

WILD GOOSE PHASE 3 GAS STORAGE EXPANSION

**SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT**

– *Draft* –

JUNE 2010



Prepared for:



State of California  
Public Utilities  
Commission

Prepared by:  **ecology and environment, inc.**  
Global Environmental Specialists

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# Executive Summary

## Introduction

The Wild Goose Gas Storage Project involves past initial development and expansion, and potential future development, of a depleted and formerly abandoned underground natural gas field (the Wild Goose Gas Field, or field) in Butte County, California. The field is used for natural gas storage by Wild Goose Storage, LLC (Wild Goose, or the applicant). Initial development of the Wild Goose Gas Storage Facility (Wild Goose Facility) took place between April 1997 and April 1999 (the Base Project). An expansion (the Phase 2 Expansion) was approved and took place starting in 2002. The Base Project was approved by the California Public Utilities Commission (CPUC) through Certificate of Public Convenience & Necessity (CPCN) Decision 97-06-091, which was amended by Decision 02-07-036 for the Phase 2 Expansion. To evaluate the Base Project under the California Environmental Quality Act (CEQA), an Initial Study and Mitigated Negative Declaration were prepared in 1997; for the Phase 2 Expansion, the Wild Goose Storage, Inc. Expansion Project Environmental Impact Report (2002 EIR) was prepared; the 2002 EIR was certified in 2002.

Wild Goose is now proposing the Wild Goose Phase 3 Gas Storage Expansion (Phase 3 Expansion), to extend the Wild Goose Facility's capabilities beyond those currently certificated. The expansion would allow fuller use of the injection, withdrawal, and storage capacity of the most suitable natural gas storage reservoirs in the field. The expansion would increase cumulative total injection capacity from 450 million cubic feet per day (MMcfd) to approximately 650 MMcfd, increase withdrawal capacity from 700 to approximately 1,200 MMcfd, and increase storage from approximately 20 billion cubic feet (Bcf) to 50 Bcf.

Wild Goose submitted an Application to Amend its CPCN and an accompanying Proponent's Environmental Assessment (PEA) to the CPUC on April 24, 2009. The application and accompanying PEA identified the proposed expansion and included a preliminary assessment of potential environmental impacts. During the review of the PEA and application, the CPUC requested clarification, and through a series of responses, the applicant submitted additional data.

This supplement to the 2002 EIR (Supplemental EIR, or SEIR) has been prepared to include information and analysis for the construction and operation of the Phase 3 Expansion; present mitigation measures which, if adopted by the CPUC, will avoid or minimize adverse significant environmental impacts; and describe changes in circumstances or new information since the 2002 EIR was prepared.

## Background

### Phase 3 Expansion Description

The Phase 3 Expansion would increase the physical footprint and current operations at the Wild Goose Facility, and would consist of the following four components:

1. Construction, operation, and maintenance of an expansion to the Remote Facility Site (RFS) in Butte County;
2. Reconductoring of up to 6 miles of electrical distribution line east of the RFS, by PG&E, in Butte County;
3. Modifications to the Delevan Interconnect Site in Colusa County; and

4. PG&E’s installation of up to three new hot tapped pipeline connections between the Wild Goose Connection Pipeline and PG&E Lines 400 and 401, near the location of the Delevan Interconnect Site (in Colusa County), to increase permitted storage and operational capacity.

The Phase 3 Expansion would increase the current injection capacity of the Wild Goose Facility from 450 to 650 million cubic feet per day (MMcfd), the withdrawal capacity from 700 to 1,200 MMcfd, and the working gas storage capacity from 29 to 50 Bcf. Elements of the Phase 3 Expansion would be consistent with the 2002 facility improvements, and would extend facility operations in a similar way.

**Table ES-1 Wild Goose Maximum Storage, Injection, and Withdrawal Limits for the Base Project, Phase 2 Expansion, and Phase 3 Expansion**

	Initial (Base Project)	Existing	Proposed
Storage	14 Bcf	29 Bcf	50 Bcf
Injection	80 MMcfd	450 MMcfd	650 Mmcfd
Withdrawal	200 MMcfd	700 MMcfd	1,200 MMcfd

A map showing the vicinity of the Phase 3 Expansion is presented in Figure ES-1.

### **Objectives of Phase 3 Expansion**

The continuing objective of the Wild Goose Facility is to provide highly flexible natural gas storage services to a variety of customers, which includes gas utilities, electric utilities, independent electric generators, gas marketers, gas producers, industrial gas users, and other wholesale and retail gas customers. The purpose of the Phase 3 Expansion is to capture the incremental storage, injection and withdrawal capacity of the natural gas storage facility to meet customer demands into the foreseeable future.

The Phase 3 Expansion would work towards achieving several goals related to the statewide need for additional natural gas supplies, as articulated by the CPUC. These goals include:

1. Ensuring the reliability of natural gas supplies to the State;
2. The development of in-state natural gas storage facilities, identified as a “key action” in the CPUC’s Energy Action Plan II (2005); and
3. Ensuring the availability in the State of low-carbon fossil fuels, as a means of working towards the goals of California Assembly Bill 32 (the California Global Warming Solutions Act of 2006).

### **Approach to Environmental Review**

As lead agency, the CPUC must determine through the CEQA process whether the Phase 3 Expansion would result in significant impacts to the environment, and whether those impacts could be avoided, eliminated, compensated for, or reduced to less than significant levels. This SEIR will become part of a body of evidence that the CPUC will use in deciding whether to approve Wild Goose’s application.

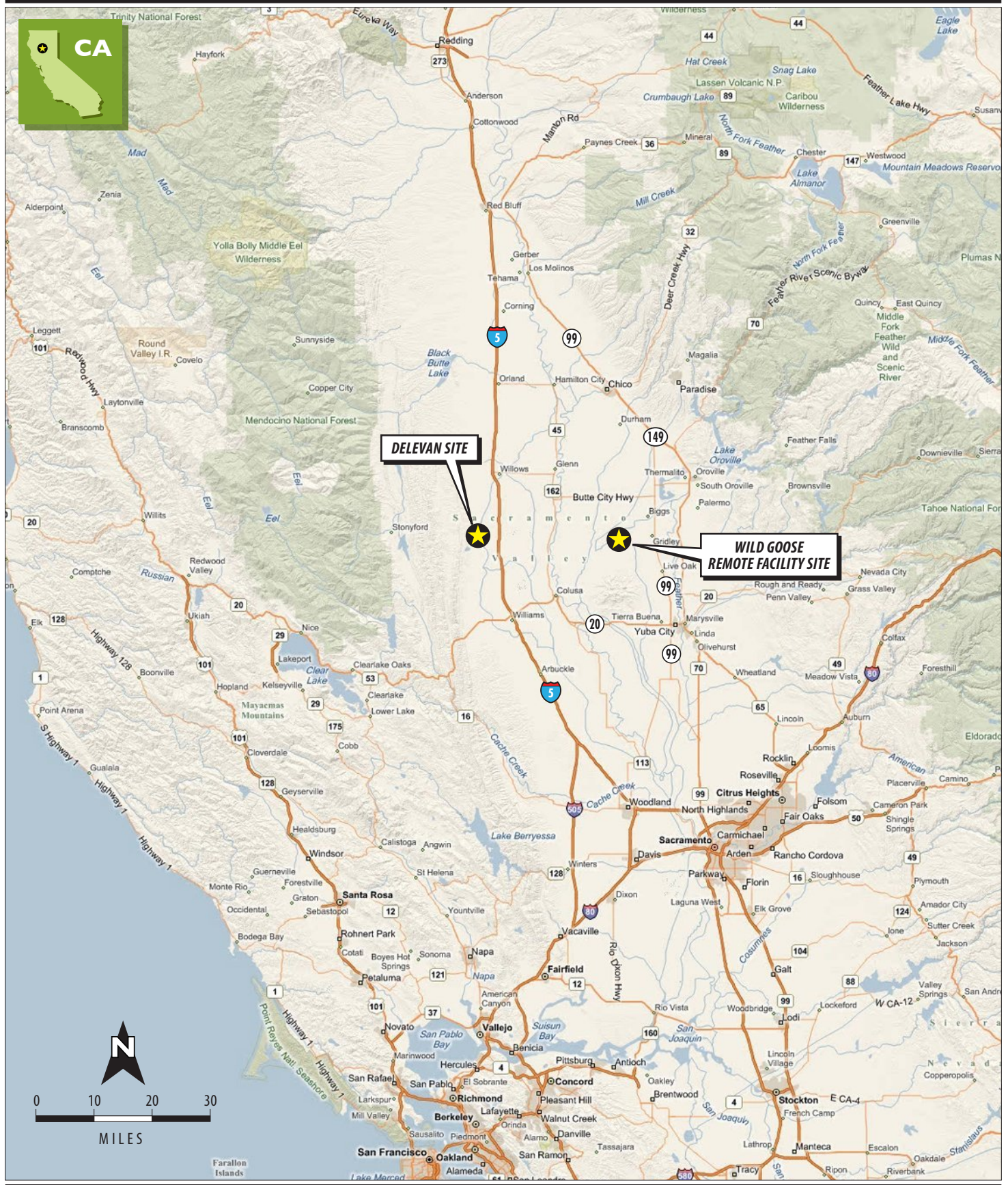


Figure ES-1  
Project Vicinity

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The CPUC is seeking comments on this Draft SEIR. The CPUC will respond to comments on the Draft Supplemental EIR, conduct additional analysis as necessary, and modify mitigation measures as appropriate. If the CPUC approves the Phase 3 Expansion, CPUC staff would closely monitor Wild Goose's compliance with the requirements imposed by the mitigation measures.

### **Purpose of the Supplemental EIR**

This Supplemental EIR provides information and analysis for the Phase 3 Expansion and describes changes in circumstances or new information available since the 2002 EIR was prepared. According to CEQA Guidelines Section 15162, a lead agency may prepare an SEIR if modifications to a previous project would require inclusion of new information, or changes to the circumstances under which the project is undertaken occur, such that new, potentially significant impacts are identified and must be addressed. According to CEQA Guidelines Section 15163, an SEIR may be prepared when only minor additions or changes would be necessary in order for the previous EIR to adequately apply to the project in the changed situation. Considerations in preparing an SEIR include the following CEQA Guidelines from Section 15163:

- The supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project as revised;
- A supplement to an EIR will be given the same kind of notice and public review as is given to a draft EIR under the CEQA Guidelines;
- A supplement to an EIR may be circulated by itself without recirculating the previous draft or final EIR; and
- When the agency decides whether to approve the project, the decision-making body will consider the previous EIR as revised by the SEIR. A finding will be made for each significant effect shown in the previous EIR as revised.

As required by CEQA, this SEIR examines the expected additional individual and cumulative impacts of the proposed expansion, and identifies ways to minimize potential adverse impacts (mitigation measures).

The CPUC is the lead agency in preparing this SEIR, and has principal responsibility for approving or denying the Phase 3 Expansion. The CPUC has prepared this SEIR to provide the public and responsible agencies with information about the potential effects of the additional expansion on the local and regional environment. This SEIR was prepared in compliance with CEQA and the CEQA Guidelines.

### **Notice of Preparation**

In accordance with the CEQA Guidelines, the CPUC prepared a Notice of Preparation (NOP) for this SEIR (see Appendix B). The NOP was mailed on October 7, 2009, to local, state, and federal agencies (see Appendix B for mailing list) and the State Clearinghouse for a 30-day review period. The NOP provided a general description of the Phase 3 Expansion and a summary of the main regulations and permit conditions applicable to its development and operation. The CPUC received one comment letter on the NOP, from the Central Valley Regional Water Quality Control Board. This comment letter is presented in Appendix B.

### **Areas of Potential Controversy**

One area of potential controversy was identified for the Phase 3 Expansion through the public agency participation process. This area of potential controversy is impacts from conversion of farmland to the expanded RFS use.

## Impacts and Mitigation Measures

The CPUC concluded that the Phase 3 Expansion has the potential to result in significant environmental impacts. Because potentially significant impacts were only identified for Air Quality and Biological Resources, the SEIR format was considered appropriate for the Phase 3 Expansion, and only those two resource topics are included in the main text of the following discussion. Less than significant impacts associated with the following resource areas are discussed in Appendix A, Focusing Initial Study:

- A.1 Aesthetic Resources
- A.2 Agriculture and Forestry Resources
- A.3 Cultural Resources
- A.4 Geology, Soils, and Mineral Resources
- A.5 Hazards and Hazardous Materials
- A.6 Hydrology and Water Quality
- A.7 Land Use and Planning
- A.8 Noise
- A.9 Population and Housing
- A.10 Public Services and Socioeconomics
- A.11 Recreation
- A.12 Transportation and Traffic
- A.13 Utilities and Service Systems

Table ES-2, located at the end of this Executive Summary, summarizes the environmental impacts that could result from implementation of the Phase 3 Expansion. Table ES-2 also includes mitigation measures that have been identified to minimize or avoid these impacts, as revised or new mitigation measures. Any additional mitigation measures identified in the Focusing Initial Study analysis are also included in the table. Additions and deletions are marked in underline and strikeout text, respectively.

## Cumulative and Growth-Inducing Impacts

The CEQA Guidelines require that potential cumulative impacts be assessed by developing either a list of past, present, and probable future projects that would produce related or cumulative effects in combination with the project, or a summary of projections contained in adopted general plans or related planning documents. The discussion of cumulative impacts in Chapter 4 of this Draft SEIR describes the potential cumulative impacts for each resource topic, updating information as necessary from the 2002 EIR. An analysis of whether the Phase 3 Expansion would result in growth-inducing impacts is also presented in Chapter 4.

## Major Conclusions of the Draft SEIR

As discussed in this Draft SEIR, no significant and unavoidable environmental impacts have been identified that would result from construction and operation of the Phase 3 Expansion. Impacts of the Phase 3 Expansion identified in the main text of the SEIR that would be less than significant after implementation of mitigation measures include the following:

**Air Quality.** Impacts were identified related to the potential of the Phase 3 Expansion to conflict with or obstruct implementation of the applicable air quality plan; and to generate greenhouse gas emissions, either directly or indirectly.

**Biological Resources.** Impacts were identified related to the potential of the Phase 3 Expansion to have an effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the



California Department of Fish and Game or U.S. Fish and Wildlife Service; to have an effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; and to interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

The mitigation measures that would be required to reduce these impacts to less-than-significant levels are identified and described in Sections 3.2 and 3.3 of the SEIR.

Impacts of the Phase 3 Expansion identified in the Focusing Initial Study (Appendix A of the SEIR) that would be less than significant after implementation of mitigation measures include the following:

**Agriculture and Forestry Resources.** Impacts were identified related to the potential of the Phase 3 Expansion to convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and monitoring Program of the California Resources Agency, to non-agricultural use.

**Cultural Resources.** Impacts were identified related to the potential of the Phase 3 Expansion to cause a change in the significance of a historical resource as defined in Section 15064.5; and to cause a change in the significance of an archaeological resource pursuant to Section 15064.5.

**Hazards and Hazardous Materials.** Impacts were identified related to the potential of the Phase 3 Expansion to create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

**Hydrology and Water Quality.** Impacts were identified related to the potential of the Phase 3 Expansion to place within a 100-year flood hazard area structures which would impede or redirect flood flows; and to expose people or structures to a risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

**Noise.** Impacts were identified related to the potential of the Phase 3 Expansion to expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

The mitigation measures that would be required to reduce these impacts to less-than-significant levels are identified and described in Appendix A of the SEIR.

In addition, Table ES-2, Summary of Impacts, provides a summary of all identified Phase 3 Expansion impacts and associated mitigation measures.

## Opportunities for Public Comment

The CPUC invites all interested persons to provide comments on the accuracy and completeness of the SEIR. Comments can be provided in writing to the CPUC at the address identified on the cover sheet of this SEIR. A public meeting will also be held to obtain public and agency input on the Draft SEIR. All written comments on the Draft SEIR received during the public comment period will be addressed in the Final SEIR.

## **Draft Mitigation Monitoring and Reporting Program**

A draft Mitigation Monitoring and Reporting Program (MMRP) for the Phase 3 Expansion is contained in Chapter 6 of this SEIR. A final MMRP will be prepared if the CPUC approves the Phase 3 Expansion. The final MMRP will incorporate any changes to the Phase 3 Expansion or mitigation measures that are made as a result of the public review process and consideration of the Phase 3 Expansion by the CPUC.

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
Aesthetics	<i>No new impacts or mitigation measures</i>		
Agriculture and Forestry Resources	Potential to convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and monitoring Program of the California Resources Agency, to non-agricultural use.	<p><u>PHASE 3 MM AG-1. The applicant will purchase or obtain compensatory mitigation for the conversion of Prime Farmland and Farmland of Statewide Importance at a ratio of one unit of mitigation to one unit of agricultural land converted. Compensatory mitigation options for the conversion of FMMP designated farmland include one or more of the following:</u></p> <ol style="list-style-type: none"> <li>1. <u>Purchase of mitigation credits from an agricultural mitigation bank located within Butte County;</u></li> <li>2. <u>Placement of an easement or other restrictions to non-agricultural uses on existing agricultural land in Butte County; and/or</u></li> <li>3. <u>Purchase of wetlands mitigation credits from an appropriate wetlands mitigation bank at a ratio of two units of mitigation to one unit of agricultural land converted.</u></li> </ol>	<u>Less Than Significant</u>
Air Quality and Greenhouse Gas Emissions	Potential to conflict with or obstruct implementation of the applicable air quality plan.	<p><u>PHASE 3 MM AIR-1: To address potentially significant construction emissions at the RFS and the PG&amp;E reconductoring component area, the applicant and PG&amp;E will apply appropriate BCAQMD Best Available Mitigation Measures (BAMMs) and/or offsite measures such as purchase of offsets for NO<sub>x</sub> and PM<sub>10</sub> emissions, as presented in the BCAQMD CEQA Air Quality Handbook (2008), in order to reduce construction emissions to a less than significant level. This measure will apply to emissions of NO<sub>x</sub> and PM<sub>10</sub> in the years 2011 and 2012. The BCAQMD will include appropriate permit conditions on the Phase 3 Expansion ATC for the RFS to ensure that BAMMs and/or offsite measures such as purchase of offsets for NO<sub>x</sub> and PM<sub>10</sub> emissions chosen are adequate and applied.</u></p>	<u>Less Than Significant</u>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<p><u>PHASE 3 MM AIR-2: To address potentially significant construction emissions at the Delevan Site, and in coordination with the Colusa County Air Pollution Control District (CCAPCD), the applicant will purchase NO<sub>x</sub> offsets for exceedances over the CCAPCD threshold limit during the construction period. Based on calculations of NO<sub>x</sub> pounds per day emissions for the construction phase, total NO<sub>x</sub> emissions are anticipated to exceed the CCAPCD limit of 25 pounds per day by a total of approximately 925 pounds over the construction period. The applicant will be required to purchase NO<sub>x</sub> offset credits for this amount as part of Authority to Construct permit conditions, and provide documentation of the offsets purchase to the CPUC and the CCAPCD prior to construction activities.</u></p>	<p><u>Less Than Significant</u></p>
		<p><u>PHASE 3 MM AIR-3: To address potentially significant operations emissions at the RFS, the applicant will purchase offsets for NO<sub>x</sub> and ROG emissions, either from existing market-based offsets within Butte County, or from the BCAQMD community offset bank, as available. Based on the calculations of NO<sub>x</sub> and ROG pounds per day emissions for the construction phase, these emissions are anticipated to exceed the Level B BCAQMD 25 pounds per day limit by a total of approximately 23 tons of NO<sub>x</sub> and 15 pounds of ROG over the entire construction period. The BCAQMD will include appropriate permit conditions in the Phase 3 Expansion Permit to Operate to ensure that offsets for NO<sub>x</sub> and PM<sub>10</sub> emissions are adequate and applied.</u></p>	<p><u>Less Than Significant</u></p>
	<p>Potential to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.</p>	<p><u>PHASE 3 MM AIR-4: Prior to construction of the Phase 3 Expansion, the applicant will enter into an agreement with PG&amp;E to participate in PG&amp;E's Climate Smart™ Program, to provide 50 percent of the electricity used at the RFS annually (approximately 900 tons CO<sub>2</sub>e) from renewable energy sources. A copy of the agreement between the applicant and PG&amp;E will be provided to CPUC prior to the start of operation of the expanded RFS. Annual reports on the applicant's participation in the program will also be submitted by the applicant to CPUC.</u></p>	<p><u>Less Than Significant</u></p>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<p><u>PHASE 3 MM AIR-5: Until the applicant can participate in an appropriate, verifiable, state-wide cap and trade program, the applicant will obtain and retire, by the end of each year of Phase 3 Expansion construction and operation, sufficient carbon credits to fully offset GHG emissions ("carbon offsets") below the 10,000 metric tons CO<sub>2</sub>e level. Renewable Energy Certificates (RECs) and TRECS (Tradable RECs) do not qualify as GHG offsets. Carbon offsets will apply to Phase 3 Expansion construction GHG emissions (amortized over 30 years) as well as direct operational GHG emissions. Prior to completion of project construction, the applicant will prepare a detailed written summary of the carbon offsets, including offset type, location, calculation methodology protocol employed, and registration status. In addition, prior to completion of project construction, the applicant will provide to CPUC an independent verification opinion statement(s) for the carbon offsets, from a verification body registered with the California Climate Action Registry, ANSI, or the CARB.</u></p> <p><u>Offsets purchased from a third party or developed by the applicant must meet at least one of the following requirements:</u></p> <ol style="list-style-type: none"> <li>1. <u>Offset project is located within California;</u></li> <li>2. <u>Offset project is located in jurisdictions that hold current, specific agreements with California (such as the Climate Action Reserve), or exist in the context of an ISO-compliant regional trading system like that being developed in the Western Climate Initiative or other regional program; and/or</u></li> <li>3. <u>Offset project is an internally developed reduction measure following a recognized protocol (such as the Climate Action Reserve, the Voluntary Carbon Standard, or the Chicago Climate Exchange). Some potential offset projects of this type include:</u> <ul style="list-style-type: none"> <li>• <u>Fuel switching in applicant-owned equipment;</u></li> <li>• <u>Energy efficiency upgrades beyond business as usual;</u></li> </ul> </li> </ol>	<p><u>Less Than Significant</u></p>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<ul style="list-style-type: none"> <li>• <u>Implementation of a quantifiable carpooling program above and beyond what is currently in place; and</u></li> <li>• <u>Sequestration and/or destruction of GHG conducted in accordance with any protocol available at the time of construction from the Climate Action Reserve, the Voluntary Carbon Standard, or the Chicago Climate Exchange.</u></li> </ul> <p><u>Any carbon offset either purchased or developed by the applicant through another entity will either be registered in, or developed in accordance with a protocol for, an established Carbon Reduction/Sequestration Project. Established projects and protocols include those provided by recognized organizations, such as the Climate Action Reserve, the Voluntary Carbon Standard, or the Chicago Climate Exchange, that can provide a reasonable level of assurance that GHG reductions are real, additional, permanent, and verifiable. If the applicant were to develop a carbon offset project without registering it with one of the above-referenced registration bodies, the applicant will demonstrate to CPUC that the offset satisfies the four additionality tests as outlined in the UNFCCC Additionality Tool, and will obtain an independent evaluation by a qualified third party confirming that the offset meets additionality testing requirements.</u></p> <p><u>Prior to the start of project operation, the applicant will submit a project design document describing baseline procedures and emissions levels as well as projected levels of emissions reductions/offsets to CPUC. The design document will include the requirement that the applicant submit a report annually to CPUC documenting the previous year's offset activities and purchases. The annual report will be independently verified by an ANSI-accredited GHG emissions reduction verification body.</u></p>	

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
Biological Resources	Potential to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	<p><u>PHASE 3 MM BIO-1: The following general measures will reduce impacts to all sensitive wildlife species during Phase 3 Expansion construction activities:</u></p> <ol style="list-style-type: none"> <li>1. <u>Preconstruction surveys will be conducted in suitable habitat in and adjacent to the Phase 3 Expansion areas at the RFS and the Delevan Site during the appropriate survey windows. Preconstruction surveys will be conducted in suitable habitat no more than 30 days in advance of construction. These surveys shall be conducted using standard approved methods, including the California Burrowing Owl Consortium Survey Protocol and Mitigation Guidelines (1993), the Swainson's Hawk Technical Advisory Committee Methodology for Nesting Surveys in California's Central Valley (TAC 2000), and the USFWS Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Species (1996).</u></li> <li>2. <u>Construction employees shall strictly limit activities, including movement of vehicles, equipment, and construction materials, to the Phase 3 Expansion footprint and designated staging areas and routes of travel within the Phase 3 Expansion footprint.</u></li> <li>3. <u>The applicant shall not stockpile brush, loose soils, excavation spoils, or other similar debris material within sensitive habitats.</u></li> <li>4. <u>Sensitive plant surveys will be conducted prior to construction within suitable habitat in and adjacent to Phase 3 Expansion work areas and during the appropriate survey window.</u></li> <li>5. <u>Where sensitive plants occur within the construction area, the work area will be adjusted in order to minimize impacts.</u></li> <li>6. <u>Exclusion fencing will be provided to protect sensitive plants that occur within 50 feet of construction work areas.</u></li> </ol>	<u>Less Than Significant</u>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<p>7. <u>A qualified biologist will monitor construction to ensure that no sensitive wildlife species inadvertently enter the work area. Should a sensitive species be found, the appropriate resource agencies will be notified within 24 hours (USFWS and CDFG). Animals will be allowed to passively exit the work areas, and construction will be halted as needed to accomplish this.</u></p>	
		<p><u>PHASE 3 MM BIO-2: The following specific measures will reduce impacts to the wildlife species described below during Phase 3 Expansion construction activities:</u></p> <p>1. <u>Reptiles and Amphibians. The following measures will be supplemented with measures prescribed in the Phase 2 Expansion USFWS Biological Opinion and CDFG Take Permit for the giant garter snake:</u></p> <ul style="list-style-type: none"> <li>• <u>Preconstruction surveys for giant garter snake (RFS, reconductoring area, and Delevan Site), northwestern pond turtle (RFS and Delevan Site), and western spadefoot toad (RFS and Delevan Site) will be performed within 24 hours prior to construction. If a giant garter snake or any other sensitive species is found, it will be allowed to escape on its own, or will be removed by an authorized biologist and relocated to suitable habitat. USFWS and CDFG will be notified whenever a sensitive reptile or amphibian is handled by an authorized biologist.</u></li> <li>• <u>Onsite monitoring biologists will obtain authorization from the USFWS and CDFG to handle the giant garter snake for the purposes of removing individuals during construction and operation of the Phase 3 Expansion components.</u></li> <li>• <u>A qualified biologist will monitor construction to ensure that no sensitive reptile or amphibian species inadvertently enter the work area.</u></li> </ul>	<p><u>Less Than Significant</u></p>



Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<ul style="list-style-type: none"> <li>• <u>Other than isolation dike construction and irrigation flow culvert installation, earthwork adjacent to flooded rice fields and other potential habitat will be confined to May through September unless otherwise authorized by the USFWS and CDFG.</u></li> </ul> <p>2. <u>Raptors and Other Sensitive Nesting Species. Preconstruction surveys will be conducted in suitable habitat at the RFS and Delevan Site to determine whether raptors or other sensitive bird species are nesting within or near the Phase 3 Expansion construction areas. The construction schedule or activities will be modified during nesting periods to preclude impacts. The general bird breeding season for this area is late February to early July. If it is not possible to adjust the schedule or construction activity, the following measures will be implemented:</u></p> <ul style="list-style-type: none"> <li>• <u>Construction within 0.5 miles of active Swainson's hawk nests will be avoided between April 15 and August 1, if feasible. If not feasible, nesting hawks within 0.5 miles will be monitored, construction activities will be halted if signs of disturbance (i.e., birds show signs of upset, repeatedly leaving the nest as a result of construction) are noted as determined by a qualified biologist, and CDFG will be consulted to determine possible options.</u></li> <li>• <u>A minimum 500-foot buffer will be maintained for other tree-nesting species such as white-tailed kites and the loggerhead shrike until after the young have fledged.</u></li> <li>• <u>A minimum 250-foot buffer will be maintained for ground-nesting or shrub-nesting species (northern harriers, tricolored blackbird, black tern, white-faced ibis, burrowing owl, and loggerhead shrikes) until after nesting is complete.</u></li> </ul>	

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<ul style="list-style-type: none"> <li>• <u>Operations blowdowns and emergency shutdown valve blowdowns shall be routed into silencers.</u></li> <li>• <u>The applicant will reduce the gas/volume in the pipeline to a minimum prior to a planned maintenance blowdown.</u></li> </ul> <p>3. <u>Burrowing Owls. Detailed preconstruction surveys will be conducted at the RFS and Delevan Site within 30 days prior to construction by a qualified biologist for burrowing owl within suitable habitat prior to the breeding season (February 1 through August 31). All areas within 250 feet of the Phase 3 Expansion areas at the RFS and Delevan Site, including road shoulders, will be surveyed. Where Phase 3 Expansion ground-disturbing activities will occur prior to the burrowing owl breeding season, all burrows, holes, crevices, or other cavities in suitable habitat in the Phase 3 Expansion areas at the RFS and Delevan Site, within the limits of proposed ground disturbance, will be thoroughly inspected by a qualified biologist before being collapsed. This will discourage owls from breeding on the construction site. Other species using burrows will be relocated prior to collapsing burrows.</u></p> <p><u>To the extent feasible, Phase 3 Expansion construction at the RFS and Delevan Site will avoid active burrows. If it is not possible to avoid burrowing owls, the following measures will be implemented:</u></p> <ul style="list-style-type: none"> <li>• <u>If burrowing owls occur within the proposed construction area, a 250-foot exclusion zone will be maintained around the burrows until relocation is complete or until chicks have fledged. Passive relocation will be used during the non-breeding season (September 1 through January 31) if it is determined that construction activities would disturb owls. Passive relocation will include installing one-way doors on the entrances of burrows located within the Phase 3 Expansion area.</u></li> </ul>	

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<ul style="list-style-type: none"> <li>• <u>The occurrence and location of any burrowing owl will be documented by the authorized biologist, who will report all incidents of disturbance or harm to burrowing owls within 24 hours to the appropriate resource agencies (USFWS and CDFG).</u></li> <li>• <u>Under the supervision of a qualified biologist, burrows within the proposed construction area will be excavated using hand tools and then refilled to prevent reoccupation. If any owls are found during the excavation, the excavation will cease and the owls will be allowed to escape.</u></li> <li>• <u>For each burrow excavated, one natural or artificial burrow will be provided in the adjacent habitat outside the 250-foot buffer zone.</u></li> </ul>	
		<p><u>PHASE 3 MM BIO-3: For the reconductoring component area, if any vegetation removal occurs during the typical avian nesting season (February 1 – August 31), a pre-disturbance survey for common and special-status bird species protected under the MBTA and California Fish and Game Codes will be conducted, using standard approved methods, including the California Burrowing Owl Consortium Survey Protocol and Mitigation Guidelines (1993) and the Swainson’s Hawk Technical Advisory Committee Methodology for Nesting Surveys in California’s Central Valley (TAC 2000). The survey will be conducted by a qualified biologist no more than two weeks prior to the onset of vegetation removal. If active nests are found within or adjacent to proposed work areas during the avian nesting season, disturbance or removal of the next will be avoided until the young have fledged and the nest is no longer active. The project biologist will determine the appropriate buffer distance between work areas and active nests in coordination with the CDFG and depending on the species, site conditions, and proposed work activities near the active nest.</u></p>	<p><u>Less Than Significant</u></p>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
	<p>Potential to have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.</p>	<p><b>PHASE 3 MM BIO-4:</b> The following measures will reduce impacts related to wetland fill at the RFS during Phase 3 Expansion construction activities:</p> <ol style="list-style-type: none"> <li>1. <u>Erosion and sediment control measures (e.g., silt fencing, erosion control fabric or other measures) will be implemented at all locations where construction occurs within or directly adjacent to aquatic features.</u></li> <li>2. <u>Sediment stockpiling will be a minimum of 50 feet from wetland/drainage systems.</u></li> <li>3. <u>Loss of wetland habitat will be compensated at an appropriate ratio. This ratio will likely be 2:1, but will be determined by resource and permitting agencies (USACE, USFWS, and CDFG) during consultation.</u></li> </ol>	<p><u>Less Than Significant</u></p>
		<p><b>PHASE 3 MM BIO-5:</b> For the reconductoring component area, work will take place from existing paved surfaces or other maintained areas that lack wetland habitats. For the wetland areas that have been identified in the reconductoring Biological Assessment (TRC 2010) along West Evans Reimer Road and Pennington Road, the following measures will be taken:</p> <ol style="list-style-type: none"> <li>1. <u>A wetlands biologist will delineate the edges of each wetland area using USACE delineation methodology (USACE, 1987). Once wetland boundaries have been accurately identified, a 100-foot buffer area will be established around each wetland area. Buffer areas will be demarcated with lath and flagging, and no construction materials, equipment or vehicles will be permitted in this area.</u></li> <li>2. <u>Erosion and sediment control measures described under MM BIO-4 will be implemented to protect wetland habitats.</u></li> </ol>	<p><u>Less Than Significant</u></p>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
	<p>Potential to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.</p>	<p><u>PHASE 3 MM BIO-6: The following measures will reduce impacts to downstream fisheries and aquatic habitat at the RFS during Phase 3 Expansion construction activities:</u></p> <ol style="list-style-type: none"> <li><u>1. The applicant will participate in ongoing consultations with CDFG and USFWS to establish a rate of withdrawal such that unacceptable impacts to downstream fisheries do not occur. To this end, the applicant will adhere to the water withdrawal rate, volume, and timing established through the agency consultation process. The applicant will also submit documented evidence that the stipulated conditions of water withdrawal have been met to both CDFG and USFWS.</u></li> <li><u>2. In coordination with CDFG and USFWS, the applicant shall conduct downstream monitoring to verify that withdrawal volume does not adversely impact fisheries or the aquatic life components that support special status aquatic species.</u></li> </ol>	<p><u>Less Than Significant</u></p>
<p>Cultural Resources</p>	<p>Potential to cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.</p>	<p><u>PHASE 3 MM CULT-1: To avoid impacts to unknown historical resources in the area of the reconductoring component, PG&amp;E or its contractor will, prior to and during reconductoring activities:</u></p> <ol style="list-style-type: none"> <li><u>1. Retain a qualified archeologist to conduct a cultural resources survey to identify all potentially eligible historic resources present on the surface of the reconductoring site. The survey will be conducted at 10 meter intervals and any cultural resources that are identified will be subsequently avoided during construction. All cultural resources identified will be recorded on Department of Parks and Recreation (DPR) 523 series forms and evaluated for their eligibility for inclusion in the NRHP and CRHR. The archaeologist will clearly mark the boundaries of any identified resources, including an additional 50-foot buffer area, around all identified sites, both on the ground and on construction maps. These boundaries will serve as construction exclusion zones where no reconductoring activities will be undertaken.</u></li> <li><u>2. Retain an independent qualified archeologist for the duration of</u></li> </ol>	<p><u>Less Than Significant</u></p>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<p><u>the reconductoring, to serve as a periodic site monitor during ground-disturbing and other activities that may affect historic resources at the site. The timing and frequency of monitoring will be at the discretion of the archeologist.</u></p> <p>3. <u>Notify construction supervisory personnel of the existence of all marked historical resources sites, and instruct supervisory personnel to keep personnel and equipment away from these areas.</u></p>	
	<p>Potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.</p>	<p><u>PHASE 3 MM CULT-2: To avoid impacts to known and unknown archaeological resources in the area of the reconductoring component, PG&amp;E or its contractor will, prior to and during reconductoring activities:</u></p> <p>1. <u>Retain a qualified archeologist to conduct an archaeological resources survey to identify all potentially eligible archaeological resources present on the surface of the reconductoring site. The survey will be conducted at 10 meter intervals and any archaeological resources that are identified will be subsequently avoided during construction. All archaeological resources identified will be recorded on DPR 523 series forms and evaluated for their eligibility for inclusion in the NRHP and CRHR. The archeologist will clearly mark the boundaries of any identified resources, including an additional 50-foot buffer area, around all identified sites, both on the ground and on construction maps. These boundaries will serve as construction exclusion zones where no reconductoring activities will be undertaken.</u></p> <p>2. <u>Retain an independent, qualified archeologist for the duration of the reconductoring, to serve as a periodic site monitor during ground-disturbing and other activities that may affect archaeological resources at the site. The timing and frequency of monitoring will be at the discretion of the archeologist.</u></p> <p>3. <u>Notify construction supervisory personnel of the existence of all the indentified and marked prehistoric site, as well as other</u></p>	<p><u>Less Than Significant</u></p>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<u>marked archaeological sites, and instruct supervisory personnel to keep personnel and equipment away from these areas.</u>	
<b>Geology, Soils, and Mineral Resources</b> <i>No new impacts or mitigation measures</i>			
<b>Hazards and Hazardous Materials</b>	Potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	<b>Mitigation Measure 3.7-3.</b> <del>At the end of each injection cycle</del> <u>In the fall of each year, WGSJ shall conduct surface gas monitoring and vegetation inspections at each abandoned well within the original productive area. If gas is detected, samples will be collected, if possible, and analyzed to determine its source or origin. If a leak is indicated by the data, the necessary remedial actions will be implemented consistent with DOGGR procedures outlined in California Code of Regulations § 1723 et. seq. All monitoring and sampling results will be submitted to the DOGGR. Any surface disturbance associated with implementing remedial actions shall be conducted consistent with the wetland impact minimization and mitigation measures specified under Impact 3.4- 4 on page 3.4-27.</u>	Less Than Significant
		<b>PHASE 3 MM HAZ-1:</b> <u>Prior to Phase 3 Expansion construction activities, the applicant will ensure the Wild Goose Purging of Natural Gas Pipeline Systems Practice incorporates and includes measures for implementing all recommendations addressing pipeline purging procedures issued by the U.S. Chemical Safety and Hazard Investigation Board and adopted into the National Fuel Gas Code, and submit the revised practice to CPUC for review and confirmation.</u>	<u>Less Than Significant</u>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		<p><u>PHASE 3 MM HAZ-2: PG&amp;E shall follow all applicable local, state, federal, and industry-specific regulations and procedures during hot tapped pipeline connection installation, and shall ensure that the following measures are taken:</u></p> <ol style="list-style-type: none"> <li>1. <u>Ensure that all appropriate local (Colusa County) permits and approvals have been obtained for welding and hot tapping;</u></li> <li>2. <u>Ensure that construction personnel working on the hot tapped pipeline connection installation are competent and have been properly trained and qualified in the use of the hot tap equipment;</u></li> <li>3. <u>Ensure that construction personnel working on the hot tapped pipeline connection installation review detailed, written, job-specific hot tapping procedures prior to starting construction activities;</u></li> <li>4. <u>Communicate safety procedures clearly to all construction personnel prior to hot tap activities, including fire protection, emergency response, and other appropriate procedures and instructions;</u></li> <li>5. <u>Ensure that at least one worker has been designated as a dedicated fire watch, trained for fire detection and prevention, equipped with a suitable fire extinguisher, and equipped with appropriate equipment to communicate with personnel working in the area;</u></li> <li>6. <u>Ensure equipment is in good working condition;</u></li> <li>7. <u>Install appropriate barricades and warning signs prior to hot tapping activities;</u></li> <li>8. <u>Establish procedures for isolation of the work area in the event of an emergency;</u></li> </ol>	<p><u>Less Than Significant</u></p>



Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
		9. <u>Ensure provisions are made for an easily accessible means of egress from the work area;</u> 10. <u>Inspect the hot tapping location prior to hot tapping activities and confirm pipeline diameter, wall thickness, evidence of corrosion, and general soundness;</u> 11. <u>Use combustible gas and oxygen detectors during hot tapping procedures as necessary to ensure that hot tapping activities do not take place if vapor/air or vapor/oxygen mixtures in piping or equipment are near or within the flammable explosive range;</u> 12. <u>Follow manufacturer's instructions and directions for operating the hot tapping equipment; and</u> 13. <u>Ensure provisions are made to assure that adequate containment is available to control liquids and vapors trapped within the hot tapping equipment which could be released upon removal of the machine after work is completed.</u>	<u>Less Than Significant</u>
Hydrology	Potential to place within a 100-year flood hazard area structures which would impede or redirect flood flows.	<u>PHASE 3 MM HYDRO-1: Phase 3 Expansion components at the RFS, reconductoring component area, and Delevan Site would be engineered to withstand stresses associated with their proximity to waterways, and would be designed to withstand flooding associated with high ground water, agricultural activities, or overflow of canals during heavy rainstorms. Structures shall be constructed in compliance with the 2007 Uniform Building Code any other federal, state and local construction regulations.</u>	<u>Less Than Significant</u>
	Potential to expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	<u>See PHASE 3 MM HYDRO-1, above.</u>	<u>Less Than Significant</u>

Table ES-2 Summary of Impacts

Topic Area	Impact	Mitigation Measure	Level of Significance w/Mitigation
Land Use and Planning	<i>No new impacts or mitigation measures</i>		
Noise	Potential to expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	<p><u>PHASE 3 MM NOI-1: The applicant will employ the following noise reduction and control practices during construction:</u></p> <ul style="list-style-type: none"> <li>• <u>Unnecessary engine idling from construction equipment will be limited during construction hours.</u></li> <li>• <u>Construction equipment specifically designed for low noise emissions (i.e., equipment that is powered by electric or natural gas engines as opposed to those powered by diesel or gasoline reciprocating engines) will be used as much as feasible.</u></li> <li>• <u>Temporary enclosures or noise barriers (i.e. noise blankets) will be used around loudest pieces of equipment, as feasible.</u></li> <li>• <u>Construction traffic will be routed away from residences and other sensitive receptors, as feasible.</u></li> <li>• <u>Noise from back-up alarms (alarms that signal vehicle travel in reverse) in construction vehicles and equipment will be reduced by providing a layout of construction sites that minimizes the need for back-up alarms and using flagmen to minimize time needed to back up vehicles. As feasible, and in compliance with the applicant's safety practices and public and worker safety provisions required in the Occupational Safety and Health Standards for the Construction Industry (29 CFR Part 1926), the applicant may also use self-adjusting, manually adjustable, or broadband back-up alarms to reduce construction noise.</u></li> </ul>	<u>Less Than Significant</u>
Population and Housing	<i>No new impacts or mitigation measures</i>		
Public Services and Socioeconomics	<i>No new impacts or mitigation measures</i>		
Recreation	<i>No new impacts or mitigation measures</i>		
Transportation and Traffic	<i>No new impacts or mitigation measures</i>		
Utilities and Services Systems	<i>No new impacts or mitigation measures</i>		

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