EXECUTIVE SUMMARY

ES. 1 INTRODUCTION

In November 1998, Lodi Gas Storage LLC (LGS) filed an application (Application No. 98-11-128) with the California Public Utilities Commission (CPUC) seeking a Certificate of Public Convenience and Necessity to allow LGS to develop and operate a natural gas storage facility near Lodi in San Joaquin County, California. The Certificate would also allow LGS to construct and operate a 33-mile-long pipeline extending into Sacramento County to connect with the Pacific Gas and Electric Company (PG&E) gas pipeline system.

The application identified the Applicant's proposed project, including pipeline routing and related facility locations. The original application was subsequently modified by three formally submitted amendments that identified several project variations and alternate facility locations for the pipeline route and the proposed compressor facility but that did not formally change the Applicant's proposed project. The information and alternate facility locations included in the original application and amendments were fully considered during the preparation of this draft environmental impact report (EIR).

For the purposes of evaluating the project under the California Environmental Quality Act (CEQA) guidelines, the "proposed project" as identified in this EIR is the project formally presented in LGS's application, as modified by three amendments. During preparation of the draft EIR, CPUC developed three alternatives to the original project proposal for evaluation in this EIR, all of which are technically feasible and generally acceptable to LGS. Based on the CPUC's review of the analysis of the original proposed project and project alternatives, CPUC has determined that the Composite Route Alternative is the preferred alternative. LGS submitted information on August 16, 1999, indicating that the Composite Route Alternative is also LGS's preferred route and includes the Applicant's preferred compressor location.

In deciding whether or not to approve LGS's application, the CPUC also conducted a review, following the guidelines of CEQA, to determine whether the project would have significant effects on the environment. This EIR constitutes part of that review. Government agencies, interested organizations, and members of the public are invited to submit written comments on this draft EIR. After the public comment period ends, the CPUC will review and respond to the comments, conduct additional environmental analysis if needed, and then release a final EIR. The Commission will make its decision on the LGS application based upon the entire body of evidence gathered for the proceeding, including the EIR and all public comments.

ES. 2 BACKGROUND

The natural gas industry has undergone considerable change in the 1990s, starting with major policy changes at the federal level enacted by the Federal Energy Regulatory Commission and other agencies,

and followed by changes at the state level. Before these changes, investor-owned utilities provided all natural gas services to customers within their identified service areas. The three largest investor-owned natural gas utilities in California are PG&E, Southern California Gas Company, and San Diego Gas & Electric. As monopolies, these utilities are regulated by the CPUC, which must authorize or review most utility actions and operations. Gas costs to utility customers are determined through regulatory rate-making decisions of the CPUC, which set rates for the entire "bundle" of services the utility provides (including supply, pipeline transmission, distribution, storage, metering, and billing). Historically, rates were based principally on the costs of purchasing and delivering natural gas.

Today in California, many gas customers can choose to purchase different natural gas services from different companies. Increasingly, large commercial and industrial customers and groups of smaller customers are arranging, on their own or through agents, to purchase their own natural gas supplies directly from gas producers, then pay pipeline companies and local gas utilities to deliver the purchased gas to the customers' facilities. These customers may also benefit from purchasing natural gas storage services. This service allows customers to purchase and store gas when prices are relatively low and supplies relatively high and then withdraw the gas from storage for use when prices are high or supplies are scarce, such as during a severe cold spell. During supply emergencies, such as when pipeline deliveries are cut off by earthquakes or other natural disasters, stored gas may be the only source available in a given service area.

The rapid changes in the natural gas industry during this decade started when the Federal Energy Regulatory Commission mandated "open access" and allowed unbundled services on interstate natural gas pipelines throughout the United States. This meant that pipeline companies were required to allow other gas companies and customers to bid for and reserve transportation capacity on their pipelines. Gas users could then purchase their gas supplies directly from natural gas producers across the western half of North America and arrange with other companies to provide the other gas services they need. Californians are currently using gas that came from wells in California, New Mexico, and Wyoming, as well as in Alberta and British Columbia, Canada.

Meanwhile, the CPUC undertook a study of ways to increase competition in the provision of natural gas services within the state. This process led to the Commission's *Gas Strategy Rulemaking* (R98-01-011) and associated decisions, which removed cross-subsidies of utility-provided natural gas storage services. (Elimination of cross-subsidies means that utilities cannot subsidize their storage operations with revenue gathered from other service areas. In other words, gas storage projects must operate on a stand-alone basis, with their profitability depending solely on the utility's ability to effectively market its storage services.) These decisions set the stage for allowing non-utility companies to develop storage facilities and offer storage services in competition with PG&E and Southern California Gas Company (the only two California utilities presently able to offer storage services). The first of these non-utility storage facilities, the Wild Goose facility in Butte County, recently opened for business, offering long-term storage services for any customer that can arrange to deliver gas to and from the facility.

ES. 3 PROJECT DESCRIPTION

LGS proposes to convert a depleted natural gas production field into a storage facility. The field LGS has chosen as the most desirable is underneath an area of approximately 1,450 acres northeast of Lodi in San Joaquin County (Figure ES-1). Although it was declared depleted in 1972, the field still has large pockets of gas trapped in two reservoirs, one on top of the other, that are more than 2,000 feet under the ground surface. A dome-shaped layer of hard shale caps each reservoir and keeps the gas trapped in the reservoirs. Each reservoir is pressurized from beneath by a deep, brackish water table. LGS would drill 10 or up to 11 new wells into the two reservoirs to allow customers to inject and/or withdraw gas from the facility several times per day. Additionally, three observation wells will be drilled to monitor critical parameters of the storage reservoirs. Figure ES-2 shows a conceptual cross section of the storage field. To get the gas into and out of the storage facility, LGS would construct a compressor facility and up to 33 miles of new gas pipeline to connect the facility to PG&E's gas transmission pipeline network and move the gas back and forth between the facility and the pipeline network. As shown in Figure ES-3, the proposed project pipeline route would primarily traverse agricultural lands westward from the storage facility, under Highway 99, Interstate 5, and several major waterways to connect to PG&E's system first at a point near Thornton (PG&E Line 196 interconnect) and ultimately to another point farther west on Sherman Island in the Sacramento-San Joaquin River Delta (PG&E Line 401 interconnect). The pipeline would be 24 inches in diameter (expanding to 30 inches between the gas field and the compressor) and would be buried at least 4 feet under the ground surface. LGS's construction contractors would use boring and directional drilling techniques to place the pipeline under major highways and the bottoms of waterways and standard trenching techniques to lay the pipeline across fields and smaller roadways.

Since summer 1998, LGS has been discussing its proposed project with potentially affected landowners. More recently, LGS has been negotiating with individual landowners to develop lease agreements and easements for the proposed pipeline and other facilities. These agreements and leases are private real estate negotiations between LGS and landowners that typically include specific terms and/or compensation for access, construction, restoration, maintenance, and inspection. The CPUC's environmental review, described in this draft EIR, does not include a review of the terms of these agreements, but rather considers broad impacts on the natural and human environment, such as effects on prime farmland in Sacramento and San Joaquin Counties. LGS will continue to negotiate lease and easement agreements throughout the CPUC's review of the proposed project. These negotiations may result in minor adjustments to the proposed pipeline route to accommodate individual landowner needs. The CPUC does not anticipate that these changes would result in different environmental impacts from those described in this draft EIR. However, the CPUC will closely examine any proposed changes in the routes evaluated in this draft EIR and include that analysis, along with any additional needed mitigation measures, in the final EIR. Subsequent to the potential certification of the final EIR, changes in the proposed route or other project components would require Commission approval. The Applicant would be required to apply for a variance and receive CPUC approval.

LGS proposes to locate the compressor facility near Highway 99, where noise produced by the compressor facility would be less noticeable. The compressor facility would consist of three large, piston-type compressors fueled by natural gas plus an operator's control room and related facilities.

These facilities would be inside a prefabricated building that would be 30 feet high, 125 feet wide, and 60 feet long. Building appurtenances, such as ventilation ducting and engine exhaust stacks may extend 35 feet in height. Several other small maintenance buildings would also be located on the site.

To prepare the gas for transportation through PG&E's system, LGS would also construct a field collection and water separation facility near the injection wells and a dehydration facility at the gas compressor facility. These facilities would remove any water that had been absorbed into the gas while it was in storage. LGS would pump that water back into the gas storage reservoirs using separate water injection wells, which it would drill into the reservoirs at locations where the injected water would not interfere with the injection/withdrawal wells. All components of the proposed project are more thoroughly defined in Section 2.4, "Proposed Project."

In developing the proposed project, the Applicant also incorporated measures to avoid or reduce potential environmental impacts resulting from construction or operation of the proposed facilities. For example, LGS identified the known sensitive cultural and biological resources in the vicinity of the project and modified the project to avoid impacts on these areas. Also, LGS has committed to certain measures to reduce the visual impact of proposed facilities, such as landscaping and painting all facilities in earth-tone colors. Section 2.4.13, "Mitigation Measures Proposed by the Applicant," describes the measures included in the proposed project by LGS to reduce or eliminate environmental impacts.

ES. 4 APPROACH TO ENVIRONMENTAL REVIEW

The CPUC is conducting its review of potential environmental impacts resulting from the project in accordance with the guidelines of CEQA. The Act requires all government agencies in California to consider whether their decisions would result in significant impacts on the environment and, if so, to take actions to eliminate, avoid, compensate for, or reduce those impacts to a less-than-significant level. In conducting the environmental review, the CPUC first examines and verifies information provided by the Applicant concerning the potential environmental impacts of the proposed project, including air quality, water quality, noise, public health and safety, utilities and services, geology and mineral resources, aesthetics, and biological resources. The CPUC then consults with government agencies that have permitting or statutory authority over all or part of the project or have specialized knowledge of the project area, and also consults with the general public about the scope of issues the EIR should cover. The CPUC conducts additional studies and analysis as needed to identify any potentially significant impacts and identifies measures, called mitigation measures, that would avoid, eliminate, compensate for, or reduce any such impacts to a less-than-significant level.

In reading this EIR, it is important to understand the assumptions used throughout the document to evaluate the potential environmental impacts of the project. Each environmental issue in this EIR is analyzed based on significance criteria suggested in the California Environmental Quality Act Guidelines (also called the State CEQA Guidelines), which are continually refined to help government agencies fulfill all the obligations of the Act. When no specific guidelines are suggested by the State CEQA Guidelines, professional judgment is used to develop reasonable significance thresholds. The significance criteria are defined at the beginning of each impact analysis section, following the discussion of the

environmental setting. Potential impacts are categorized as follows: significant and unavoidable; significant, but able to be mitigated to a less-than-significant level; or less than significant.

When the analysis presented in the EIR shows that no impact will occur as a result of the project, that impact is generally not discussed further. When this EIR determines that the proposed project could potentially cause significant environmental impacts, the CPUC identifies feasible mitigation measures that can be implemented to reduce the impact to a less-than-significant level. In many cases, the Applicant has already proposed design features or mitigation measures as part of the project that would reduce impacts. However, for certain impacts identified in this EIR, the CPUC has proposed additional mitigation measures beyond those proposed by the Applicant as part of the project.

In its environmental review, the CPUC considered the permits and approvals LGS must obtain from other agencies to construct and operate the proposed facilities. For many design, construction, and operation issues, the permit review processes of responsible federal, state, and local regulatory agencies require that LGS implement measures to ensure proper implementation of the project. For example, the U.S. Department of Transportation, Office of Pipeline Safety is responsible for ensuring that the design of the pipeline meets stringent standards adopted by the federal government to protect public health and safety. Because the U.S. Department of Transportation, Office of Pipeline Safety has a major role in reviewing and approving the safety of the proposed pipeline, and state and federal laws require the Applicant to obtain design approval from this agency, this EIR assumes that these standards will be implemented; the EIR focuses on any remaining or residual potential impacts resulting from implementation of the project.

The CPUC reviewed and considered all of the relevant permit requirements and approvals, which are listed in Section 2.6, "Required Permits, Approvals, and Reviews." Therefore, this EIR is based on the assumption that LGS would operate its facilities within the parameters of the required permits (e.g., water discharge permits and air emission permits). Operations in excess of permitted levels (i.e., if LGS added compression capability in the future) would require new discretionary permits and additional environmental review.

During the public scoping process for the environmental review, the CPUC received numerous comments about potential specific impacts on landowners from construction of the pipeline. These impacts included issues such as temporary loss of agricultural production, construction impacts on irrigation systems, and issues related to compensation for these impacts. As mentioned above, LGS is working with individual landowners to address specific concerns about each property. These impacts and mitigation or compensation for them are being handled through direct negotiation between the landowners and LGS. Potential environmental impacts are discussed at a project-wide level in this EIR. Compensation is left entirely to negotiations between LGS and individual landowners.

In response to many comments received during the scoping process for the EIR, the CPUC analyzed several project alternatives. For this alternative analysis, the CPUC developed an alternate pipeline route that emphasizes using existing public rights-of-way, an alternate pipeline route that uses existing utility corridors, and an alternate pipeline route that is a composite of public rights-of-way and existing utility corridors. LGS developed an alternate compressor facility location for review. Section ES.7,

"Alternatives to the Project," summarizes these alternatives, and Section 2.5, "Project Alternatives," describes them in more detail.

The CPUC's environmental review considers the potential environmental impacts of the proposed project and alternatives. In this review, the CPUC considered the environmental protection provided by permit and approval requirements of other agencies, the mitigation included in the project by LGS, and the recommended mitigation developed by the CPUC for this draft EIR. The required permits and approvals, for which this EIR will be used as the appropriate compliance document under the California Environmental Quality Act, are described in Section 2.6, "Required Permits, Approvals, and Reviews." The LGS mitigation included as part of the project is described in Section 2.4.13, "Mitigation Measures Proposed by the Applicant." The CPUC's recommended mitigation is summarized in Section ES.5, "Impacts and Mitigation Measures."

The CPUC is seeking comments on the draft EIR. The CPUC will then respond to the comments on the draft EIR; conduct additional analysis, if necessary; and modify its recommended mitigation, if appropriate, in the final EIR. If the CPUC approves the project, the CPUC staff would closely monitor LGS's compliance with the requirements of two potential areas of mitigation: obtaining and carrying out all requirements of the necessary permits, and enacting all mitigation measures proposed as part of the project or mandated by the CPUC.

ES. 5 IMPACTS AND MITIGATION MEASURES

This EIR considers whether LGS's proposed project would likely lead to significant effects on the environment as a result of either physical changes associated directly with the construction of the proposed project or ongoing effects of project operation. The following issues and areas were considered in evaluating whether the project would result in changes that could produce environmental impacts:

- construction practices and techniques used in constructing all components of the project;
- overall project design;
- maintenance and safety practices for each component of the project;
- pollution control technologies employed or installed by LGS;
- employment levels and related factors;
- extent and character of land use; and
- approach to environmental cleanup.

Having considered these issues, the CPUC concluded that the project has the potential to produce significant environmental impacts. Table ES-1 , located at the end of the Executive Summary, summarizes the environmental impacts that could result from implementation of the proposed project and the project alternatives. Table ES-1 also summarizes mitigation measures that have been identified by the

TABLE ES-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
LAND USE, PLANNING, AND AGRICULTURAL RESOURCES		
Proposed Project		
3.1-1: Temporary Disruption of Agricultural Production during Construction (Significant)	Mitigation Measure 3.1-1: Avoid pipeline construction in vineyards during harvesting season	Less than significant
3.1-2: Permanent Loss of Agricultural Production Capability (Less than significant)	Mitigation Measure 3.1-2: Bury pipelines at a depth of 8 feet in lands suitable for grape production that have not already been deep-ripped, or obtain landowner agreement to bury the pipeline at a shallower depth	Less than significant
3.1-3: Loss of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (Less than significant)	None required	Less than significant
3.1-4: Compatibility with Surrounding Land Uses (Less than significant)	None required	Less than significant
3.1-5: Potential Inconsistency with Plans and Policies		
Proposed pipeline alignment (Significant and unavoidable):	No mitigation is available to reduce the inconsistency of the proposed pipeline alignment with local and Delta Protection Commission policies to a less-than-significant level	Significant and unavoidable
Airport land use plan (Significant):	Mitigation Measure 3.1-3: Obtain determination that the project is consistent with or amend the airport land use plan	Less than significant
3.1-6: Potential Conflicts with Lands under Williamson Act Contracts (Less than significant)	None required	Less than significant
3.1-7: Consistency with Proposed Land Uses (Less than significant)	None required	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
Public Right-of-Way Route Alternative		
3.1-8: Temporary Disruption of Agricultural Production during Construction (Significant)	Mitigation Measure 3.1-1: Avoid construction in vineyards during harvesting season	Less than significant
3.1-9: Permanent Loss of Agricultural Production Capability (Less than significant)	Mitigation Measure 3.1-2: Bury pipelines at a depth of 8 feet in lands suitable for grape production that have not already been deep-ripped, or obtain landowner agreement to bury the pipeline at a shallower depth	Less than significant
3.1-10: Loss of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (Less than significant)	None required	Less than significant
3.1-11: Compatibility with Surrounding Land Uses (Significant)	Mitigation Measure 3.1-4: Minimize effects to the community of Terminous Mitigation Measure 3.1-5: Minimize effects on Brannan Island State Recreation Area facilities	Less than significant
3.1-12: Potential Inconsistency with Plans and Policies (Significant)	Mitigation Measure 3.1-3: Obtain determination that the project is consistent with or amend the airport land use plan	Less than significant
3.1-13: Potential Conflicts with Lands under Williamson Act Contracts (Less than significant)	None required	Less than significant
3.1-14: Consistency with Proposed Land Uses (Less than significant)	None required	Less than significant
Existing Pipeline Corridor Alternative		
3.1-15: Temporary Disruption of Agricultural Production during Construction (Significant)	Mitigation Measure 3.1-1: Avoid construction in vineyards during harvesting season	Less than significant
3.1-16: Permanent Loss of Agricultural Production Capability (Less than significant)	Mitigation Measure 3.1-2: Bury pipelines at a depth of 8 feet in lands suitable for grape production that have not already been deep-ripped, or obtain landowner agreement to bury the pipeline at a shallower depth	Less than significant

TABLE ES-1 Continued

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
3.1-17: Loss of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (Less than significant)	None required	Less than significant
3.1-18: Compatibility with Surrounding Land Uses (Significant)	Mitigation Measure 3.1-6: Minimize effects to residential property in the city of Isleton Mitigation Measure 3.1-5: Minimize effects on Brannan Island State Recreation Area facilities	Less than significant
3.1-19: Potential Inconsistency with Plans and Policies (Significant)	Mitigation Measure 3.1-3: Obtain determination that the project is consistent with or amend the airport land use plan	Less than significant
3.1-20: Potential Conflicts with Lands under Williamson Act Contracts (Less than significant)	None required	Less than significant
3.1-21: Consistency with Proposed Land Uses (Less than significant)	None required	Less than significant
Composite Route Alternative (Preferred Alternative)		
3.1-22: Temporary Disruption of Agricultural Production during Construction (Significant)	Mitigation Measure 3.1-1: Avoid construction in vineyards during harvesting season	Less than significant
3.1-23: Permanent Loss of Agricultural Production Capability (Significant)	Mitigation Measure 3.1-2: Bury pipelines at a depth of 8 feet in lands suitable for grape production that have not already been deep-ripped, or obtain landowner agreement to bury the pipeline at a shallower depth	Less than significant
3.1-24: Loss of Farmland, Farmland of Statewide Importance, and Unique Farmland (Less than significant)	None required	Less than significant
3.1-25: Compatibility with Surrounding Land Uses (Significant)	Mitigation Measure 3.1-5: Minimize effects on Brannan Island State Recreation Area facilities Mitigation Measure 3.1-6: Minimize effects to residential property in the City of Isleton	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
3.1-26: Potential Inconsistency with Plans and Policies (Significant)	Mitigation Measure 3.1-3: Obtain determination that the project is consistent with or amend the airport land use plan	Less than significant
3.1-27: Potential Conflicts with Lands under Williamson Act Contracts (Less than significant)	None required	Less than significant
3.1-28: Consistency with Proposed Land Uses (Less than significant)	None required	Less than significant
POPULATION AND HOUSING		
Proposed Project and Project Alternatives		
3.2-1: Temporary Increase in Local Population, Resulting in Minimal Growth in Regional Population (Less than significant)	None required	Less than significant
3.2-2: Temporary Increase in Local Population and Temporary Need for Housing for up to 60 People (Less than significant)	None required	Less than significant
3.2-3: No Displacement of Existing Housing Units or Displacement of a Substantial Number of People That Would Necessitate the Construction of Replacement Housing Elsewhere (Less than significant)	None required	Less than significant
GEOLOGY, SOIL, AND PALEONTOLOGY		
Proposed Project and Project Alternatives		
3.3-1: Potential to Cause Substantial Wind and Water Erosion (Less than significant)	None required	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
3.3-2: Location of Project Facilities on a Geological Unit or Soil that is Unstable, Potentially Resulting in Exposure of the Pipeline to Loss of Support and Damage (Less than significant)	Mitigation Measure 3.3-1: Identify potential areas of concern regarding potential future interference of the pipeline with agricultural practices and undertake remedial actions as necessary	Less than significant
3.3-3: Potential to Expose People or Structures to Substantial Adverse Geologic Hazards (Less than significant)	None required	Less than significant
HYDROLOGY		
Proposed Project and Project Alternatives		
3.4-1: Potential Degradation of Surface Water Quality during Construction (Less than significant)	None required	Less than significant
3.4-2: Potential Degradation of Surface Water Quality during Hydrostatic Testing of the Pipeline (Less than significant)	None required	Less than significant
3.4-3: Potential Degradation of Groundwater Quality During Well Drilling (Less than significant)	None required	Less than significant
3.4-4: Potential Degradation of Water Quality during Operation of the Project (Less than significant)	None required	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
3.4-5: Potential to Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding Caused by the Project (Less than significant)	None required	Less than significant
3.4-6: Potential to Expose Structures to a Significant Risk of Loss Involving Flooding Related to Delta Island Flooding (Significant)	Mitigation Measure 3.4-1: Use concrete coated pipe or concrete pipe collars in all areas subject to the 100-year flood, where saturated soils would not prevent the pipeline from floating	Less than significant
	AIR QUALITY	
Proposed Project and Project Alternatives		
3.5-1: Construction-Related PM10 Emissions in San Joaquin County (Significant)	Mitigation Measure 3.5-1a: Comply with the San Joaquin Air District's Regulation VIII (Fugitive Dust Prohibitions) Comply with the San Joaquin Air District's recommendation for construction equipment mitigation measures	Less than significant
3.5-2: Construction-Related PM10 Emissions in Sacramento County (Significant)	Mitigation Measure 3.5-2: Water the construction site with adequate frequency to keep soil moist at all times	Less than significant
3.5-3: Construction-Related ROG and NOx Emissions in Sacramento County (Significant and unavoidable)	No mitigation is available to reduce this impact to a less-than-significant level. However, as a best management practice, CPUC will require implementation of Mitigation Measure 3.5-1b for construction activities within Sacramento County	Significant and unavoidable
3.5-4: Controlled Emissions of NOx and ROG during Project Operation Exceed Emissions Offset Trigger Thresholds (Significant)	Mitigation Measure 3.5-3: Obtain emission offsets for NO_x and ROG emission increases or install electric compressor facilities	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
3.5-5: Emission of Toxic Air Pollutants from Natural Gas-Fired Equipment (Less than significant)	None required	Less than significant
3.5-6: Potential for Objectionable Odors (Significant)	Mitigation Measure 3.5-4: Properly construct, inspect, and maintain facilities	Less than significant
TRANSPORTATION AND CIRCULATION		
Proposed Project and Project Alternatives		
3.6-1: Temporary Increase in Traffic in the Project Area during Construction (Less than significant)	None required	Less than significant
3.6-2: Temporary Disruption of Circulation from Project Construction (Significant)	Mitigation Measure 3.6-1: Develop and implement a traffic control plan	Less than significant
3.6-3: Minimal Increase in Traffic during Project Operation (Less than significant)	None required	Less than significant
3.6-4: Potential for Interference with Emergency Response Routes (Significant)	Mitigation Measure 3.6-1: Develop and implement a traffic control plan	Less than significant
BIOLOGICAL RESOURCES		
Proposed Project and Project Alternatives		
3.7-1: Potential Disturbance to Special-Status Plant Species in Unsurveyed or Modified Portions of the Alignment (Significant)	Mitigation Measure 3.7-1a: Conduct floristic surveys to identify the location and extent, if any, of threatened, endangered, proposed, and special-status plants Mitigation Measure 3.7-1b: Avoid and protect known federal and state listed plants Mitigation Measure 3.7-1c: Minimize long-term impacts on special-status plant populations	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
3.7-2: Potential Introduction or Spread of Noxious and Invasive Weeds and Pests During Construction Activities (Significant)	Mitigation Measure 3.7-2: Control dispersal of noxious and invasive weeds and pests during construction activities	Less than significant
3.7-3: Potential Removal or Disturbance of Marsh or Riparian Scrub/Woodland Habitat (Less than significant)	None required	Less than significant
3.7-4: Potential Disturbance of Sensitive Habitats (Significant)	Mitigation Measure 3.7-3a: Confine construction activities and equipment to the designated construction work area Mitigation Measure 3.7-3b. Avoid and protect sensitive vegetation and wetland resources near designated construction work area Mitigation Measure 3.7-3c. Reestablish preconstruction site conditions to allow natural colonization of plant species and, if necessary, reseed	Less than significant
3.7-5: Potential Disturbance of Agricultural, Pasture, and Ruderal and Developed Lands (Less than significant)	None required	Less than significant
3.7-7: Potential Impacts on Aquatic Invertebrates, California Tiger Salamander, and Western Spadefoot Toad and Their Habitat (Significant)	Mitigation Measure 3.7-3a: Confine construction activities and equipment to the designated construction work area Mitigation Measure 3.7-3b. Avoid and protect sensitive vegetation and wetland resources near designated construction work area Mitigation Measure 3.7-3c. Reestablish preconstruction site conditions to allow natural colonization of plant species and, if necessary, reseed	Less than significant
3.7-8: Potential Impact on the Valley Elderberry Longhorn Beetle (Significant)	Mitigation Measure 3.7-5. Conduct preconstruction valley elderberry longhorn beetle surveys and avoid or compensate for loss of habitat	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
3.7-9: Potential Disturbance and Direct Mortality of Giant Garter Snakes (Less than significant)	None required. See Section 2.4.13, "Mitigation Measures Proposed by the Applicant"	Less than significant
3.7-10: Potential Impact on Western Pond Turtles (Less than significant)	None required	Less than significant
3.7-11: Potential Disturbance on the Greater Sandhill Crane (Significant)	Mitigation Measure 3.7-6: Conduct preconstruction surveys for sandhill cranes and avoid key foraging and roosting areas	Less than significant
3.7-12: Potential Disturbance of Active Raptor and Owl Nests and Tricolored Blackbird Nests (Significant)	Mitigation Measure 3.7-7. Conduct preconstruction surveys for nesting raptors, owls, and tricolored blackbirds and establish an appropriate buffer distance around nest sites	Less than significant
3.7-13: Loss of or Disturbance to Nesting Western Burrowing Owls (Significant)	Mitigation Measure 3.7-8: Consult with CDFG and follow CDFG's burrowing owl mitigation guidelines	Less than significant
3.7-14: Project Construction Activities May Cause the Reproductive Failure of Nesting Swainson's Hawks (Significant)	Mitigation Measure 3.7-9. Conduct preconstruction surveys for nesting Swainson's hawks and follow CDFG's mitigation guidelines for Swainson's hawks	Less than significant
3.7-15: Disturbance of Wintering Waterfowl and Shorebirds (Less than significant)	None required	Less than significant
ENERGY AND MINERAL RESOURCES		
Proposed Project and Project Alternatives		
3.8-1: Potential to Overcover or Preclude Extraction of Mineral Resources (Less than significant)	None required	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
PUBLIC HEALTH AND PUBLIC SAFETY		
Proposed Project and Project Alternatives		
3.9-1: Potential for Public Health Hazard Involving the Use, Production, or Disposal of Hazardous Materials (Less than significant)	None required	Less than significant
3.9-2: Potential Risk to Public Safety and the Environment through Release of Emissions or Risk of Upset (Less than significant)	None required	Less than significant
3.9-3: Potential Public Health Hazard Associated with Pipeline Rupture That Could Lead to an Explosion Resulting in Property Damage or Fatalities (Less than significant)	None required	Less than significant
3.9-4: Potential Peat Fire Hazard During Pipeline Construction (Significant)	Mitigation Measure 3.9-1: Develop and implement a peat fire prevention plan	Less than significant
NOISE		
Proposed Project and Project Alternatives		
3.10-1: Exposure of Noise-Sensitive Land Uses to Noise from Construction Activities Other Than Well Drilling (Significant)	Mitigation Measure 3.10-1: Employ noise-reducing construction practices to reduce construction noise to acceptable levels	Less than significant
3.10-2: Exposure of Noise-Sensitive Land Uses to Noise from Well Drilling Activities (Significant)	Mitigation Measure 3.10-2: Restrict the hours of construction, install noise-reducing barriers around drilling sites, and employ other noise-reducing “best management practices” to reduce drilling noise	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
3.10-3: Exposure of Noise-Sensitive Land Uses to Noise from Operation of the Separator Facility (Less than significant)	None required	Less than significant
3.10-4: Exposure of Noise-Sensitive Land Uses to Noise from Operation of the Compressor Facility (Less than significant)	None required	Less than significant
PUBLIC SERVICES AND SOCIOECONOMICS		
Proposed Project and Project Alternatives		
3.11-1: Temporary Increase in Demand for Emergency Response in the Project Area (Less than significant)	None required	Less than significant
3.11-2: Minimal Increase in Demand for Landfill Space Associated with Generation of Waste during Project Construction (Less than significant)	None required	Less than significant
3.11-3: Potential Interference with Existing Utility Infrastructure (Less than significant)	None required	Less than significant
VISUAL RESOURCES		
Proposed Project and Project Alternatives		
3.12-1: Potential to Degrade the Existing Visual Character of the Site (Significant)	Mitigation Measure 3.12-1: Develop and implement landscaping and site design plan	Less than significant
3.12-2: Potential to Create New Sources of Substantial Light and Glare That Would Adversely Affect Nighttime Views in the Project Area (Less than significant)	None required	Less than significant

Environmental Impact (Significance before Mitigation)	Mitigation Measures	Significance after Mitigation
3.12-3: Potential to Affect Scenic Vistas and Damage Scenic Resources along a Scenic Highway (Less than significant)	None required	Less than significant
CULTURAL RESOURCES		
Proposed Project and Project Alternatives		
3.13-1: Potential Disturbance to Previously Unidentified Cultural Resources during Project Construction (Less than significant)	None required	Less than significant

CPUC to minimize or avoid these impacts, and identifies the significant effects and unavoidable significant environmental effects associated with the proposed project and project alternatives.

Table ES-2 presents a comparison of some of the key issues associated with the proposed project and project alternatives.

ES. 6 CUMULATIVE AND GROWTH-INDUCING IMPACTS

The State CEQA Guidelines suggest 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 LGS project, or a summary of projections contained in adopted general plans or related planning documents. The CPUC has determined that, because of the somewhat unique physical nature of the proposed project, neither of these approaches would be entirely appropriate to fully address the potential for cumulative effects. Instead, the CPUC determined that an issue-by-issue examination of potential cumulative effects in specified project areas is the most expedient and appropriate method for addressing cumulative effects, in accordance with CEQA.

The discussion of cumulative impacts in Chapter 4 of this EIR describes the potential cumulative impacts for each resource topic. For purposes of this analysis, the geographic scope of this impact assessment is limited to the areas immediately adjacent to and surrounding the project sites. Air quality issues, however, are examined in the context of the entire San Joaquin Valley Air Basin.

The CPUC determined that, for the most part, the project has very little potential to cause cumulatively considerable effects. Most of the project's effects are temporary, such as the potential impacts associated with construction, and many of the long-term effects are either not additive to the effects of other projects or are so minor as to be not cumulatively considerable. An example would be the air emissions of the compressor station. Although a potentially significant impact, compressor emissions would not be cumulatively considerable because LGS would be required to reduce or offset overall emissions in the area by at least as much as would be produced by the project. (Acquiring these offsets is part of the process of obtaining a Permit to Operate from the San Joaquin Valley Unified Air Pollution Control District.)

The California Environmental Quality Act also requires that the EIR consider whether the proposed LGS project would cause growth-inducing impacts. These are effects that foster economic or population growth or cause the construction of additional housing, either directly or indirectly, in the surrounding environment. This part of the EIR analysis also addresses whether the project would remove obstacles to population growth.

The EIR concludes that because the proposed project focuses on statewide natural gas markets and would not provide a substantial increase in the local retail availability of natural gas supplies, it would not foster growth or remove obstacles to growth in the project area. The increased availability of natural gas is also not likely to remove obstacles to growth, but rather would increase competition among energy providers and possibly reduce reliance on other, more polluting sources of fuel such as fuel oil, which presently is

used during periods of shortages of natural gas. Therefore, the project is not expected to create growth-inducing impacts.

ES. 7 ALTERNATIVES TO THE PROJECT

As with all reviews conducted under the California Environmental Quality Act, the CPUC must investigate a reasonable range of alternatives to the proposed project, or to its location, that could feasibly achieve the same basic objectives as LGS's proposed project, and must evaluate the comparative merits of each alternative. The identified alternatives must focus on eliminating any significant environmental effects of the proposed project or reducing them to a less-than-significant level, even if the alternatives would be more costly or would to some degree impede the project's objectives. Under the California Environmental Quality Act, the discussion of alternatives need not be exhaustive, and the requirement for the discussion of alternatives is subject to "the rule of reason". In other words, the EIR need only consider alternatives that are "feasible", meaning that they can be accomplished in a successful manner within a reasonable period, taking into account economic, environmental, legal, social, and technological factors. The California Environmental Quality Act also requires that the EIR analyze the no-project alternative, which describes a scenario in which the proposed project would not be implemented. The environmental impacts associated with the project would not occur. Further, no impacts would occur as a result of the project not being implemented. Because there would be no environmental impacts, this alternative is not considered in detail in this EIR.

As discussed above, the CPUC has developed and examined three alternative pipeline routes: one that would generally run along established rights-of-way (Public Right-of-Way Route Alternative), a second that would route the pipeline within an existing pipeline corridor (Existing Pipeline Corridor Alternative) and a third that uses both established rights-of-way and existing pipeline corridors (Composite Route Alternative). These route alternatives were developed in response to public concerns during the scoping process regarding disruption of agricultural production and consistency with county and Delta Protection Commission policies regarding the consolidation of gas pipelines into transmission corridors. Under the Public Right-of-Way Route Alternative, the compressor facility would be located southwest of Lind Airport (Figure ES-3). The alignment of the transmission pipeline would differ from the facilities described for the proposed project. Although use of an existing public right-of-way may be preferable in some areas, in other areas this alternative route may run closer to residences than the original planned route.

Under the Public Right-of-Way Route Alternative, the wells, separation facility, and PG&E interconnects would be at the same locations described for the proposed project (Figure ES-3). Inspection, operation, maintenance, and abandonment procedures would be the same as those described for the proposed project. The pipeline construction techniques (conventional trenching and directional boring) would be the same as described for the proposed project, but the pipeline route would be longer, require more boring under roadways, and require fewer but longer directional boring operations under major waterways. However, under this alternative, the pipeline would largely avoid adjacent agricultural land uses.

TABLE ES-2
COMPARISON OF IMPACTS OF THE PROPOSED PROJECT AND PROJECT ALTERNATIVES

Impact	Proposed Project	Public Right-of-Way Route Alternative	Existing Pipeline Corridor Alternative	Composite Route Alternative (Preferred Alternative)
Miles of pipeline	33	37	35.6	35.5
Compressor location	Northeast of Highway 99 and Peltier Road	Southwest of Lind Airport	Southwest of Lind Airport	Southwest of Lind Airport
Proximity of compressor to airport	2,800 feet southeast of the end of the main runway	2,200 feet southwest and perpendicular to the main runway	2,200 feet southwest and perpendicular to the main runway	2,200 feet southwest and perpendicular to the main runway
Miles of local road right-of-way potentially affected*	0	14.6	1.7	5.2
Number of residences within 220 yards of pipeline	74	140	145	170
Number of driveways affected	16	43	40	55
Acres of vineyard affected**	100	30	80	50
Acres of non-vineyard cropland affected	200	160	225	225
Number of trees potentially affected	138	198	260	280
Biological resources affected	*See Tables 3.7-1 and 3.7-2*	*See Tables 3.7-1 and 3.7-2*	*See Tables 3.7-1 and 3.7-2*	*See Tables 3.7-1 and 3.7-2*
Number of water crossings	7	7	8	8
Daily PM10 emissions	*See Table 3.5-3*	*See Table 3.5-7*	*See Table 3.5-8*	*See Table 3.5-8*
Construction duration	4 months	6 months	5 months	5 months
Construction cost	$60 million	$64 million	$63 million	$63 million

* Includes construction immediately adjacent to roadway
** Includes farm roads, turning roads, etc.

Under the Existing Pipeline Corridor Alternative, the field pipeline route from the separation facility to the compressor facility site would primarily traverse agricultural fields following existing farm roads, ditches, or turning rows where possible (Figure ES-3). The transmission pipeline would follow farm roads, field edges, and farm ditches along the eastern portion of the alignment and parallel the PG&E Line 196, 195, and 131 easements to the PG&E Line 401 interconnect on Sherman Island. The compressor facility would be located southwest of Lind Airport and the separation facility would be located adjacent to Jahant Road, the same separation site as identified for the proposed project.

Under the Composite Route Alternative, the wells, separation facility, the PG&E interconnect facilities, and operational procedures would be the same as for the proposed project and the previously described alternatives. The compressor facility would be located southwest of the Lind Airport. East of Highway 99, the field pipeline between the separation facility and the compressor facility would follow primarily farm roads, field edges, or tuning rows in agricultural fields, avoiding residential areas along Jahant Road. Between Highway 99 and Interstate 5, the transmission pipeline would follow primarily public road corridors (either in or adjacent to the County right of way) or farm roads, similar to the Public Right-of-Way Route Alternative (Figure ES-3). West of Interstate 5, the transmission pipeline would generally cross agricultural fields paralleling the existing PG&E 195, 196, and 131 pipeline easements, similar to the Existing Pipeline Corridor Alternative.

The CPUC, working together with LGS during preliminary evaluation of the proposed project and project alternatives, has identified the Composite Route Alternative as the preferred alternative.

In this EIR, the Public Right-of-Way Route Alternative, the Existing Pipeline Corridor Alternative, and the Composite Route Alternative are evaluated in each technical section to permit a comparison of potential environmental impacts with those of the proposed project.

CPUC has determined that the Composite Route Alternative is the environmentally superior alternative.

ES. 8 AREAS OF CONTROVERSY

The CPUC identified areas of controversy on the basis of written responses to the Notice of Preparation, public meetings, and the agency scoping process. General concerns about the project as a whole included comments that project facilities would adversely affect the “rural character” of the area, citing potential visual and noise impacts. Most of the specific concerns expressed by area residents were related to the proposed route of the pipeline that would connect the storage project to PG&E’s natural gas pipeline system. Many landowners expressed a desire to run the pipeline along existing public rights-of-way, rather than across productive agricultural fields, whereas other area residents expressed concern about routing the line near their houses. Fish and wildlife agencies and organizations stated that the line should be routed to avoid planned or existing wildlife preserves on Sherman and Twitchell Islands in the Delta.

Farmers along the route expressed general concern about the project’s potential to interfere with agricultural operations, such as the land that would have to be removed from production during pipeline construction, the access LGS would need for ongoing pipeline maintenance following construction, and

the effect of the project on farmers' ability to meet irrigation needs. Many farmers also stated that the depth at which LGS stated it would place the pipeline was too shallow for certain types of agricultural operations, such as plowing or "ripping" a field in preparation for planting crops.

Some local agencies expressed concern about being able to respond to emergencies caused by the project, such as explosion and/or fire resulting from a breach of the pipeline, especially in the Delta, where peat soils are combustible. Levee districts expressed concern about the effect that directional boring under waterways would have on the stability of levees. Fish and wildlife agencies also had concerns about potential impacts on wetlands and other wildlife habitat resulting from construction of the pipeline.

In other comments, people expressed concern about the location of the compressor station. Residents closest to the proposed compressor site were concerned that the new facility would affect their property values and present a health and safety risk. Still others were concerned that allowing such a facility would prompt development of other similar industrial facilities on adjacent properties, which are currently zoned agricultural or residential. The compressor facility's effect on local air quality is also a concern, especially because the local air basin is not in compliance with federal air quality standards for concentrations of ozone and particulate matter less than 10 microns in diameter (PM_{10}).

With regard to the actual storage field, many residents expressed safety concerns about having gas injected into and withdrawn from the facility several times per day. Drilling of gas injection/ withdrawal wells and water injection wells is also a concern of area residents, both for safety reasons and because of the potential to cross-connect water tables. Others expressed concern about decommissioning the project in the future and who would be ultimately responsible for such actions.

Areas of controversy that relate to potential changes in the environmental setting of the proposed project are evaluated in this draft EIR. Specifically, this draft EIR contains an analysis of the environmental impacts that may result from implementation of the proposed project or project alternatives including impacts related to land use; population and housing; geology, soil and paleontology; hydrology; air quality; transportation and circulation; biological resources; energy and minerals; health and public safety; noise; public services; visual resources; and cultural resources.

Certain of the identified areas of controversy relate to social and economic issues or project planning issues rather than to environmental impacts of the project, such as area residents' concern that they will suffer all the impacts from the project but will not enjoy any benefits from it. These issues will be addressed as appropriate by the CPUC in its decision-making process. Other environmental areas of controversy may arise during the public comment period on the draft EIR, and these will be addressed in the final EIR.

ES. 9 OPPORTUNITIES FOR PUBLIC COMMENT

The CPUC invites all interested persons to provide comments on the accuracy and completeness of the draft EIR. Comments can be provided in writing to the CPUC at the address identified on the cover sheet

of this draft EIR. Public meetings will also be held to obtain public and agency input on the project and EIR as described in the cover sheet.

All written comments on the draft EIR received during the public comment period will be addressed in the final EIR.

ES. 10 DRAFT MITIGATION MONITORING AND REPORTING PROGRAM

A draft Mitigation Monitoring and Reporting Program for the proposed project and project alternatives is contained in Chapter 5 of this EIR. A final Mitigation Monitoring and Reporting Program will be prepared if the CPUC approves the project and will incorporate any changes to the project, alternatives, or mitigation measures that are made as a result of the public review process and consideration of the project by the CPUC.