁₀ emissions to Baseline levels on a net basis.</p> <p>(iii) If, after implementing Mitigation Measure 4.3-5(b)(ii), above, Project PM₁₀ emissions remain above Baseline levels on a net basis, then Chevron shall curtail Facility operations such that Project PM₁₀ emissions are reduced to Baseline levels on a net basis.</p>				
<p><u>5c: PM_{2.5} Mitigation.</u> Chevron shall reduce PM_{2.5} emissions to below BAAQMD significance thresholds, and to emission levels that ensure no net increase in Project PM_{2.5} emission above Baseline PM_{2.5} emissions by implementing Mitigation Measure 4.3-5b (PM₁₀), which would also reduce PM_{2.5} emissions. Additionally, Chevron shall complete a validation study quantifying the relative amount of PM_{2.5} reductions achieved by Mitigation Measure 4.3-5b, for review and approval by BAAQMD and the City, to ensure that adequate quantities of PM_{2.5} reductions are achieved as required by this Mitigation Measure 4.3-5c. Finally, Chevron shall implement Mitigation Measure 4.3-6, to reduce health risks from all TACs, including but not limited to PM_{2.5}, below the BAAQMD significance thresholds for cancer, and chronic or acute non-cancer risks, and as necessary to ensure no net increase in health risks from all TACs.</p>	Chevron	Immediately following 1-year exceedance of the Baseline and continuous thereafter	Chevron, BAAQMD, and City of Richmond Building Division and Engineering Services Department	Verification of reduction in annual report and validation study prepared by Chevron and reviewed and verified by the City, in consultation with BAAQMD, after 1-year exceedance of the Baseline and annually thereafter
<p><u>5d: SO_x Mitigation.</u> Chevron shall implement the following feasible mitigation measures in an amount sufficient to reduce SO_x emissions to below the BAAQMD significance threshold and to ensure no net increase in Project SO_x</p>	Chevron	Immediately following 1-year exceedance of the Baseline and continuous	Chevron, BAAQMD, and City of Richmond Building Division and Engineering Services	Verification of reduction in annual report and validation study prepared by Chevron and reviewed and verified by the City, in consultation with

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<p>emissions above Baseline SO_x emissions :</p> <p>(i) Chevron shall increase the use of SO_x-reducing catalyst in the Fluid Catalytic Cracking unit that has been demonstrated to substantially reduce SO_x emissions in refinery flue gases.</p> <p>(ii) If, after implementing Mitigation Measure 4.3-5d(i), above, SO_x emissions have not been reduced below the BAAQMD significance threshold, or if such emissions remain above Baseline levels on a net basis, then Chevron shall permanently retire BAAQMD-verified emission reduction credits in quantities sufficient to reduce Project SO_x emissions to Baseline levels on a net basis.</p> <p>(iii) If, after implementing Mitigation Measure 4.3-5(d)(ii), above, Project SO_x emissions remain above Baseline levels on a net basis, then Chevron shall curtail Facility operations such that Project SO_x emissions are reduced to Baseline levels on a net basis.</p>		thereafter	Department	BAAQMD, after 1-year exceedance of the Baseline and annually thereafter
<p><u>5e: CO Mitigation.</u> Chevron shall implement the following feasible mitigation measures to ensure no net increase in Project CO emissions above Baseline CO emission levels:</p> <p>(i) Chevron shall reduce CO emissions to achieve the mandatory requirement that there be no net increase in Project CO emissions above Baseline CO emissions by retiring BAAQMD-verified emission reduction credits in quantities sufficient to reduce Project CO emissions to Baseline levels on a net basis. Permanent retirement of emission reduction credits would ensure that these banked emissions cannot occur within Richmond or elsewhere.</p> <p>(ii) If, after implementing Mitigation Measure 4.3-5(e)(ii), above, Project CO emissions remain</p>	Chevron	Immediately following any 1-year exceedance of the Baseline	Chevron, BAAQMD, and City of Richmond Building Division and Engineering Services Department	Verification of reduction in annual report and validation study prepared by Chevron and reviewed and approved by the City and BAAQMD, after 1-year exceedance of the Baseline and annually thereafter.

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Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>above Baseline levels on a net basis, then Chevron shall curtail Facility operations such that Project CO emissions are reduced to Baseline levels on a net basis.</p>				
<p>5f: ROG Mitigation. Chevron shall complete the following feasible mitigation measures to reduce ROG emissions to below the BAAQMD significance thresholds and to ensure no net increase in Project ROG emissions above Baseline ROG emissions:</p> <p>(i) Prior to the commencement of Project operations, Chevron shall install a tank dome on Tank 3225;</p> <p>(ii) Within three years following the commencement of Project operations, Chevron shall install tank domes on Tanks 3189 and 3202;</p> <p>(iii) Following the third anniversary of the commencement of Project operations, Chevron shall install domes on one or more of the following tanks to reduce VOC emissions as necessary to reduce ROG emissions below the BAAQMD significance threshold, and to ensure no net increase in Project ROG emissions above Baseline ROG emissions: Tanks 1491, 3213, 3134, 1688, 1514, 3133, 3071, 992, 3197, 1687, 990, 991, 3073, 1296, 3191, 1287, 3220, 3127, 1488, 1459, 3180, 3074, 3076, 3193, 3128, 3201, and 3075. If, following Project approval, Chevron identifies feasible ROG reduction measures other than tank domes that result in quantified emissions reductions as verified by BAAQMD, City shall consider implementation of such alternative reduction measures in lieu of, or in combination with, the reduction measures required by this Mitigation</p>	Chevron	Immediately following any 1-year exceedance of the Baseline and as specified in this measure 5f.	Chevron, BAAQMD, and City of Richmond Building Division and Engineering Services Department	Verification of reduction in annual report and validation study prepared by Chevron and reviewed and approved by the City and BAAQMD, after 1-year exceedance of the Baseline and annually thereafter.

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Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>Measure 4.3-5f(iii), provided that such measures have completed all required CEQA review and permitting processes prior to implementation (it is noted, however, that no such measures are currently identified, planned or approved for implementation.)</p>				
<p>(iv) If, after implementing Mitigation Measure 4.3-5f(i) through 4.3-5(iii), above, ROG emissions have not been reduced below the BAAQMD significance threshold, or if such emissions remain above Baseline levels on a net basis, then Chevron shall permanently retire BAAQMD-verified emission reduction credits in quantities sufficient to reduce Project ROG emissions to Baseline levels on a net basis.</p>				
<p>(v) If, after implementing Mitigation Measure 4.3-5(f)(ii), above, Project ROG emissions remain above Baseline levels on a net basis, then Chevron shall curtail Facility operations such that Project ROG emissions are reduced to Baseline levels on a net basis.</p>				
<p><u>5g: Supplemental Mitigation for all CAPs.</u> In any year that Chevron exceeds Baseline emissions for any CAP, Chevron shall contribute funding for, and participate in, a Clean Air Improvement Fund, which funding shall be in addition to, and payment thereof shall in no way relieve Chevron or the Project of the requirement that the Project achieve no net increase in CAP emissions, as follows:</p> <ul style="list-style-type: none"> ▪ Funding shall be in an amount determined based on a benchmark price to be agreed to by the City, BAAQMD and Chevron, as thereafter annually adjusted by the Consumer Price Index value for the San Francisco Bay Area. 	Chevron and City of Richmond	Immediately following any 1-year exceedance of the Baseline and as specified in this measure 5g.	Chevron, BAAQMD, and City of Richmond	Verification of reduction in annual report and validation study prepared by Chevron and reviewed and approved by the City and BAAQMD, after 1-year exceedance of the Baseline and annually thereafter.

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Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<ul style="list-style-type: none"> ▪ Funding shall be paid annually within 60 days following approval by BAAQMD of the Emission Inventory for the prior calendar year. ▪ All payments into the Clean Air Improvement Fund shall be spent on emission reduction measures for criteria pollutant(s) that increased above Baseline in the following order: (1) reductions from Facility emissions, (2) reductions within the City, and (3) reductions from the North Richmond area closest to the Facility. ▪ Funding and implementation decisions shall be made in a public process by a stakeholder group consisting of representatives from the City, the community, and Chevron. ▪ A brief report shall be prepared for each major emission reduction measure implemented using such funds, and be made available to help inspire similar emission reduction opportunities. <p>Mitigation Measure 4.3-5g would not create any exception to Chevron's obligation to fully comply with all mitigation measures included in this EIR, including but not limited to Mitigation Measure 4.3-6, which requires the Project to ensure no net increase of health risks over Baseline levels caused by all TAC emissions.</p>				
<p><u>5h</u>: Chevron shall secure a permit amendment from BAAQMD reducing the annualized throughput limit of the Solvent De-asphalting unit to 50,000 barrels per day. This must be completed prior to commencing operation of the new hydrogen plant.</p>	Chevron	Prior to commencement of Project operations.	Chevron, BAAQMD, and City of Richmond	Prior to commencement of Project operations, Chevron shall submit for City review and verification
<p><u>5i</u>: Chevron shall secure a permit amendment from BAAQMD reducing the hydrogen</p>				

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Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>production limit of each train of the new hydrogen plant from 140 mmscf/day to 122 mmscf/day. This must be completed prior to commencing operation of the new hydrogen plant.</p>				<p>substantial evidence of compliance with this measure.</p>
<p>4.3-6: Chevron shall implement the following measures:</p> <p>6a1: Prior to operation of the Project, Chevron shall implement the following measures to reduce DPM, inclusive of PM_{2.5}, to reduce health risk from all Project TAC emissions to below BAAQMD significance criteria (for the 93% Project shipping scenario) and to ensure no net increase of health risks from Project TAC emissions over Baseline levels:</p> <p>(i) Chevron shall fund and require installation of cleaner main and auxiliary engines on one tug boat serving the Long Wharf as well as non-Chevron facilities. <u>Prior to operation of the Project</u>, Chevron shall fund the installation of new, cleaner Tier 4 main engines and Tier 3 auxiliary engines for one of the six tugboats.</p> <p>(ii) Chevron shall fund and cause to have implemented the project design feature described in the EIR as the removal of three ocean-going vessels (called "SuezMax" because they can go through the existing Suez canal, and have cargo capacity of between 120,000 to 200,000 tons) from West Coast service, and replacement of these vessels with two new Chevron SuezMax ships. The main ship engines of each replacement ship shall meet a Tier 3 standard instead of the required Tier 2 standard, and the auxiliary engines shall be upgraded with turbochargers that are cleaner than Tier 3 standards.</p>	<p>Chevron</p>	<p>Prior to the commencement of Project operations.</p>	<p>BAAQMD and City of Richmond Building Division and Engineering Services Department</p>	<p>Prior to the commencement of Project operation, Chevron shall submit for City and BAAQMD review and verification substantial evidence of compliance with this measure.</p>

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Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>6a2: Prior to operating the Project in excess of 93% Project utilization, Chevron shall implement a combination of the following measures to reduce DPM, inclusive of PM_{2.5}, to reduce health risk from all Project TAC emissions to below BAAQMD significance criteria and to ensure no net increase of health risks from Project TAC emissions over Baseline levels, with all emission reduction amounts from such measures requiring validation by BAAQMD:</p> <p>(i) Chevron shall increase the average parcel size—the average ship cargo volume that is delivered or picked up from the Long Wharf—to reduce the number of ship calls, and thereby reduce DPM emissions from shipping.</p> <p>(ii) Chevron shall fund and require installation of cleaner main and auxiliary engines on up to five non-retrofitted six tug boat serving the Long Wharf as well as non-Chevron facilities. The Long Wharf is primarily served by six tugs, one of which will have been retrofitted as described in Mitigation Measure 4.3-a1(i) prior to Project operation. Chevron shall fund the installation of new, cleaner Tier 4 main engines and Tier 3 auxiliary engines on the number of tugs required to reduce DPM, and achieve the No Net Increase Project Objective.</p> <p>(iii) If, after implementing Mitigation Measures 4.3-6(a)(2)(i) and 4.3-6a(2)(ii), above, health risk from Project TAC emissions remains above Baseline levels on a net basis, as determined by the health risk assessment required by Mitigation Measure 4.3-6b, below, Chevron shall install electric shore power, and require one or more of the ships using the Long Wharf to use such shore power in lieu of continuing to burn</p>	Chevron	Prior to operating the Project in excess of 93% Project utilization.	Chevron, BAAQMD, and City of Richmond Building Division and Engineering Services Department	Verification in validation study prepared by Chevron and reviewed and approved by the City, in consultation with BAAQMD, following exceedance of baseline health risk from TACs and exceedance of the 93% Utilization level

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<p>diesel fuel while berthed. Before implementing this mitigation measure, Chevron shall apply to the City and other responsible agencies for necessary permits, and shall complete the environmental process required under CEQA. Implementation of this measure is not required to achieve the performance standard included in this Mitigation Measure 4.3-6.</p> <p>(iv) If, after implementing Mitigation Measures 4.3-6(a)(2)(i) through 4.3-6a(2)(iii), above, health risk from Project TAC emissions remains above Baseline levels on a net basis, as determined by the health risk assessment required by Mitigation Measure 4.3-6b, below, then Chevron shall curtail Facility operations as necessary to ensure that such health risk is reduced to Baseline levels on a net basis.</p>	Chevron	As specified in this measure.	Chevron, BAAQMD, and City of Richmond	Chevron's compliance with Mitigation Measure 4.3-6b(i) to be verified by City, in consultation with BAAQMD, within 60 days following issuance of the annual BAAQMD-approved emissions inventory, combined with annual emission estimates from shipping, for any year which results in an increase over Baseline levels. Chevron's compliance with Mitigation Measure 4.3-6b(ii), if applicable, to be verified within 30 days following City's receipt of the health risk assessment as may be required by Mitigation Measure 4.3-6b(i).
<p><u>6b:</u> Chevron shall fund and participate in a Clean Air Improvement Fund for any net increase in health risks from TACs not avoided or mitigated as required in this EIR.</p> <p>(i) In any year for which the BAAQMD-approved emissions inventory, combined with annual emission estimates from shipping, results in an increase over Baseline levels identified in Table 4.3-24 of the three primary risk drivers (DPM, benzene, and naphthalene), even if such emissions are adequately mitigated as CAP emissions through implementation of Mitigation Measure 4.3-5 such that there is no net increase of such CAP emissions over Baseline levels, then Chevron shall, within 60 days, fund the cost of the City's preparation of a new health risk assessment to identify whether these TAC emissions resulted in an increase in risk over Baseline.</p>	Chevron	As specified in this measure.	Chevron, BAAQMD, and City of Richmond	Chevron's compliance with Mitigation Measure 4.3-6b(i) to be verified by City, in consultation with BAAQMD, within 60 days following issuance of the annual BAAQMD-approved emissions inventory, combined with annual emission estimates from shipping, for any year which results in an increase over Baseline levels. Chevron's compliance with Mitigation Measure 4.3-6b(ii), if applicable, to be verified within 30 days following City's receipt of the health risk assessment as may be required by Mitigation Measure 4.3-6b(i).

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<p>(ii) If the new risk assessment required by Mitigation Measure 4.3-6(b)(i), above identifies an increase in risk over Baseline risks, then Chevron shall contribute an additional \$100,000 in further funding for the Clean Air Improvement Fund identified in this Mitigation Measure 4.3-6b.</p>				
<p><u>6c</u>: Chevron shall monitor designated metals in Facility feedstock and refinery fuel gas (RFG) and report annually on the correlation, if any, between total annual designated metal emissions (as calculated from RFG samples) and average annual concentrations of such metals in feedstocks. The annual report shall address the following metals of concern: nickel, vanadium, selenium, cadmium, and mercury. Metals are TACs, and contribute to health risks, and any net increase in metal emissions would also trigger the mitigation measure compliance requirements in Mitigation Measures 4.3-6a and 4.3-6b, above.</p>	Chevron	Following commencement of Project operations and continuously thereafter.	Chevron, BAAQMD, and City of Richmond Planning Division	Chevron shall submit, and City shall review and verify required reports annually in consultation with BAAQMD. City shall, in consultation with BAAQMD, verify compliance with Mitigation Measures 4.3-6a and 4.3-6b, if such measures triggered by this measure 4.3-6c.
<p><u>6d</u>: Chevron shall monitor average annual sulfur and nitrogen concentrations in Facility feedstocks, and nitrogen-related refinery fuel gas air emissions, and report annually on the correlation, if any, between total annual nitrogen-related CAP and TAC emissions (as reported in the BAAQMD annual Emissions Inventory) and average annual concentrations of sulfur and nitrogen in feedstocks. Any such increase over Baseline would require compliance with mitigation measures specified above to ensure no net increase in CAPs or risks from TACs over Baseline levels.</p>	Chevron	Annually	Chevron, BAAQMD, and City of Richmond Building Division and Engineering Services Department	Chevron shall submit, and City shall review and verify required reports annually in consultation with BAAQMD. City shall verify, in consultation with BAAQMD, compliance with Mitigation Measures 4.3-6a and 4.3-6b, if such measures triggered by this measure 4.3-6d.
<p>4.3-7: Chevron shall implement Mitigation Measures 4.3-6a through 4.3-6d.</p>			<i>See referenced Mitigation Measure.</i>	

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>4.3-8: Chevron shall implement the following measures:</p> <p>(a) Chevron shall report annually to the City in writing on the number of odor complaints confirmed by the BAAQMD, and shall specify in such report, where available, whether each complaint relates to hydrogen sulfide, NH₃, or an unspecified compound or source.</p>	Chevron	Annually and in the event of an increase in odor complaints over the Baseline period	Chevron, BAAQMD, and City of Richmond Planning Division	City shall review reports annually and verify compliance, in consultation with BAAQMD, in the event of an increase in odor complaints over the Baseline period
<p>(b) If, in any year following commencement of Project operations, there is an increase in odor complaints confirmed by the BAAQMD relative to the number of odor complaints that occurred during the Baseline period, and such increase is due to H₂S or NH₃ odors, Chevron shall prepare, and submit to the City and BAAQMD for approval, an Odor Management Plan. At minimum, the Odor Management Plan shall:</p> <ul style="list-style-type: none"> ▪ Establish protocols for monitoring odors at or from the Facility on an ongoing basis; ▪ Provide for the establishment of a regular odor patrol to monitor odors at or from the Facility and to investigate, and take corrective actions with respect to, odor complaints on an ongoing basis; ▪ Establish protocols for the prompt recordation and annual reporting to City of odor complaints confirmed by BAAQMD; ▪ Establish community outreach protocols describing procedures for informing the public about how and where to submit odor complaints; ▪ Describe measures to be implemented as necessary to reduce BAAQMD-confirmed odor complaints below the BAAQMD threshold of significance, which measures shall include, but not be limited to, the following odor mitigation strategies recommended for 	Chevron	Upon commencement of Project operations.	Chevron, BAAQMD, and City of Richmond Planning Division	Review and verification continuous during Project operations.

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
refineries in the BAAQMD CEQA Guidelines (collectively, the "Odor Reduction Measures"): <ul style="list-style-type: none"> (i) implementation of water injections into the hydrocracking process; (ii) installation of vapor recovery systems; (iii) injection of masking odorants into refinery process streams; (iv) installation of flare meters and controls; (v) implementation of wastewater circulation technology for aerated ponds; (vi) implementation of thermal oxidizers; (vii) implementation of carbon absorption mechanisms; (viii) implementation of biofiltration and/or bio-trickling filters. ■ Establish protocols for (1) the annual review and reporting on the effectiveness of any Odor Reduction Measures implemented pursuant to this Mitigation Measure 4.3-8 and (2) adaptively managing the implementation of Odor Reduction Measures as necessary to maintain complaints below the BAAQMD threshold of significance on an ongoing basis.	Chevron	Upon commencement of Project operations.	Chevron, BAAQMD, and City of Richmond Planning Division	Review and verification continuous during Project operations.
(c) If, in any year following commencement of Project operations, there is an increase in odor complaints confirmed by the BAAQMD relative to the number of odor complaints that occurred during the Baseline period, and such increase is due to H ₂ S or NH ₃ odors, Chevron shall implement the odor patrol provided for under the Odor Management Plan and cause it to immediately commence monitoring odors at or from Facility on an ongoing basis, to investigate any odor complaint, to ensure that appropriate action is taken to reduce odors from the affected source, and to document the implementation and effectiveness of the				

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
corrective action.				
(d) If odor complaints above Baseline levels persist for more than 2 consecutive years following commencement of Project operations, Chevron shall fund a qualified third-party engineering firm to assume responsibility for: <ul style="list-style-type: none"> ▪ Immediately investigating odor complaints confirmed by the BAAQMD in accordance with Odor Management Plan protocols; ▪ Implementing and adaptively managing, at Chevron's sole expense and in consultation with the City and the BAAQMD, one or more of the Odor Reduction Measures described in the approved Odor Management Plan, to reduce or maintain BAAQMD-confirmed odor complaints below the BAAQMD threshold of significance; ▪ Monitoring and documenting the implementation and effectiveness of such Odor Reduction Measures and the adaptive management thereof in accordance with Odor Management Plan protocols; and ▪ Annually reporting in writing to the City and the BAAQMD on the implementation and effectiveness of such Odor Reduction Measures and the adaptive management thereof in accordance with Odor Management Plan protocols. 	Chevron	Upon commencement of Project operations.	Chevron, BAAQMD, and City of Richmond Planning Division	Review and verification continuous during Project operations.
(e) Chevron shall cause the Project to comply with the City's odor standards and with BAAQMD Regulation 7-303, which limits the concentration of NH ₃ from stacks to 5,000 ppm. The Facility heaters shall comply with the BAAQMD Permit Condition 24136, Item #16 limit of 10 ppm NH ₃ at 3% oxygen in the stack, which is less than 5,000 ppm. Chevron shall	Chevron	Upon commencement of Project operations.	Chevron, BAAQMD, and City of Richmond Planning Division	Review and verification continuous during Project operations.

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
further cause the Replacement Hydrogen Plant to comply with BAAQMD Regulations 7-303 for NH ₃ at the other sulfur recovery units. Chevron shall confirm concentration of NH ₃ in the stacks of both source categories after construction.				
4.4 BIOLOGICAL RESOURCES				
4.4-1a: To avoid construction-related direct impacts (nest removal) or indirect impacts (increased noise levels) on nesting birds (including California Department of Fish and Wildlife (CDFW) Fully Protected Species and Species of Special Concern), one of the following measures shall be implemented:	Chevron/Project Contractor	No more than 5 days prior to initiation of construction activities (including vegetation clearing and grubbing) (if required)	City of Richmond Planning and Building Services Department/ Biologist	Review of pre-construction survey prior to initiation of construction by Planning; review of buffer design and implementation, once prior to construction and throughout the construction period by Building; review survey report prior to initiation of grading in the nest-setback zone (if required) by Planning & Building
<ul style="list-style-type: none"> ▪ Conduct vegetation clearing and grubbing activities from September 1 through January 1, when birds (including raptors) are not likely to be nesting on the site; 				
OR				
<ul style="list-style-type: none"> ▪ Conduct pre-construction surveys for nesting birds if construction is to take place during the nesting season (January 1 through August 31). A qualified wildlife biologist shall conduct a pre-construction nest survey no more than 5 days prior to initiation of construction activities (including vegetation clearing and grubbing) conducted within 300 feet of any vegetated area to provide confirmation of the presence or absence of active nests on or immediately adjacent to the storage tank dome Project Design Feature within the Tank Farm Area. If active nests are encountered, species-specific measures shall be prepared by a qualified biologist and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of the nest shall be deferred until the young birds have 				

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>fledged. A minimum exclusion buffer of 50 feet (300 feet or more for raptors) shall be maintained during construction, depending on the species and location. The perimeter of the nest-setback zone shall be fenced or adequately demarcated with staked flagging at 20-foot intervals, and construction personnel and activities would be restricted in the area. A survey report by a qualified biologist verifying that (1) no active nests are present, or (2) the young have fledged, shall be submitted to the City and CDFW prior to initiation of grading in the nest-setback zone. The qualified biologist shall serve as a construction monitor during those periods when construction activities occur near active nest areas to ensure that no inadvertent impacts to these nests occur.</p>				
<p>4.4-1b: One of the following mitigation measures shall be implemented to lessen potential impacts on potential roost habitat and bat species:</p> <ul style="list-style-type: none"> ▪ Construction activities near bat roost habitat or removal of potential bat roost habitat shall commence between September and October in order to avoid both the bat maternity period and the bat hibernation period; <p>OR</p> <ul style="list-style-type: none"> ▪ If this is not feasible, pre-construction bat roost surveys shall be conducted prior to removal of potential roost habitat. Pre-construction surveys for potential bat roost habitat shall be performed in all trees and buildings subject to removal or demolition for evidence of bat use (guano accumulation, acoustic or visual detections). If evidence is 	Chevron/Project Contractor	Prior to removal of potential roost habitat (if required)	City of Richmond Planning & Building Services Department/ Biologist	Review of pre-construction survey prior to initiation of construction by Planning; review of acoustic surveys prior to construction (if required) by Planning

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>found, then acoustic surveys shall be conducted to determine whether a site is occupied. A minimum of three acoustic surveys shall be conducted in areas containing evidence of bat use between April and November under appropriate conditions using an acoustic detector (WBWG, 2002). If necessary, and with approval from CDFW, exclusion of bats from occupied roosts shall be performed in the fall prior to construction. A qualified wildlife biologist shall be present during exclusion.</p>				
<p>4.4-1c: One of the following mitigation measures shall be implemented to lessen potential impacts on potential winter roost habitat for Monarch butterfly:</p> <ul style="list-style-type: none"> ▪ Conduct tree removal when Monarch butterflies are not present (typically between March 31 and August 31); <p>OR</p> <ul style="list-style-type: none"> ▪ If conducting tree removal between March 31 and August 31 is not feasible, pre-construction Monarch butterfly roost surveys shall be conducted by a City-approved biologist within 100 feet of the storage tank dome Project Design Feature prior to initiation of any tree removal activities. If any winter roosts are encountered during the survey, construction shall be postponed until the roosting activity has ended. A follow-up survey shall be conducted by an approved biologist prior to construction in order to verify that the roosts have been vacated. 	<p>Chevron/Project Contractor</p>	<p>Prior to initiation of any tree removal activities and prior to construction (if required)</p>	<p>City of Richmond Planning & Building Services Department/ Biologist</p>	<p>Review of pre-construction survey prior to any tree removal activities by Planning; review follow-up survey prior to construction by Planning & Building</p>
4.5 CULTURAL RESOURCES				
4.5-1: In the event that any prehistoric or	Chevron/Project	During	City of Richmond	Review and verification,

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.), are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and Chevron and/or the lead agency shall consult with a qualified archaeologist to assess the significance of the find per CEQA Guidelines Section 15064.5. If any find is determined to be significant, representatives of Chevron and/or the lead agency and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation, with the ultimate determination to be made by the lead agency. All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documented according to current professional standards.</p> <p>As part of the Mitigation Monitoring and Reporting Program for the EIR, Chevron shall have environmental monitors on-site during Modernization Project actions that involve ground-disturbing construction. The construction workers shall be trained by the monitors on environmental sensitivity and the identification of prehistoric or historic subsurface cultural resources.</p> <p>In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or</p>	Contractor	construction activities	Planning Division/ Archaeologist	continuous during construction

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>unique archaeological resources, the lead agency shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, Project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the Project site while mitigation for historical resources or unique archaeological resources is carried out.</p>				
<p>4.5-2: In the event of unanticipated paleontological discoveries, such as large deposits of fossil remains, Chevron shall notify a qualified paleontologist who shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. In the event of an unanticipated discovery of a brea, true, and/or trace fossil during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist per Society of Vertebrate Paleontology standards (SVP, 1995). The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the lead agency determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the impact of the Modernization Project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the lead agency for review and approval.</p>	<p>Chevron/Project Contractor</p>	<p>During construction activities</p>	<p>Chevron and City of Richmond Planning Division/ Paleontologist</p>	<p>Review and verification, continuous during construction</p>
<p>As part of the Mitigation Monitoring and</p>				

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>Reporting Program for the EIR, Chevron shall have environmental monitors on-site during Modernization Project actions that involve ground-disturbing construction. The construction workers shall be trained by the monitors on environmental sensitivity and the identification of prehistoric or historic subsurface cultural resources.</p>				
<p>4.5-3: In the event that human skeletal remains are uncovered during construction activities for the Modernization Project, Chevron shall immediately halt work, contact the Contra Costa County Coroner to evaluate the remains, and follow the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County coroner determines that the remains are Native American, Chevron shall contact the NAHC, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (Public Resources Code 5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.</p>	Chevron/Project Contractor	During construction activities	Chevron and City of Richmond Planning Division/ Archaeologist	Review and verification, continuous during construction
4.6 ENERGY				
<i>Construction or operation of the Project would result in no-significant impacts related to energy. No mitigation is required or recommended.</i>				

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
4.7 GEOLOGY, SOILS, SEISMICITY AND MINERAL RESOURCES				
<i>Construction or operation of the Project would result in no-significant impacts related to geology, soils, seismicity and mineral resources. No mitigation is required or recommended.</i>				
4.8 GREENHOUSE GAS EMISSIONS				
<p>4.8-1: Consistent with air quality mitigation measures for construction activities, Chevron would be required to implement the following mitigation measures to reduce its Project construction emissions. Implementation of the mitigation measures would result in further reductions in greenhouse gas emissions.</p> <p><u>1a:</u> All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).</p> <p><u>1b:</u> Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxic Control Measure (Title 13 of California Code of Regulations [CCR], Section 2485). Clear signage shall be provided for construction workers at all access points.</p> <p><u>1c:</u> All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified visible emissions evaluator.</p> <p><u>1d:</u> The idling time of diesel-powered construction equipment shall be limited to 2 minutes.</p>	Chevron/Project Contractor	During construction	Chevron, BAAQMD, and City of Richmond Planning & Building Services Department	Review and verification, regularly during construction Chevron shall submit for City review and verification quarterly Mitigation measure compliance reports reasonably demonstrating compliance with this mitigation measure. Such reports shall be submitted to Building and reviewed and verified in consultation with BAAQMD.

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p><u>1e</u>: The Project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in construction (i.e., owned, leased, and subcontractor vehicles) would achieve a Project-wide fleet-average 20% nitrogen oxide reduction and 45% particulate matter reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. (Several of these measures would also reduce greenhouse gas emissions.)</p>				
<p><u>1f</u>: All contractors shall be required to use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines.</p>				
<p><u>1g</u>: Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).</p>				
<p><u>1h</u>: Enforce and follow limits on idling time for commercial vehicles, including delivery and construction vehicles.</p>				
<p><u>1i</u>: Using alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment on at least 15% of the fleet.</p>				
<p><u>1j</u>: Using local building materials of at least 10%.</p>				
<p><u>1k</u>: Recycling or reusing at least 50% of construction waste or demolition materials.</p>				

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>11: For each year of Project construction, Chevron shall hire, at commercially reasonable rates and at Chevron's expense, a qualified third-party entity reasonably acceptable to the City to quantify and verify in writing whether the reductions achieved from the above described construction greenhouse gas mitigation measures for that year of Project construction adequately mitigated this potentially significant impact, which report shall be subject to City's reasonable approval. For any year of construction for which construction-related diesel emissions are not reduced to or below the 10,000-MT CO₂e per year significance threshold, Chevron shall implement one or more of the following measures in an amount sufficient to reduce construction period greenhouse gas emissions to less than significant levels:</p> <p>(i) Reduce diesel emissions from other equipment at the Facility, such as a diesel-powered generator, in an amount equal to the construction-related greenhouse gas emissions in excess of 10,000 MT CO₂e per year for any calendar year of Project construction, which reduced emission level Chevron shall maintain for the following 2 years.</p> <p>(ii) Permanently retire, or retrofit from diesel to electric power, one or more Facility sources that emit more than 300 MT CO₂e per year.</p>	Chevron/Project Contractor	Annually, as specified in this measure.	Chevron, BAAQMD, and City of Richmond Engineering Services Department	Review of annual construction emissions reports and verification, in consultation with BAAQMD, of compliance additional measures if significance threshold is exceeded
<p>As explained in the Draft EIR, Page 4.8-53, in the event the City selects the 2MW-solar project contemplated by the EIR as a potential Community Greenhouse Gas Reduction Program (CGRP) and such solar project is funded all or in part with funds required by Mitigation Measure 2.8-2e below, then, City shall ensure</p>	Solar Project Developer/City of Richmond Planning & Building Services Department	Prior to and during construction of solar project	City of Richmond Planning & Building Services Department	Verification prior to and during construction of solar project - Protection measures and areas shall also be included in the Plans submitted for grading and/or construction permits

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>implementation of CGRP Solar Mitigation Measure Bio-1 and Bio-2 described in Section 4.8 of the EIR as follows:</p> <p><u>CGRP Solar Project Mitigation Measure Bio-1:</u> Standard construction BMPs and specific Project Design Features shall be implemented to treat and minimize discharge of soil and pollutants into the marsh and other off-site vegetated areas during construction and operation of the proposed project. Standard construction BMPs shall be implemented according to a Stormwater Pollution Prevention Plan required under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). Catch basin inlet protection and installation of straw wattles (fiber rolls) shall be used throughout the Project site during construction. Additional construction BMPs required by the Regional Water Quality Control Board and San Francisco Bay Conservation and Development Commission shall also be implemented. Potential impacts on the coastal brackish marsh during construction activities shall also be avoided by placement of exclusion fencing 5-10 feet from the perimeter of the coastal brackish marsh boundary or on the edge of the temporary disturbance area when this distance is greater. The Facility shall provide environmental awareness training for all construction personnel, bright-colored fencing and signage shall identify and restrict construction within environmentally sensitive areas, and a construction monitor/environmental inspector shall confirm the fence integrity on a daily basis to protect the area</p>				

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
from accidental equipment damage. Fence repair and/or reinforcements shall be completed immediately.				
<p><u>CGRP Solar Project Mitigation Measure Bio-2:</u> To avoid inadvertent construction impacts on salt marsh harvest mouse, Suisun ornate shrew, saltmarsh wandering shrew, and San Pablo vole, a qualified biological monitor shall be present during initial clearing and grubbing activities prior to installation of solar panel arrays in the vicinity of Herman’s Slough. The monitor shall pre-survey disturbance areas to confirm the absence of special-status small mammals. Contractor education shall include a section specific to species identification and protection measures. The entire project construction area abutting coasts brackish marsh habitats shall be surrounded by exclusion fencing. Fencing installed around the project disturbance area during construction shall be adequate to exclude these species. A maximum speed limit of 25 mph shall be observed by construction and maintenance vehicles. The Facility shall provide environmental awareness training for all construction personnel, bright-colored fencing and signage shall identify and restrict construction within environmentally sensitive areas, and a construction monitor/environmental inspector shall confirm the fence integrity on a daily basis to protect the area from accidental equipment damage. Fence repair and/or reinforcements shall be completed immediately.</p>	Solar Project Developer	Prior to and during construction of solar project	City of Richmond Planning & Building Services Department/ Biologist	Verification prior to and during construction of solar project
<p>4.8-2: Chevron shall implement subsections 2a through 2f below. If implementation of subsections 2a through 2f, below, does not reduce Facility greenhouse gas emissions to Baseline levels on an annual net basis, then</p>	Chevron/Project Contractor	Mitigation Measures 4.8-2a though 2c shall be implemented prior to commencement	City of Richmond Planning & Building Services Department	Verification prior to completion of construction

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>Chevron shall implement subsection 2g, below. If implementation of subsections 2a through 2g, below, does not reduce Facility greenhouse gas emissions to Baseline levels on an annual net basis, then Chevron shall implement subsection 2h, below:</p> <p><u>2a</u>: Implement water conservation measures during Modernization Project construction;</p> <p><u>2b</u>: Install LED Lighting at the Facility during Modernization Project construction;</p> <p><u>2c</u>: Implement fluid catalytic cracker cooling water tower motor upgrades during Modernization Project construction;</p>		of Project operation.		
<p><u>2d</u>: Participate, for Chevron Commercial Facilities (and industrial accounts, if practicable), in the Marin Clean Energy Program prior to commencement of construction;</p>	Chevron	Prior to commencement of construction	City of Richmond Planning & Environmental Initiatives	Review and verification prior to commencement of construction
<p><u>2e</u>: Provide \$30M over ten years in funding for implementation of the Community Greenhouse Gas Reduction Measures, which measures shall be selected by the City through a public process with input from stakeholders from the City, North Richmond, and Chevron, as described above;</p>	Chevron	Annually for 10 years beginning with issuance of first building permit of Hydrogen Plant Replacement	City of Richmond City Manager's Office	Review and verification annually
<p><u>2f</u>: Acquiring and timely surrender to CARB Cap and Trade Emission Allowances in quantities sufficient to reduce Facility greenhouse gas emissions to or below Baseline levels on a net basis (rounded up to the nearest metric ton), after taking into account reductions achieved by Mitigation Measures 2a-2e above;</p>	Chevron	In accordance with the Facility's compliance obligation schedule pursuant to CARB cap-and-trade regulations (Cal Code Regs., tit, 17, § 95800 et seq.)	Chevron/City of Richmond Planning Services & Building Department/ BAAQMD	Review annually and verification in accordance with the Facility's compliance obligation schedule pursuant to CARB cap-and-trade regulations (Cal Code Regs., tit, 17, § 95800 et seq.)

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p><u>2g</u>: Acquire greenhouse gas reduction credits through the California Air Pollution Control Officers Association (CAPCOA) GHG Rx credit exchange, or through a similar exchange certified by BAAQMD or CARB, in quantities sufficient to reduce Facility greenhouse gas emissions to or below Baseline levels on a net basis (rounded up to the nearest metric ton), after taking into account reductions achieved by Mitigation Measures 2a-2e above, and after taking into account net reductions achieved by Mitigation Measure 2f above;</p>	Chevron	In accordance with schedule and process described in EIR Section 4.8.4.1.2.3.3.2.	Chevron/City of Richmond Planning Services & Building Department/ BAAQMD	Review annually and verification in accordance with schedule and process described in EIR Section 4.8.4.1.2.3.3.2.
<p><u>2h</u>: Curtail facility operations such that Facility greenhouse gas emissions are reduced to or below Baseline levels on a net basis (rounded up to the nearest metric ton), after taking into account reductions achieved by Mitigation Measures 2a-2e above, and after taking into account net reductions achieved by Mitigation Measures 2f-2g above.</p>	Chevron	In accordance with schedule and process described in EIR Section 4.8.4.1.2.3.3.2.	Chevron/City of Richmond Planning Services & Building Department	Review and verification annually following in accordance with schedule and process described in EIR Section 4.8.4.1.2.3.3.2.
<p>4.8-2B: Clean Air Improvement Fund. Chevron shall fund and participate in a Clean Air Improvement Fund for any Facility greenhouse gas emissions over Baseline.</p> <ul style="list-style-type: none"> ▪ Funding shall be in an amount equivalent to the difference between Project and Baseline greenhouse gas emissions (in MT CO₂e) multiplied by the settlement price of greenhouse gas emission allowances determined at the 1st quarter 2014 California Air Resources Board (CARB) auction, annually adjusted by the Consumer Price Index value for the San Francisco Bay Area. The difference between Project and Baseline greenhouse gas emissions shall be determined in accordance with the procedures for determining the 	Chevron	In accordance with schedule and process described in EIR Section 4.8.4.1.2.3.3.2.	Chevron/City of Richmond Planning Services & Building Department	Review and verification annually following in accordance with schedule and process described in EIR Section 4.8.4.1.2.3.3.2.

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>Remaining Offset described above in <i>Section 4.8.4.1.2.3.3.2.</i></p> <ul style="list-style-type: none"> ▪ Funding shall be paid annually and in accordance with the procedures described above in <i>Section 4.8.4.1.2.3.3.2.</i> ▪ Funding shall be spent on greenhouse gas emission reduction measures in the following priority order: (1) reductions from Facility emissions; (2) reductions within the City; and (3) reductions from the North Richmond area closest to the Facility. ▪ Funding and implementation decisions shall be made by the City, as part of a public process, with input from stakeholders including representatives from the City, North Richmond, and Chevron. ▪ A brief report shall be prepared for each major emission reduction measure implemented using such funds, and be made available to help inspire other emission reduction opportunities. 				
4.9 HYDROLOGY AND WATER QUALITY				
<p>4.9-1a: Chevron shall prepare and submit a SWPPP to the RWQCB that includes best management practices to treat stormwater runoff during the construction period (and achieve water quality objectives) at least 10 days prior to commencement of construction activities. The BMPs included in the SWPPP shall be implemented during construction.</p>	Chevron/Project Contractor	At least 10 days prior to construction	City of Richmond Building Division and Engineering Services Department/ Hydrologist	Review and approval prior to construction, and verification during construction

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
4.9-1b: Chevron shall implement two Project Design Features (Stripped Sour Water Reuse/Distillation and Reforming Area and Stripped Sour Water Reuse in South Isomax Area) to offset average annual process wastewater flows under the 93% Utilization Scenario.	Chevron	Prior to commencement of Project operations	City of Richmond Building Division and Engineering Services Department/ Hydrologist	Review and verification, continuous during construction
4.9-1c: If the Modernization Project increases wastewater generation above the 93% Utilization Scenario, any increases in wastewater generation shall be offset by implementation of addition water reuse projects, which may include (1) reuse of stripped sour water from 8 and 18 plants to supply wash water for the FCC FHT and hydrocracker located in the North Isomax area; and (2) reuse stripped sour water from 8 and 18 plants to supply wash water for lube crackers in the Richmond lube oil plant area. Additional or alternative stripped sour water reuse measures could also be implemented to assure no net increase in wastewater generation with City approval.	Chevron	Immediately following any increase in utilization above the 93% scenario	City of Richmond Building Division and Engineering Services Department/ Hydrologist	Review and verification, once after new hydrogen plant is fully operational and at least annually thereafter
4.9-2: Any stockpiles of soils containing contaminants generated under the Modernization Project shall be covered with plastic sheeting to ensure that sediments and pollutants are not entrained in runoff or infiltrated into the subsurface during rainfall events. Reuse or disposal of contaminated soils shall be completed in accordance with applicable laws and regulations. If the soil is a hazardous waste, it shall be disposed of off-site at a licensed facility within 90 days of generation.	Chevron/Project Contractor	During construction; within 90 days of hazardous waste generation (if required)	City of Richmond Building Division and Engineering Services Department/ Hydrologist	Review and verification, continuous during construction
4.9-7: Within five years, Chevron shall retain qualified professionals to develop a Facility flood contingency plan that addresses all types	Chevron/Project Contractor	Within 5 years of completion of construction	City of Richmond Planning & Building Services and	Review and approval of contingency plan

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
of coastal flooding (i.e., storm-related flooding, extreme high tides, and tsunamis) and how these coastal flooding hazards will increase over time due to sea level rise. The contingency plan shall be submitted to the City of Richmond for review and approval.			Engineering Services Departments/ Hydrologist	
4.10 LAND USE, PLANS, AND POLICIES				
<i>Construction or operation of the Project would result in no-significant impacts related to land use, plans and policies. No mitigation is required or recommended.</i>				
4.11 NOISE				
4.11-1a: If nighttime construction is required, no pile driving shall be allowed and the types and intensity of any construction activities shall be limited to ensure noise generation does not exceed the City’s nighttime noise limit of 50 dBA or cause an increase greater than 5 dBA.	Chevron/Project Contractor	During nighttime construction activities	City of Richmond Building Division	Verification, continuous during nighttime construction
4.11-1b: If nighttime construction is required and the City of Richmond or the construction compliance and complaint manager receive verified complaints due to noise from the use of backup alarms, Chevron shall implement feasible measures to reduce this noise at the Facility boundary. Measures may include the use of alarms with ambient sensing/broadband technology instead of the traditional fixed level/narrowband alarms or the use of administrative controls such as using a spotter or flagger and prohibiting all foot traffic in the work area.	Chevron/Project Contractor	During nighttime construction activities	Chevron and City of Richmond Planning & Building Services Department	Verification, continuous during nighttime construction
4.12 EMPLOYMENT, POPULATION, AND HOUSING				
<i>Construction or operation of the Project would result in no-significant impacts related to employment, population or housing. No mitigation is required or recommended.</i>				

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
4.13 PUBLIC SAFETY				
4.13-2a: Store hazardous materials for Modernization Project construction activities only in the construction staging locations identified in Figure 3-1 (<i>Chapter 3, Project Description</i>) unless an alternate location within a previously developed portion of the Facility is approved as part of the building permit approval process.	Chevron/Project Contractor	During construction	Chevron and City of Richmond Building Division	Verification, continuous during construction
4.13-2b: Implement worker training and safety requirements for construction workers, including emergency response and hot work and contractor refinery instructions as more fully described in <i>Section 4.13.2.3</i> and <i>Appendix 4.13-DET</i> , and report training and implementation of safety requirements monthly to the City during construction and demolition activities. Communicate location and scope of Modernization Project-related construction activities weekly to City and Facility management to avoid any conflicts between construction and refining activities. The required implementation will include the new Leak Response Protocol developed since August 2012 (Chevron, 2012a).	Chevron/Project Contractor	Prior to construction, and weekly and monthly during construction and demolition	Chevron and City of Richmond Building Division and Fire Prevention Bureau	Review monthly reports and weekly communication during construction
4.13-3a: Demolition and other construction wastes, and hazardous wastes, must be stored only in Facility locations approved by the City.	Chevron/Project Contractor	Prior to construction and during construction and demolition	Chevron and City of Richmond Building Division And Fire Prevention Bureau	Review and approval during construction and demolition
4.13-3b: Hazardous wastes must be transported off-site to an authorized disposal, treatment, or recycling facility by a transportation company with appropriate federal and state transporter licenses within 90 days after the wastes are generated.	Chevron/Project Contractor	Prior to construction and during construction and demolition	Chevron and City of Richmond Building Division	Review and approval during construction and demolition

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
4.13-3c: Non-hazardous demolition and construction waste must be transported off-site to an authorized disposal, recycling, or reuse facility by a transportation company with required transporter licenses within 180 days after the wastes are generated.	Chevron/Project Contractor	Within 180 days of waste generated during construction and demolition	Chevron and City of Richmond Building Division	Verification continuous during and 180 days after completion of construction and demolition
4.13-4a: Chevron will implement its Modernization Project Reliability Program (<i>Appendix 4.13-PROG</i>) including updating the detailed PHAs prepared for the 2008 Project for all new and modified Modernization Project components, which shall include ISSAs, damage mechanism reviews, and evaluation of the consequences thereof resulting from the Project, and LOPA, as part of these PHAs, prior to recommencement of construction of the Modernization Project, and again post-construction but before startup of Project operations for any changes that arise during construction that may affect the earlier PHAs, ISSAs, and LOPAs. Chevron will notify CCHS and the City of the availability of these PHAs, and make these PHAs available for review by CCHS and the City. The PHAs (initial and updates/revalidations), ISSAs, damage mechanisms reviews, and LOPAs shall be consistent with (proposed) amendments to the RISO. Chevron shall conduct the LOPAs and submit written LOPA reports, prepared in accordance with industry best practices (such as those issued by the Center for Chemical Process Safety) to CCHS and the City for review prior to construction (and post-construction, for those LOPAs warranting changes based on changes that arise during construction). CCHS will work with the City in implementing these and other Public Safety mitigation measures.	Chevron/Project Contractor	Prior to construction and again post-construction but before operations	Chevron, City of Richmond Planning Division, Fire Prevention Bureau, and Contra Costa Health Services	Review and verification prior to construction and again post-construction but before operations

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>4.13-4b: Chevron will submit to CCHS a revised RMP and Safety Plan for the modified and new equipment at the Facility, and shall cause a revised RMP and Safety Plan to be submitted by the operator of the new hydrogen plant, in accordance with the requirements established in the applicable regulations. The revised RMPs and Safety Plans shall be submitted by the earlier of: 1) prior to operations; and 2) timing requirements under applicable regulations. The revised RMPs and Safety Plans shall reflect integration of ISSA, including consideration of damage mechanisms and evaluation of the consequences thereof resulting from the changes, as well as the LOPAs, conducted as a part of PHAs (initial and PHA updates/ revalidations), consistent with (proposed) amendments to the RISO. The RMPs must include all required components, including but not limited to a revised “off-site consequence” analysis of worst case and alternate scenarios (EPA, 2009), a revised accident prevention and training program, pre-startup safety reviews and prescribe training and safety requirements for contractors conducting hot work and other designated types of activities. The RMPs must cover accident risks that have been identified in the Project-related PHAs, including inherently safer systems analyses conducted as a part of Project-related PHAs and management of change procedures. Chevron will report to the City acceptance of these plans by the CCHS prior to start-up of Modernization Project operations.</p>	Chevron	The earlier of: 1) prior to operations; and 2) timing requirements under applicable regulations.	City of Richmond Planning Division and Fire Prevention Bureau, and, Contra Costa Health Services	Review and verification prior to operations
<p>4.13-4c: Chevron will submit an amended hazardous materials business plan to CCHSHMP via the California Environmental Reporting System (CERS) consistent with the timing</p>	Chevron	Consistent with timing requirements of the applicable	City of Richmond Fire Prevention Bureau Department, CCHSHMP, and	Review and verification consistent with timing requirements of the applicable CCHSHMP regulations

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>requirements of the applicable regulations. Chevron shall cause to be submitted by the operator of the hydrogen plant an amended hazardous materials business plan to CCHSHMP. The amendments will reflect the modified and new equipment at the Facility, including the hydrogen plant. Chevron will provide written confirmation to the City of CCHSHMP's acceptance of the amended plans.</p>		CCHSHMP regulations	Contra Costa Health Services	
<p>4.13-4d: Chevron will revise the Facility's SPCC Plans and Facility ERPs consistent with the timing requirements of the applicable regulations, and shall cause the SPCC and ERPs for the hydrogen plant to be updated as well. Plan revisions must address the modified and new equipment at the Facility including the hydrogen plant. Chevron shall make the plans available for review upon request by CCHSHMP and EPA.</p>	Chevron	Consistent with timing requirements of the applicable regulations	Applicable oversight agencies and City of Richmond Building Division; and Contra Costa Health Services	Review and verification consistent with timing requirements of the applicable regulations
<p>4.13-4e: For the additional catalyst identified in Table 4.13-4 (at hydrogen plant and FCC FHT), Chevron will either send spent catalyst for metal reclamation or dispose of the spent catalyst that cannot be reclaimed to a secure and licensed facility. Chevron will maintain records on the amount of catalyst sent for reclamation and for disposal and report to the City annually on these amounts.</p>	Chevron	Annually post commencement of operations	Chevron and City of Richmond Building Division	Review and verification annually post commencement of operations

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>4.13-4f: Chevron shall ensure, through its contractual arrangements with Praxair, that Praxair will comply with all mitigation measures in this EIR as they pertain to the new hydrogen plant, and shall require Praxair to cooperate with Chevron as needed to ensure the mitigation measures with regard to the hydrogen plant are effectively implemented. Prior to construction of the new hydrogen plant, Chevron shall provide to the City and County documentation reflecting that these requirements are included in contractual agreements between Chevron and Praxair.</p>	Chevron	Prior to construction of Project's new hydrogen plant	Chevron and City of Richmond Building Division	Review and verification consistent with timing requirements of this measure.
<p>4.13-5a: Chevron is required to continue to implement the following mitigations from the Long Wharf EIR (Chambers Group, Inc., 2006, 2007): OS-3b, OS-3c; OS-4; OS-6b; and OS-7a,b.</p>	<p><i>See Mitigation Measures OS-3b, OS-3c; OS-4; OS-6b; and OS-7a,b from the Long Wharf Final EIR below.</i></p>			
<p>4.13-5b: Implement Mitigation Measure 4.13-4d.</p>	<p><i>See Mitigation Measure 4.13-4d.</i></p>			
<p>4.13-5c: All spills and releases of hazardous materials or hazardous waste to the environment, including those from the transportation of these materials, must be reported within 48 hours to the City, and to the other appropriate regulatory agencies in accordance with the timing and other notification and reporting requirements prescribed by the applicable laws and regulations. Prompt cleanup of all such spills is also required.</p>	Chevron/Project Contractor	Within 48 hours after all spills and releases of hazardous materials or hazardous waste, and in accordance with applicable laws and regulations	Chevron, City of Richmond Building Division, and Fire Department, and other appropriate regulatory agencies	Verification within 48 hours after all spills and releases of hazardous materials or hazardous waste, and in accordance with applicable laws and regulations
<p>4.13-6: Prior to commencing construction, Chevron shall: 6a: For all Modernization Project new and modified equipment, including but not limited to the hydrogen plant, Chevron shall obtain new or amended building permits from the City's Building Department pursuant to City Building</p>	Chevron	Prior to construction	City of Richmond Planning and Building Services Department	Review and verification prior to issuing building permits

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
Code and CBC requirements in effect at the time the permits are issued.				
<u>6b</u> : For all Modernization Project new and modified equipment, including but not limited to the hydrogen plant, that are subject to City of Richmond Fire Department permit requirements, Chevron shall obtain new or amended fire permits from the City of Richmond Fire Department pursuant to City Fire Code and the CFC requirements in effect at the time the permits are issued.	Chevron	Prior to construction	City of Richmond Fire Department	Review and verification prior to issuing permits
<u>4.13-7a</u> : Chevron shall implement the Modernization Project Reliability Program for all units and processes affected by the Modernization Project, including written reports specified in the Modernization Project Reliability Program. An initial Reliability Program report shall be submitted to the City and County prior to Project construction. Annual reports shall be submitted thereafter, including a report prior to commencement of Project operations. For the PHAs (initial and revalidations) specified in the Modernization Project Reliability Program, Chevron would complete the PHAs prior to commencement of Project construction, and again after construction but before startup of Project operations for any changes that may have arisen during construction that could affect the earlier PHAs. Chevron will thereafter update and revalidate PHAs in accordance with the RISO but not less than once every 5 years. As indicated in Mitigation Measure 4.13-4a, the PHAs shall include LOPAs, and written LOPA reports must be submitted to the County prior to construction for review, and Chevron shall submit a copy to the City simultaneously. To the extent that any post-construction PHA	Chevron	Prior to construction, again prior to operations, annually thereafter, and in accordance with the RISO but not less than once every 5 years thereafter	City of Richmond Planning & Building Services Department and Contra Costa County Health Services	Review and verification prior to construction, again prior to operations, annually thereafter, and in accordance with the RISO but not less than once every 5 years thereafter

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>revalidations are warranted, Chevron shall submit LOPA reports for the post-construction PHA revalidations to the County for review prior to the startup of Project operations, and Chevron shall submit a copy to the City simultaneously.</p>				
<p>4.13-7b: Chevron shall complete an ISSA (as defined in the RISO), including review damage mechanisms and evaluation of their consequences, and LOPAs with written LOPA reports submitted by Chevron to the County for review, for new and modified Modernization Project components as part of the PHA revalidation process specified in the Modernization Project Reliability Program and Mitigation Measure 4.13-9a. Chevron will make the ISSA and PHAs available for review by the CCHS and the City, and will submit the LOPA reports to the County prior to construction for review.</p>	Chevron	Prior to construction, again prior to operations	City of Richmond Building Division and Engineering Services Department and Contra Costa Health Services	Review prior to construction, again prior to operations, annually and every 5 years thereafter
<p>4.13-7c: Chevron will continue to review its procedures and programs for evaluating the hazards of planned changes at the Facility, and update them to incorporate damage mechanism review, including the identification of applicable damage mechanisms as well as the evaluation of the potential impacts of the damage mechanisms in light of the proposed changes, and layers of protection analysis consistent with the Reliability Program. Chevron’s review and update of programs and procedures shall include, at a minimum, the Facility’s management of change program/procedure and its PHA program/procedure. Chevron shall include, in its annual Modernization Project Reliability Program reports to the City, a description of the status of this documentation review and update process, as well as how the</p>	Chevron	Prior to operations	Chevron and City of Richmond Building Division and Engineering Services Department and Contra Costa Health Services	Prior to construction, again prior to operations, and annually thereafter

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>changes to these programs/procedures are being implemented at the Facility.</p>				
<p>4.13-7d: Chevron will fund the costs of qualified third-party experts to assist CCHS and the City in the review of PHAs, ISSAs, and LOPAs completed for the Modernization Project pre- and post-construction, and will cooperate in providing access to Chevron documentation and facilities, as needed, for the third-party expert, CCHS, and the City to complete these reviews. At such time as the RISO is amended, and to the extent this amendment requires Chevron to fund a new, full-time chemical process safety inspector to do inspections at the Facility, Chevron shall provide to CCHS and/or the City the level of funding required to hire a new, full-time chemical process safety inspector for the Facility, and thereafter shall no longer be required to fund a separate third-party expert for post-construction reviews of PHAs, ISSAs, and LOPAs or other inspections.</p>	<p>Chevron /Project Contractor</p>	<p>Ongoing, as costs are incurred</p>	<p>City of Richmond Building Division and Engineering Services Department in consultation with Contra Costa Health Services</p>	<p>Review prior to construction and post-construction</p>
<p>4.13-7e: Chevron shall provide funding in a reasonable amount sufficient for the City to complete an air deposition background study of air quality at up to 20 locations in Richmond. The study may be done in conjunction with local high school science departments or otherwise, and may include quarterly sampling, using surface sampling collection pads, and certified laboratory analysis of such pads at locations to be determined. Study results shall be compiled annually, and made publicly available. Chevron will fund this program for a 5-year period following commencement of Modernization Project operations. In the event of a future accidental fire or other significant accidental release of air pollutants from the Facility,</p>	<p>Chevron</p>	<p>Ongoing, as costs are incurred</p>	<p>City of Richmond Building Division and Engineering Services Department</p>	<p>Verification of funding obligation prior to commencement of operations; verification of reimbursement obligations continuous thereafter, as necessary.</p>

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
Chevron shall reimburse the City for the cost of engaging a qualified consultant to perform additional air deposition sampling and analysis to evaluate the magnitude and significance of the release. The results of the post-accident deposition sampling will be publicly available.				
4.13-7f: Given the Modernization Project would include new equipment and operational practices at the Facility, Chevron will provide further training for and coordinate with the Richmond Fire Department prior to Modernization Project operations. Training would continue annually during Project operations.	Chevron	Prior to operation and annually thereafter	City of Richmond Fire Department	Verification prior to operation and annually thereafter
4.13-7g: Chevron shall work with the Contra Costa Sheriff’s Department, the City, and other interested stakeholders, prior to the commencement of Project operations, to evaluate the existing CWS and to determine whether additional services would be beneficial, including but not limited to mechanisms for the provision of emergency messages and communications, translated into multiple different languages (considering possible integration with existing cell phone registration, email, and social media notification databases and systems), and the provision of emergency notifications to locations in the community where large numbers of people may congregate at any given time (such as shopping centers, transit centers such as Bay Area Regional Transit stations, Amtrak stations, and bus stations). Chevron shall contribute toward, and help identify additional funding for, such additional services.	Chevron	Prior to operation	Contra Costa County Sheriff’s Department and City of Richmond Public Safety Department	Verification prior to operation

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>4.13-7h: Chevron will fund the costs of a third-party expert to assist the County and the City with the review of the Reliability Program reports and other submittals required by the Reliability Program and related mitigation measures, as needed. The third-party expert will be selected and retained by the County or the City within the County's or City's discretion. This funding obligation survives any amendment of the RISO that may require funding of an inspector for the Facility.</p>	Chevron	Upon commencement of operations and continuous thereafter	City of Richmond Building Division and Engineering Services Department; and Contra Costa Health Services	Review and verification upon commencement of operations and continuous thereafter.
<p>4.13-7i: Chevron shall adhere to the total acid number (TAN) limits of 0.3 mg milligrams potassium hydroxide per gram (KOH/g) for crude, 1.5 mg KOH/g for sidecuts produced from the crude unit, and 1.0 for gas oils and blends processed through the fluid catalytic cracker, fluid catalytic cracker feed hydrotreater, hydrotreater, heavy neutral hydrocracker, and light neutral hydrocracker. If Chevron intends to process a feedstock for a short-term basis (i.e., up to 6 months) that exceeds these TAN limits, it must complete its Management of Change (MOC) process for the proposed deviation, and shall take into account damage mechanism reviews as specified in Mitigation Measure 4.13-7c that have been prepared for the identified units. If Chevron intends to process a feedstock for a longer-term basis (i.e., more than 6 months) that exceeds these TAN limits, it must complete its MOC process for the proposed deviation and this MOC must include a damage mechanism review as specified in Mitigation Measure 4.13-7c. Chevron shall designate a Facility Area Business Unit Manager with final decision-making authority to approve any TAN deviation from the TAN limits. Chevron shall</p>	Chevron	Upon commencement of operations and continuous thereafter.	City of Richmond Building Division and Engineering Services Department; and Contra Costa Health Services	Review and verification upon commencement of operations and continuous thereafter.

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
notify the City and County of any TAN deviation and provide to the City and County details regarding the results of its MOC for any TAN deviations in its annual Reliability Program reports.				
4.13-7j: Chevron shall include in its annual Reliability Program reports the annual average sulfur content of feedstocks, including separate annual averages for crude oils/blends and gas oils/blends, processed at the Facility for each year since and including 2008.	Chevron	Upon commencement of operations and continuous thereafter	City of Richmond Building Division and Engineering Services Department; and Contra Costa Health Services	Verification due annually
4.13-8: Implement Mitigation Measures 4.13-4a, b, c, d; 4.13-5a, b, c; 4.13-6a, b; 4.13-7a, b, c, d, e, f, g; 4.13-11a, b, c.			<i>See referenced mitigation measures</i>	
4.13-9a: Chevron will coordinate with the Contra Costa County Sheriff’s Department, as owner and operator of the CWS, and other stakeholders, to work with local area schools (Washington Elementary School, Lincoln Elementary School, Peres Elementary School, Verde Elementary School) to ensure that their emergency response procedures and plans are adequate to minimize the risk to students in the event of a refinery incident. This shall include, as necessary, updating plans and procedures, providing emergency response equipment, and providing training to school staff. Chevron will coordinate with the Sheriff’s Department and local area schools to ensure that the schools have operational National Oceanic and Atmospheric Administration weather radios and receive training on how to use them. Coordination will be completed prior to start of Modernization Project operations.	Chevron	Prior to operation	Chevron and Contra Costa County Sheriff’s Department	Verification prior to operation
4.13-9b: Implement Mitigation Measures 4.13-4a, b, c, d; 4.13-6a, b; 4.13-7a, b, c, d, e, f, g; 4.13-11a, b, c.			<i>See referenced mitigation measures</i>	

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
4.13-10a: If contamination is discovered during Modernization Project construction, the Facility will report the discovery to the City, the RWQCB, and any agency required to receive such notice under applicable law, and shall promptly manage, contain, treat, transport, and/or arrange for off-site disposal of such contaminated material as required by applicable law and existing RWQCB Order. Chevron shall also train construction workers to recognize contamination, and shall use authorized remediation contactors with trained workers to characterize and manage any contaminated media discovered during Modernization Project construction.	Chevron	During construction, in the event of contamination	Chevron, City of Richmond Building Division and Engineering Services Department, and RWQCB	Review and verification during construction, in the event of contamination
4.13-10b: If Modernization Project construction occurs in areas subject to RWQCB Order R2-2011-0036, Chevron will first receive approval of the construction activities from the RWQCB, as required under the order, and report the approval conditions to the City. Chevron will comply with applicable regulatory requirements and RWQCB approval conditions in managing the Modernization Project construction activities.	Chevron	Prior to construction in areas subject to RWQCB Order R2-2011-0036	Chevron, City of Richmond Building Division and Engineering Services Department, and RWQCB	Review and verification during construction, in the event of contamination
4.13-11a: Update the Facility's emergency plan to assure that the Modernization Project would not impair implementation of the plan, and to assure that the plan is effective. Develop Emergency Operating Procedures for new and modified Modernization Project equipment. Revisions to the plan and procedures would include clear instructions to ensure all non-essential personnel stay outside of hazardous areas during an emergency. Incorporate revisions into a revised Safety Plan submitted to CCHS for approval and acceptance prior to	Chevron	Prior to operation	City of Richmond Public Safety Department and Contra Costa Health Services	Review and verification prior to operation

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
commencement of Modernization Project operation, and report submission date and CCHS approval to the City.				
4.13-11b: Ensure Facility personnel and contractors are trained on the revised emergency procedures, including to ensure all non-essential personnel stay outside of hazardous areas during an emergency. Maintain records on initial training and annual refreshers that can be provided to the City or County upon request.	Chevron	Prior to operation and annually thereafter	Chevron, City of Richmond Public Safety Department, and Contra Costa Health Services	Review and verification prior to operation
4.13-11c: Chevron shall coordinate with the City, County, and other local and regional agencies, including BAAQMD and fire departments in neighboring communities, to plan and conduct periodic emergency response drills, to establish joint operations centers and joint information centers, and to establish communications networks and protocols for emergency response communications extending to these neighboring communities and agencies to further develop the infrastructure and readiness for mutual aid as between these various agencies and fire departments, in the event of emergency response incidents.	City of Richmond Public Safety Department, Contra Costa Health Services, and Chevron	Prior to operation and annually thereafter	Chevron, City of Richmond Public Safety Department, and Contra Costa Health Services	Coordination, review, and verification prior to operation
4.13-12: Chevron will update its fire protection plan to address vegetated open space areas adjacent to process areas, and to assure that Chevron Fire Department personnel are trained and equipped to serve as first responders to a fire in these vegetated areas. The plan will be provided to and accepted by the Richmond Fire Department prior to start of Modernization Project operations. The plan must include: 12a: Fuel management, including seasonal mowing, removal of brush, trimming of trees, or	Chevron	Prior to operation	City of Richmond Fire Department	Review and verification prior to operation

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>other measures to reduce fuel loads during the dry season (i.e., from April 1 through November 30, unless extended by the Richmond Fire Department) in areas within 100 feet of process areas.</p> <p><u>12b:</u> Construction and seasonal maintenance of appropriate fire breaks (e.g., maintenance of unvegetated areas) to minimize size of fire in vegetated open space areas, provided no new vegetative clearing shall be completed until surveys have been completed for protected plants and animals, and the absence of such resources has been confirmed.</p> <p><u>12c:</u> Maintenance of fire roads in vegetated open space areas to provide immediate access to emergency responders, including removal of potential obstacles and brush and leveling of dirt roads on steep hillsides following the end of each rainy season (approximately April or May).</p> <p><u>12d:</u> Emergency response coordination, including enhanced mutual aid, protocols to assure adequate firefighter responses to vegetated open space area fires as well as Facility area.</p>				
<p>4.13-13a: Prior to restarting construction of the Modernization Project, and again prior to commencement of Project operations, Chevron shall submit to the City a report describing the status of its compliance with all corrective action measures (including, but not limited to, compliance with probationary terms) imposed or agreed to as a result of the agency proceedings relating to the August 6, 2012 fire. As part of this report, Chevron shall describe its ongoing consultations with the agencies that investigated the August 6, 2012 fire, including</p>	Chevron	Prior to construction and again prior to operation	City of Richmond Building Division and Engineering Services Department	Review prior to construction and again prior to operation

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
Cal/OSHA, the CSB, and Contra Costa County, including any feedback or direction that has been provided by those agencies concerning implementation of the corrective action and agency recommendations and Chevron's response thereto.				
4.13-13b: Chevron will fund the costs of a qualified expert in refinery safety, to be selected and retained by the County and/or the City within the County's and/or City's discretion, to review the ISSAs, PHAs, LOPAs, and other safety documentation associated with events triggering such ISSAs, PHAs, or LOPAs. Chevron will also cooperate in providing access to Chevron documentation and facilities, as needed, for the expert, the County, and the City review. At such time as the RISO is amended, and to the extent this amendment requires Chevron to fund a new, full-time chemical process safety inspector to do inspections at the Facility, Chevron shall provide to CCHS and the City the level of funding required to hire a new, full-time chemical process safety inspector for the Facility, and thereafter shall no longer be required to fund a separate third-party expert for reviews of PHAs, ISSAs, LOPAs, or other inspections.	Chevron	Prior to construction and continuous thereafter	City of Richmond Building Division and Engineering Services Department; and Contra Costa Health Services	Review prior to construction and continuous thereafter.
4.13-13c: Chevron will complete the tri-annual safety audits required by RISO. In addition, upon request by the County and/or City, Chevron shall fund the costs of a qualified third-party expert in refinery safety to perform a safety or compliance audit that would be provided to the County and/or City for review.	Chevron	Ongoing	City of Richmond Building Division and Engineering Services Department; and Contra Costa Health Services	Review and verification every 3 years
4.13-13d: Chevron will report to the City quarterly, and shall provide a copy of this report to the County, after Project approval on the	Chevron	Quarterly after Project approval	City of Richmond Building Division and Engineering Services	Review quarterly after project approval

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>status of the corrective actions taken to implement agency recommendations to Chevron resulting from the August 6, 2012 fire, as well as any corrective actions taken by Chevron as a result of its own investigation. To the extent that Chevron elects not to implement a recommendation made by an agency, Chevron shall include in these quarterly reports a detailed explanation of its rationale for doing so.</p>			Department	
<p>4.13-13e: Chevron shall fund the City’s coordination with the CSB, Cal/OSHA, the BAAQMD, and the EPA on their investigations regarding the Facility to the extent these agencies request City involvement or consultation.</p>	Chevron	Upon agency request to City	City of Richmond Building Division and Engineering Services Department	Coordination upon agency request to City
<p>4.13-13f: Chevron shall designate a Facility Area Business Unit Manager as the management level position bearing responsibility for any and all decisions to not implement a recommendation made during an inspection or turnaround. Chevron shall also designate a Facility Area Business Unit Manager as the management level position bearing responsibility for the establishment of the parameters in the Integrity Operating Window program, as well as for any decisions to override, bypass, or otherwise disregard an alert or flag that arises through the Integrity Operating Window program. The annual Reliability Program reports shall include clear identification of the individuals acting as Area Business Unit Managers to whom these accountabilities have been assigned. If the management position bearing any of these responsibilities changes within Chevron from the Area Business Unit Manager to another management-level job title, Chevron shall notify</p>	Chevron	Prior to commencement of operations and as required by this measure.	City of Richmond Building Division and Engineering Services Department; and Contra Costa Health Services	Review and verification prior to commencement of operations and at least annually thereafter

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
the City and include an update to this effect in its Reliability Program annual report.				
4.13-13g: Prior to the issuance of building and fire permits for the Project, Chevron shall provide to the City documentation demonstrating that it has completed implementation of (to Cal/OSHA's satisfaction) or otherwise discharged (through administrative appeal) all corrective or abatement actions resulting from Cal/OSHA's investigation following the August 2012 fire, and from Cal/OSHA's temporary leak seal investigation.	Chevron	Prior to issuance of building and fire permits	City of Richmond Building Division and Engineering Services Department	Review and verification prior to issuance of building and fire permits.
<i>Note: See Table 5-3 for the Mitigation Measures from the Long Wharf Final EIR that are applicable to the Modernization Project.</i>				
4.14 PUBLIC SERVICES				
<i>Construction or operation of the Project would result in no-significant impacts related to public services. No mitigation is required; however some improvement measures are recommended (see Table 5-2).</i>				
4.15 PARKS AND RECREATION				
<i>Construction or operation of the Project would result in no-significant impacts related to parks and recreation. No mitigation is required or recommended.</i>				
4.16 TRANSPORTATION				
4.16-1: Chevron shall work with the director of the City of Richmond Public Works Department (or the director's designated representative) and Caltrans to provide modified traffic control implemented at the intersection of Castro Street/I-580 Westbound Ramps during peak arrival and departure times in the PM peak hour. The modified traffic control shall be accomplished by one or more of the following methods: (1) posting a technician at the intersection to manually operate signal controls (using the police key feature of standard traffic signal controllers); (2) programming an alternate signal timing plan that would be in	Chevron/Project Contractor	During construction in PM peak period	City of Richmond Public Works Department in consultation with Caltrans	Coordination and verification, continuous during construction

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>operation during specified peak commute periods; and/or (3) posting traffic control officers at the intersection to manually control traffic movements. Chevron shall pay the full cost of this measure, including costs of Richmond police officers or other law enforcement personnel to provide the traffic control under above-cited methods (1) or (3).</p>				
<p>4.16-2: The following measures shall be implemented at the intersection of Richmond Parkway/Gertrude Avenue:</p> <p><u>2a:</u> Chevron shall work with the director of the City of Richmond Public Works Department (or the director’s designated representative) to provide modified traffic control during peak arrival and departure times in the PM peak hour. The modified traffic control shall be accomplished by one or more of the following methods: (1) posting a technician at the intersection to manually operate signal controls (using the police key feature of standard traffic signal controllers); (2) programming an alternate signal timing plan that would be in operation during specified peak commute periods; and/or (3) posting traffic control officers at the intersection to manually control traffic movements. Chevron shall pay the full cost of this measure, including costs for sheriff’s deputies or other law enforcement personnel to provide the traffic control under above-cited methods (1) or (3).</p> <p><u>2b:</u> During the peak congestion periods, through the use of traffic cones (and flaggers as needed), Chevron shall reconfigure the southbound (Richmond Parkway) approach to the intersection to provide one shared left-</p>	<p>Chevron/Project Contractor</p>	<p>During construction in PM peak period</p>	<p>City of Richmond Public Works Department in consultation with Caltrans</p>	<p>Coordination and verification, continuous during construction</p>

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
through lane, one through lane, and one shared right-through lane.				
4.16-3: Mitigation Measure 4.16-1 shall be implemented.		<i>See Mitigation Measure 4.16-1.</i>		
<p>4.16-4: The following measure shall be implemented at the intersection of Castro Street/Hensley Street:</p> <p>Chevron shall work with the director of the City of Richmond Public Works Department (or the director's designated representative) to provide modified traffic control during peak arrival and departure times in the PM peak hour. The modified traffic control shall be accomplished by one or more of the following methods: (1) posting a technician at the intersection to manually operate signal controls (using the police key feature of standard traffic signal controllers); (2) programming an alternate signal timing plan that would be in operation during specified peak commute periods; and/or (3) posting traffic control officers at the intersection to manually control traffic movements. Chevron shall pay the full cost of this measure, including costs of law enforcement personnel to provide the traffic control under above-cited methods (1) or (3).</p>	Chevron/Project Contractor	During construction in PM peak period	City of Richmond Public Works Department	Coordination and verification, continuous during construction
4.16-5: Mitigation Measure 4.16-2 shall be implemented.		<i>See Mitigation Measure 4.16-2.</i>		
4.16-6: Mitigation Measure 4.16-1 shall be implemented.		<i>See Mitigation Measure 4.16-1.</i>		

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>4.16-7: The following measures shall be implemented, in consultation with the Public Works Director or his designee, at the intersection of Castro Street/General Chemical Access:</p>				
<p><u>Za:</u> During the AM peak period, through the use of traffic cones (and flaggers as needed), Chevron shall reconfigure the northbound (Castro Street) approach to the intersection to provide two left-turn lanes and one shared right-through lane. The inbound approach on General Chemical Access shall also be reconfigured to provide two receiving lanes.</p>	Chevron/Project Contractor	During construction in AM peak period	City of Richmond Public Works Department	Verification, continuous during construction
<p><u>Zb:</u> During the PM peak period, through the use of traffic cones (and flaggers as needed), Chevron shall reconfigure the eastbound (General Chemical Access) approach to the intersection to provide two exclusive right-turn lanes and one exclusive left-turn lane.</p>	Chevron/Project Contractor	During construction in PM peak period	City of Richmond Public Works Department	Verification, continuous during construction
<p><u>Zc:</u> Chevron shall work with the director of the City of Richmond Public Works Department (or the director’s designated representative) to provide modified traffic control during peak arrival and departure times in the AM and PM peak hours. The modified traffic control shall be accomplished by one or more of the following methods: (1) posting a technician at the intersection to manually operate signal controls (using the police key feature of standard traffic signal controllers); (2) programming an alternate signal timing plan that would be in operation during specified peak commute periods; and/or (3) posting traffic control officers at the intersection to manually control traffic movements. Chevron shall pay the full cost of this measure, including costs of law</p>	Chevron/Project Contractor	During construction in AM and PM peak periods	City of Richmond Public Works Department	Coordination and verification, continuous during construction

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
enforcement personnel to provide the traffic control under above-cited methods (1) or (3).				
4.16-8: Mitigation Measure 4.16-4 shall be implemented.				<i>See Mitigation Measure 4.16-4.</i>
4.16-9: Mitigation Measure 4.16-2 shall be implemented.				<i>See Mitigation Measure 4.16-2.</i>
4.16-10: Chevron shall repair any roads damaged as a result of Modernization Project construction activity to a structural condition equal to that which existed prior to construction activity. Prior to Project construction, City of Richmond Public Works Department or the Director's designated representative would document road conditions for all routes that would be used by Project construction-related vehicles. The City would also document road conditions after Project construction is completed. The pre- and post-construction conditions of the haul routes shall be reviewed, and Chevron or contractor(s), and staff of the Public Works Department, would enter into an agreement prior to construction that details the pre-construction conditions and the post-construction requirements of a rehabilitation program.	Chevron/Project Contractor	Prior to and after construction	City of Richmond Public Works Department	Document road conditions prior to construction and after construction, verification of any needed repairs
4.16-11: These intersections are maintained by the County, and thus the City has no independent jurisdiction to enforce any requirement to mitigate impacts at these intersections. However the City and Chevron shall coordinate with the Contra Costa County Department of Public Works to implement the following mitigation measure at the intersections of Richmond Parkway and Pittsburg Avenue and Richmond Parkway and Parr Boulevard:	Chevron and City of Richmond Public Works Department	During construction	City of Richmond Public Works Department	Coordination and verification, continuous during construction

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p><u>11a:</u> Collect traffic data at the Richmond Parkway/Pittsburg Avenue and Richmond Parkway/Parr Boulevard intersections two weeks after start of construction during the AM and PM peak commute periods (6:00 to 9:00 a.m. and 4:00 to 6:00 p.m.). If traffic data indicate that either or both intersections operate below the established standard (i.e., LOS E or LOS F), Chevron shall work with the director of the City of Richmond Public Works Department (or the director's designated representative) in coordination with the Contra Costa County Public Works Department to implement one or more of the of the following during the construction period:</p> <ol style="list-style-type: none"> 1. Provide modified traffic control during the peak AM and/or PM peak commute periods. The modified traffic control shall be accomplished by one or more of the following methods: <ol style="list-style-type: none"> a. Posting a technician at the intersection to manually operate signal controls (using the police key feature of standard traffic signal controllers) b. Programming an alternate signal timing plan that would be in operation during the peak commute periods c. Posting traffic control officers to manually control traffic movements during peak commute periods 2. Using cones and/or flaggers, temporarily reconfigure the lane assignments at the intersection during peak AM and/or PM peak commute periods Chevron shall pay the full cost of this measure, including costs of law 				

TABLE 5-1 MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
enforcement personnel to provide the traffic control under above-cited methods (1) or (2).				
<p>4.16-12: Chevron shall post the correct emergency information at the Richmond Lane rail spur crossings in accordance with GO 75-D and evidence of compliance shall be provided to the City prior to issuance of any building or grading permits.</p> <p>All construction located near the rail track within the Project site shall comply with the Public Utilities Commission’s General Orders (GO). Details on the Commission’s General Orders are located here: http://www.cpuc.ca.gov/crossings. These General Orders consist of:</p> <ul style="list-style-type: none"> ▪ GO 26-D: Clearances on railroads and street railroads as to side and overhead structures, parallel tracks and crossings ▪ GO 72-B: Construction and Maintenance - Standard types of pavement construction at railroad grade crossings ▪ GO 75-D: Warning Devices for at-grade railroad crossings ▪ GO 88-B: Alterations of railroad crossings ▪ GO 118: Construction, reconstruction and maintenance of walkways and control, of vegetation adjacent to railroad tracks. 	Chevron	Prior to grading permit issuance	City of Richmond Public Works Department	Review and verification prior to grading permit issuance.
4.17 UTILITIES AND SERVICES				
<i>Construction or operation of the Project would result in no-significant impacts related to utilities and services. No mitigation is required; however an improvement measure is recommended (see Table 5-2).</i>				

TABLE 5-2 IMPROVEMENT MEASURE MONITORING AND REPORTING PROGRAM

Improvement Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
<p>4.3-3: The Modernization Project shall implement reasonable and prudent practices to reduce PM₁₀ and PM_{2.5} emissions from construction equipment to further reduce this less-than-significant impact. Such practices may include, but are not limited to, the following:</p> <p>3a: Idling time of diesel-powered construction equipment shall be minimized.</p> <p>3b: Off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) shall be newer, since newer equipment may achieve a Project-wide fleet-average 20% NO_x reduction, and 45% PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.</p> <p>3c: All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NO_x and PM.</p> <p>3d: Contractors should use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines.</p>	Chevron/Project Contractor	During construction activities	Chevron, BAAQMD and, City of Richmond Building Division and Engineering Services Department	Review and verification, regularly during construction

TABLE 5-2 IMPROVEMENT MEASURE MONITORING AND REPORTING PROGRAM

Improvement Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
4.14 PUBLIC SERVICES				
<p>4.14-1: <u>1a:</u> During the construction phase, Chevron shall hire additional security services as necessary to compensate for the increase in personnel on-site. <u>1b:</u> Mitigation Measures 4.16-1 through 4.16-5 and Improvement Measure 4.16-1 through 9 (see Section 4.16, Transportation and Traffic) shall be implemented to reduce the demand for help from the Richmond Police Department for traffic-related issues.</p>	Chevron/Project Contractor	During construction	City of Richmond Public Safety Department	Review and verification, continuous during construction
<p>4.14-2: Chevron and the Richmond Fire Department shall establish an agreement that ensures training on new equipment and the acquisition of any necessary heavy equipment (e.g., large diameter hoses, large scale pumping equipment).</p>	Chevron/Project Contractor and City of Richmond Fire Department	During construction, prior to and during operations	City of Richmond Fire Department	Review and verification, continuous during construction, prior to and during operations
4.16 TRANSPORTATION				
<p>4.16-1 through 9: Chevron shall implement one or more of the following measures to further reduce Modernization Project construction impacts by reducing construction-related traffic trips during the AM and PM peak hours. <u>1 through 9a:</u> Chevron shall stagger the hours of operation of the craft labor so that the construction-related traffic would be distributed over the peak and non-peak hours of traffic operation. <u>1 through 9b:</u> Chevron shall promote the use of car-sharing by the craft labor. <u>1 through 9c:</u> Chevron shall coordinate the schedule among construction of the Modernization Project, construction of the other</p>	Chevron/Project Contractor	During construction	City of Richmond Public Works Department	Review and verification, continuous during construction

TABLE 5-2 IMPROVEMENT MEASURE MONITORING AND REPORTING PROGRAM

Improvement Measures	Implemented By	When Implemented	Monitored By	Monitoring Action and Frequency
projects, and the major facility turnaround to minimize combined traffic generation on any single day.				
4.17 UTILITIES AND SERVICES				
4.17-1: Prior to issuance of a demolition, grading, or building permit, Chevron shall submit a Debris Recovery Plan and Debris Recovery Report demonstrating that at least 50% of the construction and demolition debris generated on the jobsite is reused, recycled, or otherwise diverted. The Debris Recovery Plan shall be submitted to the City for review and approval.	Chevron/Project Contractor	Prior to issuance of a demolition, grading, or building permit	City of Richmond Building Division and Engineering Services Department	Review Debris Recovery Plan and Debris Recovery Report prior to issuance of a demolition, grading, or building permit

TABLE 5-3 EXCERPTS FROM CHEVRON LONG WHARF MARINE TERMINAL EIR – MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
<p>OS-3: Chevron’s response capability for containment of spills during transfer operations would result in adverse and significant impacts for spills greater than 50 bbls. Consequences would range from spills that can be contained during first response efforts with rapid cleanup (Class II), to those complex spills that result in a significant impact (Class I) with residual effects after mitigation.</p>	<p>OS-3b: Install tension-monitoring devices at Berth 1 to monitor mooring lines and avoid excessive tension or slack conditions that could result in spills. An alarm system (visual and sound) that incorporates communication to the control-building operator shall also be a part of the system. In addition, if any vessel drifts (surge or sway) more than 7 feet from its normal manifold or loading arm position at any other terminal berth, Chevron shall install, within 6 months after the incident, tension-monitoring devices at such berth.</p>	<p>CSLC monitor to observe devices after installation.</p>	<p>Reduces potential for damages and spills.</p>	<p>CSLC</p>	<p>Within 12 months of lease implementation, unless otherwise specified.</p> <p>If any vessel drifts more than 7 feet from its normal position, install within 6 months of occurrence.</p>
	<p>OS-3c: Install Allision Avoidance System (AAS) at the terminal to prevent damage to the pier and/or vessel during docking operations. Prior to implementing this measure, Chevron shall consult with the San Francisco Bar Pilots, the U.S. Coast Guard, and the staff of the CSLC and provide information that would allow the CSLC to determine, on the basis of such consultations and information regarding the nature, extent and adequacy of the existing berthing system, the most appropriate application and timing of an AAS at the Chevron Long Wharf.</p>	<p>CSLC monitor to observe devices after installation.</p>	<p>Reduces potential for damages and spills.</p>	<p>CSLC</p>	<p>Within 12 months of lease implementation, unless otherwise specified.</p>

TABLE 5-3 EXCERPTS FROM CHEVRON LONG WHARF MARINE TERMINAL EIR – MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
<p>OS-4: Group V oils have a specific gravity greater than 1 and do not float on the water; instead, they will sink below the surface into the water column or possibly to the bottom. Chevron states in their Spill Preparedness and Emergency Response Plan that no reasonable technology currently exists for a Group V response in the San Francisco Bay. Thus, a release of a Group V oil could result in significant impacts (Class I).</p>	<p>OS-4: Chevron shall confer with the California State Lands Commission (CSLC) regarding Group V oil spill response technology including potential new response equipment and techniques that may be applicable for use at the Long Wharf. Chevron shall work with the CSLC in applying these new technologies, as agreed upon, if recommended for this facility.</p>	<p>Chevron shall submit biannual report on status of new technology and equipment to CSLC.</p>	<p>Provides flexibility in lease to up MM and improve response capability.</p>	<p>CSLC</p>	<p>Submit biannual report for life of lease.</p>
<p>OS-6: Public areas are beyond the hazard footprint boundary; thus fires and explosions would not cause a public safety risk. However, the Wharf’s Operations Manual does not address fire emergency procedures and a fire and/or explosion could lead to a release of oil.</p> <p>Since MOTEMS became effective, February 6, 2006, Chevron is required to be consistent with the requirements of sections 3102F3.8 and 3108F2.2 of 24 CCR, Part 2, California Building Code, Chapter 31F for a MOT Fire Plan.</p>	<p>OS-6b: Chevron shall develop a set of procedures and conduct training and drills for dealing with tank vessel fires and explosions for tankers berthed at the Long Wharf. The procedures should include the steps to follow in the event of a tank vessel fire and describe how Chevron and the vessel will coordinate activities. The procedures shall also identify other capabilities that can be procured if necessary in the event of a major incident. The procedures shall be submitted to the U.S. Coast Guard and California State Lands Commission within 90 days of lease renewal.</p>	<p>Chevron shall prepare and submit procedures to CSLC and US Coast Guard for review and approval.</p>	<p>Provides planning and procedures for emergency response.</p>	<p>CSLC</p>	<p>Submit to CSLC within 90 days of lease implementation.</p>
<p>OS-7: Spills from accidents in the Bay could result in impacts to water quality or</p>	<p>OS-7a: Chevron shall participate in an analysis to determine the adequacy of the existing VTS in the Bay Area, if</p>	<p>This shall be implemented as a lease condition.</p>	<p>Reduces potential damage to</p>	<p>CSLC</p>	<p>Life of lease.</p>

TABLE 5-3 EXCERPTS FROM CHEVRON LONG WHARF MARINE TERMINAL EIR – MITIGATION MEASURE MONITORING AND REPORTING PROGRAM

Impact	Mitigation Measure	Monitoring/ Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
biological resources that could be significant adverse (Class II) impacts for those that can be contained during first response efforts; or significant adverse (Class I) impacts that would have residual impacts. While Chevron does not have legal responsibility for tankers it does not own, it does have responsibility to participate in improving general response capabilities.	such a study is conducted by a Federal, State, or local agency during the life of the lease. Agencies such as the San Francisco Bay Harbor Safety Committee often conduct studies of safety issues within the Bay Area. As vessel traffic increases in and around the Bay Area and as technology improves, it may be necessary and feasible to upgrade and expand the VTS in and around the Bay Area. Chevron shall participate in this analysis and contribute a pro-rata share toward the upgrade and expansion of the system, if required to do so by the CSLC.	Chevron shall demonstrate to CSLC their participation in program strategies to protect sensitive resources.	resources.		
	OS-7b: Chevron shall respond to any spill from a vessel traveling to or from the wharf, moored at its wharf, related in any way to the wharf, or carrying cargo owned by Chevron, as if it were its own, without assuming liability, until such time as the vessel’s response organization can take over management of the response actions in a coordinated manner.	This shall be implemented as a lease condition. CSLC monitor to observe emergency actions.	Reduces potential damage to resources.	CSLC	Life of lease.

