

## SECTION 3 – ENVIRONMENTAL ANALYSIS AND CHECKLIST

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1 This Initial Study (IS) has been completed for the Project in accordance with the  
2 California Environmental Quality Act (CEQA) and the State CEQA Guidelines. The IS  
3 identifies site-specific conditions and impacts, evaluates their potential significance, and  
4 discusses ways to avoid or lessen impacts that are potentially significant. The  
5 information, analysis and conclusions included in this IS provide the basis for  
6 determining the appropriate document needed to comply with CEQA.

7 Based on the analysis and information contained herein, the IS shows that Project  
8 construction may have a significant effect on the environment; however, with revisions  
9 in the Project plans, identified in the IS as mitigation measures and agreed to by Three  
10 Rivers, potential impacts would be reduced to a less than significant level. The  
11 proposed pipeline will be installed 45 feet below the bed of the River; therefore, there  
12 will be no impacts to the bed of the River, and no changes to sediment cover would  
13 occur. Therefore, the CSLC concludes that an IS/Mitigated Negative Declaration (MND)  
14 is the appropriate CEQA document for the Project.

15 In the event of a pipeline leak, pressure valves would detect a leak in the pipeline, and  
16 valves on either side of the pipeline would automatically shut off. The pipeline would  
17 then be repaired or abandoned. Three Rivers would consult with the appropriate  
18 regulatory agencies during such an event prior to any repairs. Were a leak to occur, the  
19 gas would bubble in the water and dissipate into the atmosphere. No long-term  
20 significant impacts would be anticipated to result. As no impacts are associated with the  
21 long-term operation of the Project, long-term operations are not further discussed in this  
22 IS.

### 23 3.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

24 The evaluation of environmental impacts provided in Section 3.3 of this MND is based,  
25 in part, on the environmental impact thresholds provided by State CEQA Guidelines  
26 Appendix G. An impact assessment matrix is provided as part of the evaluation for each  
27 environmental issue area. The column headings for each impact assessment matrix are  
28 defined below.

- 29 • **Potentially Significant Impact.** This column has been checked if there is  
30 substantial evidence that a Project-related environmental effect may be  
31 significant. If there are one or more “Potentially Significant Impacts,” a Project  
32 Environmental Impact Report (EIR) would be prepared.
- 33 • **Less than Significant with Mitigation.** This column has been checked when  
34 the Project may result in a significant environmental impact, but the incorporation  
35 of identified Project-specific mitigation measures into the Project would reduce  
36 the identified effect(s) to a less than significant level.

- 1 • **Less than Significant Impact.** This column has been checked when the Project
- 2 would not result in any significant effects. The Project’s impact is less than
- 3 significant even without the incorporation of a Project-specific mitigation measure.
- 4 • **No Impact.** This column has been checked when the Project would not result in
- 5 any impact in the category or the category does not apply.

6 The environmental factors checked below in Table 3.1-1 would be potentially affected  
 7 by this Project, involving at least one impact that is a “Less than Significant Impact with  
 8 Mitigation,” as detailed in Section 3.3. However, the Project would not result in any  
 9 “Potentially Significant Impacts” that cannot be reduced to a less than significant level.

10 **Table 3.1-1. Environmental Issues and Potentially Significant Impacts**

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agricultural and Forest Resources
<input type="checkbox"/>	Air Quality / Greenhouse Gas Emissions	<input checked="" type="checkbox"/>	Biological Resources
<input checked="" type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Geology and Soils
<input type="checkbox"/>	Hazards and Hazardous Materials	<input type="checkbox"/>	Hydrology and Water Quality
<input type="checkbox"/>	Land Use and Planning	<input type="checkbox"/>	Mineral Resources
<input type="checkbox"/>	Noise	<input type="checkbox"/>	Population and Housing
<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation
<input type="checkbox"/>	Transportation/Traffic	<input type="checkbox"/>	Utilities and Service Systems
<input checked="" type="checkbox"/>	Mandatory Findings of Significance		

11 **3.2 AGENCY DETERMINATION**

12 Based on the environmental impact analysis provided by this Initial Study:

- 13  I find that the Project WOULD NOT have a significant effect on the
- 14 environment, and a NEGATIVE DECLARATION will be prepared.
- 15  I find that although the Project could have a significant effect on the
- 16 environment, there will not be a significant effect in this case because
- 17 revisions in the Project have been made that will avoid or reduce any
- 18 potential significant effects to a less than significant level. A MITIGATED
- 19 NEGATIVE DECLARATION will be prepared.
- 20  I find that the Project MAY have a significant effect on the environment. An
- 21 ENVIRONMENTAL IMPACT REPORT will be prepared.

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Sarah Sugar, Environmental Scientist  
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California State Lands Commission

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June 6, 2013  


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Date

1 **3.3 ENVIRONMENTAL CHECKLIST**

2 **3.3.1 Aesthetics**

<b>AESTHETICS – Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3 **3.3.1.1 Environmental Setting**

4 The Project is located within agricultural lands that are used for the production of field  
 5 corn, and the majority of the Project area is flat. The proposed natural gas pipeline  
 6 alignment would cross both State Highway 12, adjacent to the DW 8-1 Well, and the  
 7 River, near the planned northern terminus of the pipeline. State Highway 12 is  
 8 approximately 6 feet higher in elevation than the surrounding agricultural fields. Levees  
 9 approximately 20 feet in height are located along both the northern and southern banks  
 10 of the River. HDD boring would be used to install the proposed pipeline under these  
 11 topographic features.

12 The closest residence to the Project is located approximately 0.14 mile (740 feet) to the  
 13 southwest of the 5-2 Line tie-in point at the northern terminus of the proposed pipeline  
 14 alignment. No scenic roadways are located in the vicinity of the Project, nor is the site  
 15 located within close proximity to an officially designated State scenic highway as  
 16 mapped by the California Scenic Highway Mapping System. The closest designated  
 17 scenic highway is State Highway 160, located approximately 5.63 miles to the west of  
 18 the Project. No significant scenic resources are located at or near the Project.

19 The following photographs show views of the Project areas.



**Photograph 1**

View of existing DW 1-8 Well site and location of H12 Entry.  
View looking northeast from well site.



**Photograph 2**

View of proposed pipeline alignment on north side of State Highway 12.  
The pipeline would be installed in active agricultural fields by trenching methods.



**Photograph 3**

View of River Exit site and proposed pipeline alignment on north side of State Highway 12. The pipeline would be installed in active agricultural fields by trenching methods.



**Photograph 4**

View to the South of the Proposed Pipeline Alignment from the North Side of the Mokelumne River.



**Photograph 5**

View of tie-in point to existing 5-2 Line at the northern terminus of the proposed pipeline.  
View looking southwest of Towne existing production facility.

1 **3.3.1.2 Regulatory Setting**

2 **Federal/State**

3 There are no federal or State regulations related to aesthetics relevant to the Project.

4 **Local**

5 Sacramento County General Plan. The Sacramento County General Plan includes  
6 Conservation and Land Use Elements which address aesthetic resources in the Project  
7 area. The policies of these elements are intended to preserve and protect the scenic  
8 and historic resources within Sacramento County to the maximum extent feasible while  
9 allowing quality development in conformance with the General Plan provisions  
10 (Sacramento County 2011).

11 San Joaquin County General Plan. The San Joaquin County General Plan includes a  
12 Community Development Element which addresses aesthetic resources in the Project  
13 area. The policies of these elements are intended to preserve and protect the scenic  
14 and historic resources within San Joaquin County to the maximum extent feasible while  
15 allowing quality development in conformance with the General Plan provisions (San  
16 Joaquin County 2012). The following policies in this document apply to the Project:

- 1 • Compatibility with Adjacent Land Uses. The potential to create traffic, noise, dust,  
2 odor, and visual impacts requires that developments be carefully located and  
3 designed. Techniques that can be used to minimize the effects on adjacent land  
4 uses include the use of buffers, development conditions, industrial parks, and  
5 performance standards.
- 6 • Buffers. Buffers can be used to provide relief from the noise, dust, and visual  
7 impacts created by industrial development. Buffers can include solid fences,  
8 vegetation, or open spaces which provide room between the industrial  
9 developments and the surrounding land uses.

### 10 **3.3.1.3 Impact Analysis**

#### 11 ***a) Have a substantial adverse effect on a scenic vista?***

12 The Project would involve the installation of an underground natural gas pipeline, and  
13 construction activities would be short-term and temporary in nature. Pipeline installation  
14 equipment would be located on the Project for a period of approximately 2 months, or  
15 60 days, but would all be removed after installation activities are complete. Oil and gas  
16 exploration and production equipment and farm buildings, water tanks, and other  
17 agricultural facilities related to agricultural activities are present within the vicinity of the  
18 Project. Boat marinas are also present within the vicinity of the northern portion of the  
19 Project. Many of these agricultural and recreational facilities are similar in shape and  
20 size to the Project equipment. Therefore, given the presence of equipment would be  
21 temporary and would fit in with the surroundings, the Project is expected to have a less  
22 than significant effect on scenic vistas.

#### 23 ***b) Substantially damage scenic resources, including, but not limited to, trees, 24 rock outcroppings, and historic buildings within a State scenic highway?***

25 The Project is not located within close proximity to any officially designated State scenic  
26 highway as mapped by the California Scenic Highway Mapping System. The closest  
27 designated scenic highway is State Highway 160, located approximately 5.63 miles to  
28 the west of the Project area. Therefore, the Project would not substantially damage  
29 scenic resources within a State scenic highway and no impacts related to this category  
30 from either construction or long-term operation of the Project would result.

#### 31 ***c) Substantially degrade the existing visual character or quality of the site and its 32 surroundings?***

33 Since the pipeline would be installed underground, the Project would not substantially  
34 degrade the existing visual character or quality of the site and its surroundings as part of  
35 long-term operations. The Project would result in short-term, temporary visual impacts  
36 associated with construction activity. Moreover, because all trenching and ground  
37 disturbance would take place in active corn fields, there would be no removal or

1 modification of trees, hills, vegetation or other aesthetic resources during construction.  
2 Once construction is complete, the pipeline installation equipment would be removed  
3 and there would be no visual change to existing conditions, as the proposed pipeline  
4 would be underground. Therefore, Project impacts would be less than significant.

5 ***d) Create a new source of substantial light or glare which would adversely affect***  
6 ***day or nighttime views in the area?***

7 The Project would not require the installation of any new lighting as a result of project  
8 implementation. Temporary glare may occur off of construction equipment during the  
9 installation of the proposed natural gas pipeline. However, this glare would be  
10 temporary in nature. As the pipeline would be installed under the ground surface, no  
11 new glare is expected from the operation of the proposed pipeline. No temporary  
12 lighting will be used during the installation of the Project. All construction activities would  
13 occur during daylight hours only. Therefore, the Project would have less than significant  
14 light and glare impacts.

1 **3.3.2 Agriculture and Forest Resources**

AGRICULTURE AND FOREST RESOURCES - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.</p>				
<p>a) 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 Natural Resources Agency, to non-agricultural use?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code § 12220, subd. (g)), timberland (as defined by Pub. Resources Code § 4526), or timberland zoned Timberland Production (as defined by Gov. Code § 51104, subd. (g))?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>d) Result in the loss of forest land or conversion of forest land to non-forest use?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 **3.3.2.1 Environmental Setting**

3 The Project is primarily located on active agricultural land (field corn), in areas identified  
 4 in the Sacramento County General Plan as AG 80 [minimum 80 acre parcel size], and in  
 5 the San Joaquin County General Plan as AG 40 [minimum 40 acre parcel size].

6 **3.3.2.2 Regulatory Setting**

7 The following discussion summarizes the most important federal, State, and local laws  
 8 and regulations that apply to agricultural and forestry resource protection for the Project  
 9 area.

1 **Federal**

2 No federal regulations that pertain to agricultural resources are relevant to the Project.

3 **State**

4 California Land Conservation Act (Williamson Act). The California Land Conservation  
5 Act of 1965, commonly referred to as the Williamson Act, enables local governments to  
6 enter into contracts with private landowners for the purpose of restricting specific  
7 parcels of land to agricultural or related open space use, and provides landowners with  
8 lower property tax assessments in return. Local government planning departments are  
9 responsible for the enrollment of land into Williamson Act contracts. Generally, any  
10 commercial agricultural use would be permitted within any agricultural preserve. In  
11 addition, local governments may identify compatible uses permitted with a use permit.

12 **Local**

13 San Joaquin County General Plan. The General Plan Resource Element contains  
14 policies governing the use and development of agriculture and forest resources. The  
15 following objectives and policies are relevant to the Project:

- 16 • Agricultural areas shall be used principally for crop production, ranching, and  
17 grazing. All agricultural support and non-farm uses shall be compatible with  
18 agricultural operations and shall satisfy the following criteria:
  - 19 (a) The use requires a location in an agricultural area because of unusual  
20 siting requirements, operational characteristics, resource orientation, or  
21 because it is providing a service to the surrounding agricultural area;
  - 22 (b) The operational characteristics of the use will not have a detrimental  
23 impact on the management or use of surrounding agricultural properties;
  - 24 (c) The use will be sited to minimize any disruption to the surrounding  
25 agricultural operations; and
  - 26 (d) To protect agricultural land, non-agricultural uses which are allowed in the  
27 agricultural area should be clustered, and strip or scattered development  
28 should be avoided.
  - 29 (e) Non-agricultural land uses at the edge of agricultural areas shall  
30 incorporate adequate buffers (e.g., fences and setbacks) to prevent  
31 conflicts with adjoining agricultural operations.

32 Sacramento County General Plan. The following General Plan policies related to  
33 agricultural resources are applicable to the Project.

- 1       • Agricultural Element
- 2           ○ AG-1 - The County shall protect prime farmlands and lands with intensive
- 3           agricultural investments from urban encroachments.
- 4           ○ AG-5 - Mitigate loss of prime farmlands or lands with intensive agricultural
- 5           investments through CEQA requirements to provide in-kind protection of
- 6           nearby farmland.
- 7           ○ AG-22 - The County shall actively encourage enrollments of agricultural
- 8           lands in its Williamson Act program.
- 9           ○ AG-23 - Discourage property owners from filing notices of nonrenewal.
- 10          ○ AG-24 - Support and promote the rescission of notices of nonrenewal and
- 11          replacement of Williamson Act contracts, pursuant to the provisions of
- 12          Government Code section 51254, in areas outside the Urban Services
- 13          Boundary for which notices of nonrenewal have been filed.
  
- 14       • Conservation Element
- 15           ○ CO-54 - Direct development away from prime or statewide importance
- 16           soils or otherwise provide for mitigation that slows the loss of additional
- 17           farmland conversion to other uses.
- 18           ○ CO-55 - Projects resulting in the conversion of more than 50 acres of
- 19           prime or statewide in importance farmland shall be deemed to have a
- 20           significant environmental effect, as defined by CEQA.

21   **3.3.2.3   Impact Analysis**

22   ***a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide***  
23   ***Importance (Farmland), as shown on the maps prepared pursuant to the***  
24   ***Farmland Mapping and Monitoring Program of the California Natural Resources***  
25   ***Agency, to non-agricultural use?***

26   The Project will take place on land designated as Prime Farmland on the 2010  
27   Sacramento and San Joaquin County Farmland Mapping and Monitoring Program  
28   Maps. The proposed natural gas pipeline would be installed under the ground surface,  
29   and therefore, would only temporarily impact these agricultural lands. Because of the  
30   trench depth, the existence of the pipeline would not interfere with post-construction  
31   agricultural uses of the land, and no long-term conversion of any farmland to non-  
32   agricultural use would occur as a result of project implementation. Agricultural uses of  
33   farmland in the Project area would only be precluded as long as construction lasts, and  
34   so the Project would have a less than significant impact on conversion of farmland.

35   ***b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?***

36   The Project is located on agricultural cropland classified as Williamson Act Prime  
37   Agricultural Lands and Agricultural Land in Non-Renewal. The Williamson Act allows  
38   county governments to enter into contracts with private landowners who agree to restrict

1 parcels of land to agricultural uses or uses compatible with agriculture for at least 10  
2 years. In return, landowners receive property tax assessments that are much lower than  
3 normal because they are based upon income derived from farming and open space  
4 uses as opposed to fair market value of the property. The proposed natural gas pipeline  
5 would be installed under the ground surface, and therefore, would only temporarily  
6 impact these agricultural lands. No long-term conversion of any farmland to non-  
7 agricultural use would occur as a result of project implementation. Installation of a  
8 natural gas pipeline within the Project is consistent with and an allowed use under the  
9 existing zoning, land use, and Williamson Act requirements, and so the impact would be  
10 less than significant.

11 ***c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined***  
12 ***in Pub. Resources Code § 12220, subd. (g)), timberland (as defined by Pub.***  
13 ***Resources Code § 4526), or timberland zoned Timberland Production (as defined***  
14 ***by Gov. Code § 51104, subd. (g))?***

15 There is no forest land located within the Project area. Therefore, the Project would not  
16 conflict with existing zoning for, or cause rezoning of, any forest land or timberland, and  
17 there would be no impact.

18 ***d) Result in the loss of forest land or conversion of forest land to non-forest use?***

19 There is no forest land located within the Project area. Therefore, the Project would not  
20 result in the loss of forest land, or conversion of forest land to non-forest use, and there  
21 would be no impact.

22 ***e) Involve other changes in the existing environment which, due to their location***  
23 ***or nature, could result in conversion of Farmland, to non-agricultural use or***  
24 ***conversion of forest land to non-forest use?***

25 The Project would take place within land designated as Prime Farmland on the 2010  
26 Sacramento and San Joaquin County Farmland Mapping and Monitoring Program  
27 Maps; however, the pipeline would be installed under the ground surface and would,  
28 therefore, only temporarily impact these agricultural lands. No long-term conversion of  
29 any farmland to non-agricultural use would occur as a result of project implementation.  
30 Therefore, impacts would be less than significant.

1 **3.3.3 Air Quality and Greenhouse Gas (GHG) Emissions**

<b>AIR QUALITY AND GREENHOUSE GAS EMISSIONS</b> – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 **3.3.3.1 Environmental Setting**

3 The Project is located on the north and south side of State Highway 12 on Bouldin  
 4 Island, San Joaquin County, and adjacent to an existing natural gas production facility  
 5 located north of the Mokelumne River on Tyler Island, Sacramento County. The Project  
 6 falls under the jurisdiction of two air districts; consequently, construction and operation  
 7 are subject to two sets of air quality regulations and requirements:

- 8 • San Joaquin Valley Air Pollution Control District (SJVAPCD) for the portion of the  
 9 Project area on Bouldin Island, which represents most of the Project and Project  
 10 emissions; and
- 11 • Sacramento Metropolitan Air Quality Management District (SMAQMD) for the  
 12 portion of the Project area on Tyler Island.

13 **San Joaquin County**

14 San Joaquin County encompasses over 1,425 square miles. It is bordered by  
 15 Sacramento County to the north, Stanislaus County to the south, Amador and

1 Calaveras counties to the east, and Contra Costa and Alameda counties to the west.  
2 Incorporated areas within the County include the cities of Stockton, Lodi, Manteca,  
3 Tracy, Ripon, Lathrop, and Escalon, with the city of Stockton as the county seat. State  
4 Route 99 (SR 99) and Interstate 5 (I-5), two of the State’s major north-south roadways,  
5 pass through the County. Interstate 205 (I-205) and Interstate 580 (I-580) provide the  
6 County direct connections to the San Francisco Bay Area to the west. Major land uses  
7 include agriculture, urban residential, rural residential, commercial, industrial, rangeland,  
8 and open space/natural habitat. Major landforms in the County include the foothills of  
9 the Diablo Range in the southwest, the foothills of the Sierra Nevada in the east, and  
10 the Delta in the northwest. Air pollution in the San Joaquin Valley Air Basin (SJVAB) in  
11 general can be attributed to both human-related (anthropogenic) and natural (non-  
12 anthropogenic) activities that produce emissions. Emissions from a variety of industrial-  
13 based sources, as well as on- and off-road mobile sources, account for the most  
14 significant anthropogenic emissions in the SJVAB. Activities that tend to increase  
15 mobile activity include increases in population or general traffic activity (including  
16 automobiles, trucks, aircraft, and rail), urban sprawl (which will increase commuter  
17 driving distances), and general local land management practices as they pertain to  
18 modes of commuter transportation. These sources, coupled with geographical and  
19 meteorological conditions unique to the area, stimulate the formation of unhealthy air.

## 20 **Sacramento County**

21 Sacramento County covers approximately 994 square miles of California’s Central  
22 Valley. Sacramento County extends from the low delta lands between the Sacramento  
23 and San Joaquin Rivers, north to approximately 10 miles beyond the State Capitol, and  
24 east to the foothills of the Sierra Nevada. The county is about 50 miles northeast of the  
25 Carquinez Strait, a sea-level gap between the Coast Ranges and the Diablo Range.  
26 The prevailing winds are from the south, primarily because of marine breezes through  
27 the Carquinez Strait, although during winter the sea breezes diminish and winds from  
28 the north occur more frequently. Average wind speeds are about 8 miles per hour.

29 The climate is characterized as maritime with few extremes of heat or cold. According to  
30 the Western Regional Climate Center, Mather Airport has an average January  
31 temperature of about 46 Fahrenheit (°F) and an average July temperature of about  
32 75°F. The average annual rainfall in the County is 19.6 inches, and precipitation occurs  
33 mostly in the winter and spring months. Episodes of poor atmospheric mixing cause  
34 inversion layers, which are formed when temperature increases with elevation above  
35 ground, or when a mass of warm dry air settles over a mass of cooler air near the  
36 ground. Surface inversions (at 0 to 500 feet) occur most often during the winter, while  
37 subsidence inversions (at 1,000 to 2,000 feet) are most frequent during the summer.  
38 Inversion layers limit vertical mixing in the atmosphere, trapping pollutants near the  
39 surface.

1 **Global Climate Change**

2 Global climate change is a change in the average weather of the earth which can be  
3 measured by wind patterns, storms, precipitation, and temperature. Scientific research  
4 has indicated that the human-related GHG emissions above natural levels are likely a  
5 significant contributor to global climate change (IPCC 2007). GHGs are gases that trap  
6 heat in the atmosphere and regulate the Earth's temperature, and include water vapor  
7 (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), chlorofluorocarbons  
8 (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>),  
9 and ozone. The global warming potential (GWP) of these gases provides a comparison  
10 of the warming influence of different GHGs relative to CO<sub>2</sub> and allows for the calculation  
11 of a single consistent GHG emission unit: the "CO<sub>2</sub> equivalent" (CO<sub>2e</sub>).

12 In 2009, the transportation sector accounted for approximately 38 percent of the total  
13 statewide GHG emissions, thus making it the largest contributor to the total statewide  
14 emissions. Emissions from electricity generation, the second largest, accounted for 23  
15 percent of the total emissions, with almost equal contributions from in-State and  
16 imported electricity, while the industrial sector accounted for approximately 20 percent  
17 of the total in 2009. These three sectors accounted for approximately 80 percent of the  
18 statewide GHG emissions in 2009. Emissions from agriculture (7 percent), residential  
19 (6.3 percent), and commercial (3.1 percent) sectors accounted for approximately 16.5  
20 percent of the total. CH<sub>4</sub> and N<sub>2</sub>O emissions from wildfires and soil disturbances  
21 (forestry) accounted for approximately 0.04 percent of the total statewide GHG  
22 emissions. The remaining 3.5 percent of the gross emissions were mainly due to  
23 evaporative losses and use of ozone depleting substances (ODS), which could not be  
24 assigned to any specific economic sector in the inventory (CARB 2011).

25 CO<sub>2</sub> is an odorless, colorless GHG. Natural sources include decomposition of dead  
26 organic matter, respiration of bacteria, plants, animals, and fungus, evaporation from  
27 oceans, and volcanic outgassing. Anthropogenic (human caused) sources of CO<sub>2</sub>  
28 include burning fuels, such as coal, oil, natural gas, and wood. The global atmospheric  
29 concentration of CO<sub>2</sub> has increased from a pre-industrial value of about 280 parts per  
30 million (ppm) to 379 ppm in 2005. The atmospheric concentration of CO<sub>2</sub> in 2005  
31 exceeds by far the natural range over the last 650,000 years (180 to 300 ppm) (IPCC  
32 2007).

33 Methane is a flammable gas and the main component of natural gas fuel. It has a GWP  
34 of about 21 times the GWP of CO<sub>2</sub>. This is reported in terms of CO<sub>2e</sub>. Anaerobic decay  
35 of organic matter is one natural source of methane. Geological deposits, known as  
36 natural gas fields, also contain methane, which is extracted for fuel. Other sources are  
37 from landfills, fermentation of manure, and cattle (IPCC 2007).

1 N<sub>2</sub>O is a colorless gas that has a GWP of about 310 CO<sub>2</sub>e. It is produced by microbial  
2 processes in soil and water, including those reactions which occur in fertilizer containing  
3 nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired  
4 power plants, nylon production, nitric acid production, and vehicle emissions) emit N<sub>2</sub>O.  
5 It is used in rocket engines, racecars, and as an aerosol spray propellant (IPCC 2007).

6 CFCs, which are gases formed synthetically by replacing all hydrogen atoms in  
7 methane or ethane with chlorine and/or fluorine atoms, are nontoxic, nonflammable,  
8 insoluble, and chemically nonreactive in the troposphere (the level of air at the earth's  
9 surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol  
10 propellants, and cleaning solvents. They destroy stratospheric ozone, however, and  
11 their production was banned by the Montreal Protocol in 1987. HFCs are synthetic  
12 human-made chemicals that are used as a substitute for CFCs for automobile air  
13 conditioners and refrigerants. PFCs are used in aluminum production and the  
14 semiconductor manufacture industry. These various classes of fluorocarbons have  
15 GWPs between 140 CO<sub>2</sub>e and 11,700 CO<sub>2</sub>e (IPCC 2007).

16 SF<sub>6</sub> is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the  
17 highest GWP of any gas – 23,900 CO<sub>2</sub>e. SF<sub>6</sub> is used for insulation in electric power  
18 transmission and distribution equipment, in the magnesium industry, in semiconductor  
19 manufacturing, and as a tracer gas for leak detection.

20 Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively  
21 short-lived and therefore is not global in nature. According to CARB, it is difficult to  
22 make an accurate determination of the contribution of ozone precursors (nitrogen  
23 oxides [NO<sub>x</sub>] and volatile organic compounds [VOCs]) to global warming (CARB 2004).

### 24 **3.3.3.2 Regulatory Setting**

25 The following discussion summarizes the most important federal, State, and local laws  
26 and regulations that apply to air quality and GHGs for the Project area.

#### 27 **Federal and State Ambient Air Standards**

28 Air pollutants emitted into the ambient air by stationary and mobile sources are  
29 regulated by federal and State law. These regulated air pollutants are known as “criteria  
30 air pollutants” and are categorized into primary and secondary pollutants. Primary air  
31 pollutants are those that are emitted directly from sources. Carbon monoxide (CO),  
32 VOC, NO<sub>x</sub>, sulfur dioxide, coarse inhalable particulate matter (PM<sub>10</sub>), fine inhalable  
33 particulate matter (PM<sub>2.5</sub>), and lead are primary air pollutants. VOC and NO<sub>x</sub> form  
34 secondary criteria pollutants through chemical and photochemical reactions in the  
35 atmosphere. Ozone and nitrogen dioxide (NO<sub>2</sub>) are the principal secondary pollutants.  
36 Other pollutants, such as CO<sub>2</sub>, a natural by-product of animal respiration that is also

1 produced in the combustion process, have been linked to such phenomena as global  
2 climate change.

3 Federal Clean Air Act (FCAA) (42 United States Code [USC] 7401 et seq.). The FCAA  
4 requires the U.S. Environmental Protection Agency (EPA) to identify National Ambient  
5 Air Quality Standards (NAAQS or national standards) to protect public health and  
6 welfare. National standards have been established for ozone, CO, NO<sub>2</sub>, sulfur dioxide,  
7 PM<sub>10</sub>, PM<sub>2.5</sub>, and lead. The U.S. Supreme Court ruled on April 2, 2007 that CO<sub>2</sub> is an air  
8 pollutant as defined under the FCAA, and that EPA has the authority to regulate GHG  
9 emissions. However, there are no federal regulations or policies regarding GHG  
10 emissions applicable to the Project or alternatives under consideration. Tables 3.3.3-1  
11 and 3.3.3-2 illustrate current national and state ambient air quality standards and  
12 provide a brief discussion of the related health effects and principal sources for selected  
13 pollutants.

14 Pursuant to the 1990 FCAA Amendments (FCAAA), the EPA classifies air basins (or  
15 portions thereof) as in “attainment” or “nonattainment” for each criteria air pollutant,  
16 based on whether or not the NAAQS has been achieved. The classification is  
17 determined by comparing actual monitoring data with State and federal standards. If a  
18 pollutant concentration is lower than the standard, the area is classified as in  
19 “attainment” for that pollutant. If an area exceeds the standard, the area is classified as  
20 in “nonattainment” for that pollutant. If there are not enough data available to determine  
21 whether the standard is exceeded in an area, the area is designated “unclassified.”

22 California Clean Air Act of 1988, amended in 1992 (CCAA). The CCAA requires all air  
23 districts in the State to endeavor to achieve and maintain State ambient air quality  
24 standards for ozone, CO, sulfur dioxide, NO<sub>2</sub>, and particulate matter by the earliest  
25 practicable date. California's ambient air standards are generally stricter than national  
26 standards for the same pollutants. California also has established its own standards for  
27 sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

28 Based on pollutant levels, the 1992 amendments to the CCAA divide ozone  
29 nonattainment areas into four categories (moderate, serious, severe, and extreme) to  
30 which progressively more stringent requirements apply. An extreme ozone  
31 nonattainment area is one in which ozone concentrations were greater than 0.20 ppm  
32 during 1989-91. The 1988 CCAA, upon which the 1991 regional air quality management  
33 plan was based, specified that attainment plans for areas which could not demonstrate  
34 attainment of State standards until after December 31, 1997, must include specified  
35 emission reduction strategies and meet milestones in implementing emission controls  
36 and achieving more healthful air quality. Air quality agencies associated with the Project  
37 include the following.

- 38 • California Air Resources Board (CARB) – CARB has established standards for  
39 criteria air pollutants, known as the California Ambient Air Quality Standards

- 1 (CAAQS) that are generally more restrictive than the NAAQS. CARB has also  
 2 established standards for pollutants in addition to the criteria air pollutants.
- 3 • Local Air Districts – The Project falls under the jurisdiction of two different air  
 4 districts: the portion of the Project that lies within Bouldin Island and San Joaquin  
 5 County falls under the SJVAPCD, while the portion within Tyler Island and  
 6 Sacramento County falls under the SMAQMD. Most of the Project and Project  
 7 emissions, however, are within the jurisdiction of SJVAPCD.

Table 3.3.3-1. National Ambient Air Quality Standards <sup>a</sup>		
Pollutant	Averaging Time	Concentration
Ozone	8 Hour	0.075 ppm (147 µg/m <sup>3</sup> ) <sup>d</sup>
	8 Hour	9 ppm (10 mg/m <sup>3</sup> )
Carbon Monoxide	1 Hour	35 ppm (40 mg/m <sup>3</sup> )
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm (100 µg/m <sup>3</sup> )
Sulfur Dioxide	Annual Arithmetic Mean	0.03 ppm (80 µg/m <sup>3</sup> )
	24 Hour	0.14 ppm (365 µg/m <sup>3</sup> )
PM 10	Annual Arithmetic Mean	----- <sup>c</sup>
	24 Hour	150 µg/m <sup>3</sup>
PM 2.5 (1997 Standard)	Annual Arithmetic Mean	15 µg/m <sup>3</sup>
	24 Hour	65 µg/m <sup>3</sup>
PM 2.5 (2006 Standard)	Annual Arithmetic Mean	15 µg/m <sup>3</sup>
	24 Hour	35 µg/m <sup>3</sup>
ppm=parts per million      mg/m <sup>3</sup> =milligrams per cubic meter		µg/m <sup>3</sup> =micrograms per cubic meter
a See <a href="http://epa.gov/air/criteria.html">http://epa.gov/air/criteria.html</a>		
b 1-Hour ozone standard revoked effective June 15, 2005.		
c Annual PM 10 standard revoked effective December 18, 2006.		
d EPA finalized the revised (2008) 8-hour ozone standard of 0.075 ppm on March 27, 2008. The 1997 8-hour ozone standard of 0.08 ppm has not been revoked. In the January 19, 2010 Federal Register, EPA proposed to revise the 2008 ozone NAAQS of 0.075 ppm to a NAAQS in the range of 0.060 to 0.070 ppm. EPA expects to finalize the revised NAAQS, which will replace the 0.075 ppm NAAQS, by July 29, 2011. More information is available here.		
e On October 15, 2008, EPA strengthened the lead standard.		

Table 3.3.3-2. California Ambient Air Quality Standards <sup>a</sup>		
Pollutant	Averaging Time	Concentration
Ozone	8 Hour	0.070 ppm (137 µg/m <sup>3</sup> )
	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )
Carbon Monoxide	8 Hour	9 ppm (10 mg/m <sup>3</sup> )
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )
Nitrogen Dioxide	Annual Arithmetic Mean	0.030 ppm (56 µg/m <sup>3</sup> )
	1 Hour	0.18 ppm (338 µg/m <sup>3</sup> )
Sulfur Dioxide	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )
	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )
PM 10	Annual Arithmetic Mean	20 µg/m <sup>3</sup>
	24 Hour	50 µg/m <sup>3</sup>
PM 2.5	Annual Arithmetic Mean	12 µg/m <sup>3</sup>
	24 Hour	none
ppm=parts per million	mg/m <sup>3</sup> =milligrams per cubic meter	µg/m <sup>3</sup> =micrograms per cubic meter
a See <a href="http://www.arb.ca.gov/research/aaqs/aaqs2.pdf">http://www.arb.ca.gov/research/aaqs/aaqs2.pdf</a>		

1 **Regional and Local**

2 SJVAPCD and SMAQMD are agencies responsible for protecting the public health and  
 3 welfare through the administration of federal and State air quality laws and policies.  
 4 Included in the SJVAPCD and SMAQMD tasks are the monitoring of air pollution, the  
 5 preparation of the counties’ portions of the State Implementation Plan (SIP), and the  
 6 promulgation of rules and regulations. The SIP includes strategies and tactics to be  
 7 used to attain and maintain acceptable air quality in the counties. The rules and  
 8 regulations include procedures and requirements to control the emission of pollutants  
 9 and prevent significant adverse impacts.

10 San Joaquin Valley Attainment Designation. The SJVAPCD regional air quality  
 11 monitoring network provides information on existing ambient concentrations of criteria  
 12 air pollutants, including in San Joaquin County. The SJVAB remains in “nonattainment”  
 13 for ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>. Table 3.3.3-3 reflects ambient air standard attainment  
 14 designation for SJVAPCD. The SJVAPCD does not have a concentration-based  
 15 threshold. Rather, their thresholds are in terms of tons/year.

**Table 3.3.3-3. San Joaquin Valley Attainment Status**

Pollutant	Designation/ Classification	
	Federal Standards (a)	State standards (b)
Ozone - One hour	No Federal Standard <sup>f</sup>	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme <sup>c</sup>	Nonattainment
PM 10	Attainment <sup>c</sup>	Nonattainment
PM 2.5	Nonattainment <sup>d</sup>	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment

<sup>a</sup> See 40 CFR Part 81

<sup>b</sup> See CCR Title 17 Sections 60200-60210

<sup>c</sup> On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.

<sup>d</sup> The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).

<sup>e</sup> Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

<sup>f</sup> Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

1 Sacramento Metropolitan AQMD Attainment Designation. Sacramento County is  
 2 designated as a nonattainment area under national and state ambient air quality  
 3 standards (AAQS) for ozone (serious nonattainment status), PM<sub>10</sub> (moderate  
 4 nonattainment status) and PM<sub>2.5</sub>. The urbanized portion of Sacramento is also within a  
 5 carbon monoxide maintenance area. The SMAQMD has published significance criteria  
 6 and analysis methodologies to determine impacts related to these emissions. Ozone is  
 7 assessed based on the presence of NO<sub>x</sub> (ozone precursors), and the significance  
 8 threshold is 85 pounds per day. The significance threshold for particulate matter (PM) is  
 9 based on the CAAQS, and is 50 micrograms per cubic meter (µg/m<sup>3</sup>). SMAQMD also  
 10 has standard rules and regulations to reduce both particulate matter and ozone  
 11 precursor emissions. Sacramento County is designated in attainment or unclassified for  
 12 all remaining pollutants. Table 3.3.3-4 presents the SMAQMD ambient air quality  
 13 standard attainment designation.

<b>Table 3.3.3-4. Sacramento Metropolitan AQMD Attainment Status</b>		
<b>Pollutant</b>	<b>California Standard</b>	<b>Federal Standard</b>
Ozone	Non-Attainment Classification = Serious (1 hour and 8 hour Standards)	Non-Attainment, Classification = Severe -15* (8 hour Standard)
PM10	Non-Attainment (24 hour Standard and Annual Mean)	Non-Attainment**, Classification = Moderate (24 hr std)
PM2.5	Non-Attainment (Annual Standard)	Non-Attainment (24 hour Standard)
Carbon Monoxide	Attainment (1 hour and 8 hour Standards)	Attainment (1 hour and 8 hour Standards)
Nitrogen Dioxide	Attainment (1 hour Standard)	Attainment (Annual Standard)***
Sulfur Dioxide	Attainment (1 hour and 24 hour Standards)	Attainment (3 hour, 24 hour, and Annual Standards)****
<p>* A formal request for voluntary reclassification from “serious” to “severe” for the 8-hour ozone nonattainment area with an associated attainment deadline of June 15, 2019, was submitted from the Air Resources Board to EPA on February 14, 2008. EPA approved the request effective June 4, 2010.</p> <p>** Air Quality meets Federal PM-10 Standards. The AQMD must request redesignation to attainment and submit a maintenance plan to be formally designated to attainment.</p> <p>*** NO2 - New 1-hour standard 100ppb, effective 4/12/2010 (Designation expected 4/12/2011.)</p> <p>**** SO2 - New 1-hour standard 75ppb, effective 8/23/2010</p> <p>California Area Designations based upon AQ Data collected during 2001-2003.</p>		

1 Sacramento and San Joaquin County General Plans. Both the Sacramento and San  
 2 Joaquin County General Plans focus primarily on reducing air pollution through better  
 3 planning for future development, primarily housing development. Issues related to  
 4 stationary emission sources are delegated to the air districts. Neither General Plan has  
 5 any thresholds of significance for air pollutants, nor does either Plan provide any  
 6 guidance on controlling emissions from stationary sources.

7 **Greenhouse Gas Regulations**

8 Executive Order S-3-05. This Executive Order proclaims that California is vulnerable to  
 9 the impacts of climate change. It declares that increased temperatures could reduce the  
 10 Sierra Nevada snowpack, further exacerbate California’s air quality problems, and

1 potentially cause a rise in sea level. To combat those concerns, the Executive Order  
2 established statewide GHG emission targets. Specifically, emissions are to be reduced  
3 to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990  
4 level by 2050.

5 Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). In September 2006, AB  
6 32 became law. AB 32 made CARB responsible for monitoring and reducing GHG  
7 emissions in the State and required CARB to establish a statewide GHG emissions cap  
8 for 2020 that is based on 1990 emissions levels. In December 2008, CARB adopted its  
9 AB 32 Climate Change Scoping Plan (Scoping Plan), which functions as a roadmap of  
10 CARB's plans to achieve GHG reductions in California required by AB 32 through  
11 subsequently enacted regulations (CARB 2009). The Scoping Plan contains the main  
12 strategies California will implement to reduce CO<sub>2</sub>e emissions by 169 million metric  
13 tons (MMT), or approximately 30 percent, from the State's projected 2020 emissions  
14 level of 596 MMT of CO<sub>2</sub>e under a business-as-usual scenario. The Scoping Plan also  
15 breaks down the amount of GHG emissions reductions CARB recommends for each  
16 emissions sector of the State's GHG inventory. The Scoping Plan does not include any  
17 direct discussion about GHG emissions generated by construction activity.

18 Senate Bill (SB) 97. SB 97 acknowledges that climate change is a prominent  
19 environmental issue that requires analysis under CEQA. This bill directed the State  
20 Office of Planning and Research (OPR) to prepare, develop, and transmit to the  
21 California Natural Resources Agency guidelines for the feasible mitigation of GHG  
22 emissions or the effects of GHG emissions, as required by CEQA by July 1, 2009. The  
23 Natural Resources Agency adopted those guidelines on December 30, 2009, and the  
24 guidelines became effective March 18, 2010. These amendments to the State CEQA  
25 Guidelines establish a framework for addressing global climate change impacts in the  
26 CEQA process, and include revisions to the Environmental Checklist Form (Appendix  
27 G) as well as to the Energy Conservation appendix (Appendix F). A new section was  
28 also added to the State CEQA Guidelines (§ 15064.4) that provides an approach to  
29 assessing impacts from GHGs.

### 30 **3.3.3.3 Impact Analysis**

31 ***a) Conflict with or obstruct implementation of the applicable air quality plan?***

32 ***b) Violate any air quality standard or contribute substantially to an existing or***  
33 ***projected air quality violation?***

34 ***c) Result in a cumulatively considerable net increase of any criteria pollutant for***  
35 ***which the Project region is nonattainment under an applicable federal or State***  
36 ***ambient air quality standard (including releasing emissions which exceed***  
37 ***quantitative thresholds for ozone precursors)?***

1 The Project lies under the jurisdiction of two separate air quality management districts,  
 2 each with its own different significance criteria. Because of the dual jurisdiction, the  
 3 Project would be considered to have a significant impact on air quality if the emissions  
 4 sum for any criteria pollutant exceeds either air district’s threshold of significance for  
 5 that pollutant (criteria are identified in Tables 3.3.3-5 and 3.3.3-6 and discussed below).

6 **Sacramento Metropolitan AQMD**

7 The SMAQMD (1994) Clean Air Plan, or SIP, includes assumptions and allowances for  
 8 growth and development in the region and details control measures and Best  
 9 Management Practices that must be used for the region to make progress toward  
 10 attainment. Updates to the 1994 Clean Air Plan include the *State of Progress Plan* and  
 11 *2011 Reasonable Further Progress Plan*, both of which address attainment of the  
 12 federal 8-hour ozone standard. The *2008 Triennial Report* and the *2007 Annual*  
 13 *Progress Report* address the attainment of the state ozone standard. The current SIP  
 14 and 2035 Metropolitan Transportation Plan (MTP) published by the Sacramento Area  
 15 Council of Governments (SACOG) both use the same growth assumptions.

16 SMAQMD has also adopted significance thresholds for projects within the District that  
 17 are subject to CEQA, as published in the December 2009 SMAQMD’s *Guide to Air*  
 18 *Quality Assessment in Sacramento County*. Projects that exceed the thresholds would  
 19 have the potential to obstruct the success of the regional ozone attainment plans and,  
 20 therefore, would be considered significant and require mitigation. The adopted  
 21 significance thresholds for criteria pollutants of the greatest concern in the Sacramento  
 22 area (those for which the region is in nonattainment) include carbon monoxide  
 23 concentrations that exceed the 1-hour state ambient air quality standard (i.e., 20.0 ppm)  
 24 or the 8-hour state ambient standard (i.e., 9.0 ppm). SMAQMD thresholds of  
 25 significance for selected criteria pollutants are summarized in Table 3.3.3-5.

26  
27

**Table 3.3.3-5  
Thresholds of Significance for SMAQMD**

Criteria Pollutant	Threshold of Significance	
	Construction (short-term)	Operational (long-term)
Reactive Organic Gas (ROG)	none	65 lb/day
Nitrogen Oxides (NOx)	85 lb/day	65 lb/day
Particulates (PM <sub>10</sub> )	50 µg/m <sup>3</sup> 24-hour standard; * 20 µg/m <sup>3</sup> Annual Arithmetic Mean	
Particulates (PM <sub>2.5</sub> )	12 µg/m <sup>3</sup> (Annual Arithmetic Mean)	
Toxic Air Contaminants (TAC)	Public Risk < 10 in a million Prioritization Scope < 10	
* Equal to or greater than 5 percent of the CAAQS at offsite receptors. The SMAQMD holds that if project emissions of NO <sub>x</sub> and ROG are below 65 lb/day, then the project would not threaten violations of the PM <sub>10</sub> CAAQS		
Source: <a href="http://airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf">http://airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf</a> .		

1 **San Joaquin Valley APCD**

2 The SJVAPCD has prepared an Air Quality Attainment Plan to enable the San Joaquin  
 3 Valley to attain air quality standards by the earliest practicable date. The Attainment  
 4 Plan covers the Central Valley from San Joaquin to Kern County. Short-term emissions  
 5 are anticipated as part of the Project, but with measures included in the Project  
 6 description the impact will be less than significant. Particulate matter emissions can be  
 7 expected to occur during trenching and backfilling. The SJVAPD requires preparation  
 8 and implementation of a Dust Control Plan as specified in Regulation VIII, Rule 8021,  
 9 Section 6.3.1 for non-residential projects that disturb 5 or more acres or move, deposit,  
 10 or relocate more than 2,500 cubic yards per day of bulk materials on at least 3 days;  
 11 however, because the Project would not exceed these thresholds, a Dust Control Plan  
 12 will not be required. Typical equipment used for this Project may include front-end  
 13 loaders, backhoe, trencher, bore equipment, welders and grader (see Table 2.3-1). The  
 14 Project would be subject to SJVAPCD regulations related to control of PM emissions.

15 Thresholds of significance established by SJVAPCD as criteria for determining the  
 16 significance of air quality impacts consider a Project’s short-term emissions separately  
 17 from its long-term emissions. Short-term emissions, which are mainly related to the  
 18 construction phase of the project and are recognized to be short in duration, consist  
 19 mainly of exhaust emissions (NOx and PM) from construction equipment and other  
 20 mobile sources, and PM emissions from earth-moving activities. Long-term emissions  
 21 are primarily related to activities that will occur indefinitely as a result of project  
 22 operations. Table 3.3.3-6 summarizes adopted thresholds of significance for SJVAPCD.

23  
 24

**Table 3.3.3-6  
 Thresholds of Significance for SJVAPCD**

<b>Criteria Pollutant</b>	<b>Threshold of Significance</b>
Reactive Organic Gas (ROG)*	10 tons/year
Nitrogen Oxides (NOx)*	10 tons/year
Toxic Air Contaminants (TAC)	Public Risk < 10 in a million Prioritization Scope < 10
*Threshold applies to both construction and operational emissions. Source: <a href="http://www.valleyair.org/transportation/ceqaanalysislevels.htm#thresholds">www.valleyair.org/transportation/ceqaanalysislevels.htm#thresholds</a> .	

25 Three Rivers proposes to install a welded steel natural gas pipeline from an existing  
 26 natural gas well site located on the south side of State Highway 12 on Bouldin Island,  
 27 San Joaquin County, and an existing natural gas production facility located north of the  
 28 River on Tyler Island, Sacramento County. The Project would consist of three phases:

- 29
- Phase 1, Bore Under State Highway 12 (estimated 2 days duration)
  - 30 • Phase 2, Bore Under Mokelumne River (estimated 14 days duration)
  - 31 • Phase 3, Trenching and Pipeline Installation (estimated 12 days duration)

1 Equipment that will be used during these phases is summarized in Table 3.3.3-7.

2 **Table 3.3.3-7**

3 **List of Anticipated Equipment for Project by Phase**

<b>Bore Under State Highway 12</b>				
<b>Equipment Type</b>	<b>Manufacturer</b>	<b>Quantity</b>	<b>Total Hours/day</b>	<b># Days</b>
Excavator (Class 320 CL)	Hitachi	1	10	1
Loader Backhoe (CAT 420D)	Case	1	8	2
Directional Drill (DD 140D) 300 hp	American	1	10	2
Mud Unit 185 hp	Augers	1	10	2
Crawler Dozer D-5 LGP	American Augers Caterpillar	1	8	1
<b>Mobile Sources</b>	<b># Trips per Day</b>		<b>Roundtrip Miles per Trip</b>	
Vacuum Truck (2)	1		25	
Passenger Car/Pickup Truck (1)	1		25	
Roundtrip				
<b>Bore Under Mokelumne River</b>				
<b>Equipment Type</b>	<b>Manufacturer</b>	<b>Quantity</b>	<b>Total Hours/day</b>	<b># Days</b>
Excavator (Class 320 CL) (2)	Hitachi	2	10	4
Loader Backhoe (CAT 420D)	Case	1	10	14
Directional Drill (DD 140D) 300 hp	American	1	10	10
Mud Unit 185 hp	Augers	1	10	10
Crawler Dozer D-5 LGP	American Augers Caterpillar	1	10	4
<b>Mobile Sources</b>	<b># Trips per Day</b>		<b>Roundtrip Miles per Trip</b>	
Vacuum Truck (2)	2		65	
Passenger Car/Pickup Truck (1)	1		65	
Roundtrip	2		4	
Boat (1)				
<b>Trenching and Pipeline Installation</b>				
<b>Equipment Type</b>	<b>Manufacturer</b>	<b>Quantity</b>	<b>Total Hours/day</b>	<b># Days</b>
Excavator (Class 320CL) (2)	Hitachi	2	10	4
Loader Backhoe (CAT 420D)	Case	1	10	12
Side Boom Tractors - 2	Case	1	10	8
Crawler Dozer D-5 LGP (2)	Caterpillar	2	10	6
Trencher	unknown	1	10	4
Pipe Rollers	unknown	2	10	1
<b>Mobile Sources</b>	<b># Trips per Day</b>		<b>Roundtrip Miles per Trip</b>	
Boom Truck	1		45	
Welding Truck	1		65	
Vacuum Truck	2		65	
Pick-Up Truck	4		65	
ATV	1		1	

1 Construction is scheduled to take place during the summer/fall of 2013, and is expected  
 2 to be complete within 6 weeks (1.5 months). Including mobilization and demobilization  
 3 of equipment and personnel, and site restoration, Project activities would require 2  
 4 months. All construction activities would take place within private agricultural lands  
 5 outside of the River, its levees, and any agricultural drainage ditches containing  
 6 wetlands. The Project would take place completely within active agricultural fields and  
 7 within private dirt roadways. A corridor approximately 15 feet wide would be used for  
 8 conducting construction activities outside of the proposed bore entry and exit points.

9 **Project Criteria Air Pollutant Emissions**

10 Criteria pollutant emissions were estimated using Road Construction Emissions Model,  
 11 Version 6.3.2 software, which is recommended by both the SMAQMD and the  
 12 SJVAPCD for use in calculating air emissions for this type of project. Criteria pollutant  
 13 emissions for the project were estimated based upon lists of equipment for the Project  
 14 phases. Total surface disturbance for the Project would be 0.5 acre. Tables 3.3.3-8 and  
 15 3.3.3-9 summarize daily and annual construction-related emissions that would be  
 16 released from each Project phase. Detailed calculations are presented in Appendix E.

17 **Table 3.3.3-8**  
 18 **Summary of Daily Construction-Related Emissions**

Project Phase	ROG (lbs/day)	NO <sub>x</sub> (lbs/day)	PM <sub>10</sub> (lbs/day)	PM <sub>2.5</sub> (lbs/day)
Bore Under Highway 12	2.5	20.0	10.5	2.6
Bore Under River	3.6	27.2	11.3	3.3
Trenching/Installation	4.5	33.1	4.5	1.9
Total	10.6	80.3	26.3	7.8
Exceeds Threshold?	No	No	No	No

19 **Table 3.3.3-9**  
 20 **Summary of Annual Construction-Related Emissions\***

Project Phase	ROG (ton/yr)	NO <sub>x</sub> (ton/yr)	PM <sub>10</sub> (ton/yr)	PM <sub>2.5</sub> (ton/yr)
Bore Under Highway 12	0.04	0.04	0.04	0.04
Bore Under River	0.04	0.1	0.1	0.1
Trenching/Installation	0.04	0.2	0.04	0.04
Total	0.12	0.34	0.18	0.18
Exceeds Threshold?	No	No	No	No

\*Emissions calculated as 0.0 ton per year with the ROADWAY Model are reported as 0.04 ton/year. (This note is to inform the reader that the Roadway Model used in these calculations gives emissions to the nearest tenth of a ton (0.1 ton). Any emissions below 0.05 ton are reported as 0.0 ton. In such cases, emissions are conservatively reported as 0.04 ton.)

1 Both daily and annual emissions would be below the thresholds of significance  
2 presented in Tables 3.3.3-5 and 3.3.3-6 for SMAQMD and SJVAPCD. After completion  
3 of the Project, the construction area would be graded and restored. After restoration, the  
4 pipeline would operate consistent with 40 CFR Part 191 procedures. There would not  
5 be any operational emissions. Therefore, pursuant to SMAQMD and SJVAPCD  
6 guidance, the Project's short-term and long-term emissions would not conflict with or  
7 obstruct implementation of the applicable air quality plan, violate or contribute  
8 substantially to a violation of relevant air quality standards, or result in a cumulatively  
9 considerable net increase of any criteria pollutant for which the Project region is  
10 nonattainment, and impacts would be less than significant.

11 **d) Expose sensitive receptors to substantial pollutant concentrations?**

12 **Criteria Air Pollutant Concentrations**

13 Some land uses are considered more sensitive to air pollution than others due to the  
14 types of population groups or activities involved. Sensitive receptors are defined as  
15 locations with human populations and where there is a reasonable expectation of  
16 continuous human exposure according to the averaging period for the AAQS. The most  
17 sensitive portions of the population are children, the elderly, the acutely ill, and the  
18 chronically ill, especially those with cardiorespiratory diseases. Residential areas are  
19 also considered to be sensitive receptors to air pollution because residents (including  
20 children and the elderly) tend to be at home for extended periods of time, resulting in  
21 sustained exposure to any pollutants present. Other sensitive receptors include  
22 retirement facilities, hospitals, and schools. The closest residence to the proposed  
23 pipeline route is located approximately 740 feet to the southwest of the Project area.

24 Project activities would release pollutants into the localized area of the Project;  
25 however, these pollutants would disperse substantially prior to reaching any sensitive  
26 receptor. Due to the distance between the Project and the nearest sensitive residential  
27 receptor to the Project area, and to the fact that Project emissions are below both  
28 SMAQMD's and SJVAPCD's thresholds of significance as discussed in above in  
29 Responses 3.3.3 a-c, the Project is not expected to subject sensitive receptors to  
30 substantial pollutant concentrations.

31 **Toxic Air Pollutants**

32 The main toxic air pollutant released from this project would be diesel particulate matter  
33 (DPM) from equipment. To assess if the release of DPM would pose a health risk to  
34 individuals living near the site, a risk prioritization score was calculated based on the Air  
35 Toxics "Hot Spots" and Information Act of 1987. This project is ranked as "Medium" for  
36 receptors located within 100 meters (328 feet) from the construction area and "Low" for  
37 all other locations greater than 100 meters. Therefore, the impacts from release of toxic  
38 air pollutants would be less than significant. A copy of the risk prioritization spreadsheet

1 is provided in Appendix E. For the current project, the amount of DPM that would be  
 2 released is estimated to be 38 pounds. A breakdown of DPM emissions by Phase is  
 3 shown in Table 3.3.3-10.

4 **Table 3.3.3-10**  
 5 **Breakdown of Diesel Particulate Emissions by Phase**

Project Phase	Exhaust PM <sub>10</sub> (lbs/day)	Phase Duration (days)	Total (lbs)
Bore Under Highway 12	0.9	2	1.8
Bore Under River	1.3	14	18.2
Trenching/Installation	1.5	12	18.0
Total	3.7	28	38.0

Note: Exhaust PM-10 emission rates are calculated using the ROADWAY model.

6 **e) Create objectionable odors affecting a substantial number of people?**

7 Project activities may create odors, but they would only be perceptible close to the  
 8 Project area, which is remote and rural. Due to the distance of the Project area from the  
 9 nearest residence, the Project is not expected to create objectionable odors that would  
 10 be noticeable at this residence, and impacts from odors would be less than significant.

11 **f) Generate greenhouse gas emissions, either directly or indirectly, that may have**  
 12 **a significant impact on the environment?**

13 **g) Conflict with an applicable plan, policy or regulation adopted for the purpose**  
 14 **of reducing the emissions of greenhouse gases?**

15 The Project would release GHG emissions during the construction phase. These would  
 16 be temporary emissions and would occur over 2 months. Operation of the pipeline  
 17 would not result in additional GHG emissions, as no new infrastructure with the potential  
 18 to release emissions is proposed.

19 Emissions calculations to determine GHGs emitted by the Project were performed using  
 20 Road Construction Emissions Model, Version 6.3.2 software, which is recommended by  
 21 both the SJVAPCD and SMAQMD for use in emissions calculations for this type of  
 22 project. This program determined that CO<sub>2</sub> and trace amounts of NO<sub>2</sub> and CH<sub>4</sub> would be  
 23 released during the fuel combustion process. However, these constituents would  
 24 contribute less than 1 percent to the overall GHG budget. Of the three types of GHG  
 25 released from combustion of diesel, N<sub>2</sub>O and CH<sub>4</sub> would account for less than 1 percent  
 26 of the total. CO<sub>2</sub> would constitute the remaining 99 percent.

27 GHG emissions for the project were estimated based on lists of equipment for each  
 28 phase of the Project and the corresponding equipment use assumptions provided by  
 29 Three Rivers. Equipment proposed for use during the Project is found in Table 3.3.3-9.

1 An estimated total 62.21 tons of GHG emissions would be released during the  
 2 construction phase. A breakdown of emissions by phase is summarized in Table 3.3.3-  
 3 11. Emissions of both CO<sub>2</sub> and CO<sub>2</sub>e are presented. Calculation of GHG emissions is  
 4 provided in Appendix E.

5 **Table 3.3.3-11**  
 6 **Summary of GHG Emissions\***

Project Phase	CO <sub>2</sub> (tons/yr)	Ratio <sup>1</sup> CO <sub>2</sub> e/CO <sub>2</sub>	CO <sub>2</sub> e (tons/yr)
Bore Under Highway 12	2.10	1.0034	2.11
Bore Under River	19	1.0034	19
Trenching/Installation	41	1.0034	41.14
Project Total	62.0		62.21

\* This table presents a summary of emissions of both CO<sub>2</sub> alone and total GHGs (CO<sub>2</sub> + N<sub>2</sub>O + CH<sub>4</sub>) in terms of CO<sub>2</sub>e.

7 Neither SMAQMD nor SJVAPCD have established thresholds of significance for short-  
 8 term construction-related GHG emissions. Therefore, to place the project GHG  
 9 emissions into perspective, expected Project emissions were compared with total GHG  
 10 emissions in Sacramento and San Joaquin Counties. Moreover, the EPA considers a  
 11 significant GHG source to be 25,000 metric tons (MT) CO<sub>2</sub>e per year, and requires such  
 12 sources to report their GHG emissions. Similarly, under California’s new cap and trade  
 13 program, sources of 25,000 MT CO<sub>2</sub>e per year or greater will be subject to the cap and  
 14 trade provisions. Because the Project’s estimated 62.21 MT per year would be limited to  
 15 one year, would be significantly less than EPA’s threshold of significant GHG sources,  
 16 and would constitute less than 0.001 percent of either county’s annual GHG emissions  
 17 (see Table 3.3.3-12), the Project’s impact from GHGs would be less than significant.

18 **Table 3.3.3-12**  
 19 **County and State GHG Emissions**

Source of GHG Emissions	Annual Emissions of CO <sub>2</sub> (Metric tons/yr)
Sacramento County (2005)	13,938,537
San Joaquin County (2005)	6,563,888
State of California (2002 to 2004)	565,000,000
Estimated Project Emissions	62.21
Project Emissions as % of San Joaquin County Emissions	0.00094%
Project Emissions as % of Sacramento County Emissions	0.00045%
Project Emissions as % of State of California Emissions	0.00001%

### 3.3.4 Biological Resources

<b>BIOLOGICAL RESOURCES – Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) 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 Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

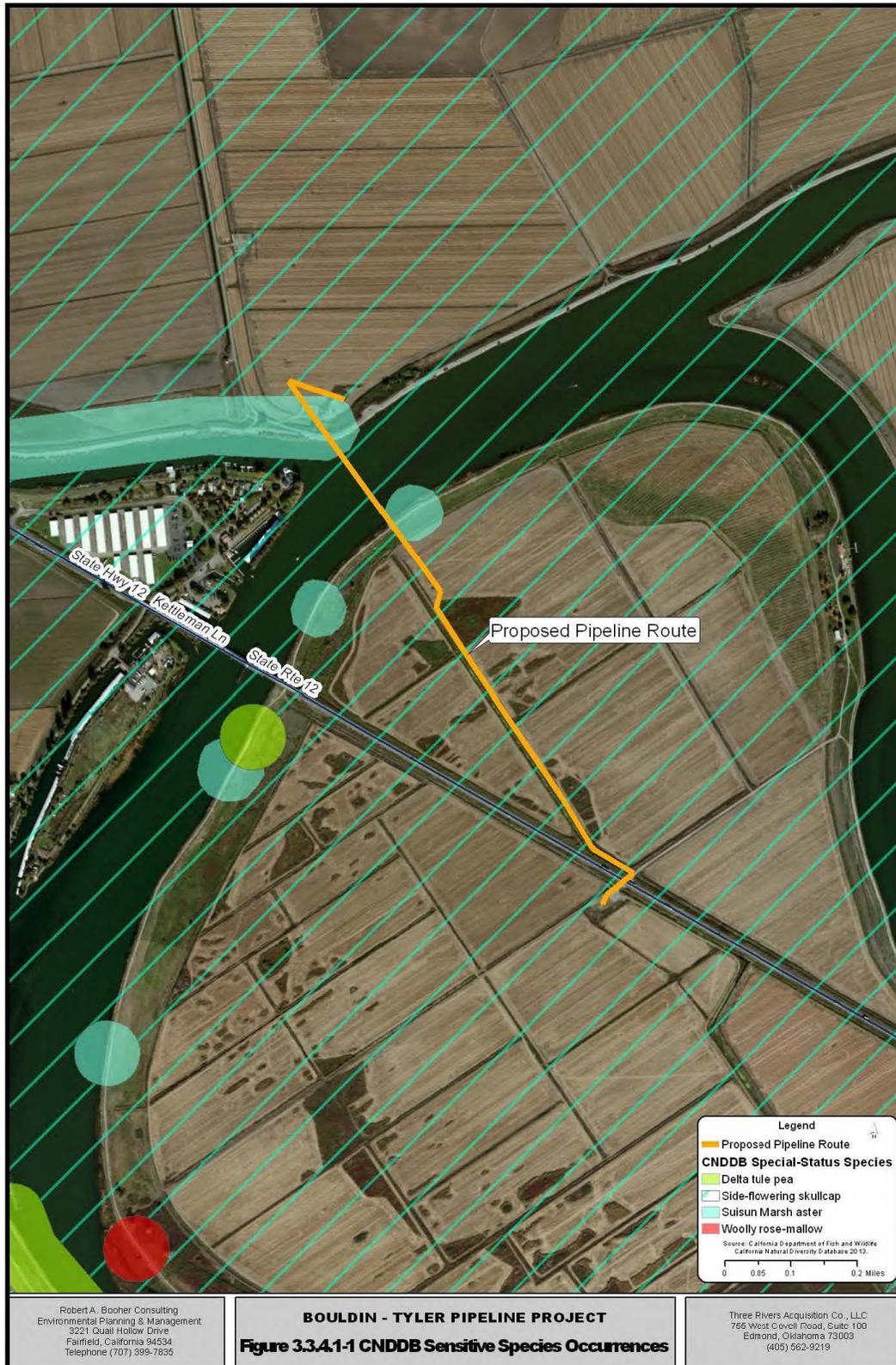
#### 3.3.4.1 Environmental Setting

Robert A. Booher Consulting (RAB Consulting) conducted a literature review and reconnaissance-level field surveys to identify special-status plant and wildlife species, and sensitive habitats that could be present within the proposed pipeline alignment, existing access roads, and areas immediately adjacent to these areas. The following sections describe the survey methods used, and the literature and databases reviewed.

Tables 3.3.4-1 lists plant and wildlife species observed during biological surveys, and Table 3.3.4-2 (at the end of this section) lists special-status wildlife species (see also Figure 3.3.4.1-1). Figure 3.3.4.1-2 shows the location of wetland habitat in the Project area. Appendix D (Biological Assessment Report) provides a detailed discussion of the biological resources present or potentially present in and adjacent to the Project area.

**Table 3.3.4-1. Plant and Animal Species Observed During Biological Surveys.**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Family</b>
<b>Animals</b>		
Mallard	<i>Anas platyrhynchos</i>	Anatidae
Great blue heron	<i>Ardea herodias</i>	Ardeidae
Cattle egret	<i>Bubulcus ibis</i>	Ardeidae
Turkey vulture	<i>Cathartes aura</i>	Cathartidae
American crow	<i>Corvus brachyrhynchos</i>	Corvidae
Common raven	<i>Corvus corax</i>	Corvidae
Northern alligator lizard	<i>Elgaria coerulea</i>	Anguidae
Black-tailed jackrabbit	<i>Lepus californicus</i>	Leporidae
House sparrow	<i>Passer domesticus</i>	Passeridae
Ring-necked pheasant	<i>Phasianus colchicus</i>	Phasianidae
Raccoon	<i>Procyon lotor</i>	Procyonidae
Western fence lizard	<i>Sceloporus occidentalis</i>	Phrynosomatidae
California ground squirrel	<i>Spermophilus beecheyi</i>	Sciuridae
Mourning dove	<i>Zenaida macroura</i>	Columbidae
<b>Plants</b>		
Water plantain	<i>Alisma plantago-aquatica</i>	Alismataceae
Common fiddleneck	<i>Amsinckia menziesii</i> var. <i>intermedia</i>	Boraginaceae
Wild oat	<i>Avena fatua</i>	Poaceae
Black mustard	<i>Brassica nigra</i>	Brassicaceae
Ripgut	<i>Bromus rigidus</i> Roth.	Poaceae
Soft cheat grass	<i>Bromus hordeaceus</i>	Poaceae
Soft chess	<i>Bromus mollis</i>	Poaceae
Soft cheat grass	<i>Bromus secalinus</i> L.	Poaceae
Yellow-star thistle	<i>Centaurea solstitialis</i>	Asteraceae
Hedge bindweed	<i>Calystegia sepium</i>	Convolvulaceae
Poison hemlock	<i>Conium maculatum</i>	Apiaceae
Field bindweed	<i>Convolvulus arvensis</i>	Convolvulaceae
Umbrella sedge	<i>Cyperus eragrostis</i>	Cyperaceae
Common willow herb	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Onagraceae
Redstem filaree	<i>Erodium cicutarium</i>	Geraniaceae
California poppy	<i>Eschscholzia californica</i>	Papaveraceae
Fennel	<i>Foeniculum vulgare</i>	Asteraceae
California mustard	<i>Guillenia lasiophylla</i>	Brassicaceae
Cow parsnip	<i>Heracleum lanatum</i>	Apiaceae
Foxtail barley	<i>Hordeum leporinum</i>	Poaceae
Mediterranean barley	<i>Hordeum marinum</i>	Poaceae
Baltic rush	<i>Juncus balticus</i>	Juncaceae
Common rush	<i>Juncus effusus</i>	Juncaceae
Prickly lettuce	<i>Lactuca serriola</i> L.	Asteraceae
Perennial rye grass	<i>Lolium perenne</i>	Poaceae
Common mallow	<i>Malva neglecta</i> Wallr.	Malvaceae
Cheeseweed	<i>Malva parviflora</i>	Malvaceae
Bur clover	<i>Medicago polymorpha</i>	Fabaceae
Phragmites	<i>Phragmites australis</i>	Poaceae
Bristly ox-tongue	<i>Picris echioides</i>	Asteraceae
Rabbitsfoot grass	<i>Polypogon monspeliensis</i> (L.) Desf.	Poaceae
Wild radish	<i>Rhaphanus sativus</i>	Brassicaceae
California blackberry	<i>Rubus ursinus</i>	Rosaceae
Curly dock	<i>Rumex crispus</i> L.	Polygonaceae
Willow	<i>Salix</i> spp.	Saliaceae
Common tule	<i>Scirpus acutus</i>	Cyperaceae
California bulrush	<i>Scirpus californicus</i>	Cyperaceae
Bulrush	<i>Scirpus microcarpus</i>	Cyperaceae
Spiny sowthistle	<i>Sonchus asper</i>	Asteraceae
Perennial sowthistle	<i>Sonchus arvensis</i> L.	Asteraceae
Annual sowthistle	<i>Sonchus oleraceus</i>	Asteraceae
Narrow-leaved cattail	<i>Typha angustifolia</i>	Typhaceae
Broad-leaved cattail	<i>Typha latifolia</i>	Typhaceae
Field corn	<i>Zea mays</i>	Poaceae





1

1 **Literature Review**

2 RAB Consulting biologists independently reviewed databases and reports that address  
3 biological resources within the Project and surrounding area, including the *California*  
4 *Natural Diversity Database* (CNDDDB) (CDFG 2012), the California Native Plant  
5 Society’s (CNPS) *Inventory of Rare and Endangered Vascular Plants of California*  
6 (CNPS 2012), and the United States Fish and Wildlife Service (USFWS) online  
7 electronic database of endangered species (USFWS 2012). Relevant technical  
8 information from these databases are incorporated and referenced as appropriate.

9 **Reconnaissance Survey**

10 RAB Consulting biologists conducted reconnaissance-level biological surveys of the  
11 Project, existing access roads, and buffer areas on August 23, 2010, and March 6,  
12 2012. Habitat types encountered during the surveys were characterized primarily by  
13 dominant and subdominant plant species. Wildlife use of these areas was described  
14 based on known and inferred occurrences. Most species were recorded as present if  
15 they were observed, if species’ vocalizations were heard, or if diagnostic field signs  
16 were found (i.e., scat, tracks, pellets). Some species known to occur in the region or for  
17 which suitable habitat is present onsite were recorded as “expected, but not observed.”  
18 Plant taxonomy is based on *The Jepson Manual* (Hickman 1996), and wildlife taxonomy  
19 on Laudenslayer et al. (1991). Surveys were conducted within the proposed pipeline  
20 alignment, existing access roads, as well as a buffer area approximately 250 feet wide  
21 around these areas.

22 Special-status wildlife species (see Table 3.3.4-2) were surveyed for to determine the  
23 presence or absence of such species or their habitat. If a special-status wildlife species  
24 or population had been observed, digital photographs would have been taken, the  
25 individuals or populations would have been noted on a USGS 7.5-minute quad map,  
26 and the number of individuals present would have been estimated and recorded. If a  
27 special-status species or population were identified, a CNDDDB field survey form would  
28 have been completed. In the case of the Project, biological surveys failed to document  
29 the presence of any special-status wildlife species or populations, and the preparation  
30 of the above-mentioned documentation was not required.

31 Surveys were conducted to identify the following:

- 32 1. Suitability of habitat(s) to support sensitive wildlife species;
- 33 2. Presence of wildlife species and their habitats;
- 34 3. Potential of the site to contain vernal pools, natural wetlands, inland blowout  
35 lakes/ponds;
- 36 4. Potential of the site to support sensitive small mammal species;
- 37 5. Potential of the site to support sensitive avian species (e.g., waterfowl, etc.);
- 38 6. Potential of the site(s) to support special status plant species;

- 1 7. Habitat condition, quality and vegetation associations; and
- 2 8. On-site, adjacent and surrounding land uses.

### 3 **Special-status Plant Survey**

4 Special-status plant surveys were conducted on August 23, 2010, and March 6, 2012,  
5 to coincide with the flowering period of sensitive plant species potentially occurring  
6 within the Project area. A review of the various special-status species databases and  
7 literature indicated that 10 special-status plant species had potential to occur in the  
8 Project and buffer area (see Table 3.3.4-2). Botanical surveys conducted during 2010  
9 were conducted within the blooming period of nine of the 10 special-status plant species  
10 expected to potentially occur within these areas (surveys were not conducted during the  
11 blooming period of eel-grass pondweed – *Potamogeton zosteriformis*). Botanical  
12 surveys conducted during 2012 were conducted within the blooming period of one of the  
13 10 special-status plant species expected to potentially occur within these areas (eel-  
14 grass pondweed). Surveys were floristic in nature (where possible), and were  
15 conducted in accordance with CDFW's *Guidelines for Assessing Effects of Proposed*  
16 *Projects on Rare, Threatened, and Endangered Plants and Natural Communities*  
17 (2000). If a special-status plant species or population was observed, digital photographs  
18 were taken, the population was noted on a USGS 7.5-minute quad map, and an  
19 estimate of the number of individuals present, their phenology, and the associated  
20 vegetation were recorded. For each special-status plant species or population identified,  
21 a CNDDDB field survey form was completed.

22 Rare plant surveys were performed using demographic survey techniques derived from  
23 the CNPS rare plant monitoring guidelines (CNPS 2001). These guidelines include  
24 conducting floristically based surveys, identifying to species level all plants encountered,  
25 or identifying to the level necessary to detect rare plants if present.

26 During field surveys, meandering transects were walked throughout the Project area,  
27 proposed and existing access roads, and buffer areas to ensure that all habitats present  
28 were surveyed. All plant species observed were identified to the level necessary to  
29 ensure that any special-status species present would be detected. Scientific and  
30 common nomenclature followed *The Jepson Manual* (Hickman 1996).

### 31 **Results and Findings**

32 A discussion of biological resources is provided below and includes a discussion of the  
33 vegetation communities and wildlife habitats known to occur within the Project area,  
34 existing access roads, and buffer areas, and special-status plants and wildlife that could  
35 potentially occur in these areas.

1 Habitats and Vegetation Communities

2 Vegetative communities identified within the Project and buffer area included  
3 ruderal/disturbed, agricultural field/agricultural wetland, and freshwater emergent  
4 wetland. Vegetative community designations are based on *A Guide to Wildlife Habitats*  
5 *of California* (Mayer and Laudenslayer 1988).

6 Vegetation communities and wildlife detected or commonly occurring within these  
7 habitats are discussed below. The value of the Project, proposed and existing access  
8 roads, buffer areas, and associated habitats to wildlife is also provided below. Table  
9 3.3.4-1 lists plant and wildlife species observed during biological surveys.

10 *Ruderal/Disturbed*

11 The ruderal/disturbed vegetative community was observed within and immediately  
12 adjacent to the existing DW 8-1 Well, on the banks of the levees on the north and south  
13 sides of the River, within portions of the pipeline alignment that will be installed by  
14 trenching between the River and the 5-2 Line, and within and adjacent to existing  
15 access roads that would be used during construction. Common vegetative species  
16 found in this community included weedy non-native and weedy native species. Common  
17 species identified during the field visit included: wild oat (*Avena fatua*), black mustard  
18 (*Brassica nigra*), ripgut (*Bromus rigidus* Roth.), soft cheat grass (*Bromus hordeaceus*),  
19 soft chess (*Bromus mollis*), soft cheat grass (*Bromus secalinus* L.), yellow-star thistle  
20 (*Centaurea solstitialis*), hedge bindweed (*Calystegia sepium*), field bindweed  
21 (*Convolvulus arvensis*), redstem filaree (*Erodium cicutarium*), California poppy  
22 (*Eschscholzia californica*), fennel (*Foeniculum vulgare*), California mustard (*Guillenia*  
23 *lasiophylla*), cow parsnip (*Heracleum lanatum*), foxtail barley (*Hordeum leporinum*),  
24 prickly lettuce (*Lactuca serriola* L.), common mallow (*Malva neglecta* Wallr.),  
25 cheeseweed (*Malva parviflora*), bur clover (*Medicago polymorpha*), bristly ox-tongue  
26 (*Picris echioides*), wild radish (*Rhaphanus sativus*), spiny sowthistle (*Sonchus asper*),  
27 perennial sowthistle (*Sonchus arvensis* L.), and annual sowthistle (*Sonchus oleraceus*).

28 Although often comprised of non-native plant species, ruderal habitats, particularly at  
29 edges of natural communities, can provide foraging habitat for many species of birds  
30 and mammals. These habitats can be occupied by California ground squirrels and other  
31 rodents, and can potentially support special-status wildlife species, including burrowing  
32 owl (*Athene cunicularia*) nest sites and San Joaquin kit fox (*Vulpes macrotis mutica*)  
33 dens.

34 *Agricultural Field/Agricultural Wetland*

35 Large portions of the proposed pipeline alignment that will be installed via trenching  
36 methods were vegetated with the agricultural field/agricultural wetland community  
37 during the biological surveys. Agricultural fields/agricultural wetlands were either plowed

1 or planted to field corn at the time the biological surveys were conducted. Agricultural  
2 fields/agricultural wetlands were also observed covering large portions of the Project  
3 buffer area during biological surveys, and were either plowed or planted to field corn at  
4 the time the surveys were conducted. Agricultural wetlands are regulated under the  
5 jurisdiction of the USACE and RWQCB. Common species identified during the  
6 biological surveys consisted of field corn or limited ruderal/disturbed vegetation as  
7 described above.

8 The general Project area once supported a wide variety of wetlands and wetland  
9 vegetation prior to the construction of levees to control the flow of water and to drain  
10 area wetlands. Agricultural lands in the Project are currently plowed on a regular basis  
11 and planted to corn and other agricultural crops. No wetland vegetation is now present  
12 within these areas.

### 13 *Freshwater Emergent Wetland*

14 The freshwater emergent wetland vegetative community was observed within  
15 agricultural drainage ditches crossing the proposed pipeline alignment, along the edges  
16 of the proposed River HDD crossing, and within wetlands adjacent to portions of the  
17 northwest side of the pipeline alignment on Bouldin Island. This vegetative community  
18 was also observed within similar habitats found within the Project buffer area. Standing  
19 water was observed in this vegetative community at the time the surveys were  
20 conducted. Freshwater emergent wetlands are typically characterized by erect, rooted  
21 herbaceous hydrophytes. Dominant vegetation generally consists of perennial  
22 monocots up to 6.6 feet tall. All emergent wetlands are flooded frequently, enough so  
23 that the roots of the vegetation prosper in an anaerobic environment. The acreage of  
24 fresh emergent wetlands in California has decreased dramatically since the turn of the  
25 century due to drainage and conversion to other uses, primarily agriculture

26 Vegetative species observed during field surveys included water plantain (*Alisma*  
27 *plantago-aquatica*), poison hemlock (*Conium maculatum*), umbrella sedge (*Cyperus*  
28 *eragrostis*), common willow herb (*Epilobium ciliatum* ssp. *ciliatum*), Mediterranean  
29 barley (*Hordeum marinum*), Baltic rush (*Juncus balticus*), common rush (*Juncus*  
30 *effuses*), Perennial rye grass (*Lolium perenne*), phragmites (*Phragmites australis*),  
31 rabbitsfoot grass (*Polypogon monspeliensis*), California blackberry (*Rubus ursinus*),  
32 curly dock (*Rumex crispus*), willow (*Salix* spp.), common tule (*Scirpus acutus*),  
33 California bulrush (*Scirpus californicus*), bulrush (*Scirpus microcarpus*), narrow-leaved  
34 cattail (*Typha angustifolia*), and broad-leaved cattail (*Typha latifolia*).

35 Fresh emergent wetlands are among the most productive wildlife habitats in California.  
36 They provide food, cover, and water for more than 160 species of birds and numerous  
37 mammals, reptiles, and amphibians. Many species rely on fresh emergent wetlands for  
38 their entire life cycle. Wildlife species observed in this community during biological

1 surveys included mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*),  
2 cattle egret (*Bubulcus ibis*), and mourning dove (*Zenaida macroura*).

3 Figure 3.3.4.1-2 shows the location of wetland habitat in the Project area. No freshwater  
4 emergent wetland habitat was observed within areas proposed for ground-disturbing  
5 activities during Project implementation.

#### 6 Special-Status Biological Resources

7 The following is a discussion of the plant and wildlife species that have been afforded  
8 special recognition by federal, State, or local resource agencies and organizations. This  
9 discussion focuses on and summarizes species known or expected to occur within the  
10 Project study area. Legal protection is afforded to species listed as “threatened” or  
11 “endangered” under the Federal or California Endangered Species Acts or “fully  
12 protected” under the Fish and Game Code. The CDFW designates species as  
13 “California Species of Special Concern,” because of declining population levels, limited  
14 ranges, and/or continuing threats that have made these species vulnerable to extinction.  
15 Sources used to determine the status of biological resources are as follows:

- 16 • Plants – CNDDDB (CDFG 2012), USFWS (USFWS 2012), and CNPS (2012)
- 17 • Wildlife – CNDDDB (CDFG 2012), USFWS (USFWS 2012), and Mayer and  
18 Laudenslayer (1988)
- 19 • Habitats – CNDDDB (CDFG 2012) and Sawyer and Keeler-Wolf (1995)

20 Through an electronic search of the CNDDDB and a literature review, 11 special-status  
21 plant species and 23 special-status animal species were identified as potentially  
22 occurring within the general Project region. Of these special-status species, 10 plant  
23 and 12 animal species were identified as potentially occurring within the Project area  
24 and buffer area. Table 3.3.4-2 provides a complete list of these species. Figure 3.3.4.1-  
25 1 illustrates the location of documented special-status plant and animal occurrences  
26 within the vicinity of the Project. Special-status plant and wildlife species, identified  
27 through the literature review and by regulatory agencies, which occur outside of the  
28 elevational or geographic range of the Project and buffer area, or for which no  
29 appropriate habitat is present within these areas, are not discussed further in this  
30 document. The following discussion focuses only on special-status species that could  
31 potentially occur within the area surveyed.

#### 32 Special-Status Plant Species

33 Special-status plant surveys were conducted on August 23, 2010, and March 6, 2012,  
34 to coincide with the flowering period of sensitive plant species potentially occurring  
35 within the Project and buffer area. A review of the various special-status species  
36 databases and literature indicated that 10 special-status plant species had potential to  
37 occur in the Project and buffer areas (see Table 3.3.4-2). Botanical surveys conducted

1 during 2010 were conducted within the blooming period of nine of these species.  
2 Botanical surveys conducted during 2012 occurred within the blooming period of the  
3 tenth species (eel-grass pondweed).

4 Surveys for special-status plant species were conducted within the Project area and a  
5 buffer area approximately 250 feet wide around the Project area. The freshwater  
6 emergent wetland vegetative community was surveyed in particular because it was the  
7 only vegetative community present that provided potential habitat for special-status  
8 plant species. No special-status plant species were identified during the course of the  
9 botanical surveys; however, Delta tule pea, side-flowered skullcap, Suisun Marsh aster,  
10 and woolly rose-mallow, all special-status plant species, have been documented in the  
11 Project area previously by the CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1).

## 12 Special-Status Wildlife Species and Sensitive Habitats

13 A total of 12 wildlife species, including three birds, three mammals, two reptiles, and  
14 four fish species were identified during the literature search as potentially occurring  
15 within the Project and buffer area. A discussion of these species and their potential to  
16 occur within the survey area is included below.

### 17 *Western Burrowing Owl*

18 The western burrowing owl (*Athene cunicularia hypugea*) is a California species of  
19 special concern. Burrowing owls are small, partly diurnal owls that live in underground  
20 burrows. They occur in arid, open grasslands, deserts, and fallow areas adjacent to  
21 developed areas such as roadsides, airports, and campuses. Burrowing owls frequently  
22 occupy California ground squirrel burrows and range throughout the State where there  
23 is suitable grassland habitat. Conversion of open grasslands to agricultural use and  
24 ground squirrel control has caused widespread population declines (Zeiner et al. 1990,  
25 CDFG 2012).

26 Potential foraging and nesting habitat for the western burrowing owl was observed  
27 throughout the Project and buffer areas during biological surveys. No western burrowing  
28 owls, signs of their activity (i.e., pellets, whitewash, feathers, etc.), or active burrow/nest  
29 sites were observed within the Project or buffer area during surveys; however, California  
30 ground squirrels and their burrows were observed within the Project and buffer area  
31 during surveys. These burrows provide potential nesting habitat for burrowing owls,  
32 should burrowing owls become established within the Project or buffer area. At the time  
33 of the surveys, these burrows were in use by California ground squirrels. California  
34 ground squirrels are highly aggressive, and their presence likely precludes the use of  
35 their burrows by burrowing owls. Burrowing owls have not been documented in the  
36 Project area previously by the CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1).

1 *Swainson's Hawk*

2 Swainson's hawk (*Buteo swainsoni*), a State threatened species, is an uncommon  
3 breeding resident and migrant in the Central Valley. The nesting lifestage of this species  
4 is considered sensitive by CDFW. Breeding and nesting primarily occur in riparian  
5 woodland habitats and oak savannah of the Central Valley, and often take place near  
6 water, but some nesting in urban woodland areas has also been recorded. This species  
7 forages in adjacent agricultural fields, grasslands, and open pasture and individuals  
8 have been known to forage as much as 20 miles from their nesting site. Small  
9 mammals, amphibians, reptiles, birds, and occasionally fish make up the diet of this  
10 species. Swainson's hawk often roosts in large trees but will sometimes roost on the  
11 ground. Nests consist of a platform of sticks, bark, and fresh leaves constructed in a  
12 tree, bush or utility pole from 4 to 100 feet above ground. Breeding occurs from late  
13 March to late August, with peak activity in late May through July. Incubation is about 25  
14 to 28 days. Migrating individuals typically move south through California in September  
15 and October and move back to their summer range in March through May (Zeiner et al.  
16 1990).

17 Potential foraging habitat for the Swainson's hawk was observed throughout the Project  
18 and buffer area during biological surveys. Potential nesting habitat for this species was  
19 observed in a grove of eucalyptus trees approximately 480 feet west of the northern  
20 section of the proposed pipeline alignment. However, no Swainson's hawks or their  
21 nesting sites (active or inactive) were observed during biological surveys. Swainson's  
22 hawks have not been documented in the Project area previously by the CNDDDB (CDFG  
23 2012) (see Figure 3.3.4.1-1).

24 *White-Tailed Kite*

25 The white-tailed kite (*Elanus leucurus*) has no federal status, and is a California fully  
26 protected species. The white-tailed kite inhabits low elevation, open grasslands,  
27 savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Riparian areas  
28 adjacent to open areas are also used. The species preys mostly on voles and other  
29 small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians. To  
30 hunt, it soars, glides, and hovers less than 100 feet above the ground in search of prey  
31 (Zeiner et al. 1990, CDFG 2012). The white-tailed kite uses trees with dense canopies  
32 for cover: the specific plant associations seem to be unimportant, with the vegetation  
33 structure and prey abundance apparently more important. Substantial groves of dense,  
34 broad-leafed deciduous trees are used for nesting and roosting (Zeiner et al. 1990,  
35 CDFG 2012). It makes a nest of loosely piled sticks and twigs that are lined with grass,  
36 straw, or rootlets. The nest is placed near the top of a dense oak, willow, or other tree  
37 stand, usually 20 to 100 feet above ground in trees that vary from 15 to 150 feet in  
38 height. The nest is located near an open foraging area. It is monogamous, and breeds

1 from February to October, with a peak from May to August (Zeiner et al. 1990, CDFG  
2 2012).

3 By the 1930s, the California population of the white-tailed kite was reduced by habitat  
4 loss, shooting and possibly egg collecting. Threats to this species are likely the result of  
5 conversion of natural or agricultural lands to urban or commercial property, clean  
6 farming techniques that leave few residual vegetation areas for the prey, increased  
7 competition for nest-sites with other raptors and corvids, a relatively long-term drought  
8 throughout California during much of the time from 1982 to 1991, and increased  
9 disturbances at nest sites (Zeiner et al. 1990, CDFG 2012).

10 In California today, the white-tailed kite is a common to uncommon, year-long resident  
11 in coastal and valley lowlands, and is rarely found away from agricultural areas. It  
12 inhabits herbaceous and open stages of most habitats mostly in cismontane California,  
13 and has extended its range and increased numbers in California in recent decades.  
14 Although apparently a resident bird throughout most of its breeding range, dispersal  
15 occurs during the non-breeding season, resulting in some range expansion during the  
16 winter (Zeiner et al. 1990, CDFG 2012).

17 Potential foraging habitat (i.e., rolling foothills and valley margins with marshlands) for  
18 the white-tailed kite was identified within the Project and buffer area during biological  
19 surveys. This species has the potential to forage intermittently within wetlands and  
20 adjacent upland areas in the Project and buffer area. Potential nesting habitat for this  
21 species was observed within scattered willow trees found within the freshwater  
22 emergent wetland vegetative community (the River and agricultural drainage ditches).  
23 No individual white-tailed kites were observed during the field survey, nor were any nest  
24 sites (active or inactive) observed. This species has not been documented in the Project  
25 area previously by the CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1).

#### 26 *Other Raptor Species*

27 Potential nesting habitat for other raptor species was not identified in the Project or  
28 buffer area during biological surveys. Raptors may forage intermittently within any of the  
29 vegetative communities observed in the Project or buffer area. No individual raptors  
30 were observed during field surveys, nor were raptor nesting sites (active or inactive)  
31 observed.

#### 32 *Migratory Avian Species*

33 Potential foraging and nesting habitat for migratory avian species was identified within  
34 both the Project and buffer area during biological surveys. Individual migratory bird  
35 species were observed during field surveys, including turkey vultures, American crows,  
36 common ravens, and mourning doves. No migratory avian species nests (active or  
37 inactive) were observed during surveys.

1 *Western Red Bat*

2 The western red bat (*Lasiurus blossevillii*) is a California species of special concern  
3 species that is locally common in some areas of California, occurring from Shasta  
4 County to the Mexican border, west of the Sierra Nevada range and the deserts. The  
5 winter range includes western lowlands and coastal regions south of San Francisco  
6 Bay. Roosting habitat includes forests and woodlands. The western red bat roosts  
7 primarily in trees, often in edge habitats adjacent to streams, fields, or urban areas.  
8 Mating occurs in August and September and young are born from late May through  
9 early July (Zeiner et al. 1990).

10 Potential foraging habitat for the western red bat was observed within both the Project  
11 and buffer areas during biological surveys. Pallid bats may forage intermittently within  
12 all the vegetative communities observed in the Project and buffer areas; however no  
13 western red bats, nor any roosting or maternity habitat or sites, were observed during  
14 biological surveys, and this species has not been documented in the Project area by the  
15 CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1).

16 *Riparian Brush Rabbit*

17 The riparian brush rabbit (*Sylvilagus bachmani riparius*) is a federally and California  
18 endangered species. The riparian brush rabbit is a small cottontail that is secretive by  
19 nature. Riparian brush rabbits prefer dense, brushy areas of valley riparian forests,  
20 marked by extensive thickets of wild rose, blackberries, and willows. For the most part,  
21 riparian brush rabbits remain hidden under protective shrub cover. They feed at the  
22 edges of shrub cover rather than in large openings, and seldom venture more than a  
23 few feet from cover. Their diet consists of herbaceous vegetation, such as grasses,  
24 sedges, clover, forbs, and buds, bark, and leaves of woody plants (CDFG 2012,  
25 USFWS 2012).

26 The approximate breeding season of riparian brush rabbits occurs from January to May.  
27 Although males are capable of breeding all year long, females are only receptive during  
28 this period. The young are born in a shallow burrow or cavity lined with grasses and fur  
29 and covered by a plug of dried vegetation. Although these rabbits have a high  
30 reproductive rate, five out of six rabbits typically do not survive to the next breeding  
31 season (CDFG 2012, USFWS 2012).

32 Potential foraging and nesting habitat for the riparian brush rabbit (*Sylvilagus bachmani*  
33 *riparius*) was observed within the freshwater emergent wetland vegetative community  
34 during biological surveys. No individual riparian brush rabbits were observed during  
35 biological surveys, nor has this species been documented in the Project area by the  
36 CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1).

1 *San Joaquin Kit Fox*

2 The San Joaquin kit fox (*Vulpes macrotis mutica*) is a federally endangered species and  
3 a State threatened species. The kit fox, of which the San Joaquin kit fox is a subspecies,  
4 is the smallest of all North American canids and is closely associated with arid  
5 grassland/scrub and steppe habitats. Physically, the San Joaquin kit fox is  
6 characterized by small size, narrow body, large and conspicuous ears, and long, bushy  
7 tail (~ 40 percent of body length) (Zeiner et al. 1990, CDFG 2012).

8 San Joaquin kit foxes inhabit grassland/saltbush scrub habitats of the San Joaquin  
9 Valley floor and surrounding foothills. Dens are typically established in excavated  
10 burrows, but may be established in culverts, pipes, or under structures. Kit fox diets are  
11 composed primarily of nocturnal rodents and leporids, but may also include fruits, birds,  
12 and insects. Their historic distribution encompassed much of the San Joaquin Valley  
13 floor and the bordering foothills, stretching from Contra Costa and Stanislaus Counties  
14 in the north to Kern County in the south, but its range has since been much restricted.  
15 Small populations are also located in valleys of the interior Coast Ranges of Monterey  
16 and San Luis Obispo Counties (Zeiner et al. 1990, CDFG 2012).

17 Potential foraging habitat for the San Joaquin kit fox was observed throughout the  
18 Project and buffer area during biological surveys. No potential or known dens of an  
19 appropriate size for use by the San Joaquin kit fox were observed in the Project or  
20 buffer area during biological surveys. RAB Consulting visited the Project on two  
21 separate occasions during 2010 and 2012, and observed no “signs” (tracks, scats,  
22 active digging, etc.) of this species. This species has not been documented in the  
23 Project area previously by the CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1).

24 *Special-Status Fish Species*

25 Potential habitat for green sturgeon (*Acipenser medirostris*), delta smelt (*Hypomesus*  
26 *transpacificus*), central valley steelhead (*Oncorhynchus mykiss*), Chinook salmon  
27 (*Oncorhynchus tshawytscha*), and Sacramento splittail (*Pogonichthys macrolepidotus*)  
28 occurs within the River under which the proposed pipeline will be installed via HDD  
29 methods. These species have not been documented within the Project area by the  
30 CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1). However, these fish species have been  
31 recorded in the greater San Francisco Bay and Delta, and are likely present within the  
32 River during portions of the year.

33 **Green Sturgeon:** The green sturgeon is a federally threatened species and a California  
34 species of special concern. Green sturgeon is an anadromous fish that spawn in the  
35 Sacramento River and its tributaries in the San Joaquin-Sacramento Delta. They spend  
36 time in fresh water only while young and spawning. Adult fish and older juveniles are  
37 commonly found in estuaries and marine environments, including San Francisco Bay.  
38 Sturgeons in general are highly vulnerable to habitat alteration and over-fishing due to

1 their specialized habitat requirements, the long time it takes them to reach breeding  
2 maturity, and their sporadic reproductive success. They are slow-growing and late-  
3 maturing fish that apparently spawn every 4 to 11 years during the spring and summer  
4 months (Zeiner et al. 1990, CDFG 2012).

5 **Delta Smelt:** The delta smelt is a California and federally threatened species. Estuarine  
6 rearing habitat for juvenile and adult delta smelt is typically found in the waters of the  
7 lower Delta and Suisun Bay, where salinity is between 2 and 7 parts per thousand.  
8 Delta smelt tolerate a salinity range of 0 to 19 parts per thousand. They typically occupy  
9 open shallow waters but also occur in the main channel in the region where freshwater  
10 and brackish water mix. The zone may be hydraulically conducive to their ability to  
11 maintain position and metabolic efficiency.

12 Adult delta smelt begin spawning migration into the upper Delta in December or  
13 January, and migration may continue over several months. Spawning occurs between  
14 January and July, with peak spawning during April through mid-May. Spawning occurs  
15 in along the channel edges in the upper Delta, including the Sacramento River above  
16 Rio Vista, Cache Slough, Lindsey Slough, and Barker Slough. Spawning has been  
17 observed in the Sacramento River up to Garcia Bend during drought conditions,  
18 possibly attributable to adult movement farther inland in response to saltwater intrusion.  
19 Eggs are broadcast over the bottom, where they attach to firm substrate, woody  
20 material, and vegetation. Hatching takes approximately 9 to 13 days, and larvae begin  
21 feeding 4 to 5 days later. Newly hatched larvae contain a large oil globule and are  
22 semibuoyant. Larval smelt feed on rotifers and other zooplankton. As their fins and  
23 swim bladder develop, they move higher into the water column. Larvae and juveniles  
24 gradually move downstream toward rearing habitat in the estuarine mixing zone (Zeiner  
25 et al. 1990, CDFG 2012).

26 **Central Valley Steelhead:** Central Valley steelhead is a federally threatened species.  
27 Steelhead, an anadromous variant of rainbow trout, is closely related to Pacific salmon.  
28 The species was once abundant in California coastal and Central Valley drainages, but  
29 population numbers have declined significantly in recent years, especially in the  
30 tributaries of the Sacramento River. Steelhead typically migrate to marine waters after  
31 spending 1 year or more in freshwater. In the marine environment, they typically mature  
32 for 1 to 3 years before returning to their natal stream to spawn as 3- or 4-year-olds.  
33 Unlike other Pacific salmon, steelhead are capable of spawning more than once before  
34 they die. The steelhead spawning season typically stretches from December through  
35 April. After several months, fry emerge from the gravel and begin to feed. Juveniles rear  
36 in freshwater from 1 to 4 years (usually 2 years), then migrate to the ocean as smolts  
37 (Zeiner et al. 1990, CDFG 2012).

38 **Chinook Salmon:** Four distinct runs of Chinook salmon (*Oncorhynchus tshawytscha*)  
39 occur in the San Joaquin-Sacramento Delta system: winter run, spring run, fall run, and

1 late fall run. Chinook salmon are anadromous, meaning that adults live in marine  
2 environments and return to their natal freshwater streams to spawn. Juveniles rear in  
3 freshwater for a period of up to 1 year until smoltification (i.e., a physiological  
4 preparation for survival in marine environs) and subsequent ocean residence. Each  
5 distinct run is described in further detail below.

- 6 • Central Valley Winter-run Chinook salmon are listed as both a California and  
7 federally endangered species. Critical habitat for the winter-run Chinook salmon  
8 includes the Sacramento River from Keswick Dam (River Mile 302) to Chipps  
9 Island (River Mile 0) in the Delta (CDFG 2012, Zeiner et al. 1990). Adult winter-  
10 run Chinook salmon immigration (upstream migration) through the Delta and into  
11 the Sacramento River occurs from December through July, with peak  
12 immigration from January through April. Winter-run Chinook salmon primarily  
13 spawn in the mainstem Sacramento River between Keswick Dam (River Mile  
14 302) and the Red Bluff Diversion Dam (River Mile 242) between late April and  
15 mid-August, with peak spawning generally occurring in June (CDFG 2012, Zeiner  
16 et al. 1990). Juvenile emigration (downstream migration) past the Red Bluff  
17 Diversion Dam (River Mile 242) begins in late July, peaks during September, and  
18 may extend through mid-March. The peak period of juvenile emigration through  
19 the lower Sacramento River into the Delta generally occurs between January and  
20 April (CDFG 2012, Zeiner et al. 1990). Differences in peak emigration periods  
21 between these two locations suggest that juvenile winter-run Chinook salmon  
22 may exhibit a sustained residence in the upper or middle reaches of the  
23 Sacramento River before entering the lower Sacramento River/Delta. Although  
24 the location and extent of rearing in these lower or middle reaches is unknown, it  
25 is believed that the duration of fry presence in an area is directly related to the  
26 magnitude of river flows during the rearing period (CDFG 2012, Zeiner et al.  
27 1990).

- 28 • Central Valley Spring-run Chinook salmon, which includes populations spawning  
29 in the Sacramento River and its tributaries, are listed as a California and federally  
30 threatened species. Spring-run Chinook salmon historically inhabited a range  
31 extending from the upper tributaries of the Sacramento River to the upper  
32 tributaries of the San Joaquin River, but have been extirpated from the San  
33 Joaquin River system. The only streams in the Central Valley with remaining wild  
34 spring-run Chinook salmon populations are the Sacramento River and its  
35 tributaries, including the Yuba River, Mill Creek, Deer Creek, and Butte Creek  
36 (CDFG 2012, Zeiner et al. 1990). Spring-run Chinook salmon enter the  
37 Sacramento River from late March through September, but peak abundance of  
38 immigrating adults in the Delta and lower Sacramento River occurs from April  
39 through June. Adult spring-run Chinook salmon remain in deep-water habitats  
40 downstream of spawning areas during summer until their eggs fully develop and  
41 become ready for spawning. This is the primary characteristic that distinguishes

1 spring-run Chinook salmon from the other runs. Spring-run Chinook salmon  
2 spawn primarily upstream of the Red Bluff Diversion Dam and in the  
3 aforementioned tributaries. Spawning occurs from mid-August through early  
4 October. A small portion of an annual year-class may emigrate as postemergent  
5 fry (less than 45 millimeters long) and reside in the Delta undergoing  
6 smoltification. However, most are believed to rear in the upper river and  
7 tributaries during winter and spring, emigrating as juveniles (more than 45  
8 millimeters long). The timing of juvenile emigration from the spawning and  
9 rearing reaches can vary depending on tributary of origin and can occur from  
10 November through June (CDFG 2012, Zeiner et al. 1990).

11 • Central Valley fall-run and late fall-run Chinook salmon are important  
12 commercially and recreationally. They are designated as a federal candidate for  
13 listing under the Federal ESA, and have no status under California law. Because  
14 fall-run Chinook salmon are the largest of the four runs in the Sacramento River  
15 system, they continue to support commercial and recreational fisheries of  
16 significant economic importance (CDFG 2012, Zeiner et al. 1990). In general,  
17 adult fall-run Chinook salmon migrate into the Sacramento River and its  
18 tributaries from July through December, with immigration peaking from mid-  
19 October through November. Fall-run Chinook salmon spawn in numerous  
20 tributaries of the Sacramento River, including the lower American River, lower  
21 Yuba River, Feather River, and tributaries of the upper Sacramento River. Most  
22 mainstem Sacramento River spawning occurs between Keswick Dam and the  
23 Red Bluff Diversion Dam. A greater extent of fall-run spawning, relative to the  
24 other three runs, occurs below the Red Bluff Diversion Dam, with limited  
25 spawning potentially occurring as far downstream as Tehama (River Mile 220).  
26 Spawning generally occurs from October through December, with fry emergence  
27 typically beginning in late December and January. Fall-run Chinook salmon  
28 emigrate as post-emergent fry, juveniles, and smolts after rearing in their natal  
29 streams for up to 6 months. Consequently, fallrun emigrants may be present in  
30 the lower Sacramento River from January through June and remain in the Delta  
31 for variable lengths of time before ocean entry (CDFG 2012, Zeiner et al. 1990).  
32 Adult immigration of late fall-run Chinook salmon into the Sacramento River  
33 generally begins in October, peaks in December, and ends in April. Primary  
34 spawning areas for late fall-run Chinook salmon are located in tributaries of the  
35 upper Sacramento River (e.g., Battle Creek, Cottonwood Creek, Clear Creek, Mill  
36 Creek), although late fall-run Chinook salmon are believed to return to the  
37 Feather and Yuba Rivers as well. Spawning in the mainstem Sacramento River  
38 occurs primarily from Keswick Dam (River Mile 302) to the Red Bluff Diversion  
39 Dam (River Mile 258), generally from January through April. Juveniles emigrate  
40 through the lower Sacramento River primarily from October through April (CDFG  
41 2012, Zeiner et al. 1990).

1 *Western Pond Turtle*

2 The western pond turtle (*Emys marmorata*) is a California species of special concern.  
3 Western pond turtles occur in western and central California from southern California to  
4 the Pacific Northwest. The western pond turtle is thoroughly aquatic, preferring the quiet  
5 waters of ponds, reservoirs, and sluggish streams. The species occurs in a wide range  
6 of both permanent and intermittent aquatic environments. Western pond turtles spend a  
7 considerable amount of time basking on rocks, logs, emergent vegetation, mud or sand  
8 banks, or human-generated debris. They move up to 1,300 feet or more to upland areas  
9 adjacent to watercourses to deposit eggs and overwinter. Western pond turtles typically  
10 become active in March and return to overwintering sites by October or November  
11 (Zeiner et al. 1990, CDFG 2012).

12 Potential breeding and foraging habitat (i.e., emergent marsh with permanent water and  
13 aquatic vegetation) for the northwestern pond turtle was observed within agricultural  
14 drainage ditches crossing the proposed pipeline alignment and the Mokelumne River  
15 bore crossing. Potential habitat was also observed within similar habitats found within  
16 the Project buffer area. Appropriate upland nesting habitat (non-native annual  
17 grassland) was not observed within the Project and buffer area during biological  
18 surveys. This species could potentially nest in the ruderal/disturbed vegetative  
19 community adjacent to aquatic habitat found in the Project and buffer area; however,  
20 this upland nesting habitat is lower in quality. No individual western pond turtles were  
21 observed during biological surveys. This species has not been documented within the  
22 Project area by the CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1).

23 *Giant Garter Snake*

24 The giant garter snake (*Thamnophis gigas*) (GGS) is a federally and State-listed  
25 threatened species. Historically, giant garter snakes were found in the Sacramento and  
26 San Joaquin Valleys from Butte County south to Buena Vista Lake in Kern County.  
27 Today, populations are found only in the Sacramento Valley and isolated portions of the  
28 San Joaquin Valley as far south as Fresno County (USFWS 2012, Zeiner et al. 1990,  
29 CDFG 2012). GGS typically inhabit sloughs, marshes, and drainage canals  
30 characterized by slow flowing or standing water, permanent summer water, mud  
31 bottoms, earthen banks, and an abundance of preferred forage species. The GGS is  
32 highly aquatic, but avoids areas of dense riparian overstory, preferring stands of  
33 emergent aquatic vegetation, such as bulrushes and cattails, and herbaceous terrestrial  
34 cover composed of annual and perennial grasses, blackberry, and mustard. GGS rely  
35 on canals and ditches as movement corridors. These corridors are vital to GGS  
36 dispersal and, most importantly, for continuing genetic exchange between  
37 subpopulations. Un-vegetated canals may be used as disposal corridors, but they  
38 typically do not remain in exposed canals due to increased vulnerability to predators.  
39 Essential habitat components required by GGS include:

- 1 • Adequate water during the snake’s active period (early spring through mid-fall) to  
2 provide a prey base and cover;
- 3 • Emergent, herbaceous wetland vegetation, such as cattail and bulrushes, for  
4 escape cover and foraging habitat; and
- 5 • Upland habitat for basking, cover, and retreat sites, and refuge from floodwaters.

6 GGS have the potential to occur within agricultural drainage ditches crossing the  
7 proposed pipeline alignment and the Mokelumne River HDD crossing. Potential habitat  
8 was also observed within similar habitats found within the Project buffer area. Potential  
9 nesting and aestivation burrows were observed along the banks of the drainage ditches  
10 and the River within the Project and buffer area during biological surveys. Upland  
11 habitat adjacent to this aquatic habitat consisted of agricultural fields that are low in  
12 quality as use for aestivation habitat. No individual giant garter snakes were observed  
13 during biological surveys. This species has not been documented within the Project  
14 area by the CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1).

### 15 **3.3.4.2 Regulatory Setting**

16 This section identifies and discusses the regulations and policies administered by  
17 resource agencies pertaining to those biological resources that are known to  
18 exist and/or have the potential to occur within the Project and adjacent areas.

#### 19 **Federal**

20 Federal Endangered Species Act (FESA) (7 USC 136, 16 USC 1531 et seq.). The  
21 FESA, which is administered in California by the USFWS and the National Marine  
22 Fisheries Service (NMFS), provides protection to species listed as threatened or  
23 endangered, or proposed for listing as threatened or endangered. Section 9 of the  
24 FESA prohibits the “take” of any member of a listed species. Take is defined as “...to  
25 harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to  
26 engage in any such conduct.” Harass is “an intentional or negligent act or omission that  
27 creates the likelihood of injury to a listed species by annoying it to such an extent as to  
28 significantly disrupt normal behavior patterns that include, but are not limited to,  
29 breeding, feeding, or sheltering.” Harm is defined as “...significant habitat modification or  
30 degradation that results in death or injury to listed species by significantly impairing  
31 behavioral patterns such as breeding, feeding, or sheltering.”

32 When applicants are proposing projects with a federal nexus that “may affect”  
33 a federally listed or proposed species, the federal agency is required to consult with  
34 USFWS or NMFS, as appropriate, under Section 7 of the FESA. Section 7 of the FESA  
35 provides that each federal agency must ensure, in consultation with the Secretary of the  
36 Interior or Commerce, that any actions authorized, funded, or carried out by the agency  
37 are not likely to jeopardize the continued existence of any endangered or threatened

1 species or result in the destruction or adverse modification of areas determined to be  
2 critical habitat. The USACE, as the federal permitting agency and nexus for the Project,  
3 is initiating Section 7 consultation with the USFWS and NMFS.

4 Magnuson-Stevens Fishery Conservation and Management Act and Sustainable  
5 Fisheries Act of 1996 (16 USC 1801 et seq.). The Magnuson-Stevens Fishery  
6 Conservation and Management Act is intended to result in processes to conserve and  
7 manage fishery resources. Projects likely to affect federally managed fishery species  
8 are required to assess the project's likely impact on Essential Fish Habitat.

9 Migratory Bird Treaty Act (MBTA) (16 USC 703-712). The MBTA bars the take,  
10 possession, purchase, sale, or barter of any migratory bird listed in 50 CFR section 10  
11 or their parts, nests, or eggs. Certain game bird species are allowed to be hunted for  
12 specific periods determined by federal and State governments. The intent of the MBTA  
13 is to eliminate any commercial market for migratory birds, feathers, or bird parts,  
14 especially for eagles and other birds of prey.

15 Rivers and Harbors Act (33 USC 401). Section 10 of the Rivers and Harbors Act limits  
16 the construction of structures and the discharge of fill into navigable waters of the U.S.  
17 This regulation is used by the USACE to control, and permit, the placing of structures or  
18 the operation of vessels within the waters of the U.S. Several Nationwide Permits, which  
19 are used to authorize specific activities that have been previously assessed under the  
20 National Environmental Policy Act (NEPA), provide an expedited permitting process for  
21 the more "routine" in-water construction activities such as placing scientific equipment,  
22 construction of pipelines, and placing shoreline protective devices.

23 Clean Water Act (CWA) (33 USC 1251 et seq.). The CWA is comprehensive legislation  
24 that generally includes reference to the federal Water Pollution Control Act of 1972, its  
25 substantial supplementation by the CWA of 1977, and subsequent amendments. As the  
26 U.S. primary law protecting water quality, the CWA sets water quality standards for  
27 surface water and discharge effluents into waters of the U.S. Implemented by the EPA,  
28 often issued through the State Water Resources Control Board (SWRCB), RWQCBs,  
29 and USACE. Permits are issued under CWA Section 404 (dredge and fill) and Section  
30 401 (water quality certification). The CWA also provides for a permitting system to  
31 control discharges to surface waters. State operation of the program is encouraged.

## 32 **State**

33 California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.). The  
34 CDFW administers a number of laws and programs designed to protect fish and wildlife  
35 resources. Principal of these is the CESA, which regulates the listing and take of State  
36 endangered (SE) and threatened species (ST). Under section 2081 of CESA, CDFW  
37 may authorize take of an endangered and/or threatened species, or candidate species

1 by permit or Memorandum of Understanding for scientific, educational, or management  
2 purposes, or for the incidental take associated with implementation of a project.

3 CDFW administers other State laws designed to protect wildlife and plants. Under Fish  
4 and Game Code sections 3511, 4700, 5050, and 5515, CDFW designates species that  
5 are afforded fully protected (FP) status. Under this protection, CDFW may authorize  
6 take or capture of a designated species for "...necessary scientific research, including  
7 efforts to recover fully protected, threatened, or endangered species" and "...live capture  
8 and relocation of those species pursuant to a permit for the protection of livestock." Fish  
9 and Game Code section 3503 prohibits the needless destruction of the nests and eggs  
10 of all birds; section 3503.5 protects all birds of prey, their eggs, and their nests.

11 California Streambed Alteration Program (Fish & G. Code §§ 1600-1616). The  
12 Streambed Alteration Program regulates activities that would "substantially divert or  
13 obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use  
14 material from the streambed of a natural watercourse" that supports wildlife resources.  
15 The Project would result in work under the bed of the Mokelumne River, and as such,  
16 requires a Streambed Alteration Agreement from the CDFW.

17 California Aquatic Invasive Species Management Plan. In 2008 the State of California  
18 developed a plan to control the introduction and spread of non-native species within the  
19 aquatic and marine waters of the State. That plan proposes management actions for  
20 addressing aquatic invasive species (AIS) threats to the State of California. It focuses  
21 on the non-native algae, crabs, clams, fish, plants and other species that continue to  
22 invade California's creeks, wetlands, rivers, bays and coastal waters.

23 California Native Plant Protection Act of 1977 (Fish & G. Code, § 1900 et seq.). CDFW  
24 also manages the California Native Plant Protection Act, which was enacted to identify,  
25 designate and protect rare plants. In accordance with CDFW guidelines, California  
26 Native Plant Society 1B list plants are considered "rare" under the Act, and are  
27 evaluated as special-status species under CEQA.

28 Porter-Cologne Water Quality Control Act (Porter-Cologne) (Cal. Water Code, § 13000  
29 et seq.). Porter-Cologne mandates that waters of the State shall be protected, such that  
30 activities which may affect waters of the State shall be regulated to attain the highest  
31 quality (see Section 3.3.8, Hydrology and Water Quality).

## 32 **Local**

33 Sacramento County General Plan. The Conservation Element of the Sacramento  
34 County General Plan includes policies that protect natural resources such as wetlands,  
35 vernal pools, streams and rivers, riparian habitat, woodlands, and native trees. When  
36 impacts to these natural resources cannot be avoided during development, certain  
37 policies require mitigation to ensure that impacts are minimized and that there is no net

1 loss of the affected resource. The purpose of the Conservation Element is to manage  
2 and protect the County’s natural resources for the use and enjoyment of present and  
3 future generations while maintaining the long-term ecological health and balance of the  
4 environment. The following provides goals and policies applicable to the Project.

- 5 • AG-10 - The County shall balance the protection of prime, statewide importance,  
6 unique and local importance farmlands and farmlands with intensive agricultural  
7 investments with the preservation of natural habitat so that the protection of  
8 farmland can also serve to protect habitat.
- 9 • CI-60 - Encourage maintenance of natural roadside vegetation and landscaping  
10 with native plants which usually provide the best habitats for native wildlife.
- 11 • CO-25 - Support the preservation, restoration, and creation of riparian corridors,  
12 wetlands and buffer zones.
- 13 • CO-69 - Avoid, to the extent possible, the placement of new major infrastructure  
14 through preserves unless located along disturbed areas, such as existing  
15 roadways.
- 16 • CO-70 - Community Plans, Specific Plans, Master Plans and development  
17 projects shall: include the location, extent, proximity and diversity of existing  
18 natural habitats and special status species in order to determine potential  
19 impacts, necessary mitigation and opportunities for preservation and restoration;  
20 be reviewed for the potential to identify nondevelopment areas and establish  
21 preserves, mitigation banks and restore natural habitats, including those for  
22 special status species, considering effects on vernal pools, groundwater, flooding,  
23 and proposed fill or removal of wetland habitat; and be reviewed for applicability  
24 of protection zones identified in this Element, including the Floodplain Protection  
25 Zone, Stream Corridor Ordinance, Cosumnes River Protection Combining Zone  
26 and the Laguna Creek Combining Zone.
- 27 • CO-75 - Maintain viable populations of special status species through the  
28 protection of habitat in preserves and linked with natural wildlife corridors.
- 29 • CO-91 - Discourage introductions of invasive non-native aquatic plants and  
30 animals.
- 31 • CO-134 - Maintain and establish a diversity of native vegetative species in  
32 Sacramento County.
- 33 • OS-1 - Actively plan to protect, as open space, areas of natural resource value,  
34 which may include but are not limited to wetlands preserves, riparian corridors,  
35 woodlands, and floodplains associated with riparian drainages.
- 36 • OS-2 - Maintain open space and natural areas that are interconnected and of  
37 sufficient size to protect biodiversity, accommodate wildlife movement and  
38 sustain ecosystems.

- 1       • OS-9 - Open space easements obtained and offered as mitigation shall be  
2       dedicated to the County of Sacramento, an open space agency, or an  
3       organization designated by the County to protect and manage the open space.  
4       Fee title of land may be dedicated to the County, the open space agency, or  
5       organization provided it is acceptable to the appropriate department or agency.

6       The major goal outlined in the Conservation Element of the General Plan is for the  
7       management and protection of natural resources for the use and enjoyment of present  
8       and future generations, while maintaining the long-term ecological health and balance of  
9       the environment. In addition to the Conservation Element goals and objectives, the  
10      Open Space Element further identifies two key concepts that form the basis of the goals,  
11      objectives and policies contained in the element: (1) protecting the urban edge and (2)  
12      establishing natural area linkages.

13      Sacramento County Tree Ordinance. Chapter 19 of the Sacramento County Code is the  
14      Tree Ordinance, which is the policy of the County to plant, maintain, protect, preserve,  
15      and regulate public trees and to provide for the special protection of heritage and  
16      landmark trees within the unincorporated area of the County. The Tree Preservation  
17      and Protection (Chapter 19.12) section of the Tree Ordinance finds that the purpose  
18      and intent of the section is as follows: Over the years, the vast majority of these trees  
19      have been cleared to accommodate agriculture, burned as firewood and removed to  
20      facilitate urban development. Only a small vestige of the original oak woodland forests  
21      remains today. The removal of oak trees continues to the present time, and occurs at a  
22      much faster pace than natural regeneration. Thus, it has become imperative that an  
23      ordinance be established to preserve and protect remaining native oak trees as  
24      significant, integral, and outstanding examples of the historical heritage of Sacramento  
25      County. Furthermore, it is recognized that the preservation of trees enhances the  
26      natural scenic beauty, sustains the long-term potential increase in property values which  
27      encourages quality development, maintains the original ecology, retains the original  
28      tempering effect of extreme temperatures, increases the attractiveness of the County to  
29      visitors, helps to reduce soil erosion, and increases the oxygen output of the area which  
30      is needed to combat air pollution. The Tree Preservation and Protection section of the  
31      Tree Ordinance states that it is the policy of the County to preserve all trees possible  
32      through its development review process.

33      San Joaquin County General Plan. The San Joaquin County General Plan outlines  
34      objectives, policies and implementation measures related to natural resources within the  
35      Project area. Objectives of the General Plan call for the protection and improvement of  
36      vegetation, fish and wildlife resources in the County and to provide undeveloped open  
37      space for nature study, protection of endangered species, and preservation of wildlife  
38      habitat. Specific policies call for the protection of significant biological and ecological  
39      resources, including wetlands, riparian areas, rare, threatened, and endangered species  
40      and their habitats, potentially rare or commercially important species, vernal pools,

1 significant oak groves and heritage trees. The General Plan outlines implementation  
2 measures intended to protect special-status species and their habitats and trees, to  
3 preserve and restore natural habitats for wildlife, to preserved and restore wetlands and  
4 riparian habitat, and to seek ways to acquire natural areas.

5 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. San  
6 Joaquin County is a signatory to the San Joaquin County Multi-Species Habitat  
7 Conservation and Open Space Plan (SJMSCP). Participation in the SJMSCP, which is  
8 voluntary, satisfies the requirements of FESA and CESA, and ensures that potential  
9 impacts to special-status species are mitigated to a less than significant level in  
10 compliance with CEQA. The Plan provides incidental take authorization for 97 listed and  
11 non-listed plant, fish, and wildlife species and provides compensation for habitat losses  
12 through collection of fees that are used to preserve habitats elsewhere.

### 13 **3.3.4.3 Impact Analysis**

14 ***a) Have a substantial adverse effect, either directly or through habitat***  
15 ***modifications, on any species identified as a candidate, sensitive, or special***  
16 ***status species in local or regional plans, policies, or regulations, or by the***  
17 ***California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

#### 18 **Impacts to Special-Status Plant Species**

19 No special-status plant species were identified during the course of the botanical  
20 surveys; however, Delta tule pea, side-flowered skullcap, Suisun Marsh aster, and  
21 woolly rose-mallow, all special-status plant species, have been documented in the  
22 Project area previously by the CNDDDB (CDFG 2012) (see Figure 3.3.4.1-1). No ground-  
23 disturbing activities are proposed within freshwater emergent wetland habitat, and no  
24 impacts to this vegetative community are expected. As all the special-status plant species  
25 potentially occurring in the Project area only occur within freshwater emergent wetland  
26 habitat, and because no impacts to this vegetative community will occur during the Project,  
27 no impacts to special-status plant species are expected to occur during Project  
28 implementation, and no further plant surveys or other mitigation measures are necessary  
29 to protect these plant species.

#### 30 **Impacts to Nesting Special-Status Avian Species**

31 Implementation of the Project could potentially result in significant impacts to nesting  
32 special-status avian species by causing abandonment of nests and destruction of active  
33 nest sites. Western burrowing owls, Swainson's hawk, white-tailed kite, and migratory  
34 bird species (protected by the MBTA and other State and federal protection acts) have  
35 the potential to nest within the vegetative communities observed within the Project  
36 alignment and adjacent areas. Swainson's hawks, white-tailed kites, and migratory bird  
37 species would not be impacted by direct disturbance of nesting sites. Instead, they

1 could be indirectly impacted by the visual presence of humans and construction  
2 equipment, and noise and vibration related to Project construction activities. Burrowing  
3 owls have the potential to nest in agricultural lands found within the Project where  
4 ground disturbance activities would occur; their nest sites, then, could be directly  
5 impacted by ground disturbance activities, or indirectly impacted by the noise and  
6 vibration created by construction activities, and the visual presence of humans and  
7 construction equipment in the Project work areas and access roadways. No evidence of  
8 these species or active/inactive nest sites of these species was observed during  
9 biological surveys; however, these species have the potential to become established in  
10 the Project and buffer area prior to Project implementation.

11 Impacts to nesting special-status avian species would be considered a potentially  
12 significant effect; however, the implementation of Mitigation Measures (MMs) **BIO-1**,  
13 **BIO-2**, **BIO-3**, **BIO-4** and **BIO-10**, described below, would avoid or reduce impacts to  
14 this special-status wildlife species to a less than significant level.

## 15 **Impacts to Special-Status Mammal Species from Project Implementation**

### 16 Riparian Brush Rabbit

17 Implementation of the Project could result in impacts to potential foraging and nesting  
18 habitat of the riparian brush rabbit. No evidence of the presence of this species was  
19 observed during biological surveys, and this species is presumed to be absent from  
20 areas proposed for ground-disturbance as these areas are located within active  
21 agricultural lands. However, the species may still become present in the Project area  
22 prior to construction. Portions of the proposed pipeline would be installed near existing  
23 agricultural drainage ditches with freshwater emergent wetland that could provide  
24 potential habitat for this species. If the species were present during Project construction  
25 and entered construction areas, without mitigation, individuals of this species could  
26 potentially be injured or killed by construction activities.

27 Impacts to riparian brush rabbit would be considered a potentially significant effect;  
28 however, the implementation of MMs **BIO-1**, **BIO-2**, **BIO-5** and **BIO-10** would avoid or  
29 reduce impacts to this special-status wildlife species, and would therefore reduce  
30 impacts to a less than significant level.

### 31 San Joaquin Kit Fox

32 RAB Consulting observed no evidence of San Joaquin kit fox or any potential/known  
33 burrows within areas proposed for ground or buffer areas during biological surveys. Nor  
34 were any “signs” (tracks, scats, active digging, etc.) of this species observed during the  
35 surveys; however, San Joaquin kit fox could still become established in the Project or  
36 buffer area prior to Project implementation. This species could also dig out existing

1 California ground squirrel burrows found within the Project and buffer zone for use as  
2 nesting and pupping dens.

3 Implementation of the Project could potentially result in significant impacts on individual  
4 San Joaquin kit foxes if they take up residence in the Project or buffer area prior to  
5 construction. Impacts to this species would likely occur through one of the following  
6 ways:

- 7 • Through crushing or injury of individual San Joaquin kit foxes, if any are present  
8 within areas proposed for disturbance during construction;
- 9 • Through the destruction of burrows if they are excavated by San Joaquin kit  
10 foxes within disturbance areas prior to construction; or
- 11 • Through visual, noise, and vibration impacts.

12 If San Joaquin kit foxes become established in burrows adjacent to or within proposed  
13 disturbance areas, construction equipment or the presence of construction personnel,  
14 and the noise and vibration caused by construction activities could lead to the  
15 abandonment of actively used burrows/dens. However, as discussed previously, neither  
16 potential burrows/dens nor “signs” (tracks, scats, active digging, etc.) were identified  
17 during biological surveys of the Project or buffer area. Still, project activities could cause  
18 the abandonment of occupied burrows/dens if any kit foxes are established prior to  
19 Project implementation.

20 Potential impacts to San Joaquin kit foxes and their potential burrows/dens would be  
21 considered a potentially significant impact. Implementation of MMs **BIO-1**, **BIO-2**, **BIO-6**  
22 and **BIO-10** would avoid or reduce impacts to this special-status wildlife species, and  
23 would therefore reduce impacts to a less than significant level.

#### 24 **Impacts to Special-Status Fish Species from Project Implementation**

25 HDD boring would be used to install the proposed pipeline under the River. The pipeline  
26 would be placed at a sufficient depth (50 feet) under the bed of the River to substantially  
27 reduce the likelihood of release of drilling fluids into the water. Using HDD would avoid  
28 direct disturbance to the bed and bank of the River, and would avoid impacts to special-  
29 status fish species from direct construction-related disturbance; however, the remote  
30 chance does exist that a “frac-out” could occur and release drilling lubricants into the  
31 River or into adjacent areas that drain into the River. The release of drilling fluids into  
32 the habitat of special-status fish species could result in the injury or mortality of special-  
33 status fish species, should they come into contact with these materials. These drilling  
34 fluids could adversely affect the water quality of the spawning and rearing habitats  
35 downstream, which may impair salmonid egg incubation, feeding, respiration, or  
36 behavior. Inadvertent releases of these materials can be toxic to salmonids and other  
37 aquatic organisms.

1 Impacts to special-status fish species would be considered a potentially significant  
2 effect. The implementation of MMs **BIO-1**, **BIO-7** and **BIO-10** would avoid or reduce  
3 impacts to this special-status wildlife species, and would therefore reduce impacts to a  
4 less than significant level.

## 5 **Impacts to Special-Status Reptile Species from Project Implementation**

### 6 Western Pond Turtle

7 Implementation of the Project could potentially result in significant impacts to western  
8 pond turtles during project implementation. Direct injury or mortality of individual turtles  
9 could result if they are present in work areas during project implementation, although  
10 RAB Consulting observed no evidence of western pond turtles within areas proposed  
11 for ground or buffer areas during biological surveys. Impacts to individual western pond  
12 turtles would be considered a significant impact; however, the implementation of MMs  
13 **BIO-1**, **BIO-2**, **BIO-8** and **BIO-10** would avoid or reduce impacts to this special-status  
14 wildlife species, and would therefore reduce impacts to a less than significant impact.

### 15 Giant Garter Snake (GGS)

16 Implementation of the Project could potentially result in significant impacts to GGS.  
17 Direct injury or mortality of individual GGS could result if GGS are present in work areas  
18 during Project implementation. GGS have the potential to be present in areas where  
19 pipeline installation activities would occur within 200 feet of aquatic habitat. Individual  
20 GGS could be crushed by construction equipment and during pipeline installation  
21 activities if present in work areas. RAB Consulting observed no evidence of GGS within  
22 areas proposed for ground or buffer areas during biological surveys.

23 Potential impacts to GGS would be considered a potentially significant impact. The  
24 implementation of the MMs **BIO-1**, **BIO-2**, **BIO-9** and **BIO-10** described below following  
25 the impacts discussion would avoid or reduce impacts to this special-status wildlife  
26 species, and would therefore reduce impacts to a less than significant impact. With the  
27 implementation of MMs BIO-1 through BIO-10, impacts to special-status plant and  
28 animal species would be reduced to a less than significant level.

29 **BIO-1: Worker Environmental Awareness Training.** A worker environmental  
30 awareness training shall be conducted prior to Project initiation for construction  
31 personnel, and shall consist of a brief presentation in which a biologist  
32 knowledgeable in local sensitive habitats and wildlife and regulatory protection will  
33 discuss environmental concerns. All personnel working on the Project shall be  
34 educated on the sensitivity of adjacent habitats and species.

35 **BIO-2: Pre-Construction Biological Surveys.** A pre-construction biological species  
36 clearance survey shall be conducted by a qualified biologist, approved by CSLC

1 staff, no fewer than 14 days or more than 30 days prior to the beginning of  
2 construction activities to determine evidence of the presence of any of the special-  
3 status animal species identified in Table 2 of the attached Biological Assessment  
4 Report (Appendix D). MM BIO-3, BIO-4, BIO-6 and BIO-8 detail procedures that  
5 shall be followed in the event the survey identifies evidence of the presence of  
6 special-status species.

7 **BIO-3: Pre-construction Avian Nesting Surveys.** To avoid or reduce potential impacts  
8 to nesting special-status avian species, a qualified biologist, approved by CSLC  
9 staff, will conduct pre-construction nesting surveys for special-status avian species  
10 within the Project and buffer area during the appropriate survey periods for each  
11 species. Surveys and survey timing will follow CDFW- and USFWS-approved  
12 protocols where applicable. Where active special-status bird nest sites are  
13 identified or suspected to occur during pre-construction surveys, the qualified  
14 biologist shall establish the following buffer zones around nest sites, and no  
15 disturbance activities will occur within these buffer zones until the biologist  
16 confirms that young birds have fledged or the nests have failed. Nesting buffer  
17 zones shall be marked with stakes, and signs shall be placed on the stakes  
18 indicating that no construction activities are to be conducted in the buffer areas  
19 until the areas are cleared by the qualified biologist:

- 20 • Swainson's Hawk. To avoid and minimize impacts on nesting Swainson's  
21 hawks, a 1,320-foot buffer shall be established around active nesting sites  
22 for work between March 1 and August 31. No Project-related activities will  
23 be allowed to occur within this zone. A biological monitor shall monitor the  
24 nest site on a regular schedule to ensure no impacts are occurring to  
25 nesting Swainson's hawks. Monitoring protocol shall be determined in  
26 consultation with CDFW. The buffer area can be removed prior to August 31  
27 if the qualified biologist determines that all juveniles have fledged from  
28 occupied nests.
- 29 • White-Tailed Kite. To avoid and minimize impacts on white-tailed kites, a  
30 250-foot buffer shall be established around active nests for work between  
31 January 1 and October 31. No Project-related activities will be allowed to  
32 occur within this buffer until the qualified biologist determines that young  
33 have fledged or the species are no longer attempting to nest. The buffer  
34 area can be removed prior to October 31 if the qualified biologist determines  
35 that all juveniles have fledged from occupied nests.
- 36 • Migratory Song Birds. To avoid and minimize impacts on nesting migratory  
37 songbirds, a 250-foot buffer shall be established around active nesting sites  
38 when Project activities will occur between March 1 and August 31. No  
39 Project activities will be allowed to occur within this zone. The buffer area

1 can be removed prior to August 31 if the qualified biologist determines that  
2 all juveniles have fledged from occupied nests.

3 **BIO-4: Contingency Measures for Burrowing Owls and Nest Sites.** If active  
4 burrowing owl nest sites are observed on or within 500 feet of the Project or  
5 buffer area during the pre-construction biological survey (MM BIO-2), the  
6 biologist shall consult with the CDFW and the following measures shall be  
7 implemented:

- 8 • If the species is found to be present and it is within the nesting season  
9 (February 1 through August 31), construction shall not occur within 300 feet  
10 of the active burrows unless a qualified biologist, approved by the CDFW,  
11 verifies through non-invasive methods that either: (1) the birds have not  
12 begun egg-laying and incubation; or (2) that juveniles from the occupied  
13 burrows are foraging independently and are capable of independent  
14 survival. The 300-foot buffer shall be clearly marked before construction  
15 commences;
- 16 • Burrowing owls present between September 1 and January 31 (outside of  
17 the breeding season) shall be moved away from the disturbance area using  
18 passive relocation techniques. Relocation shall only take place between  
19 September 1 and January 31, and must be completed by January 31. Prior  
20 to commencement of relocation, a Relocation Management and Mitigation  
21 Plan (RMMP) shall be prepared by Three Rivers and approved by CDFW.  
22 Passive relocation techniques and mitigation will comply with the RMMP  
23 and recommendations in the CDFW Staff Report on Burrowing Owl  
24 Mitigation Guidelines (2012), and shall include the following measures and  
25 criteria:
  - 26 ○ One-way doors shall be installed in burrow entrances. Doors shall be  
27 left in place for 48 hours to ensure owls have left the burrow;
  - 28 ○ Once owls have relocated off-site, existing burrows shall be collapsed  
29 to prevent reoccupation. Prior to burrow excavation, flexible plastic pipe  
30 shall be inserted into the tunnels to allow escape of any remaining owls  
31 during excavation. Excavation shall be conducted by hand whenever  
32 possible;
  - 33 ○ Destruction of burrows shall only occur in conformance with the CDFW-  
34 approved RMMP specified above; and
  - 35 ○ Destruction of occupied burrows after relocation shall be mitigated  
36 through enhancement of existing unsuitable burrows (through  
37 enlargement or debris clearing) or creation of new burrows (by  
38 installation of artificial burrows) at a ratio of 2:1 on protected lands  
39 (mitigation lands). This mitigation will meet the following criteria:

- 1           ▪ A specific site (mitigation lands) shall be identified where owl  
2 burrows will be created and/or enhanced;
- 3           ▪ A minimum of 6.5 acres of foraging habitat per displaced owl or pair  
4 of owls shall be conserved in conjunction with the creation and  
5 enhancement of burrows. In the event that there is overlap between  
6 displaced owls' or pair of owls' foraging habitat, there can also be  
7 overlap in an equal level to the existing conditions, in the amount of  
8 foraging habitat mitigation provided, if approved by CDFW;
- 9           ▪ A conservation easement or other protection for the mitigation  
10 lands shall be authorized which will ensure that the created burrows  
11 (and their associated owl population) will be conserved in-  
12 perpetuity; and
- 13           ▪ Specific success criteria, management directives and annual  
14 reporting requirements shall be identified to ensure the success of  
15 the burrow creation and enhancement.
- 16           • As an alternative to the above two measures (if approved by CDFW), all  
17 occupied burrows identified outside of the construction and buffer areas, but  
18 within 500 feet of construction activities, both during and outside of nesting  
19 season (September through January) and during nesting season (February  
20 1 through August 31) may be buffered by hay bales, fencing (e.g., sheltering  
21 in place) or as directed by a qualified biologist and the CDFW.

22 **BIO-5: Riparian Brush Rabbit Protective Fencing.** In areas where Project activities are  
23 proposed adjacent to freshwater emergent wetland habitat (potential habitat for  
24 the riparian brush rabbit), wildlife proof barrier fencing shall be installed prior to  
25 conducting Project activities (i.e., clearing of the pipeline right-of-way, trenching  
26 activities, etc.) to prevent riparian brush rabbits from entering Project work areas.  
27 If at any time during Project implementation an individual riparian brush rabbit is  
28 discovered within the fenced Project, all activities in the area would cease, and a  
29 qualified biologist, approved by the CDFW, would temporarily open the protective  
30 fencing and herd the rabbit out of the work area. Fencing would be closed after  
31 the rabbit has left the Project.

32 **BIO-6: Contingency Measures for San Joaquin Kit Fox.** If San Joaquin kit foxes are  
33 determined to be residing in the Project area or within 200 feet of the Project or  
34 buffer area during the pre-construction biological surveys, Three Rivers will  
35 implement the following measures, consistent with the USFWS (2011)  
36 “Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior  
37 to or During Ground Disturbance:”

- 38           • If kit fox dens have become established in the Project area or within 200 feet  
39 of the Project area prior to Project implementation that may be indirectly

1 impacted by construction activities, exclusion zones shall be established prior  
2 to construction by a qualified biologist approved by the CDFW, and dens shall  
3 not be disturbed in any way. Exclusion zone fencing shall include untreated  
4 wood particle-board, silt fencing, orange construction fencing or other fencing  
5 as approved by the USFWS and CDFW. Exclusion zone barriers shall be  
6 maintained until all construction and drilling activities have been completed,  
7 after which all barriers shall be removed. Exclusion zones shall be roughly  
8 circular with a radius of 50 feet outward from the entrance of potential dens or  
9 100 feet outward from the entrance of known dens. Fencing must contain  
10 openings for kit fox ingress / egress and keep humans and equipment out. If a  
11 natal/pupping den is discovered within the Project area or within 200 feet of  
12 the Project area, the USFWS and CDFW shall be immediately notified and  
13 under no circumstances should the den be disturbed or destroyed without  
14 prior authorization from USFWS and CDFW.

15 • If specified exclusion zones described above cannot be observed for any  
16 reason, USFWS and CDFW shall be contacted for guidance prior to ground-  
17 disturbing activities on the den or within the exclusion zones described above.  
18 In the event that USFWS and CDFW concur that an occupied San Joaquin kit  
19 fox den would be unavoidably destroyed by a planned Project action,  
20 procedures detailed in the USFWS (2011) “Standardized Recommendations  
21 for Protection of the San Joaquin Kit Fox Prior to or During Ground  
22 Disturbance” shall be implemented, and the following procedures shall be  
23 followed:

24 ○ Three Rivers must first obtain authorization / permit from the USFWS  
25 and CDFW;

26 ○ Known dens occurring within the footprint of the activity must be  
27 monitored for three (3) days with tracking medium or an infra-red beam  
28 camera to determine the current use:

29 ■ If no kit fox activity is observed during this period, the den shall be  
30 destroyed immediately to preclude subsequent use;

31 ■ If kit fox activity is observed at the den during this period, the den  
32 should be monitored for at least five (5) consecutive days from the  
33 time of the observation to allow any resident animal to move to  
34 another den during its normal activity. Use of the den can be  
35 discouraged during this period by partially plugging its entrances(s)  
36 with soil in such a manner that any resident animal can escape  
37 easily. Only when the den is determined to be unoccupied may the  
38 den be excavated under the direction of the biologist. If the animal is  
39 still present after five (5) or more consecutive days of plugging and  
40 monitoring, the den may have to be excavated when, in the judgment

1 of a biologist, it is temporarily vacant, for example during the animal's  
2 normal foraging activities. Whenever possible, burrows should be  
3 excavated using hand tools.

4 ○ For potential dens, if a take authorization / permit has been  
5 obtained, den destruction may proceed without monitoring for kit  
6 fox use, unless other restrictions were issued with the take  
7 authorization/permit. If no take authorization / permit has been  
8 issued, then potential dens should be monitored as if they were  
9 known dens. If any den is considered to be a potential den, but is  
10 later determined during monitoring or destruction to be currently,  
11 or previously used by kit fox (e.g., if kit fox sign is found inside),  
12 then all construction activities shall cease and the USFWS and  
13 CDFW shall be notified immediately;

14 ○ Destruction of the den shall be accomplished by careful  
15 excavation until it is certain that no kit foxes are inside. The den  
16 shall be fully excavated, filled with dirt and compacted to ensure  
17 that kit foxes cannot reenter or use the den during the  
18 construction period;

19 ○ If at any point during excavation, a kit fox is discovered inside the  
20 den, the excavation activity shall cease immediately and  
21 monitoring of the den as described above shall be resumed.  
22 Destruction of the den may only be completed when the biologist  
23 has determined that the animal has escaped, without further  
24 disturbance, from the partially destroyed den. Natal or pupping  
25 dens which are occupied shall not be destroyed until the pups and  
26 adults have vacated, and then only after consultation with and  
27 authorization by the USFWS and CDFW; and

28 ○ Den excavation shall be undertaken only by a qualified biologist  
29 pursuant to USFWS and CDFW authorization and direction for  
30 excavation of kit fox dens.

31 • In the event that a San Joaquin kit fox is found to be injured, dead, or  
32 entrapped, the incident shall immediately be reported to the Project biologist.  
33 The Project biologist shall then contact the following parties:

- 34 ○ CDFW State Dispatch - (916) 445-0045  
35 ○ Mr. Paul Hoffman, CDFW wildlife biologist - (530) 934-9309  
36 ○ USFWS, Endangered Species Division - (916) 414-6620 or (916) 414-  
37 6600.

38 The USFWS and CDFW shall be notified in writing within three (3) working  
39 days of the accidental death or injury to a San Joaquin kit fox during Project

1 related activities. Notification shall include the date, time, and location of the  
2 incident or of the finding of a dead or injured animal and any other pertinent  
3 information, and be sent to the following addresses:

- 4 ○ USFWS: Chief of the Division of Endangered Species, 2800 Cottage  
5 Way, Suite W2605, Sacramento, CA 95825-1846
- 6 ○ CDFW: Mr. Paul Hoffman, 1701 Nimbus Road, Suite A, Rancho  
7 Cordova, CA 95670

8 New sightings of kit fox shall be reported to the California Natural Diversity  
9 Database using a California Native Species Field Survey Form, and a copy of  
10 the Form and a topographic map clearly marked with the location of where the  
11 kit fox was observed shall also be provided to the USFWS; and

- 12 • All construction pipes, culverts, or similar structures with a diameter of 4  
13 inches or greater that are stored at a construction site for one or more  
14 overnight periods should be thoroughly inspected for kit foxes before the pipe  
15 is subsequently buried, capped, or otherwise used or moved in any way. If a  
16 kit fox is discovered inside a pipe, that section of pipe should not be moved  
17 until the USFWS and CDFW have been consulted. If necessary, and if  
18 approved by USFWS and CDFW, the pipe may be moved only once, and  
19 under the direct supervision of the biologist, to remove it from the path of  
20 construction activity until the fox has escaped.

21 **BIO-7: Frac-Out Contingency Plan.** To reduce or avoid impacts to special-status fish  
22 species and other aquatic wildlife species, Three Rivers shall implement the *Frac-  
23 Out Contingency Plan* as described in the MND in the event a frac-out should  
24 occur in the Mokelumne River, in agricultural drainage ditches, or in adjacent  
25 upland areas, including areas immediately adjacent to areas with aquatic  
26 resources. A copy of this plan shall be maintained at the Project site for reference  
27 during all times. Appropriate clean up materials shall be staged at each individual  
28 location of boring so that equipment will be available at all times.

29 **BIO-8: Contingency Measures for Western Pond Turtle.** The Applicant shall  
30 implement the following measures to avoid impacts to western pond turtle during  
31 Project construction.

- 32 • If juvenile or adult turtles are found within Project work areas during pre-  
33 construction biological surveys, the individual turtles shall be moved out of  
34 the Project disturbance zone by a qualified biologist approved by CDFW;  
35 and
- 36 • If this species is observed within Project work areas at any time during  
37 construction activities, construction work shall cease within 150 feet of the  
38 area until the turtle(s) can be moved by the qualified biologist to a safe  
39 location consistent with CDFW regulations.

1 **BIO-9: Giant Garter Snake Protective Measures.** In accordance with *Standard*  
2 *Avoidance and Minimization Measures for Construction Activities in Giant Garter*  
3 *Snake Habitat* (USFWS 1997), the following mitigation measures shall be  
4 implemented during implementation of the Project to avoid impacts to GGS:

- 5 • 24 hours prior to construction activities, construction work areas within 200  
6 feet of agricultural drainage ditches shall be surveyed for GGS by a qualified  
7 biologist approved by CSLC staff. Surveys of these areas shall be repeated  
8 if a lapse in construction activity of two weeks or greater has occurred. If a  
9 GGS is encountered during surveys, Three Rivers shall report the  
10 sighting(s) to USFWS immediately by telephone at (916) 414-6600.  
11 Additionally, the Project biologist shall submit all sightings to the California  
12 Natural Diversity Database using a California Native Species Field Survey  
13 Form and provide copies to CDFW and USFWS;
- 14 • If construction activities are to be conducted within 200 feet of agricultural  
15 drainage ditches between October 2 and April 30, the Sacramento USFWS  
16 Office and CDFW will be consulted with to determine what additional  
17 measures are necessary to minimize and avoid take, and what permits  
18 would be required. These measures shall be implemented and all necessary  
19 permits obtained before work in those areas continues;
- 20 • Vegetative clearing shall be confined to the minimum area necessary for  
21 construction. Potential GGS habitat adjacent to the pipeline alignment shall  
22 be flagged and posted prior to ground-disturbing activities to avoid  
23 encroachment by construction personnel;
- 24 • All movement of construction equipment and vehicles shall be confined to  
25 existing roadways and the pipeline alignment, including the 15-foot buffer  
26 around the alignment;
- 27 • The qualified biologist shall be on-site during all construction and  
28 earthmoving activities that occur within 200 feet of potential GGS habitat.  
29 The biologist shall contact CDFW and USFWS if any GGS are encountered,  
30 or if any incidental take occurs. In the event GGS are observed near or in  
31 the construction area, the biologist shall have the authority to stop  
32 construction until the GGS has left the area. Physical removal of GGS from  
33 the Project area shall only be conducted with CDFW and USFWS  
34 authorization, and shall be conducted by a biologist qualified and listed by  
35 USFWS to handle this species. The biologist shall record all relevant  
36 environmental, biological, and behavior data observed, and submit summary  
37 reports to CDFW and USFWS; and
- 38 • All Project-related traffic shall observe a speed limit of 15 miles per hour to  
39 ensure that any GGS crossing or basking on access roadways or the  
40 proposed pipeline alignment will have time to move out of the way of traffic.

- 1 **BIO-10: General Impact Avoidance and Minimization.** Three Rivers shall implement the  
2 following general environmental avoidance and minimization measures to protect  
3 biological resources within the Project and buffer area:
- 4 • Hazardous materials, fuels, lubricants, or solvents that are accidentally spilled  
5 during drilling activities shall be cleaned up and disposed of immediately and  
6 according to applicable federal, State and local regulations;
  - 7 • The speed of Project-related vehicular traffic shall be limited to 15 miles per  
8 hour once vehicles have left State or County roads and are traveling along  
9 unpaved dirt access roads to and from the Project;
  - 10 • All equipment storage during site development and operation shall be  
11 confined to areas proposed for disturbance or to previously disturbed offsite  
12 areas that are not potential habitat for sensitive species;
  - 13 • Sediment-control devices (e.g., weed-free straw wattles, silt fence, straw  
14 bales, etc.) shall be installed around construction work zones to prevent  
15 runoff to adjacent sensitive wildlife habitats;
  - 16 • To prevent entrapment of wildlife species during the construction phase of the  
17 Project, all excavated, steep-walled holes and trenches in excess of 3 feet in  
18 depth shall be provided with one or more escape ramps constructed of  
19 earthen fill or a wood/metal plank. If wildlife-proof barricade fencing is  
20 available, it shall also be utilized where appropriate. Escape ramps shall be at  
21 less than a 45° angle. Trenches and pits shall be inspected for entrapped  
22 wildlife each working day before construction activities resume. Before such  
23 pits and trenches are filled, they shall be thoroughly inspected for entrapped  
24 animals. If any wildlife species are discovered, they shall be allowed to escape  
25 voluntarily, without harassment, before construction activities resume, or  
26 removed from the trench or hole by a qualified biologist approved by CSLC  
27 staff and allowed to escape unimpeded;
  - 28 • All construction pipes, culverts, or similar structures that are stored at a  
29 construction site overnight shall be thoroughly inspected for trapped animals  
30 before the pipe is buried, capped, or otherwise used or moved. Pipes laid in  
31 trenches overnight shall be capped. If an animal is discovered inside a pipe,  
32 that section of pipe shall not be capped or buried until the animal has escaped;
  - 33 • All trash items such as wrappers, cans, bottles, and food scraps generated  
34 both during construction and subsequent operation shall be disposed of in  
35 closed containers only and regularly removed from the site. No deliberate  
36 feeding of wildlife shall be allowed;
  - 37 • To prevent harassment, mortality, or unauthorized “take” of sensitive species  
38 and/or their habitat by domestic dogs and cats, no pets shall be permitted  
39 onsite; and

- 1 • Firefighting equipment shall be maintained on site during Project-related  
2 activities to minimize impacts associated with wild fires. Shields, protective  
3 mats or other fire preventive methods shall be used during grinding and  
4 welding activities to prevent or minimize the potential for fire. Personnel shall  
5 be trained regarding fire hazard for wildlife and their habitats.

6 ***b) Have a substantial adverse effect on any riparian habitat or other sensitive***  
7 ***natural community identified in local or regional plans, policies, regulations or by***  
8 ***the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

9 Installation of the pipeline will not impact any riparian habitat; however, the pipeline  
10 would be installed within agricultural wetlands (agricultural fields) by trenching.  
11 Agricultural wetlands are wetlands that are currently disturbed and used for agricultural  
12 purposes, but historically were wetlands as a part of the Sacramento-San Joaquin  
13 Delta. They are regulated by the USACE and RWQCB. The trench will be approximately  
14 2 feet wide and will be excavated to provide a minimum cover of 5 feet under farm fields  
15 (the depth of the trench could be greater if special conditions are encountered).  
16 Segregation of topsoil will be conducted during construction to maintain the existing soil  
17 profile. The trencher or backhoe will make a first pass in the trench-line to remove  
18 approximately 10 to 18 inches of topsoil. Topsoil will be placed alongside the trench  
19 opposite the side designated for trench spoils. Once the topsoil has been excavated, a  
20 trencher or backhoe will make a second pass along the trench-line to remove the  
21 subsoil and complete the excavation. The pipe would then be placed in the trench, and  
22 soils would be placed back in the trench in the same order in which they were removed,  
23 thus maintaining the original layers of the soil. The total trenching surface disturbance  
24 would be approximately 3,245 linear feet long and 2 feet wide (approximately 6,490  
25 square feet or 0.15 acre). No permanent changes to existing drainage patterns would  
26 occur as a result of Project implementation, as original ground surface contours would  
27 be restored after Project construction.

28 Impacts to agricultural wetlands would be considered temporary in nature. The USACE  
29 and CVRWQCB consider impacts to be temporary as long as impacted areas are  
30 restored within the same season. If agricultural wetland soils are restored in the same  
31 season, no compensatory wetland mitigation is required by these agencies to offset  
32 impacts. Therefore, impacts to agricultural wetlands would be less than significant.

33 ***c) Have a substantial adverse effect on federally protected wetlands as defined by***  
34 ***Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal***  
35 ***pool, coastal, etc.) through direct removal, filling, hydrological interruption, or***  
36 ***other means?***

37 See Response 3.3.4.3 b) above. A map showing wetland habitat is appended as Figure  
38 3.3.4. The USACE did not require a wetland delineation as the entirety of the agriculture  
39 lands found on both Bouldin and Tyler Islands are considered agricultural wetlands.

1 RAB Consulting conducted a desktop mapping of wetlands in the Project 250-foot buffer  
2 area (see map in Figure 3.3.4.1-2). Bill Guthrie with the USACE on November 12, 2012  
3 accepted the map as adequate for mapping wetland habitat. As discussed in Response  
4 3.3.4.3 b) above, impacts to federally protected wetlands would be less than significant.

5 ***d) Interfere substantially with the movement of any native resident or migratory***  
6 ***fish or wildlife species or with established native resident or migratory wildlife***  
7 ***corridors, or impede the use of native wildlife nursery sites?***

8 See Response 3.3.4.3 a) above. The Project would not impact any migration routes or  
9 corridors during project implementation. No wildlife nursery sites were identified within  
10 the Project or buffer areas during biological studies conducted by RAB Consulting.  
11 However, migratory native salmonids may be present in the River during HDD boring  
12 activities; if a frac-out occurred and the bentonite slurry used in the HDD process  
13 entered the River, aquatic species such as benthic invertebrates, aquatic plants, and  
14 fish and fish eggs could be smothered by the fine particles in the bentonite. However,  
15 with application of MM **BIO-7**, which would implement a Frac-Out Contingency Plan  
16 during HDD activities, the potential impact would become less than significant.

17 ***e) Conflict with any local policies or ordinances protecting biological resources,***  
18 ***such as a tree preservation policy or ordinance?***

19 The Project conforms to the requirements of the Sacramento and San Joaquin County  
20 General Plans, including the Conservation Elements of these documents. The Project  
21 does not conflict with any local policies and ordinances regarding terrestrial resources  
22 and does not include the removal of any trees; therefore, the Project would be in  
23 compliance with the Sacramento and San Joaquin County General Plans and local tree  
24 ordinances. With the implementation of mitigation measures described previously under  
25 a), impacts would be considered less than significant.

26 ***f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural***  
27 ***Community Conservation Plan, or other approved local, regional, or State habitat***  
28 ***conservation plan?***

29 The San Joaquin County Multispecies Habitat Conservation Plan (SJMSCP) covers the  
30 entire County of San Joaquin, including Bouldin Island on which portions of the Project  
31 would occur; however, agricultural lands are not covered by the provisions of the  
32 SJMSCP. As the Project will only have ground-disturbing impacts within agricultural  
33 lands, the SJMSCP is not applicable to the Project. No other habitat conservation plans  
34 are applicable to or cover the Project area. Therefore, no impacts are anticipated due to  
35 Project implementation.

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
<i>Plants (see Figure 3.3.4.1-1)</i>					
Bristly sedge	<i>Carex comosa</i>	-	List 2	Marshes, swamps, lake margins, and wet places. Elevational range: -5 to 1,005 meters. Blooming period: May through September.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River HDD crossing, and within wetlands adjacent to portions of the northwest side of the proposed pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).
Delta tule pea	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	-	List 1B	Freshwater and brackish marshes. Typically on marsh and slough edges, along with <i>Typha</i> , <i>Aster lentus</i> , <i>Rosa calif.</i> , <i>Juncus</i> spp., <i>Scirpus</i> , etc. Elevational range: 0 to 4 meters. Blooming period: May through September.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River HDD crossing, and within wetlands adjacent to portions of the northwest side of the proposed pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has been documented approximately 0.4 mile southwest of the proposed pipeline alignment by the CNDDDB (CDFG 2012).
Mason's lilaopsis	<i>Lilaeopsis masonii</i>	-	Rare, List 1B	Freshwater and brackish marshes, riparian scrub. Elevational Range: 0 to 10 meters. Blooming period: April through November.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River HDD crossing, and within wetlands adjacent to

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
					portions of the northwest side of the proposed pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).
Delta mudwort	<i>Limosella subulata</i>	-	List 2	Freshwater and brackish marshes, riparian scrub. Typically on mud banks of the delta. Often with <i>Lilaeopsis masonii</i> . Elevational range: 0 to 3 meters. Blooming period: May through August.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River HDD crossing, and within wetlands adjacent to portions of the northwest side of the proposed pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).
Eel-grass pondweed	<i>Potamogeton zosteriformis</i>	-	List 2	Marshes, swamps, ponds, lakes, and streams. Elevational range: 0 to 1,860 meters. Blooming period: March through May.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River HDD crossing, and within wetlands adjacent to portions of the northwest side of the proposed pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	-	List 1B	Marshes and swamps in standing or slow-moving fresh water. Elevational range: 0 to 610 meters. Blooming period: May through October.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River HDD crossing, and within wetlands adjacent to portions of the northwest side of the proposed pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).
Marsh skullcap	<i>Scutellaria galericulata</i>	-	List 2	Marshes, swamps, wet places, lower montane coniferous forest, meadows, and seeps. Elevational range: 0 to 2,100 meters. Blooming period: June through September.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River HDD crossing, and within wetlands adjacent to portions of the northwest side of the proposed pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).
Side-flowering skullcap	<i>Scutellaria lateriflora</i>	-	List 2	Wet Meadows, seeps, marshes, and swamps. Elevational range: -3 to 500 meters. Blooming period: July through September.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River HDD crossing, and within wetlands adjacent to portions of the northwest side of the proposed pipeline alignment on Bouldin

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
					Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has been documented as occurring throughout the Project area by the CNDDDB (CDFG 2012).
Suisun marsh aster	<i>Symphyotrichum lentum</i>	-	List 1B	Marshes and swamps (brackish and freshwater). Most often along sloughs with <i>phragmites</i> , <i>typha</i> , <i>scirpus</i> , blackberry, etc. Elevational range: 0 to 3 meters. Blooming period: May to November.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River HDD crossing, and within wetlands adjacent to portions of the northwest side of the proposed pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has been documented immediately northeast of the proposed pipeline alignment by the CNDDDB (CDFG 2012).
Woolly rose-mallow	<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	-	List 2	Freshwater marshes and swamps. Moist, freshwater soaked river banks and low peat islands in sloughs. Elevational range: 0 to 150 meters. Blooming period: June through September.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the Mokelumne River HDD crossing, and within wetlands adjacent to portions of the northwest side of the proposed pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual plants were observed during surveys. This species has been documented approximately 0.9 mile southwest of the

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
					proposed pipeline alignment by the CNDDDB (CDFG 2012).
Northern California black walnut	<i>Juglans hindsii</i>	-	List 1B	Riparian forest and woodland. Found in deep alluvial soils associated with a creek or stream. Elevational range: 0 to 395 meters. Blooming period: April through May.	No potential. This species was not identified within the Project or buffer areas during biological surveys.
<b>Sensitive Habitats</b>					
Coastal and valley freshwater marsh (present)					
Great Valley valley oak riparian forest (not present)					
<b>Birds</b>					
Burrowing owl	<i>Athene cunicularia</i>	-	CSC	Open grasslands, prairies, farmlands, and deserts.	Potentially present. Potential foraging habitat for this species was observed throughout the Project and buffer area during biological surveys. No potential burrows that could be used by this species for nesting purposes were observed during biological surveys. However, California ground squirrels and their burrows were observed during the biological surveys. This species has the potential to use these burrows should they become established in the Project or buffer area prior to Project implementation. No individual owls observed during biological surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).
Swainson's hawk	<i>Buteo swainsoni</i>	-	CT	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and ranch and agricultural lands. Requires adjacent suitable foraging areas such as grasslands or alfalfa/grain fields supporting rodent populations.	Potentially present. Potential foraging habitat for this species observed throughout the Project and buffer area during biological surveys. Trees that could be used for nesting occur approximately 480 feet to the west of the proposed pipeline alignment. No individual Swainson's hawks or potential nesting sites were observed during biological surveys. This species has not been

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
					documented within the Project area by the CNDDDB (CDFG 2012).
White-tailed kite	<i>Elanus leucurus</i>	-	FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Found in open grasslands, meadows, or marshes foraging close to isolated, dense-topped trees for nesting and perching.	Potentially present. Potential foraging and nesting habitat for this species occurs within freshwater emergent wetland habitat found in agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the River bore crossing, and within wetlands adjacent to portions of the northwest side of the pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individuals of this species were observed during surveys, nor were any potential nesting sites identified. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).
California black rail	<i>Laterallus jamaicensis coturniculus</i>	-	CT, FP	Mainly inhabits salt-marshes bordering larger bays. Occurs in tidal salt marsh heavily grown to pickleweed. Also found in freshwater and brackish marshes. Needs dense vegetation for nesting habitat.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.
California clapper rail	<i>Rallus longirostris obsoletus</i>	FE	CE, FP	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed. Feeds away from cover on invertebrates from mud-bottomed sloughs.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.
<b>Mammals</b>					
Western red bat	<i>Lasiurus blossevillii</i>	-	CSC	Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. Roosts primarily in trees, 2 to 40 feet above the ground surface.	Potentially present. Potential foraging habitat for this species was observed throughout the Project and buffer area during biological surveys. No roosting habitat (trees) appropriate for use by this species was

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
					observed during biological surveys. No individual western red bats were observed during surveys, nor are any sightings documented in the Project area (CDFG 2012).
Riparian brush rabbit	<i>Sylvilagus bachmani riparius</i>	FE	CE	Inhabit dense, brushy areas of Valley riparian forests, marked by extensive thickets of wild rose ( <i>Rosa</i> spp.), blackberries ( <i>Rubus</i> spp.), and willows ( <i>Salix</i> spp.). Thriving mats of low-growing vines and shrubs serve as ideal living sites where they build tunnels under and through the vegetation.	Potentially present. Potential habitat for this species occurs within freshwater emergent wetland habitat found near agricultural drainage ditches crossing the proposed pipeline alignment, along the edges of the Mokelumne River HDD crossing, and within wetlands adjacent to portions of the northwest side of the pipeline alignment on Bouldin Island. Potential habitat was also observed within similar habitats found within the Project buffer area. No individuals of this species were observed during surveys. This species has not been documented within the Project area by the CNDDB (CDFG 2012).
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	FE	CT	Annual grasslands or grassy open stages with scattered shrubby vegetation. Require loose textured sandy soils for burrowing and suitable prey base.	Potentially present. Potential habitat for this species occurs within both the Project and buffer area. No individual San Joaquin kit foxes or sign of their presence (tracks, scats, prey remains, potential or occupied burrows, etc.) were observed during surveys. This species has not been documented within the Project area by the CNDDB (CDFG 2012).
<b>Invertebrates</b>					
Sacramento anthicid beetle	<i>Anthicus sacramento</i>	-	-	Restricted to sand dune areas. Inhabit sand slipfaces among bamboo and willow and willow but may not depend on presence of these plant species.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	FE	-	Endemic to grasslands. Found in large, turbid pools. Inhabit astatic pools located in swales formed by old braided alluvium filled by winter and spring rains.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
Longhorn fairy shrimp	<i>Branchinecta longiantenna</i>	FE	-	Vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	-	Endemic to the grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains in astatic rain-filled pools. Inhabit small clear-water sandstone-depression pools and grassed swales, earth slumps, or basalt-flow depression pools.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	-	Occurs only in the Central Valley of California, in association with blue elderberry ( <i>Sambucus mexicana</i> ). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for stressed elderberry shrubs.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.
Delta green ground beetle	<i>Elaphrus viridis</i>	FT	-	Restricted to the grassland margins of vernal pools, primarily between Jepson Prairie and Travis AFB.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	FE	-	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.
<b>Fish</b>					
Green sturgeon	<i>Acipenser medirostris</i>	FT	CSC	Generally found in marine waters from the Bering Sea to Ensenada, Mexico. However, spawning populations have been found only in medium sized rivers from the Sacramento-San Joaquin system north to the Bering Sea. Adult green sturgeon enter the estuary and move up the Sacramento River in early	Potentially present. Potential habitat for this species occurs within the River under which the proposed pipeline will be installed via HDD methods. No individuals of this species were observed during biological surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012). However, this species is likely

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
				spring. Anecdotal evidence suggests that spawning may also occur in the Feather River but has not yet been documented there. Spawning occurs in the Sacramento River between March and June. Spawning occurs in deep, fast water. Most young green sturgeon migrate from river to ocean when they are one to four years old.	present within the Project area during portions of the year.
Delta smelt	<i>Hypomesus transpacificus</i>	FT	CT	Delta smelt are found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. Shortly before spawning, adults migrate upstream from the brackish-water habitat associated with the mixing zone and disperse widely into river channels and tidally-influenced backwater sloughs. They spawn in shallow, fresh or slightly brackish water upstream of the mixing zone. Most spawning happens in tidally-influenced backwater sloughs and channel edgewater. Although spawning has not been observed in the wild, the eggs are thought to attach to substrates such as cattails, tules, tree roots and submerged branches.	Potentially present. Potential habitat for this species occurs within the River under which the proposed pipeline will be installed via HDD methods. No individuals of this species were observed during biological surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012). However, this species is likely present within the Project area during portions of the year.
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	FT	-	After maturing for 1 to 3 years in the ocean, adult steelhead typically begin their spawning migration into the Sacramento and San Joaquin Delta System in fall and winter. Adult steelhead enter the mainstream Sacramento River in July, peak in abundance in the fall, and continue migrating through February and March.	Potentially present. Potential habitat for this species occurs within the River under which the proposed pipeline will be installed via HDD methods. No individuals of this species were observed during biological surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012). However, this species is likely present within the Project area during

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
				Juvenile steelhead will remain in fresh water and continue to rear for 1 to 3 years before migrating to the ocean in November through May to mature. Smolts typically migrate to the ocean during march through June.	portions of the year.
Chinook salmon (Sacramento River Winter-Run, Central Valley Spring-Run, Central Valley Fall- and Late Fall-Run)	<i>Oncorhynchus tshawytscha</i>	FE / FT / FC	CE/CT/-	Adult winter-run Chinook salmon leave the ocean and migrate through the Sacramento-San Joaquin River Delta into the Sacramento River from November through July. Juvenile winter-run Chinook salmon rear and emigrate in the lower Sacramento River from October through March. Adult spring-run Chinook salmon enter the Sacramento and San Joaquin River main streams in February through July. Spring-run Chinook salmon appear to emigrate at 3 different life stages: as fry, fingerlings, or yearlings. Fry may occur between December and January, fingerlings occur from February through May, and yearling spring-run Chinook salmon emigrate from October through February. Central Valley fall run Chinook salmon occupy the major Central Valley river systems. After 2 to 4 years of maturation in the ocean, adult fall-run Chinook salmon return to their natal freshwater streams to spawn. Adult fall-run Chinook salmon enter the Sacramento River system from July through December and spawn from October through December. Juvenile fall-run and late fall-run Chinook salmon may rear from January to June.	Potentially present. Potential habitat for this species occurs within the River under which the proposed pipeline will be installed via HDD methods. No individuals of this species were observed during biological surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012). However, this species is likely present within the Project area during portions of the year.

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	-	CSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, associated marshes, slow-moving river sections, and dead end sloughs. Require flooded vegetation for spawning and foraging for young.	Potentially present. Potential habitat for this species occurs within the River under which the proposed pipeline will be installed via HDD methods. No individuals of this species were observed during biological surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012). However, this species is likely present within the Project area during portions of the year.
<b>Amphibians and Reptiles</b>					
California tiger salamander	<i>Ambystoma californiense</i>	FT	CSC	Primarily inhabit non-native grassland providing underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.
Western pond turtle	<i>Emys marmorata</i>	-	CSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Require basking sites and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	Potentially present. Potential habitat for this species occurs within agricultural drainage ditches crossing the proposed pipeline alignment and the River HDD crossing. Potential habitat was also observed within similar habitats found within the Project buffer area. No individual western pond turtles were observed during surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).
Giant garter snake	<i>Thamnophis gigas</i>	FT	CT	Prefers fresh water marsh and low gradient streams. Has adapted to drainage ditches and irrigation canals.	Potentially present. Potential habitat for this species occurs within agricultural drainage ditches crossing the proposed pipeline alignment and the HDD crossing. Potential habitat was also observed within similar habitats found within the Project buffer area. Potential nesting and aestivation burrows were observed along the banks of the drainage ditches and the River within the Project and buffer area during biological

**Table 3.3.4-2. Special-Status Plant & Wildlife Species Recorded or Potentially Occurring within the Project Area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site
					surveys. Upland habitat adjacent to this aquatic habitat consisted of agricultural fields that are low in quality as use for aestivation habitat. No individual giant garter snakes were observed during biological surveys. This species has not been documented within the Project area by the CNDDDB (CDFG 2012).
California red-legged frog	<i>Rana aurora draytonii</i>	FT	CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to aestivation habitat, consisting of small mammal burrows and moist leaf litter.	No potential. Unlikely to occur due to lack of potential habitat within the Project or buffer areas or existing access roadways.

Sources: CDFG 2012, CNPS 2012, and USFWS 2012

**LEGEND**

- FEDERAL
  - FE Federally listed as endangered
  - FT Federally listed as threatened
  - FC Federal Candidate Species (former Category 1 candidates)
- STATE
  - CE State listed as endangered
  - CT State listed as threatened
  - CR State designated as Rare
  - CSC California Department of Fish and Wildlife designated “Species of Special Concern”
  - FP California Fully Protected Species
- CNPS
  - CNPS List 1b Plants that are rare, threatened, or endangered in California and elsewhere
  - CNPS List 2 Plants that are rare, threatened, or endangered in California, but are more common elsewhere
  - CNPS List 3 Plants about which we need more information – a review list
  - CNPS List 4 Plants of limited distribution – a watch list

1 **3.3.5 Cultural Resources**

<b>CULTURAL RESOURCES</b> - Would the Project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 **3.3.5.1 Environmental Setting**

3 The Project area is located within the boundaries of the Delta subregion of the Central  
 4 Valley archaeological region, as defined by Moratto (1984). Little is known of human  
 5 occupation of this region before 4500 years before present (BP). As a result of rapid  
 6 alluvial and colluvial deposition in the valley over the past 10,000 years, ancient cultural  
 7 deposits have been deeply buried in many areas.

8 The earliest evidence of widespread occupation of the lower Delta region appears at  
 9 archaeological deposits assigned to the Windmill Pattern (Early Horizon), dated  
 10 between 4500 and 2500 BP. The Windmill Pattern has been associated by some  
 11 archaeologists with the arrival of Utian peoples from outside of California who had  
 12 adapted to riparian and wetland environments. Windmill group subsistence-settlement  
 13 patterns are poorly understood because few known archaeological sites are ascribed to  
 14 this archaeological pattern. Available data indicate that Windmill group sites are  
 15 typically located on low rises or knolls in the floodplains of creeks or rivers. Such  
 16 locations would have provided protection from seasonal floods while retaining proximity  
 17 to riparian, marsh, and grassland biotic communities.

18 Most known Windmill Pattern sites contain cemeteries, implying some degree of  
 19 sedentism. Windmill groups typically buried the deceased in a ventrally extended  
 20 position with abundant grave goods and oriented the head to the west.

21 Subsistence needs were met through hunting and fishing, as evidenced by large  
 22 projectile points (spear or dart tips), baked clay net sinkers, bone fish hooks and spears,  
 23 and remnants of faunal remains at Windmill Pattern sites. The presence of Windmill  
 24 Pattern ground stone tools, such as mortars and milling slabs, indicate that Windmill  
 25 groups collected plant foods (seeds, nuts, and perhaps roots). Other artifacts

1 characteristic of the Windmill Pattern include charmstones, quartz crystals, bone awls,  
2 needles, and beads and ornaments manufactured from abalone shell and olive snails.

3 The succeeding Berkeley Pattern (Middle Horizon) dates from 2500 to 1500 BP,  
4 overlapping in time at least some Windmill Pattern manifestations. Archaeologists  
5 have identified more Berkeley Pattern sites than Windmill Pattern sites, and sites  
6 representing the former pattern are also more widespread. Deep midden deposits,  
7 suggesting larger residential group size, greater frequency of site reuse, and/or a  
8 greater degree of sedentism, characterize Berkeley Pattern sites. Berkeley group  
9 subsistence, in contrast to Windmill groups, placed greater emphasis on acorns and  
10 other vegetal food sources.

11 The Project area is located in a portion of the Delta that was most likely used by several  
12 Native American groups in recent prehistory and the historic period. Anthropologists  
13 have drawn conflicting pictures of Native American use of the project area. The region  
14 has been variously ascribed to the Southeastern Patwin, the Plains Miwok, and the Bay  
15 Miwok.

16 Native American tribes first came into contact with Europeans in the second half of the  
17 eighteenth century, when Spanish explorers entered the area. The first baptisms took  
18 place in 1794 and the last in 1827. A majority of the Native American converts were  
19 taken to Mission San Francisco and Mission San Jose. It appears that many tribelets  
20 disappeared through the combined effects of population removal to the missions and  
21 epidemics. Accounts exist of individuals who resisted missionization and fled to their  
22 villages. As a consequence, the Spanish formed military expeditions to recapture the  
23 fugitives. At first these individuals remained hidden in Delta lands, but eventually they  
24 learned to emulate Spanish warfare tactics. Several tribelets initiated counterattacks in  
25 the form of raids on missions and ranchos. With the arrival of trappers, gold miners, and  
26 settlers in California, Native American tribes suffered exposure to newly introduced  
27 diseases. Although this early contact with settlers had a destructive impact on these  
28 Native American populations, specific tribal relationships with settlers varied. While  
29 hostilities occurred between the Sierra Miwok and miners, some of the Plains Miwok  
30 were put to work in agricultural operations on the large land grants coming into  
31 existence at that time. After the United States acquired California in 1848, some tribes  
32 were displaced to Central Valley locations, while many remained on the rancherias  
33 established in the Sierra Nevada foothills.

34 During the final decades of the nineteenth and early years of the twentieth centuries,  
35 tribes living on the foothill rancherias adapted to a new lifestyle. Subsistence through  
36 hunting and gathering was now augmented by seasonal wage labor on ranches and  
37 farms. As reliance on cash incomes increased, traditional subsistence practices  
38 suffered.

1 Mexican, American, and European settlers began to arrive and set down roots within  
2 the boundaries of Project area in the 1840s and 1850s. Euroamerican encroachment  
3 into the area began in the Montezuma Hills in Solano County in 1844, when settler John  
4 Bidwell (1819–1900) petitioned the Mexican government for a land grant in  
5 southeastern Solano County. Manuel Micheltorena, the thirteenth governor of Mexican  
6 Alta California, made the grant to Bidwell that same year for the 17,726-acre Rancho  
7 Los Ulpinos. The grant was located on the west bank of the Sacramento River and  
8 extended to the west. In 1845, Bidwell built an adobe house in the vicinity of present-  
9 day Rio Vista and attempted to cultivate the land. His efforts at agriculture, as well as  
10 those of subsequent settlers on the rancho, were unsuccessful due to harsh winters and  
11 inadequate food supply.

12 The town of Rio Vista was created on land purchased in 1855 by Colonel N. H. Davis  
13 from Bidwell. Davis laid out the town of Brazos del Rio (now Rio Vista) in 1857, below  
14 the mouth of Cache Slough. The new settlement was the only town in the Rio Vista  
15 Township and its name was later changed to Rio Vista. Residents included Henry  
16 Beguhl, who settled the area shortly after his arrival in 1850. In 1858, a small portion of  
17 land in the Los Ulpinos grant was purchased by Joseph Bruning. In 1862, when heavy  
18 rains washed out Rio Vista, settlers sought a new town site at a higher elevation in the  
19 vicinity of the Montezuma Hills, on Bruning’s land. Bruning maintained his land holdings  
20 for more than 44 years after which he donated his land to the improvement of Rio Vista.  
21 In addition to allowing the new establishment of Rio Vista on his property he donated  
22 land for Rio Vista’s first school and first Catholic Church. Over the next few decades the  
23 town continued to expand with residential and commercial development.

24 In 1892, fire devastated Rio Vista’s downtown, destroying many residences and  
25 commercial buildings. Almost immediately, the town’s population began renewal  
26 projects and many business owners constructed their buildings with brick. The town was  
27 incorporated in 1893. New residents to the Rio Vista area included George E. Mayhood,  
28 who acquired property in the region by 1915.

29 During the late nineteenth and early twentieth centuries, Rio Vista functioned largely as  
30 an agricultural community. Aside from its downtown, much of its land remained  
31 undeveloped. An increasing population due to renewal and development during the  
32 early 1900s resulted in a rise in residential and infrastructure development including  
33 educational, religious, and community facilities. During the 1920s, Rio Vista and the  
34 surrounding region had approximately 1,900 residents. By the late 1940s and following  
35 World War II, Rio Vista had an established downtown area and the regional population  
36 reached more than 3,500 residents. Today, the Rio Vista region is approximately 25  
37 percent developed and has more than 8,000 residents.

38 Throughout much of the nineteenth century, wheat cultivation and ranching dominated  
39 the pursuits of agricultural producers in the project area. Agricultural development,

1 however, was limited. By 1878, an estimated 23 ranches operated in the general project  
2 area. Agriculture-related industry served as the main driving forces of the economy  
3 throughout the late nineteenth and early twentieth centuries. By the twentieth century,  
4 agriculture within the project area flourished and included a variety of fruit, asparagus,  
5 beans, and sugar beets, which were transported to outside markets via steamers along  
6 the Sacramento River and highway travel on improved roadways.

7 The Project area continues to be characterized by agricultural land and farmsteads,  
8 including clusters of single-family residences and outbuildings. The region settled as a  
9 farming community in the mid-1800s.

### 10 **3.3.5.2 Regulatory Setting**

11 The following discussion summarizes the most important federal and State laws and  
12 regulations that apply to cultural resource protection for the Project area.

#### 13 **Federal**

14 National Historic Preservation Act of 1966 (NHPA). The NHPA and its implementing  
15 regulations (36 CFR 800) require federal agencies to evaluate the potential effects of  
16 their actions on historic properties. This process, often referred to as the “Section 106”  
17 process, applies to properties that are listed on or eligible for listing on the National  
18 Register of Historic Places (National Register).

#### 19 **State**

20 California Environmental Quality Act (CEQA). As the CEQA lead agency, the CSLC is  
21 responsible for complying with all provisions of CEQA (Pub. Resources Code, § 21000  
22 et seq.) and the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.) that  
23 relate to “historical resources.” An historical resource includes: 1) a resource that is  
24 listed in, or determined to be eligible for listing in the California Register of Historic  
25 Resources (CRHR); 2) a resource included in a local register of historical or identified  
26 as significant in an historical resource surveys; and, 3) any resource that a lead agency  
27 determines to be historically significant for the purposes of CEQA, when supported by  
28 substantial evidence in light of the whole record.

29 The CRHR was created to identify resources deemed worthy of preservation on a State  
30 level and was modeled closely after the National Register. The criteria are nearly  
31 identical to those of the National Register, but focus on resources of statewide  
32 significance. The criteria, which are set forth in State CEQA Guidelines section 15064.5,  
33 subdivision (a)(3), are defined as any resource that meets any of the following criteria:

- 34 • Is associated with events that have made a significant contribution to the broad  
35 patterns of California’s history and cultural heritage;

- 1 • Is associated with lives of persons important in our past;
- 2 • Embodies the distinctive characteristics of a type, period, region, or method of
- 3 construction, or represents the work of an important creative individual, or
- 4 possesses high artistic values; or
- 5 • Has yielded, or may be likely to yield, information important in prehistory or
- 6 history.

7 Properties listed, or formally designated as eligible for listing, on the National Register  
8 are automatically listed on the CRHR, as are certain State Landmarks and Points of  
9 Interest. In addition, State CEQA Guidelines section 15064.5, subdivision (a)(4) states:

10 *The fact that a resource is not listed in, or determined to be eligible for listing in the*  
11 *California Register of Historical Resources, not included in a local register of*  
12 *historical resources (pursuant to Section 5020.1(k) of the Public Resources Code),*  
13 *or identified in an historical resources survey (meeting the criteria in Section*  
14 *5024.1(g) of the Public Resources Code) does not preclude a lead agency from*  
15 *determining that the resource may be an historical resource as defined in Public*  
16 *Resources Code Section 5020.1(j) or 5024.1.*

## 17 **Local**

18 County of San Joaquin General Plan. San Joaquin County's General Plan, Volume I,  
19 Section VI Resources, H. Heritage Resources establishes the following objectives and  
20 policies related to cultural resources that are applicable to the Project:

- 21 • Objective 1: To protect San Joaquin County's valuable architectural, historical,  
22 archaeological and cultural resources.
  - 23 ○ Policy 1: The County shall continue to encourage efforts, both public and
  - 24 private, to preserve its historical and cultural heritage.
  - 25 ○ Policy 2: Significant archeological and historical resources shall be
  - 26 identified and protected from destruction. If evidence of such resources
  - 27 appears after development begins, an assessment shall be made of the
  - 28 appropriate actions to preserve or remove the resources.
  - 29 ○ Policy 3: No significant architectural, historical, archaeological or cultural
  - 30 resources shall be knowingly destroyed through County action.

31 County of San Joaquin Ordinance Code. Historic resource preservation is discussed  
32 under Chapter 9-1053 of the Ordinance Code. The intent of the chapter is to establish  
33 regulations for the preservation of historic resources, such as cultural, archeological,  
34 architectural, aesthetic, and environmental resources, within San Joaquin County.  
35 Established regulations contained therein are generally applicable to known historic  
36 resources.

1 Sacramento County General Plan. The Conservation Element, Section VI sets the goal  
2 and implementation measures to promote the inventory, protection, and interpretation of  
3 the cultural heritage of Sacramento County, including historical and archaeological  
4 settings, sites, buildings, features, artifacts, and/or areas of ethnic historical, religious, or  
5 socioeconomic importance. Policies CO-155 through CO-162 have been adopted to  
6 protect archaeological resources. Policies CO-163 through CO-166 have been adopted  
7 to protect historic structures.

8 Sacramento County Code 2.23.080. This code designates the Sacramento Commission  
9 of History and Science as responsible for designation of sites and landmarks of historic  
10 and scientific importance throughout the incorporated and the unincorporated areas of  
11 Sacramento County.

### 12 **3.3.5.3 Impact Analysis**

13 ***a) Cause a substantial adverse change in the significance of a historical resource***  
14 ***as defined in § 15064.5?***

15 ***b) Cause a substantial adverse change in the significance of an archaeological***  
16 ***resource pursuant to § 15064.5?***

17 As discussed below, in March 2012, Brunzell Cultural Resource Consulting (BCR  
18 Consulting) conducted a cultural resources record and information search of the Project  
19 and buffer area and requested a search of the “Sacred Lands Inventory” maintained by  
20 the Native American Heritage Commission (NAHC) for the Project and buffer area. A  
21 pedestrian survey of the Project and buffer area was conducted on March 6, 2012.

22 The cultural resources record and information search was conducted with the Central  
23 California and Information Center of the California Historical Resources Information  
24 System located in Turlock, California, and the North Central Information Center located  
25 in Sacramento, California, and included a review of:

- 26 • National Register of Historic Places (Directory of Determinations of Eligibility,  
27 California, Office of Historic Preservation, Volumes I and II, 2001);
- 28 • California Historical Landmarks (State of California 1996);
- 29 • California Points of Historical Interest listing (State of California 1992);
- 30 • Historic Property Data File (State of California 2005);
- 31 • Other pertinent historic data on file with BCR Consulting.

32 The records search revealed that portions of the Project and adjacent areas within 1.0  
33 mile of the project have been subject to seven previous cultural resource studies,  
34 resulting in the recording of no cultural resources within the boundaries of the Project or  
35 buffer area. A total of 15 cultural resources studies took place within 1 mile of the

1 Project, and nine cultural resource sites have been recorded within that radius (see  
 2 Table 3.3.5-1).

3 **Table 3.3.5-1**  
 4 **Records Search Results**

USGS	Archaeological Sites	Reports
<i>Isleton</i> (1993) 7.5-Minute USGS Quadrangle	None	SJ-750*, 816*, 1640*, 1731*, 2674*, 3644, 5356, 6068, 6069, P-34-72, 101, 189
<i>Bouldin Island</i> (1997) 7.5-Minute USGS Quadrangle	None	SA-1783, 1806, 7157, 7962, 9182, 9326, SJ-750*, 816*, 1640*, 1731*, 2674*, 3804*, 4275*, 5356, 5498, 5501, 5503, 5985, 6068, 6069

\* Study included a portion of the Project.

5 On March 16, 2012, BCR Consulting requested a search of the Sacred Lands File  
 6 maintained by the NAHC. The request included a brief Project description and location  
 7 map and was sent to David Singleton of the NAHC by email. On April 5, 2012, Debbie  
 8 Pilas-Treadway performed the Sacred Lands File search, and provided names of  
 9 potentially interested tribes and individuals to BCR Consulting; the following individuals  
 10 and groups were listed: Katherine Erolinda Perez, Chairperson of the Northern Valley  
 11 Yokuts and Bay Miwoks; Andrew Galvan, Chairperson of the Ohlone Indian Tribe; and  
 12 Ramona Garlby, Representative of the Trina Marine Ruano Family. On April 17, 2012,  
 13 BCR Consulting communicated via certified letters and emails to the potentially  
 14 interested parties. BCR Consulting followed up this correspondence with phone calls to  
 15 the potentially interested parties. No responses have been received to date.

16 Neither previous archaeological surveys, nor the Sacred Lands search, nor the Project-  
 17 specific archaeological survey of the Project and buffer area have indicated that any  
 18 archeological resources are present within the Project. Construction and operation of  
 19 the Project is, therefore, not expected to affect any known archeological resources.  
 20 Although surface disturbance activities would all occur within frequently disturbed active  
 21 agricultural land, there is still some potential that excavation activities could encounter  
 22 and adversely affect unrecorded subsurface archaeological sites. Impacts to unknown  
 23 archeological resources would be considered a significant impact. Therefore, MM **CUL-**  
 24 **1** has been incorporated to protect unknown archeological resources during Project  
 25 construction. With incorporation of MM **CUL-1**, the Project’s impacts on historical and  
 26 archaeological resources would be less than significant.

27 **CUL-1: Unanticipated Archaeological Resources.** Should any previously unknown  
 28 archaeological resources be discovered during construction, work will stop  
 29 within 100 feet of the find until a qualified archaeologist can assess the  
 30 significance of the find, and, if necessary, develop appropriate treatment  
 31 measures in consultation with CSLC staff. If human remains are discovered,  
 32 there shall be no further excavation or disturbance of the site or any nearby

1 area reasonably suspected to overlie adjacent human remains. Three Rivers  
2 shall notify the county coroner immediately in compliance with State Health and  
3 Safety Code section 7050.5 and work in the vicinity may not resume until the  
4 coroner has made the necessary findings as to origin and circumstances of the  
5 death. CSLC staff shall also be notified immediately. If the remains are  
6 determined by the coroner to be of Native American origin, the coroner shall  
7 notify the NAHC within 24 hours. The NAHC would then contact the most likely  
8 descendant of the deceased Native American, who would make a  
9 recommendation on how to treat or dispose of the remains with appropriate  
10 dignity as set forth in Public Resources Code section 5097.98.

11 After construction is complete, the Project archaeologist shall prepare a  
12 construction monitoring report and submit it to CSLC staff and the Central  
13 California and the North Central Information Centers.

14 ***c) Directly or indirectly destroy a unique paleontological resource or site or***  
15 ***unique geologic feature?***

16 According to review of the San Joaquin County General Plan, Sacramento County  
17 General Plan and pedestrian surveys, no unique geological features or known  
18 paleontological resources are located in the Project, buffer area, or general project area.  
19 Therefore, the Project would not directly or indirectly destroy a unique paleontological  
20 resource site or site of unique geologic feature and no project impacts would result.

21 ***d) Disturb any human remains, including those interred outside of formal***  
22 ***cemeteries?***

23 There is some potential that excavation activities during Project implementation could  
24 encounter and adversely affect unrecorded archaeological sites that may lie buried  
25 beneath the ground surface. Impacts to unknown archeological resources would be  
26 considered a significant impact. Therefore, MM **CUL-1** has been incorporated to protect  
27 unknown archeological resources during Project construction. With implementation of  
28 the mitigation measure, the impact would be less than significant.

1 **3.3.6 Geology and Soils**

<b>GEOLOGY AND SOILS – Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.6.1 Environmental Setting**

3 This section derives information and data from a geologic hazards evaluation and bore  
 4 crossing soil investigation that were completed for the Project by Raney Geotechnical,  
 5 Inc. (Raney Geotechnical 2012) (see Appendix F). The purpose of the geotechnical  
 6 study was to evaluate the significance of various potential geotechnical issues that may  
 7 affect the permitting, planning, design, construction, and operation of the Project.

8 The Project is located within the Sacramento-San Joaquin Delta in the westerly portion  
 9 of the Great Valley Geomorphic Province of California. The Great Valley is bordered to  
 10 the north by the Cascade and Klamath Ranges, to the west by the Coast Ranges, to the  
 11 east by the Sierra Nevada, and to the south by the Traverse Ranges. The valley formed

1 by tilting of the Sierran Block with the western side dropping to form the valley and  
2 eastern side being uplifted to form the Sierra Nevada. The valley is characterized by a  
3 thick sequence of sediments derived from erosion of the adjacent Sierra Nevada to the  
4 east and the Coast Ranges to the west. These sedimentary rocks are mainly  
5 Cretaceous in age. The depth of the sediments varies from a thin veneer at the edges of  
6 the valley to in excess of 50,000 feet near the western edge of the valley.

7 The Delta is a low-elevation, triangular area generally situated between Sacramento to  
8 the north, Stockton to the south, and Suisun Bay to the west. Prior to reclamation and  
9 development of agricultural lands, the Delta was generally comprised of a vast  
10 swampland of tules, interlacing river channels, and low islands underlain by thick  
11 deposits of peat. Studies have shown a series of buried and filled river channels lie  
12 beneath the present delta surface, indicating that the present pattern of islands and  
13 channels is only the most recent configuration. Earlier channels and islands related to  
14 Pleistocene high sea levels during interglacial times have a very different geometry.

15 Reclamation of the Delta and the development of agricultural lands began in the late  
16 1800s and continued through the early 1900s. Reclamation included the construction of  
17 a system of levees and drainage ditches. Since reclamation, farmed areas between  
18 channels within the delta (islands) have experienced significant subsidence due  
19 primarily to microbial oxidation of organic-rich deposits and compaction due to farming  
20 activities. In a number of places, the islands now lie more than 20 feet below sea level.

## 21 **Lithology**

22 As indicated above, the Project area is underlain by a heterogeneous complex of peat,  
23 river channel, and flood deposits. State geologic mapping indicates that surface  
24 deposits in the Project north of the River are recognized as Rindge muck, partially  
25 drained. Geologic mapping indicates that surface deposits in the Project south of the  
26 River are recognized as Rindge mucky silt loam, partially drained. These soils are  
27 comprised of soft mud and peat deposits.

## 28 Structures, Faults, and Seismicity

29 The general Project area is underlain by a monoclinial series of Cenozoic deposits  
30 dipping gently to the southwest toward the westerly margin of the Central Valley. The  
31 contact between the Cenozoic and basement rock dips nearly eight degrees southwest,  
32 or at a slightly greater inclination than does the on-lapping homoclinal Cenozoic  
33 sequence. No active faults are mapped within the immediate Project area.

34 Adjacent to the Central Valley, the Sierra Nevada and Coast ranges are geologically  
35 young mountain ranges containing active and potentially active fault zones. Numerous  
36 active faults are present within the Coast Ranges to the west of the Project including the  
37 San Andreas, Calaveras, Hayward, and Green Valley Faults. In addition, an active

1 seismotectonic source, the Coast Ranges-Central Valley (CRCV) boundary zone, is  
2 situated approximately 9 miles west of the Project. The CRCV boundary zone is the  
3 geomorphic boundary of the Coast Ranges and the Central Valley, and is underlain by a  
4 300-mile-long seismically active fold and thrust belt that has been the source of recent  
5 earthquakes, such as the 1983 Magnitude 6.5 Coalinga and the 1985 Magnitude 6.1  
6 Kettleman Hills earthquake. Nearly the entire thrust system is “blind” (concealed). The  
7 basal detachment of this thrust system dips at a shallow angle to the west. East-  
8 directed thrusting over ramps in the detachment and west-directed thrusting on  
9 backthrusts are responsible for the uplift along the eastern range front of the Coast  
10 Ranges. Based on earthquake focal mechanisms, movement on the thrust zone is  
11 generally perpendicular to the strike of the geomorphic boundary and trend of the San  
12 Andreas Fault System. Shortening along the geomorphic boundary is driven by a  
13 component of the Pacific-North American Plate motion that is normal to the plate  
14 boundary. In recent years, an additional active blind thrust (Mt. Diablo Thrust) has been  
15 identified about 20 miles westerly of the subject property. The CRCV boundary zone  
16 and the Mt. Diablo Thrust are considered the dominant seismic features with potential  
17 for affecting the Project.

### 18 **3.3.6.2 Regulatory Setting**

19 The following discussion summarizes the most important federal, State, and local laws  
20 and regulations that apply to geology and soils for the Project area.

#### 21 **Federal/Local**

22 There are no federal or local regulations related to geology and soils relevant to the  
23 Project.

#### 24 **State**

25 California is a highly geologically active area, and has substantial relevant regulatory  
26 requirements. The regulations listed below are at least partially applicable to the Project.

27 Alquist-Priolo Earthquake Fault Zoning Act (Pub. Resources Code, §§ 2621-2630). This  
28 Act requires that "sufficiently active" and "well-defined" earthquake fault zones be  
29 delineated by the State Geologist and prohibits locating structures for human occupancy  
30 across the trace of an active fault.

31 California Building Code (CBC). The CBC contains requirements related to excavation,  
32 grading, and construction. According to the CBC, a grading permit is required if more  
33 than 50 cubic yards of soil are moved. Chapter 33 of the CBC contains requirements  
34 relevant to the construction of pipelines alongside existing structures. California Code of  
35 Regulations, Title 23, sections 3301.2 and 3301.3 contain provisions requiring

1 protection of the adjacent property during excavations and require a 10-day written  
2 notice and access agreements with the adjacent property owners.

3 California Seismic Hazards Mapping Act (Pub. Resources Code, § 2690 and following  
4 as Division 2, Chapter 7.8) and the Seismic Hazards Mapping Regulations (Cal. Code  
5 Regs., tit. 14, div. 2, ch. 8, art. 10). Designed to protect the public from the effects of  
6 strong ground shaking, liquefaction, landslides, other ground failures, or other hazards  
7 caused by earthquakes, this Act requires that site-specific geotechnical investigations  
8 be conducted identifying the hazard and formulating mitigation measures prior to  
9 permitting most developments designed for human occupancy. Special Publication 117,  
10 Guidelines for Evaluating and Mitigating Seismic Hazards in California (California  
11 Geological Survey [CGS] 2008), constitutes the guidelines for evaluating seismic  
12 hazards other than surface fault rupture and for recommending mitigation measures as  
13 required by Public Resources Code section 2695, subdivision (a).

#### 14 **3.3.6.3 Impact Analysis**

15 ***a) Expose people or structures to potentially substantial adverse effects,***  
16 ***including the risk of loss, injury, or death involving:***

17 *i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-*  
18 *Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or*  
19 *based on other substantial evidence of a known fault? Refer to Division of Mines*  
20 *and Geology Special Publication 42.*

21 The proposed pipeline alignment does not lie within an Alquist-Priolo fault rupture  
22 hazard zone; however, it is within the general vicinity of a number of faults that are  
23 considered active or potentially active. Project construction would not result in rupture of  
24 a known earthquake fault.

25 The proposed pipeline would be installed 45 feet below the bed of the River. In the  
26 event of a pipeline leak, pressure valves will detect a leak in the pipeline, and valves on  
27 either side of the pipeline will automatically shut off. The pipeline would then be repaired  
28 or abandoned. Three Rivers would consult with the appropriate regulatory agencies  
29 during such an event prior to any repairs. During a potential leak, the gas will bubble in  
30 the water and dissipate to the atmosphere. No long-term significant impacts would be  
31 anticipated to result, and the overall impact would be less than significant.

32 *ii) Strong seismic ground shaking?*

33 The Project is located within the general vicinity of a number of faults that are  
34 considered active or potentially active and that have the potential to generate strong  
35 ground motion. Review of the CGS website indicates that peak horizontal ground  
36 motion in the general Project area with a 475-year return period event (10 percent

1 probability of exceedance in 50 years) is expected to be in the range of 0.25 g to 0.33 g.  
2 Due to the proximity of major active faults within and adjacent to the Coast Ranges  
3 westerly of the Project, the area of the proposed pipeline is considered subject to  
4 moderate groundshaking.

5 Project construction activities are not likely to generate any strong seismic activity.  
6 Although there is potential for the pipeline to suffer damage in an earthquake, the  
7 pipeline would be constructed and operated in accordance with the specific  
8 requirements of California Public Utility Commission General Order 112-E and the U.S.  
9 Department of Energy, Title 49, Part 142; moreover, in an emergency such as an  
10 earthquake, Three Rivers would implement emergency response consistent with its  
11 Operation, Maintenance and Emergency Response Plan (Appendix B). Therefore,  
12 impacts from seismic ground shaking would be less than significant.

13 *iii) Seismic-related ground failure, including liquefaction?*

14 As detailed in Appendix F, review of Fault-Rupture Zone Mapping indicates that the  
15 subject site is not within a Fault-Rupture Hazard Zone as currently delineated by the  
16 State of California. The nearest State-delineated Fault-Rupture Zone to the site is  
17 situated more than 9 miles westerly of the Project. Furthermore, review of published and  
18 unpublished geologic literature, and Raney Geotechnical, Inc.'s reconnaissance survey,  
19 have not revealed any evidence of fault rupture hazard on the Project.

20 Soils susceptible to liquefaction are present throughout the Project area. Generally, the  
21 upper 50 feet of the soil profile normally consist of several feet of low density organic  
22 soils and soft clays, overlying interlayered loose to medium dense sands, sandy silts,  
23 and gravels.

24 Seismic events likely to produce the greatest intensity of shaking within the Project  
25 include events on the CRCV boundary zone about 9 miles to the west. This fault is  
26 considered capable of generating a maximum earthquake magnitude of 6.7. Raney  
27 Geotechnical, Inc.'s analysis indicates that, under a maximum intensity earthquake,  
28 loose sand layers within the soil profile could be susceptible to liquefaction. Except in  
29 the vicinity of levees, the ground is relatively flat and liquefaction would not be expected  
30 to cause significant ground spreading.

31 *iv) Landslides?*

32 The portions of the proposed pipeline where the ground would be disturbed during the  
33 installation process would occur in agricultural fields that are nearly level and are  
34 regularly disturbed during the growing of agricultural crops. In areas where the ground  
35 surface will be disturbed, soils will be disturbed temporarily and would be restored to  
36 their original condition after the pipeline is installed. As the Project would not disturb the

1 ground surface in areas that have substantial slope, it is not expected to result in any  
2 landslides. No impacts are expected.

3 ***b) Result in substantial soil erosion or the loss of topsoil?***

4 The portions of the proposed pipeline where the ground would be disturbed during the  
5 installation process would occur in agricultural fields that are nearly level and are  
6 regularly disturbed during the growing of agricultural crops. In areas where the ground  
7 surface will be disturbed, soils will be disturbed temporarily and topsoil segregated to  
8 ensure the land would be restored to its original condition after the pipeline is installed.  
9 Soils in the project area are susceptible to erosion due to water runoff. Heavy rains  
10 during construction could result in erosion and sedimentation impacts to surface waters.  
11 The Applicant has incorporated best management practices into the design of the  
12 Project to reduce erosion and sedimentation impacts (Appendix G). As such, Project  
13 implementation would not result in substantial soil erosion or the loss of topsoil, and the  
14 impact would be less than significant.

15 ***c) Be located on a geologic unit or soil that is unstable, or that would become***  
16 ***unstable as a result of the proposed project, and potentially result in on- or off-***  
17 ***site landslide, lateral spreading, subsidence, liquefaction or collapse?***

18 Implementation of the Project would not cause Project soils to become unstable, and  
19 would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or  
20 collapse. The portions of the proposed pipeline where the ground would be disturbed  
21 during the installation process would occur in agricultural fields that are nearly level and  
22 are regularly disturbed during the growing of agricultural crops. In areas where the  
23 ground surface would be disturbed, soils would be restored to their original condition  
24 after the pipeline is installed after approximately 1.5 months. Soils in the Project area  
25 are susceptible to erosion due to water runoff. Heavy rains during construction could  
26 result in erosion and sedimentation impacts to surface waters. Three Rivers has  
27 incorporated best management practices into the design of the Project to reduce  
28 erosion and sedimentation impacts (see Appendix G, Best Management Practices).  
29 Therefore, impacts related to project construction would be less than significant.

30 ***d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform***  
31 ***Building Code (1994), creating substantial risks to life or property?***

32 The Project occurs within soils that are classified as expansive soils; however, the  
33 Project would involve the construction of a pipeline in an area used for growing  
34 agricultural crops that does not contain residences or other structures. Although there is  
35 potential for the pipeline to suffer damage from expansive soils, the pipeline would be  
36 constructed and operated in accordance with the specific requirements of California  
37 Public Utility Commission General Order 112-E and the U.S. Department of Energy,  
38 Title 49, Part 142; moreover, in the case of a leak, Three Rivers would implement

1 emergency response consistent with its Operation, Maintenance and Emergency  
2 Response Plan (Appendix B). Therefore, the Project's impacts would be less than  
3 significant.

4 ***e) Have soils incapable of adequately supporting the use of septic tanks or***  
5 ***alternative wastewater disposal systems where sewers are not available for the***  
6 ***disposal of waste water?***

7 The Project would not result in any development that would increase the generation of  
8 wastewater or require the use of an individual wastewater treatment or disposal system.  
9 No Project impacts associated with construction would result.

1 **3.3.7 Hazards and Hazardous Materials**

<b>HAZARDS AND HAZARDOUS MATERIALS – Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 **3.3.7.1 Environmental Setting**

3 The proposed pipeline will carry processed natural gas. Natural gas would be  
 4 processed at the natural gas well sites prior to entry into the pipeline system. Operation  
 5 of the proposed pipeline will have the potential to release hazardous materials, including  
 6 natural gas from rupture or failure of the pipeline system. Three Rivers has prepared an  
 7 Emergency Response Plan for the Project (Appendix B).

8

1 Construction of the proposed pipeline would also involve the use of hazardous materials  
2 associated with internal combustion engines and hydraulic equipment, including fuels,  
3 coolant liquids, oils, and lubricants. Drilling muds would consist of bentonite, a natural  
4 clay compound. Additives (diesel fuel, lingo-sulfates, etc.) are sometimes mixed with  
5 bentonite to keep the mud emulsified in the event that drilling is temporary halted. Some  
6 of these materials are toxic and could result in adverse effects to aquatic organisms if  
7 released to the River during a frac-out; however, as noted in the impact analysis below,  
8 bentonite used in the Project will not have diesel or other toxic additives. No fuels or  
9 lubricants will be stored on-site during construction of the project.

10 No schools are located within the immediate vicinity of the Project area; the closest  
11 school to the Project is Isleton Elementary School, located approximately 2.7 miles to  
12 the northeast. The closest airport to the Project is Walnut Grove Airport, located  
13 approximately 6.42 miles north of the Project area.

### 14 **3.3.7.2 Regulatory Setting**

15 The following discussion summarizes the most important federal, State, and local laws  
16 and regulations that apply to hazards and hazardous materials for the Project area.

#### 17 **Federal**

18 Clean Water Act. The CWA is a comprehensive piece of legislation that generally  
19 includes reference to the federal Water Pollution Control Act of 1972, its substantial  
20 supplementation by the CWA of 1977, and subsequent amendments in 1981, 1987, and  
21 1993. Overall, the CWA seeks to protect the nation's water from pollution by setting  
22 water quality standards for surface water and by limiting the discharge of effluents into  
23 waters of the U.S. These water quality standards are enforced by the EPA. The CWA  
24 also provides for development of municipal and industrial wastewater treatment  
25 standards and a permitting system to control wastewater discharges to surface waters.

26 Oil Pollution Act (OPA). The OPA (33 USC 2712) requires owners and operators of  
27 facilities that could cause substantial harm to the environment to prepare and submit  
28 plans for responding to worst-case discharges of oil and hazardous substances. The  
29 passage of OPA motivated the State of California to pass a more stringent spill  
30 response and recovery regulation and the creation of the Office of Spill Prevention and  
31 Response (OSPR) to review and regulate oil spill plans and contracts.

#### 32 **State**

33 Porter-Cologne Water Quality Control Act (Porter-Cologne) (Cal. Water Code, § 13000  
34 et seq.). Porter-Cologne mandates that waters of the State shall be protected, such that  
35 activities which may affect waters of the State shall be regulated to attain the highest  
36 quality (see Section 3.3.8, Hydrology and Water Quality).

1 **Local**

2 The Sacramento and San Joaquin County General Plans Hazardous Materials and  
3 Public Safety Elements address hazards and hazardous materials use and safety within  
4 the Project area. These elements provide goals, policies, and actions intended to  
5 control the use of hazardous materials, and promote the safe use of these materials by  
6 the public.

7 **3.3.7.3 Impact Analysis**

8 ***a) Create a significant hazard to the public or the environment through the routine***  
9 ***transport, use, or disposal of hazardous materials?***

10 ***b) Create a significant hazard to the public or the environment through***  
11 ***reasonably foreseeable upset and accident conditions involving the release of***  
12 ***hazardous materials into the environment?***

13 There is potential for accidental releases of hazardous materials during Project  
14 construction activities. Potential impacts associated with the accidental release of these  
15 materials depend on the quantity and type of material, the location where it is used, the  
16 toxicity or other hazardous characteristics of the material, and whether it is transported,  
17 stored, and used in a solid, liquid, or gaseous form. The following procedures will be  
18 implemented to avoid and/or minimize potential impacts resulting from hazards or  
19 hazardous materials.

- 20 • All hazardous materials such as diesel fuel shall be stored according to the  
21 California Code of Regulations, Titles 22, 23, 26 and 27, California Fire Code,  
22 Title 24, and Sacramento/San Joaquin County hazardous materials ordinances  
23 and Material Safety Data Sheets shall be on the Project site. Waste materials  
24 shall be managed properly in accordance with requirements that comply with or  
25 given authority by the Code of Federal Regulations (40 CFR) and refined in  
26 California through California Code of Regulations, Titles 14, 22, 23, 26 & 27.  
27 Training shall be provided to all personnel involved in handling of hazardous  
28 materials/waste.
- 29 • A Project-specific emergency response plan shall be prepared for the Project and  
30 a copy of the plan shall be kept on site. The plan shall discuss methods to avoid  
31 and/or minimize impacts in the event of a release. The purpose of the plan shall  
32 be to ensure that adequate containment would be provided to control accidental  
33 spills, that adequate spill response equipment and absorbents would be readily  
34 available, and that personnel would be properly trained in how to control and  
35 clean up any spills.
- 36 • Fluid disposal shall follow CVRWQCB regulations (Cal. Code Regs., tit. 23).

- 1 • Equipment staging areas shall be identified that are located at least 100 feet from  
2 any water body, wetlands, or sensitive habitats. All staging, fueling, and  
3 maintenance of vehicles and construction equipment shall be conducted in these  
4 designated staging areas. Equipment shall be provided with drip pans nightly to  
5 prevent soil contamination during periods of inactivity. The contractor shall  
6 maintain spill containment and cleanup materials on-site during the duration of  
7 construction activities. Any soil contamination by fuels or petroleum-based  
8 products shall be immediately cleaned-up and removed from the site in DOT-  
9 approved drums or bags and properly disposed of in accordance with local,  
10 State, and federal regulations.
- 11 • In the event of a spill of hazardous materials or drilling fluids, the applicant will  
12 immediately implement provisions of the Frac-Out Contingency Plan.
- 13 • All spills of hazardous materials, if impacting or threatening waters of the State  
14 and/or the U.S., shall be reported to the appropriate local, State and federal  
15 agencies.
- 16 • The use of diesel fuel or hazardous substances as additives to drilling muds will  
17 be prohibited.
- 18 • Amendments to the Frac-Out Contingency Plan and Hazardous Materials  
19 Contingency Plan shall be filed with the appropriate local, State, and federal  
20 agencies.

21 With the implementation of the measures described above, the Project will have less  
22 than significant impact. The Project would not create a significant hazard to the public or  
23 the environment through the routine transport, use, or disposal of hazardous materials.  
24 Additionally, the Project would not create a significant hazard to the public or the  
25 environment through reasonably foreseeable upset and accident conditions involving  
26 the release of hazardous materials into the environment.

27 ***c) Emit hazardous emissions or handle hazardous or acutely hazardous***  
28 ***materials, substances, or waste within one-quarter mile of an existing or***  
29 ***proposed school?***

30 The closest school to the Project is Isleton Elementary School, located approximately  
31 2.7 miles to the northeast of the Project. The proposed natural gas pipeline would not  
32 emit hazardous emissions nor would the pipeline require the handling of hazardous or  
33 acutely hazardous materials, substances, or waste within one-quarter mile of an existing  
34 or proposed school and, therefore, no Project impacts due to construction or operation  
35 would result.

36 ***d) Be located on a site which is included on a list of hazardous materials sites***  
37 ***compiled pursuant to Government Code section 65962.5 and, as a result, would it***  
38 ***create a significant hazard to the public or the environment?***

1 As of April 4, 2013, the Department of Toxic Substances Control (DTSC) EnviroStor  
2 database does not identify the Project area as being located on a federal superfund,  
3 State response, school clean up, or corrective action cleanup site. Therefore, no  
4 impacts due to Project construction or operation would occur.

5 ***e) For a project located within an airport land use plan or, where such a plan has***  
6 ***not been adopted, within two miles of a public airport or public use airport, would***  
7 ***the project result in a safety hazard for people residing or working in the project***  
8 ***area?***

9 The closest airport to the Project is Walnut Grove Airport, located approximately 6.42  
10 miles north of the Project. The Project would be located underground. Therefore, the  
11 Project would not result in a safety hazard for people residing or working in the Project  
12 area and no project impacts due to construction or operation would result.

13 ***f) For a project within the vicinity of a private airstrip, would the project result in a***  
14 ***safety hazard for people residing or working in the project area?***

15 The Project is not located within the vicinity of a private airstrip, and the pipeline would  
16 be located underground. Therefore, the proposed pipeline would not result in a safety  
17 hazard for people residing or working in the Project area and no impacts due to  
18 construction or operation would result.

19 ***g) Impair implementation of or physically interfere with an adopted emergency***  
20 ***response plan or emergency evacuation plan?***

21 No adopted emergency response plans or emergency evacuation plans are in effect  
22 within the Project area. Therefore, the Project would not impair or physically interfere  
23 with an adopted emergency response plan or emergency evacuation plan. No impacts  
24 are expected from project implementation.

25 ***h) Expose people or structures to a significant risk of loss, injury or death***  
26 ***involving wildland fires, including where wildlands are adjacent to urbanized***  
27 ***areas or where residences are intermixed with wildlands?***

28 The Project is not located within a wildland fire hazard area. The proposed pipeline  
29 would be located underground and therefore would not expose people or structures to a  
30 significant risk of loss, injury or death involving wildland fires. Therefore, impacts due to  
31 project construction and operation would be less than significant.

1 3.3.8 Hydrology and Water Quality

HYDROLOGY AND WATER QUALITY – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1    **3.3.8.1    Environmental Setting**

2    The Project alignment would cross under the River and various agricultural irrigation  
3    ditches. The Project area is primarily used for agricultural purposes, and these irrigation  
4    ditches provide water for irrigating crops. Irrigation water is obtained from the River for  
5    such purposes. Because of surface water infiltration and low elevation, groundwater  
6    within the Project area is shallow.

7    The Project is located within an area subject to inundation and a 100-year flood plain as  
8    designated by the Federal Emergency Management Agency and the San Joaquin and  
9    Sacramento County General Plans. However, such a flooding event would not likely  
10   occur except in the instance of a levee break. The proposed pipeline would be  
11   completely unmanned (excepting occasional visits by pipeline technicians) and does not  
12   present any potential danger or impact as a result of being in the 100-year flood zone.  
13   Pipeline equipment will not impede or redirect water flow during a 100-year event.

14   The Project would not alter current drainage patterns in the area and construction would  
15   be short term in nature. All water required during implementation of the Project would be  
16   imported to the site from adjacent water sources with existing entitlements.

17   **3.3.8.2    Regulatory Setting**

18   The following discussion summarizes the most important federal, State, and local laws  
19   and regulations that apply to hazards and hazardous materials for the Project area.

20   **Federal**

21   Clean Water Act. The CWA is a comprehensive piece of legislation that generally  
22   includes reference to the federal Water Pollution Control Act of 1972, its substantial  
23   supplementation by the CWA of 1977, and subsequent amendments. Overall, the CWA  
24   seeks to protect the nation’s water from pollution by setting water quality standards for  
25   surface water and by limiting the discharge of effluents into waters of the U.S. These  
26   water quality standards are enforced by the EPA. The CWA also provides for  
27   development of municipal and industrial wastewater treatment standards and a  
28   permitting system to control wastewater discharges to surface waters. State operation  
29   of the program is encouraged. The CWA is the primary federal statute governing the  
30   discharge of dredged and/or fill material into waters of the U.S. Relevant sections  
31   include the following.

- 32       • Section 208 requires that states develop programs to identify and control  
33       nonpoint sources of pollution, including runoff.
- 34       • Section 230.8 gives authority to the USACE and EPA to specify, in advance,  
35       sites that are either suitable or unsuitable for the discharge of dredged or fill  
36       material within U.S. waters.

- 1 • Section 303 requires states to establish and enforce water quality standards to  
2 protect and enhance beneficial uses of water for such purposes as recreation  
3 and fisheries.
- 4 • Section 304(a)(1) requires the administrator of the EPA to publish criteria for  
5 water quality that reflect the latest scientific knowledge regarding the effects of  
6 pollutants in any body of water.
- 7 • Section 313(a) requires that federal agencies observe state and local water  
8 quality regulations.
- 9 • Section 401 applies to dredging and other in-water activities and requires  
10 certification that a permitted project complies with state water quality standards  
11 for actions within state waters. Under section 401, states must establish water  
12 quality standards for waters in the territorial sea. Dredging and other in-water  
13 activities may not cause the concentrations of chemicals in the water column to  
14 exceed state standards. To receive state certification, the applicant must  
15 demonstrate that these standards would not be exceeded.
- 16 • Section 401(a)(1) requires any applicant for a federal permit (i.e., section 404) to  
17 provide certification from the state in which the discharge originates that such  
18 discharge would comply with applicable water quality provisions (i.e., section  
19 303).
- 20 • Section 402 requires the EPA Administrator to develop the National Pollutant  
21 Discharge Elimination System (NPDES) to issue permits for pollutant discharges  
22 to waters of the U.S. An NPDES permit is required for: (1) any proposed point  
23 source wastewater or stormwater discharge to surface waters from municipal  
24 areas with a population of 100,000 or more; and (2) construction activities  
25 disturbing 1.0 acre (0.4 hectare) or more of land. A stormwater pollution  
26 prevention plan (SWPPP) is required for projects disturbing more than 1 acre,  
27 pursuant to the general permit for construction-related discharges.
- 28 • Section 404 establishes programs regulating the discharge of dredged and fill  
29 material into navigable waters of the United States.
- 30 • Section 404(b)(1) guidelines are the substantive criteria used in evaluating  
31 discharges of dredged or fill material under section 404.

32 Oil Pollution Act (33 USC 2712). The OPA requires owners and operators of facilities  
33 that could cause substantial harm to the environment to prepare and submit plans for  
34 responding to worst-case discharges of oil and hazardous substances.

35 Rivers and Harbors Act (33 USC 401). Section 10 of the Rivers and Harbors Act limits  
36 the construction of structures and the discharge of fill into navigable waters of the U.S.

1 **State**

2 Porter-Cologne Water Quality Control Act of 1969 (Cal. Water Code § 13000 et seq.)  
3 (Porter-Cologne). Porter-Cologne is the principal law governing water quality in  
4 California. The act, which establishes a comprehensive program to protect water quality  
5 and the beneficial uses of State waters, also established the SWRCB and the nine  
6 RWQCBs that are charged with implementing the SWRCB provisions and have primary  
7 responsibility for protecting water quality in California. Porter-Cologne also implements  
8 many provisions of the federal CWA, such as the NPDES permitting program.

9 Pursuant to federal law (33 USC 1341; CWA § 401), applicants for a federal license or  
10 permit for activities that may result in any discharge to waters of the United States must  
11 seek a Water Quality Certification (Certification) from the State in which the discharge  
12 originates. Such Certification is based on a finding that the discharge will meet water  
13 quality standards and other appropriate requirements of State law. In California,  
14 RWQCBs issue or deny certification for discharges within their jurisdiction. The SWRCB  
15 has this responsibility where projects or activities affect waters in more than one  
16 RWQCB's jurisdiction. If the SWRCB or a RWQCB imposes a condition on its  
17 certification, those conditions must be included in the federal permit or license.

18 As required by both the CWA and Porter-Cologne, the CVRWQCB has established  
19 water quality objectives and toxic material limitations in the Water Quality Control Plan  
20 (Basin Plan) for the Sacramento River and San Joaquin River Basins, which are  
21 designed to protect beneficial uses of surface waters in the Project area, which are as  
22 follows:

- 23 • Municipal and Domestic Supply
- 24 • Agricultural Supply
- 25 • Industrial Service Supply
- 26 • Industrial Process Supply
- 27 • Ground Water Recharge
- 28 • Freshwater Replenishment
- 29 • Navigation
- 30 • Hydropower Generation
- 31 • Water Contact Recreation
- 32 • Non-contact Water Recreation
- 33 • Commercial and Sport Fishing
- 34 • Aquaculture
- 35 • Warm Freshwater Habitat
- 36 • Cold Freshwater Habitat
- 37 • Estuarine Habitat
- 38 • Wildlife Habitat
- 39 • Preservation of Biological Habitats of Special Significance

- 1 • Rare, Threatened, or Endangered Species
- 2 • Migration of Aquatic Organisms
- 3 • Spawning, Reproduction, and/or Early Development
- 4 • Shellfish Harvesting

5 California Water Code section 8710. This section requires that a reclamation board  
6 permit be obtained prior to the start of any work, including excavation and construction  
7 activities, if projects are located within floodways or levee sections. Structures for  
8 human habitation are not permitted within designated floodways.

9 California Code of Regulations, Title 23. The Central Valley Flood Protection Board  
10 (CVFPB) regulates specific river, creek, and slough crossings for flood protection.  
11 These crossings must meet the provisions of Title 23 of the California Code of  
12 Regulations. Title 23 requires that new crossings maintain hydraulic capacity through  
13 such measures as in-line piers, adequate stream bank height (freeboard), and  
14 measures to protect against stream bank and channel erosion. Title 23 requires that  
15 improvements, including crossings, be constructed in a manner that does not reduce  
16 the channel's capacity or functionality, or that of any federal flood control project. The  
17 CVFPB issues and reviews encroachment permit applications for approval of a new  
18 channel crossing or other channel modification. For a crossing proposed for a federal  
19 flood control project, the CVFPB coordinates review of the application with the USACE  
20 and other agencies, as necessary.

## 21 **Local**

22 The Sacramento and San Joaquin County General Plans Land Use, Conservation, and  
23 Open Space Elements address hydrology and water quality within the Project area.  
24 These elements provide goals, policies, and actions intended to preserve, restore, and  
25 enhance the use of water resources, and promote the quality and responsible use of  
26 water by the public.

### 27 **3.3.8.3 Impact Analysis**

#### 28 ***a) Violate any water quality standards or waste discharge requirements?***

29 The Project would include the installation of a pipeline under the ground surface using  
30 traditional trenching and, under the Mokelumne River, agricultural drainage ditches, and  
31 State Highway 12, HDD boring methods. Soils would only be temporarily impacted, and  
32 areas of ground disturbance would be restored to original conditions after installation  
33 activities are completed. With the implementation of Project mitigation measures, the  
34 potential for discharge of any materials from these areas (e.g., sediment) would be low  
35 and would not result in water quality degradation or an increase in contaminants.

1 HDD activities would bore underneath surface water features includes agricultural  
2 drainage ditches and the River. With implementation of the Frac-Out Contingency Plan,  
3 the HDD Boring Abandonment Contingency Plan (see Section 2.3.2), and other  
4 construction best management practices (see Section 3.3.7.3), however, impacts to  
5 water quality in these areas are not anticipated. Therefore, impacts due to Project  
6 implementation would be less than significant.

7 ***b) Substantially deplete groundwater supplies or interfere substantially with***  
8 ***groundwater recharge such that there would be a net deficit in aquifer volume or***  
9 ***a lowering of the local groundwater table level (e.g., the production rate of pre-***  
10 ***existing nearby wells would drop to a level which would not support existing land***  
11 ***uses or planned uses for which permits have been granted)?***

12 The Project would not require water service as part of construction or long-term  
13 operation nor would it interfere with groundwater supply or recharge. No Project impact  
14 would result.

15 ***c) Substantially alter the existing drainage pattern of the site or area, including***  
16 ***through the alteration of the course of a stream or river, in a manner which would***  
17 ***result in substantial erosion or siltation on- or off-site?***

18 The pipeline would be located underground, and surfaces disturbed during construction  
19 would be restored to pre-Project conditions. Therefore, the Project would not  
20 substantially alter the drainage pattern of the Project or area that could result in  
21 substantial erosion or siltation on or off-site, and no impacts due to construction would  
22 occur. No impacts are anticipated.

23 ***d) Substantially alter the existing drainage pattern of the site or area, including***  
24 ***through the alteration of the course of a stream or river, or substantially increase***  
25 ***the rate or amount of surface runoff in a manner which would result in flooding***  
26 ***on- or off-site?***

27 The Project involves placement of infrastructure underground and would not alter the  
28 existing drainage patterns or substantially increase the rate or amount of surface run off.  
29 No impacts are anticipated during construction of the Project.

30 ***e) Create or contribute runoff water which would exceed the capacity of existing***  
31 ***or planned stormwater drainage systems or provide substantial additional***  
32 ***sources of polluted runoff?***

33 The Project is a natural gas pipeline that would be located underground. The Project  
34 would not alter existing drainage patterns, result in an increase in erosion or flooding,  
35 require modifications to any existing drainage facilities, or adversely affect the quality of  
36 runoff water; therefore, no impacts due to construction would occur.

1 **f) Otherwise substantially degrade water quality?**

2 The Project would be located underground and would not introduce a new use into the  
3 area. As noted in *Response 3.3.8.3 a)* above, the Project would not violate water quality  
4 standards or waste discharge requirements. Therefore, impacts due to construction and  
5 operation are considered less than significant.

6 **g) Place housing within a 100-year flood hazard area as mapped on a federal**  
7 **Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard**  
8 **delineation map?**

9 The Project does not include the construction of housing within a 100-year flood hazard  
10 area. No impacts are anticipated.

11 **h) Place within a 100-year flood hazard area structures which would impede or**  
12 **redirect flood flows?**

13 The Project would not involve the construction of any structures within a 100-year flood  
14 plain, and therefore, would not impede or redirect any water flow within a 100-year flood  
15 plain. No impacts are anticipated.

16 **i) Expose people or structures to a significant risk of loss, injury or death**  
17 **involving flooding, including flooding as a result of the failure of a levee or dam?**

18 The proposed pipeline would be located underground, and the Project would not result  
19 in the development of any housing or any other above-ground structures that would  
20 redirect flood flows. Therefore, Project construction would have no flooding-related  
21 impacts.

22 **j) Inundation by seiche, tsunami, or mudflow?**

23 There is no potential for seiche or tsunami due to the lack of a significant water body  
24 near the Project. The Project area is generally flat with the exception of levees on either  
25 side of the River. The possibility of mudflow on these levees is low. No evidence of past  
26 mudflows was observed within or adjacent to the Project area. Therefore, Project  
27 impacts would be less than significant.

1 **3.3.9 Land Use and Planning**

<b>LAND USE AND PLANNING – Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.9.1 Environmental Setting**

3 The Project is situated within unincorporated areas of Sacramento and San Joaquin  
 4 Counties, California. Existing land uses within and adjacent to the Project include the  
 5 growing of agricultural crops (corn – *Zea mays* L.), recreation (fishing and boating), and  
 6 natural gas exploration and production activities. The Project occurs within both upland  
 7 areas and agricultural wetlands, as well as under the River and agricultural drainage  
 8 ditches. Wetlands were observed along the edges of the River and within agricultural  
 9 drainage ditches under which the pipeline would be installed via boring, as well as  
 10 within the River and agricultural drainage ditches in the Project buffer area. No vernal  
 11 pool habitat was observed in areas of the Project where ground-disturbing activities  
 12 would occur.

13 The area surrounding the Project consists of privately and publically owned lands. The  
 14 city of Isleton is located approximately 2.53 miles northwest of the Project, while the city  
 15 of Rio Vista is located approximately 6.31 miles west of the Project.

16 **3.3.9.2 Regulatory Setting**

17 The following discussion summarizes the most important federal, State, and local laws  
 18 and regulations that apply to land use for the Project area.

19 **Federal**

20 There are no federal regulations related to land use relevant to the Project.

1 **State**

2 California State Lands Commission (CSLC). The CSLC has jurisdiction and  
3 management authority over all ungranted tidelands, submerged lands, and the beds of  
4 navigable lakes and waterways. The CSLC also has certain residual and review  
5 authority for tidelands and submerged lands legislatively granted in trust to local  
6 jurisdictions (Pub. Resources Code, §§ 6301 & 6306). All tidelands and submerged  
7 lands, granted or ungranted, as well as navigable lakes and waterways, are subject to  
8 the protections of the Common Law Public Trust. As general background, the State of  
9 California acquired sovereign ownership of all tidelands and submerged lands and beds  
10 of navigable lakes and waterways upon its admission to the United States in 1850. The  
11 State holds these lands for the benefit of all people of the State for statewide Public  
12 Trust purposes, which include but are not limited to waterborne commerce, navigation,  
13 fisheries, water-related recreation, habitat preservation and open space. On tidal  
14 waterways, the State's sovereign fee ownership extends landward to the mean high tide  
15 line, except for areas of fill or artificial accretion.

16 **Local**

17 Sacramento and San Joaquin County General Plans. The Land Use Element of the  
18 Sacramento and San Joaquin General Plans defines planned long-range development  
19 pattern and physical character, as well as the extent and distribution of future growth in  
20 the project area. The Land Use Element is one of seven elements mandated by State  
21 planning law that consists of a Statement of policies and a land use map showing the  
22 spatial distribution, location, and extent of lands designated for housing, business,  
23 industry, open space, agriculture, and other categories (Sacramento County 2011, San  
24 Joaquin County 2012).

25 **3.3.9.3 Impact Analysis**

26 ***a) Physically divide an established community?***

27 The Project does not occur within an existing community (the Project is located in un-  
28 incorporated agricultural areas), and as such, would not physically divide an established  
29 community. No Project impacts are expected.

30 ***b) Conflict with any applicable land use plan, policy, or regulation of an agency***  
31 ***with jurisdiction over the Project (including, but not limited to the general plan,***  
32 ***specific plan, local coastal program, or zoning ordinance) adopted for the***  
33 ***purpose of avoiding or mitigating an environmental effect?***

34 The Project is consistent with the land use and zoning designation for the area, and is  
35 therefore considered consistent with associated agricultural resource planning purposes  
36 and General Plan requirements. The Land Use Elements of the Sacramento and San

1 Joaquin County General Plans state that natural gas pipelines installed underground  
2 are a “compatible” use with agricultural designations (Sacramento County 2011, San  
3 Joaquin County 2012). The Project would temporarily disturb agricultural soils.  
4 However, after installation is complete, soils would be placed back in the trench in the  
5 same manner they are removed, and no long-term impacts to agricultural soils would  
6 occur. Impacts are considered less than significant.

7 ***c) Conflict with any applicable habitat conservation plan or natural community***  
8 ***conservation plan?***

9 The SJMSCP covers the entire County of San Joaquin, including Bouldin Island on  
10 which portions of the Project would occur; however, agricultural lands are not covered  
11 by the provisions of the SJMSCP and, as the Project will only have ground-disturbing  
12 impacts within agricultural lands, the SJMSCP is not applicable to the Project. No other  
13 habitat conservation plans or other approved local, regional, or state habitat  
14 conservation plans are applicable to or cover the Project area. Therefore, the Project  
15 would have no impact on existing conservation plans.

1 **3.3.10 Mineral Resources**

<b>MINERAL RESOURCES - Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.10.1 Environmental Setting**

3 San Joaquin and Sacramento Counties, including the general Project area, serve as an  
 4 important regional source of natural gas. The Project is located within the administrative  
 5 boundaries of the River Island Gas Field. There are 15 natural gas wells that have been  
 6 drilled within 1-mile of the proposed pipeline alignment according to Department of  
 7 Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) records. The  
 8 pipeline would connect an existing active gas well on Bouldin Island to an existing  
 9 pipeline and production facility at the northern terminus of the proposed pipeline on  
 10 Tyler Island.

11 No other types of mineral resources have been identified within the Project area. There  
 12 are no existing or planned surface mining operations within the Project area.

13 **3.3.10.2 Regulatory Setting**

14 **Federal**

15 There are no federal regulations related to mineral resources relevant to the Project.

16 **State**

17 Surface Mining and Reclamation Act (SMARA). The CGS classifies the regional  
 18 significance of mineral resources in accordance with SMARA and assists in the  
 19 designation of lands containing significant aggregate resources. Mineral Resource  
 20 Zones (MRZs) have been designated to indicate the significance of mineral deposits.  
 21 The MRZ categories are:

- 22 • **MRZ-1:** Areas where adequate information indicates that no significant mineral  
 23 deposits are present or where it is judged that little likelihood exists for their  
 24 presence.
- 25 • **MRZ-2:** Areas where adequate information indicates significant mineral deposits  
 26 are present, or where it is judged that a high likelihood exists for their presence.

- 1       • **MRZ-3:** Areas containing mineral deposits the significance of which cannot be  
2       evaluated from available data.
- 3       • **MRZ-4:** Areas where available information is inadequate for assignment to any  
4       other MRZ.

## 5 **Local**

6 The Conservation Elements of the Sacramento and San Joaquin County General Plans  
7 address mineral resources, their extraction, the continued access to these resources,  
8 and their wise use. These elements provide goals, policies, and actions intended to  
9 achieve the Counties' vision for continued access to, extraction of, and continued  
10 benefit to Sacramento and San Joaquin Counties from these mineral resources.

### 11 **3.3.10.3 Impact Analysis**

#### 12 ***a) Result in the loss of availability of a known mineral resource that would be of*** 13 ***value to the region and the residents of the State?***

14 The purpose of the Project is to bring to market (i.e., make available) natural gas that is  
15 currently available at the existing DW 8-1 Well. No other known mineral resource areas  
16 are identified within the Project area. As such, the Project would not result in the loss of  
17 availability of any known mineral resources that would be of value to the region and the  
18 residents of the State, and no impacts due to Project construction would result.

#### 19 ***b) Result in the loss of availability of a locally-important mineral resource*** 20 ***recovery site delineated on a local general plan, specific plan or other land use*** 21 ***plan?***

22 The Sacramento and San Joaquin County General Plans do not identify any mineral  
23 resource protection zones or locally important mineral resources recovery sites in the  
24 Project area nor are any existing or planned surface mining operations located in the  
25 Project area. San Joaquin and Sacramento Counties, including the general Project  
26 area, serve as an important regional source of natural gas. The Project is located within  
27 the administrative boundaries of the River Island Gas Field. The proposed pipeline will  
28 connect an existing active gas well to an existing pipeline and production facility at the  
29 northern terminus of the proposed pipeline on Tyler Island. Therefore, the Project would  
30 not result in the loss of availability of a locally important mineral resource recovery site  
31 and no impacts due to Project construction would result.

1 **3.3.11 Noise**

<b>NOISE – Would the Project result in:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.11.1 Environmental Setting**

3 “Noise” is often defined as unwanted sound, whereas “sound” is used to describe the  
 4 mechanical form of radiant energy transmitted by pressure waves in the air. Sound is  
 5 characterized by two parameters: amplitude (loudness) and frequency (tone).

- 6 • Amplitude is the difference between ambient air pressure and the peak pressure  
 7 of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale  
 8 and is interpreted by the ear as corresponding to different degrees of loudness.  
 9 Laboratory measurements correlate a 10 dB increase in amplitude with a  
 10 perceived doubling of loudness and establish a 3 dB change in amplitude as the  
 11 minimum audible difference perceptible to the average person (Federal Highway  
 12 Administration 1982).
- 13 • Frequency is the number of fluctuations of the pressure wave per second and is  
 14 measured in hertz (Hz), which indicates the number of cycles per second. The  
 15 human ear is not equally sensitive to sounds of different frequencies. Sound  
 16 waves below 16 Hz or above 20,000 Hz cannot be heard by humans, and the  
 17 human ear is more sensitive to sound in the higher portion of this range than in

1 the lower. To approximate this sensitivity, environmental sound is usually  
2 measured in A-weighted decibels (dBA). On this scale, the normal range of  
3 human hearing extends from about 10 dBA to about 140 dBA.

4 The intensity of environmental noise fluctuates over time and several descriptors of  
5 time-averaged noise levels are used. The three most commonly used descriptors are  
6 Energy Equivalent Noise Level ( $L_{eq}$ ), Day-Night Average Noise Level ( $L_{dn}$ ), and  
7 Community Noise Equivalent Level (CNEL).

- 8 •  $L_{eq}$  – a measure of the average energy content (intensity) of noise over any given  
9 period of time. Many communities use 24-hour descriptors of noise levels to  
10 regulate noise.
- 11 •  $L_{dn}$  – the 24-hour average of the noise intensity, with a 10 dBA “penalty” added  
12 for nighttime noise (10:00 PM to 7:00 AM) to account for the greater sensitivity to  
13 noise during this period.
- 14 • CNEL – similar to  $L_{dn}$  but adds an additional 5 dB penalty to evening noise (7:00  
15 to 10:00 PM).

16 Noise generated by stationary sources, such as construction sites, machinery, and  
17 industrial operations, typically attenuate at a rate between 6.0 to about 7.5 dBA per  
18 doubling of distance. Noise generated by mobile sources, such as automobiles, trucks  
19 and airplanes, generally attenuate at a rate between 3.0 to 4.5 dBA per doubling of  
20 distance. Table 3.3.11-1 provides examples of maximum sound levels associated with  
21 common noise sources, and human response to these examples.

22 In addition to the criteria discussed above, another consideration in defining impact  
23 criteria is the existing noise environment in the project area. Appendix G of the State  
24 CEQA Guidelines states that a project would normally have a significant effect on the  
25 environment if it increases substantially the ambient noise levels for adjoining areas. In  
26 community noise assessments, noise impacts are “generally not significant” if noise-  
27 sensitive sites are not located in the project area, or if increases in community noise  
28 levels with the implementation of the project are expected to be 3 dBA or less at noise-  
29 sensitive locations, and the project would not result in violations of local ordinances or  
30 standards. Noise-sensitive sites include residences, motels, hotels, public meeting  
31 rooms, auditoriums, schools, churches, libraries, hospitals, amphitheaters, parks, and  
32 other areas where quiet is essential. If the increase in noise exposure level is greater  
33 than 3 dBA, the significance of impact will depend on the ambient noise level and the  
34 presence of noise-sensitive sites. Noise impacts are “possibly significant” if increases in  
35 noise exposure levels are expected to be greater than 5 dBA with implementation of the  
36 project. Noise impacts are “generally significant” if the project would cause noise  
37 standards or ordinances to be exceeded, or increases in the community noise levels by  
38 6 to 10 dBA in built-up areas, or increases by 10 dBA or more in rural areas. CNEL is  
39 used in this initial study for arterial/highway traffic-generated noise assessment.

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**Table 3.3.11-1  
Weighted Sound Levels and Human Responses**

Example of Sound Source	dBA*	Response Criterion
	<b>0</b>	Threshold of hearing
	<b>10</b>	Just audible
Broadcasting studio background	<b>20</b>	
Soft whisper at 2 feet	<b>30</b>	Very quiet
Background level within a residence or library	<b>40</b>	
Open office background level	<b>50</b>	Quiet
Light auto traffic at 50 feet; normal conversational speech at 5 to 10 feet	<b>60</b>	
Freeway traffic at 50 feet; commercial jet aircraft interior during flight	<b>70</b>	Intrusive, with telephone use difficult
Diesel locomotive at 300 feet; helicopter at 500 feet	<b>80</b>	Annoying
Heavy truck or bulldozer at 50 feet; pneumatic drill at 50 feet	<b>90</b>	Hearing damage at 8 Hours
Shotgun at 200 feet; shout at 0.5 feet; inside New York City subway station	<b>100</b>	Very annoying
Riveting machine at operators position; jet takeoff at 2,000 feet	<b>110</b>	
Jet aircraft takeoff at 100 feet; auto horn at 3 feet	<b>120</b>	Threshold of feeling and pain, with maximum vocal effort
	<b>130</b>	Painfully loud
Carrier deck jet operation	<b>140</b>	Limit of amplified speech
*Typical A-weighted sound levels taken with a sound-level meter and expressed as dBA, which approximates the frequency response of the human ear. Source: Council of Environmental Quality, 1970 Environmental Quality: The First Annual Report of the Council on Environmental Quality. U.S. Government Printing Office, Washington D.C.		

3 The Project is located in an unincorporated area of southwestern Sacramento County  
4 and western San Joaquin County. The closest community to the Project is Isleton,  
5 which is located approximately 2.53 miles to the northwest of the Project. The Project  
6 area is used primarily for agricultural, recreational, and natural gas production, and the  
7 closest residence is located approximately 0.14 mile (740 feet) to the southwest of the  
8 5-2 Line tie-in point at the northern terminus of the proposed pipeline alignment. The  
9 current primary contributors to noise in the vicinity of the Project area are vehicular  
10 traffic on blacktop and dirt roads, recreational boat traffic on the River, and noise  
11 generated by farming activities (i.e., mechanical cultivation, seeding, and harvesting).

1 **3.3.11.2 Regulatory Setting**

2 The following discussion summarizes the most important federal, State, and local laws  
3 and regulations that apply to noise for the Project area.

4 **Federal**

5 A number of laws and guidelines at the federal level direct the consideration of a broad  
6 range of noise and vibration issues. Several of the more significant noise related federal  
7 regulations and guidelines are provided below.

8 Noise Control Act of 1972 (42 USC 4910). This Act establishes a national policy to  
9 promote an environment for all Americans free from noise that jeopardizes their health  
10 and welfare. To accomplish this, the Act establishes a means for the coordination of  
11 federal research and activities in noise control, authorizes the establishment of federal  
12 noise emissions standards for products distributed in commerce, and provides  
13 information to the public respecting the noise emission and noise reduction  
14 characteristics of such products.

15 EPA recommendations in “Information on Levels of Environmental Noise Requisite to  
16 Protect Health and Welfare with an Adequate Margin of Safety” (NTIS 550\9-74-004,  
17 EPA, Washington, D.C., March 1974). In response to a federal mandate, the EPA  
18 provided guidance in this document, commonly referenced as the, “Levels Document,”  
19 that establishes an  $L_{dn}$  of 55 dBA as the requisite level, with an adequate margin of  
20 safety, for areas of outdoor uses including residences and recreation areas. This  
21 document does not constitute EPA regulations or standards, but identifies safe levels of  
22 environmental noise exposure without consideration for achieving these levels or other  
23 potentially relevant considerations. It is intended to “provide State and Local  
24 governments as well as the federal government and the private sector with an  
25 informational point of departure for the purpose of decision making.” The agency is  
26 careful to stress that the recommendations contain a factor of safety and do not  
27 consider technical or economic feasibility issues, and therefore should not be construed  
28 as standards or regulations.

29 Federal Energy Regulatory Commission (FERC) Guidelines On Noise Emissions From  
30 Compressor Stations, Substations, And Transmission Lines (18 CFR 157.206(d)5).  
31 These guidelines require that “the noise attributable to any new compressor stations,  
32 compression added to an existing station, or any modification, upgrade or update of an  
33 existing station, must not exceed a  $L_{dn}$  of 55 dBA at any pre-existing noise sensitive  
34 area (such as schools, hospitals, or residences).” This policy was adopted based on the  
35 EPA-identified level of significance of 55  $L_{dn}$  dBA.

36 Federal Highway Administration (FHA) Noise Abatement 1 Procedures (23 CFR Part  
37 772). The purpose of 23 CFR Part 772 is to provide procedures for noise studies and

1 noise abatement measures to help protect the public health and welfare, to supply noise  
2 abatement criteria, and to establish requirements for information to be given to local  
3 officials for use in the planning and design of highways. It establishes five categories of  
4 noise sensitive receptors and prescribes the use of the Hourly  $L_{eq}$  as the criterion metric  
5 for evaluating traffic noise impacts.

6 Department of Housing and Urban Development (HUD) Environmental Standards (24  
7 CFR Part 51). HUD Regulations set forth the following exterior noise standards for new  
8 home construction:

- 9 • 65  $L_{dn}$  or less – Acceptable
- 10 • > 65  $L_{dn}$  and < 75  $L_{dn}$  – Normally unacceptable, appropriate sound attenuation  
11 measures must be provided
- 12 • > 75  $L_{dn}$  – Unacceptable

13 HUD's regulations do not contain standards for interior noise levels. Rather, a goal of 45  
14 dB is set forth and attenuation requirements are geared to achieve that goal.

## 15 **State**

16 State regulations for limiting population exposure to physically and/or psychologically  
17 significant noise levels include established guidelines and ordinances for roadway and  
18 aviation noise under Caltrans as well as the now defunct California Office of Noise  
19 Control. The California Office of Noise Control land use compatibility guidelines  
20 provided the following:

- 21 • An exterior noise level of 60 to 65 dBA CNEL is considered "normally  
22 acceptable" for residential uses.
- 23 • A noise level of 70 dBA CNEL is considered to be "conditionally acceptable."  
24 This level is considered to be the upper limit of "normally acceptable" noise levels  
25 for sensitive uses such as schools, libraries, hospitals, nursing homes, churches,  
26 parks, offices, and commercial and professional businesses.
- 27 • A noise level of greater than 75 dBA CNEL is considered "clearly unacceptable"  
28 for residences.

## 29 **Local**

30 The Project falls under the local jurisdictions of Sacramento and San Joaquin Counties.  
31 Local regulations applicable to the Project are described below.

32 County of Sacramento. The County of Sacramento General Plan Noise Element  
33 establishes land use compatibility standards for new developments. Table 3.3.11-2  
34 below lists acceptable and unacceptable noise levels for new development which is  
35 compatible with noise-sensitive uses unless noise mitigation features are included in

1 Project designs. Noise sensitive land uses are: (1) Residential, including single and  
 2 multifamily dwellings, mobile home parks, dormitories, and similar uses; (2) Transient  
 3 lodging, including hotels, motels, and similar uses; (3) Hospitals, nursing homes,  
 4 convalescent hospitals, and other facilities for long-term medical care; and (4) Public or  
 5 private educational facilities, libraries, churches, and places of public assembly.

6 **Table 3.3.11-2**  
 7 **County of Sacramento General Plan Land Use and Noise Compatibility**

New Land Use	Sensitive <sup>1</sup> Outdoor Area - Ldn	Sensitive Interior <sup>2</sup> Area - Ldn	Notes
All Residential	65	45	5
Transient Lodging	65	45	3,5
Hospitals & Nursing Homes	65	45	3, 4, 5
Theaters & Auditoriums	---	35	3
Churches, Meeting Halls	65	40	3
Schools, Libraries, etc.	65	40	3
Office Buildings	65	45	3
Commercial Buildings	---	50	3
Playgrounds, Parks, etc.	70	---	
Industry	65	50	3

Notes:

1. Sensitive areas are defined in acoustic terminology section.
2. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
3. Where there are no sensitive exterior spaces proposed for these uses, only the interior noise level standard shall apply.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. If this use is affected by railroad noise, a maximum (Lmax) noise level standard of 70 dB shall be applied to all sleeping rooms to reduce the potential for sleep disturbance during nighttime train passages.

8 Construction activities are exempt from the County of Sacramento Noise Ordinance  
 9 (Sacramento County Code Chapter 6.68, §§ 6.68.070 and 6.68.090) if these activities  
 10 do not take place between 8:00 PM and 6:00 AM on weekdays and between 8:00 PM  
 11 and 7:00 AM on weekends. Project activities would comply with these requirements.

1 County of San Joaquin. The County of San Joaquin General Plan Noise Element  
 2 establishes land use compatibility standards for new developments. Table 3.3.11-3  
 3 below lists acceptable and unacceptable noise levels for new development which is  
 4 compatible with noise-sensitive uses unless noise mitigation features are included in  
 5 Project designs. Noise sensitive land uses are: (1) Residential, including single and  
 6 multifamily dwellings, mobile home parks, dormitories, and similar uses; (2) Transient  
 7 lodging, including hotels, motels, and similar uses; (3) Hospitals, nursing homes,  
 8 convalescent hospitals, and other facilities for long-term medical care; and (4) Public or  
 9 private educational facilities, libraries, churches, and places of public assembly.

10  
11

**Table 3.3.11-3  
County of San Joaquin General Plan Land Use and Noise Compatibility**

Land Use Category	Community Noise Exposure <i>L<sub>dn</sub></i> or <i>CNEL</i> , <i>dB</i>					
	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, Mobile Homes	Light Gray		Medium Gray		Dark Gray	
Residential - Multi-Family	Light Gray		Medium Gray		Dark Gray	
Transient Lodging - Motels, Hotels	Light Gray		Medium Gray		Dark Gray	
Schools, Libraries, Churches, Hospitals, Nursing Homes	Light Gray		Medium Gray		Dark Gray	
Auditoriums, Concert Halls, Amphitheaters	Light Gray		Medium Gray		Dark Gray	
Sports Arena, Outdoor Spectator Sports	Light Gray		Medium Gray		Dark Gray	
Playgrounds, Neighborhood Parks	Light Gray		Medium Gray		Dark Gray	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Light Gray		Medium Gray		Dark Gray	
Office Buildings, Business Commercial and Professional	Light Gray		Medium Gray		Dark Gray	
Industrial, Manufacturing, Utilities, Agriculture	Light Gray		Medium Gray		Dark Gray	

**INTERPRETATION:**

**Normally Acceptable**  
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

**Conditionally Acceptable**  
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

**Normally Unacceptable**  
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

**Clearly Unacceptable**  
New construction or development should generally not be undertaken.

1 Construction activities are exempt from the San Joaquin County Noise Ordinance  
 2 (Section 9-1025.9 of the San Joaquin County Development Title) if these activities are  
 3 conducted between 6:00 AM and 9:00 PM on any day of the week. Project activities will  
 4 comply with these requirements.

5 **3.3.11.3 Impact Analysis**

6 **a) Exposure of persons to or generation of noise levels in excess of standards**  
 7 **established in the local general plan or noise ordinance, or applicable standards**  
 8 **of other agencies?**

9 Project construction activities will result in short-term noise impacts and would use the  
 10 following types of equipment: excavators, backhoes, side boom trucks, crawler dozers,  
 11 trenchers, welding trucks, vacuum trucks, pipe rollers, pickup trucks, all-terrain vehicle  
 12 (ATV), directional drill, mud unit, and a boat. The number and type of equipment used  
 13 during drilling, testing and completion activities will vary from day to day.

14 The EPA has found that the noisiest equipment types operating at construction sites  
 15 typically range from 76 dBA to 101 dBA at a distance of 50 feet. Table 3.3.11-4 below  
 16 lists noise levels typically generated by construction equipment; however, not all  
 17 equipment listed will be used during the Project.

18 **Table 3.3.11-4**  
 19 **NOISE LEVELS GENERATED BY CONSTRUCTION EQUIPMENT**

Type of Equipment	Typical Sound Level (dBA at 50 feet)
Pump	76
Generator	76
Air Compressor	81
Concrete Mixer (truck)	85
Pneumatic Tools	85
Backhoe	85
Excavator	86
Dozer	87
Front-End Loader	88
Dump Truck	88
Jack Hammer	88
Scraper	88
Pavers	89
Pile Driver	101

Sources: U.S. Environmental Protection Agency, 1974; Noise Control for Building and Manufacturing Plants, BBN Layman Miller Lecture Notes, 1987.

1 Bulldozers are expected to produce the loudest noise levels during Project activities,  
2 resulting in noise levels of 87 dBA at 50 feet from the Project.

3 Noise level during Project construction at the closest residence to the Project was  
4 calculated to be 64 dBA using the equation below (www.animations.physics.unsw.edu).

$$5 \quad L_1 = L_2 + 20\log_{10} (R_2/R_1)$$

$$6 \quad L_2 = L_1 - 20\log_{10} (R_2/R_1)$$

$$7 \quad L_2 = 87 - 20\log_{10} (740'/50')$$

$$8 \quad L_2 = 87 - 23$$

$$9 \quad L_2 = \mathbf{64 \text{ dBA}}$$

10  $\Delta L = L_1 - L_2$   
11  $L_1 =$  Sound level at Object 1, the dosimeter due south of the noise source (91  
12 dBA).  
13  $L_2 =$  Estimated sound Level at Object 2, the nearest residence  
14  $R_1 =$  Distance from the source of noise to the south dosimeter (50 feet)  
15  $R_2 =$  Distance from source of noise to the nearest residence (740 feet)

16 Based upon the results presented above, the outdoor noise level at the nearest  
17 residence is expected to be 64 dBA during Project construction activities. The Project  
18 would be in compliance with the Noise Control Ordinance in the Sacramento and San  
19 Joaquin County Noise Ordinances and with Sacramento and San Joaquin County  
20 General Plan Noise Elements. Accordingly, noise impacts at the nearest residence  
21 during Project implementation are within regulatory limits for residential uses.

22 State and federal standards set by the U.S. Department of Labor Occupational Safety  
23 and Health Administration (OSHA) regulate worker exposure time to sound levels above  
24 90 dBA. However, construction equipment noise levels will be 87 dBA during project  
25 activities. Accordingly, farm personnel working in the vicinity of the Project would not be  
26 exposed to sound levels exceeding State or federal standards. Therefore people will not  
27 be exposed to noise levels in excess of applicable standards, and the impact would be  
28 less than significant.

29 ***b) Exposure of persons to or generation of excessive ground-borne vibration or***  
30 ***ground-borne noise levels?***

31 Vibration is oscillating motion of structures or the ground. The rumbling sound caused  
32 by the vibration in the ground is called ground-borne vibration. The Project is expected  
33 to create ground-borne vibration as a result of project activities (e.g., during construction  
34 activities). Two elements need to be addressed when considering regarding ground-  
35 borne vibration impacts: damage to buildings and annoyance to humans.

36 One of the accepted measurements for evaluating building damage associated with  
37 ground-borne vibration is peak particle velocity (PPV). According to the DOT Surface  
38 Transportation Board (DOT-STB 2009), "PPV is the maximum instantaneous positive or

1 negative peak of the vibration signal, measured as distance per time (inches per  
 2 second). PPV has been used historically to evaluate shock wave type vibrations from  
 3 actions like blasting, pile driving and mining activities and their relationship to building  
 4 damage.” Table 3.3.11-5 shows effects of construction vibrations on buildings.

5 **Table 3.3.11-5**  
 6 **Effects of Construction Vibration\***

Peak Particle Velocity (in/sec)	Effects on Buildings
< 0.05	No effect on buildings
0.1 to 0.5	Minimal potential for damage to weak and sensitive structures
0.5 to 1.0	Threshold at which there is a risk of architectural damage to buildings with plastered ceilings and walls. Some risk to ancient monuments and ruins.
1.0 to 2.0	U.S. Bureau of Mines data indicate that blasting vibrations in this range will not harm most buildings. Most construction vibration limits are in this range.
>3.0	Potential for architectural damage and possible minor structural damage.

\*Modified from Vibration at [www.drnoise.com/PDF\\_files/Vibration%20Primer.pdf](http://www.drnoise.com/PDF_files/Vibration%20Primer.pdf).

7 In order to estimate ground-borne vibration impacts associated with the Project  
 8 activities, RAB Consulting reviewed a study conducted by Gasch Geophysical Services,  
 9 Inc. that involved a ground vibration monitoring study of a triple oil and gas well drilling  
 10 rig operating near Lost Hills, California. The study used InstanTel vibration monitoring  
 11 instruments calibrated according to manufacturer’s specifications. A 3-component tri-  
 12 axial geophone was used to record vibration levels in the longitudinal (toward the  
 13 source), transverse (horizontally orthogonal to the longitudinal direction), and vertical  
 14 (up and down) directions. Measurements were recorded on two sides (north side and  
 15 south side) of the drill rig. The power system including mud pumps, water and fuel  
 16 storage and compressors were located on the north side of the drill rig. The catwalk and  
 17 other minor transient vibration generating equipment were located on the south side of  
 18 the drill rig. The results of the study are presented in Table 3.3.11-6.

19 Gasch Geophysical Services, Inc. recorded a PPV of 0.105 inches/second at 87 feet  
 20 during drilling activities associated with a triple rig. The following calculation was used to  
 21 determine the PPV (inches per second [in/sec]) at the nearest residence to the Project  
 22 (DOT-Federal Transit Administration 2006).

23 
$$PPV_{\text{equipment}} = PPV_{\text{ref}} (25/D)^n$$

24 Where:  $PPV_{\text{equipment}}$  = peak particle velocity in in/sec of the equipment  
 25 adjusted for the distance  
 26  $PPV_{\text{ref}}$  = reference vibration level in in/sec at 87 feet (drill rig)  
 27 D = distance from equipment to the nearest residence in feet  
 28 n = 1.5 (value related to the attenuation rate through the ground)  
 29  $PPV = 0.105(87/740)^{1.5} = 0.0042$  in/sec

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2

**Table 3.3.11-6  
Vibration Monitoring Study Results\***

Distance from Drill Hole (feet)	Transverse Direction (in/sec)	Vertical Direction	Longitudinal Direction
87 feet north	0.0550	0.105	0.0600
152 feet north	0.0400	0.0300	0.0200
225 feet north	0.0150	0.01000	0.01000
321 feet north	0.01000	0.01000	0.01000
105 feet south	0.0150	0.01000	0.01000
188 feet south	0.0150	0.0150	0.01000
335 feet south	0.01000	0.01000	0.01000

\*Gasch Geophysical Services, Inc. Vibration Monitoring of a Large Drill Rig, December 2012.

3 The estimated PPV, 0.0042 in/sec, at the nearest residence is lower than the PPV of  
4 0.05 in/sec that may cause effects on buildings as shown in Table 3.3.11-5. Therefore,  
5 the estimated ground-borne vibration generated by the Project is not expected to cause  
6 significant damage to buildings located within the general Project area, including the  
7 closest residence located 740 feet from the Project alignment. As such, the Project  
8 would have less than significant impacts to structures.

9 Another widely accepted source of measurements for evaluating human annoyance  
10 associated with ground-borne vibration is root-mean-square (rms) amplitude. According  
11 to the DOT’s Federal Transit Administration (2006),

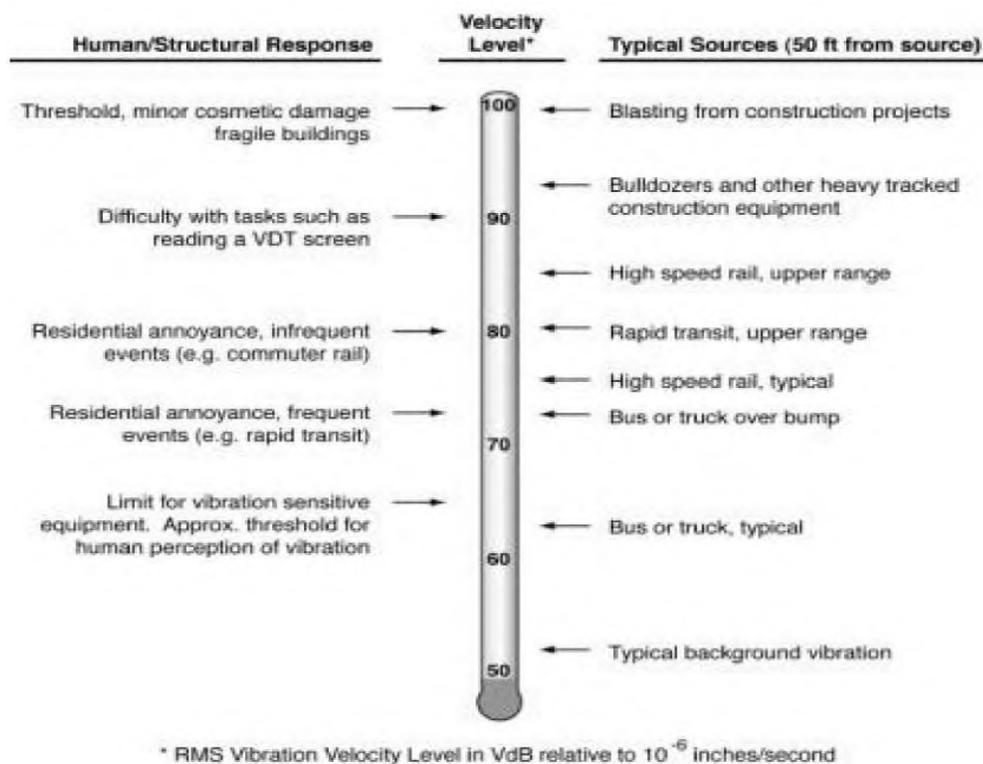
12 *It takes some time for human body to respond to vibration signals. In a sense, the*  
13 *human body responds to an average vibration amplitude. Because the net average*  
14 *of a vibration is zero, the rms amplitude is used to describe the “smoothed” vibration*  
15 *amplitude. The rms of a signal is the square root of the average of the squared*  
16 *amplitude of the signal. The average is typically calculated over a one-second*  
17 *period.*

18 The rms, connoted as vibration decibels (VdB) on a log scale, is used to evaluate  
19 human annoyance against ground-borne vibration. Figure 3.3.11-7 shows the  
20 human/structural response to different levels of ground-borne vibration velocity levels.

21 According to the DOT’s Federal Transit Administration (2006), the background vibration  
22 velocity level in residential areas is usually 50 VdB or lower, well below the 65 VdB  
23 threshold of perception for humans. The range of interest is from approximately 50 VdB  
24 to 100 VdB; however, the State CEQA Guidelines do not specifically define the levels at  
25 which ground-borne vibration is considered "excessive." Table 3.3.11-8 provides  
26 examples of the human response to different levels of ground-borne noise and vibration.

1  
2  
3

**Figure 3.3.11-7  
Human/Structural Response to Different Levels of Ground-Borne Vibration  
Velocity Levels**



4  
5

**Table 3.3.11-8  
Human Response to Different Levels of Ground-Borne Noise and Vibration**

Vib. Velocity Level	Noise Level		Human Response
	Low Freq1	Mid Freq2	
65 VdB	25 dBA	40 dBA	Approximate threshold of perception for many humans. Low-frequency sound usually inaudible, mid-frequency sound excessive for quiet sleeping areas.
75 VdB	35 dBA	50 dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level annoying. Low-frequency noise acceptable for sleeping areas, mid-frequency noise annoying in most quiet occupied areas.
85 VdB	45 dBA	60 dBA	Vibration acceptable only if there are an infrequent number of events per day. Low-frequency noise annoying for sleeping areas, mid-frequency noise annoying even for infrequent events with institutional land uses such as schools and churches.
Notes:			
1. Approximate noise level when vibration spectrum peak is near 30 Hz.			
2. Approximate noise level when vibration spectrum peak is near 60 Hz.			

1 In order to estimate ground-borne vibration impacts to humans by the Project activities,  
 2 the velocity level in decibels, Lv (VdB) at the nearest residence to the Project is  
 3 calculated using the following equation.

$$4 \quad L_v = 20 \times \log_{10}(v/v_{ref})$$

5 Where: Lv = velocity level in decibels (VdB)  
 6 v = RMS velocity amplitude = PPV/Crest Factor  
 7 v<sub>ref</sub> = reference velocity amplitude (1 x 10<sup>-6</sup>)

8 Crest factor is defined as the ratio of the PPV amplitude to the rms velocity amplitude.  
 9 To calculate the rms velocity amplitude, a crest factor of 4 for random ground vibration  
 10 was used.

$$11 \quad \text{rms velocity amplitude} = \text{PPV/Crest Factor} = 0.0042/4 = 0.0011$$

12 The vibration velocity level for the Project is calculated below:

$$13 \quad L_v = 20 \times \log_{10}(0.0011/1 \times 10^{-6}) = 60.8 \text{ VdB}$$

14 The calculated vibration velocity at the nearest residence, 60.8 VdB, is lower than the  
 15 threshold of perception for humans of 65 VdB as shown in Table 3.3.11-8. Therefore,  
 16 the estimated ground-borne vibration generated by the Project will have a less than  
 17 significant impact.

18 ***c) A substantial permanent increase in ambient noise levels in the Project vicinity***  
 19 ***above levels existing without the Project?***

20 Construction activities are anticipated to be conducted for 1.5 months. Due to the  
 21 temporary nature of the construction activities, there would be no permanent increases  
 22 in the ambient noise levels in the Project area. Based on the relatively short duration of  
 23 construction activities and the absence of Project-related noise emissions after  
 24 construction, the Project would not cause a substantial permanent increase in ambient  
 25 noise levels in the Project vicinity above levels existing without the Project area and no  
 26 impact would result.

27 ***d) A substantial temporary or periodic increase in ambient noise levels in the***  
 28 ***project vicinity above levels existing without the project?***

29 See Response 3.3.11.3 a) discussion above. The Project would have a less than  
 30 significant impact on ambient noise levels.

31 ***e) For a project located within an airport land use plan or, where such a plan has***  
 32 ***not been adopted, within two miles of a public airport or public use airport, would***  
 33 ***the project expose people residing or working in the project area to excessive***  
 34 ***noise levels?***

1 The Project is not located within the vicinity of a public or private airport or airstrip. The  
2 closest airport to the Project is Walnut Grove Airport, located approximately 6.42 miles  
3 north of the Project. In addition, the Project is not located within the jurisdiction of an  
4 airport land use plan. Therefore, the Project would not expose people residing or  
5 working in the Project area to excessive noise levels, and there would be no impact.

6 ***f) For a project within the vicinity of a private airstrip, would the project expose***  
7 ***people residing or working in the project area to excessive noise levels?***

8 The Project is not located within the vicinity of a public or private airport or airstrip. The  
9 closest airport to the Project is Walnut Grove Airport located approximately 6.42 miles  
10 north of the Project. Therefore, the Project will not expose people to excessive noise  
11 levels, and there would be no impact.

1 **3.3.12 Population and Housing**

POPULATION AND HOUSING – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.12.1 Environmental Setting**

3 The Project is located in an unincorporated area of southwestern Sacramento County  
 4 and western San Joaquin County. The closest community to the Project is the city of  
 5 Isleton, which is located approximately 2.53 miles to the northwest of the Project. The  
 6 Project area is used primarily for agricultural, recreational, and natural gas production.  
 7 The closest residence to the Project is located approximately 0.14 mile (740 feet) to the  
 8 southwest of the 5-2 Line tie-in point at the northern terminus of the proposed pipeline  
 9 alignment.

10 **3.3.12.2 Regulatory Setting**

11 **Federal/State/Local**

12 No federal, State, or local regulations related to population and housing are relevant to  
 13 the Project.

14 **3.3.12.3 Impact Analysis**

15 ***a) Induce substantial population growth in an area, either directly (for example, by***  
 16 ***proposing new homes and businesses) or indirectly (for example, through***  
 17 ***extension of roads or other infrastructure)?***

18 The Project as proposed would not induce population growth in the area, either directly  
 19 or indirectly, and no impacts due to Project construction would result.

20 ***b) Displace substantial numbers of existing housing, necessitating the***  
 21 ***construction of replacement housing elsewhere?***

1 The Project would not displace any housing. Therefore, the Project would not displace  
2 substantial numbers of existing housing, necessitating the construction of replacement  
3 housing elsewhere, and no impacts due to Project construction would result.

4 ***c) Displace substantial numbers of existing housing, necessitating the***  
5 ***construction of replacement housing elsewhere?***

6 The Project would not displace substantial numbers of people, necessitating the  
7 construction of replacement housing elsewhere, since no housing would be removed as  
8 part of the Project. Therefore, no impacts due to Project construction would result.

1 **3.3.13 Public Services**

<b>PUBLIC SERVICES</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.13.1 Environmental Setting**

3 **Fire Protection and Emergency Response**

4 Fire protection and emergency response services in the Project area are provided by  
5 the River Delta Fire District, located at 16969 Jackson Slough Road, Isleton, CA 95641.

6 **Police Services**

7 Police Services in the Project area are provided by the following police departments:

- 8 • Sacramento County Sheriff’s Department, Florin Service Center, located at 7000  
9 65th Street, Sacramento, CA 95823.
- 10 • San Joaquin County Sheriff’s Department, located at 7000 Michael Canlis  
11 Boulevard, French Camp, CA 95231.

12 **Public Education**

13 The following school districts provide public education services within the Project area:  
14 (1) Lodi Unified School District; (2) New Hope Unified School District; and (3) River  
15 Delta Unified School District

16 **Parks and Open Space**

17 No parks or open space areas are located within the Project or buffer area. Franks Tract  
18 State Recreation Area is located approximately 4.1 miles south of the Project.

1    **Emergency Medical Services**

2    Emergency medical services are provided in the Project area by the following hospitals:

- 3       • Sutter Delta Medical Center, 3901 Lone Tree Way, Antioch, CA. This hospital is  
4       an acute care facility with 145 beds. It is equipped with a 24-hour Level II  
5       Emergency Department.
- 6       • Lodi Memorial Hospital, 975 South Fairmont Avenue, Lodi, CA. This hospital is  
7       an acute care facility with 261 beds. It is equipped with a 24-hour Level II  
8       Emergency Department.

9    **3.3.13.2 Regulatory Setting**

10   **Federal**

11   Federal regulations directly applicable to fire protection and emergency response issues  
12   include:

13   29 CFR 1910.38, Emergency Action Plans. Under this regulation, an employer must  
14   have an emergency action plan whenever an OSHA standard requires one. An  
15   emergency action plan must be in writing, kept in the workplace, and available to  
16   employees for review; an employer with 10 or fewer employees may communicate the  
17   plan orally to employees. Minimum elements of an emergency action plan are:

- 18       • Procedures for reporting a fire or other emergency;
- 19       • Procedures for emergency evacuation, including type of evacuation and exit  
20       route assignments;
- 21       • Procedures to be followed by employees who remain to operate critical plant  
22       operations before they evacuate;
- 23       • Procedures to account for all employees after evacuation;
- 24       • Procedures to be followed by employees performing rescue or medical duties;  
25       and
- 26       • The name or job title of every employee who may be contacted by employees  
27       who need more information about the plan or an explanation of their duties under  
28       the plan.

29   29 CFR 1910.39, Fire Prevention Plans. Under this regulation, an employer must have  
30   a fire prevention plan. A fire prevention plan must be in writing, be kept in the workplace,  
31   and be made available to employees for review; an employer with 10 or fewer  
32   employees may communicate the plan orally to employees. The minimum elements of a  
33   fire prevention plan are as follows:

- 34       • A list of all major fire hazards, proper handling and storage procedures for  
35       hazardous materials, potential ignition sources and their control, and the type of  
36       fire protection equipment necessary to control each major hazard;

- 1 • Procedures to control accumulations of flammable and combustible waste
- 2 materials;
- 3 • Procedures for regular maintenance of safeguards installed on heat-producing
- 4 equipment to prevent the accidental ignition of combustible materials;
- 5 • The name or job title of employees responsible for maintaining equipment to
- 6 prevent or control sources of ignition or fires; and
- 7 • The name or job title of employees responsible for the control of fuel source
- 8 hazards.

9 An employer must inform employees upon initial assignment to a job of the fire hazards  
10 to which they are exposed. An employer must also review with each employee those  
11 parts of the fire prevention plan necessary for self-protection.

12 29 CFR 1910.155, Subpart L, Fire Protection. Under this regulation, employers are  
13 required to place and keep in proper working order fire safety equipment within facilities.

#### 14 **State**

15 Office of the State Fire Marshal. The State Fire Marshal develops regulations relating to  
16 fire and life safety under California Code of Regulations, Title 19, Public Safety. These  
17 regulations have been prepared and adopted to establish minimum standards for the  
18 prevention of fire and for protection of life and property against fire, explosion, and panic.  
19 The Fire Marshal also adopts and administers the regulations and standards considered  
20 necessary under the California Health and Safety Code to protect life and property.

#### 21 **Local**

22 The Sacramento County Public Facilities and Public Health and Safety Elements  
23 address the siting of and safe operation of natural gas pipelines within Sacramento and  
24 San Joaquin Counties. These elements contain policies requiring regular auditing of  
25 these pipelines, as well a regular maintenance activity to ensure their safe operation.

#### 26 **3.3.13.3 Impact Analysis**

27 ***a) Would the Project result in substantial adverse physical impacts associated with***  
28 ***the provision of new or physically altered governmental facilities, need for new or***  
29 ***physically altered governmental facilities, the construction of which could cause***  
30 ***significant environmental impacts, in order to maintain acceptable service ratios,***  
31 ***response times or other performance objectives for any of the public services?***

32 The Project would not generate population growth through the generation of additional  
33 jobs or housing units that would result in increased demand for public services and/or  
34 facilities. No new or physically altered governmental facilities are proposed as part of  
35 the Project. Therefore, the Project would have no impact on public services in the area.

1 **3.3.14 Recreation**

RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.14.1 Environmental Setting**

3 No recreational facilities (parks, marinas, etc.) are located within the Project or buffer  
 4 area; however, boating and fishing activities are conducted within the River in the  
 5 Project vicinity. Two boat marinas, B&W Resort and Marina and Perry’s Boat Harbor,  
 6 are located in the general vicinity of the proposed bore under the Mokelumne River. The  
 7 closest park to the Project is Franks Tract State Recreation Area, located approximately  
 8 4.1 miles south of the Project. The Project does not provide any public access to  
 9 recreational areas or facilities. Project activities will not take place in any recreation  
 10 facilities or areas.

11 **3.3.14.2 Regulatory Setting**

12 The following discussion summarizes the most important federal and State laws and  
 13 regulations that apply to recreational resource protection for the Project area.

14 **Federal/State**

15 No federal or state regulations pertain to recreational resources relevant to this Project.

16 **Local**

17 The Sacramento and San Joaquin County General Plans Open Space Elements  
 18 address open space and recreation access. These elements provide goals, policies,  
 19 and actions intended to achieve the Counties’ vision for open space, parks, and  
 20 recreational facilities that are accessible to all members of the community.

1 **3.3.14.3 Impact Analysis**

2 ***a) Would the Project increase the use of existing neighborhood and regional***  
3 ***parks or other recreational facilities such that substantial physical deterioration***  
4 ***of the facility would occur or be accelerated?***

5 The Project would not increase the use of existing neighborhood and regional parks or  
6 other recreational facilities such that substantial physical deterioration of the facilities  
7 would occur or be accelerated and no impacts due to Project construction would result.

8 ***b) Does the Project include recreational facilities or require the construction or***  
9 ***expansion of recreational facilities which might have an adverse physical effect***  
10 ***on the environment?***

11 The Project does not include recreational facilities or require the construction or  
12 expansion of recreational facilities which might have an adverse effect on the  
13 environment. Therefore, no impacts due to Project construction would result.

1 **3.3.15 Transportation/Traffic**

TRANSPORTATION / TRAFFIC – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.15.1 Environmental Setting**

3 Vehicles that travel through the Project area use State Highway 12 and Tyler Island  
 4 Road (a Sacramento County roadway). No other public roadways are present within the  
 5 Project and buffer area. State Highway 12 is considered a rural two-lane collector  
 6 roadway and serves as the main east-west transportation corridor between the Fairfield  
 7 and Stockton urban areas. The stated capacity of State Highway 12 is defined as  
 8 10,000 vehicles per day in the Project vicinity. Caltrans conducts traffic counts annually  
 9 at the intersection of State Highway 12 and Terminous Road approximately 1.21 miles  
 10 to the northwest of the Project. The last available data (2011) show that approximately  
 11 17,500 and 19,000 vehicles travel in a westerly and easterly direction respectively along  
 12 this section of Highway 12 during an average day; peak hourly traffic ranges between  
 13 1,750 and 1,850 vehicles per hour (Caltrans 2012). Sacramento County defines Tyler

1 Island Road as a local road but the County has not designated the road’s capacity, and  
2 no traffic counts are available (Sacramento County 2011).

3 The Sacramento and San Joaquin County General Plans classify roadway Level of  
4 Service (LOS) for rural and unincorporated areas of the counties with a rating of A to F  
5 (defined below), with A representing the best LOS and F representing the worst; LOS D  
6 is the minimum acceptable standard for roads in rural unincorporated roadways.

- 7 • LOS A - Conditions of free flow. Speed is controlled by drivers’ desires, speed  
8 limits, or physical roadway conditions, not other vehicles.
- 9 • LOS B - Conditions of stable flow. Operating speeds beginning to be restricted,  
10 but little or no restrictions on maneuverability.
- 11 • LOS C - Conditions of stable flow. Speeds and maneuverability somewhat  
12 restricted. Occasional back-ups behind left-turning vehicles at intersections.
- 13 • LOS D - Conditions approach unstable flow. Tolerable speeds can be  
14 maintained, but temporary restrictions may cause extensive delays. Speeds may  
15 decline to as low as 40 percent of free flow speeds. Little freedom to maneuver;  
16 comfort and convenience low.
- 17 • LOS E - Unstable flow with stoppages of momentary duration. Average travel  
18 speeds decline to one-third the free flow speeds or lower, and traffic volumes  
19 approach capacity. Maneuverability severely limited.
- 20 • LOS F - Forced Flow. Represents jammed conditions. Intersection operates  
21 below capacity with several delays; may block upstream intersections.

22 According to Caltrans (2012), State Highway 12 currently has a rating of LOS D.

### 23 **3.3.15.2 Regulatory Setting**

#### 24 **Federal**

25 No federal regulations related to transportation are relevant to the Project.

#### 26 **State**

27 Caltrans is responsible for the design, construction, maintenance, and operation of the  
28 California State Highway System and the portion of the Interstate Highway System  
29 within the State’s boundaries. Chapter 2, Article 3 of the Vehicle Code defines the  
30 powers and duties of the California Highway Patrol, which has enforcement  
31 responsibilities for the operation of vehicles and highway use within the State.

#### 32 **Local**

33 Sacramento County. The County General Plan (Sacramento County 2011) establishes  
34 several policies for transportation demand and management within the Project area.

- 1 • CI-8. Maintain and rehabilitate the roadway system to maximize safety, mobility,  
2 and cost efficiency.
- 3 • CI-9. Plan and design the roadway system in a manner that meets LOS D on  
4 rural roadways and LOS E on urban roadways, unless it is infeasible to  
5 implement project alternatives or mitigation measures that would achieve LOS D  
6 on rural roadways or LOS E on urban roadways. The urban areas are those  
7 areas within the Urban Service Boundary as shown in the Land Use Element of  
8 the Sacramento County General Plan. The areas outside the Urban Service  
9 Boundary are considered rural.
- 10 • CI-10. Land development projects shall be responsible to mitigate the project's  
11 adverse impacts to local and regional roadways.

12 San Joaquin County. The County General Plan (San Joaquin County 2012) does not  
13 establish specific policies for transportation demand and management within the Project  
14 area; it addresses County policies through lists of projects needed to achieve the  
15 County's transportation system goals. The San Joaquin Council of Governments  
16 (SJCOG) and SACOG are designated by State and federal governments as the  
17 Metropolitan Planning Organization, Local Transportation Authority, and Regional  
18 Transportation Planning Agency. Under these designations, the SJCOG and SACOG  
19 are responsible for all regional transportation planning and programming activities.

### 20 **3.3.15.3 Impact Analysis**

21 ***a) Conflict with an applicable plan, ordinance or policy establishing measures of***  
22 ***effectiveness for the performance of the circulation system, taking into account***  
23 ***all modes of transportation including mass transit and non-motorized travel and***  
24 ***relevant components of the circulation system, including but not limited to***  
25 ***intersections, streets, highways and freeways, pedestrian and bicycle paths, and***  
26 ***mass transit?***

27 Project activities include work on private lands outside of existing public roadways, HDD  
28 bores under State Highway 12 and the Mokelumne River, and use of public roads by  
29 vehicles used to transport equipment, materials, and workers. No alteration to existing  
30 public roadways or waterways would be required as a result of Project implementation.  
31 Public access to the Project is restricted, as it lies on private lands, and would remain  
32 restricted during Project construction. The Project would not interfere with public access  
33 or use of existing County or State roadways as part of construction or long-term Project  
34 operation, nor would it generate additional vehicle trips as part of long-term operation.

35 Short-term temporary construction activities would generate additional vehicle trips  
36 during construction. Construction activities are anticipated to last for approximately 2  
37 months; however, Project impacts on existing traffic levels would be minimal compared  
38 to the current hourly and daily levels experienced on State Highway 12 and Tyler Island

1 Road. Therefore, traffic impacts due to Project construction and operation would be less  
2 than significant, and no mitigation would be required.

3 ***b) Conflict with an applicable congestion management program, including but not***  
4 ***limited to level of service standards and travel demand measures, or other***  
5 ***standards established by the county congestion management agency for***  
6 ***designated roads or highways?***

7 Since no congestion management plans are applicable to the Project area, no  
8 associated impacts are anticipated.

9 ***c) Result in a change in air traffic patterns, including either an increase in traffic***  
10 ***levels or a change in location that results in substantial safety risks?***

11 The Project would result in the installation of a pipeline under the ground surface and  
12 above ground valves and risers. Risers would be approximately 4 to 5 feet in height. As  
13 such, construction and operation of the Project would have no impact on air traffic  
14 patterns or changes in location that result in substantial safety risks.

15 ***d) Substantially increase hazards due to a design feature (e.g., sharp curves or***  
16 ***dangerous intersections) or incompatible uses (e.g., farm equipment)?***

17 The Project would result in the installation of a pipeline under the ground surface and  
18 above ground valves and risers. Risers would be approximately 4 to 5 feet in height.  
19 The pipeline would be installed under public roadways using HDD techniques, and as a  
20 result, would not result in any changes to existing roadways. As such, construction and  
21 operation of the Project would not substantially increase hazards due to a design  
22 feature or incompatible uses and no Project impacts would occur.

23 ***e) Result in inadequate emergency access?***

24 The Project would take place within private lands, and would not result in impacts on  
25 emergency access routes. Adequate access would be maintained to the Project to  
26 provide emergency access in the event of an emergency.

27 ***f) Conflict with adopted policies, plans or programs regarding public transit,***  
28 ***bicycle, or pedestrian facilities, or otherwise decrease the performance or safety***  
29 ***of such facilities?***

30 The Project would involve installation of a pipeline under the ground surface and above-  
31 ground valves and risers. Risers would be approximately 4 to 5 feet in height. The  
32 pipeline would be installed under public roadways (Highway 12) using HDD boring  
33 techniques, and as a result, would not result in any changes to existing roadways. No  
34 alternate modes of transportation are available within the Project area. Therefore, no  
35 Project impacts to alternative transportation would result.

1 **3.3.16 Utilities and Service Systems**

<b>UTILITIES AND SERVICE SYSTEMS – Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, State, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 **3.3.16.1 Environmental Setting**

3 **Water Utility**

4 No water utility facilities are located in the Project area. The Project and surrounding  
 5 buffer areas are used to grow agricultural crops. Water from the Mokelumne River used  
 6 for irrigation in the Project area is transferred to the local farm fields via pumping into  
 7 local irrigation ditches. No irrigation pipelines are located in the Project area. Although  
 8 the proposed pipeline would cross several irrigation ditches and the River, the pipeline  
 9 would be installed in these areas using HDD, and no surface disturbance to irrigation  
 10 ditches or the River would result.

1 **Sewer Utility**

2 No sewer utility facilities are located in the Project area. The Project and surrounding  
3 buffer areas are used to grow agricultural crops.

4 **Solid Waste**

5 Waste generated in the local project area is handled at the following solid waste  
6 facilities:

- 7 • North County Recycling Center & Sanitary Landfill located at 17720 East Harney  
8 Lane, Lodi, CA 95240. This facility processes approximately 441 tons of waste  
9 daily, and is permitted to process up to 1,200 tons of solid waste per day.
- 10 • Potrero Hills Landfill, 3675 Potrero Hills Lane, Suisun City, CA 94585. This  
11 facility processes approximately 3,100 tons of waste daily, and is permitted to  
12 process up to 3,400 tons of solid waste per day.

13 **3.3.16.2 Regulatory Setting**

14 **Federal, State or Local**

15 No federal, state, or local regulations are applicable to the Project's use of utility  
16 services.

17 **3.3.16.3 Impact Analysis**

18 ***a) Exceed wastewater treatment requirements of the applicable Regional Water***  
19 ***Quality Control Board?***

20 The Project would not require new water or wastewater treatment service. Therefore,  
21 the Project would not exceed the wastewater treatment requirements of the RWQCB,  
22 and no impact would result due to construction of the Project.

23 ***b) Require or result in the construction of new water or wastewater treatment***  
24 ***facilities or expansion of existing facilities, the construction of which could cause***  
25 ***significant environmental effects?***

26 The Project would not require additional water or wastewater treatment services or  
27 affect existing services. Therefore the Project would not require or result in the  
28 construction of new water or wastewater treatment facilities or expansion of existing  
29 facilities, and no impacts would occur due to the construction of the Project.

30 ***c) Require or result in the construction of new storm water drainage facilities or***  
31 ***expansion of existing facilities, the construction of which could cause significant***  
32 ***environmental effects?***

1 The Project would not require or result in the construction of new storm water drainage  
2 facilities or expansion of existing facilities or affect existing facilities, and so no impacts  
3 would result due to construction of the Project.

4 **d) Have sufficient water supplies available to serve the project from existing**  
5 **entitlements and resources, or are new or expanded entitlements needed?**

6 The Project would not require wastewater treatment services. All water used throughout  
7 the Project would come from existing entitlements. Therefore, no impacts would result  
8 due to construction of the Project.

9 **e) Result in a determination by the wastewater treatment provider which serves or**  
10 **may serve the project that it has adequate capacity to serve the project's**  
11 **projected demand in addition to the provider's existing commitments?**

12 The Project would not require water or wastewater treatment services. Therefore, no  
13 impacts would result due to construction of the Project.

14 **f) Be served by a landfill with sufficient permitted capacity to accommodate the**  
15 **project's solid waste disposal needs?**

16 Waste generated in the Project area is handled at the North County Recycling Center &  
17 Sanitary Landfill located in Lodi and at the Potrero Hills Landfill in Suisun City. At these  
18 facilities recyclable and organic materials are sorted out for recycling elsewhere and the  
19 remaining solid waste is disposed of at the facilities. The Project would generate waste  
20 during short-term, temporary construction activities, but would not generate waste  
21 necessitating disposal as part of long-term operations. Construction waste would be  
22 disposed of in compliance with existing regulations and recycled to the extent feasible.  
23 Therefore, impacts due to Project construction would be less than significant.

24 **g) Comply with federal, State, and local statutes and regulations related to solid**  
25 **waste?**

26 As noted above in *Response 3.3.16 f)* above, solid waste generated by the Project  
27 would be during short-term, temporary construction activities. Once constructed, the  
28 new natural gas pipeline would not generate waste necessitating disposal. Construction  
29 waste would be disposed of in compliance with existing regulations and recycled to the  
30 extent feasible. Therefore, impacts due to Project construction would be less than  
31 significant.

1 **3.3.17 Mandatory Findings of Significance**

<p><b>MANDATORY FINDINGS OF SIGNIFICANCE –</b>                      The lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where prior to commencement of the environmental analysis a project proponent agrees to mitigation measures or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per Section 15065 of the State CEQA Guidelines):</p>	<p>Potentially Significant Impact</p>	<p>Less Than Significant with Mitigation</p>	<p>Less Than Significant Impact</p>	<p>No Impact</p>
<p>a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</p>	<p><input type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>
<p>b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p>	<p><input type="checkbox"/></p>
<p>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p>	<p><input type="checkbox"/></p>

2 **3.3.17.1 Environmental Setting**

3 ***a) Does the project have the potential to degrade the quality of the environment,***  
 4 ***substantially reduce the habitat of a fish or wildlife species, cause a fish or***  
 5 ***wildlife population to drop below self-sustaining levels, threaten to eliminate a***  
 6 ***plant or animal community, reduce the number or restrict the range of a rare or***  
 7 ***endangered plant or animal or eliminate important examples of the major periods***  
 8 ***of California history or prehistory?***

9 With the incorporation of mitigation measures as outlined in this IS/MND, the Project  
 10 does not have the potential to degrade the quality of the environment, substantially

1 reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop  
2 below self-sustaining levels, threaten to eliminate a plant or animal community, reduce  
3 the number or restrict the range of rare or endangered plant or animal or eliminate  
4 important examples of the major periods of California history or prehistory.

5 ***b) Does the project have impacts that are individually limited, but cumulatively***  
6 ***considerable? (“Cumulatively considerable” means that the incremental effects***  
7 ***of a project are considerable when viewed in connection with the effects of past***  
8 ***projects, the effects of other current projects, and the effects of probable future***  
9 ***projects)?***

10 The State CEQA Guidelines state that a Lead Agency shall consider whether the  
11 cumulative impact of a project is significant and whether the effects of the Project are  
12 cumulatively considerable (§ 15065). The assessment of the significance of the  
13 cumulative effects of the project must, therefore, be conducted in connection with the  
14 effects of past projects, other current projects, and probable future projects.

#### 15 **Past, Present and Reasonably Foreseeable Future Projects**

16 The H12 bore would be located at the DW 8-1 Well site. Once the pipeline is installed  
17 and connected to the DW 8-1 Well, the well will be converted from an idle well to a  
18 producing well. The tie-in point is located at the Towne Tyler Island Farms 5-2 Well,  
19 which is currently in production. According to the DOGGR Online Mapping System, 11  
20 plugged wells and 1 active well are located within 1 mile of the Project. Although the  
21 pipeline has been designed to accommodate potential future natural gas development  
22 on Bouldin Island, according to DOGGR records, no other oil and gas wells are  
23 currently being permitted within 2 miles of the Project.

24 A review of Sacramento Planning and Community Development Department Planning  
25 Project Viewer and San Joaquin Community Development Department Planning  
26 Documents failed to identify any proposed projects within 1 mile of the Project.

#### 27 **Potential Cumulative Impacts**

28 Based upon the results of the initial study, it was determined that there would be no  
29 potentially significant impacts associated with the following resource areas:

- Aesthetics
- Agricultural and Forest Resources
- Geology and Soils
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utility and Service Systems

1 Accordingly, the Project would not result in cumulative impacts to these resource areas.

2 The following is a discussion of cumulative impacts that could result from the Project in  
3 conjunction with past, present, and reasonably foreseeable future projects as described  
4 above. The term “cumulatively considerable”, for the purposes of this analysis, means  
5 the effects of a project are considerable when viewed in connection with effects of past  
6 projects, effects of other current projects, and effects of reasonably foreseeable or  
7 probable future projects.

8 Air Quality

9 By its very nature, air pollution is largely a cumulative impact. The nonattainment status  
10 of regional pollutants is a result of past and present development. Future attainment of  
11 State and federal ambient air quality standards is a function of successful  
12 implementation of the SMAQMD and SJVAPCD attainment plans. Consequently, the  
13 SMAQMD and SJVAPCD application of thresholds of significance for criteria pollutants  
14 is relevant to the determination of whether a project’s individual emissions would have a  
15 cumulatively significant impact on air quality. As the Project’s emissions are less than  
16 the thresholds of significance for criteria pollutants, the Project would not be expected to  
17 result in a cumulatively considerable net increase of any criteria pollutant for which the  
18 SMAQMD and SJVAPCD is in nonattainment under the applicable federal or State  
19 AAQSS.

20 Biological Resources

21 The biological surveys performed in 2010 and 2012 found no sensitive plant or animal  
22 species present within the Project area or within the 250-foot buffer area around the  
23 Project. Wetland and riverine habitat were observed within the footprint of the Project,  
24 but freshwater wetland and riverine habitat would be avoided by installing the pipeline  
25 by HDD boring methods. Installation of the pipeline in agricultural wetlands will be  
26 achieved by trenching. All agricultural wetlands disturbed by trenching methods will be  
27 restored to pre-construction condition and no long-term permanent impacts to  
28 agricultural wetlands would occur. No riparian, or vernal pool habitat or other natural or  
29 sensitive community types were observed within the footprint of the Project or adjacent  
30 areas during the biological assessment. The Project would not interfere with movement  
31 of any wildlife species or with established native resident or migratory wildlife corridors.  
32 Native resident and/or migratory fish and known native wildlife nursery sites are not  
33 present within areas proposed for ground disturbance. The Project as proposed would  
34 not conflict with any local policies or ordinances protecting biological resources or local  
35 tree preservation policies/ordinances.

36 As previously stated, approximately 1.9 acres of agricultural farmland have been  
37 impacted as a result of previous and existing gas wells within 1 mile of the Project area.  
38 Accordingly, when combined with 0.6 acre of agricultural land temporarily disturbed by

1 the Project, 2.5 acres of agricultural farmland habitat would be cumulatively impacted  
2 within a 1-mile radius of the Project. This represents a cumulative impact of 0.3 percent  
3 to agricultural land within a 1-mile radius of the Project. Areas proposed for ground  
4 disturbance would be returned to agricultural production after construction of the  
5 pipeline.

6 Accordingly, the Project will not have a cumulatively considerable effect on biological  
7 resources.

8 Cultural Resources

9 The cultural resources records search and Native American Consultation did not identify  
10 any cultural or historic resources within the proposed Project area. Nine resources (see  
11 Table 3.3.5-1) were recorded within 1 mile of the proposed Project; however, these  
12 resources would not be impacted. Additionally, the Project has been previously  
13 disturbed by many years of agricultural activities as well as the construction and  
14 maintenance of roadways and levees. Accordingly, there will be no cumulative impact to  
15 cultural resources.

16 ***c) Does the project have environmental effects which will cause substantial***  
17 ***adverse effects on human beings, either directly or indirectly?***

18 The Project would not cause substantial adverse effects on human beings. The project  
19 would add a new use to the proposed area. However, the use is consistent with current  
20 land uses in the Project area. As noted in the analysis above in Section 3, the Project  
21 would comply with all applicable local, State, and federal environmental regulations and  
22 would not result in any significant impacts to the public.

23