4.0 ENVIRONMENTAL ANALYSIS

This section describes the affected environment as it currently exists (baseline conditions) and discusses the environmental consequences of the proposed Project. This section also discusses the environmental consequences of amending the BLM's CDCA Plan to allow for an exemption to the Energy Production and Utility Corridors Element of the plan as well as the environmental consequences of amending the Yuma District Plan to allow North Baja to cross the Milpitas Wash SMA. The discussion is organized by the following major resource topics: geology; soils; water resources; wetlands; vegetation; wildlife and aquatic resources; special status species; land use, special management areas, recreation and public interest areas, and aesthetic resources; socioeconomics; transportation and traffic; cultural resources; air quality; noise; reliability and safety; cumulative impacts; growth-inducing impacts; and environmental justice. The No Project Alternative has also been analyzed in this section for each of these major resource topics.

In accordance with BLM Manual guidance (H-1790-1), the major resource sections address the following "critical elements of the human environment:" air quality; ACECs; cultural resources; Native American religious concerns; prime or unique farmlands; floodplains; rangeland health; threatened and endangered species; hazardous or solid wastes; drinking and groundwater quality; wetlands and riparian zones; Wild and Scenic Rivers; Wilderness Areas; socioeconomics; environmental justice; health and safety risks to children; and invasive, non-native species. These critical elements are based on requirements specified in statute, regulation, or executive order.

The environmental consequences of constructing and operating the North Baja Pipeline Expansion Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short term, long term, and permanent. Temporary impact generally occurs during construction with the resource returning to preconstruction condition almost immediately afterward. Short-term impact could continue for up to 3 years following construction. Impact was considered long term if the resource would require more than 3 years to recover. A permanent impact could occur as a result of any activity that modifies a resource to the extent that it would not return to preconstruction conditions during the life of the Project.

The specific criteria used to determine the significance of an impact are presented at the beginning of each major resource section. Unless otherwise noted, all identified impacts are considered to be potentially significant adverse impacts before applying North Baja's proposed mitigation. If any impacts remain significant (i.e., continue to exceed the significance criteria) after North Baja implements its proposed mitigation measures, the FERC and CSLC staffs developed additional mitigation in an effort to reduce any significant impact to a less than significant level. In some cases, although an impact would not be considered significant, the FERC and CSLC staffs developed additional mitigation in an effort to further reduce impacts. These recommended mitigation measures appear offset with bold type in the text. The FERC and CSLC staffs will recommend to their respective Commissions that these additional mitigation measures be included as specific conditions to any approvals issued by the FERC and the CSLC, as appropriate, for the North Baja Pipeline Expansion Project.

The potential environmental impacts identified in this section and the mitigation measures proposed by North Baja and recommended by the FERC and CSLC staffs are summarized in tabular form in Section 5. The summary table classifies each impact as either Class I (significant adverse impact that remains significant after mitigation); Class II (significant adverse impact that can be eliminated or reduced below an issue's significance criteria); Class III (adverse impact that does not meet or exceed an issue's significance criteria); or Class IV (beneficial impact). This table forms the basis for the detailed MMP that would be implemented during construction and operation of the North Baja Pipeline Expansion Project (see Section 2.5).

The conclusions in this EIS/EIR are based on the analysis of the environmental impacts and the following assumptions:

- North Baja would comply with all applicable laws and regulations;
- the proposed facilities would be constructed as described in Section 2 of this EIS/EIR; and
- North Baja would implement the mitigation measures included in its applications and supplemental submittals to the FERC and the CSLC.

4.1 GEOLOGY

4.1.1 Significance Criteria

An adverse impact on geologic, mineral, or paleontological resources would be considered significant and would require mitigation if:

- construction activities or the siting of facilities would worsen existing unfavorable geologic conditions;
- Project construction or operation would preclude or disrupt the development of mineral resources;
- geologic hazards could cause a rupture or failure of the pipeline or cause damage to related facilities that would present a significant threat to public safety; or
- Project construction would result in damage or loss of vertebrate or invertebrate fossils that are considered important by paleontologists and land management agency staff.

4.1.2 Geologic Setting

Pipeline Facilities

The proposed Project is located within the Colorado Desert geomorphic province, commonly referred to as the "low desert" in southern California. The Colorado Desert Province is bounded on the east by the Colorado River, on the south by the Mexican border, and on the west by the Transverse Ranges (Norris and Webb 1990). The northern border lies along the southern edge of the eastern Transverse Ranges, approximately at the San Bernardino-Riverside County line. The Colorado Desert Province is characterized by its arid climate, broad valleys, and low elevation, approximately 250 feet above mean sea level at the Riverside-Imperial County line (Norris and Webb 1990).

The northwesterly structural trends characteristic of most geologic provinces of California are evident in the Colorado Desert Province. The dominant feature of the area is the Salton Trough, located in the southeastern portion of the desert (California Division of Mines and Geology [CDMG] 1992a). The Salton Trough is a tensional feature that has been seismically active in recent time (less than 11,000 years ago), and is marked by several right-lateral strike-slip faults as illustrated on Figure 4.1.2-1. The Salton Trough is a rift valley that is a northwesterly extension of the Gulf of California, which is formed by the East Pacific Rise spreading center. Segments of this spreading center extend up the Gulf and are offset by a series of northwest-trending transform faults, the most northerly of which is the San Andreas. Geologic and geophysical evidence strongly suggests the presence of spreading centers beneath the alluvial blanket within the Salton Trough (CDMG 1977).

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Figure 4.1.2-1 Principal Faults of the Colorado Desert Province and Seismic Activity Near the Project Area

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A review of existing documents (U.S. Geological Survey [USGS] 1973), including North Baja's construction reports for the A-Line, indicates that bedrock would not likely be encountered along the B-Line and Arrowhead Extension routes except in the vicinity of MP 29.5 of the B-Line, where blasting is anticipated in exposed bedrock comprising intrusive volcanic material overlain by pyroclastic rocks. Other than this isolated area of exposed bedrock, the proposed B-Line route is typically underlain by Quaternary (1.6 million years ago to present) alluvium, colluvium, and terrace deposits, which consist of unconsolidated to poorly consolidated gravel, sand, and silt (CDMG 1977, 1999b). Further details are found in the Geologic Hazards Study (see Appendix J).

The eastern portion of the proposed IID Lateral in the vicinity of the Algodones Dunes is underlain by wind-blown/aeolian deposits consisting of unconsolidated to poorly consolidated sand and silt size material (CDMG 1977). The entire dune chain is migrating southeast in response to strong northwesterly winds that occur in the area, especially in the late winter and spring (Norris and Webb 1990). The East Mesa and Imperial Valley are underlain by Tertiary (66 to 1.6 million years ago) and Quaternary sedimentary rocks composed mainly of sandstones, clays, and lake deposits. Alluvial and terrace deposits form deep soils above these rock features (Morton 1977).

The geologic and physiographic conditions likely to be encountered during construction of the proposed Project are identified by milepost in Table 4.1.2-1.

Aboveground Facilities

All aboveground facilities associated with the B-Line and Arrowhead Extension would be in areas where the surficial geology comprises Quaternary unconsolidated alluvium, colluvium, and terrace deposits. The facilities associated with the IID Lateral would be underlain by similar materials, along with recent aeolian sand deposits of the Algodones Dunes.

Pipe Storage and Contractor Yards

The four proposed pipe storage and contractor yards would be on unconsolidated Quaternary alluvial and colluvial materials. Three of these yards were used during construction of the A-Line; the remaining yard located near MP 43.5 of the IID Lateral was used for similar purposes in the past.

Impact and Mitigation

Construction and operation of the proposed pipeline and aboveground facilities would not materially alter the geologic conditions of the Project area. Effects from construction could include disturbances to the natural topography along the right-of-way and at aboveground facilities due to grading and trenching activities. Along small portions of the right-of-way, natural topographic slope and contours would be temporarily altered by the small-scale grading of the construction right-of-way that is necessary to provide a level and safe work surface for equipment. After completion of construction, North Baja would restore topographic contours and drainage conditions as closely as feasible to their preconstruction condition.

TABLE 4.1.2-1

Geologic and Physiographic Conditions Crossed by the North Baja Pipeline Expansion Project Facilities

Mileposts	Geologic Formation or Stratigraphic Unit (Geologic Age)	Blasting Anticipated [a]	Topography and Elevation Range [b]
B-Line			
0.0 to 12.0	Younger alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated sand, gravel, and silt.	No	Broad flat urbanized area, elevation ranges from 250 to 340 feet above mean sea level (amsl).
12.0 to 26.2	Younger and older alluvial, colluvial, and wash deposits (Quaternary and Tertiary). The older deposits consist of poorly consolidated silts, sands, and gravels.	No	Generally flat terrain with some badlands, elevation ranges from 240 to 340 feet amsl.
26.2 to 26.7	Sedimentary clastic rocks (Tertiary) consisting of non-marine clastic rocks and volcanic conglomerates.	No	Uneven terrain along the base of the Palo Verde Mountains, elevation ranges from 230 to 250 feet amsl.
26.7 to 28.5	Alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated sand, gravel, and silt.	No	Uneven terrain along the base of the Palo Verde Mountains, elevation ranges from 230 to 300 feet amsl.
28.5 to 31.0	Alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated or moderately consolidated sand, gravel, and silt; near MP 29.0, intrusive volcanic bodies (Tertiary) composed of andesite, dacite, or latite porphyry, which may be overlain by pyroclastic rocks and flows of acidic to intermediate composition in isolated locations.	Yes	Uneven terrain along the base of the Palo Verde Mountains, elevation ranges from 230 to 300 feet amsl.
31.0 to 31.2	Alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated sand, gravel, and silt.	No	Uneven terrain along the base of the Palo Verde Mountains, elevation ranges from 235 to 300 feet amsl.
31.2 to 31.6	Bouse Formation consisting of sedimentary and Volcanic rocks (Tertiary). Sedimentary rocks consist of brackish water limestone, siltstone, and sandstone. A 1-foot-thick layer of volcanic tuff may be present at the surface, masking the underlying sedimentary rocks.	No	Uneven terrain along the base of the Palo Verde Mountains, elevation ranges from 250 to 300 feet amsl.
31.6 to 33.5	Sedimentary rocks that alternate between clastic rocks (Tertiary) and younger alluvial/colluvial deposits (Quaternary). Clastic rocks consist of non-marine clastic rocks and volcanic conglomerates. Alluvial and colluvial deposits consist of unconsolidated sand, gravel, and silt.	No	Uneven terrain with some badlands near the base of the Palo Verde Mountains, elevation ranges from 250 to 340 feet amsl.
33.5 to 36.2	Younger alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated sand, gravel, and silt.	No	Generally flat area crossing Milpitas Wash, elevation ranges from 360 to 400 feet amsl.
36.2 to 57.5	Younger and older alluvial deposits (Quaternary and Tertiary) consisting of unconsolidated clay, silt, sand, and gravels occurring primarily as valley fill and streamwash deposits.	No	Generally flat ascending terrain at the base of the Chocolate Mountains, elevation ranges between 400 to 1,230 feet amsl.
57.5 to 71.0	Older Alluvium (Tertiary) partly dissected largely unconsolidated poorly sorted silt, and gravel of alluvial fans, and desert pavement areas.	No	Generally flat descending terrain with some badlands, elevation ranges between 350 to 700 feet amsl.
71.0 to 79.8	Younger alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated sand, gravel, and silt.	No	Broad flat alluvial valley in the Salton Trough, sand dunes present from MPs 75.5 to 79.8, elevation ranges from 200 to 700 feet amsl.
Arrowhead Extension			
0.0 to 2.1	Younger alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated sand, gravel, and silt.	No	Broad flat urbanized area, elevation ranges from 250 to 340 feet amsl.
IID Lateral			
0.0 to 0.5	Younger alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated sand, gravel, and silt.	No	Broad flat alluvial valley, elevation ranges from 200 to 700 feet amsl.

TABLE 4.1.2-1 (cont'd)

Geologic and Physiographic Conditions Crossed by the North Baja Pipeline Expansion Project Facilities

Mileposts	Geologic Formation or Stratigraphic Unit (Geologic Age)	Blasting Anticipated [a]	Topography and Elevation Range [b]
0.5 to 7.6	Extensive sand dune deposits (Quaternary) consisting of unconsolidated to poorly consolidated sand and silt.	No	Wind-blown sand dunes, elevation ranges from 50 to 300 feet amsl.
7.6 to 27.0	Younger alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated sand, gravel, and silt.	No	Broad flat alluvial valley, elevation ranges from 200 to 700 feet amsl.
27.0 to 45.7	Younger alluvial, colluvial, and wash deposits (Quaternary) consisting of unconsolidated sand, gravel, and silt.	No	Broad flat alluvial valley in the Salton Trough, elevation ranges from 0 to 50 feet amsl.

[a] May change based on conditions encountered in the field.

[b] Elevation range limited to specific area of proposed modifications.

Blasting is only anticipated to be necessary along the B-Line near MP 29.5 because that was the only area requiring blasting during construction of the A-Line. The area surrounding MP 29.5 is uninhabited desert, with no nearby residences or other development. However, cultural resources features are nearby. The blast would be limited to the trenchline and blasting mats would be employed to keep fly-rock from leaving the construction work area. All blasting activities would be conducted in strict compliance with North Baja's Blasting Specifications (see Appendix I). To avoid injury to personnel and damage to structures or other features like existing pipelines, North Baja's Blasting Specifications stipulates that the blasting contractor must prepare site-specific blasting plans and procedures for review and approval by North Baja. All blasting activities would be conducted under the supervision of a California Licensed Blasting Technician. Blasting procedures would be in accordance with Federal, State, and local regulations regarding use, storage, and transport of explosives; safety; and environmental protection. Blasting would not be required in other areas because most of the pipeline route is underlain by unconsolidated to poorly consolidated alluvial deposits or soft, weathered sedimentary clastic rocks.

Because three of the proposed pipe storage and contractor yards were previously disturbed during construction of the A-Line, and the remaining yard along the IID lateral was previously used for similar purposes, any improvements at these sites would be minimal. Activities at the yards would consist of minor grading and surfacing, and would not materially alter the existing geologic conditions of the Project area or subject the facilities to an increased threat from geologic hazards.

Construction of the pipeline and associated aboveground facilities would minimally disturb shallow geologic deposits; therefore, the potential for construction activities or the siting of facilities to worsen existing unfavorable geologic conditions would be less than significant.

4.1.3 Mineral Resources

Pipeline Facilities

The B-Line would cross within approximately 2 miles of known mineral resources such as gold, manganese, copper, and sand and gravel deposits (CDMG 1977). Mineral resources zones (MRZ), assigned by the CDMG classify the portion of the B-Line in Riverside County as MRZ-4, which is defined as having no known mineral occurrences. The CDMG has not classified MRZs within Imperial County (California Department of Conservation [CDC] 2004).

Gold deposits have been found in the southeastern area of Imperial County. The Potholes and Picacho Mining Districts are in the southeastern part of Imperial County, about 50 miles east of El Centro, California and 20 miles north of Yuma, Arizona. The CDC has identified Principal Mineral-Producing Localities (clay and gypsum) in southern Imperial County, although neither is in the immediate vicinity of the proposed Project (CDMG 1999).

The BOR operates a rock quarry between the Cibola NWR and SR 78. The A-Line was rerouted to avoid the quarry and lies 0.2 mile to the east outside of the formation that supplies quarry material. The B-Line would follow the same alignment. According to the BOR, the quarry is used intermittently to supply material for erosion control.

Other mineral resource/mining areas within the Project area include the Hodge Mine, the Mule Mountains Mining District, two California mineral estates, the Old Channel Mine shaft, the Mesquite Gold District, and the Cargo Muchacho Gold Mining District. The B-Line would cross the northwestern corner of the mineral estate located in Township 12S, Range 20E, Section 16, and west of the Old Channel Mine shaft near MP 49.7. Neither of these resources is active. The other mineral estate, located in Township 11S, Range 20E, Section 16, is 3,000 feet west of MP 42.5. Table 4.1.3-1 summarizes these mineral resources in relation to the B-Line.

TABLE 4.1.3-1

Mineral Resources and Mining Areas in the Vicinity of the North Baja Pipeline Expansion Project

Facility	Nearest B-Line Milepost [a]	Distance from Pipeline (miles)
Hodge Mine	7.0	1.6
Mule Mountains Mining District	21.0	5.8
Bureau of Reclamation Quarry	30.0	0.2
California Mineral Estate	42.5	0.6
California Mineral Estate	49.7	0.0
Old Channel Mine Shaft	49.7	0.3
Mesquite Gold District	53.0	4.4
Cargo Muchacho Gold Mining District	71.0	3.9

[a] No mineral resources or mining areas were identified within the vicinity of the Arrowhead Extension or the IID Lateral.

Aboveground Facilities

None of the aboveground facilities associated with the proposed Project would be within 1 mile of identified mineral or quarry resources.

Pipe Storage and Contractor Yards

None of the proposed pipe storage or contractor yards associated with the proposed Project would be within 1 mile of the identified active mineral resources.

Impact and Mitigation

Pipeline projects have the potential to affect the production of mineral resources by restricting mineral production activities in the immediate vicinity of the pipeline right-of-way or precluding future expansion. However, because the Project would not be near any active mines, impacts on mining activities are not expected. The Project would not affect the BOR's quarry integrity or operation, nor would quarry operations have negative effects on the pipeline, given the distance the pipeline is located from current and future quarry operations. The potential for the pipeline to be affected by the weight of loaded quarry trucks crossing the pipeline would be minimal because the trucks travel from the quarry west to SR 78 and do not cross the pipeline to the east. Additionally, the pipeline would be designed to accommodate the same loads that SR 78 is designed to accommodate according to CalTrans specifications. North Baja would notify the BOR before construction in the vicinity of the quarry. Because of the proximity of the BOR quarry to SR 78 and the presence of unsuitable material to the north and south of current quarrying activities, future expansion would not be affected by the pipeline. Moreover, because no additional active mines or quarries would be within 1,000 feet of the North Baja Pipeline Expansion Project, the potential for construction and operation of the Project to preclude or disrupt the development of mineral resources would be less than significant.

4.1.4 Geologic Hazards

Pipeline Facilities

Geologic hazards are natural physical conditions that may result in damage to the land and structures, or injury to people. Such hazards typically include seismicity (active faults, earthquakes, and soil liquefaction), landslides, subsidence, and karst terrain (sinkholes and other water-formed/solution features).

Active Faults – Several active faults or seismic zones lie within the Project area. The primary seismic hazard to the proposed pipeline facilities would be moderate ground shaking from earthquakes associated with the San Andreas Fault System. Major elements of the San Andreas Fault System in the vicinity of the Project include the San Jacinto and Imperial Fault Zones (USGS 2006). The Brawley Fault Zone lies between the Coachella section of the San Andreas Fault Zone and the Imperial Fault Zone, and transfers slip movements to the Imperial Fault Zones. According to the 1997 Uniform Building Code, the seismic hazard potential along the B-Line increases from north to south from a seismic zone rating of 3 from MP 0.0 to approximately MP 45.0, to a seismic zone rating of 4 throughout the Imperial Valley. The Arrowhead Extension, which connects with the B-Line at MP 7.4, has a seismic zone rating of 3. The IID Lateral has a seismic zone rating of 4 for its entire length (International Conference of Building Officials 1998). The increase in seismic hazard in the Imperial Valley is attributable to seismic activity in the Salton Trough. Consequently, the southern portion of the B-Line route would be in a region that is more seismically active than the northern portion.

Seismic events greater than or equal to a magnitude of 5.0 in the vicinity of the proposed pipeline routes that have been historically recorded are listed in Table 4.1.4-1 and shown on Figure 4.1.2-1. The largest recorded magnitude earthquake occurred in 1979, with a reported magnitude of 7.0. This earthquake occurred approximately 9.4 miles from MP 31.0 of the IID Lateral. As shown on Figure 4.1.2-1, seismic activity predominantly occurs along the Imperial and Brawley Fault Zones.

Regionally, seismicity has been attributed to active faulting along various fault zones and/or faults. Active faults in the vicinity of the proposed pipeline facilities include the southern portion of the San Andreas Fault Zone, the Brawley Fault Zone, and the Imperial Fault Zone. The B-Line, Arrowhead Extension, and associated aboveground facilities would not cross or be near any faults or Alquist-Priolo Earthquake Fault Zones (Hart 1997). However, the IID Lateral would cross the Imperial Fault and Imperial Fault Zone. The active faults near the IID Lateral are listed in Table 4.1.4-2; the fault locations are shown on Figure 4.1.2-1. The Geologic Hazards Study presents details of the probability of seismic activity for relevant faults and areas (see Appendix J).

The Imperial Fault is a right-lateral strike-slip fault that stretches roughly from north to south. The IID Lateral would cross this fault at approximately MP 40.0. This fault is very active, with several instances of surface rupture and trigger slips on record. The largest of the events to date include surface ruptures during a 6.4 magnitude event in 1979 and a 6.9 magnitude event in 1940. The 1940 event caused the All-American Canal to shift more than 14 lateral feet, while the 1979 event caused a lateral shift of 22 inches (Southern California Earthquake Data Center [SCEDC] 2005). Events similar to the 1979 event are likely to occur every 30 to 40 years. Events similar to the 1940 event have an average return interval of about 700 years. Surface rupture is common along this fault, even during smaller events (SCEDC 2005).

The Superstition Hills and Superstition Mountain sections of the San Jacinto Fault Zone lie northwest of the western end of the proposed IID Lateral. They represent the most seismically active faults in southern California, with significant earthquakes (greater than Magnitude 5.5) and a slip rate between 1.0 and 5.0 millimeters per year (USGS 2006).

TABLE 4.1.4-1

Earthquakes within 62 Miles of the North Baja Pipeline Expansion Project with Magnitudes Greater Than or Equal to 5.0

Source [a]	Shortest Distance from Pipeline (miles) [b, c]	Milepost	Year	Magnitude	Maximum Intensity [d]	Latitude	Longitude
B-Line and Arrowhead Extension							
EQH	18.6	0.0	1906	6.0	VIII	33.000	115.000
IID Lateral							
EQH	0.4	43.0	1915	6.25	VIII	32.800	115.500
SCEDC	1.8	27.0	1935	5.3		32.79	115.26
USGS	1.8	45.0	1979	5.5		32.93	115.54
DNA	1.9	43.0	1977	5.0		32.820	115.470
SCEDC	1.9	44.0	1940	5.15		32.83	115.5
SCEDC	1.9	44.0	1940	5.18		32.83	115.5
USGS	1.9	43.0	1977	5.0		32.82	115.47
USGS-C	1.9	43.0	1915	6.2		32.8	115.5
USGS-C	1.9	27.0	1935	5.0		32.9	115.22
SCEDC	2.1	13.0	1951	5.94		32.74	115.03
USGS-C	2.1	26.0	1935	5.0		32.9	115.2
CDMG	2.3	29.0	1917	5.5	VII	32.800	115.300
SCEDC	2.5	45.0	1953	5.5		32.77	115.54
USGS-C	2.5	27.0	1938	5.0		32.9	115.22
SCEDC	3.2	44.0	1940	6.9		32.85	115.5
USGS	3.2	45.0	1979	5.2		32.9	115.55
SCEDC	3.9	44.0	1940	5.41		32.86	115.5
USGS-C	3.9	29.0	1917	5.5		32.8	115.3
USN	4.6	35.0	1940	5.5	VII	32.700	115.400
SCEDC	5.0	45.0	1934	5.9		32.77	115.6
USGS	5.0	45.0	1979	5.1		32.91	115.53
SIG	5.4	39.0	1940	6.7		32.700	115.500
ROT	8.7	45.0	1953	5.7		32.833	115.667
USGS	9.4	31.0	1979	7.0		32.63	115.33
PAS	9.7	27.0	1935	5.0		32.900	115.217
PAS	9.7	27.0	1935	5.0		32.900	115.217
PAS	9.7	27.0	1938	5.0		32.900	115.217
PAS	10.8	30.0	1979	6.6		32.614	115.318
CDMG	12.2	45.0	1928	5.0		32.900	115.700
EQH	13.5	44.0	1930	5.0	VIII	33.000	115.500
USN	13.5	44.0	1955	5.4	VII	33.000	115.500
ROT	13.6	38.0	1961	5.1		32.567	115.450
DNA	14.3	45.0	1979	6.1		33.013	115.555
PAS	17.0	45.0	1951	5.6		32.983	115.733
CDMG	18.7	38.0	1918	5.0	VI	32.500	115.500
CDMG	18.7	38.0	1921	5.0	IV	32.500	115.500
DNA	18.7	38.0	1927	5.75		32.500	115.500
PDE	20.5	45.0	1979	5.0		33.100	115.550
PAS	22.0	45.0	1950	5.4		33.117	115.567
PAS	22.0	45.0	1950	5.5		33.117	115.567
PAS	22.3	45.0	1946	5.4		33.000	115.833
PAS	23.2	45.0	1971	5.1		33.034	115.821
PDE	23.2	45.0	1987	6.7		33.010	115.840
PDE	24.2	45.0	1987	6.5	VI	33.083	115.775

TABLE 4.1.4-1 (cont'd)

Earthquakes within 62 Miles of the North Baja Pipeline Expansion Project with Magnitudes Greater Than or Equal to 5.0

Source [a]	Shortest Distance from Pipeline (miles) [b, c]	Milepost	Year	Magnitude	Maximum Intensity [d]	Latitude	Longitude
PDE	24.6	21.0	1987	5.4	V	32.390	115.310
GS	24.8	17.0	1999	4.9		32.369	115.224
USN	27.3	44.0	1935	5.0	VI	33.200	115.500
SIG	28.2	11.0	1980	6.4	V	32.300	115.000
PDE	28.2	15.0	1978	5.0	VI	32.290	115.081
PDE	30.5	15.0	1999	5.2		32.269	115.138
USN	30.9	18.0	1954	5.1	VI	32.300	115.300
PAS	31.3	45.0	1942	5.5		33.233	115.717
USN	31.7	45.0	1957	5.0	VI	33.200	115.800

[a] Sources were identified by a query search conducted by the National Geophysical Data Center, a division of the National Oceanic and Atmospheric Administration.

[b] The approximate midpoint of the B-Line was used as the center of the radial search. The latitude and longitude coordinates for this location are north 33°07'30" and west 114°52'52", respectively.

[c] "Shortest Distance from Pipeline" is equal to the shortest distance between the earthquake epicenter and the pipeline in miles.

[d] "Maximum Intensity" indicates the maximum Modified Mercalli Intensity (MMI) value associated with the earthquake, which is another measurement of perceptible ground movement. MMI indicates the effects actually experienced by people in terms of 12 levels of intensity (USGS 1989). Intensity level V is "felt by nearly everyone; many awakened; some dishes windows broken; unstable objects overturned; pendulum clocks may stop." Intensity level VI is "felt by all, many frightened; some heavy furniture moved; a few instances of fallen plaster; damage slight." However, magnitude using the Richter scale was used whenever possible.

CDMG = California Division of Mines and Geology; DNA = Decade of North American Geology; EQH = Earthquake History of the United States, Gutenberg and Richter; GS = U.S. Geological Survey, Denver, Colorado; PAS = Pasadena, California; PDE = Preliminary Determination of Epicentres; ROT = Rothe, J.P; SIG = Catalog of Significant Earthquakes; USN = U.S. Network Catalog; SCEDC = Southern California Earthquake Data Center (USGS and CalTech) www.data.scec.org; USGS = Earthquake Hazards Program, 1973-2005 Database Search (http://neic.usgs.gov); USGS-C = Earthquake Hazards Program, 1735-1974 CA Database Search (http://neic.usgs.gov)

TABLE 4.1.4-2

Active Faults in the Vicinity of the IID Lateral

Name and Geometry [a]	Distance from Pipeline (miles)	Milepost	Length (miles)	Slip Rate (in/yr)	Rank [b]	Mmax [c]	Maximum Fault Displace-ment (feet)	Peak Horizontal Acceleration (% gravity; g)	U S. Department of Transportation Classification	R.I. [d]	Endpt. N [e]	Endpt. S [f]	Comment
Imperial Fault Zone (rl-ss)	0.0	40.0	38.5	0.31	M	7.0	15	0.84	A	79	-115.57: 32.91	-115.17: 32.47	Slip rate is based on study by Thomas and Rockwell (1996). Maximum magnitude based on M 6.9 event that occurred in 1940 (Ellsworth 1990).
Brawley Fault Zone (rl-ss)	10.8	44.0	26.0	0.39	P	6.4	0.6	0.55	B	24	-115.71; 33.35	-115.51; 32.96	Slip rate and fault length reported by the Working Group on California Earthquake Probabilities (WGCEP) (1995).
Superstition Hills Section of the San Jacinto Fault Zone (rl-ss)	9.0	45.0	13.5	0.06	P	6.6	2.1	0.71	A	250	-115.84; 33.01	-115.64; 32.89	Slip rate and fault length reported by WGCEP (1995). Maximum magnitude based on 1987 Superstition Hills Earthquake (Wells and Coppersmith 1994).
Superstition Mountain Section of the San Jacinto Fault Zone (rl-ss)	11.8	45.0	14.0	0.08	M	6.6	1.2	0.64	A	500	-115.92; 33.99	-115.70; 32.89	Slip rate based on Gurrola and Rockwell (1996). Maximum magnitude earthquake based on 1968 Borrego Mountain Earthquake (Wells and Coppersmith 1994).

[a] (rl-ss) = right-lateral strike-slip.

[b] M = moderately constrained slip rate; P = poorly constrained slip rate.

[c] Maximum moment magnitude calculated from relationships (rupture area) derived by Wells and Coppersmith (1994).

[d] R.I. = recurrence interval.

[e] Endpt. N = North endpoint of the fault in latitude and longitude.

[f] Endpt. S = South endpoint of the fault in latitude and longitude.

Source: Petersen et al. 1996. Probabilistic Seismic Hazard Assessment for the State of California.

The Brawley Fault Zone is a right-lateral strike-slip fault trending in a north-south direction. The IID Lateral would not cross this fault; the nearest distance to the fault in proximity to the lateral would be 10.8 miles at MP 44.0. This fault complex appears to be connected with the Imperial Fault Zone, and ruptures seem to have occurred synchronously between the two systems during previous earthquakes. The area is characterized by high heat flow due to the local thinness of the crust. Because of the high heat flow and the rapid rate of slip, faults in the area are probably prone to aseismic creep, which is relatively slow movement along a fault that does not trigger seismic events greater than micro-earthquakes.

Because of the complexity of the fault system at work, this area is also prone to earthquake swarms, such as those that coincided with the ground movement in 1975, breaking the surface trace for a distance of 6 miles with a vertical displacement of almost 8 inches (SCEDC 2005).

Earthquakes – The pipeline facilities would be located in a seismically active region. The potential for strong ground accelerations in the immediate vicinity of the proposed B-Line and Arrowhead Extension is generally low; however, the potential increases along the IID Lateral as it approaches El Centro. To quantify seismic hazards in any given region, the USGS developed maps of earthquake shaking hazards under the National Seismic Hazard Mapping Project (updated 1996). These maps are used to assess probabilistic seismicity and provide information used to create and update design provisions of building codes in the United States. These codes provide design standards for buildings, bridges, highways, and utilities such as natural gas pipelines. Values on these seismic hazard maps are expressed as a percentage of gravity (acceleration of a falling object due to gravity) - the higher the value, the greater the potential hazard.

As shown on Figure 4.1.4-1, there is only a 10 percent chance that the peak ground acceleration along the B-Line or Arrowhead Extension would exceed 10 to 20 percent of gravity in 50 years. The IID Lateral would cross through areas of 20 to 30 percent of gravity in the Algodones Dunes, with steep increases up to greater than 80 percent of gravity at the terminus of the pipeline in El Centro (see Figure 4.1.4-1) (CDMG 1996, USGS 1996).

Soil Liquefaction – Secondary seismic effects triggered by strong ground shaking are often more serious than the shaking itself. The most damaging secondary seismic effect is commonly soil liquefaction, a physical process in which saturated, non-cohesive soils temporarily lose their bearing strength when subjected to strong and prolonged shaking. As loose granular soils are shaken, they tend to contract, which may lead to positive pore pressures that can result in a loss of shear strength. Liquefaction typically occurs when the water table is less than 50 feet below ground surface and the soils are predominantly unconsolidated. Soils most prone to liquefaction are poorly graded, or in other words have a uniform grain size. Sand boils and fissures are a common sign of liquefaction. Sand boils and fissures form when saturated sediment below the surface is pushed to the surface by elevated pore water pressure. Soil liquefaction can also lead to other ground failures, including settlement and lateral spreading.

Within the Palo Verde Valley, which would include the B-Line between MPs 0.0 to 12.0 and the entire Arrowhead Extension, the depth to groundwater ranges between 9 and 23 feet below ground surface due to the proximity to the Colorado River. This area has been identified as having liquefaction hazard potential by Riverside County. Although groundwater is less than 50 feet from the surface in the vicinity of the Cibola NWR in Imperial County, seismicity is minimal. Where the proposed pipeline route crosses the Milpitas Wash at MP 36.0, two nearby monitoring wells indicate the depth to groundwater is between 43 and 50 feet. Further south (at about MP 79.0 of the B-Line), the depth to groundwater typically exceeds 50 feet. In the vicinity of the All-American Canal (MP 79.8), the depth to groundwater has been recorded as shallow as 35 feet below ground surface.

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FINAL ENVIRONMENTAL IMPACT STATEMENT/REPORT FOR THE PROPOSED NORTH BAJA PIPELINE EXPANSION PROJECT
Docket Nos. CP06-61-000 and CP01-23-003

Figure 4.1.4-1 Probabilistic Seismic Hazard Map

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To determine the potential for liquefaction hazards, North Baja conducted a Liquefaction Hazard Evaluation and Mitigation Study before construction of the A-Line. The report provides the results of geotechnical exploration at the Ehrenberg Compressor Station site and along 18th Avenue; analysis of soil borings that were previously placed at the Colorado River and the All-American Canal; identification of seismic sources, Maximum Magnitude Earthquake values, and site acceleration; Uniform Building Code seismic coefficients based on design basis earthquake(s) for the study area; the probability of soil liquefaction; and an estimate of permanent ground subsidence induced from liquefaction. The results are discussed below. In addition, the Geologic Hazards Study (see Appendix J) includes a seismic hazards study and a study of liquefaction potential that were conducted for the proposed Project including the IID Lateral. The liquefaction potential study concluded that in addition to the areas identified along the B-Line, there are areas of locally high liquefaction potential along the IID Lateral. In particular, areas along the East Mesa (between MPs 8.0 and 27.0) and in the Imperial Valley (between MPs 27.0 and 45.7) would have a locally or generally high potential for liquefaction based on soil type and potential for ground shaking (see Appendix J). The liquefaction potential identified for the B-Line along the western portion of 18th Avenue would also be expected along the route of the Arrowhead Extension.

Along the route of the IID Lateral, one well has been identified where the groundwater level was within 50 feet of the surface. The well is located in the Algodones Dunes, near MP 9.0, where soils are primarily unconsolidated sand and silt. Although groundwater is not near the surface in the Imperial Valley, liquefaction and sand boils were observed during earthquakes of the late 1970s and early 1980s (Bennett et al. 1979, 1984).

Landslides – Landslides involve the downslope movement, under gravity, of masses of soil and rock material. Landslides can be triggered by ground shaking, such as earthquakes, or heavy precipitation events. Generally, landslides occur on slopes composed of sedimentary or unconsolidated materials. Sedimentary rocks are particularly susceptible to landslides because they commonly contain relatively less competent beds of clays and other fine-grained rocks interbedded with more competent beds of sand and gravel.

Slumping is another slope instability hazard that involves the downward and outward sliding of a large mass of more consolidated material along a curved, usually concave upward, shearing plane. The slump block, or the main block that has broken off, often breaks into smaller mini-slump blocks as it slides downslope. Landslide hazards, like earthquake hazards, are more concentrated in California. No significant landslides were observed during a site reconnaissance North Baja conducted to evaluate geologic hazards along the pipeline route. According to information obtained using the USGS hazard mapping and analysis tools, the B-line, Arrowhead Extension, and IID Lateral routes generally do not cross steep terrain prone to landslides or slumping (USGS 1996). With the exception of the edge of the Palo Verde Mesa (MPs 11.6 to 11.8) discussed below, the slopes that would be crossed do not exceed 25 percent gradient and have negligible potential for slope instability.

The banks of the Colorado River at the B-Line crossing location may be susceptible to failure during an earthquake or flooding. The B-Line would cross numerous drainages containing alluvial material. These drainages are subject to debris flow and flash flood occurrence during sporadic heavy rainfall for the region. The Palo Verde Peak area contains moderate to steep slopes that contain blocky, volcanic rock outcrops and boulders on the surface. These outcrops are a potential source of falling and rolling boulders. Rock falls are most likely to occur during strong earthquakes or large storms that may loosen boulders on the surface. However, the proposed pipeline does not appear to be at risk from rock falls because the route does not traverse sloping terrain exceeding 25 percent gradient, nor is the route immediately at the foot of steep slopes.

From MPs 11.6 to 11.8, the B-Line would cross the terrace edge of the Palo Verde Mesa. The terrace slope is generally at a 25 percent gradient, but slopes of 30 to 35 percent gradient are locally present along the edge of the mesa. This terrace slope is susceptible to water erosion if significant runoff occurs down the slope. The base of the terrace is densely vegetated. The terrace slope to the south appears to have been eroded by several small washes that formerly drained a larger drainage basin to the west. The drainage is now generally directed to a gulley cutting through the lower terrace about 4,000 feet to the south of MP 11.7. There are several sand dunes at the base of the mesa to the south, giving the appearance of a hummocky topography. The IID Lateral would cross the Salton Trough, where topographic relief is generally low. Because the majority of the terrain that would be crossed by the Project is relatively flat, significant landslides or associated hazards are not anticipated.

Subsidence – Subsidence, the loss of surface elevation due to removal of subsurface support, is one of the most diverse forms of ground failure ranging from small or local collapses to broad regional lowering of the earth's surface. Excessive groundwater withdrawal can lead to subsidence. Within the agricultural areas of the Palo Verde and Imperial Valleys, canal water (and not groundwater) is the primary source of irrigation water. Therefore, the potential for future subsidence associated with groundwater withdrawal would be minimal. Additionally, because of the relationship to water table decline, this type of subsidence is generally a slow process occurring over broad areas and would not be likely to damage the pipeline.

Karst Terrain – Features such as sinkholes, fissures, caves, and underground drainage that form by dissolution of limestone, dolomite, gypsum, or other soluble rocks are considered karst terrain. These features can be hazardous due to associated ground failures. The geologic conditions required for karst development generally are not present within the areas that would be crossed by the Project. One segment of the B-Line that would cross the southern portion of the Palo Verde Mountains (MPs 31.2 to 31.6) would likely encounter rock types from the upper section of the Bouse Formation. The Bouse Formation is identified as containing a basal limestone unit that is overlain by several hundred feet of thinly interbedded clay, silt, and sand. However, the presence of karst features in this area is not likely, and associated hazards are not anticipated. There are no karst features in the vicinity of the Arrowhead Extension or the IID Lateral.

Active Sand Dunes – While not considered a geologic hazard, active sand dunes can either expose or bury pipelines as the dunes laterally migrate. The Algodones Sand Dunes would be crossed by the IID Lateral between MPs 0.0 and 7.9. The dunes were formed from lake bottom deposits from Lake Cahuilla and are an active feature that moves at a rate of approximately 6 to 25 centimeters per year (BLM 2003). Winter winds are from the northwest, but often reverse to the southeast in summer. The stronger winter winds are slowly pushing the dune system southeastward.

Aboveground Facilities

Unlike buried pipelines, aboveground structures are more likely to be damaged by ground shaking rather than surface displacement. Results from the Liquefaction Hazard Evaluation and Mitigation Study North Baja performed in 2001 for the A-Line indicate that a major earthquake of magnitude 7 or greater originating on the San Andreas or Imperial Faults would create a high probability for soil liquefaction at the Ehrenberg Compressor Station site. However, underlying ground improvements were implemented at the site by densification of liquefiable soil using compaction grouting or stone columns.

The only aboveground facility in the sand dunes area would be a valve located along the IID Lateral at MP 7.6 between the All-American Canal and Interstate 8 in an area of relatively stable sands and away from actively moving dunes.

The Imperial Fault Zone is the nearest fault zone to any valve and is approximately 11 miles from valve #3 on the IID Lateral. Table 4.1.4-3 summarizes the fault zones in relation to the nearest proposed valve locations, identifies the nearest upstream and downstream valves, lists the distance to the nearest home or business and town or city, and provides the estimated response time for valve closure.

The estimated response time for valve closure is complicated by the fact that the IID Lateral is a single-purpose pipeline that would serve only the El Centro Generating Station. When the IID chooses to use the gas transported by the IID Lateral, it would make a sudden large demand on gas volume, which would temporarily substantially drop the gas pressure in the pipeline. Like the existing North Baja system, a precipitous pressure drop would trigger an alarm at North Baja's Gas Control Center, which is staffed 24 hours a day. The operator would have 10 minutes in which to determine whether the pressure drop is caused by something other than a rupture and either override the alarm or initiate a shutdown. If neither of these actions is taken by the operator within 10 minutes, or if line pressure decreases to a pre-determined threshold before 10 minutes, the valve would close automatically.

Pipe Storage and Contractor Yards

The yards proposed for pipe storage and contractor use would be in relatively flat areas. With the possible exception of minor grading and surface disturbance, the topography and soils at these sites would not be disturbed. In addition, these facilities would be temporary and operated only as long as needed for construction. Therefore, no significant impact on geologic resources associated with the use of pipe storage and contractor yards would be anticipated. Furthermore, none of the activities at these facilities would be likely to trigger geologic hazards.

Impact and Mitigation

Seismicity includes active faults, ground shaking, and soil liquefaction, and is the primary geologic hazard that could affect the proposed Project facilities. Seismic events in the vicinity of the Project are centered on fault activity in the Salton Trough. Several faults and fault zones are proximal to the proposed IID Lateral, the most significant of which is the Imperial Fault Zone (CDMG 1992b), which would be crossed at approximately MP 40.0.

In addition to surface displacement, ground shaking and resulting soil liquefaction can also occur with fault activity and could be a potential hazard to the pipeline facilities. Several faults in the vicinity of the Project area have the potential for generating earthquakes that could cause strong ground motions. A major earthquake of magnitude 7.0 or greater originating on the San Andreas or Imperial Faults could affect the Project area within the design life of the proposed facilities. Damage to buried pipelines is most often caused by the differential movements of geologic material as opposed to shaking itself.

Results from the Liquefaction Hazard Evaluation and Mitigation Study North Baja performed for the A-Line indicate that a major earthquake of magnitude 7.0 or greater originating on the San Andreas or Imperial Faults would create a high probability for soil liquefaction at the Arizona side of the Colorado River crossing and on the western portion of the 18th Avenue alignment. The liquefaction potential identified for the B-Line along the western portion of 18th Avenue would also be expected along the route of the Arrowhead Extension.

Permanent ground subsidence induced from liquefaction was estimated to be 0 to 4.8 inches, and surface ground disruption, cracking, or sand boil formation is not likely to occur. The potential for lateral spreading is low, except for the Arizona side of the Colorado River, where about 1 inch of permanent lateral displacement could occur in addition to vertical ground subsidence.

TABLE 4.1.4-3

Earthquake Fault Zones in Relation to the Nearest Proposed IID Lateral Valve Locations

Name	Milepost	Distance from Pipeline (miles)	Nearest Upstream Valve	Nearest Downstream Valve	Distance Between Valves (miles)[a]	Distance to Nearest Home or Business (feet)	Distance to Nearest Town/City (miles)	Town/City	2004 Population	Estimated Response Time for Valve Closure (minutes)
Superstition Hills Section of the San Jacinto Fault Zone	11.7	13.5	Valve #3	Valve #4	11.5	2,000	3.8	El Centro	38,350	10
Superstition Mountain Section of the San Jacinto Fault Zone	11.7	16.4	Valve #3	Valve #4	11.5	2,000	9.5	Brawley	22,255	10
Brawley Fault Zone	11.7	13.6	Valve #3	Valve #4	11.5	0	0	Brawley	22,255	10
Imperial Fault Zone	11.7	11.3	Valve #3	Valve #4	11.5	50	2.3	El Centro	38,350	10

[a] Distances are measured between the upstream and downstream valves except for valves near the end of the pipeline, where distances are between the valve nearest the fault and the nearest upstream or downstream valve.

To mitigate the potential for liquefaction, North Baja incorporated the recommendations of the Liquefaction Hazard Evaluation and Mitigation Study conducted for the A-Line into the design for the proposed Project. At the Colorado River, liquefiable soils would be avoided by use of the HDD crossing method. As discussed above, the liquefaction study included as part of the Geologic Hazards Study conducted for the proposed Project concluded that in addition to the areas identified along the B-Line, there are areas of locally high liquefaction potential along the IID Lateral (see Appendix J). In particular, areas along the East Mesa (between MPs 8.0 and 27.0) and in the Imperial Valley (between MPs 27.0 and 45.7) would have a locally or generally high potential for liquefaction based on soil type and potential for ground shaking (see Appendix J). Lateral spreading near the Alamo River and at canal banks may exceed the 0 to 6 inches estimated for other areas. As recommended in the study, North Baja would design and construct the IID Lateral to be earthquake resistant using the estimated Peak Ground Velocity and Permanent Ground Displacement values given in Appendix J.

To further mitigate and reduce potential damage to the proposed facilities from earthquakes, North Baja's facility design would comply with Federal standards outlined in Title 49 CFR Part 192. This code governs the construction and operation of natural gas pipelines, greatly reducing the potential risk of damage. The pipelines and associated facilities would be designed using the *Guidelines for the Design of Buried Steel Pipe* (American Lifelines Alliance 2001), *Guidelines for the Seismic Design and Assessment of Natural Gas and Liquid Hydrocarbon Pipelines* (Pipeline Research Council International, Inc. 2004), applicable building codes, and/or other similar recognized seismological engineering standards. The engineering design drawings for the entire Project in California would be certified by a California-registered civil/structural engineer, and would comply with the latest edition of the California Building Code.

Empirical reviews of historical earthquakes demonstrate that pipelines are not prone to failure due to earthquakes. A 1996 study of earthquake performance data for steel transmission lines and distribution supply lines operated by SoCalGas over a 61-year period found that post-1945 arc-welded transmission pipelines in good repair have never experienced a break or leak during a southern California earthquake. These pipelines are the most resistant type of piping, vulnerable only to very large and abrupt ground displacement (e.g., severe landslides), and are generally highly resistant to traveling ground wave effects and moderate amounts of permanent deformation (O'Rourke and Palmer 1996).

North Baja has committed to perform a site-specific seismic evaluation as part of its detailed design phase for the Project. This evaluation would determine the engineering/design solutions that are appropriate to mitigate against the hazard of seismic displacements along the Imperial Fault. The seismic evaluation would determine recommended design fault displacements for the pipeline design specifications. North Baja would develop a computer model to determine the soil-pipe interaction with the proposed applied displacement. The model would evaluate various combinations of pipe wall thickness and pipe grade to determine which pattern yields the best performance under displacement conditions. The design may also incorporate additional mitigation methods if necessary. Examples of additional design features that have been employed on pipelines in earthquake-prone regions include:

- trapezoidal trench design using loose granular backfill (most common);
- trapezoidal trench design using geofoam as backfill;
- installation of the pipe within a culvert;
- increasing the wall thickness or pipe grade;
- specialty in-line fittings to accommodate pipe movement;

- installation of the pipe above ground on elevated supports or pipe hangers;
- modification of the pipeline configuration;
- installation of isolation/automatic shutdown valves on either side of the fault crossing; and
- modification of emergency response procedures.

North Baja would provide a copy of the final design for the Imperial Fault crossing, as well as any related geotechnical information, to the CSLC and the FERC before construction of the IID Lateral. The final design would also address any measures necessary to mitigate for liquefaction hazards.

The strength and ductility of the pipeline facilities would further reduce the potential impacts associated with displacement caused by surface faulting, liquefaction, and mass wasting. In the unlikely event of a pipeline rupture caused by a seismic event (or any other cause), North Baja would implement its emergency response procedures, as described in Section 4.14.2. All facilities would be designed with remote manual pipeline block valves with automatic shutdown capability that are programmed to sense pipeline ruptures and to isolate a specific pipeline valve section in the case of a catastrophic rupture in that valve section. As shown in Table 4.1.4-3, the estimated response time for valve closure is 10 minutes. In the event of an emergency, North Baja currently has a procedure in place to utilize the Spokane, Washington operations center as an emergency call center. However, the call center in Spokane is currently in the process of being changed to Redmond, Oregon. By the time the proposed Project would be in operation, the Redmond center would likely be operational. There would also be a corporate call center in Calgary, Alberta, Canada. The purpose of the call centers in the first few minutes following a rupture is to mobilize company resources to secure the incident site and notify local first responders of the incident. The incident site is surrendered to local first responders upon their arrival. Procedures are also in place to notify Sempra of any incident occurring on the North Baja facilities so that it can respond appropriately with regard to its facilities and jurisdictions in Mexico. Further discussion of North Baja's proposed operation, maintenance, and safety controls is presented in Sections 2.6 and 4.14.

Because North Baja would design and construct the pipelines and associated facilities in accordance with the guidelines, Federal standards, and building codes described above, and the empirical studies as cited above indicate that the ductility of pipelines makes them highly resistant to rupturing as a result of earthquakes or moderate displacement, the potential for seismic-related events to cause a rupture or failure of the pipeline or cause damage to related facilities would not present a significant threat to public safety except in the case of the most severe earthquake displacement across the pipeline route. In case of severe earthquake displacement across the pipeline route, the threat to public safety would be minimized through the use of remote manual block valves with automatic shutdown capability that would isolate the rupture, and automated detection and notification of first responders of the incident; therefore, the potential for a seismic event to cause a rupture or failure of the pipeline or cause damage to related facilities that would present a significant threat to public safety would be less than significant.

As previously discussed, a review of USGS documents indicates that the majority of the Project does not cross landslide-prone areas. The B-Line would parallel the A-Line, which was rerouted to avoid the Palo Verde Mountain foothills, eliminating a landslide hazard identified at that location. With the exception of the Palo Verde Mesa that would be crossed by the B-Line between MPs 11.6 and 11.8, neither the B-Line, the Arrowhead Extension, nor the IID Lateral cross steep terrain that was identified as having a high potential for landslides or slumping.

In areas of steep terrain, the potential hazard can be reduced by creating a stable and/or level right-of-way work area during the grading operation and implementing restoration practices in the CM&R Plan (see Appendix E). To prevent a potential instability of the B-Line at the Palo Verde Mesa, the pipeline and the grade immediately to each side of the pipeline would be laid back to no more than 30 percent gradient for the estimated 60-foot-high lower terrace slope. North Baja anticipates minor cuts would be needed to accommodate this grade transition. In other areas of steep terrain, North Baja would:

- restore damaged slope breakers on the existing permanent easement where the B-Line parallels the existing A-Line;
- install slope breakers to control surface water on the new construction right-of-way;
- install trench breakers to control groundwater flow in the pipe trench;
- route discharge of surface water away from the slope breakers, and divert or collect surface water coming onto the construction right-of-way to pipes in an outflow below the slope;
- adhere strictly to erosion control and revegetation measures required by Federal, State, and local authorities;
- bury the pipeline in a deeper trench than normal or place armor above it in areas of potential debris flow hazards; and
- monitor geotechnical conditions for signs of mass wasting, and respond appropriately to any indications of instability.

If these measures are followed, the potential for impacts from slope stability hazards to cause a rupture or failure of the pipeline or cause damage to related facilities that would present a significant threat to public safety would be less than significant.

Although the banks of the Colorado River may be susceptible to failure during an earthquake or flooding, use of the HDD method to install the pipeline crossing would place the pipeline well below and away from the potential areas of bank instability. Therefore, mass wasting of the banks would not affect the pipeline.

The IID Lateral would cross the Algodones Sand Dunes. As previously discussed, active sand dunes can either expose or bury pipelines as the dunes laterally migrate. CalTrans has stabilized a segment of the dunes and actively manages the area to keep Interstate 8 open to vehicle traffic. The IID Lateral would be just south of the CalTrans-managed area and is, therefore, somewhat protected from sand dune migration. North Baja would bury the IID Lateral 6 feet deep between MPs 2.7 and 5.7, which includes the area most susceptible to blowing/shifting sands and pipeline exposure. If sand depth were to increase slightly over the pipeline, this would increase its protection from the elements and from vandalism. Therefore, the potential for sand dunes to cause a rupture or failure of the pipeline or cause damage to related facilities that would present a significant threat to public safety would be less than significant.

As discussed in Section 4.14, North Baja would prepare and implement an Operation and Maintenance Plan and an Emergency Response Plan in accordance with the requirements in Title 49 CFR Part 192. Implementation of North Baja's Operation and Maintenance Plan would further reduce the potential threat from the facilities to public safety during their operation.

4.1.5 Paleontological Resources

The significance of paleontological remains can be determined by the types of fossils, the geologic age of the remains, the assemblage association (the unique biological association or organisms), the lithology and age of the rock units, and feature rarity or uniqueness. A paleontological resource can be considered to have scientific or educational value if it:

- provides important information on the evolutionary trends among organisms, relating living inhabitants of the earth to extinct organisms;
- provides important information regarding development of biological communities or the interaction between botanical and zoological biota;
- demonstrates unusual or spectacular circumstances in the history of life;
- is in short supply and in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation and is not found in other geographic locations;
- is recognized as a natural aspect of our national heritage;
- lived before the Holocene (less than 11,000 years ago); and
- is not associated with an archaeological resource, as defined in Section 3(1) of the Archaeological Resources Protection Act of 1979 (16 USC § 470bb[1]).

A fossil specimen would be significant if it is: (1) identifiable; (2) complete; (3) well preserved; (4) age diagnostic; (5) useful in environmental reconstruction; (6) a type or topotypic specimen; (7) a rare taxon; or (8) part of a diverse assemblage.

Pipeline Facilities

Before construction of the A-Line, paleontological literature and museum archival reviews for previously recorded fossil sites in the vicinity of the A-Line were undertaken. All known geological and paleontological literature was reviewed for references to fossils. In addition, museum archival reviews were conducted at the University of California Museum of Paleontology (UCMP) at Berkeley, the San Diego Natural History Museum, and the San Bernardino County Museum. The UCMP at Berkeley is considered the primary repository for fossils in the State of California, and the UCMP collections are considered the most comprehensive of all California institution collections.

Detailed information on the stratigraphy of the area was obtained from numerous geological publications. The geology in the vicinity of the proposed right-of-way has been mapped or described extensively, including Brown (1923), Dibblee (1954), Strand (1962), Jennings (1967), Metzger et al. (1973), Loeltz et al. (1975), Morton (1977), and Stone (1990). Dibblee (1954), Metzger et al. (1973), and Morton (1977) provided the most comprehensive and detailed accounts.

A field survey was then undertaken by North Baja to supplement the literature and museum archival reviews. The objective of the field survey was to verify that sensitive rock units occurred at mapped points, to document the condition of recorded fossil sites, to identify potentially unrecorded fossil sites, and to determine if special mitigation measures need to be implemented.

With the exception of the Colorado River and All-American Canal crossings, the B-Line would be 25 feet from the A-Line for its entire length and cross the same rock types/formations that have the potential to contain significant paleontological resources. While most geologic formations have the potential to contain fossils, those containing vertebrate fossils are considered to be the most significant. Vertebrate fossils tend to be rare and fragmentary, and thus have greater scientific importance than the more common invertebrate and plant fossils.

The B-Line would cross stratigraphic units that could contain paleontological resources, including Holocene and Pleistocene alluvial sediments, Pliocene marine sediments of the Bouse Formation, Miocene fanglomerates, and Early Tertiary volcanic and volcaniclastic rocks. Rock formations older than the Early Tertiary volcanics typically consist of igneous and metamorphic type rocks not known to contain fossils. The Arrowhead Extension would extend from MP 7.4 of the B-Line north for 2.1 miles and cross the same stratigraphy as found in the first 11 miles of the A-Line.

The regional stratigraphy along the IID Lateral route can be summarized into four sedimentary units proceeding from east to west between MPs 0.0 and 45.7. The oldest of these, between MPs 0 and 2.0, consists of Pleistocene non-marine sedimentary deposits locally derived from the flanks of the Mesozoic crystalline (granitic) rocks of the Cargo Muchacho Mountains. Between MPs 2.0 and 7.6 west of these arkosic sediments, are aeolian (windblown) sands designated "Qs" on the State geologic maps. West of the dune fields between MPs 7.6 and 27.6 is a 20-mile-long stretch of alluvial deposits that include fluvial as well as some aeolian/fluvial deposits (dune sands redeposited by streams). This heterogeneous unit denoted as "Qal" or Quaternary alluvium is mapped as "Recent," but Pleistocene intervals are present at about 4 to 6 feet below the surface.

The most remarkable unit identified along the proposed IID Lateral is the lacustrine sands and silts of ancient Lake Cahuilla between MPs 27.6 and 45.7. In addition to these fine-grained arenites there are some intervals rich in clay and even occasional beach sands marking the gradual retreat of this large lake occupying the center of the Salton Trough. Mapped as "Pleistocene and Recent," Lake Cahuilla sediments date back as far as the Pliocene epoch up to 4 million years in the past in the deeper parts of the trough. A thick rich soil profile sits atop these predominantly fine-grained arenites and the entire interval is nearly completely unconsolidated.

Based on the literature and museum archival review, field survey, the paleontological sensitivity for the stratigraphic units crossed by the proposed pipeline facilities was determined. The potential for fossils to occur based on paleontological sensitivity along the B-Line, Arrowhead Extension, and IID Lateral is summarized by milepost in Table 4.1.5-1.

As shown in Table 4.1.5-1, Pleistocene older alluvium and the Pliocene Bouse Formation units both have a moderate potential to contain fossils. These units would be crossed only by the B-Line. The remaining stratigraphic units that would be crossed by the pipelines have a low potential for fossils.

The paleontological monitoring conducted by qualified personnel during the construction of the A-Line revealed a very limited presence of paleontological resources (see Table 4.1.5-2). Of the several areas identified during preconstruction analysis as moderate sensitivity along the A-Line, only about a 1-mile-long stretch from MPs 28.1 to 29.1 yielded a single significant paleontological find. Areas of older Pleistocene alluvium, and potentially of moderate sensitivity identified from MPs 11.5 to 22.3 yielded no paleontological materials. Other areas of older Pleistocene alluvium between MPs 35.0 and 75.2 yielded only occasional paleontological materials and no significant finds.

TABLE 4.1.5-1

Paleontological Sensitivity of Stratigraphic Units Found Along the North Baja Pipeline Expansion Project

Mileposts	Stratigraphic Unit	Potential for Fossils
B-Line		
0.0 – 11.5	Holocene alluvium	low
11.5 – 22.3	Pleistocene older alluvium	moderate
22.3 – 25.2	Holocene alluvium	low
25.2 – 25.8	Pleistocene older alluvium	moderate
25.8 – 26.0	Holocene alluvium	low
26.0 – 26.6	Miocene fanglomerate	low
26.6 – 27.0	Holocene alluvium	low
27.0 – 27.3	Miocene fanglomerate	low
27.3 – 27.6	Holocene alluvium	low
27.6 – 28.2	Pliocene Bouse Formation	moderate
28.2 – 28.5	Holocene alluvium	low
28.5 – 29.2	Pliocene Bouse Formation	moderate
29.2 – 29.9	Early Tertiary volcanic rocks	low
29.9 – 30.2	Pliocene Bouse Formation	moderate
30.2 – 31.2	Early Tertiary volcanic rocks	low
31.2 – 31.6	Pliocene Bouse Formation	moderate
31.6 – 32.6	Miocene fanglomerate	low
32.6 – 32.8	Holocene alluvium	low
32.8 – 35.8	Miocene fanglomerate	low
35.8 – 36.3	Holocene alluvium	low
36.3 – 75.2	Pleistocene older alluvium	moderate
75.2 – 79.8	Holocene alluvium	low
Arrowhead Extension		
0.0 – 2.1	Holocene alluvium	low
IID Lateral		
0.0 – 2.0	Pleistocene alluvium	low
2.0 – 7.6	Dune sands	low
7.6 – 27.6	Quaternary alluvium	low
27.6 – 45.7	Quaternary lacustrine sands	low

TABLE 4.1.5-2

Paleontological Resources Discovered During Construction of the A-Line

Mileposts	Results of Paleontological Monitoring	Significant Paleontological Find
25.7	Unidentified Holocene specimen (bone fragment)	No
27.2	Corals and calcareous algae in Bouse limestone	No
27.7-28.1	Turritelidae fossils, brachiopods, ostracods, foraminifera amphistegina, echinoids, and algae	No
27.7-28.8	Slabs of chert hosting marine invertebrates	No
27.9	Large fossil log in Bouse Formation limestone spoil pile	No
28.1	Slabs of Bouse Formation limestone hosting kummel form echinoids	No
28.1-28.2	Echinoid (sea urchin) fossils of probably Miocene age (14 to 15 million years before present)	Yes
28.1-28.2	Small echinoid crowns, barnacles plates, and shark teeth	No
28.6	Chert/limestone pebbles; crinoids, corals, bryozoans, and sand shark teeth	No
28.5-29.0	Brachiopod in Bouse Formation	No
29.1	Paleozoic brachiopod	No
33.1	Petrified wood specimen	No
33.2	Paleozoic fossiliferous crinoidal limestone	No
32.1-35.0	Limestone nodule with Paleozoic fossil corrals	No
41.5	Two petrified wood specimens in Pleistocene older alluvium	No
45.2-45.8	Marine fossils in carbonate pod (coral, bryozoa, crinoid ossicles)	No

Aboveground Facilities

Construction of valve #5 at MP 28.0 on the proposed B-Line would have the potential to affect paleontological resources because it would occur in close proximity to where a significant paleontological find was discovered during construction of the A-Line. No other aboveground facility sites would be in areas anticipated to have significant paleontological resources.

Pipe Storage and Contractor Yards

The four pipe storage and contractor yards would not be located in areas anticipated to have significant paleontological resources.

Impact and Mitigation

Paleontological resources could be affected by construction of the pipeline and associated aboveground facilities as well as by the resulting increased public access to these resources. Without mitigation, ground disturbance during construction could cause adverse impacts on paleontological resources. The FLPMA of 1976 and NEPA mandate the protection of significant paleontological resources on federally owned or controlled lands. The CEQA also requires the protection of paleontological resources in California. Direct physical modifications of paleontological resources could occur during Project construction by activities such as grading or trenching. Indirect impacts on fossil beds could result from erosion caused by slope regrading, vegetation clearing, and unauthorized collection. Avoidance of significant fossil localities is the most effective mitigation method. If avoidance is not possible, scientific excavation to recover fossil materials would reduce the impacts to an acceptable level.

Based on the archival research and monitoring undertaken during the construction of the A-Line, monitoring of the B-Line construction by a paleontologist would be warranted between MPs 27.0 and 29.1, where the outer edge of the Bouse Formation would be crossed. This milepost range includes the location of valve #5. Because the stratigraphic unit that would be crossed by the Arrowhead Extension has a low potential to yield paleontological resources, construction impacts on paleontological resources would not be expected.

The four stratigraphic units that would be crossed by the IID Lateral (Pleistocene alluvial fan deposits, dune sands, Quaternary alluvium, and Quaternary lake deposits) have low potential to yield paleontological resources. Therefore, the construction of the IID Lateral is unlikely to impact such resources.

To address potential impacts on paleontological resources resulting from pipeline construction, North Baja developed a Paleontological Resource Mitigation and Monitoring Plan (PRMM Plan) for the North Baja Pipeline Expansion Project (see Appendix K). The PRMM Plan includes a summary of the literature and museum archival review, field survey results, and assessment of potential impacts on paleontological resources. The PRMM Plan also includes Project-wide and site-specific mitigation and monitoring measures and curation and reporting procedures that would be implemented during construction. Some pertinent measures contained in North Baja's PRMM Plan include:

- availability of a qualified Project paleontologist to be called to the Project area to respond to construction-related issues;

- training of construction personnel and EIs regarding the possibility that fossil resources may be encountered during construction;

- granting of authority for the EI to temporarily halt construction to allow for assessment by the Project paleontologist and implementation of mitigation procedures if warranted;
- salvage of significant fossils as determined necessary by the Project paleontologist; and
- protocol for curation and repository storage of fossils.

Following construction, North Baja's Project paleontologist would prepare a final paleontological report. The final report would be distributed to the FERC, the CSLC, the BLM, the BOR, the Cibola NWR, and other interested parties.

In summary, the overall potential to recover salvageable paleontological resources from the surficial units along the proposed B-Line is low, with the exception of the area between MPs 27.0 and 29.1. During construction, North Baja would conduct paleontological monitoring within this area, which includes the proposed site of valve #5. Similarly, the overall potential to recover salvageable paleontological resources from the surficial units along the proposed IID Lateral route is low. North Baja would conduct spot monitoring between MPs 27.6 and 46.0 of the IID Lateral unless excavation unearths coarse beach intervals or thicker sand/gravel lenses. If these characteristics are exposed, continuous monitoring would be conducted. Because the potential for paleontological resources to occur within the Project area is low, and North Baja would implement its PRMM Plan, which specifies paleontological monitoring in areas identified as having moderate potential for paleontological resources, the potential that construction of the Project would result in damage or loss of vertebrate or invertebrate fossils that are considered important by paleontologists and land management agency staff would be less than significant.

4.1.6 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on geologic, mineral, or paleontological resources identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.2 SOILS

4.2.1 Significance Criteria

An adverse impact on soils would be considered significant and would require mitigation if Project construction or operation would:

- increase erosion rates or reduce soil productivity by compaction or soil mixing to a level that would prevent successful rehabilitation and eventual re-establishment of vegetative cover to the recommended or preconstruction composition and density;

- reduce agricultural productivity for longer than 3 years as a result of soil mixing, structural damage, or compaction;

- increase exposure of human or ecological receptors to potentially hazardous levels of chemicals or explosives due to the disturbance of contaminated soils or to the discharge or disposal into soils of hazardous materials; or

- result in the need for a significantly wider construction right-of-way and/or the increased potential for pipe exposure during operations due to the presence of unconsolidated and unstable soils.

4.2.2 Existing Soil Resources

The soils crossed by the proposed Project were analyzed using the State Soil Geographic (STATSGO) database developed by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) for use in regional, multi-state, river basin, State, and multi-county resource planning. STATSGO spatial data are compiled by combining geologically and topographically related soil series found in county soil surveys into larger map units called Map Unit Identifiers (MUIDs). The B-Line would cross 7 MUIDs comprising 42 soil components (see Figure 4.2.2-1), while the Arrowhead Extension would cross only 1 MUID comprising 14 soil components. The IID Lateral would cross 5 MUIDs comprising 79 soil components (see Figure 4.2.2-2). The characteristics of soils that would be crossed by the small segment of pipeline route in Arizona and at the sites of the Ehrenberg Compressor Station, El Paso Meter Station, Blythe Meter Station, Rannells Trap, Ogilby Meter Station, and El Centro Meter Station were further assessed using county soil surveys.

Pipeline Facilities

The soils that would be crossed by the B-Line in La Paz County, Arizona consist of silt and sandy loams and sands. The soils that would be crossed by the B-Line and Arrowhead Extension in the northern portion of Riverside County, California include sandy loams, silty clay loams, and silty clays. Soils in the southern portion of Riverside County that would be crossed by the B-Line include silty clays, sandy loams, gravelly loamy sands, gravelly sands, sand, dune land, and badlands. In the Palo Verde Valley, the soils are primarily formed in sediments deposited by the Colorado River. These soils are highly productive and are ideal for agricultural use if irrigated due to mineral content. Soil types are diverse along the B-Line in Imperial County, California, with loamy and fine sands; sandy, gravelly, and clay loams; and clay and silty clays, with badland and rock outcrops. Many areas along the southern portion of the B-Line route in Imperial County have a gravelly desert pavement present over the surface soils.

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THE PROPOSED NORTH BAJA PIPELINE EXPANSION PROJECT
Docket Nos. CP06-61-000 and CP01-23-003

Figure 4.2.2-1 Map Unit Identifiers Crossed by the B-Line

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Figure 4.2.2-2 Map Unit Identifiers Crossed by the IID Lateral

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Soils that would be crossed by the eastern portion of the IID Lateral, including the area of the Imperial Sand Dunes, are typically loose, sandy, excessively drained soils. West of the dunes area into the East Mesa area, the soils are typically sandy, loamy, and well drained to excessively drained. Many areas within the East Mesa area have a gravelly desert pavement present over the surface soils. West of the East Mesa area through the Imperial Valley, the soils are predominantly fine, silty loamy soils that are well to moderately well drained with patches of coarse loamy, coarse silty, and sandy well- to moderately well-drained soils interspersed. The soils in the Imperial Valley are primarily mineral-rich sediments historically deposited by Lake Cahuilla. These soils are highly productive due to their mineral content, and are ideal for agricultural use if irrigated.

The agricultural land in the Palo Verde and Imperial Valleys is irrigated with systems using water from irrigation drains and canals.

The soils along the B-Line, the Arrowhead Extension, and the IID Lateral were evaluated to identify prime farmland and major soil characteristics that could affect construction or increase the potential for construction-related soil impacts. The primary limiting characteristics include high water erosion potential, high wind erosion potential, and shallow depth to bedrock. Each soil component was evaluated for these limitations, and then the percentage of each MUID with these limitations was summarized. The percentage, along with the length of pipeline route in each MUID, was used to estimate the acreage of soils with limitations that would be crossed by the B-Line, the Arrowhead Extension, and the IID Lateral. Table 4.2.2-1 summarizes by MUID and milepost the acres of soil limitations that would be affected by the proposed pipeline facilities. The nature and prevalence of each major characteristic are discussed below.

Erosion Potential from Water – Erosion is an ongoing, natural process that can be accelerated by human disturbance. Factors such as soil texture, structure, slope, vegetative cover, rainfall intensity, and wind intensity can influence the severity of erosion. Soils most susceptible to erosion by water are typified by bare or sparse vegetative cover, non-cohesive soil particles, and moderate to steep slopes. Soils typically more resistant to erosion include those that occupy low relief areas, are well vegetated, and have high infiltration capacity and internal permeability. Approximately 36 percent of all soils that would be affected by the Project are highly susceptible to erosion by water.

Of the soils along the B-Line, about 45 percent (454.4 acres) would be susceptible to erosion by water. Along the Arrowhead Extension, about 16 percent (3.6 acres) of the soils would be susceptible to erosion by water. Along the IID Lateral, 10 percent (36.4 acres) of the soils would be susceptible to erosion by water. Because the majority of the terrain in the areas that exhibit a high potential for water erosion is relatively flat, erosion by water is not expected to be a significant concern.

Erosion Potential from Wind – Wind erosion processes are less affected by slope angles. Wind-induced erosion often occurs on dry, fine-textured soil where vegetative cover is sparse and strong winds are prevalent. About 26 percent of all soils that would be affected by the Project are susceptible to wind erosion.

Sixteen percent (162.9 acres) of the soils that would be affected by the B-Line would be susceptible to wind erosion, while less than 0.1 percent (0.6 acre) along the Arrowhead Extension would be susceptible. About 53 percent (191.7 acres) of the soils along the IID Lateral route exhibit a high potential for erosion by wind.

TABLE 4.2.2-1

Soil Characteristics Associated with the North Baja Pipeline Expansion Project

Facility/Mileposts	Map Unit Identifiers (MUID)	Affected Acres [a]	High Water Erosion Potential (acres) [b]	High Wind Erosion Potential (acres) [b]	Potential for Shallow Bedrock (acres) [b]
B-Line					
0.0 – 11.4	CA653	145.1	20.4 [c]	5.1 [c]	0.0 [c]
11.4 – 22.3	CA654	138.7	19.1	24.2	11.5
22.3 – 24.1	CA927	22.9	19.1	0.0	1.3
24.1 – 26.6	CA653	31.8	25.5	6.4	0.0
26.6 – 26.9	CA911	3.8	2.5	1.3	2.5
26.9 – 27.7	CA927	10.2	8.9	0.0	0.0
27.7 – 28.2	CA653	6.4	2.5	0.0	6.4
28.2 – 28.5	CA909	3.8	2.5	1.3	0.0
28.5 – 31.0	CA653	33.1	11.5	1.3	29.3
31.0 – 32.0	CA653	11.5	10.2	2.5	0.0
32.0 – 57.8	CA927	328.4	292.7	0.0	16.5
57.8 – 79.8	CA601	280.0	39.5	120.9	0.0
B-Line Subtotal		*1,015.6*	*454.4*	*162.9*	*67.5*
Arrowhead Extension					
0.0 – 2.1	CA653	22.4	3.6 [c]	0.6 [c]	0.0 [c]
IID Lateral					
0.0 – 0.6	CA601	5.6 [d]	0.8	2.4	0.0
0.6 – 6.9	CA921	61.3 [d]	0.0	61.3	0.0
6.9 – 11.7	CA604	46.5 [d]	0.0	0.0	0.0
11.7 – 12.1	CA921	3.1	0.0	3.1	0.0
12.1 – 19.7	CA604	55.1	0.0	0.0	0.0
19.7 – 23.0	CA921	24.1	0.0	24.1	0.0
23.0 – 26.1	CA604	22.5	0.0	0.0	0.0
26.1 – 26.6	CA921	3.6	0.0	3.5	0.0
26.6 – 27.8	CA604	8.7	0.0	0.0	0.0
27.8 – 28.3	CA606	3.6	4.1	0.0	0.0
28.3 – 32.9	CA603	33.5	0.0	33.5	0.0
32.9 – 34.9	CA606	14.5	14.3	0.0	0.0
34.9 – 37.3	CA603	17.5	0.0	17.7	0.0
37.3 – 39.3	CA606	14.5	14.4	0.0	0.0
39.3 – 41.7	CA603	17.5	0.0	17.6	0.0
41.7 – 42.1	CA606	2.9	2.8	0.0	0.0
42.1 – 45.7	CA603	26.2	0.0	28.5	0.0
IID Lateral Subtotal		*360.7*	*36.4*	*191.7*	*0.0*
Total Acres		1,398.7	494.4	355.2	67.5

[a] Affected acres were calculated using a 105-foot-wide construction right-of-way for the B-Line, a 60-foot-wide and 100-foot-wide construction right-of-way for the Arrowhead Extension, and a 60-foot-wide construction right-of-way for the IID Lateral unless otherwise noted. Aboveground facilities, extra workspaces, and access roads are not included.

[b] It was assumed that the frequency of occurrence of each individual component soil series along the pipeline route within each MUID is the same as its percent composition within the MUID.

[c] Does not include soils in that portion of the route where the pipeline would be within the road or road shoulder.

[d] Based on an 80-foot-wide construction right-of-way.

Sources: STATSGO Database; Imperial Irrigation District 1967; U.S. Department of Agriculture, Soil Conservation Service 1974; U.S. Department of Agriculture, Soil Conservation Service 1980.

Shallow Bedrock – Soils were evaluated to identify areas as containing shallow bedrock (hard bedrock within 5 feet of the soil surface). The presence of shallow bedrock could indicate the need for blasting. About 5 percent of all soils that would be affected by the Project have the potential for shallow bedrock. All of these areas occur along the B-Line route. There is the potential for about 7 percent (67.5 acres) of the soils along the B-Line route to exhibit bedrock at a depth of less than 5 feet; however, based on past construction activity associated with the A-Line, shallow bedrock that would require blasting is expected to be encountered only at about MP 29.5. None of the soils along the Arrowhead Extension or the IID Lateral have the potential for shallow bedrock.

Prime Farmland – The NRCS (2003) defines prime farmland as "land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops." This designation includes cultivated land, pasture, woodland, or other lands that are either used for food or fiber crops, or are available for these uses. Urbanized land, built-up land, and open water cannot be designated as prime farmland. Prime farmland typically contains few or no rocks, has an adequate and dependable water supply, is permeable to water and air, is not excessively erodible or saturated with water for long periods, and is not subject to frequent, prolonged flooding during the growing season. Soils that do not meet the above criteria may be considered prime farmland if the limiting factor is mitigated (e.g., by draining or irrigating). Additionally, the CDC designates farmlands of Statewide and local importance. Farmland of Statewide importance is similar to prime farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for production of irrigated crops at some time during the 4 years prior to the mapping date. Farmland of local importance is designated as land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. Areas of prime farmland and farmlands of Statewide and local importance that would be crossed by the B-Line, the Arrowhead Extension, and the IID Lateral are listed in Table 4.2.2-2 by milepost. In total, 71.7 acres of prime farmland and 47.6 acres of farmland of Statewide importance would be affected. No farmland of local importance would be affected by the pipeline facilities.

Aboveground Facilities

Modifications at the Ehrenberg Compressor Station, including the proposed pig receiver, would be completed within the existing fenceline and would not require additional land. Extra workspace, however, would be required outside of the fenceline to install a header pipe associated with the pig receiver. Use of this extra workspace would temporarily affect about 0.7 acre of soils. Modifications at the adjacent El Paso Meter Station would be completed within the fenceline and would not affect additional soil resources. The soils associated with these sites are silt loams, sandy loams, and sands that may exhibit a slight potential for erosion. The majority of these soils are classified as prime farmland. Construction of the Blythe-Arrowhead Meter Station and pig receiver would be completed within the existing fenceline of the SoCalGas Blythe Compressor Station and would not affect additional soil resources.

The pig launcher and receiver proposed for Rannells Trap would require an expansion of the existing site by 0.3 acre during construction and operation. Soils at this location consist of moderately level well-drained sands and loams. These soils are not designated as prime farmland or farmlands of Statewide or local importance. The pig launcher, taps, and crossover piping associated with the Arrowhead Extension would affect 1.0 acre of soils during construction and 0.8 acre of soils during operation. The soils at this location consist of sandy loams, silty clay loams, and silty clays that are designated as prime farmland and farmland of Statewide importance.

TABLE 4.2.2-2

Prime Farmland and Farmlands of Statewide and Local Importance Crossed by the North Baja Pipeline Expansion Project

Facility/Designation	La Paz County Mileposts	Riverside County Mileposts	Imperial County Mileposts	Total Acres [a]
B-Line				
Prime Farmland	0.0-0.2	0.8-5.4, 5.5-11.4		47.0
Farmland of Statewide Importance		2.2-5.4, 5.5-11.6		18.4
Farmland of Local Importance		0.3-0.8, 11.7-16.8, 17.0-19.8, 20.2-21.6, 22.1-22.2 [b,]	22.3-22.5, 23.4-23.5, 23.9-24.4, 24.5-25.0 [b,]	0.0
Arrowhead Extension				
Prime Farmland		0.0-2.1		16.1
Farmland of Statewide Importance		0.0-2.1		16.1
Farmland of Local Importance		-None-		0.0
IID Lateral				
Prime Farmland			27.9-28.2, 28.9-29.9, 30.1-30.5, 30.9-31.1, 32.3-33.0, 33.3-34.2, 34.9-35.1, 37.2-38.7, 39.1-39.3, 39.5-39.8, 40.5-41.1, 42.3-43.3	8.6
Farmland of Statewide Importance			28.2-28.9, 29.9-30.1, 30.5-30.9, 31.1-32.3, 33.0-33.3, 34.2-34.9, 35.1-37.2, 38.7-39.1, 39.3-39.5, 39.8-40.5, 41.1-42.3, 43.3-46.0	13.1
Farmland of Local Importance			9.3-9.7 [b, c], 12.9-13.9 [b, c]	0.0
Total Pipeline Facilities				
Prime Farmland				71.7
Farmland of Statewide Importance				47.6
Farmland of Local Importance				0.0

[a] Acreage includes pipeline construction right-of-way, extra workspaces, and access roads. Actual rights-of-way widths were used to calculate acres.

[b] Although mapped as "farmland of local importance," this area is not farmed land and is open desert.

[c] Located on the north side of Evan Hewes Highway.

Source: California Department of Conservation 1995a,b.

Modifications at the Ogilby Meter Station, including the proposed pig launcher and receiver, would affect about 0.2 acre of soils outside the existing fenced facility during construction and operation. The tap to the B-line and pig launcher associated with the IID Lateral would affect 0.2 acre of soils for the construction and operation of these facilities. The soils in the vicinity of the Ogilby Meter Station and the B-Line tap and pig launcher sites consist of desert pavement, clay loams, loams, sandy clay loams, and sandy loams. These soils may be limited by a slight potential for erosion. No prime farmland or farmlands of Statewide or local importance would be affected at these sites.

The El Centro Meter Station and pig receiver would affect about 2.5 acres of soils during construction and about 0.2 acre of soils during operation, all located within the existing fenceline of the IID El Centro Power Generating Station. The soils associated with these facility sites consist of fine silty

to coarse loamy soils. No prime farmland or farmlands of Statewide or local importance would be affected by these facilities.

Pipe Storage and Contractor Yards

All four proposed pipe storage and contractor yards have been previously disturbed for industrial/commercial activities and some have been graveled and/or paved.

4.2.3 General Impact and Mitigation

Pipeline construction activities such as clearing, grading, trench excavation, backfilling, and the movement of construction equipment along the right-of-way may affect soil resources. Clearing removes protective vegetative cover and exposes the soil to the effects of wind, rain, and runoff, which increases the potential for soil erosion and sedimentation of sensitive areas. Grading, spoil storage, and equipment traffic can compact soil, reducing porosity and percolation rates and increasing runoff potential. Construction activities can also affect soil fertility and facilitate the dispersal and establishment of weeds.

Erosion is a continuing, natural process that can be accelerated by human activities. Clearing, grading, and the movement of equipment on the right-of-way can accelerate the erosion process and, without adequate protection, result in discharges of sediment to wetlands and waterbodies and lower soil fertility. Factors that influence the rate of erosion include soil texture and structure, the length and percent of slope, vegetative cover, and rainfall or wind intensity. The most erosion-prone soils are generally bare or sparsely vegetated, non-cohesive, fine textured, and situated on moderate to steep slopes. Soils more resistant to erosion include those that are well vegetated, well structured with high percolation rates, and located on flat to nearly level terrain.

Construction equipment operating and traveling on the construction right-of-way, especially during wet periods and on poorly drained soils, can compact the soil. Soil compaction can also result from the storage of heavy spoil piles on certain types of soil for extended periods of time. Soil compaction destroys soil structure, reduces pore space and the moisture holding capacity of the soil, and increases runoff potential. If unmitigated, compaction results in soils with a reduced revegetation potential and an increased erosion hazard. The degree of compaction depends on the moisture content and texture of the soil. Wet soils with fine clay textures are the most susceptible to compaction. Compaction of fine-grained sediments such as clays is of particular concern in areas where clay soils are accompanied by a high water table because it may contribute to subsidence or the loss of surface elevation due to removal of subsurface support. Although clay soils occur in the Imperial Valley, the water table is generally low along the B-Line and IID Lateral routes, ranging from 9 to more than 400 feet below ground along the B-Line and 20 to 310 feet below ground along the IID Lateral route. Therefore, increases in compaction levels or the occurrence of subsidence that could damage the pipeline are not anticipated.

Construction activities such as grading, trenching, and backfilling can also cause mixing of soil horizons. Mixing of topsoil with subsoil, particularly in agricultural lands, dilutes the superior chemical and physical properties of the topsoil and lowers soil fertility and the ability of disturbed areas to revegetate successfully. Trenching of stony or shallow-depth-to-bedrock soils can bring stones or rock fragments to the surface. Soils with bedrock present at depths of 5 feet or less may require blasting, which also often results in excess rock being brought to the soil surface. Excess rocks on or near the soil surface could interfere with agricultural practices and hinder restoration of the right-of-way.

During the scoping process, a commentor expressed concern that the use of screened subsoil for padding material during pipeline installation could cause negative impacts on the soil's revegetation

potential. Screening subsoil for padding material would result in a backfill material with less soil fines, and the resultant coarser textured soil would likely have less nutrient and water holding capacity, which could affect the revegetation potential of the soil. However, screened subsoil is only one option for padding material; imported sand or sandbags could also be used. For the A-line, North Baja used a combination of screened subsoil and sandbags as pipe padding material. Although North Baja did not provide the specific locations where pipe padding was required or where each method was used during construction of the A-Line, the B-line would cross about 5.3 miles of soils with the potential for shallow bedrock or rocky soils to be encountered where it is likely that pipe padding would be necessary. Soils with these characteristics are not anticipated along the IID Lateral. The pipe padding methods proposed for the North Baja Pipeline Expansion Project are the same as those used during the A-Line construction, and the results of revegetation monitoring for the A-Line do not indicate a reduction in the recruitment of native species over the trenchline. Moreover, native seedling recruitment was in some locations higher over the disturbed right-of-way than in the control plots off of the right-of-way. Revegetation of the A-Line is discussed in Section 4.5.3 and in North Baja's CM&R Plan (see Appendix E).

Construction can also facilitate the establishment of noxious weeds where none or few existed. The clearing of existing perennial vegetation provides an opportunity for weed species to invade the right-of-way, and the movement of equipment along the right-of-way could transport weed seed and plant parts from one location to another (see Section 4.5.5). The seriousness of these effects would depend on the prevalence of weeds in the area of the pipeline route, the type of weed and its method of reproduction and dispersal, and the weed's effect on current or future land use.

No areas of contaminated soils are expected to be crossed by the Project; however, all of the soils crossed by the Project would be susceptible to contamination from spills or leaks of fuels, lubricants, and coolants from construction equipment. Although these impacts would typically be minor because of the low frequency and volumes of these occurrences, the introduction of these contaminants to soils can adversely affect productivity.

The impact of construction on soils can be effectively minimized through the use of erosion control and revegetation plans such as the FERC's Plan. To minimize impacts on soils associated with this Project, North Baja developed its CM&R Plan that includes the portions of the FERC's Plan that are relevant to the Project area and Project-specific measures developed in consultation with the BLM, the FWS, and the CDFG that address the special issues associated with construction and restoration in an arid environment. The CM&R Plan is included in Appendix E and consists of three parts as discussed below.

Desert Restoration Plan – This plan identifies the unique natural characteristics of the Project area and describes the procedures that were successful during construction of the A-Line that would be implemented during construction of the B-Line to preserve and restore habitat values affected by pipeline construction in the desert environment. The Desert Restoration Plan also summarizes the results of North Baja's post-construction revegetation and weed control monitoring that was conducted for the A-Line.

Upland Erosion and Sediment Control – This includes portions of the FERC's Plan that are relevant to the Project area and that are designed to minimize Project-related construction impacts on soils and minimize erosion.

Wetlands and Waterbodies – This includes portions of the FERC's Procedures that are relevant to the Project area and are designed to minimize Project-related disturbance to waterbodies and wetlands.

The Desert Restoration Plan and the Upland Erosion and Sediment Control sections of the CM&R Plan pertain to construction-related impacts on soils and provide mitigation measures that North Baja would implement to reduce these impacts during construction. These measures include:

- restricting the construction right-of-way width for the B-Line to 105 feet and further reducing the width of the right-of-way in areas with high concentrations of native trees;

- restricting the construction right-of-way width for the IID Lateral to 80 feet where the lateral would be parallel to existing powerlines and to 60 feet where the lateral would be installed between a powerline and a road or within or abutting the traveled portion of county roads;

- preserving the native seed bank by segregating topsoil to a depth of 2 to 8 inches in non-agricultural areas where grading would be conducted and redistributing material over the right-of-way during cleanup;

- preserving and redistributing cut vegetation over the right-of-way;

- restricting grading and crushing or cutting of vegetation where possible, leaving rootstock and minimizing soil disturbance;

- imprinting areas with a sheepsfoot or similar device to provide indentations to catch water/seed and anchor native plant material that has been respread over the right-of-way, thereby aiding in natural revegetation and erosion control;

- segregating and redistributing topsoil to its actual depth up to 2 feet in agricultural areas;

- maintaining water flow in crop irrigation systems, unless shutoff is coordinated with affected parties;

- testing for and alleviating compacted soils in agricultural and residential areas (details regarding North Baja's compaction testing plans are included in its CM&R Plan [see Appendix E] and discussed below);

- implementing procedures to prevent or minimize the spread of noxious weeds or other undesirable species by limiting disposal of plant materials to suitable areas and cleaning of clearing and grading equipment before entering native species areas; and

- placing intact salvaged plant materials or rock at specific locations where visual blocking would be employed to discourage use of the pipeline right-of-way by unauthorized vehicles.

The CM&R Plan modifies or omits several measures of the FERC's Plan because portions of the FERC's Plan are not applicable due to the arid climate crossed by the pipeline route. North Baja states that the arid climatic conditions in the Project area would limit the use or decrease the practical effectiveness of many traditional erosion control measures. For example, North Baja does not propose to install temporary erosion controls because of the level topography along most of the route and the stony soil where slopes are somewhat steeper along portions of the B-Line route east of SR 78. In the Project area, rainfall amounts average less than 5 inches annually. The infrequent rain events often occur in intense cloudbursts that result in flash flooding, which renders typical erosion controls (silt fence, hay bales, etc.) ineffective.

The Agency Staffs have reviewed North Baja's CM&R Plan and generally agree with the level of mitigation proposed and the appropriateness of the differences between the CM&R Plan and the FERC's Plan. Additionally, while the BLM, the FWS, and the CDFG were consulted during development of the

CM&R Plan for the A-Line, it is possible that these agencies may include additional construction or mitigation measures when issuing permits and agreements for the proposed Project, including the CDFG's SAA (see Section 4.3.3.4). In accordance with its CM&R Plan, North Baja would prepare and submit an updated CM&R Plan before construction if necessary to incorporate any additional requirements of Federal, State, and local permits.

Although revegetation of the disturbed areas in native desert habitats would be slow, the rate of revegetation would be primarily attributable to the arid climate. Artificial revegetation is not practical on a large scale due to the extremely arid conditions. If North Baja implements its CM&R Plan, the Project would not result in significantly increased erosion rates and a reduction of soil productivity by compaction or soil mixing to a level that would prevent successful rehabilitation and eventual re-establishment of vegetative cover to the recommended or preconstruction composition and density. Further, if the mitigation measures in the CM&R Plan that pertain to agricultural areas are implemented, the Project would not result in a significant reduction in agricultural productivity for longer than 3 years as a result of soil mixing, structural damage, or compaction.

The CM&R Plan includes the measures of the FERC's Plan to mitigate potential soil compaction in residential and agricultural areas, and also includes a measure to conduct compaction testing and alleviate compaction along the IID Lateral if fine-textured soils, as identified by the EI or the BLM, are encountered. Additional measures to mitigate construction-related impacts on soils are included in North Baja's Dust Control Plan, which is described in Section 4.12.4 and provided in Appendix L. Fugitive dust disturbed by construction is a visible indication of soil loss through wind erosion. The Dust Control Plan outlines measures that would be implemented to control fugitive dust during construction.

North Baja's SPCC Plan specifies cleanup procedures to minimize the potential for soil contamination from spills or leaks of fuels, lubricants, and coolants used during construction (see Appendix F). Implementation of North Baja's SPCC Plan would effectively reduce the potential impact on soils from spills of the hazardous materials used during construction and would not significantly increase the exposure of human or ecological receptors to potentially hazardous levels of chemicals.

North Baja would employ full-time EIs to ensure compliance with the CM&R Plan, the SPCC Plan, the Dust Control Plan, and other Project-specific plans and specifications during construction and restoration. At least two EIs would be assigned to each construction spread. The EIs would have peer status with other activity inspectors and would have the authority to stop and order corrective actions for activities that violate the environmental conditions of the FERC Certificate or other authorizations. Implementation of North Baja's proposed mitigation measures would reduce impacts on soil resources to less than significant levels.

4.2.4 Site-specific Impact and Mitigation

Pipeline Facilities

As indicated in Table 4.2.2-1, about 7 percent of the soils that would be crossed by the B-Line may exhibit shallow depth to bedrock. Based on North Baja's experience during construction of the A-line, shallow bedrock would be a concern primarily in the vicinity of MP 29.5 and would likely require blasting in order to excavate the trench through this area. Specific construction procedures would be used to minimize impact on soils. Excess rock would be removed from the upper 12 inches of soil to the extent practicable in cropland, hayfields, pastures, residential areas, and other areas at the landowner's request. Excess rock would not be windrowed along the right-of-way unless written approval was obtained from landowners or land management agencies. All blasting would be done according to North Baja's construction specifications for blasting (see Sections 2.3.2 and 4.1.2, and Appendix I). North

Baja's blasting specifications include detailed requirements for the use, storage, transportation, and handling of explosives; therefore, the Project would not significantly increase the exposure of human or ecological receptors to explosives.

Other soil limitations that would be encountered during construction of the Project would include 494.4 acres of soils with high water erosion potential. The majority of these soils would occur along the B-Line (454.4 acres), with 3.6 acres affected along the Arrowhead Extension, and 36.4 acres affected along the IID Lateral. In addition, a total of 355.2 acres of soils along the B-Line (162.9 acres), the Arrowhead Extension (0.6 acre), and the IID Lateral (191.7 acres) routes exhibit high wind erosion potential. As discussed in Section 4.2.3, implementation of the mitigation measures outlined in North Baja's CM&R Plan and Dust Control Plan would satisfactorily minimize and mitigate construction-related effects on these soils to less than significant levels.

Comments were received during the scoping process that reported increased erosion along the restored A-Line right-of-way and requested that culverts be installed where dry washes cross Stallard Road. A review of the affected areas indicates that the specific erosion events were not related to the pipeline right-of-way but rather were the result of high intensity runoff in wash areas due to storm-related events. The installation of culverts where washes are crossed by Stallard Road would be an issue to be addressed with Riverside County, which is the agency that has jurisdiction over the road. However, the BLM recently identified various degrees of erosion along the A-line in steeply sloped areas south of Stallard Road. North Baja would work with the BLM to correct these areas.

The IID Lateral would cross the ISDRA between MPs 0.0 and 7.0. The sand dunes consist of loose wind-blown sand. North Baja would cross portions of this area in association with the HDDs of the two All-American Canal crossings; however, the portion of this area between the two canals would be crossed using conventional overland construction methods. Crossing this area would require a wider trench to be excavated because trench walls in unconsolidated, unstable soils tend to collapse. Despite the need for a wider trench, North Baja anticipates that it would be able to construct through this area within its proposed 80-foot-wide construction right-of-way. Therefore, the presence of unconsolidated and unstable soils would not result in the need for a significantly wider construction right-of-way.

The loose sandy soil conditions in this area could increase the potential for pipe exposure. North Baja proposes to bury the IID Lateral 6 feet deep between MPs 2.7 and 5.7, which includes the area most susceptible to blowing/shifting sands. This added depth of cover would reduce the potential for pipe exposure; therefore, the presence of unconsolidated and unstable soils would not result in an increased potential for pipe exposure during operations.

Because a significantly wider construction right-of-way would not be required and North Baja's proposal to increase the pipeline depth would reduce the potential for pipeline exposure, impacts related to the unconsolidated and unstable soils crossed would be less than significant.

A significant impact on irrigation systems is not anticipated. The majority of irrigation drains and canals would not be affected by construction because they would be crossed either by boring underneath the culverts along 18th Avenue or by installing the pipeline between the drain culvert and the road. Additionally, North Baja would contact landowners in the Palo Verde and Imperial Valleys regarding the location of other irrigation systems that could be affected during construction and would maintain water flow in these systems or coordinate disruption of irrigation flow or any shutoff times with the affected landowners. However, Rannells Drain along the B-Line and two unnamed canals along the Arrowhead Extension would be crossed using the open-cut method (see Section 2.3.2). The impact on Rannells Drain and the two unnamed canals would be temporary and mitigated by restoring the banks and bed to their original configurations. Because of the steepness of the banks at the Rannells Drain crossing,

erosion control fabric would be used for bank stabilization purposes upon completion of pipeline construction at this crossing. Implementation of these mitigation measures would reduce impacts on irrigation systems, Rannells Drain, and the two unnamed canals to less than significant levels.

Between MPs 0.0 and 0.2 and MPs 0.8 and 11.6, the B-Line would cross soils designated as prime farmland and farmland of Statewide importance. In total, 65.4 acres of designated farmland would be temporarily affected along the B-Line. No permanent impacts on prime farmland or farmlands of Statewide or local importance would occur in association with the construction and operation of facilities associated with the B-Line.

The Arrowhead Extension would cross about 1.1 miles of agricultural land between MPs 1.0 and 2.1 that would result in temporary impacts on about 16.1 acres of soils designated as prime farmland and farmland of Statewide importance. Construction of the pig launcher, taps, and crossover piping would permanently affect 0.8 acre of prime farmland and farmland of Statewide importance. The Blythe-Arrowhead Meter Station and pig receiver would be within the fenceline of the existing SoCalGas Blythe Compressor Station site and would not affect farmland soils. This loss would be much less than 0.1 percent of the agricultural lands in the Palo Verde Valley and would be less than significant.

Soils designated as prime farmland and farmland of Statewide importance would be crossed at numerous locations along the IID Lateral between MPs 27.9 and 46.0. In total, about 21.7 acres of designated farmland would be temporarily affected along the IID Lateral. No permanent impacts on prime farmland or farmlands of Statewide or local importance would occur in association with the construction and operation of facilities associated with the IID Lateral.

North Baja would avoid significant impact on prime farmland or farmlands of Statewide or local importance by locating the B-Line, portions of the Arrowhead Extension, and the IID Lateral facilities in road shoulders adjacent to agricultural areas. Impacts that would occur on these soils and other active farmlands would be mitigated by segregating 1 to 2 feet of topsoil before installation of the pipeline and reapplying topsoil over the surface of the right-of-way during restoration as outlined in the CM&R Plan (see Appendix E). In addition, North Baja would implement a post-construction crop monitoring program to maintain the level of production of the affected soils. The program would evaluate crop productivity and success for a period of at least 2 years following construction. North Baja would prepare activity reports during this period documenting any problems identified by North Baja or the landowner and describing corrective actions taken to remedy these problems. These reports would be submitted to the FERC and the CSLC on a quarterly basis, as stipulated in the CM&R Plan. The FERC and CSLC staffs would also monitor the right-of-way after construction. If after 2 years it is determined that cropland crossed by the pipeline has not been restored successfully, North Baja would implement additional restoration measures. Implementation of North Baja's CM&R Plan would reduce impacts on agricultural land to less than significant levels.

For the portions of the Project that cross BLM lands, the BLM would need to assess potential impacts on rangeland health resulting from construction of the Project. One of the attributes included in the rangeland health assessment is soil/site stability (i.e., the capacity of the site to limit redistribution and loss of soil resources by wind and water [Pellant et al. 2005]). As discussed above, soil disturbance during pipeline construction could expose the soils to the erosional forces of wind and water thus affecting soil stability. Implementation of erosion control measures and the revegetation plan contained in North Baja's CM&R Plan (see Section 4.2.3 and Appendix E) would effectively mitigate impacts on soil and avoid impacts on rangeland health.

4.2.5 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on soils identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.3 WATER RESOURCES

4.3.1 Significance Criteria

An adverse impact on groundwater would be considered significant and would require mitigation if Project construction or operation would:

- alter the flow of groundwater to local springs or wetland areas;
- interrupt or degrade groundwater used for private or municipal purposes; or
- result in either short- or long-term violation of Federal, tribal, or State agency numerical water quality standards or water quality objectives.

An adverse impact on surface waters would be considered significant and would require mitigation if Project construction or operation would:

- result in either short- or long-term violation of Federal, tribal, or State agency numerical water quality standards or water quality objectives;
- alter channel bed armoring, bank composition, or stream hydraulic characteristics such that it results in short- or long-term erosion or so that the banks of a waterway must be armored to reduce short- or long-term erosion;
- cause the resuspension of contaminated bottom sediments that would degrade the quality of water downstream in violation of Federal, tribal, or State agency water quality standards;
- result in increased sedimentation that adversely affects the operation of irrigation water control structures, gates, or valves or the quality of municipal water supply reservoirs;
- reduce streamflow quantity where such a flow change would significantly damage either beneficial uses or aquatic life;
- increase the potential for flooding outside the stream channel;
- place permanent structures within the 100-year floodplain that would be damaged by flooding;
- increase soil or wind erosion rates or sedimentation such that degradation of water quality standards would result; or
- degrade the integrity of structures, such as (bridges, pipelines, and utilities) due to erosion and improper conveyance of stormwater during construction and operation.

4.3.2 Groundwater Resources

4.3.2.1 Existing Groundwater Resources

Groundwater in the vicinity of the North Baja Pipeline Expansion Project is primarily derived from unconsolidated to poorly consolidated alluvial sediments consisting of gravel, silt, sand, and clay

associated with a complex system of basin-fill deposits (FERC and CSLC 2002, Planert and Williams 1995, Robson and Banta 1995). Many desert basins are characterized by broad alluvial fans and plains sloping to playas, creating closed drainage basins that are usually dry. Hydrologic characteristics within these desert basins can differ considerably from basin to basin and within basins. The majority of the groundwater underlying the proposed facilities is derived from imported water from the Colorado River that is used for irrigation. Other local uses of groundwater in the Project area include industrial and commercial processes and municipal and domestic water supplies. Small amounts of groundwater may also be found in the underlying bedrock where it collects in fractures or weathered areas, but this groundwater is not considered a primary source.

No EPA-designated sole-source aquifers would be crossed by the proposed Project (EPA 2005, Federal Emergency Management Agency [FEMA] 2005). The nearest sole-source aquifer is the Ocotillo-Coyote Aquifer, which is approximately 42 miles west of the terminus of the IID Lateral. No known municipal/public water supply sources, wellhead protection areas, or springs would be crossed (Langer et al. 1984).

B-Line and Arrowhead Extension

The Colorado River Aquifer underlies the majority of the B-Line, the Arrowhead Extension, and associated aboveground facilities, including all of those portions within La Paz County, Arizona and Riverside County, California, and the northern portion of Imperial County, California. The B-Line would cross a watershed described as the Amos Ogilby and Imperial Hydrological Units in the southern portion of Imperial County from about MP 49.5 south to the All-American Canal. Groundwater recharge in these watersheds occurs within Colorado River floodplain alluvial deposits and is hydraulically connected to the river (FERC and CSLC 2002). Other minor sources of groundwater recharge include groundwater inflow from adjacent areas, infiltration of precipitation that falls to the ground surface, infiltration from irrigation ditches and canals, and local runoff from surrounding mountains.

Groundwater depth in the vicinity of the B-Line and the Arrowhead Extension is variable depending on the proximity of the area to the Colorado River or on drainage from irrigated lands (FERC and CSLC 2002). Depths to groundwater were derived from a combination of databases prepared by the USGS (2005) and a series of maps prepared by Langer et al. (1984). Groundwater levels ranging from 9 to 23 feet below the surface have been recorded in the vicinity of the B-Line in the Palo Verde Valley (approximately MPs 0.0 to 12.0), which is close to the Colorado River. Groundwater in the Palo Verde Valley is artificially augmented by irrigation water diverted from the Colorado River. Further south along the B-Line, depth to groundwater tends to increase. Groundwater levels have been recorded at depths greater than 130 feet beneath the Palo Verde Mesa (approximately MPs 12.7 to 20.5), and depths of more than 400 feet below the land surface have been recorded near the Cargo Muchacho Mountains (approximately MP 66.8) and surrounding areas. Even further south along the B-Line, depths to groundwater gradually decrease and have been recorded as shallow as approximately 35 feet below the ground surface in the vicinity of the All-American Canal near MP 79.8 (USGS 2000).

Groundwater quality is influenced by local geology, the effects of agricultural irrigation, and the chemical characteristics of the Colorado River (FERC and CSLC 2002). High concentrations of total dissolved solids ranging from 400 to 3,000 milligrams per liter (mg/l) cause the chemical quality of groundwater in the areas affected by the B-Line and the Arrowhead Extension facilities to be relatively poor (EPA 2006).

IID Lateral

The IID Lateral would cross a terminal sink basin called the Salton Trough, which is a topographic and structural trough that extends from southeastern California into Mexico (Planert and Williams 1995). The Salton Trough is approximately 130 miles long and 70 miles wide and is a landward extension of the depression that is partially filled by the Gulf of California. The Salton Trough is further divided in California into two parts by the Salton Sea: the Imperial Valley to the south and the Coachella Valley to the north. The IID Lateral would pass entirely through the southern Imperial Valley, which is the largest area of desert irrigation in the United States.

The most important source of groundwater recharge to the Imperial Valley is the Colorado River, with minor recharge resulting from groundwater inflow from adjacent areas (especially canal seepage), infiltration of runoff from surrounding mountains, and local runoff (Planert and Williams 1995). The salinity of the Colorado River is the most important water quality issue in the basin, with concentrations as high as 900 milligrams per liter (mg/l); major ionic constituents are calcium, sulfate, and chloride (USGS 2005). Groundwater within the Imperial Valley generally flows north toward the Salton Sea. Depths to groundwater range between 20 and 310 feet below the ground surface and generally tend to decrease moving from east to west (USGS 2005, California Department of Water Resources [CDWR] 2005).

4.3.2.2 General Impact and Mitigation

Although activities associated with construction of the Project could affect groundwater resources, most potential impacts on groundwater resources would be avoided or minimized by the use of both standard and specialized construction techniques as described in Section 2.3. For the majority of the Project, groundwater levels are generally well below the land surface that would be affected by construction activities. However, shallow aquifers underlying certain construction areas (e.g., the Palo Verde Valley, portions of the route in the Cibola NWR, and the Imperial Valley) could experience minor impacts from clearing, grading, trenching, dewatering, soil mixing, and compaction that could temporarily alter overland flow and groundwater recharge. Near-surface soil mixing and compaction caused by heavy construction vehicles could also reduce the soil's ability to absorb water. These impacts would be temporary and minor and would not significantly affect groundwater resources or groundwater quality. In accordance with North Baja's CM&R Plan, vegetation would be cleared only where necessary. After completion of construction, North Baja would restore the ground surface as closely as practicable to original contours and allow vegetation to regenerate to provide restoration of preconstruction overland flow and recharge patterns. Routine operation and maintenance of the Project facilities would not result in disturbance or contamination of groundwater resources.

Unconfined aquifers and shallow groundwater areas could be vulnerable to contamination caused by inadvertent surface spills of petroleum or hazardous materials used during construction. Accidental spills and leaks of hazardous materials associated with equipment trailers; the refueling or maintenance of vehicles; and the storage of fuel, oil, and other fluids pose the greatest risk to groundwater resources. If not cleaned up, contaminated soils would continue to leach and add pollutants to groundwater long after a spill has occurred. Impacts associated with spills or leaks of hazardous liquids could be avoided or minimized by restricting the location of refueling and storage facilities and by requiring cleanup in the event of a spill or leak.

North Baja's SPCC Plan addresses preventive and mitigative measures that would be used to avoid or minimize the potential impact of petroleum or hazardous material spills during pipeline construction. Some pertinent measures in North Baja's SPCC Plan include:

- proper storage and handling of containers and tanks, including storage of containers with hazardous liquids in secondary containment structures;
- restricting liquid transfer, vehicle and equipment washing, and refueling within 100 feet of wetlands and waterbodies, 200 feet of water supply wells, and 400 feet of municipal or community water wells or protected wellhead or watershed areas;
- training of all employees on the contents of the SPCC Plan;
- maintaining emergency spill kits in all service vehicles;
- periodic inspection of vehicles and equipment for leaks;
- established release notification and emergency response procedures; and
- proper disposal of contaminated materials and soils and replacement of excavated contaminated soil with clean soil.

Implementation of North Baja's CM&R and SPCC Plans would reduce the potential for construction or operation of the Project to result in either short- or long-term violation of Federal, tribal, or State agency numerical water quality standards or water quality objectives to less than significant levels.

In locations where groundwater is close to the land surface (6 to 8 feet deep), the trench excavation could intersect the water table. In these areas, trench dewatering may be required. The potential effect on users of the aquifer would depend on the rate and duration of pumping and the location of the activity, but is expected to be minor. Pipeline construction activities within a particular location are typically completed within several days; consequently, potential impacts would be localized and temporary and water levels would be quickly re-established when backfilling is complete. However, alteration of the natural soil strata could potentially result in new groundwater migration pathways away from surface waterbodies. Implementation of North Baja's CM&R Plan, which requires the use of trench breakers or installation of trench plugs at the edges of waterbodies, would eliminate these potential impacts; therefore, the potential for the Project to alter the flow of groundwater to local springs or wetland areas would be less than significant.

During construction of the B-Line, the Arrowhead Extension, and the IID Lateral, substantial amounts of groundwater may be encountered in the vicinity of the Colorado River and near canal crossings. Additionally, substantial amounts of groundwater may be encountered along the IID Lateral in the agricultural areas from MPs 28 to 46 near canal and drain crossings. To control the influx of groundwater into bore pits, the use of well points in addition to standard sump pump dewatering may be necessary. The water from these dewatering operations would be discharged to dewatering structures and/or otherwise filtered and discharged into field drains or canals. North Baja would obtain the necessary permits to perform these operations. Minor fluctuations in local groundwater levels may occur, but would be temporary and minor.

Although no areas of known groundwater contamination would be affected by construction of the Project facilities, unanticipated, pre-existing contaminated groundwater could be encountered during construction. In the event contaminated groundwater or contaminated soils are encountered as evidenced by refuse and/or other debris in the trench, discoloration, odor, or other signs at these locations or other locations along the pipeline routes, additional observations for the presence of a chemical sheen, free product, and chemical odor would be made and recorded before any further construction activity. Field

observations would be conducted to determine the nature of the contamination, appropriate disposal/treatment options, and the need for sampling. If contaminated groundwater and/or soils are encountered, North Baja would stop work and consult with the appropriate agencies, including the CRWQCB and the Riverside and Imperial Counties Departments of Health on a plan to proceed. The plan would include provisions for characterizing the contaminants, appropriate health and safety measures for workers, and proper discharge of the groundwater. North Baja would notify the appropriate agencies of any discoveries of pre-existing contamination and would perform evaluations on the amount and composition of the contamination. Once the evaluations are completed, North Baja would coordinate with the appropriate agencies to determine appropriate actions and disposal of affected materials.

4.3.2.3 Water Supply Wells

Before construction, North Baja would conduct a field survey to identify public and private water supply wells within 150 feet of the proposed construction work area. This is the distance specified in Title 18 CFR Part 380.12(d)(9). However, a preliminary identification of water supply wells in the vicinity of the Project was conducted by contacting State agency staff and reviewing well location maps and databases at the CDWR and the USGS. Based on this review, 10 water supply wells would be within 150 feet of the centerline of the pipeline facilities (USGS 2005, CDWR 2005). All of these wells would be along the B-Line. Nine of the 10 wells have no records of groundwater data after 2001 and are likely non-operational wells. The exception is well ID #007S023E14C019S at MP 2.5. Table 4.3.2-1 lists the wells within 150 feet of the B-Line by milepost and depicts the distance from the centerline and depth to groundwater.

TABLE 4.3.2-1

Water Wells Within 150 Feet of the Centerline of the Pipeline Facilities Associated with the North Baja Pipeline Expansion Project

Facility/Well ID# [a]	Milepost	Distance from Centerline (feet) [b]	Groundwater Depth (feet)
B-Line			
007S023E14C019S	2.5	74	12.4
007S023E15A001S	2.6	116	ND [c]
007S023E08R001S	4.5	131	ND
007S023E17D002S	5.4	11	ND
007S022E12R001S	6.5	17	ND
007S022E14A001S	7.4	23	ND
007S022E10R001S	8.5	147	ND
007S022E15D001S	9.4	7	ND
007S022E17C001S	11.0	92	ND
007S022E18A001S	11.6	27	ND
Arrowhead Extension		-None-	
IID Lateral		-None-	

[a] Uses township-range-section nomenclature based on the San Bernardino Base and Meridian.

[b] Accuracy of global positioning system data may be as high as +/- 30 meters depending on satellite coverage and geographic information system resolution.

[c] ND = No current groundwater data available for the period 2001 through 2006.

During construction of the A-Line, only one well was identified within 150 feet of the proposed construction work area. This well, probably inactive based on lack of groundwater data since 2001, is north of 18th Avenue near MP 7.9 and is assumed to be associated with an existing residence.

Potential impacts on wells within 150 feet of the construction work area could include: localized decreases in groundwater recharge rates, changes to overland water flow, contamination due to hazardous materials spills, decreased well yields, decreased water quality (such as an increase in turbidity or odor in the water), interference with well mechanics, or complete disruption of the well. These impacts could result from trenching, equipment traffic, or blasting. Many variables such as well depth, well age, surficial geologic material type, and aquifer characteristics would factor into whether a well would actually be impacted by the Project. The primary variable, however, would be the distance between the construction activity and the well. Wells further than 150 feet from the construction work area would be unaffected by the Project under most conditions.

With the landowner's permission, North Baja would test water wells within 150 feet of the construction work area before construction to determine baseline flow conditions as a means of determining any potential construction-related impacts. Where impacts are reported by landowners, North Baja would conduct post-construction water well tests. If it is determined that construction activities have impaired a well's water quality or yield, North Baja would either provide bottled water for drinking and arrange for an alternate source of water (such as a water truck) for other household uses, temporarily relocate the landowner until the water supply is restored, or compensate the landowner for losses. If water quality or yield is permanently impaired as a result of construction activities, North Baja would arrange for a new well to be drilled or compensate the landowner.

The potential for contaminating wells due to spills of petroleum or hazardous materials is generally low because of the relatively small volume of such materials present during construction. Refueling and the storage of hazardous substances would be prohibited within 200 feet of a private well and 400 feet of a community or municipal well. The potential for impacts due to spills would be further reduced by implementation of North Baja's SPCC Plan as described in Section 4.3.2.2.

As discussed previously, blasting is only anticipated near MP 29.5. No water wells have been identified within 0.5 mile of this location. Should additional water wells be identified in the vicinity of a location requiring blasting, North Baja's use of proper blasting techniques, which would fracture bedrock only to the point necessary for removal, would limit the effect of the blast to a local area above the aquifer in the proximity of the trenchline (see Appendix I). Consequently, it is unlikely groundwater quality would be affected.

In summary, no municipal uses of groundwater were identified within the vicinity of the North Baja Pipeline Expansion Project, and only 10 private wells have been identified within 150 feet of the proposed facilities. Because North Baja would implement the measures contained in its CM&R and SPCC Plans and would identify and monitor any water wells within 150 feet of the construction work area, the potential for the Project to interrupt or degrade groundwater used for private or municipal purposes is less than significant.

4.3.3 Surface Water Resources

4.3.3.1 Existing Surface Water Resources

Pipeline Facilities

The North Baja Pipeline Expansion Project would cross two watersheds: the Imperial Reservoir Watershed and the Salton Sea Watershed. The B-Line would cross the Imperial Reservoir Watershed between MPs 0.0 and 49.5 and the Salton Sea Watershed between MPs 49.5 and 79.8, the Arrowhead Extension would lie entirely within the Imperial Reservoir Watershed, and the IID Lateral would lie entirely within the Salton Sea Watershed. Both watersheds have been classified as Category I watersheds

in California's Unified Watershed Assessment (NRCS 2005), which is part of the Clean Water Action Plan. Category I watersheds are high priority candidates for restoration activities to improve impaired water quality or other impaired natural resource goals, with an emphasis on aquatic systems.

Surface waters are classified by the States by the identification of beneficial uses of surface waters. This identification is based strictly on documentation of the existence of those uses, which can also include potential future and intermittent uses. Such uses are protected by the States through the development of water quality objectives for those uses. The beneficial uses of surface waters in the Project area include agricultural irrigation; municipal and domestic water supply; industrial service supply; groundwater recharge; contact (e.g., swimming, wading, waterskiing) and non-contact (e.g., boating, beachcombing, hiking) recreation; freshwater fish habitat; wildlife habitat; and preservation of rare, threatened, or endangered species (CRWQCB 1994, NRCS 2005). The water quality of the surface waters in the Project area is generally poor; these waters are highly saline or alkaline because of the predominance of sedimentary rocks, high evaporation rates, and low precipitation. The primary purpose of the agricultural drains in the Project area is for the collection, transport, and storage of drainage waters from irrigated cropland to maintain adequate soil salinity balance for agriculture (CRWQCB 1994).

All of the waterbodies within the Imperial Reservoir and Salton Sea Watersheds, including agricultural canals and drains, are listed by the California State Water Resources Control Board (CSWRCB) as impaired (California Environmental Protection Agency [CEPA] 2005). This impairment is due to elevated pesticide and selenium levels in fish tissues and toxic bioassay results that identified high pesticide levels in other aquatic organisms. Agricultural runoff from irrigation practices has been identified as the primary source of impairment (CEPA 2005), and contaminated sediments may exist in agricultural canals and drains from extensive pesticide use on irrigated croplands (CRWQCB 1999).

Surface waters in the Project area consist of perennial rivers, man-made irrigation canals and ditches/drains, and desert dry washes. Occasional high-intensity rainfalls contribute to the highly turbid flows that are observed in streams and rivers in the region. Dry washes flow primarily during these precipitation events. Flash floods can be caused by intense, short periods of rainfall and can move large loads of sediment, gravel, and larger debris over wide areas of drainage canals and desert washes.

A total of 2 perennial waterbodies, 73 irrigation canals and drains, and 265 dry desert washes would be crossed by the proposed pipeline facilities. Of these, the B-Line would cross 1 perennial waterbody (the Colorado River) and 31 irrigation canals and drains (including the All-American Canal). All 265 dry washes that would be crossed by the Project occur along the B-Line. The Arrowhead Extension would cross the C-05 Canal and two unnamed canals. The IID Lateral would cross 1 perennial waterbody (the Alamo River) and 39 irrigation canals and drains, including the All-American Canal (two crossings) and the East Highline Canal. Table 4.3.3-1 lists the perennial waterbodies and irrigation canals and drains by milepost, type, crossing width, fishery classification, and proposed crossing method. The dry washes that would be crossed by the B-Line are listed in Appendix M.

No potable water intake sources are within 3 miles downstream of the proposed waterbody crossings (Taylor 2005). However, the East Highline Canal delivers municipal water to the City of Holtville via an intake on Pear Canal (Mendez 2005), which is approximately 6 miles from where the IID Lateral would cross the East Highline Canal.

Neither of the two perennial rivers (the Colorado River and the Alamo River) that would be crossed by the Project are listed on the Nationwide Rivers Inventory or recognized as State-designated scenic rivers (NRCS 2005).

TABLE 4.3.3-1

Perennial Waterbodies, Canals, and Drains Crossed by the North Baja Pipeline Expansion Project

Facility/ Approximate Milepost	Waterbody	Type	Crossing Width (feet)	Fishery Type	Proposed Crossing Method
B-Line					
0.2	Colorado River	Perennial	790	Warmwater	HDD [a]
1.3	D-10-13-42E	Delivery Canal	9	NC [b]	Dry [c]
1.7	D-10-13-45E	Delivery Canal	15	NC	Dry
1.9	D-10-13-47E	Delivery Canal	15	NC	Dry
2.2	D-10-13-49E	Delivery Canal	15	NC	Dry
2.3	D-10-13 (F)	Canal	40	NC	Dry
2.7	D-10-11-2N	Delivery Canal	2	NC	Dry
2.9	D-10-Siphon 48	Canal	15	NC	Dry
3.2	East Side Drain	Drain	2	NC	Dry
3.4	Goodman Drain	Drain	50	NC	Dry
3.6	D-Siphon-89	Canal	40	NC	Dry
3.9	Private	Canal	2	NC	Dry
4.4	D-19	Canal	15	NC	Dry
4.7	D-19-4N	Delivery Canal	2	NC	Dry
5.2	Lovekin Drain	Drain	30	NC	Dry
5.4	Private	Canal	2	NC	Dry
5.9	C-Siphon-56	Canal	42	NC	Dry
6.9	Central Drain	Drain	35	NC	Dry
7.9	C-05 Canal	Canal	17	NC	Dry
8.2	Private	Canal	9	NC	Dry
8.9	West Side Drain	Drain	40	NC	Dry
9.5	C-03 Canal	Canal	35	NC	Dry
9.9	C-03-64N	Delivery Canal	35	NC	Dry
10.3	C-03-16-3N Canal	Delivery Canal	40	NC	Dry
10.5	C-03-16 Canal	Canal	2	NC	Dry
10.7	C-03-16-6S	Delivery Canal	15	NC	Dry
10.9	C-03-16-1	Canal Heading	6	NC	Dry
10.9	C-03-16-8W	Delivery Canal	6	NC	Dry
11.2	Private	Canal	15	NC	Dry
11.4	Rannells Drain	Drain	60	NC	Open Cut
11.4	Private West Side of Drain	Canal	15	NC	Dry
79.8	All-American Canal	Canal	200	NC	HDD
Arrowhead Extension					
0.5	Unnamed Canal	Canal	10	NC	Open Cut
1.5	Unnamed Canal	Canal	10	NC	Open Cut
1.5	C-05 Canal	Canal	53	NC	Dry
IID Lateral					
2.4	All-American Canal	Canal	200	NC	HDD
8.1	All-American Canal	Canal	200	NC	HDD
12.5	All-American Canal Lateral 7	Canal	17	NC	Dry
27.5	East Highline	Canal	190	NC	HDD
28.4	Warren 2E	Drain	4	NC	Dry
28.5	Lateral 7 / Gate 183	Canal	3	NC	Dry
29.1	Lateral 7 / Gate 183A	Canal	2	NC	Dry
29.4	Warren 2C	Drain	3	NC	Dry

TABLE 4.3.3-1 (cont'd)

Perennial Waterbodies, Canals, and Drains Crossed by the North Baja Pipeline Expansion Project

Facility/ Approximate Milepost	Waterbody	Type	Crossing Width (feet)	Fishery Type	Proposed Crossing Method
31.4	Warren 1	Drain	4	NC	Dry
32.3	Alamo	Canal	7	NC	Dry
32.3	Alamo River	Perennial	52	NC	Dry
33.6	Barbara Worth	Drain	3	NC	Dry
33.9	Lateral 12	Canal	6	NC	Dry
34.5	Ash Main	Canal	6	NC	Dry
34.9	Ash Lateral 30	Canal	6	NC	Dry
35.9	Ash Lateral 39	Canal	4	NC	Dry
36.4	Ash Lateral 39 (30A)	Canal	6	NC	Dry
36.9	Ash Lateral 34	Canal	6	NC	Dry
37.2	South Central	Drain	6	NC	Dry
38.0	Ash Lateral 33	Canal	6	NC	Dry
38.2	Ash Lateral 36/Gate 151	Canal	3	NC	Dry
38.4	Central 2A	Drain	3	NC	Dry
38.4	Ash Lateral 36/Gate 151C	Canal	3	NC	Dry
38.9	Central 2C	Drain	4	NC	Dry
38.9	Ash Lateral 15	Canal	6	NC	Dry
38.9	Unnamed	Drain	8	NC	Dry
39.2	Unnamed	Drain	7	NC	Dry
39.2	Ash Lateral 37	Canal	8	NC	Dry
39.4	Unnamed	Drain	12	NC	Dry
39.4	Ash 157	Drain	14	NC	Dry
40.3	Acacia	Drain	4	NC	Dry
40.4	Acacia	Canal	7	NC	Dry
41.9	Acacia Lateral 6A	Canal	3	NC	Dry
42.2	Unnamed	Drain	4	NC	Dry
42.5	Acacia Lateral 8	Canal	3	NC	Dry
43.4	Acacia 6A	Drain	6	NC	Dry
44.1	Alder Lateral 7	Canal	17	NC	Dry
44.6	Alder	Canal	11	NC	Dry
44.8	Central 3	Drain	6	NC	Dry
45.6	Dogwood	Canal	12	NC	Dry

[a] HDD = Horizontal directional drill.

[b] NC = No fisheries classification.

[c] Dry crossings would include boring beneath the existing canals and drains that are enclosed inside drain culverts or installing the pipeline between the drain culvert and the road.

The North Baja Pipeline Expansion Project would cross floodplains at numerous locations along the B-Line and at a single location along the IID Lateral. No floodplains would be crossed by the Arrowhead Extension. The B-Line would cross 4.3 miles of FEMA-designated floodplains at 27 separate locations scattered between MPs 24.0 and 79.6. Seventeen of these locations coincide with dry wash crossings. The floodplain crossings vary in length from 0.02 mile to 0.77 mile with the majority of floodplain crossings less than 0.25 mile long. The IID Lateral would cross one FEMA-designated 100-year flood hazard area at the Alamo River crossing (ESRI & FEMA 2005, FEMA 2005). The only aboveground facility that would be in a floodplain is valve #7 on the B-Line.

Aboveground Facilities

There are no waterbodies at any of the proposed aboveground facility sites, and none of the aboveground facilities would be within a 100-year flood hazard area designated by the FEMA (ESRI & FEMA 2005).

Pipe Storage and Contractor Yards

Use of the proposed pipe storage and contractor yards would not affect surface waters.

Access Roads

Use of the access roads would not affect surface waters.

4.3.3.2 General Impact and Mitigation

Pipeline construction could affect surface waters in several ways. Clearing and grading of streambanks, in-stream trenching, trench dewatering, and backfilling could affect waterbodies through modification of aquatic habitat, increased sedimentation, increased turbidity, decreased dissolved oxygen concentrations, stream warming, or introduction of chemical contamination from fuels or lubricants. The crossing of irrigation canals could interrupt the flow of irrigation water, which could damage crops and reduce crop yields.

Spoil placed in floodplains during pipeline construction could cause an increase in flood levels or could be washed downstream or be deleterious to aquatic life. The removal of floodplain vegetation could reduce the ability of the floodplain to slow flood flows and filter pollutants and suspended sediment, resulting in increased erosion. Occasional high-intensity rainfalls can result in flash flooding within the Project area and can move large loads of sediment, gravel, and larger debris. This flash flooding is typically confined to natural desert washes and manmade drainage canals within the Project area. All construction within floodplains would be temporary, lasting only a few months during clearing, grading, trenching, pipe stringing, welding, lowering in, backfilling, and restoration operations. North Baja states that it would manage spoil piles in accordance with the provisions of the CDFG's SAA. For the A-Line, these provisions required that materials placed in seasonally dry portions of a stream that could be washed downstream or could be deleterious to aquatic life must be removed before inundation by high flows. Dry washes are also regulated by the CRWQCB, which may impose additional stipulations regarding spoil pile management such as requiring North Baja to leave gaps in the spoil piles in dry washes so the washes remain open during construction. In accordance with its CM&R Plan (see Appendix E), North Baja would prepare and submit an updated CM&R Plan before construction if necessary to incorporate any additional requirements of Federal, State, and local permits.

Drainage canals would not be disturbed by construction. All trench spoil would be returned to the trench, and all disturbed areas would be restored to preconstruction contours. Additionally, North

Baja would stabilize the right-of-way following construction. Because the Project would not add permanent fill in the floodplains, potential flood flows would not be displaced and long-term impacts are not anticipated. Valve #7 on the B-Line would be designed according to DOT standards outlined in Title 40 CFR Part 192, which requires valves to be built on a concrete pad that protects the valves from potential flood or erosion damage.

The greatest potential impact of pipeline construction on surface waters would result from the temporary suspension of sediments caused by in-stream construction or by erosion of cleared streambanks and rights-of-way. The extent of the impact would depend on sediment loads, stream velocity, turbidity, bank composition, and sediment particle size. These factors would determine the density and downstream extent of sediment migration. In-stream construction, particularly under flowing conditions, could cause the dislodging and transport of channel bed sediments, which could cause changes in downstream bottom contours and streamflow dynamics that could cause additional erosion and downstream sedimentation. Turbidity resulting from resuspension of sediments from in-stream construction or erosion of cleared right-of-way areas would reduce light penetration and photosynthetic oxygen production. In-stream work could also introduce chemical and nutrient pollutants from sediments if pollutants are present in the sediments at the crossing location and result in the movement of these pollutants to new locations downstream. Resuspension of deposited organic material and inorganic sediments could cause an increase in biological and chemical use of oxygen, resulting in reduced dissolved oxygen concentrations in the affected area. Lower dissolved oxygen concentrations could cause temporary displacement of motile organisms and may kill non-motile organisms within the affected area. Implementation of the measures described in North Baja's CM&R Plan, such as placement of extra work areas, general crossing procedures, spoil pile placement and control, and trench dewatering, would reduce the potential for degradation of downstream water quality as a result of suspension of sediments to less than significant levels.

Clearing and grading of streambanks would expose large areas of soil to erosional forces and would reduce the riparian vegetation along the cleared section of the stream. The use of heavy equipment for construction could cause compaction of near-surface soils, which could result in increased runoff into surface waterbodies. The increased runoff could transport additional sediment into the waterbodies, resulting in increased turbidity levels and sedimentation rates in the receiving waterbody. Erosion prior to right-of-way restoration and revegetation would be controlled through various procedures as described in North Baja's CM&R Plan. These procedures would reduce the potential for erosion, via either wind or water, to less than significant levels.

No alteration of existing drainage patterns would occur during construction that would result in significant erosion or flooding. The capacity of existing or planned stormwater drainage systems, irrigation water control structures, and municipal water supply reservoirs would not be affected. Adherence to the measures and best management practices in North Baja's CM&R Plan would ensure that the Project would not violate narrative and numerical water quality standards or result in polluted runoff.

Refueling of vehicles and storage of fuel, oil, or other hazardous materials near surface waters and spills from equipment working in waterbodies could also create a potential for contamination in waterbodies. If a spill were to occur, immediate downstream users of the water could experience degradation in water quality. Acute and chronic toxic effects on aquatic organisms could also result from such a spill. Implementation of the measures in North Baja's SPCC Plan (see Appendix F) would minimize the potential impact of a spill into surface waters during construction to less than significant levels.

Waterbody Construction and Mitigation Procedures

As discussed in Section 2.3, North Baja's CM&R Plan includes the portions of the FERC's Procedures that are relevant to protect waterbodies in the Project area. These measures include:

- locating all extra work areas at least 50 feet away from waterbody boundaries, where topographic conditions permit;
- limiting clearing of vegetation between extra work areas and the edge of the waterbody to the certificated construction right-of-way;
- maintaining adequate flow rates to protect aquatic life and prevent the interruption of existing downstream uses;
- restricting storage and refueling activities near surface waters;
- restricting spoil placement and control near surface waters;
- limiting use of equipment operating in the waterbody to that needed to construct the crossing;
- adhering to timing restrictions on in-stream work;
- requiring temporary erosion and sediment control at Rannells Drain and the two unnamed canals along the Arrowhead Extension and/or as required by regulatory agencies;
- requiring bank stabilization and recontouring after construction; and
- limiting use of herbicides or pesticides for right-of-way maintenance in or within 100 feet of a waterbody except as specified by the appropriate land management or State agency.

North Baja would obtain waterbody crossing permits from the COE under section 10 of the Rivers and Harbors Act of 1899 and section 404 of the CWA. North Baja would also obtain a section 401 Water Quality Certification from the CRWQCB. In addition, North Baja would obtain an SAA (section 1600 seq. of the California Fish and Game Code) from the CDFG (see Section 4.3.3.4). All construction activities at waterbody crossings would be in accordance with Federal, State, and local permit requirements. North Baja's implementation of its CM&R Plan and these mitigation measures would reduce impacts on surface waters to less than significant levels.

The majority of the waterbodies that would be crossed by the B-Line are dry washes that do not support fisheries, provide critical aquatic habitat, provide migratory passage for aquatic organisms, or have CRWQCB-designated recreation/high quality visual resource values. North Baja would cross these dry washes with typical cross-country construction methods using the same techniques that were implemented to construct the A-Line. As discussed above, the spoil piles would be managed in accordance with the provisions of the CDFG's SAA, which are expected to require that materials placed in seasonally dry portions of a stream that could be washed downstream or could be deleterious to aquatic life must be removed before inundation by high flows. Impacts on dry washes would be limited to the temporary alteration of beds and banks, loss of wildlife habitat, and possibly increased sediment load during initial storm events following construction. Discussions of impacts on the vegetation, wildlife, and special status species associated with these washes are included in Sections 4.5, 4.6, and 4.7, respectively.

With three exceptions, North Baja would cross all flowing waterbodies using the HDD or bore method, or the pipeline would be installed between the drain culverts and a road bed. Specifically, North Baja proposes to cross the Colorado River, the All-American Canal, and the East Highline Canal using the HDD method, which is described in Section 2.3.2. These three waterbodies are greater than 100 feet wide at the crossing location and are discussed in Section 4.3.3.3.

The only flowing waterbody proposed to be crossed using the open-cut method is Rannells Drain, which would be crossed by the B-Line at MP 11.4. Two unnamed canals that would be crossed by the Arrowhead Extension at MPs 0.5 and 1.5 would also be crossed using the open-cut method. The open-cut method is described in Section 2.3.2. Rannells Drain is an agricultural drain in the Palo Verde Valley that is periodically cleared of vegetation by the PVID. North Baja installed the A-Line in 2002 using the open-cut crossing method and the vegetation in the drain has fully recovered. The PVID has indicated it would be willing to perform maintenance clearing/dredging at the Rannells Drain crossing before construction of the B-Line in 2009, as long as it is done between August 2 and March 14 as agreed with the CDFG. Although Rannells Drain is shallow and stagnant, North Baja proposes to use sediment booms downstream of the trenching, which would contain sedimentation to the localized area. In accordance with the CM&R Plan, North Baja would attempt to complete actual in-stream trenching within 48 hours. Any sediment potentially released during construction would be removed the next time the PVID dredges the drain for agricultural purposes (expected to occur 1 year after construction) and would not be a permanent addition to the aquatic environment. Implementation of North Baja's CM&R Plan and the use of sediment booms would reduce the potential for degradation of downstream water quality as a result of suspension of sediments, including contaminated sediments, and any impact on water quality would be temporary.

With the exception of Rannells Drain and the two unnamed canals along the Arrowhead Extension, all other canals and drains along the B-Line are constrained within culverts under 18th Avenue and would either be crossed by locating the pipeline over the culverts and/or by boring underneath them; therefore, construction would avoid disturbance to the beds and banks of these waterbodies. Erosion control devices would be installed in accordance with the CM&R Plan to protect these waterbodies from sedimentation resulting from adjacent construction activities. Construction across canals and drains in the Palo Verde Valley would be completed in accordance with the PVID permit conditions and site-specific agreements with private landowners. Similar construction techniques were used to construct the A-Line resulting in no impact on canals and drains.

All canals and drains that would be crossed by the IID Lateral also flow through culverts. North Baja would cross these canals and drains using the same techniques and mitigation measures as proposed for the canals and drains that would be crossed by the B-Line. The IID Lateral would also cross the Alamo River (MP 32.3), which would be crossed by installing the pipeline in the road shoulder over the culverts that carry the water under Hunt Road. Use of this method would avoid impacts on the Alamo River.

Impacts on the integrity of structures, such as bridges, pipelines, utilities, or culverts due to erosion or conveyance of stormwater during construction or operation would be less than significant through the implementation of the measures proposed in North Baja's CM&R Plan. Additionally, no structures would be placed within waterbodies that could affect normal flow or increase the potential for flooding outside of the waterbody channel.

4.3.3.3 Major and Sensitive Waterbodies

Waterbodies may be considered sensitive to pipeline construction for a number of reasons, including, but not limited to, the width of the crossing; the presence of coldwater aquatic habitat,

fisheries, and imported or special status species; the presence of high-quality recreational, visual resource, or historic value; or the presence of impaired water or contaminated sediments. Waterbodies may also be considered sensitive if they are of special interest to a land management agency, resource agency, or Native American tribe.

Two major waterbodies (greater than 100 feet wide) would be crossed by the B-Line: the Colorado River (MP 0.2, 790 feet wide) and the All-American Canal (MP 79.8, 200 feet wide). The Colorado River is the primary source for most of the irrigation water in the Project area and is regulated by the COE under section 10 of the Rivers and Harbors Act of 1899 for navigable waters. The Colorado River is also considered sensitive because it provides potential habitat for the razorback sucker, a Federal and State-listed endangered fish species (see Section 4.7.4.4). The All-American Canal is under the jurisdiction of the BOR as part of a Federal irrigation system that diverts water from the Colorado River at the Imperial Dam near Yuma, Arizona, and takes it across the Colorado Desert to provide water through a series of smaller canals into the Imperial and Coachella Valleys. The canal is managed by the IID and is scheduled to have a lining installed between 2006 and 2007, before the proposed construction of the IID Lateral (BOR 1994, Remington 2005).

The IID Lateral would cross two waterbodies greater than 100 feet wide: the All-American Canal (MPs 2.4 and 8.1, 200 feet wide) and the East Highline Canal (MP 27.5, 190 feet wide). The East Highline Canal delivers municipal water to the City of Holtville via an intake on Pear Canal (Mendez 2005). This municipal water intake is located at gate 30L, approximately 6 miles downstream from the East Highline Canal crossing.

North Baja proposes to cross the Colorado River, All-American Canal (three crossings), and the East Highline Canal using the HDD method. As discussed in Section 2.3, this technique involves drilling a pilot hole under the waterbody and banks, then enlarging that hole through successive reamings until the hole is large enough to accommodate the pipe. Throughout the process of drilling and enlarging the hole, a slurry made of naturally occurring non-toxic materials, such as bentonite clay and water, would be circulated through the drilling tools to lubricate the drill bit, remove drill cuttings, and hold the hole open. This slurry is referred to as drilling mud. Pipe sections long enough to span the entire crossing would be staged and welded along the construction work area on the opposite side of the waterbody and then pulled through the drilled hole.

Unlike a conventional open-cut crossing, the HDD method would not alter or remove streambed or streambank habitat, cause in-stream sedimentation, or interfere with fish movement. The primary impact that could occur as a result of an HDD is an inadvertent release of drilling mud (frac-out) directly or indirectly into the waterbody. Drilling mud may leak through previously unidentified fractures in the material underlying the river or canal bed, in the area of the mud pits or tanks, or along the path of the drill due to unfavorable ground conditions. Although drilling mud consists of naturally occurring nontoxic materials, such as bentonite clay and water, in larger quantities the release of drilling mud into a waterbody could affect fisheries or other aquatic organisms by settling and temporarily inundating the habitats used by these species. This impact is less likely in fast-moving water, which can disperse the drilling mud over a large area. Moreover, the impact of a frac-out is substantially less than the impact associated with an open-cut crossing.

The Colorado River and the All-American Canal were crossed by the A-Line in 2002 using the HDD method. One minor frac-out occurred on land near the HDD entry point at the Colorado River; no frac-outs occurred in the water. Geotechnical investigations conducted at these crossing locations indicate that stiff cohesive soils are present that are conducive for the HDD crossing method. Preliminary geotechnical investigations conducted at the IID Lateral crossing locations of the All-American and East

Highline Canals indicate that the HDD crossing method would be appropriate at these locations, although North Baja would conduct additional geotechnical investigations to confirm this preliminary assessment.

North Baja has submitted site-specific HDD crossing plans for the Colorado River, All-American Canal, and East Highline Canal that show the drill entry and exit workspaces, the pipe fabrication and stringout areas, and the drill profiles. North Baja has also submitted an HDD Plan (see Appendix G) that describes the HDD process and how it would be monitored. The HDD Plan describes the agency notification procedures and the corrective action and cleanup procedures that would be followed in the event of a frac-out to land and the abandonment procedures that would be followed if it is necessary to abandon the drill hole. Although the HDD Plan addresses corrective action and cleanup procedures for a frac-out to land, it does not provide this information for a frac-out that occurs in the water. Therefore, **the Agency Staffs recommend that:**

- **North Baja shall prepare a revised HDD Plan that specifies the corrective action and cleanup procedures that would be followed in the event a frac-out occurs in the water during an HDD operation. North Baja shall file the revised plan with the FERC and the CSLC for the review and written approval of the Director of the Office of Energy Projects (OEP) and the Executive Officer of the CSLC <u>before commencement of any HDD operation</u>.**

With the implementation of the Agency Staffs' recommendation, North Baja's site-specific crossing plans and HDD Plan would reduce potential impacts to less than significant levels.

4.3.3.4 Streambed Alteration Agreement

The Colorado River, the Alamo River, 73 irrigation drains and canals, and 265 dry desert washes would be crossed by the North Baja Pipeline Expansion Project in California. The CDFG requires project Applicants to notify the CDFG of any activity that would divert, obstruct, or change the natural flow of the bed, channel, or bank (including associated riparian habitat) of a river, stream, or lake; or use material from a streambed prior to the Applicant's commencement of the activity. Streams include, but are not limited to, intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams, and watercourses with subsurface flow. The irrigation drains and canals that would be crossed by the Project are not under the jurisdiction of the CDFG. The issuance of an SAA (section 1600 seq. of the California Fish and Game Code) for projects subject to the CEQA requires CEQA compliance actions by the CDFG as a responsible agency. For the CDFG to process an SAA, the EIS/EIR document must incorporate information regarding impacts on lakes, streams, and associated habitat, including but not limited to the following items:

- a delineation of lakes, streams, and associated habitat that would be directly or indirectly impacted by the proposed Project;
- details on the biological resources (flora and fauna) associated with the lands and/or streams;
- identification of the presence or absence of sensitive plants, animals, or natural communities;
- a discussion of environmental alternatives;
- a discussion of avoidance measures to reduce Project impacts;

- a discussion of potential mitigation measures required to reduce Project impacts to less than significant levels; and

- a discussion of potential adverse impacts from any increased runoff, sedimentation, soil erosion, and/or urban pollutants on streams and watercourses on or near the Project site, with mitigation measures proposed to alleviate such impacts.

The CDFG, as a responsible agency under the CEQA, may consider the local jurisdiction's (lead State agency) Negative Declaration or EIS/EIR for the Project. If the EIS/EIR does not fully identify potential impacts on lakes, streams, and associated resources, and provide adequate avoidance, mitigation, monitoring, and reporting commitments, additional CEQA documentation would be required before execution (signing) of the SAA.

Existing Biological Resources

Biological resources, including wetlands, vegetation, fish, wildlife, and special status species present in streambeds along the proposed pipeline routes are discussed in detail in Sections 4.4, 4.5, 4.6, and 4.7. These discussions include descriptions of habitat types crossed, aquatic and terrestrial species occurring or potentially occurring along the routes, and detailed reviews of protected species and their habitats.

The Colorado River is the prominent surface water feature in the region. This waterbody is a warmwater fishery that provides habitat for several special status species. The riparian vegetation adjacent to the river also provides habitat for a variety of wildlife. Additionally, the Colorado River is an important contributor to the region's biodiversity.

Two vegetative types are generally found along the desert washes crossed by the Project: Sonoran creosote bush scrub and desert wash woodland. Desert wash woodland is the dominant community along well-defined washes. Although not the most common vegetation type crossed by the pipeline routes, desert wash woodland provides greater structural diversity than the Sonoran creosote bush scrub due to its taller vegetation and higher density of vegetation. These characteristics increase wildlife value of the desert wash woodland habitat type.

Biological Studies Conducted

In accordance with the requirements of the SAA, a field-based habitat assessment of the proposed B-Line route was conducted before construction of the A-Line in 2000, and similar habitat assessments of the IID Lateral and the Arrowhead Extension were conducted in 2005 and 2006, respectively, to determine the potential for the occurrence of protected species or their habitats and to ascertain information on vegetative communities within the Project area. Species-specific surveys were conducted for protected species identified by agencies as potentially occurring along the route throughout 2005 and in the Spring of 2006. North Baja's survey methods were designed in consultation with appropriate Federal and State agencies. Additional discussion of surveys for protected species is included in Section 4.7.

Impact Analysis

The evaluation of potential impacts of the Project on streambeds focuses on biological resources associated with the feature, including wetlands, vegetation, fish, wildlife, and special status species. In general, impacts on biological resources within the Project area would be minor and temporary. Direct impacts would be limited to increased erosion and potential sedimentation of the dry washes during initial

storm events following construction. Clearing of riparian vegetation would remove some available habitat and would temporarily displace wildlife species to available adjacent habitats. Some individuals of less mobile species may be killed or injured by construction activities.

No impact on the Colorado River and associated riparian corridor is expected because the river and associated riparian vegetation would be crossed using the HDD method (see Sections 2.3.2 and 4.3.3.3) and the drill entry and exit points would be outside of the riparian zone.

Detailed discussions of potential impact on biological resources resulting from the North Baja Pipeline Expansion Project are included throughout Section 4. Impacts on waterbodies that would be crossed by the Project are discussed in Section 4.3.3, impacts on vegetation are discussed in Section 4.5, impacts on wildlife and aquatic resources are discussed in Section 4.6, and impacts on special status species are discussed in Section 4.7.

Impact Avoidance, Minimization, and Mitigation Measures

Specific mitigation measures to minimize impact on biological resources are discussed in the respective subsections of Section 4. Additionally, North Baja has developed its CM&R Plan (see Appendix E) to minimize impacts on the Project area during construction. The CM&R Plan includes a discussion of proposed restoration activities and other mitigation measures.

4.3.4 Groundwater and Surface Water Uses During Construction

Hydrostatic Test Water

Pipeline integrity would be verified through hydrostatic testing, which is conducted by filling the pipeline with water, pressurizing it, and then checking for pressure loss resulting from leakage. North Baja would use both groundwater and surface water sources for hydrostatic testing.

Water for testing the piping within the Ehrenberg Compressor Station would be obtained from an existing irrigation canal adjacent to the compressor station property or an existing well located on the compressor station site. Both sources are hydrologically connected to the Colorado River. After testing, the water would be discharged into lined irrigation canals at the site or into the D-10 Canal.

North Baja would hydrostatically test the B-Line with water obtained either from the same water sources at the Ehrenberg Compressor Station site or directly from the All-American Canal at the location of the pipeline crossing. The water would be discharged to the All-American Canal when testing is complete.

The Arrowhead Extension and piping within the Blythe-Arrowhead Meter Station would be tested with water obtained from the PVID, local wells, or a commercial water source. After testing, the water would be discharged into the C-05 Canal.

North Baja would hydrostatically test the IID Lateral with water obtained from the All-American Canal through an agreement with the IID to use approximately 7 acre-feet of water and discharge it directly back into the All-American Canal or into other IID irrigation facilities. The quantities of hydrostatic test water required for each facility and the water sources are listed in Table 4.3.4-1.

TABLE 4.3.4-1

Hydrostatic Test Water Requirements for the North Baja Pipeline Expansion Project

Facility	Water Withdrawn (gallons)	Source
B-Line; Ehrenberg Compressor Station	11,201,000 [a]	Existing well at the Ehrenberg Compressor Station site, existing irrigation canal adjacent to the Ehrenberg Compressor Station Site, or the All-American Canal
Arrowhead Extension; Blythe-Arrowhead Meter Station	586,256	Palo Verde Irrigation District, local wells, or commercial water source
IID Lateral	2,366,000	All-American Canal

[a] The water would be withdrawn in phases coinciding with North Baja's proposed construction schedule (see Section 2.4).

The withdrawal of large volumes of water from surface water sources could temporarily affect the recreational and biological uses of the resource if the diversions constitute a large percentage of the source's total flow or volume. Hydrostatic test water withdrawals could also result in the temporary loss of habitat, changes in water temperature and dissolved oxygen levels, and entrainment or impingement of fish or other aquatic organisms. The withdrawal of large volumes of water from private or public water supply wells could exceed the delivery capacity of the system or well.

North Baja would minimize the potential for these effects by adhering to the hydrostatic testing measures included in its CM&R Plan (see Appendix E). These measures include screening intake hoses and regulating the withdrawal of hydrostatic test water at a rate that would not adversely affect aquatic resources or downstream flows. The fill volume would be limited to 1,500 gallons per minute or 10 percent of streamflow, whichever is less. Maintaining the prescribed withdrawal rate would avoid a reduction in streamflow quantity such that there would not be a flow change that would significantly damage either beneficial uses or aquatic life within the source waters. The rate of water withdrawal from private sources would be limited so as not to exceed the delivery capacity of the system or well. Water would be filtered before entering the pipe and no chemicals would be added to the test water. North Baja would conduct all hydrostatic test activities in accordance with its applicable permits (including coordination with the BOR) and DOT pipeline safety regulations as set forth in Title 49 CFR Part 192. Implementation of these measures would reduce impacts on groundwater and surface waters resulting from hydrostatic testing to less than significant levels. Sections 4.6.3 and 4.7 describe potential impacts of hydrostatic testing on aquatic resources and special status species, respectively.

The potential impacts resulting from the discharge of hydrostatic test water include soil erosion and stream scour and subsequent degradation of water quality. North Baja would discharge hydrostatic test water in accordance with the requirements of its NPDES permit. The discharge rate would be regulated, and water would be discharged through energy dissipation devices and sediment barriers, as necessary, to prevent erosion or excessive flow. The use of such devices would prevent adverse effects on the operation of irrigation water control structures, gates, or valves. No municipal water supply reservoirs would be affected by the proposed Project.

Dust Control Water

Water would also be needed to control fugitive dust generated during construction activities (see Sections 4.2 and 4.11 and Appendix L). The water would likely be obtained from the same sources that would provide water for hydrostatic testing activities (see Table 4.3.4-1). The impacts on water resources due to water withdrawals for dust control would be the same as those discussed above for hydrostatic test

water withdrawals. The rate of water withdrawal for dust control would be limited so as not to exceed the delivery capacity of the system or affect downstream uses.

Because North Baja did not provide estimates of the quantities of water that would be required for dust control or specify the water sources or measures to protect aquatic resources during dust control water withdrawals, **the Agency Staffs recommend that:**

- **North Baja shall prepare a revised Project-wide Dust Control Plan that specifies the following:**

  a. the sources of water that would be used for dust control;

  b. the anticipated quantities of water that would be required; and

  c. the measures that would be implemented to prevent fish and fish egg entrainment during dust control water withdrawals.

  The revised Project-wide Dust Control Plan shall be filed with the FERC and the CSLC for the review and written approval of the Director of OEP and the Executive Officer of the CSLC <u>before construction</u>.

4.3.5 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on groundwater and surface water resources identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.4 WETLANDS

4.4.1 Significance Criteria

An adverse impact on wetlands would be considered significant and would require mitigation if Project construction or operation would:

- fill or alter a wetland resulting in an adverse change in its hydrology or soils, or the composition of vegetation of a unique, rare, or special concern wetland community; or

- cause short- or long-term violations of Federal, tribal, or State water quality standards for streams that lead to wetlands, measured as in-stream elevated turbidity readings or decreased dissolved oxygen levels.

4.4.2 Existing Wetland Resources

Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of wetland vegetation adapted for life in saturated soil conditions (COE 1987). Wetlands can be a source of substantial biodiversity and serve a variety of functions that include providing wildlife habitat, recreational opportunities, flood control, and naturally improving water quality.

Wetlands in the Project area are regulated at the Federal and State levels. On the Federal level, the COE has authority under section 404 of the CWA to review and issue permits for activities that would result in the discharge of dredged or fill material into waters of the United States, including wetlands. Section 401 of the CWA requires that proposed dredge and fill activities under section 404 be reviewed and certified by the designated State agency, in this case the CRWQCB, so that the proposed Project would meet State water quality standards.

For the North Baja Pipeline Expansion Project, wetlands were delineated using the methodology described in the COE Wetlands Delineation Manual (COE Manual), Technical Report Y-87-1. The delineations were conducted during July through October 2000 for the wetlands that would be crossed by the B-Line and during September 2005 for the wetlands that would be crossed by the IID Lateral. On September 23, 2005, North Baja met with representatives from the COE who approved of North Baja's wetland delineation methods after reviewing selected wetlands along the B-Line and IID Lateral. A total of 18 COE jurisdictional wetlands (2.7 miles) would be crossed by the proposed Project. No isolated, non-COE jurisdictional wetlands would be crossed by the Project. The location, wetland identifier, FWS National Wetlands Inventory (NWI) classification, crossing length, and approximate acreage that would be affected by construction and operation of each wetland are listed in Table 4.4.2-1.

Pipeline Facilities

Based on North Baja's field surveys, the proposed pipeline facilities would cross 18 wetlands for a total distance of approximately 2.7 miles. The B-Line would cross 13 of these wetlands for a total crossing length of 13,995 feet (2.7 miles). Ten of these would be palustrine scrub-shrub wetlands and three would be palustrine emergent wetlands. Two of the scrub-shrub wetlands are adjacent to the Colorado River between MPs 0.1 and 0.2. Vegetation in these wetlands includes arrow weed, tamarisk, and willow, as well as a few other species. Eight other scrub-shrub wetlands are between MPs 28.2 and 31.3. All of these wetlands are sodic seasonal wetlands with visible efflorescence (salt) covering the surface. The vegetation in these wetlands is dominated by tamarisk, iodine bush, and greasewood.

TABLE 4.4.2-1

Wetlands Crossed by the North Baja Pipeline Expansion Project [a]

Approximate Milepost	County, State	Wetland Identifier	National Wetlands Inventory (NWI) Classification [b]	Crossing Length (feet)	Temporary Construction Impact (acres) [c]	Permanent Impact (acres) [d]
B-Line						
0.1	La Paz, AZ	P26-WE-1	PSS/PEM	250 [d]	0.0	0.0
0.2	La Paz, AZ	P24-WE-1	PSS	50 [d]	0.0	0.0
2.7	Riverside, CA	N55-WE-3	PEM	70	0.2	0.0
28.2	Imperial, CA	N68-WE-29	PSS	360	1.0	0.1
28.3	Imperial, CA	N69-WE-29	PSS	970	2.5	0.2
28.5	Imperial, CA	N70-WE-29	PSS	515	1.7	0.1
28.8	Imperial, CA	CWE-1	PSS	194	0.5	<0.1
29.1	Imperial, CA	CWE-2	PSS	151	0.4	<0.1
29.1	Imperial, CA	CWE-3	PSS	287	0.7	0.1
29.7	Imperial, CA	CWE-4	PSS	9,630	23.2	2.2
31.3	Imperial, CA	CWE-5	PSS	1,483	5.4	0.3
79.8	Imperial, CA	D18-WE-81C	PEM	15 [e]	0.0	0.0
79.8	Imperial, CA	P1-WE-80	PEM	20 [e]	0.0	0.0
Subtotal B-Line				*13,995*	*35.6*	*3.0*
Arrowhead Extension			-None-			
Subtotal Arrowhead Extension				*0.0*	*0.0*	*0.0*
IID Lateral						
27.5	Imperial, CA	East Highline Canal – East	PSS	50 [e]	0.1	0.0
27.6	Imperial, CA	East Highline Canal – West	PSS	50 [e]	0.0	0.0
32.3	Imperial, CA	Alamo River	PSS	340 [r]	0.0	0.0
43.4	Imperial, CA	Acacia Lateral Canal	PSS	40 [g]	0.0	0.0
44.1	Imperial, CA	Alder Lateral Canal	PSS	18 [g]	0.0	0.0
Subtotal IID Lateral				*498*	*0.0*	*0.0*
Project Total				14,493	35.7	3.0

[a] Does not include dry wash crossings (see Section 4.3.3.2).

[b] NWI Wetland Classification (Cowardin et al. 1979):
PSS = Palustrine scrub-shrub
PEM = Palustrine emergent

[c] Acres include the construction right-of-way and extra workspaces.

[d] Permanent wetland vegetation type conversion impacts are associated with scrub-shrub wetlands. Operational requirements (corrosion/leak surveys) allow a 10-foot-wide corridor centered over the pipeline to be maintained in an herbaceous state; however, North Baja does not plan to conduct regular vegetation maintenance.

[e] Would be crossed by horizontal directional drill.

[f] Would not be affected because the pipeline would be installed in the road shoulder outside the wetland boundary.

[g] Would be crossed by the bore method.

Of the three palustrine emergent wetlands that would be crossed by the B-Line, one wetland is in a topographic depression between an irrigation canal levee road and an adjacent agricultural field at MP 2.7. Dominant species in this wetland include nut sedge, Bermuda grass, and barnyard grass. The other two emergent wetlands are on the north and south banks of the All-American Canal at MP 79.8.

The drains that would be crossed in the Palo Verde Valley contain vegetation typical of the wetland communities in the area. However, these drains are not considered jurisdictional by the COE and are occasionally dredged.

No wetlands would be crossed by the Arrowhead Extension.

The IID Lateral would cross five palustrine scrub-shrub wetlands for a total crossing length of 498 feet (less than 0.1 mile). Of these, two wetlands are adjacent to the East Highline Canal between MPs 27.5 and 27.6. Vegetation in these wetlands includes arrow weed, tamarisk, and salt bush. A scrub-shrub wetland dominated by tamarisk is adjacent to the Alamo River at MP 32.3. At the Acacia Lateral Canal crossing at MP 43.4, a tamarisk-dominated scrub-shrub wetland would be crossed. A scrub-shrub wetland associated with the Alder Lateral Canal that is dominated by tamarisk, salt bush, and arrow weed would be crossed at MP 44.1.

Aboveground Facilities

No wetlands are present at any of the aboveground facility sites.

Pipe Storage and Contractor Yards

No wetlands are at the four proposed pipe storage and contractor yards.

Access Roads

No wetlands are along the proposed access roads.

4.4.3 General Impact and Mitigation

Although wetlands occur along both the B-Line and the IID Lateral, construction impacts would primarily occur on wetlands along the B-Line. Construction of the B-Line would affect a total of 35.6 acres of wetlands, including 0.2 acre of emergent wetland and 35.4 acres of scrub-shrub wetlands (see Table 4.4.2-1). Of the total 35.6 acres of disturbance along the B-Line, about 26.9 acres were previously disturbed during construction of the A-Line. About 8.7 acres of new wetland disturbance would result from construction of the B-Line. Four wetlands, two associated with the Colorado River crossing and two associated with the All-American Canal crossing, would be avoided by the use of the HDD crossing method at these river and canal crossings (see Table 4.4.2-1).

Wetland impacts along the IID Lateral would be avoided by use of the HDD crossing method at the East Highline Canal, constructing in the road shoulder outside of the wetland boundary at the Alamo River, or by use of the bore crossing method at the Acacia Lateral and Alder Lateral Canals. However, about 0.1 acre of scrub-shrub wetlands would be affected by North Baja's request to locate extra workspace within the wetland that would be crossed on the east side of the Highline Canal at MP 27.5.

The primary impact of pipeline construction and right-of-way maintenance activities on wetlands would be the temporary and permanent alteration of wetland vegetation. These effects would be greatest during and immediately following construction. Generally, the wetland vegetation community would

eventually transition back into a community with functionality similar to that of the wetland before construction. In emergent wetlands, the herbaceous vegetation would regenerate quickly (typically within 1 to 3 years). Scrub-shrub wetlands could take several years to reach functionality similar to preconstruction conditions depending on the age and complexity of the system. However, given the fast growing species (primarily tamarisk) that dominate the scrub-shrub wetlands that would be affected and the results of North Baja's revegetation monitoring for the A-Line, regeneration is expected to occur within a shorter time frame.

Following revegetation, there would be little permanent impact on emergent wetland vegetation in the maintained right-of-way because these areas naturally consist of and would remain as open and herbaceous communities. Herbaceous wetland vegetation in the pipeline right-of-way is not generally mowed or otherwise maintained, although the FERC's Procedures allows annual maintenance of a 10-foot-wide strip centered over the pipeline. A 10-foot-wide corridor centered over the pipeline could potentially be maintained in an herbaceous condition to facilitate corrosion/leak surveys. Permanent impacts would occur on scrub-shrub wetlands if annual maintenance were conducted within this 10-foot-wide strip preventing the scrub-shrub species in this area from reaching mature size. Approximately 3.0 acres of scrub-shrub wetlands along the B-Line could be permanently affected by vegetation type conversions that would be primarily impacts on the structure of the wetlands (i.e., result in more herbaceous vegetation and fewer shrubs), but would not greatly reduce the existing wetland functions or amount of wetlands in the Project area. However, North Baja does not routinely conduct vegetation maintenance along its right-of-way; therefore, permanent impacts on wetlands would not be expected to occur.

Of the 13 wetlands along the B-Line route, 9 were affected during construction of the A-Line, and 4 were previously avoided by HDD crossings. North Baja conducted post-construction monitoring of the nine previously affected wetlands and reports that the wetlands have rapidly revegetated to their preconstruction condition with both native (salt bush) and non-native (tamarisk) species. Because of the high concentration of salts within these wetlands, few native species are able to colonize these areas, and the presence of tamarisk propagules in the wetland topsoil and in adjacent areas favors recolonization and dominance by this non-native species.

Other types of impacts associated with construction of the pipeline could include temporary changes in wetland hydrology and water quality. During construction, failure to segregate topsoil over the trenchline in non-saturated wetlands could result in the mixing of the topsoil with the subsoil. This disturbance could result in altered biological activities and chemical conditions in wetland soils and could affect the re-establishment and natural recruitment of native wetland vegetation after restoration. In addition, inadvertent compaction and rutting of soils during construction could result from the movement of heavy machinery and the transport of pipe sections. The resulting alteration of the natural hydrologic patterns of the wetlands could inhibit seed germination or increase the potential for siltation. The discharge of stormwater, trench water, or hydrostatic test water could result in silt-laden water entering a wetland and cause the release of chemical and nutrient pollutants from sediments. Construction clearing activities and disturbance of wetland vegetation could also temporarily affect the wetland's capacity to buffer flood flows and/or control erosion. The procedures that North Baja would implement to avoid or minimize these impacts are discussed below.

Wetland Construction and Mitigation Procedures

In general, wetland impacts would be minimized by avoidance, mitigation of impacts, and compensation in accordance with Federal, State, and local regulations.

North Baja would avoid impacts on wetlands by implementing the HDD crossing method at six wetland crossings, and implementing the bore crossing method at two wetland crossings. North Baja would further avoid impacts on wetlands by locating the IID Lateral within existing road shoulders. Additionally, North Baja would avoid and minimize impacts on wetlands by its proposal to install the B-Line 25 feet south and west of North Baja's existing A-Line and work over the existing pipeline.

North Baja would mitigate construction-related impacts by implementing its CM&R Plan as discussed below and by complying with the COE's section 404 and the CRWQCB's section 401 permit conditions. The COE has determined that the North Baja Pipeline Expansion Project would qualify for a nationwide permit under the COE's section 404 permit program. Nationwide permits are a type of general permit issued by the COE for certain activities having minimal impacts. Projects that qualify for a nationwide permit are not required to demonstrate compliance with the section 404(b)(1) guidelines that restrict discharges of dredged or fill material where a less environmentally damaging alternative exists. Should the COE later determine that an individual section 404 permit is necessary, as part of its section 404 permit application North Baja would be expected to demonstrate that it has taken appropriate and practicable steps to minimize wetland impacts in compliance with the section 404(b)(1) guidelines that restrict discharges of dredged or fill material where a less environmentally damaging alternative exists. In order for the COE to determine whether practicable alternatives have been taken, North Baja is required to avoid wetland impacts to the maximum extent possible. When unavoidable wetland impacts are proposed, the COE and the CRWQCB would require that all practicable actions be taken to mitigate those impacts. This is consistent with the CEQ's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (Title 40 CFR Part 1508.20), which defines mitigation to include the following criteria:

- avoiding the impact altogether by not taking a certain action or parts of an action;
- minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- compensating for the impact by replacing or providing substitute resources or environments.

North Baja would implement the wetland construction and restoration measures contained in its CM&R Plan (see Appendix E). The CM&R Plan incorporates many of the measures of the FERC's Procedures that are relevant to protect wetlands within the Project area. Some of the measures pertaining to wetland crossings specified in the FERC's Procedures and/or to which North Baja has committed, include:

- prohibiting storage of hazardous materials, chemicals, fuels, and lubricating oils within a wetland or within 100 feet of a wetland boundary;
- requiring that native vegetation on the right-of-way within wetlands be cut at ground level, leaving existing root systems in place to promote regrowth;
- requiring segregation of the uppermost 1 foot of wetland topsoil from the underlying subsoil in areas disturbed by trenching;

- limiting the operation of construction equipment within wetlands to that equipment essential for clearing, excavation, pipe installation, backfilling, and restoration activities;

- requiring all nonessential equipment to traverse around wetlands using upland access roads where wetland soils are prone to rutting and/or cannot be appropriately stabilized; and

- minimizing duration of construction-related disturbance within wetlands.

One measure of the FERC's Procedures that North Baja did not incorporate into its CM&R Plan is the provision to limit the width of the construction right-of-way in wetlands to 75 feet or less. North Baja did not incorporate this requirement because, of the 18 wetlands that would be affected by the Project, 6 would be avoided by HDD crossings, 2 would be avoided by bore crossings, and 1 would be avoided by constructing within the road shoulder adjacent to the Alamo River. The one emergent wetland that would be affected would be crossed within the 60-foot-wide construction right-of-way along 18th Avenue. The remaining eight wetlands that would be crossed are scrub-shrub wetlands that contain a high percentage of tamarisk, which is considered a noxious weed species.

Additionally, North Baja is requesting approval to locate extra workspaces within five wetlands, four along the B-Line and one along the IID Lateral. The FERC's Procedures requires that all extra workspaces (such as staging areas and additional spoil storage areas) be located at least 50 feet away from wetland boundaries, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. North Baja states that use of these extra workspaces would affect 2.7 acres of tamarisk-dominated scrub-shrub wetlands (2.6 acres along the B-Line and 0.1 acre along the IID Lateral). Of the total 2.7 acres that would be affected, 1.8 acres were previously disturbed during construction of the A-Line. Table E-2 in the CM&R Plan (see Appendix E) lists the specific wetlands and workspace requirements.

The Agency Staffs agree that it would not be necessary for North Baja to reduce the width of its construction right-of-way to 75 feet in wetlands that are predominantly tamarisk. The Agency Staffs approve North Baja's request to locate extra workspaces in the five wetlands specified in Table E-2 of its CM&R Plan, and also agree that the other measures of the FERC's Procedures that are omitted from the CM&R Plan (e.g., do not cut trees outside of the approved construction work area to obtain timber for riprap or equipment mats; use no more than two layers of timber riprap to support equipment on the construction right-of-way) are not necessary in the arid climate that would be crossed or are not directly applicable to the Project.

North Baja indicated that it has initiated consultation with the CRWQCB. In its review of the Project to determine whether to issue a section 401 permit, the CRWQCB may impose permit conditions requiring mitigation measures in addition to those described above. In accordance with the CM&R Plan, North Baja would prepare and submit an updated CM&R Plan before construction if necessary to incorporate any additional requirements of Federal, State, and local permits. North Baja's adherence to its CM&R Plan and compliance with the COE's section 404 and the CRWQCB's section 401 permit conditions would adequately protect wetland resources crossed by the pipeline route and reduce impacts to less than significant levels.

4.4.4 Site-specific Impact and Mitigation

The two wetlands associated with the Colorado River, two wetlands associated with the All-American Canal, and two wetlands associated with the East Highline Canal would be avoided by the HDDs of these waterbodies. Two wetlands associated with the Acacia Lateral and Alder Lateral Canals

would be avoided by North Baja's proposal to bore beneath these features. In addition, the wetland associated with the Alamo River would be avoided by constructing the pipeline within the road shoulder outside of the wetland boundaries.

North Baja's clearing of a 105-foot-wide construction right-of-way through the eight scrub-shrub wetlands located between MPs 28.2 and 31.3 would reduce the amount of tamarisk occurring along the pipeline route. The CM&R Plan contains a measure to remove all tamarisk trees and shrubs including stumps and root systems. North Baja has the right to maintain a 10-foot-wide strip centered over the pipeline if necessary for periodic corrosion/leak surveys. A 10-foot-wide maintained corridor would result in the permanent conversion of about 3.0 acres of scrub-shrub wetland to emergent wetland. However, as previously discussed, North Baja has not conducted vegetation maintenance along the A-Line and does not propose to conduct annual vegetation maintenance in the areas associated with the North Baja Pipeline Expansion Project. As documented in North Baja's post-construction monitoring reports, wetlands affected by construction of the A-Line have largely revegetated to a state similar to preconstruction conditions. Therefore, no long-term or significant adverse impact on wetlands is expected to result from the North Baja Pipeline Expansion Project.

The emergent wetland at MP 2.7 would be within the 60-foot-wide construction right-of-way along 18th Avenue. Impacts on this wetland would be temporary and minor, and the wetland would be expected to revegetate quickly.

The Project would not result in the placement of fill within wetlands, and wetland topsoil and hydrology would be restored at the affected wetlands. No streams run through the affected wetlands, therefore, construction through wetlands would not result in significant water quality impacts on streams.

4.4.5 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on wetlands identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.5 VEGETATION

4.5.1 Significance Criteria

An adverse impact on vegetation would be considered significant and would require mitigation if Project construction or operation would:

- disturb a substantial portion of the vegetation type within a local region to the point where natural or enhanced regeneration could not restore the vegetation to its preconstruction condition within 3 years;

- result in the long-term (more than 5 years) reduction or alteration of unique, rare, or special concern vegetation types; riparian vegetation; or natural communities;

- introduce new, or lead to the expanded range of existing, invasive noxious weed species or soil pests, so that they interfere with crop production or successful revegetation of natural communities; or

- cause a spill or leak that would contaminate the soil to the extent of eradicating the existing vegetation, inhibiting revegetation, or migrating to other areas and affecting soil and water ecology via erosion and sedimentation.

4.5.2 Existing Vegetation Resources

The proposed pipeline route is entirely within the Lower Colorado River Valley subdivision of the Sonoran Desert, and vegetation communities found in the Project vicinity are typical of that subdivision. The characterization of vegetation communities presented in this EIS/EIR is based on the published and unpublished literature (Holland 1986, Sawyer and Keeler-Wolf 1995) as well as information from field surveys.

Distinct vegetation communities have been identified that occur within the Project area as discussed below. Table 4.5.2-1 lists these communities; provides general descriptions, including common vegetative species typical of each community; and identifies the facility and milepost ranges where each community occurs. Wetland vegetation communities that would be affected by the Project are discussed in Section 4.4. Areas of riparian vegetation would be avoided by the Project.

Pipeline Facilities

The B-Line would cross three native desert vegetation communities as well as agricultural and urban/ruderal lands that have been significantly altered by human settlement.

The primary vegetation community that would be crossed by the B-Line is creosote scrub. This community comprises about 78 percent of the vegetation communities crossed by the B-Line. The next two most prevalent vegetation communities crossed are urban/ruderal and desert wash woodland, comprising about 12 and 10 percent, respectively, of the vegetation communities crossed by the B-Line. The remaining upland vegetation community that would be crossed by the B-Line is the agricultural community, which would account for less than 1 percent of the vegetation crossed.

TABLE 4.5.2-1

Vegetation Communities Affected by the North Baja Pipeline Expansion Project

Vegetation Community	General Description	Common Species	Location of Occurrence (Facility/Milepost Range)
Creosote bush scrub	Generally less than 10 feet tall and widely spaced, usually with bare ground between plants. Perennial vegetation is less than 25 percent of the landscape. Also included are non-wetland tamarisk scrub, rocky slopes, stabilized sand dunes, and desert saltbush scrub communities.	White bursage, brittlebush, ocotillo, saltbushes, desert-holly, mesquites, tamarisk	B-Line, MPs 11.7-28.2, 28.6-29.7, 31.7-79.8 IID Lateral, MPs 0.0-3.5, 7.7-27.5
Desert wash woodland	Open to dense, drought deciduous, microphyllous riparian thorn scrub woodlands, less than 60 feet tall.	Cat-claw acacia, desert broom, fairy duster, burrobrush, Anderson's thornbush, tamarisk	B-Line, MPs 11.7-28.2, 28.6-29.7, 31.7-79.8
Desert sand dune	Sparsely vegetated, actively moving, sand dunes.	Creosote bush, mesquite, dune buckwheat, dune sunflower, Peirson's milk-vetch	IID Lateral, MPs 0.0-7.7
Agricultural	Consists of commercial agricultural crops dependent on irrigation.	Cotton, alfalfa, wheat, melons	B-Line, MPs 0.4-2.9, 10.5-11.7 Arrowhead Extension, MPs 1.0-2.1 IID Lateral, MPs 27.6-42.8, 44.1-45.6
Urban/ruderal	Sparsely vegetated, previously disturbed areas. May include improved landscaped areas.	Wild oats, mustard, thistle, landscape species	B-Line, MPs 0.0-0.2, 2.9-10.5 Arrowhead Extension, MPs 0.0-1.0 IID Lateral, MPs 42.8-44.1, 45.6-45.7

Along the Arrowhead Extension, 52 percent of the vegetation communities that would be crossed are agricultural and 48 percent are urban/ruderal.

The primary vegetation community that would be crossed by the IID Lateral is urban/ruderal, which accounts for about 74 percent of the vegetation communities crossed. The next most prevalent vegetation community that would be crossed is creosote bush scrub, which accounts for 16 percent of the vegetation communities crossed. The desert sand dune and agricultural communities account for 9 percent and less than 1 percent, respectively, of the vegetation communities crossed by the IID Lateral.

Aboveground Facilities

The modifications proposed at the Ehrenberg Compressor Station would take place primarily within the fenceline; however, the installation of about 400 feet of header piping outside the fenced site would affect the urban/ruderal community. The Blythe-Arrowhead Meter Station and pig receiver would be within the existing SoCalGas Blythe Compressor Station site and would not affect additional vegetation resources. Modifications at the Ogilby Meter Station (including the pig launcher and receiver) would affect the creosote bush scrub community. Construction of the El Centro Meter Station would affect the urban/ruderal community.

Nine valves would be constructed along the B-Line, all of which would be collocated with existing aboveground facilities. Four of the B-Line valves (#s 2, 5, 6, and 7) would be collocated with existing valves along the A-Line; however, the permanently maintained area at the existing valve sites

would need to be expanded in order to accommodate these new valves. Expansion of these existing sites would affect the following vegetation communities: urban/ruderal (valve #2) and creosote bush scrub (valve #s 5, 6, and 7). Construction of the remaining five valves (#s 1, 3, 4, 8, and 9) would take place within currently maintained aboveground facility sites and would not affect additional vegetation resources.

Four valves would be constructed in association with the IID Lateral. Valve #1 would be within the Ogilby Meter Station site and would not require any additional land. Valve #2 would affect the desert sand dune community, valve #3 would affect the creosote bush scrub community, and valve #4 would affect the agricultural community.

The pig launcher, taps, and related crossover piping associated with the Arrowhead Extension would affect the agricultural community. The creosote bush scrub community would be affected by construction of the pig launcher and receiver at the Rannells Trap, as well as the construction of the tap at the B-Line and the pig launcher associated with the IID Lateral.

Pipe Storage and Contractor Yards

North Baja identified four pipe storage and contractor yards to be used during construction, three of which were used during construction of the A-Line. All four of these sites are previously disturbed sites used for industrial/commercial purposes and occur primarily within the urban/ruderal community although the creosote bush scrub community would also be affected.

Access Roads

Improvements or modifications to 44 existing access roads and construction of 1 new permanent access road (less than 0.1 mile long) associated with the B-Line would affect the creosote bush scrub, agricultural, and desert wash woodland communities. The construction of one permanent access road (less than 0.1 mile long) associated with the Arrowhead Extension would affect the urban/ruderal community. Construction of the IID Lateral would require improvements or modifications to six existing access roads and the construction of one new permanent access road (less than 0.1 mile long) that would affect the creosote bush scrub, urban/ruderal, agricultural, and desert sand dune communities.

4.5.3 General Impact and Mitigation

Pipeline Facilities

The primary impact of the pipeline facilities on vegetation would be the cutting, clearing, and/or removal of existing vegetation within the construction work area. The degree of impact would depend on the type and amount of vegetation affected, the rate at which the vegetation would regenerate after construction, and the frequency of vegetation maintenance conducted during operation. Existing vegetation would be disturbed everywhere along the construction right-of-way. In general, the swath of vegetation that would be disturbed during construction would be 105 feet wide for the length of the B-Line, between 60 and 100 feet wide for the Arrowhead Extension, and between 60 and 80 feet wide for the IID Lateral. Because North Baja would work over its existing pipeline to construct the B-Line, it would minimize the area of new disturbance and, therefore, would minimize impacts on vegetation. About 75 percent of the vegetation disturbance associated with the B-Line would be within North Baja's existing, previously disturbed right-of-way.

Secondary effects associated with disturbances to vegetation could include increased soil erosion (see Section 4.2), increased potential for the introduction and establishment of invasive weedy species

(see Section 4.5.5), and a local reduction in available wildlife habitat (see Section 4.6.1). Other potential effects on vegetation could include the contamination of soils from spills or leaks of fuels, lubricants, and coolants from construction equipment that would restrict the ability of vegetation to become re-established.

North Baja's proposed construction right-of-way and temporary extra workspaces would disturb a total of about 1,533.6 acres of vegetation. Table 4.5.3-1 lists the amount of each vegetation community that would be affected by construction and operation of the pipeline facilities.

The most common vegetation communities that would be affected are creosote bush scrub (942.1 acres) and urban/ruderal (374.0 acres), which account for about 86 percent of the vegetation that would be cleared or affected by construction. The next most common communities that would be disturbed are agriculture (93.5 acres) and desert wash woodland (82.9 acres) accounting for about 12 percent of the affected vegetation. The least common vegetation community that would be affected is desert sand dunes (41.1 acres), which accounts for less than 3 percent of the vegetation that would be disturbed by the construction of the pipeline facilities.

After cleanup and reseeding of the right-of-way, the agricultural community would typically regenerate quickly and impacts on these vegetation communities would be short term. Cultivated areas are regularly disturbed, generally receive ample water through irrigation if necessary, and would quickly re-establish on the right-of-way following replanting by the landowners.

The removal of desert vegetation would have a long-term impact. The arid environment characteristic of these habitats is not conducive to plant growth and would slow the regeneration of vegetation following construction. Moreover, because of the dryness of these areas, regeneration by active seeding or planting is typically ineffective. Natural regeneration of these areas would take several years and in some cases could take over 50 years.

Of the vegetation communities that would be disturbed, the most sensitive is the desert wash woodland, which would be crossed by the B-Line. Desert wash species growing in microphyll woodland, such as ironwood, blue palo verde, and smoke tree, provide structural diversity, cover, and forage for many more wildlife species than the creosote bush scrub habitat. Although this vegetation type provides important habitat, it has not been officially designated as a vegetation community of special concern or value.

Of the total 82.9 acres of desert wash woodland that would be cleared, 22.0 acres (about 26 percent) would be new disturbance (i.e., not disturbed during construction of the A-Line). Because of the importance of microphyll woodland, North Baja proposes to minimize tree clearing in woodland areas by reducing the width of the construction right-of-way in certain locations. Based on field surveys, North Baja adopted a selection criteria that identified areas of vegetation with at least 20 percent crown cover within the non-construction or "passing lane" portion of the construction right-of-way where it proposes to minimize tree clearing by reducing the width of the right-of-way from 105 feet to 80 feet. The BLM and the CDFG approved this approach to identify tree groupings to be preserved during construction of North Baja's A-Line. For the B-Line, North Baja identified 16 woodland areas of native trees (about 24.1 acres) along the proposed route where the right-of-way width would be reduced. The reduction of the right-of-way width from 105 feet to 80 feet at these 16 areas would preserve 5.6 acres of desert wash woodland trees, which would reduce the amount new clearing in desert wash woodlands by about 20 percent. Table 4.5.3-2 identifies the location and extent of these areas.

TABLE 4.5.3-1

Acres of Vegetation Communities Affected by the North Baja Pipeline Expansion Project

Facility	Creosote Bush Scrub			Urban/Ruderal			Agriculture			Desert Wash Woodland [a]			Desert Sand Dunes			Total		
	Const.	Oper.	New	Const.	Oper.	New	Const.	Oper.	New	Const.	Oper.	New	Const.	Oper.	New	Const.	Oper.	New
B-Line																		
Pipeline Facilities																		
Pipeline Right-of-Way	761.2	0.0	198.0	117.7	0.0	0.5	28.0	0.0	8.5	75.6	0.0	19.6	0.0	0.0	0.0	982.5	0.0	226.6
Temporary Extra Workspace	83.6	0.0	36.1	0.0	0.0	0.0	34.7	0.0	11.4	7.3	0.0	2.4	0.0	0.0	0.0	125.6	0.0	49.9
Pipeline Facilities Subtotal	*844.8*	*0.0*	*234.1*	*117.7*	*0.0*	*0.5*	*62.7*	*0.0*	*19.9*	*82.9*	*0.0*	*22.0*	*0.0*	*0.0*	*0.0*	*1,108.1*	*0.0*	*276.5*
Aboveground Facilities	1.5	0.5	1.5	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.5	2.3
Pipe Storage and Contractor Yards	5.0	0.0	0.0	45.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.4	0.0	0.0
Access Roads	97.1	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	99.7	0.0	0.0
B-Line Subtotal	*948.4*	*0.5*	*235.6*	*163.9*	*0.0*	*1.3*	*65.0*	*0.0*	*19.9*	*83.2*	*0.0*	*22.0*	*0.0*	*0.0*	*0.0*	1,260.5	0.5	278.8
Arrowhead Extension																		
Pipeline Facilities																		
Pipeline Right-of-Way	0.0	0.0	0.0	7.2	0.0	7.2	13.4	4.7	13.4	0.0	0.0	0.0	0.0	0.0	0.0	20.6	4.7	20.6
Temporary Extra Workspace	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	1.7
Pipeline Facilities Subtotal	*0.0*	*0.0*	*0.0*	*7.2*	*0.0*	*7.2*	*15.1*	*4.7*	*15.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*22.3*	*4.7*	*22.3*
Aboveground Facilities	0.0	0.0	0.0	1.0	0.3	1.0	1.0	0.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.1	2.0
Pipe Storage and Contractor Yards	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Access Roads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arrowhead Extension Subtotal	*0.0*	*0.0*	*0.0*	*8.2*	*0.3*	*8.2*	*16.1*	*5.5*	*16.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*24.3*	*5.8*	*24.3*

TABLE 4.5.3-1 (cont'd)

Acres of Vegetation Communities Affected by the North Baja Pipeline Expansion Project

	Creosote Bush Scrub			Urban/Ruderal			Agriculture			Desert Wash Woodland[a]			Desert Sand Dunes			Total		
Facility	Const.	Oper.	New	Const.	Oper.	New	Const.	Oper.	New	Const.	Oper.	New	Const.	Oper.	New	Const.	Oper.	New
IID Lateral																		
Pipeline Facilities																		
Pipeline Right-of-Way	72.8	42.5	72.8	245.7	59.7	245.7	1.0	0.0	1.0	0.0	0.0	0.0	40.7	0.0	40.7	360.2	102.2	360.2
Temporary Extra Workspace	24.5	0.0	24.5	3.4	0.0	3.4	14.7	0.0	14.7	0.0	0.0	0.0	0.4	0.0	0.4	43.0	0.0	43.0
Pipeline Facilities Subtotal	*97.3*	*42.5*	*97.3*	*249.1*	*59.7*	*249.1*	*15.7*	*0.0*	*15.7*	*0.0*	*0.0*	*0.0*	*41.1*	*0.0*	*41.1*	*403.2*	*102.2*	*403.2*
Aboveground Facilities	0.4	0.2	0.4	2.5	0.2	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.4	2.9
Pipe Storage and Contractor Yards	0.0	0.0	0.0	22.7	0.0	22.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.7	0.0	22.7
Access Roads	2.9	0.1	0.2	1.3	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	11.2	0.1	0.2
IID Lateral Subtotal	*100.6*	*42.8*	*97.9*	*275.6*	*59.9*	*274.3*	*21.8*	*0.0*	*15.7*	*0.0*	*0.0*	*0.0*	*42.0*	*0.0*	*41.1*	*440.0*	*102.7*	*429.0*
Project Total																		
Pipeline Facilities																		
Pipeline Right-of-Way	834.0	42.5	270.8	370.6	59.7	253.4	42.4	4.7	22.9	75.6	0.0	19.6	40.7	0.0	40.7	1,363.3	106.9	607.4
Temporary Extra Workspace	108.1	0.0	60.6	3.4	0.0	3.4	51.1	0.0	27.8	7.3	0.0	2.4	0.4	0.0	0.4	170.3	0.0	94.6
Pipeline Facilities Subtotal	942.1	42.5	331.4	374.0	59.7	256.8	93.5	4.7	50.7	*82.9*	*0.0*	*22.0*	*41.1*	*0.0*	*41.1*	*1,533.6*	*106.9*	*702.0*
Aboveground Facilities	1.9	0.7	1.9	4.3	0.5	4.3	1.0	0.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	2.0	7.2
Pipe Storage and Contractor Yards	5.0	0.0	0.0	68.1	0.0	22.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	73.1	0.0	22.7
Access Roads	100.0	0.1	0.2	1.3	0.0	0.0	8.4	0.0	0.0	0.3	0.0	0.0	0.9	0.0	0.0	110.9	0.1	0.2
Project Total	1,049.0	43.3	333.5	447.7	60.2	283.8	102.9	5.5	51.7	83.2	0.0	22.0	42.0	0.0	41.1	1,724.8	109.0	732.1
Percent of Total	60.8	39.6	45.5	26.0	55.1	38.7	6.0	5.0	7.1	4.8	0.0	3.0	2.4	0.0	5.6	100.0	100.0	100.0

[a] Acres include areas with at least 20 percent tree cover where the right-of-way width was reduced (see Table 4.5.3-2).

Const. = Construction.

Oper. = Operation.

New = New disturbance (i.e., not disturbed during construction of the A-Line).

TABLE 4.5.3-2

Locations Along the B-Line Where the Construction Right-of-Way Would be Reduced to 80 Feet to Minimize Tree Clearing

Starting Milepost	Length (feet)	Crown Cover (percent)	Previous Disturbance (A-Line) (acres)	New Disturbance (acres)
16.9	345	25	0.4	0.2
17.9	270	31	0.3	0.2
20.0	700	30	0.8	0.5
22.3	480	20	0.6	0.3
22.5	250	43	0.3	0.2
22.6	1,000	33	1.1	0.7
22.8	180	42	0.2	0.1
23.3	340	50	0.4	0.2
23.4	250	63	0.3	0.2
23.5	590	41	0.7	0.4
25.8	850	35	1.0	0.6
34.5	860	25	1.0	0.6
45.1	500	48	0.6	0.3
51.1	1,800	30	2.1	1.2
51.7	1,100	30	1.3	0.8
64.5	500	31	0.6	0.3
Total	10,015		11.7	6.8

As proposed in the CM&R Plan, trees that cannot be avoided would be subjected to one of several treatments (prune, limb, or remove) based on proximity to the pipeline centerline. By pruning or limbing trees rather than removing them, many trees within the right-of-way would be preserved.

During the scoping process, the FWS identified impacts on desert wash woodland as a significant concern and requested that mitigation/restoration efforts be concentrated in the desert wash woodlands that would be crossed by the B-Line north and adjacent to the Cibola NWR and the Milpitas Wash. Additionally, the FWS suggested that North Baja consider conducting vegetation maintenance (i.e., noxious weed control) beyond the limits of the construction right-of-way in areas of microphyll woodland as part of off-site mitigation. As noted in North Baja's CM&R Plan, tree and shrub seedling recruitment was generally higher in areas of desert wash woodlands than in areas of creosote bush scrub. Moreover, seedling recruitment within the disturbed right-of-way was generally higher than in control plots located off of the right-of-way. Noxious weeds (e.g., African mustard and tamarisk), while present, were found in areas where weeds were present before construction. North Baja proposes to conduct the same restoration and maintenance activities for desert wash woodland that were conducted for the A-Line, which, as evidenced by the results of North Baja's mitigation and monitoring reports, were successful.

As was required by the CDFG to construct the A-Line, North Baja proposes compensatory mitigation for the loss of desert wash woodland vegetation. North Baja proposes an assessed financial contribution at a 2:1 ratio for the clearing of the 22.0 acres (new disturbance) of desert wash woodland in addition to the 1:1 compensation ratio it proposes to offset impacts on desert tortoise habitat. North Baja would negotiate off-site mitigation requirements with the FWS and the CDFG (see Section 4.7).

The BLM identified the Milpitas Wash SMA as a significant concern, noting that it consists of relatively unfragmented native vegetation communities. Further detail regarding the potential effects of the Project on managed wildlife habitats, including the Milpitas Wash SMA, is included in Section 4.6.2.4.

No impact on the riparian corridor adjacent to the Colorado River is anticipated because the crossing would be completed using the HDD method. The HDD would pass 60 feet below the bed of the Colorado River. Because the root zones of the vegetation adjacent to the Colorado River are primarily less than 15 feet deep, the adjacent riparian vegetation would not be affected by the HDD and removal of riparian vegetation along the Colorado River would not occur during construction or maintenance of the pipeline. Therefore, the habitat diversity added to the region by the Colorado River and its adjacent vegetation would not be compromised by the proposed Project. Similarly, implementation of the HDDs at the All-American Canal would avoid impacts on the riparian vegetation at these crossing locations.

Open-cut trenching through Rannells Drain (MP 11.4) would have a short-term impact on both wetland (cattails and bulrush) and upland (arrow weed, quailbush, and tamarisk) vegetation growing in and on the steep banks of the drain. This vegetation is routinely removed during drain maintenance by the PVID. The banks of the drain would be restored and stabilized following construction (see Section 4.2.4). Because vegetation has re-established following the construction of the A-Line in 2002, it is expected that the vegetation in Rannells Drain would regenerate on its own from existing seed and vegetative propagules within 2 years after construction.

Construction of the B-Line (primarily along 18th Avenue) and the IID Lateral (primarily along Hunt Road and East Ross Road) could affect mature landscaping associated with residential development. In many cases this mature vegetation provides shade and helps attenuate the effects of ambient dust. A total of 11 residences along the B-Line were identified where construction would affect landscaping. Impacts on landscaping along the Arrowhead Extension and the IID Lateral would largely be avoided. Based on North Baja's evaluation, no trees on residential properties are proposed for removal. Mitigation measures such as tree protection fencing would be employed to protect existing trees during construction. North Baja would restore landscaping following construction as part of site-specific plans. If mature trees or shrubs need to be removed during construction, landowners would be compensated for the loss of irreplaceable vegetation as part of agreements between North Baja and the landowners. Additional information about impacts on and potential mitigation measures for residential areas, including landscaping, is presented in Section 4.8.3.

To reduce impacts on vegetation within the construction and permanent rights-of-way and improve revegetation potential, North Baja would implement its CM&R Plan (see Appendix E). Specifically, North Baja would implement the following measures that were found to be successful for the A-Line:

- Segregate topsoil in all agricultural areas and in native habitats where grading is required. This measure would preserve the superior chemical and biological qualities of the topsoil and, in nonagricultural habitats, would preserve the native seed bank contained in the soil.

- Crush or skim vegetation within the construction right-of-way in areas where grading is not required, which would result in less soil disturbance. The remaining root crowns would aid in soil stabilization, help retain organic matter in the soil, aid in moisture retention, and have the potential to resprout following construction.

- Preserve native vegetation removed during clearing operations. The cut vegetation would be windrowed along the right-of-way during construction and then respread over the disturbed areas as part of restoration activities. This measure would be considered "vertical mulch" and would aid in seedling recruitment by trapping seeds, providing shade, and improving water infiltration. Additionally, this cut vegetation would add to the organic matter in the topsoil layer as it decomposes.

- Replant desert wash woodland species at specified locations along the right-of-way providing a visual barrier to the right-of-way to deter OHV traffic on the right-of-way (see Section 4.8.5). Although this vegetation would not be expected to survive, it would provide many of the benefits of vertical mulch described above in addition to preventing vegetation damage by OHV use on the right-of-way.

- Recontour disturbed areas as needed. The contours would be reshaped after backfilling the trench and replacing the topsoil to restore preconstruction contours and natural drainage patterns. This treatment would reduce erosion and the loss of topsoil, which would improve revegetation potential.

- Imprint areas of soil disturbance using a "sheep's-foot" roller or other methods. Imprinting would provide micro-catchment areas for seed retention and would improve water infiltration.

- Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.

- Test for and alleviate compacted soils in agricultural and residential areas.

- Implement procedures to prevent or minimize the spread of noxious weeds or other undesirable species by limiting disposal of plant materials to suitable areas and the cleaning of clearing and grading equipment before beginning work on the Project (see Section 4.5.5).

- Monitor the revegetation of the right-of-way the year following construction and again during the second growing season. In agricultural areas, crop monitoring would be conducted to determine if additional restoration is required. Additional revegetation efforts would be conducted until revegetation is deemed successful. In non-agricultural lands, revegetation monitoring would be conducted until 2012 and would be considered successful if upon visual survey, the density and cover are similar to adjacent undisturbed lands.

Although construction of the pipeline facilities would result in long-term impacts on about 1,066.1 acres of native desert vegetation (i.e., creosote bush scrub, desert wash woodland, and desert sand dunes), North Baja's plan to overlap its construction right-of-way onto its existing pipeline right-of-way would reduce new impacts on undisturbed desert vegetation by about 63 percent. North Baja's plan to reduce its construction right-of-way through areas of desert wash woodland would further reduce impact on desert vegetation types and the implementation of its CM&R Plan would improve the success of natural restoration. The North Baja Pipeline Expansion Project would not represent a significant impact on vegetation because the Sonoran Desert encompasses more than 5.4 million acres in southeast California alone (Ceres 2006), and the Project would affect less than 0.01 percent of the regional desert vegetation type. Therefore, impacts on vegetation would be considered less than significant.

During the scoping process, several landowners expressed concern about the removal of native desert vegetation. As discussed above, the revegetation of desert areas could take from 5 to 50 years. A review of North Baja's post-construction monitoring reports for the A-Line indicates that following construction in 2002, natural seedling recruitment along the construction right-of-way has occurred within creosote bush scrub and desert wash woodlands. Seedlings of both annual species and perennial shrubs and trees were found growing on the right-of-way during annual vegetation monitoring.

As discussed in Section 4.2.4, the BLM would need to assess potential impacts on rangeland health on BLM lands attributable to the Project. One of the attributes that would be assessed is the integrity of the biotic community (i.e., the capacity of the area to support characteristic functional and structural communities, to resist loss of this function and structure due to disturbance, and to recover following disturbance [Pellant et al. 2005]). The removal of desert vegetation and disturbance of soils could affect the ability of the Project area to support vegetation and wildlife communities. However, North Baja's CM&R Plan, which includes measures to control erosion and preserve topsoil and scarce organic matter, would minimize impacts on the revegetation potential of the Project area. Similar measures were implemented during construction and restoration of the A-Line, and the results of revegetation monitoring indicate that revegetation is occurring within the disturbed areas.

All of the vegetation communities affected by the Project would be susceptible to secondary impacts related to soil contamination by materials used during construction activities. While these impacts would typically be minor because of the low frequency and volumes of these occurrences, the introduction of contaminants to soils could adversely affect the potential for revegetation. North Baja's SPCC Plan specifies cleanup procedures to minimize the potential for soil contamination from spills or leaks of fuels, lubricants, and coolants (see Appendix F). Adherence to North Baja's SPCC Plan would reduce the potential for a spill or leak to contaminate the soil to the extent of eradicating existing vegetation, inhibiting revegetation, or migrating to other areas and affecting soil and water ecology via erosion and sedimentation to a less than significant level.

Aboveground Facilities

The modifications proposed at the Ehrenberg Compressor Station would not permanently affect additional vegetation resources, although about 0.7 acre of the urban/ruderal community would be temporarily affected by the installation of header piping. At the Ogilby Meter Station, 0.2 acre of the creosote bush scrub community would be permanently affected by construction of a pig launcher and receiver. Construction of the El Centro Meter Station would temporarily affect 2.5 acres and permanently affect 0.2 acre of the urban/ruderal community, all of which occurs within the existing fenceline of the IID El Centro Generating Station.

The four valves along the B-Line that would require an expansion of existing valve sites (valve #s 2, 5, 6, and 7) would permanently affect 0.3 acre of urban/ruderal and 0.8 acre of creosote bush scrub communities. The three valves to be constructed along the IID Lateral would each affect less than 0.1 acre of the desert sand dune (valve #2), creosote bush scrub (valve #3), and agricultural (valve #4) communities.

Construction and operation of the pig launcher and receiver proposed at Rannells Trap would affect 0.3 acre of the creosote bush scrub community. Construction of the pig launcher, taps, and crossover piping associated with the Arrowhead Extension would permanently affect about 0.8 acre of the agricultural community. Permanent impacts on about 0.2 acre of the creosote bush scrub community would result from the construction of the tap to the B-Line and the pig launcher associated with the IID Lateral.

Access Roads

The construction, modification, and improvement to access roads used during construction of the proposed Project would primarily have temporary impacts on vegetation resources. Access road disturbance associated with the B-Line would temporarily affect 97.1 acres of the creosote bush scrub community, 2.3 acres of the agricultural community, and 0.3 acre of desert wash woodland. For the Blythe-Arrowhead Meter Station, a new permanent access road would be constructed, affecting less than

0.1 acre of the urban/ruderal community. Access roads associated with the IID Lateral would temporarily affect 6.1 acres of agricultural, 2.9 acres of creosote bush scrub, 1.3 acres of urban/ruderal, and 0.9 acre of desert sand dunes communities. About 0.1 acre of the creosote bush scrub community would be permanently affected by construction of the permanent access road to the tap facility.

Pipe Storage and Contractor Yards

The temporary use of four pipe storage and contractor yards would temporarily affect 68.1 acres of the urban/ruderal community and 5.0 acres of the creosote bush scrub community. No permanent impacts on vegetation would result from the use of these sites.

4.5.4 Vegetation Communities of Special Concern or Value

No designated vegetation communities of special concern or value were identified along the proposed pipeline routes or at aboveground facility sites.

Because no vegetation communities of special concern or value would be affected and any riparian vegetation crossed would be largely avoided, the potential for the Project to result in the long-term (more than 5 years) reduction or alteration of unique, rare, or special concern vegetation types; riparian vegetation; or natural communities would be less than significant.

4.5.5 Noxious Weeds and Other Invasive Plants

Noxious weeds and other invasive plants are non-native, undesirable native, or introduced species that are able to exclude and outcompete desirable native species, and thereby decrease overall species diversity. Noxious weeds often invade and persist in areas after disturbance (e.g., after construction of a pipeline) and can hinder restoration. Other aggressive plant species, both native and introduced, may also outcompete desirable native and other beneficial species. Noxious weeds are addressed by Executive Order 13112 (February 1999), which directs Federal agencies to prevent the introduction of invasive species; provide for their control; and minimize the economic, ecological, and human health impacts that invasive species cause. The order further specifies that a Federal agency shall not authorize, fund, or carry out actions likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless it has determined that the benefits of such actions outweigh the potential harm caused by invasive species and that all feasible and prudent measures to minimize risk of harm would be taken in conjunction with the actions.

The removal of existing vegetation and the disturbance of soils during construction could create conditions for the invasion and establishment of exotic-nuisance species. Construction equipment traveling from invasive weed-infested areas into weed-free areas could also facilitate the dispersal of invasive weed seed and propagules and result in the establishment of noxious weeds in weed-free areas. The spread of exotic or noxious weeds has been identified as one of the most harmful threats to the biodiversity of the Sonoran Desert area (Marshall et al. 2000). The potential severity of the noxious weed impacts depends upon the species, the prevalence in the area before construction, and the intensity of the construction-induced dispersal.

Botanical surveys for the A-Line were conducted using the California Invasive Plant Council's (CIPC) List A and Red Alert lists to identify invasive weed species. Four invasive species were identified in significant numbers; African mustard, Australian saltbush, fountain grass, and tamarisk. No Red Alert species were found. North Baja conducted post-construction weed and revegetation surveys for the A-Line, the most recent of which occurred in the Spring of 2005. The surveys indicate that although weeds (specifically mustard and tamarisk) have reoccurred in areas where they were present before construction

of the A-Line, they have not spread to new areas along the right-of-way. Additionally, the surveys indicate that fountain grass has been eliminated from the right-of-way. Because there has been no spreading of noxious weeds as a result of construction of the A-Line, North Baja has not conducted post-construction noxious weed control measures with the exception of manual removal of tamarisk during revegetation surveys.

North Baja has not yet provided information regarding noxious weed species that may occur along the IID Lateral route; however, in accordance with the CM&R Plan (see Appendix E), surveys for noxious weeds along the IID Lateral would be conducted before construction.

The use of construction equipment and the importation of Project materials from areas outside the local region could introduce weed or soil pests that could interfere with crop production or successful revegetation of natural communities. North Baja would reduce the potential to spread noxious weeds and soil pests by implementing the measures that were successful during construction of the A-Line. These measures include:

- In accordance with Executive Order 13112, the construction area within lands administered by the BLM would be surveyed by a qualified noxious weed authority that would identify all noxious weeds present and provide a list to the authorized officer. A determination would be made by the authorized officer of any noxious weeds that require flagging for treatment before construction. Treatment would be according to the instructions of the authorized officer. Only BLM-approved herbicides would be used on BLM lands, and North Baja would coordinate with the appropriate BLM office prior to use of herbicides. Any use of herbicides in California would be handled by properly licensed county agricultural agents.

- Before construction, populations of plants listed as invasive exotics by the CIPC in its most recent invasive plant List A (including lists A-1 and A-2) and Red Alert list, as well as any other species listed on the BLM National List of Invasive Weed Species of Concern would be identified on the ground and on maps through a preconstruction survey. This would establish a baseline from which to evaluate post-construction monitoring surveys.

- Disposal of soil and plant materials from non-native areas would not be allowed in native areas. Weed propagules or soil pests that could occur in excess spoils or plant materials from non-native areas would not be allowed to be transferred to or disposed of within areas comprising native vegetation communities.

- All construction equipment would be washed before beginning work on the Project, equipment working in Arizona would be cleaned before beginning work in California, and equipment used to clear tamarisk would be washed before working elsewhere on the Project to prevent the spread of invasive weeds from other areas. Equipment would be washed at existing commercial wash stations.

- Construction personnel would be educated on weed identification and the importance of controlling and preventing the spread of invasive non-native species.

- Gravel and/or fill material to be placed in relatively weed-free areas would come from weed-free sources. Certified weed-free hay bales would be used. Post-construction monitoring and treatment of invasive weeds would be implemented.

- Tamarisk trees would be removed from all portions of the right-of-way in native areas. In non-native areas, tamarisk trees would be removed as necessary as part of clearing operations. To prevent dispersal of tamarisk propagules, debris would either be burned onsite under an appropriate burning permit or hauled offsite. All loads hauled offsite would be properly covered to prevent the spread of propagules by wind. On federally administered lands, tamarisk debris would be hauled offsite and disposed of at an approved disposal site. Burning on Federal lands would require the approval of the authorized officer.

The portion of the Cibola NWR that would be crossed is dominated by a tamarisk monoculture both within the proposed right-of-way and areas adjacent to the right-of-way; therefore, attempting to control tamarisk in these areas would not be practical. During the scoping process, representatives from the Cibola NWR suggested that North Baja offset Project-related impacts on vegetation in the Cibola NWR by conducting tamarisk control outside the Project area in native stands of mesquite for a period of 3 to 4 years. Specific restoration measures conducted within the Cibola NWR would be determined during easement negotiations with the NWR.

North Baja would continue to conduct surveys for non-native plant species after construction is complete. The results of these surveys would be compared to the preconstruction surveys and to surveys from prior years to determine locations of weed infestations attributable to the Project. North Baja would conduct surveys and implement control measures (e.g., herbicide application, pulling by hand as permitted by landowner or land management agency) at Project-related infestations twice a year for 2 years after construction is complete or until the infestations have been controlled. North Baja would also implement weed control measures annually as part of routine operation and maintenance of the pipeline.

Implementation of the mitigation measures proposed by North Baja would reduce the potential for the Project to introduce new, or lead to the expanded range of existing, invasive noxious weed species or soil pests, so that they interfere with crop production or successful revegetation of natural communities to a less than significant level.

4.5.6 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on vegetation identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.6 WILDLIFE AND AQUATIC RESOURCES

4.6.1 Significance Criteria

An adverse impact on wildlife and aquatic resources would be considered significant and would require mitigation if Project construction or operation would:

- change the diversity or substantially alter the numbers of a local population of any wildlife or aquatic species, or interfere with the survival, growth, or reproduction of affected wildlife and fish populations;
- substantially interfere with the movement or range of migratory birds and other wildlife, or the movement, range, or spawning of any resident or anadromous fish;
- substantially reduce the abundance of species under the protection of the Migratory Bird Treaty Act;
- result in a substantial long-term loss of existing wildlife or aquatic habitat;
- cause substantial deterioration of existing fish habitat; or
- create a potential health hazard or involve the use, production, or disposal of materials that pose a hazard to wildlife or fish populations in the Project area.

4.6.2 Wildlife

4.6.2.1 Existing Wildlife Resources

In general, large mammals, except for the coyote, are unusual in the Project area (Brown 1982). However, mule deer, desert bighorn sheep, mountain lion, and wild horses and burros could occur as transients. Most of the mammals common to the general Project area have adapted to high diurnal temperatures by spending much of the day underground or aestivating. Consequently, the area may host large populations of burrowing rodents.

With the exception of microphyll woodlands, the open, sparsely vegetated habitats of the Project area do not typically support diverse avifauna that are usually associated with structurally taller and denser habitats found in areas receiving more annual rainfall (Brown 1982). The Project area's avian inhabitants are largely arid-adapted desert species.

Rock outcrops, bajadas,[1] washes, and gravel plains each support a varied and often different herpetofauna; however, certain species are common across most habitats (Brown 1982).

Pipeline Facilities

As described in Section 4.5, the proposed pipeline facilities would cross five distinct upland vegetation communities. Each of these communities provides nesting, cover, and foraging habitat for a variety of wildlife. Other resources including open water and wetland habitats also provide these same functions for wildlife species. Impacts on these resources are described and quantified in Sections 4.3.2, 4.4, and 4.5, respectively. Table 4.6.2-1 identifies some of the wildlife species that are common to these

[1] Bajadas generally consist of shallow slopes at the base of rocky hills, typically exhibiting deep soils and a more complex soil structure that retains water and supports a diverse vegetation community.

habitats. The most prevalent habitat is creosote bush scrub, accounting for about 60 percent of the wildlife habitat that would be affected. Although creosote bush scrub is the most common habitat type affected by the Project, many more wildlife species depend on desert wash woodland and wetland areas for their sources of water, cover, and forage. Desert wash woodlands account for about 5 percent and wetlands account for about 2 percent of the habitat affected. The urban/ruderal community, which provides the least favorable wildlife habitat, is the next most prevalent community accounting for about 24 percent of the habitat affected. Other habitats that would be affected are agricultural (6 percent) and desert sand dunes (3 percent).

TABLE 4.6.2-1

Wildlife Species by Habitat Type Common in the North Baja Pipeline Expansion Project Area

Species	Habitat Type
Mammals	Creosote bush scrub/desert wash woodland/wetland/riparian: mountain lion, coyote, mule (burro) deer, desert bighorn sheep, feral burro, coyote, striped skunk, desert shrew, white-tailed antelope, squirrel desert pocket mouse, desert kangaroo rat, Merriam kangaroo rat, white-throated woodrat, long-tailed pocket mouse, round-tailed ground squirrel, desert cottontail rabbit, kit fox, southwestern yellow bat, little brown myotis, western mastiff bat, western pipistrelle, pallid bat, cave myotis, and California myotis.
	Dune areas: Coyote, mule deer, rabbit, ground squirrels, desert kangaroo rat.
	Agricultural/urban/Ruderal: Opossum.
Birds	Sonoran creosote bush scrub/desert wash woodland/wetland/riparian: Burrowing owl, red-tailed hawk, Gambel's quail, cactus wren, Anna's hummingbird, Gila woodpecker, white-winged dove, mourning dove, white-winged dove, greater roadrunner, lesser nighthawk, common raven, verdin, black-tailed gnatcatcher, black-throated sparrow, Say's phoebe, ash-throated flycatcher, and loggerhead shrike.
	Agricultural/Urban/Ruderal Land: European starling, American crow, mockingbird, house finch, and great egret.
Reptiles	Sonoran creosote bush scrub/desert wash woodland/wetland/riparian: Desert glossy snake, western whiptail, sidewinder, southern desert whiptail, gopher snake, chuckwalla, Mojave fringe-toed lizard, Colorado fringe-toed lizard, side-blotched lizard, desert night lizard, zebra-tailed lizard, side-blotched lizard.
	Dune areas: banded gecko, flat-tailed horned lizard (edges of sand dune area).

Sources: Holland and Keil 1995; BLM 2006.

Aboveground Facilities

Wildlife use of the areas of the proposed aboveground facility sites is similar to adjacent habitats. Limited wildlife habitat exists in the agricultural land adjacent to the Ehrenberg Compressor Station and the El Paso Meter Station. The Blythe-Arrowhead Meter Station and pig receiver site consists of the urban/ruderal community within an existing, fenced compressor station site; consequently, wildlife habitat is minimal. Wildlife use of the Rannells Trap site is similar to that described above for creosote bush scrub habitats. Wildlife use of the Ogilby Meter Station location is limited due to the disturbed nature of the area and its proximity to Interstate 8. The El Centro Meter Station occurs within the urban/ruderal community and would be located within a previously developed area with minimal habitat value.

Valve sites along the B-Line are generally collocated with existing facilities, although four valve sites would be expanded and would permanently affect agricultural and creosote bush scrub habitats. Construction of the three valves along the IID Lateral that would be outside of existing facility sites would affect creosote bush scrub, desert sand dune, and agricultural habitat.

Agricultural habitat would be affected by the construction of the pig launcher, taps, and crossover piping associated with the Arrowhead Extension. Creosote bush scrub habitat would be affected by the

pig launcher and receiver that would be constructed at Rannells Trap and the tap to the B-Line and pig launcher associated with the IID Lateral.

Pipe Storage and Contractor Yards

The proposed pipe storage and contractor yards would all be located in urban/ruderal and creosote bush scrub habitat types at previously disturbed sites.

Access Roads

The construction of new temporary and permanent access roads would primarily affect creosote bush scrub habitat, although agricultural, urban/ruderal, and desert sand dune habitats would also be affected.

4.6.2.2 General Impact and Mitigation

Pipeline Facilities

The impact of the Project on wildlife species and their habitats would vary depending on the requirements of each species and the existing habitat present in the areas crossed by the pipeline facilities. Direct impacts of construction on wildlife would include the displacement of wildlife on the right-of-way and direct mortality of some individuals. Wildlife, such as birds and larger mammals, would leave the vicinity of the right-of-way as construction activities approach. Depending on the season, construction could also disrupt bird courting or nesting and breeding of other wildlife on and adjacent to the right-of-way. Many of these animals may relocate into similar habitats nearby; however, a lack of adequate territorial space could force some animals into suboptimal habitats. This could increase inter- and intra-specific competition and lower reproductive success and survival. The influx and increased density of animals in some undisturbed areas caused by these dislocations could also reduce the reproductive success of animals that are not displaced by construction. Additionally, some smaller, less mobile wildlife, such as small mammals and burrowing species (e.g., burrowing owl, opossums, shrew, rats, mice) and reptiles, could be crushed by construction equipment or trapped in trenches. Bird nests located within the construction work area could be destroyed by clearing activities. The loss of these species could result in a decrease in the food stock available for predators of these species. These effects, however, would cease after construction, and wildlife would return to the newly disturbed areas and adjacent, undisturbed habitats after right-of-way restoration is completed. Additionally, the majority of impacts on native desert vegetation (about 63 percent) would occur over North Baja's previously disturbed existing pipeline right-of-way. Therefore, the proposed Project would not be expected to substantially alter the local wildlife populations.

The cutting, clearing, and/or removal of existing vegetation would also affect wildlife by reducing the amount of available habitat. The degree of impact would depend on the type of habitat affected and the rate at which vegetation regenerates after construction. The impact on urban/ruderal habitats (374.0 acres) would be minor because they provide minimal habitat value and would be restored to near original condition following construction. The impact on agricultural habitats (93.5 acres) would be relatively minor because these areas receive regular disturbance (e.g., crop planting, harvesting,) and would be replanted either immediately following, or during the next growing season following construction.

However, native desert upland habitats could take up to 50 years to become re-established. About 942.1 acres of creosote bush scrub, 82.9 acres of desert wash woodland, and about 41.1 acres of desert sand dune habitats would be affected by the Project. The effect on these areas would be much

greater because these native desert habitats would take the longest amount of time to regenerate. The impact on dune habitat would be less than on other desert habitats because wildlife has adapted to the existing minimal vegetative cover that is common to these areas. In general, the effects on native desert habitats are not expected to have a significant impact on wildlife populations because the amounts of the habitats that would be affected are relatively minor compared to the amounts present in the surrounding areas. The majority of the right-of-way through desert habitats (96 percent) would be only temporarily expanded and would affect a 25-foot-wide swath of land that is adjacent to the existing previously disturbed construction right-of-way used for the A-Line. In addition, approximately 99 percent of the right-of-way would be adjacent to existing utility or transportation corridors. Furthermore, North Baja's implementation of its CM&R Plan would improve the potential for successful revegetation of the right-of-way in the long term (see Section 4.5.3 and Appendix E). Although the loss of native desert habitats would be long term, the loss would amount to less than 0.01 percent of the regionally available habitat; therefore, the potential for the Project to change the diversity or substantially alter the numbers of a local population of any wildlife species, or interfere with the survival, growth, or reproduction of affected wildlife, or result in a substantial long-term loss of existing wildlife habitat is less than significant.

Construction of the B-Line would result in a 105-foot-wide cleared right-of-way for a majority of its length that could contribute to habitat fragmentation and affect the movement of wildlife species. However, this impact would be minimized because North Baja would overlap the majority of its construction right-of-way (80 feet) onto the previously cleared right-of-way used to construct the A-Line. Because, in general, construction of the B-Line would result in about 25 feet of new disturbance adjacent to an existing disturbed right-of-way, the potential for the Project to substantially interfere with the movement or range of wildlife species would be less than significant.

The B-Line and IID Lateral would cross several areas of wetland and numerous open water systems (rivers, canals, and drains). The only undisturbed riparian areas that would be crossed are adjacent to the Colorado River and would be effectively avoided by the use of the HDD crossing method. These areas are important habitats for a number of resident wildlife species although only the Colorado River supports fishery resources. Additionally, North Baja plans to implement the HDD crossing method at four other waterbody crossings and would avoid in-stream impacts at most other canals and drains by crossing at locations where these features are constrained within culverts. These crossing plans would minimize impacts on open water habitats. The only open water habitat that would be disturbed would be Rannells Drain. Rannells Drain is an agricultural drain that is subject to the clearing of vegetation periodically by the PVID. Disturbance to this habitat would be minimized through implementation of North Baja's CM&R Plan (see Appendix E).

Following construction and restoration, North Baja would monitor the revegetation of the right-of-way in areas of desert vegetation through the year 2012. Post-construction monitoring would be conducted in all other areas for a period of 2 years following construction.

Fires inadvertently started by construction activities (e.g., welding), equipment, or personnel could also affect wildlife in the Project area by igniting vegetation along the right-of-way. This habitat loss could cause crowding in adjacent habitats reducing productivity and increasing stress-induced mortality. Fire would likely have temporary impacts on urban/ruderal and agricultural communities and longer-term impacts on native desert communities. North Baja has developed a Fire Prevention and Suppression Plan to minimize the potential for wildfires (see Appendix N). Some of the measures contained in the plan include: requiring the contractor to train all personnel on fire prevention measures, restricting smoking and parking to cleared areas, requiring all combustion engines to be equipped with a spark arrestor, and requiring vehicles and equipment to maintain a supply of fire suppression equipment (e.g., shovels and fire extinguishers). A Fire Guard would be assigned to each construction spread that

would be responsible for maintaining contact with local fire control agencies. North Baja would restrict activities on Federal lands during conditions of high fire danger in coordination with the BLM.

Aboveground Facilities

At the Ehrenberg Compressor Station, 0.7 acre of urban/ruderal habitat would be temporarily disturbed; however, there would be no permanent impacts on habitat. At the Ogilby Meter Station, 0.2 acre of the urban/ruderal cover type would be permanently affected by the construction of a pig launcher and receiver. Construction of the El Centro Meter Station would occur within an existing industrial facility site and would temporarily affect 2.5 acres of urban/ruderal habitat, while 0.2 acre would be affected permanently.

Valve sites along the B-Line are generally collocated with existing facilities, although four would permanently affect 0.3 acre of urban/ruderal habitat and 0.8 acre of creosote bush scrub habitat. The installation of three valves along the IID Lateral would affect less than 0.1 acre each of desert sand dune, creosote bush scrub, and agricultural habitats.

Construction of the pig launcher, taps, and crossover piping associated with the Arrowhead Extension would permanently affect about 0.8 acre of agricultural habitat. Permanent impacts on creosote bush scrub habitat would result from the construction of a pig launcher at Rannells Trap (0.3 acre), and the construction of a tap and pig launcher for the IID Lateral (0.2 acre).

The construction, improvement, and modification of access roads would affect a total of 110.9 acres, primarily creosote bush scrub habitat, although agricultural (8.4 acres), urban/ruderal (1.3 acres), desert sand dune (0.9 acre), and desert wash woodland (0.3 acre) habitats would also be affected. About 0.1 acre of creosote bush scrub and less than 0.1 acre of urban/ruderal habitat would be permanently affected by the construction of two permanent access roads.

Pipe Storage and Contractor Yards

The temporary use of four pipe storage and contractor yards would affect 68.1 acres of urban/ruderal habitat and 5.0 acres creosote bush scrub habitat. As previously discussed, the urban/ruderal community provides minimal habitat values. The area of creosote bush scrub has been previously disturbed. No permanent impacts on wildlife would result from the use of these sites.

4.6.2.3 Migratory Birds

A variety of migratory bird species, including both songbirds and raptors, utilize the vegetation communities identified within the Project area. Migratory birds are species that nest in the United States and Canada during the summer, and then migrate south to the tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. The North Baja Pipeline Expansion Project lies within the Sonoran/Mohave bird conservation region as identified by the U.S. North American Bird Conservation Initiative (NABCI) Committee.[2] Of the 61 migratory bird species likely to occur within the Project area, 28 species are considered by the FWS to be birds of conservation concern including but not limited to: the burrowing owl, Crissal thrasher, Le Conte's thrasher, and Gila woodpecker (FWS 2002a). General impacts on migratory birds are discussed below; specific impacts on many of these species are discussed in Section 4.7.

[2] The NABCI Committee is a coalition of government agencies, private organizations, and bird initiatives in the United States working to advance integrated bird conservation (NABCI 2006).

Executive Order 13186 (January 2001) directs Federal agencies to consider the effects of agency actions and plans on migratory birds, with emphasis on species of concern. The California Species Preservation Act of 1970 (California Fish and Game Code, sections 900 to 903), which is administered by the CDFG, prohibits the taking or possessing of any bird egg or nest. Native desert habitats, including desert wash woodland habitat, provide some of the most significant habitat for migratory birds within the Project area. The majority of this habitat occurs along the portion of the B-Line that would be constructed over a 4- to 6-month period in the latter part of 2009 (see Section 2.4). This proposed construction schedule would partially overlap the nesting season (February through September) for a majority of the migratory birds in the Project area, which could result in the mortality of eggs and young birds that have not yet fledged.

The North Baja Pipeline Expansion Project would also result in short-term and long-term losses of habitat available to migratory birds. Short-term losses of habitat available for use by migratory birds would include 86.8 acres of agricultural habitat, and 35.7 acres of wetland/riparian vegetation. Because these habitats would quickly recover following construction, they would be available for use by migratory birds during the next nesting season following construction.

Construction of the Project would disturb a total of 1,174.2 acres of desert habitat including 1,049.0 acres of creosote bush scrub, 83.2 acres of desert wash woodland, and 42.0 acres of desert sand dune habitat, which would result in long-term losses of habitat available for use by migratory birds because these habitats would require many years to recover following construction. Along the B-Line, this loss of habitat would be minimized by North Baja's proposal to overlap its construction right-of-way over the previously disturbed right-of-way reducing new long-term habitat loss by 671.6 acres. Additionally, North Baja would reduce the right-of-way width from 105 feet to 80 feet in 16 areas of microphyll woodlands, which would reduce impacts on this desert wash woodland habitat by 5.6 acres. North Baja would also preserve individual trees within the construction right-of-way where possible. Construction along the IID Lateral would not result in a significant loss of habitat as only 142.6 acres of native desert habitats would be disturbed of which about 42 acres would occur in the dunes area. Because the existing vegetation resources in the dunes area are sparse, the long-term loss of vegetation would have a minimal effect on migratory bird habitat in this area. Of the remaining 100.6 acres of desert habitat affected by the IID Lateral, 98 percent would occur within or immediately adjacent to existing disturbed utility and transportation rights-of-way. The measures contained in North Baja's CM&R Plan would promote revegetation of disturbed areas by restoring original contours, segregating topsoil where grading is required, and respreading cut vegetation over the restored areas.

Although the loss of native desert habitats that would be utilized by migratory birds would be long term, 66 percent of the habitat would be previously disturbed, and a majority of the affected habitat would occur within or immediately adjacent to existing disturbed utility and transportation rights-of-way. In addition, the loss would amount to less than 0.01 percent of the regionally available Sonoran desert habitat; therefore, the potential for the Project to substantially interfere with the movement or range of migratory birds would be less than significant.

North Baja would attempt to schedule construction in native habitats outside of the breeding season for migratory birds. If, however, construction activities are necessary during the bird breeding season, in accordance with its CM&R Plan, North Baja would remove vegetation that could provide nesting substrate from the right-of-way before the breeding season, thus eliminating the possibility that birds could nest on the right-of-way. Qualified biologists would conduct preconstruction surveys to confirm the absence of nesting birds before construction begins.

If, in spite of vegetation removal, nesting birds are found on the construction right-of-way, the nest would not be removed until fledging has occurred or unless authorized after consultation with the FWS, the CDFG, and, if the nest is located on Federal lands, the Federal land management agency.

Although North Baja states that it would preclear vegetation, no details of the preclearing proposal have been provided. Therefore, **the Agency Staffs recommend that:**

- **North Baja shall, in consultation with the FWS, the BLM, and the CDFG, develop Preclearing Plans to protect migratory bird species during construction. These plans shall include specific details of the preclearing methods to be implemented, the specific locations where preclearing would occur, and the dates preclearing would be initiated and completed. North Baja shall file these plans with the FERC and the CSLC for the review and written approval of the Director of OEP and the Executive Officer of the CSLC <u>before initiation of Phase I-A and Phase II construction activities</u>.**

With the implementation of North Baja's proposed measures and the Agency Staffs' recommendation, the Project would not substantially reduce the abundance of species under the protection of the Migratory Bird Treaty Act and, therefore, the impact of the Project on migratory bird species would be less than significant.

4.6.2.4 Sensitive or Managed Wildlife Habitats and Species

The B-Line would cross the Cibola NWR, located about 20 miles south of Blythe along the lower Colorado River, between MPs 29.5 to 33.0. The Cibola NWR encompasses about 16,630 acres of land bisected by the Colorado River and provides habitat for over 240 species of birds, and numerous mammals, including several protected species. The B-Line would cross only a small portion of the NWR, on the western edge of the refuge through monotypic tamarisk stands that provide very low quality wildlife habitat.

On BLM lands between MPs 29.2 and 52.0, the B-Line would cross two SMAs in the vicinity of the Milpitas Wash. Between MPs 29.2 and 33.8, the area is managed by the BLM Yuma Field Office as an SMA under the Yuma District Plan. The Yuma District Plan designates the 4,760-acre area as an SMA for its undisturbed desert vegetation, wildlife habitat, and cultural resources (BLM 1985). Between MPs 33.8 and 52.0, the area is managed by the BLM El Centro Field Office as a Wildlife Habitat Area under the Milpitas Wash Wildlife Habitat Management Plan (BLM 1986). Management objectives for this 180,800-acre area include consolidation, protection, and enhancement of wildlife habitat and habitat for plants of special management concern; expansion of habitat used by burro deer and other native wildlife species; consideration of wildlife species in development and management decisions; and obtaining good ecological condition of 70 percent of the area covered by the habitat management plan.

The Project would cross a Wildlife Habitat Management Area (WHMA) established under the NECO Plan. The NECO Plan is an amendment to the BLM's CDCA Plan and includes most of the California portion of the Sonoran Desert ecosystem. The B-Line would cross a WHMA for 14.8 miles between approximate MPs 35.2 and 50.0. The WHMA is designated as a multi-species WHMA and includes two corridor portions of proposed WHMAs for bighorn sheep between MPs 35.2 and 42.0 and MPs 49.0 and 50.0, although no bighorn sheep habitat is included. The management goals for this area include the maintenance of naturally occurring distributions of 28 special status animal species and 30 special status plant species in the planning area; the maintenance of proper functioning condition in all natural communities with special emphasis on communities that: (a) are present in small quantity, (b) have a high species richness, and (c) support many special status species; and the maintenance of

ecological processes by maintaining naturally occurring interrelationships among various biotic and abiotic elements of the environment (BLM 2002).

As described in Section 4.7, North Baja proposes a number of conservation measures protecting wildlife and special status plants that are generally consistent with objectives of the management plans addressing activities in the Milpitas Wash SMA and the multi-species WHMA. Although much of the Cibola NWR near the proposed pipeline route is dominated by relatively poor quality habitat (tamarisk monoculture), overall the refuge is inhabited by a diverse species community. Construction of the North Baja Pipeline Expansion Project would not directly affect sensitive wildlife habitat within the refuge. Noise associated with construction activities could, however, indirectly impact wildlife by temporarily displacing wildlife from areas within the refuge that would be near the construction right-of-way. The impact would be greater if construction activities coincide with the breeding season of wildlife that use the refuge. Because of the year-round vehicle and boat traffic associated with SR 78 and the Colorado River, wildlife in the area is expected to be somewhat acclimated to noise.

The BLM manages wild horse and burro herds in accordance with the Wild and Free Roaming Horses and Burros Act, which was passed by the U.S. Congress in 1971 to protect, manage, and control wild horses and burros on the public lands. Through the BLM planning process, the areas where wild horses and burros can be managed as a component of the public land have been designated as Herd Management Areas (HMAs). In Arizona, the Project would cross a small portion of the Cibola-Trigo HMA where there is a slight potential that wild horses and/or burros could be found watering at the Colorado River crossing. In California, the B-Line would cross the Chocolate-Mules HMA between approximate MPs 34.9 and 75.3 where there is a slight potential for wild burros to occur. Precipitation within the Project area would increase the potential for wild horses or burros to occur. Construction of the pipeline could affect wild horses or burros if the animals were to fall into the open trench. The BLM commented that mitigation measures to prevent animals from being trapped in the open trench, specifically measures to be implemented to minimize impact on desert tortoise, would be sufficient to minimize impacts on wild horse and burro herds. As discussed in Section 4.7.4.3, North Baja would install tortoise escape ramps in the excavated trench at 1-mile intervals.

The Nature Conservancy, with assistance from others, completed *An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion* (Ecological Analysis) (Marshall et al. 2000). The objective of the Ecological Analysis was to identify landscape-scale conservation sites that, with proper management, would help ensure the long-term persistence of the biodiversity in the Sonoran Desert. Generally, these conservation sites are areas containing sensitive vegetative communities or rare species at a density considered ecologically significant by regional experts. One of the 100 landscape-scale conservation sites identified by the Ecological Analysis would be crossed by the B-Line at MP 0.2. This 434,141-acre conservation site includes the Colorado River and adjacent riparian areas. The Ecological Analysis reports 31 sensitive species or biotic communities associated with the river, including 18 species with protected status under Federal or State laws. The Colorado River and adjacent riparian habitat would be avoided by the HDD crossing of the river.

The IID Lateral would be adjacent to the East Mesa ACEC and flat-tailed horned lizard management area, which was designated to protect wildlife species (especially the flat-tailed horned lizard). Evan Hewes Highway, an unmaintained frontage road for the adjacent Interstate 8, is the southern border for this ACEC. The IID Lateral would be within the road right-of-way, just outside of the management area (Flat-tailed Horned Lizard Interagency Coordinating Committee [FTHLICC] 2003). The management area reaches to the road right-of-way just north of MPs 8.5 to 8.8, 9.8 to 14.8, and 15.8 to 21.0. All construction activities would occur within the road right-of-way for Evan Hewes Highway.

Impacts on sensitive or managed wildlife habitats and species are not expected to substantially affect local wildlife populations or adversely affect biological diversity in the region.

4.6.3 Aquatic Resources

4.6.3.1 Existing Aquatic Resources

Pipeline Facilities

Fishery resources in the waterbodies that would be crossed by the B-Line are limited to the Colorado River (MP 0.2), the All-American Canal (MP 79.8), and the 33 irrigation canals and drains in the PVID near Blythe, California (MPs 0.2 to 11.7 of the B-Line and MPs 0.0 to 2.1 of the Arrowhead Extension). Fishery resources in the waterbodies that would be crossed by the IID Lateral are limited to the All-American Canal (MPs 2.4 and 8.1), the East Highline Canal (MP 27.5), the Alamo River (MP 32.3), and 36 other irrigation canals and drains.

The CDFG classifies the Colorado River as a warmwater fishery (CDFG 2000). Representative fish species in the Colorado River include bass, bluegill, crappie, catfish, carp, sunfish, and sucker. The CDFG has indicated that the fish species found in some reaches of the larger irrigation canals associated with the Colorado River are similar to those in the Colorado River (Hayes 2000). However, the irrigation canals and the Alamo River do not have a classified fishery.

In the Project area, the Colorado River flows have been reduced and confined behind a series of dams, forming large reservoirs. The normal heavy silt load has been reduced with reservoirs acting as settling basins. This change in the flow of the river has led to a deposition of salts, fertilizers, and other products of irrigation and agriculture in the sediments of the river and has altered fish fauna composition over the last 100 years.

The B-Line would also cross 265 dry desert washes. Because flow in these washes is minimal and limited to the time period following rain events, aquatic ecosystems have not developed in these washes. However, as discussed in Section 4.6.2, the washes provide habitat for terrestrial wildlife species.

Potential habitat for the razorback sucker, a Federal- and State-listed endangered fish species, occurs in the Colorado River. Details regarding this species are found in Section 4.7.3. No other Federal or State-listed special status fish species are known to occur in the surface waters crossed by the proposed pipeline routes.

There is no designated Essential Fish Habitat in the Project area.

Aboveground Facilities

There are no surface waters within or immediately adjacent to the boundaries of the aboveground facility sites; therefore, no fishery resources would be affected by the construction or operation of the aboveground facilities.

Pipe Storage and Contractor Yards

There are no surface waters within or immediately adjacent to the proposed pipe storage and contractor yards; therefore, no fishery resources would be affected by use of the yards.

Access Roads

No surface waters or fishery resources would be affected by use of the access roads.

4.6.3.2 General Impact and Mitigation

Construction of the pipeline across waterbodies would increase the sedimentation and turbidity of the water, the potential for streambank erosion, and the potential for fuel and chemical spills. These effects could impact aquatic resources. Construction-related impacts on aquatic resources could also result from in-stream blasting, hydrostatic testing, and water withdrawals for dust control. No in-stream blasting would be required. The remaining impacts are discussed in more detail below. The degree of impact would depend on the proposed crossing method, the existing conditions at each crossing location, the mitigation measures employed, and the timing of construction.

Sedimentation and Turbidity

Sedimentation can adversely affect fish eggs and juvenile fish survival, benthic community diversity and health, and spawning habitat. The B-Line and the IID Lateral would cross several flowing waterbodies, mostly irrigation canals and ditches in the PVID and the IID that would be crossed by boring or installing the pipeline between drain culverts and roads. The Colorado River, All-American Canal, and East Highline Canal would be crossed using the HDD method. Only one flowing waterbody, Rannells Drain, would be crossed using the open-cut crossing method. Two unnamed canals along the Arrowhead Extension would also be crossed using the open-cut crossing method.

The open-cut crossing method is a wet trench method and has a higher potential for sedimentation and turbidity than the other crossing methods. However, the open-cut method is also the quickest crossing method. Because the effects of increased sedimentation and turbidity are generally limited to the period of in-stream work, the duration of these effects would be relatively short. Additional discussion on the potential impacts associated with the proposed open-cut crossing of Rannells Drain is provided in Section 4.6.3.3.

Streambank Erosion

Waterbodies crossed by the proposed Project facilities that would be susceptible to streambank erosion are primarily limited to perennial rivers and major canals. Crossing these features using the HDD method would avoid disturbance of the streambank vegetation. Retaining the existing bank composition at these waterbodies would prevent the need for bank armoring following construction. Irrigation canals and drains would be crossed at locations where these waterbodies are constrained within culverts, which would avoid any bank disturbance. Clearing of vegetation at intermittent waterbodies (dry washes) would not be expected to increase the susceptibility of those features to streambank erosion due to the limited flow in each waterbody. Further, adherence to North Baja's CM&R Plan would facilitate revegetation of the banks following construction. Therefore, impacts on streambank erosion from the proposed Project would be less than significant.

Fuel and Chemical Spills

A chemical or fuel spill in or near a waterbody could release contaminants, which could affect fish directly or indirectly through changes in food sources or by contaminating the water resources. North Baja would adhere to the measures detailed in its CM&R Plan (Appendix E) and the SPCC Plan (Appendix F) to prevent a large spill from occurring near surface waters. Hazardous materials storage and vehicle or equipment refueling would be restricted within 100 feet of surface waters. Should a spill occur, the implementation of the measures in the SPCC Plan, such as maintaining adequate emergency response equipment, would decrease the response time for control and cleanup of the spill and minimize exposure of aquatic resources to hazardous materials released into a waterbody. Although some individual fish or invertebrates could be harmed by a spill of hazardous materials into a waterbody, these impacts would not change the numbers of a local population or cause a substantial deterioration of

existing fish habitat. Therefore, the overall impact on aquatic resources from a spill would be less than significant.

Hydrostatic Testing and Dust Control Water Withdrawals

Potential impacts associated with hydrostatic testing and dust control water withdrawals include entrainment of fish, reduced downstream flows, impaired downstream uses associated with water withdrawals, erosion, scouring, and a release of chemical additives associated with hydrostatic test water discharges. North Baja proposes to obtain test water for the B-Line and piping within the Ehrenberg Compressor Station from an existing irrigation canal that withdraws water from the Colorado River just south of North Baja's Ehrenberg Compressor Station property, a well on the Ehrenberg Compressor Station site, or the All-American Canal. Groundwater associated with the well at the compressor station site is hydrologically connected to the Colorado River. The Arrowhead Extension and piping within the Blythe-Arrowhead Meter Station would be tested with water obtained from the PVID, local wells, or a commercial water source. The IID Lateral would be tested in sections with water obtained directly from the All-American Canal. These same sources of water are expected to be used for dust control. North Baja would screen intake piping to prevent fish and fish egg entrainment during hydrostatic test water withdrawal. In Section 4.3.4, the Agency Staffs have recommended that North Baja file a revised Dust Control Plan that specifies the sources of water that would be used for dust control, the anticipated quantities of water that would be required, and measures to minimize fish and fish egg entrainment during dust control water withdrawals. Because water withdrawals would occur from existing wells, irrigation canals, or commercial water sources and would not affect current flow levels in the Colorado River or other waterbodies containing fishery resources, and fish and fish egg entrainment would be minimized during water withdrawals, the effects of the proposed Project on the movement, range, or spawning of resident fish would be less than significant.

After hydrostatic testing, the water would be discharged into irrigation canals or returned to the All-American Canal. No chemicals would be added to the test water, and energy dissipation devices would be employed to minimize channel erosion. Dust control water would be sprayed directly on the ground surface. Therefore, changes in water quality would not be expected from hydrostatic testing or dust control activities. Implementation of these measures would reduce impacts on fishery resources to less than significant levels.

Timing of Construction

The degree of impact associated with in-stream activities can be affected by the season of construction. Construction during periods of sensitive fish activities (i.e., spawning and migration) can have a greater impact on fish than construction during other periods. Because in-stream activities would only occur at Rannells Drain and two unnamed canals that do not support fisheries resources, there would be no impact on fish spawning and migration from construction of the proposed Project.

4.6.3.3 Site-specific Impact and Mitigation

The proposed open-cut trenching through Rannells Drain would create a temporary increase in sediment load in the drain. The PVID cleared and dredged the drain in 2002 before the construction of the A-Line, but the drain has subsequently revegetated with tamarisk, *Arundo* sp., and native vegetation, and has limited free water. The PVID has indicated it would be willing to perform maintenance clearing/dredging at the Rannells Drain crossing before construction of the B-Line in 2009, as long as it is done between August 2 and March 14 as agreed with the CDFG.

Rannells Drain is connected to the Colorado River through the Palo Verde Lagoon and a series of other drainage structures, but is generally unsuitable as fish habitat because of its shallow depth and

stagnant conditions. As such, Rannells Drain does not have a classified fishery and no fisheries habitat would be lost as a result of construction across Rannells Drain. Nonetheless, North Baja proposes to use sediment booms downstream of the trenching, which would contain sedimentation to the localized area. Any sediment potentially released during construction would be removed the next time the PVID dredges the drain for agricultural purposes (expected to occur 1 year after construction) and would not be a permanent addition to the aquatic environment.

North Baja proposes to cross the Colorado River, the All-American Canal, and the East Highline Canal using the HDD method. Although the HDD method avoids in-stream impacts because it eliminates the need for in-stream excavation, it does not completely eliminate the possibility of impacts on aquatic resources due to the possibility of a frac-out into the waterbody (see Section 4.3.3.3). Drilling mud primarily consists of water mixed with bentonite, which is a naturally occurring clay material. A frac-out could occur if the drilling head hits a subterranean fracture in the substrate. When the drilling mud reaches the fracture, it can follow the fracture up or otherwise be forced to the surface or into the water if drilling is occurring under a waterbody. If drilling mud is released into the water, the settling bentonite could cover fish or amphibian eggs and cut off their oxygen supply. Bentonite has not been shown to adversely affect gills or feeding of fish or invertebrates.

During construction of the A-Line, there were no inadvertent releases of drilling mud into the Colorado River or the All-American Canal, and none is expected during construction of the B-Line and IID Lateral. However, North Baja has prepared an HDD Plan (see Appendix G) that requires North Baja to continuously monitor the drilling operations. If monitoring indicates an in-stream release, the EIs would immediately notify North Baja's construction management personnel. North Baja would notify the appropriate Federal and State agencies as soon as possible of an in-stream release event, detailing the nature of the release and corrective actions being taken. The notified agencies would determine whether additional measures need to be implemented. If it is determined that the release cannot be remedied without causing additional environmental impact, North Baja would request agency approval to continue the drilling operations. If a release occurs that may migrate downstream and affect water quality, downstream water users would be contacted by North Baja. The contacts and telephone numbers of downstream users would be assembled before commencement of construction, and maintained on site. Implementation of these measures would minimize adverse impacts of a frac-out in or near these waters on the aquatic communities to less than significant levels. Minimizing the effects of a frac-out in accordance with North Baja's HDD Plan would also prevent the substantial deterioration of existing fish habitat.

4.6.4 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on wildlife and aquatic resources identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.7 SPECIAL STATUS SPECIES

4.7.1 Significance Criteria

An adverse impact on federally or State-listed or other special status species would be considered significant and would require mitigation if Project construction or operation would:

- reduce the abundance of sensitive species that occur within the Project area;
- result in the loss or alteration of designated or proposed critical habitat for one or more listed species;
- cause a temporary loss or alteration of habitat important for one or more listed species that could cause increased mortality or lowered reproductive success of the species (i.e., avoidance for greater than one breeding season);
- result in direct or indirect impacts on candidate or sensitive species populations, or habitat, that would contribute to or result in the Federal or State listing of the species (e.g., by substantially reducing species numbers or by resulting in the permanent loss of habitat essential for the continued existence of a species); or
- create a potential health hazard or involve the use, production, or disposal of materials that pose a hazard to special status species populations in the Project area.

4.7.2 Regulatory Requirements and Species Identification

Federal agencies are required by section 7 of the ESA (Title 19 USC Part 1536[c]), as amended (1978, 1979, and 1982), to ensure that any actions authorized, funded, or carried out by the agency do not jeopardize the continued existence of a federally listed endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat of a federally listed species. The action agency (e.g., the FERC) is required to consult with the FWS and/or the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) to determine whether federally listed endangered or threatened species or designated critical habitat are found in the vicinity of the proposed Project, and to determine the proposed action's potential effects on those species or critical habitats. For actions involving major construction activities with the potential to affect listed species or designated critical habitat, the Federal agency must submit its Biological Assessment (BA) to the FWS and/or NOAA Fisheries and, if it is determined that the action may adversely affect a listed species, the Federal agency must submit a request for formal consultation to comply with section 7 of the ESA. In response, the FWS and/or the NOAA Fisheries would issue a Biological Opinion (BO) as to whether or not the Federal action would likely jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of designated critical habitat.

In compliance with section 7 of the ESA, the FERC requested that the FWS consider the draft EIS/EIR, along with various survey reports prepared by North Baja, as the BA for the North Baja Pipeline Expansion Project. No species under NOAA Fisheries' jurisdiction would be affected by the proposed Project. On April 20, 2007, the FWS issued the BO (see Appendix R).

Under the CEQA, the CSLC must take into account the impacts on special status species. Additionally, California has its own Endangered Species Act (CESA) that requires State agencies to protect and promote the recovery of State-listed endangered or threatened species. Similar to the ESA,

the CESA requires that State lead agencies consult with the CDFG to ensure that actions are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of essential habitat. In addition to species listed as threatened or endangered under the ESA and CESA, agencies and organizations such as the FWS, the BLM, the CDFG, and the California Native Plant Society (CNPS) maintain lists of special concern, sensitive, or rare species that are also appropriate to consider in this NEPA and CEQA analysis.

For purposes of this environmental analysis, special status plants and animals include the following:

- species officially listed by California or the Federal government as endangered, threatened, or rare;
- species that are proposed for Federal listing as threatened or endangered or considered candidates for listing;
- species noted as sensitive or of special concern by the FWS, the BLM, the Arizona Game and Fish Department (AGFD), or the CDFG; and
- plants occurring on Lists 1A, 1B, 2, 3, and 4 of the CNPS' *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994).

North Baja participated in extensive coordination efforts with the FWS, the BLM, the CDFG, and the AGFD before and during construction of the A-Line. Those efforts were summarized in the final Biological Report for that project and submitted to the agencies in 2002 (North Baja 2002). Building on that information base, and using data from the California Natural Diversity Database (CNDDB), AGFD Heritage Data Management System, and through discussions with plant and wildlife specialists with knowledge of the Project area, North Baja prepared a list of threatened, endangered, and special status species that potentially occur in the vicinity of the proposed Project. In addition to those communications, meetings were held with representatives of the FWS, the BLM, and the CDFG to present an overview of the Project and solicit issues of concern from the agencies.

A total of 51 special status species were identified as potentially occurring within the Project area (see Table 4.7.2-1). Following focused habitat evaluations and species-specific surveys in 2005, 24 of the 51 species were eliminated from consideration due to lack of habitat, lack of potential impact, or both (see Table 4.7.2-1). The remaining 27 species are discussed below.

4.7.3 General Impact and Mitigation

In general, the impacts of the Project on special status species would be the same as described for vegetation, wildlife, and aquatic resources. However, the magnitude and duration of these impacts could be greater for special status species because their distribution and relative abundance usually are more limited. Construction could remove special status plants living within the construction right-of-way and could disturb, displace, or harm special status animals on and adjacent to construction work areas. Construction could also affect special status plants and wildlife by temporarily altering the habitat along the pipeline right-of-way and permanently altering the habitat at aboveground facility sites.

TABLE 4.7.2-1

Special Status Species Initially Identified as Potentially Occurring in the Vicinity of the North Baja Pipeline Expansion Project

Species	Status [a]			Eliminated from Further Consideration	Facility/General Milepost Range Where Species May Occur
	Federal	State	Other		
Mammals					
American badger (*Taxidea taxus*)		SC		Yes. Suitable habitat not present in Project area.	
Arizona myotis (*Myotis occultus*)		SC		Yes. Occasional transient only in Project area.	
Big free-tailed bat (*Nyctinomops macrotis*)		SC		Yes. Occasional transient only in Project area.	
California leaf-nosed bat (*Macrotus californicus*)		SC	BLM-S	Yes. Occasional transient only in Project area.	
Cave myotis (*Myotis velifer*)		SC	BLM-S	Yes. Suitable habitat not present in Project area.	
Colorado River cotton rat (*Sigmodon arizonae plenus*)		SC		No	B-Line: MP 0.2
Desert bighorn sheep (*Ovis canadensis nelsoni*)			BLM-S	No	B-Line: MP 31.0
Pale big-eared bat (*Corynorhinus townsendii pallescens*)		SC		Yes. Occasional transient only in Project area.	
Pallid bat (*Antrozous pallidus*)		SC	BLM-S	Yes. Occasional transient only in Project area.	
Pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*)		SC		Yes. Limited range of species does not include Project area.	
Western mastiff bat (*Eumops perotis californicus*)		SC	BLM-S	Yes. Occasional transient only in Project area.	
Yuma mountain lion (*Puma concolor browni*)		SC		Yes. Suitable habitat not present in Project area.	
Birds					
Arizona Bell's vireo (*Vireo bellii arizonae*)		SE		No	B-Line: MPs 0.0 to 3.0 and 31.0 to 33.0
Bald eagle (*Haliaeetus leucocephalus*)	FT	SE		Yes. No suitable nesting/roosting sites in Project area. Occasional transient only.	
Brown-crested flycatcher (*Myiarchus tyrannulus*)		SC		No	B-Line: MPs 22.0 to 23.0, 35.0 to 36.0, 41.0 to 46.0, 50.0 to 53.0, and 59.0 to 66.0
Brown pelican (*Pelecanus occidentalis*)	FT	SE		Yes. Suitable habitat not present in Project area.	
Burrowing owl (*Athene cunicularia*)		SC	BLM-S	No	B-Line: MPs 0.0 to 12.0 Arrowhead Extension: MPs 0.0 to 2.1 IID Lateral: MPs 28.0 to 46.0
California black rail (*Laterallus jamaicensis coturniculus*)		ST		No	B-Line: MPs 0.0 to 12.0 and 31.0 to 33.0 IID Lateral: MP 33.0
Crissal thrasher (*Toxostoma crissale*)		SC		No	B-Line: MPs 0.0 to 3.0, 24.0 to 29.0, and 31.0 to 33.0
Elf owl (*Micrathene whitneyi*)		SE		Yes. Suitable habitat not present in Project area.	

TABLE 4.7.2-1 (cont'd)

Special Status Species Initially Identified as Potentially Occurring in the Vicinity of the North Baja Pipeline Expansion Project

Species	Status [a]			Eliminated from Further Consideration	Facility/General Milepost Range Where Species May Occur
	Federal	State	Other		
Ferruginous hawk (*Buteo regalis*)		SC		No	Occasional migrant in the Project area
Gila woodpecker (*Melanerpes uropygialis*)		SE		No	B-Line: MPs 0.2, 17.6, 21.8, 22.2 to 25.3, 35.6 to 36.4, 46.4, 50.2 to 52.4, 55.5, 59.5, and 64.8 to 65.2
Le Conte's thrasher (*Toxostoma lecontei*)		SC	BLM-S	No	B-Line: MPs 12.0 to 79.8 IID Lateral: MPs 8.0 to 28.0
Sonoran yellow warbler (*Dendroica petechia sonorana*)		SC		Yes. Occasional transient only in Project area.	
Southwestern willow flycatcher (*Empidonax trailii extimus)*	FE	SE		No	B-Line: MPs 0.0, 25.0, and 33.0
Summer tanager (*Piranga rubra*)		SC		No	B-Line: MPs 22.0 to 23.0, 35.0 to 36.0, 41.0 to 46.0, 50.0 to 53.0, and 59.0 to 66.0
Vermilion flycatcher (*Pyrocephalus rubinus*)		SC		No	B-Line: MPs 0.0 to 12.0, 22.0 to 29.0, 31.0 to 33.0, 35.0 to 53.0, 59.0 to 66.0, and 79.0 to 79.8
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FC	SE		No	B-Line: MP 0.2
Yellow breasted chat (*Icteria virens*)		SC		No	B-Line: MPs 0.0 to 3.0, 22.0 to 23.0, and 31.0 to 33.0
Yuma clapper rail (*Rallus longirostris yumanensis*)	FE	ST		No	B-Line: MPs 0.0 to 12.0 and 31.0 to 33.0 IID Lateral: MP 32.3
Amphibians/Reptiles					
Colorado River toad (*Bufo alvarius*)		SC		No	B-Line: MP 0.2
Couch's spadefoot toad (*Scaphiopus couchii*)		SC		No	B-Line: MPs 25.0 and 35.3
Desert tortoise (*Gopherus agassizii*)	FT	ST		No	B-Line: MPs 17.0 to 75.2
Flat-tailed horned lizard (*Phrynosoma mcallii*)		SC	BLM-S	No	B-Line: MPs 71.0 to 79.8 IID Lateral: MPs 8.0 to 28.0
Fish					
Bonytail chub (*Gila elegans*)	FE	SR		Yes. Not expected to occur in Project area.	
Desert pupfish (*Cyprinodon macularius*)	FE	SE		Yes. Not expected to occur in Project area.	
Razorback sucker (*Xyrauchen texanus*)	FE	SE		No	B-Line: MPs 0.2 and 24.0 to 31.0
Plants					
Algodones Dune sunflower (*Helianthus niveus tephrodes*)		SE	1B	No	IID Lateral: MPs 0.5 to 7.9
Crucifixion thorn (*Castela emoryi*)			2	Yes. Not expected to occur in Project area. Not identified during previous surveys.	

TABLE 4.7.2-1 (cont'd)

Special Status Species Initially Identified as Potentially Occurring in the Vicinity of the North Baja Pipeline Expansion Project

Species	Status [a]			Eliminated from Further Consideration	Facility/General Milepost Range Where Species May Occur
	Federal	State	Other		
Fairyduster (*Calliandra eriophylla*)			2	No	B-Line: MPs 45.1 to 49.8, 53.6 to 57.4, and 65.1 to 66.6 IID Lateral: MPs 0.5 to 7.9
Giant Spanish-needle (*Palafoxia arida* var. *gigantean*)			1B/BLM-S	No	IID Lateral: MPs 0.5 to 7.9
Glandular ditaxis (*Ditaxis clariana*)			2	Yes. Not expected to occur in Project area. Not identified during previous surveys.	
Harwoods milk-vetch (*Astragalus insularis* var. *harwoodii*)			2	Yes. Not expected to occur in Project area. Not identified during previous surveys.	
Las Animas colubrina (*Colubrina californica*)			2	Yes. Not expected to occur in Project area. Not identified during previous surveys.	
Munz's cholla (*Opuntia munzii*)			1B/BLM-S	Yes. Not expected to occur in Project area. Not identified during previous surveys.	
Peirson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*)	FT	SE	1B	No	B-Line: MPs 72.0 to 79.8 IID Lateral: MPs 0.5 to 7.5
Saguaro (*Carnegiea gigantean*)			2	Yes. Not expected to occur in Project area. Not identified during previous surveys.	
Sand food (*Pholisma sonorae*)			1B	No	IID Lateral: MPs 0.5 to 7.9
Slender woolly-heads (*Nemacaulis denudata* var. *gracilis*)			2	Yes. Not expected to occur in Project area. Not identified during previous surveys.	
Wiggins's cholla (*Opuntia wigginsii*)			3	Yes. Not expected to occur in Project area. Not identified during previous surveys.	
Wiggins's croton (*Croton wigginsii*)		SR	2	No	IID Lateral: MPs 0.5 to 7.9

[a] Status:
FE = Federally listed as endangered
FT = Federally listed as threatened
FC = Candidate for Federal listing as endangered or threatened
SE = California State-listed as endangered
ST = California State-listed as threatened
SR = California State-listed as rare (California Native Plant Protection Act)
SC = Federally/California State-listed as special concern
1B = CNPS list of plants that are rare, threatened, or endangered in California and elsewhere
2 = CNPS list of plants that are rare, threatened, or endangered in California, but more common elsewhere
3 = CNPS list of plants about which more information is needed to determine their status
BLM-S = Bureau of Land Management lists as sensitive

North Baja has proposed to implement the following general minimization and conservation measures to reduce the impact of the Project on special status species:

- North Baja would use its environmental training program, successfully implemented for the A-Line construction, as a basis for a site-specific environmental training program to be implemented before the start of work. All employees and contractors working in the field would be required to complete an environmental training session before beginning work on the right-of-way. The program would include discussions of the biology, distribution, and ecology of special status species within the geographic area of construction; protection afforded such species under applicable Federal and State laws and regulations; all protection measures that must be followed to protect such species during Project activities; penalties for noncompliance; reporting requirements; and the importance of compliance with all protection measures. To ensure proper focus, emphasis would be placed on the specific aspects of compliance applicable to the particular audience's activities on the Project.

- Employees and contractors would be informed during one or more training sessions that they are not authorized to handle or otherwise move listed species at any time, including while commuting to work sites or at a work site.

- North Baja would hire and designate at least two EIs per construction spread who would be responsible for overseeing Project environmental protection measures, including those for special status species. Environmental inspection procedures would be in compliance with the relevant provisions of North Baja's CM&R Plan. North Baja would also hire and designate at least one authorized biologist who would be responsible for identification of habitat and individuals of special status species and for implementation of all measures requiring an authorized biologist's intervention. The biologist would, if needed, hold the required permits or formal agreements with appropriate Federal and State agencies for the survey or handling of any special status species.

- An authorized biologist would conduct species-specific surveys of each Project facility located within areas identified during North Baja's surveys as listed species habitat no more than 7 days before the onset of activities.

- Project personnel would exercise caution when commuting to the construction area to minimize any chance for the inadvertent injury or mortality of species encountered on roads leading to and from the construction area. North Baja's contractors and employees would report all such incidents directly to an EI.

- Only existing routes of travel and approved access roads would be used to and from construction areas. Cross-country travel by vehicles and equipment would be prohibited. Except on county- or State-maintained roads, vehicle and equipment speeds would not exceed 25 miles per hour within potential habitat of a listed species. On the B-Line, between MPs 48.0 and 68.0 (an area of relatively high tortoise density), North Baja states that it would limit vehicle and equipment speeds to 10 miles per hour except for stringing trucks, which North Baja proposes to allow to travel at 25 miles per hour.

- Authorized biologists would monitor all work where prior North Baja surveys have documented the occurrence of one or more listed species and where construction activities can reasonably be expected to adversely affect those species. In conjunction with North Baja's EIs, the biologists would have the authority to halt all non-emergency

actions that might result in harm to a listed species, and would assist in the overall implementation of protection measures for listed species during Project activities.

- All trash and food items generated by construction and maintenance activities would be promptly placed in a closed container and regularly removed from the Project site to reduce the attractiveness of the area to common ravens and other desert predators.

- Firearms and domestic pets would be prohibited from work sites.

- In the construction work area and along access roads, employees and contractors would look under vehicles and equipment for the presence of special status species before movement. If a special status species is observed, no vehicles or equipment would be moved until the animal has left voluntarily or is removed by an authorized biologist.

- Pipeline construction activities between dusk and dawn would be limited to emergencies only (i.e., issues involving human health and safety) with the exception of the HDD operations (including those at the Colorado River, the All-American Canal, Interstate 8, the East Highline Canal) and the open-cut crossing of Rannells Drain.

- Open pipeline trenches, auger holes, or other excavations that could entrap wildlife would be inspected by an authorized biologist a minimum of three times per day, and immediately before backfilling. In habitats supporting special status species, pipe segments would either be capped or taped closed each night or raised on supports of sufficient height to prevent the entry and entrapment of special status species. Such pipe segments would be inspected regularly before sealing and before using in the morning. For open trenches, earthen escape ramps would be maintained at 1-mile intervals. Other excavations that remain open overnight would be covered, ramped, or fenced to prevent entrapment of wildlife.

- If a listed species is located during construction, and a contingency for avoidance, removal, or transplant has not been approved by the FWS or appropriate agency, North Baja would not proceed with Project activities in that location until specific consultation with the FERC, the FWS, the BLM, and/or other appropriate agency is completed.

- All encounters with listed species would be reported to the biologist, who would record the following information:

  - species;
  - location (narrative and maps) and dates of observations;
  - general condition and health, including injuries and state of healing;
  - diagnostic markings, including identification numbers or markers; and
  - locations moved from and to.

- Upon locating a dead or injured listed species, North Baja would notify the FWS and the CDFG in California or the AGFD in Arizona. Written notification would be made within 15 days of the date and time of the finding or incident (if known) and would include: location of the carcass, a photograph, cause of death (if known), and other pertinent information.

- As described in Section 2.2.1, in general, the construction right-of-way would be limited to a width of 105 feet along the B-Line. North Baja proposes to generally use a 100-foot-

wide construction right-of-way for the Arrowhead Extension except when in the Arrowhead Boulevard roadway or road shoulder where a 60-foot-wide construction right-of-way would be used. The construction right-of-way for the IID Lateral would be limited to a width of 60 feet for the majority of its length and 80 feet where it parallels existing utility corridors. The construction right-of-way would be clearly staked and flagged in advance of construction. The construction work area includes approved work areas for the pipelines, compressor station, and meter stations; the facilities at Rannells Trap; the taps, crossover piping, and pig launcher associated with the Arrowhead Extension; access roads; the tap to the B-line and pig launcher associated with the IID Lateral; and staging and pipe storage areas.

- As described in Section 4.6.2.3, North Baja would attempt to schedule construction in native habitats outside of the breeding season for migratory birds. If, however, construction activities are necessary in native habitats during the bird breeding season, North Baja would remove vegetation that could provide nesting substrate from the right-of-way before the breeding season, thus eliminating the possibility that birds could nest on the right-of-way. In accordance with the Agency Staffs' recommendation in Section 4.6.2.3, specific plans relating to preclearing of vegetation would be coordinated with the FWS, the BLM, and the CDFG. Qualified biologists would conduct preconstruction surveys to confirm the absence of nesting birds before construction begins.

- If, in spite of vegetation removal, nesting birds are found on the construction right-of-way, the nest would not be removed until fledging has occurred or unless authorized after consultation with the FWS, the CDFG, and, if the nest is located on Federal lands, the Federal land management agency.

- At specified locations in areas of high-density microphyll woodland (see Table 4.5.3-2), North Baja would narrow the construction right-of-way width to 80 feet. Areas of this narrower construction width would be identified in the field, staked, and flagged in advance of construction.

- At the conclusion of work, all trenches and holes would be completely filled, surfaces cleaned and smoothed, and each site recontoured to match the original profiles as closely as possible.

- With the exception of fenced facilities, all materials and equipment would be removed from the area upon completion of work. All stakes, flagging, and fencing used to delineate and protect any environmental or cultural feature in the construction area would be removed no later than 30 days after construction and restoration are complete.

- Upon completion of Project activities, North Baja would submit a final report to the FERC for distribution to other agencies, including the FWS. The report would document the effectiveness and practicality of the conservation measures, the number of individuals of each species excavated from their burrows or removed from the site, the number of individuals killed or injured, and other pertinent information. The report would also recommend modifications of the Project stipulations in order to enhance the protection of species in the future. In addition, the final report would provide the actual acreage disturbed by Project activities by habitat type.

These measures would be applied Project-wide and would reduce most impacts on special status species to less than significant levels. The Agency Staffs believe, however, that North Baja's proposal to

allow stringing trucks to travel at 25 miles per hour between MPs 48.0 and 68.0 of the B-Line would not adequately protect special status species. North Baja has indicated that limiting vehicles, other than stringing trucks, to 10 miles per hour would provide maximum protection to special status species due to the increased frequency of non-stringing truck traffic along the right-of-way. North Baja further indicated that stringing trucks would enter and exit the right-of-way at locations that minimized the time the trucks were operating along the right-of-way, and that decreasing the allowed speed of the stringing trucks could have schedule and associated cost implications. However, the Agency Staffs continue to have concerns about allowing these large, generally heavily loaded, trucks to operate at an increased speed along the right-of-way in areas of known special status species occurrence given the longer required stop time for these vehicles. Because the speed restriction would only occur along a 20-mile stretch and the restriction would be known well before the construction bids would be prepared, it does not appear that this restriction should significantly impact the construction schedule or costs. Furthermore, limiting the speed of the stringing trucks would aid in dust control, which is a concern of the BLM. Therefore, **the Agency Staffs recommend that:**

- **North Baja shall restrict stringing trucks to a 10-mile-per-hour speed limit on the right-of-way between MPs 48.0 and 68.0 of the B-Line.**

As discussed in Section 2.5, North Baja would employ EIs who would be responsible for overseeing the implementation of environmental protection measures; full-time third-party Compliance Monitors would be present on the construction spreads to monitor compliance with the Project mitigation measures and requirements; and the FERC, CSLC, and BLM staff would conduct periodic inspections of the Project for compliance with the Project's environmental conditions. Other Federal, State, and local agencies would conduct oversight of inspection and monitoring to the extent determined necessary by the individual agency.

Site-specific impacts and species-specific conservation measures are discussed below.

4.7.4 Federally Listed Threatened and Endangered Species

Based on consultations with the Arizona and Carlsbad Field Offices of the FWS as well as the CDFG and a search of the CNDDB, nine federally listed endangered or threatened species or species proposed for listing as endangered or threatened were identified as potentially occurring in the Project area (see Table 4.7.2-1). Following preliminary field surveys and further consultations with the FWS offices, four species were eliminated from further consideration: the bald eagle, brown pelican, bonytail chub, and desert pupfish. These species are only known from sites well away from the proposed Project area. Therefore, the Agency Staffs have determined that there would be *no effect* on these species from construction or operation of the North Baja Pipeline Expansion Project. The Agency Staffs have determined that the proposed Project has the potential to affect the remaining five federally listed species that are known or suspected to occur within the Project area. A discussion of these five species is presented below.

4.7.4.1 Southwestern Willow Flycatcher

The southwestern willow flycatcher is federally and California-listed as endangered. This species breeds in riparian habitats along rivers, streams, or other wetlands where dense growths of willows or other shrubs and medium-sized trees are present. Similar habitats are used during migration. All willow flycatcher subspecies winter in Mexico, Central America, and possibly northern South America, but specific wintering grounds and migration routes for the southwestern subspecies are unknown. Southwestern willow flycatchers are late migrants and typically arrive on their breeding grounds in mid-May where they remain until late-August (Tibbitts et al. 1994).

Surveys for southwestern willow flycatchers were conducted in accordance with FWS survey protocols during May, June, and July 2005 in known areas of habitat along the B-Line as identified during surveys for the A-Line. These areas include the Ehrenberg area (MP 0.0), the Stallard Road area (MP 25.0), and near the Cibola NWR Davis Lake Area (MP 33.0). No breeding southwestern willow flycatchers were identified at any of the habitat locations surveyed along the B-Line in 2005. However, migrants were identified between May 17 and June 12, 2005 at Ehrenberg and between May 16 and June 11, 2005 at Stallard Road. No southwestern willow flycatchers were identified at the Cibola NWR, or during a June 29, 2005 survey or two July 2005 surveys. These results are consistent with the 2001 surveys and the 2002 monitoring efforts conducted at the same locations for the A-Line. There is no suitable habitat for this species along the proposed Arrowhead Extension or the IID Lateral.

Southwestern willow flycatchers are known to migrate through the area that would be crossed by the B-Line, specifically near the Colorado River and in the vicinity of Stallard Road, but there is no evidence of these birds nesting in the area. Although the removal of desert wash woodland trees during the installation of the B-Line would reduce habitat for this species, in accordance with its general conservation measures, North Baja proposes to clear vegetation outside of the breeding season, thereby avoiding impacts on potential breeding individuals. Also, because the habitat loss would occur adjacent to an existing pipeline in the area, clearing would not fragment suitable habitat, but rather would be a minor, incremental loss of desert wash woodland. Nonetheless, if suitable habitat was occupied during clearing, construction could increase stress on migrating flycatchers and increase their susceptibility to predators or reduce their physical condition during the critical migrating period. These potential impacts, however, would not ultimately be expected to occur as there is sufficient desert wash woodland throughout the Project vicinity along the Colorado River and in the Cibola NWR. It is expected that migrating individuals would use these adjacent areas for foraging and cover. Thus, there would be no direct adverse impacts from Project construction on individual birds or bird populations aside from a temporary relocation from one area of suitable habitat to another similar and nearby area. North Baja's implementation of measures included in its CM&R Plan would facilitate the long-term restoration and revegetation of desert wash woodlands affected by construction such that these areas would be suitable for use by migrating flycatchers in the future.

Southwestern willow flycatchers potentially using habitat along the Colorado River could be disturbed by activities associated with the HDD of that waterbody. Specifically, noise and light associated with HDD equipment and activities could dissuade individuals from using habitat in the vicinity of the HDD and/or could interrupt resting individuals. However, because migrating individuals could easily relocate to other nearby areas of suitable resting habitat, adverse impacts on migrants are not expected. To minimize the potential for construction activities to affect southwestern willow flycatchers at the Colorado River crossing, **the Agency Staffs recommend that:**

- **North Baja shall implement the following measures at the Colorado River during activities associated with the HDD:**

  a. all individuals working within or adjacent to southwestern willow flycatcher habitat shall complete southwestern willow flycatcher training <u>before working within the construction right-of-way in those areas</u>; and

  b. dust shall be strictly controlled by watering construction areas within 1,000 feet of potential habitat at the Colorado River.

As a result of North Baja's proposed measures as well as the Agency Staffs' recommendation above and in Section 4.6.2.3, although the North Baja Pipeline Expansion Project may affect habitat used by the southwestern willow flycatcher, the Project is *not likely to adversely affect* the species. Further,

although construction-related disturbances could cause individuals to avoid suitable habitats, with implementation of the measures outlined above, the Agency Staffs believe that disturbances of individuals are unlikely and impacts on the southwestern willow flycatcher associated with the Project would be less than significant.

4.7.4.2 Yuma Clapper Rail

The Yuma clapper rail is federally listed as endangered and California-listed as threatened. In California, the Yuma clapper rail is found between February and August in freshwater and brackish emergent wetlands along the Colorado River and around the Salton Sea. Although this species requires mature stands of cattails and bulrushes for cover, it can be found foraging in adjacent areas of shallow water and mudflats for crayfish, clams, and insects.

Preliminary evaluations along the B-Line indicated that potential habitat for this species is found in freshwater marshes, wetlands, and drains near the Colorado River, the Palo Verde Valley, and the Davis Lake areas (MPs 0.0 to 12.0 and MPs 31.0 to 33.0). A focused survey was conducted at each location of identified potential habitat in 2001 and again in May 2005. The survey was conducted to determine the number and location, if any, of the Yuma clapper rail. Surveys were conducted following a modified survey protocol (survey window extended to May 30, 2005), as discussed with and approved by the FWS on May 10, 2005. Each area of potential habitat was surveyed twice between May 16 and May 25, 2005. No Yuma clapper rails were detected during these survey efforts, consistent with survey and monitoring results from 2001 and 2002 and species records in the area. No potential habitat for the Yuma clapper rail was identified along the proposed Arrowhead Extension.

Preliminary evaluations along the IID Lateral indicated that potential habitat for this species may occur near the Alamo River (MP 32.3). North Baja has not yet conducted surveys for this species at this river crossing.

Although this species was not identified along other areas of the B-Line during previous surveys, in order to avoid impacts on the species during construction of the A-Line, the FWS required that vegetation be cleared before construction in the areas of direct impacts along Rannells Drain as well as an area extending 150 feet on either side of the direct zone of impact. Further, the CDFG has recommended that if Rannells Drain is not cleared before construction, North Baja would be required to conduct surveys for the Yuma clapper rail at this location. North Baja has agreed to conduct these surveys, if necessary. However, North Baja has not proposed conservation measures to avoid impacts on individual Yuma clapper rails if identified during such surveys, nor has North Baja proposed to conduct surveys for the Yuma clapper rail at the Alamo River. Therefore, **the Agency Staffs recommend that:**

- **North Baja shall implement the following measures to minimize impact on the Yuma clapper rail unless North Baja provides documentation from the FWS and the CDFG that such measures are not necessary or if site-specific surveys fail to identify individuals at the Alamo River or Rannells Drain:**

  a. ensure vegetation at the proposed crossing location of Rannells Drain, extending 150 feet on either side of the proposed construction work area, is cleared <u>before February 1, 2009</u>;

  b. ensure vegetation at the proposed crossing location of the Alamo River is cleared <u>before February 1, 2009</u>; and

c. initiate all construction activities at Rannells Drain and the Alamo River <u>between the hours of 8:30 AM and 3:30 PM</u> to avoid periods of peak Yuma clapper rail vocalizations.

Direct impacts on Yuma clapper rail and/or rail habitat along the Colorado River would be avoided through North Baja's proposed HDD crossing of this waterbody and the adjacent habitat. Additionally, the measures recommended by the Agency Staffs to avoid impacts on the southwestern willow flycatcher at the Colorado River would also avoid impacts on the Yuma clapper rail at the Colorado River.

Disturbance of wetlands and drains during Project construction would reduce available foraging and nesting habitat for the species. The reduction in this habitat type could reduce the ability of the area to support clapper rails or affect the overall suitability of habitat in the region. However, impacts on wetland and drain habitat would be temporary because these vegetation communities typically revegetate within 1 year following construction. As a result of the Agency Staffs' recommendations and given that impacts on Yuma clapper rail habitat would be minor and temporary, the proposed Project *is not likely to adversely affect* the species.

4.7.4.3 Desert Tortoise

The desert tortoise, a federally and California-listed threatened species, is widely distributed throughout the Mojave and Colorado deserts from below sea level to elevations of about 4,130 feet or higher. It is most common in desert scrub, desert wash, and Joshua tree habitats, but occurs in almost every desert habitat except on the most precipitous slopes. Highest tortoise densities are found in creosote bush communities with extensive annual wildflower blooms. This species requires friable soil for burrow and nest construction, but does not occupy areas of blown sand or very sandy soils due to burrow collapse.

The BLM's CDCA Plan, completed in 1980, has been amended by the NECO Plan. The NECO planning area is in the southeastern CDCA, primarily in the Sonoran Desert, and provides a landscape approach to managing desert ecosystems. The CDCA includes a system of large DWMAs for the desert tortoise. Specific DWMA prescriptions include standardization of BLM management classes, tortoise categories, and critical habitat; 5:1 ratio for surface disturbance compensation; and an overall 1 percent disturbance limit for any development within a DWMA.

The North Baja Pipeline Expansion Project would be outside the designated DWMAs. All of the land defined in BLM records as tortoise habitat that would be crossed by the proposed pipeline and lateral routes was previously defined as Category II lands, which recognize that the desert tortoise habitat is of lesser quality than that classified as Category I lands (most of which were incorporated into a DWMA). All categories of desert tortoise habitat outside the DWMAs were defined under the NECO Plan to be Category III for the purposes of compensation for disturbance, and have been assigned a compensation ratio of 1:1.

In the vicinity of the proposed B-Line, the creosote bush scrub habitats east of the Mule Mountains extending south to Interstate 8 (MPs 16.0 to 75.2) are potentially suitable habitat for the desert tortoise. A portion of this, MPs 34.0 to 58.4, is part of the Chuckwalla Unit, an area designated by the FWS as critical habitat for the desert tortoise. The Chuckwalla Unit includes privately owned land as well as land managed by the BLM.

Surveys for desert tortoise were conducted along the A-Line in 2001 and for the proposed B-Line between April 18 and April 27, 2005. The purpose of the surveys was to determine the number and

location of desert tortoise sign, including live and dead tortoise, burrows, scat, and tracks. Although one potential tortoise burrow was found in Riverside County at MP 11.8 in 2001, tortoise sign reliably associated with active tortoise use was noted only along the proposed B-Line route from MPs 17.0 to 69.0. In general, tortoise sign found in the 2001 survey, tortoise encounters documented during construction in 2002, and tortoise sign found in 2005 were closely correlated. The highest density of tortoise sign was found between MPs 41.0 and 67.0, with very high concentrations in the area of Indian Wash between MPs 62.5 and 65.5.

Construction of the B-Line would impact a total of 832 acres of desert tortoise habitat; however, only 237 acres would be new disturbance and 595 acres would overlap the previously disturbed (and compensated for) A-Line construction right-of-way. A total of 358 acres of critical habitat would be impacted, of which 106 acres would be new disturbance. The FWS has stated that only new disturbance would require compensation (Robleck 2005). The primary impact on critical habitat would occur during the construction phase of the Project. During construction, critical habitat would be temporarily disturbed at work areas, temporary access roads, and along the construction right-of-way. Although these areas would be restored and not used again during routine operation or maintenance, recovery in the arid climate is expected to take more than 10 years. Through desert tortoise critical habitat, the B-Line would be immediately adjacent to the existing A-Line, as well as portions of Stallard Road, SR 78, and Ogilby Road, which would minimize habitat fragmentation. The proposed Project would use existing access roads to the extent practicable with new access road construction limited to 0.25 mile as permanent access to the Blythe Meter Station. Thus, while the area of the right-of-way is within critical habitat, North Baja would limit disturbance of previously unaffected areas to the narrowest extent practicable. The proposed Project would not cross public lands within the DWMA that are managed for the conservation of the desert tortoise.

To compensate for the loss of desert tortoise habitat not previously compensated for during construction of the A-Line, North Baja would implement the following measures:

- Compensation rates for new impacts on desert tortoise habitat of 1:1 would be calculated and an assessed financial contribution would be paid to the BLM. In accordance with accepted guidelines previously implemented by the FERC, the FWS, and the BLM, areas of new impacts would include only those areas not previously affected by construction of the A-Line.

- North Baja would provide funding to the CDFG to manage acquired lands in addition to an enhancement fee based on the same compensation rate, which would be based on the CDFG published or calculated rates per acre at the time of issuance of the final EIS/EIR for the proposed Project.

In addition to the loss of potential desert tortoise habitat, construction-related impacts on the desert tortoise could include direct mortality or injury as a result of being crushed by vehicles, movement of soils, and entrapment in burrows and open trenches. North Baja would minimize the potential for impacts on the desert tortoise by implementing the following measures:

- North Baja would submit the names, permit numbers, and relevant tortoise experience resumes of all individuals who might need to handle desert tortoises to the FWS for approval at least 15 days before the initiation of clearance surveys. North Baja would also submit the list to the BLM for its records. Project activities would not begin until an authorized biologist has been approved. Although other biologists may be employed as biological monitors, only those approved by the FWS as authorized biologists would be permitted to handle tortoises.

- All persons authorized by the FWS to handle desert tortoises would follow the guidelines established in the *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council 1999).

- A clearance survey for the desert tortoise would be conducted by an authorized biologist within 24 hours before ground disturbance.

- Burrows outside of the limits of the construction right-of-way would be flagged so that the biological monitor would be able to more easily locate them during construction.

- All desert tortoise burrows or pallets in the construction area would be excavated by an authorized biologist. All desert tortoise handling and burrow excavation would be in accordance with the handling procedures developed by the FWS and would be conducted by authorized biologists.

- Desert tortoises that are found above ground and need to be moved from potential harm would be placed in the shade of a shrub by the authorized biologist. All desert tortoises removed from burrows would be placed in an unoccupied burrow of approximately the same size as the one from which it was removed.

- If an existing burrow is unavailable, the authorized biologist would construct or direct the construction of a burrow of similar size, shape, depth, and orientation as the original burrow. Desert tortoises moved during inactive periods would be monitored for at least 2 days after placement in the new burrows to ensure their safety. The authorized biologist would be allowed some judgment and discretion to ensure that the survival of the desert tortoise is likely.

- Should a tortoise wander into the construction area during construction, adjacent activities would be halted until the tortoise is moved out of the construction work area and out of harm's way.

- North Baja would install exclusion fencing along the right-of-way in areas where tortoise density is sufficiently high to warrant fencing, in the opinion of the authorized biologist in charge of tortoise surveys and in consultation with the FWS and the CDFG, to prevent tortoises from entering the construction work area and getting in harm's way.

- A worker bonus program would be implemented that would reward construction staff who spot a tortoise within the construction work area and, without touching or disturbing the animal, notify the authorized biologist for action.

- If a tortoise is located in the construction work area and is not moving, adjacent activities would be halted until an authorized biologist is able to move it out of harm's way.

- All pipeline marker signs within desert tortoise habitat would be fitted with "bird-be-gone" or similar bird repellent devices.

- Only approved access roads would be used. Only approved areas would be used for temporary storage areas, laydown sites, and any other surface-disturbing activities. Any routes of travel that require construction or modification, or any additional work areas, would be surveyed for tortoises by an authorized biologist(s) before modification or construction of the route or construction or use of a new work area.

- Trench segments or other excavations would be provided with tortoise escape ramps at 1-mile intervals. All excavations would be inspected for tortoises three times daily and before backfilling.

- Any time a vehicle is parked, the ground around and under the vehicle would be inspected for desert tortoises before the vehicle is moved. If a desert tortoise is observed, it would be left to move on its own. If this does not occur within 15 minutes, an authorized biologist would remove and relocate the tortoise.

- Within desert tortoise habitat, construction pipe, culverts, or similar structures with a diameter of 3 inches or greater that are stored on the construction site for one or more nights would be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored on the construction site.

- All construction-related activities in desert tortoise habitat would be conducted between dawn and dusk.

Although these measures would substantially reduce impacts on the desert tortoise, the construction of the proposed Project *is likely to adversely affect* the desert tortoise and its critical habitat and, as such, impacts on this species would be considered significant. Therefore, approval of the Project would be subject to a Statement of Overriding Considerations under the CEQA. As part of the section 7 formal consultation process, the FWS included non-discretionary terms and conditions in the BO to ensure that the Project would not jeopardize the continued existence of the desert tortoise (see Appendix R). North Baja would not be authorized to make any irreversible or irretrievable commitments of resources that would foreclose formulation or implementation of any reasonable or prudent alternatives needed to avoid jeopardizing the continued existence of the species and adverse modification of its critical habitat.

4.7.4.4 Razorback Sucker

The razorback sucker is a federally and California-listed endangered fish species found only in large rivers of western North America's Colorado River basin (Mueller 2000). Both a riverine and lacustrine species, razorback suckers are found in low-velocity main channel backwaters or off-channel wetlands. This fish spawns in areas of sand, gravel, or rocks in shallow water.

The razorback sucker may occur along the proposed B-Line at the Colorado River crossing (MP 0.2). The razorback sucker is also known to occur throughout the Palo Verde Outfall Drain. The proposed B-Line route would parallel, but would not affect, the Palo Verde Outfall Drain from MPs 24.0 to 31.0.

The FWS has designated a portion of the Colorado River crossed by the B-Line as critical habitat for the species. As currently proposed, North Baja would install the pipeline under the Colorado River using the HDD method. Unlike a conventional open-cut crossing, an HDD crossing would not alter or remove streambed or streambank habitat, cause in-stream sedimentation, or interfere with fish movement. This method would avoid effects on the razorback sucker during the crossing of the Colorado River.

North Baja may withdraw water from sources hydrologically connected to the Colorado River for use in dust control activities and hydrostatic testing of the pipeline (see Section 4.3.3.4). Pursuant with its CM&R Plan, North Baja would screen intake piping to prevent fish and fish egg entrainment during hydrostatic test water withdrawals. In Section 4.3.4, the Agency Staffs have recommended that North

Baja file a revised Dust Control Plan that includes measures to prevent fish and fish egg entrainment during dust control water withdrawal.

It is possible that geologic irregularities could be encountered during the HDD crossing of the Colorado River that could result in the inadvertent release of drilling mud (frac-out) or the inability to complete the crossing using the HDD method. North Baja has prepared an HDD Plan (see Appendix G) that would minimize the adverse impact of a frac-out on aquatic resources. During construction of the A-Line, there were no frac-outs into the Colorado River and, based on geotechnical studies, none are expected to occur during the B-Line crossing of the river. Therefore, although the potential exists for the Project to affect the species in the event of a frac-out during the HDD crossing of the Colorado River, the potential for this to occur is low. Because of the low likelihood of a frac-out and the measures that would be implemented during water withdrawals from the Colorado River, the Agency Staffs have determined that construction of the proposed Project is *not likely to adversely affect* the razorback sucker or its critical habitat and, as such, impacts on this species would be less than significant.

4.7.4.5 Peirson's Milk-vetch

The Peirson's milk-vetch is a federally listed threatened and California-listed endangered plant found in southern California, Arizona, and Baja California. In California, the Peirson's milk-vetch occurs on sand dunes in the Algodones Dunes system of Imperial County. Historically, the plant was known from Borrego Valley in San Diego County and at a site southwest of the Salton Sea in Imperial County, but it has not been identified at those locations in recent years (Sawyer and Keeler-Wolf 1995). It is thought that the species responds positively to substrate disturbance, due in part to the redistribution of sandy substrate and nutrients to the ground surface.

Critical habitat for the Peirson's milk-vetch was designated by the FWS in 2004. Critical habitat in the Project area consists of Subunits A and B of the Algodones Dunes Critical Habitat Unit, which includes both Federal and private land. Subunit A is north of SR 78 and encompasses portions of the Mammoth and North Algodones Dunes Wilderness. Subunit B lies south of SR 78 and north of Interstate 8 and encompasses the Ogilby Management Area. The proposed Project does not cross Subunits A or B and, therefore, would be outside designated critical habitat.

North Baja conducted a focused survey for the portion of the proposed B-Line route south of the intersection with Interstate 8 (MPs 72.0 to 79.8) on May 14, 2005, and a supplemental survey on the west side of the right-of-way on September 4, 2005. Individuals and small populations of the Peirson's milk-vetch were found along the proposed B-Line route in areas of sandy substrate off the existing A-Line right-of-way, while the three larger populations (greater than 100 plants each) were found on the A-Line right-of-way. Plant populations varied in density, generally occurring as single plants or relatively isolated populations of several dozen plants. The survey extended up to 30 feet west of the existing right-of-way, but only one plant was seen west of the previously disturbed right-of-way, approximately 5 feet off of the existing right-of-way. The remainder of the plants occurred within the disturbed right-of-way.

North Baja did not conduct a focused survey for the Peirson's milk-vetch along the proposed IID Lateral. However, the BLM conducted an annual focused survey for the Peirson's milk-vetch in 2005 in the ISDRA, which included the area that would be crossed by the IID Lateral. The results of this survey showed populations of the Peirson's milk-vetch close to the proposed IID Lateral route between MPs 0.5 and 7.5. Therefore, the presence of the Peirson's milk-vetch is assumed between MPs 0.5 and 7.5 of the IID Lateral.

Although no Peirson's milk-vetch were identified during preconstruction monitoring for the A-Line, after the heavy rains of 2004 and 2005 large numbers of Peirson's milk-vetch were found in the

disturbed post-construction right-of-way. Based on the survey results of the proposed B-Line and existing A-Line rights-of-way, it appears that there is a substantial seed bank of Peirson's milk-vetch available that was not adversely affected by construction of the A-Line. Additionally, it appears as if the topsoil and seed bank conservation measures implemented during construction of the A-Line in 2002 successfully preserved and distributed Peirson's milk-vetch seeds and provided for the quick re-establishment of this species. North Baja would utilize the same techniques used during construction and restoration of the A-Line for the proposed B-Line, including topsoil segregation to conserve the existing seed bank, respreading of topsoil upon completion of construction, and imprinting the right-of-way during restoration with equipment (e.g., sheepsfoot roller) to provide micro-catchment areas for seed retention. Clearing could result in the loss of the current season's seed production depending on construction timing; however, Peirson's milk-vetch seed is able to remain viable for several years (FWS 2002b). Therefore, re-establishment would not be dependent upon construction occurring after a single season's seed-production period.

North Baja would similarly segregate topsoil along the IID Lateral, but would not use a sheepsfoot roller in the area of the dunes along the lateral because this equipment is ineffective in sand. Construction of the IID Lateral through potential Peirson's milk-vetch habitat would be conducted in the summer months after adult plants (if present) have already set seed, which should allow for the re-establishment in the next growing season after construction is completed.

Proposed mitigation measures, including topsoil segregation and timing of construction, would substantially reduce impacts on the Peirson's milk-vetch. Additionally, construction through previously undisturbed areas adjacent to the existing right-of-way could actually benefit the species by providing open areas for the species to develop. Nonetheless, the proposed Project would result in direct impacts on the species, including crushing and cutting of individuals and populations. Thus, although construction in locations adjacent to populations of this species may increase habitat suitability or otherwise make the area suitable for proliferation of the species, the likelihood of overall positive benefits is uncertain. The clearing and grading of areas currently containing individuals and populations of this species would result in direct and adverse impacts on existing populations. Therefore, the Agency Staffs believe that the North Baja Pipeline Expansion Project *is likely to adversely affect* the Peirson's milk-vetch and, as such, impacts on this species would be considered significant and approval of the Project would be subject to a Statement of Overriding Considerations under the CEQA. As part of the section 7 formal consultation process, the FWS concluded in the BO that the Project would not jeopardize the continued existence of the Peirson's milk-vetch (see Appendix R).

4.7.5 State-listed Threatened and Endangered Species

Based on consultations with the AGFD and the CDFG and a search of the CNDDB, 16 State-listed or proposed listed rare, threatened, or endangered species were identified as potentially occurring within the proposed Project area. The Agency Staffs have determined that due to lack of habitat, the proposed Project would not affect the bald eagle, the brown pelican, the elf owl, or the desert pupfish, and they have been eliminated from further consideration. Based on habitat evaluations and species-specific surveys, the Agency Staffs have determined that the North Baja Pipeline Expansion Project has the potential to affect the remaining 11 species. Five of these species are also federally listed (southwestern willow flycatcher, Yuma clapper rail, desert tortoise, razorback sucker, Peirson's milk-vetch) and are discussed in Section 4.7.4. The remaining six species are discussed below.

4.7.5.1 Arizona Bell's Vireo

The Arizona bell's vireo is a California-listed endangered bird that inhabits desert riparian communities where thickets of willow and other low shrubs are found along water and intermittent

streams. In California, the Arizona bell's vireo is limited in distribution to a few locations along the Colorado River.

Habitat evaluation surveys along the proposed B-Line identified potential habitat for this species at the Colorado River (MPs 0.0 to 3.0) and the Davis Lake area (MPs 31.0 to 33.0). As discussed previously, the use of the HDD method to cross the Colorado River and implementation of North Baja's general conservation measures would serve to avoid or minimize potential impact on areas adjacent to the Colorado River, including habitat for the Arizona bell's vireo. The proposed B-Line would cross no closer than 1,300 feet to Davis Lake between MPs 31.0 and 33.0 and, therefore, would not be considered a noise impact. In addition, riparian habitat would not be affected at this location. Therefore, construction of the pipeline would have no adverse effect on the Arizona Bell's vireo or its habitat. As such, the Project is not expected to reduce the overall abundance of the species in the area or cause a temporary loss or alteration of important habitat for the species. As a result, impacts on this species would be less than significant.

4.7.5.2 California Black Rail

The California black rail is a California-listed threatened species. This freshwater marsh bird requires mature stands of cattails and bulrushes for cover, and it can be found foraging in adjacent areas of shallow water and mudflats for crayfish, clams, and insects.

Preliminary habitat evaluations indicate that potential habitat for the California black rail is found in freshwater marshes, wetlands, and drains along the B-Line route near the Colorado River (MPs 0.0 to 3.0), the Palo Verde Valley (MPs 0.0 to 12.0), and the Davis Lake area (MPs 31.0 to 33.0). Habitat for this species may also occur near the Alamo River (MP 32.3) along the IID Lateral.

North Baja conducted a focused survey at each location of potential rail habitat along the A-Line in 2001 and along the proposed B-Line in May 2005. No California black rails were detected at any of the survey locations.

Because this species was not identified during surveys along the B-Line, no special mitigation measures are proposed besides North Baja's general conservation measures. However, areas of suitable habitat could become occupied prior to construction beginning in 2009, if the Project is approved. As recommended by the CDFG, North Baja has agreed to conduct preconstruction surveys for the California black rail if habitat for this species is not cleared before construction. Habitat for this species is similar to the Yuma clapper rail, previously discussed in Section 4.7.4.2. Per the Agency Staffs' recommendation for the Yuma clapper rail (see Section 4.7.4.2), suitable habitat for both the Yuma clapper rail and the California black rail at both Rannells Drain and the Alamo River would be cleared before construction. This measure would avoid direct impacts on the California black rail during construction of the B-Line.

Disturbance of wetlands and drains during Project construction would reduce available foraging and nesting habitat for the species. Impacts on wetland and drain habitat would be temporary because these vegetation communities typically revegetate within 1 year following construction. Given that no individuals were found to be using the areas along the proposed Project corridor during several recent surveys and that impacts on California black rail habitat would be minor and temporary, construction of the proposed Project would have no adverse effect on the California black rail and impacts on this species would be less than significant.

4.7.5.3 Gila Woodpecker

The Gila woodpecker is a California-listed endangered species. This species is common in Arizona, but is limited to a few scattered locations in the Colorado River Valley in California. The Gila woodpecker inhabits areas of desert riparian, mesquite, saguaro, or Joshua tree woodlands. It may sometimes be found in trees, palms, and even wooden utility poles in urban and suburban areas.

Before construction of the A-Line, 10 areas were identified as potential Gila woodpecker nesting habitat. These areas include the Colorado River crossing (MP 0.2) and areas at MPs 17.6, 21.8, 22.2 to 25.3 (Stallard Road Wash), MPs 35.6 to 36.4 (Milpitas Wash), MPs 46.4, 50.2 to 52.4, 55.5, 59.5, and 64.8 to 65.2 (Gold Rock Ranch). A focused survey and preconstruction surveys were conducted before construction of the A-Line in 2002.

The 2002 surveys identified two occupied cavities at MPs 50.7 and 51.7. One active nest cavity was identified in a power pole approximately 54 feet from the right-of-way. The other active nest cavity was located in a Palo Verde tree with a single male woodpecker within 16 feet of the right-of-way. The birds persisted during and after construction, and appeared unaffected by the pipeline installation process (Foster Wheeler Environmental Corporation [FWENC] 2002).

The CDFG recommended that North Baja conduct preconstruction surveys to determine the presence of the Gila woodpecker in the vicinity of the proposed B-Line in areas of suitable nesting habitat. North Baja has agreed to conduct surveys for Gila woodpeckers in areas of suitable nesting habitat before initiation of construction of the B-Line if construction is scheduled to occur during the breeding season. If active Gila woodpecker nest cavities are identified within 100 feet of the right-of-way during preconstruction surveys, North Baja would monitor cavities during construction to determine if nesting individuals are being disturbed by construction activities. If disturbance (e.g., avoidance of the cavity by individuals) is noted, and young are present in the cavity, North Baja would cease construction within 200 feet of the nest cavity until the young have fledged.

With implementation of North Baja's proposed surveys and conservation measures, if necessary, no direct adverse effect on the Gila woodpecker is expected from construction of the proposed B-Line. As a result, impacts on this species would be less than significant.

4.7.5.4 Western Yellow-billed Cuckoo

The western yellow-billed cuckoo is a California-listed endangered species and is also a candidate for Federal listing as endangered or threatened. This bird is an uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in California. Habitat loss has resulted in drastically reduced numbers of this species. Western yellow-billed cuckoos are most frequently found along perennial streams, wetlands, and other riparian areas with large stands of cottonwood and willow trees and an understory of mesquite, tamarisk, and cattail marshes.

Marginal habitat for the western yellow-billed cuckoo is present along some areas of the Colorado River near MP 0.2 of the proposed B-Line. North Baja's biologists conducted protocol surveys for this species before construction of the A-Line in June and July 2001. No individuals were identified during these surveys (FWENC 2002). Due to the highly degraded nature of the habitat in the Colorado River vicinity of the Project, this species is not expected to occur. Additionally, the Agency Staffs have determined that through implementation of North Baja's general conservation measures, the proposed Project would have no adverse effect on the western yellow-billed cuckoo. As such, Project-related impacts that would reduce the overall abundance of the species in the area or cause a temporary loss or

alteration of important habitat for the species are not expected. As a result, impacts on the western yellow-billed cuckoo would be less than significant.

4.7.5.5 Algodones Dune Sunflower

The Algodones Dune sunflower is a Federal species of concern, a California-listed endangered species, and is designated 1B (rare throughout all or portions of its range) by the CNPS. The Algodones Dune sunflower is a perennial herb found in partially stabilized desert dunes in the lee of prevailing winds in the southern Sonoran Desert in Imperial County and in southwestern Arizona and New Mexico. The species blooms from September to May, and is threatened primarily by OHV traffic (Skinner and Pavlik 1994, CDFG 2000).

Suitable habitat for this species is found along the IID Lateral route in the southern Algodones Dunes within the ISDRA (MPs 0.5 to 7.9). The IID Lateral would cross approximately 76 acres of Algodones Dune sunflower habitat in the ISDRA. In lieu of conducting species-specific surveys, North Baja has indicated that it is assuming that the species is present throughout the area of suitable habitat. North Baja would segregate topsoil along the IID Lateral, but would not use a sheepsfoot roller in the area of the dunes along the lateral because this equipment is ineffective in sand. Construction of the IID Lateral through potential Algodones Dune sunflower habitat would be conducted in the summer months after adult plants (if present) have already set seed, which should allow for the re-establishment in the next growing season after construction is completed. Although North Baja's general conservation measures would substantially reduce impact on this species, construction of the IID Lateral may result in the removal of individual plants. However, the reproduction potential of the local population would not be affected; therefore, construction of the IID Lateral would not have an adverse impact on the population of Algodones Dune sunflower. As a result, with the implementation of North Baja's general conservation measures, including the efforts to minimize the spread of non-native species, the Project is not expected to reduce the overall abundance of the species in the area or cause a temporary loss or alteration of important habitat for the species. Therefore, impacts on the Algodones Dune sunflower would be less than significant.

4.7.5.6 Wiggins's Croton

The Wiggins's croton is a California-listed rare plant species and is designated 2 (rare throughout all or portions of its range in California, but common beyond the boundaries of California) by the CNPS. This species occurs in the southeastern Sonoran Desert in southeastern Imperial County in California. It can be found on desert dunes and Sonoran desert scrub habitats, and is commonly associated with sand dunes and sandy arroyos. The Wiggins's croton blooms from March to May and is threatened by OHV traffic (Skinner and Pavlik 1994, CDFG 2000).

Suitable habitat for the Wiggins's croton is found along the IID Lateral route in the southern Algodones Dunes within the ISDRA (MPs 0.5 to 7.9). The IID Lateral would cross approximately 76 acres of Wiggins's croton habitat in the ISDRA. In lieu of conducting species-specific surveys, North Baja has indicated that it is assuming that the species is present throughout the area of suitable habitat. North Baja would segregate topsoil along the IID Lateral, but would not use a sheepsfoot roller in the area of the dunes along the lateral because this equipment is ineffective in sand. Construction of the IID Lateral through potential Wiggins's croton habitat would be conducted in the summer months after adult plants (if present) have already set seed, which should allow for the re-establishment in the next growing season after construction is completed. Although North Baja's general conservation measures would substantially reduce impact on this species, construction of the IID Lateral may result in the removal of individual plants. However, the reproduction potential of the local population would not be affected; therefore, construction of the IID Lateral would not have an adverse impact on the population of

Wiggins's croton. As a result, with the implementation of North Baja's general conservation measures, including the efforts to minimize the spread of non-native species, the Project is not expected to reduce the overall abundance of the species in the area or cause a temporary loss or alteration of important habitat for the species. Therefore, impacts on the Wiggins's croton would be less than significant.

4.7.6 Other Special Status Species

Based on consultations with the FWS, the BLM, the AGFD, and the CDFG and a search of the CNDDB, 35 special status species (i.e., those not federally or State-listed or proposed listed endangered or threatened) were identified as potentially occurring within the Project area. Based on habitat evaluations and species-specific surveys, the proposed Project has the potential to affect 16 of these species. A discussion of potential impacts and measures to avoid or minimize impacts on these species is presented below.

4.7.6.1 Colorado River Cotton Rat

The Colorado River cotton rat is a California species of special concern. This species is limited to the marshes of the Colorado River. The B-Line would cross the Colorado River and associated riparian areas at about MP 0.2 using the HDD method. This method would not require surface disturbance within the river or in the adjacent banks or wetlands. If a frac-out occurred during the HDD of the river, drilling mud could be released into areas adjacent to the river, and North Baja's efforts to contain the drilling mud could further affect potential habitat for the Colorado River cotton rat. However, successful HDDs of the Colorado River have been completed in the vicinity of the B-Line crossing and North Baja does not anticipate difficulties with the crossing for the proposed Project. The Agency Staffs anticipate that the proposed HDD is likely to be successful; therefore, the North Baja Pipeline Expansion Project is not expected to reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts on the Colorado River cotton rat that could contribute to a trend towards Federal or State listing. As a result, impacts on the Colorado River cotton rat would be less than significant.

4.7.6.2 Desert Bighorn Sheep

The desert bighorn sheep is listed as a sensitive species by the BLM. Desert bighorn sheep usually occur in small herds of about 10 animals in open, rocky, steep areas with available water and herbaceous forage. The sheep generally have two distinct, separate ranges in summer and winter, with corresponding spring and fall migrations. The summer ranges for desert bighorn sheep are typically smaller than winter ranges due to the sheep's dependence on water sources in the summer. The BLM reported that the proposed Project could encounter desert bighorn sheep near the Palo Verde Wilderness Area, which is approximately 1 mile west of the B-Line near MP 31.0. As discussed in Section 4.6.2.4, the multi-species WHMA that would be crossed by the B-Line between approximate MPs 35.2 and 50.0 includes two corridor portions of proposed WHMAs for bighorn sheep between MPs 35.2 and 42.0 and MPs 49.0 and 50.0.

Impacts on desert bighorn sheep are likely to be indirect in nature, resulting from noise-related disturbance during construction. All construction activities would occur within the approved construction work area and North Baja would inform workers that bighorn sheep may occur in the area.

Based on the distance of the Project from the Palo Verde Wilderness Area and because desert bighorn sheep are highly mobile and wide ranging and would likely avoid construction activities, impacts on the desert bighorn sheep would be less than significant.

4.7.6.3 Brown-crested Flycatcher

The brown-crested flycatcher is a California species of special concern. It inhabits desert riparian habitat along the lower Colorado River and requires thickets, trees, snags, and shrubs for foraging and perching, as well as nesting cavities and appropriate cover (CDFG 2000). This species breeds from May through September along the Colorado River south to Yuma; however, excessive clearing of the riparian forest along the lower Colorado River south to Yuma has made this species a rare breeder in the area (Small 1994).

Suitable riparian and desert wash woodland habitat for the brown-crested flycatcher occurs along the proposed B-Line in the lower Colorado River basin between MPs 22.0 to 23.0, 35.0 to 36.0, 41.0 to 46.0, 50.0 to 53.0, and 59.0 to 66.0 (Konecny 2000). Clearing of suitable habitat during construction of the proposed Project during the breeding season could result in injury or death of adults and young, if still in the nest, or abandonment of nests if they are located near the right-of-way. North Baja currently proposes to complete construction of the B-Line after the breeding season. Per its general conservation measures, North Baja would preclear vegetation along the B-Line if the schedule was modified such that construction would be necessary during the breeding season, thereby preventing individuals from nesting in areas that would be disturbed during construction. Additionally, per the Agency Staffs' recommendation in Section 4.6.2.3, preconstruction clearing would be conducted in accordance with recommendations from the FWS, the BLM, and the CDFG. The minor, incremental loss of unoccupied habitat would not be expected to have direct or indirect impacts on individuals or reduce the abundance of brown-crested flycatchers in the area because the proposed Project would be adjacent to an existing cleared right-of-way. Thus, fragmentation of undisturbed suitable habitat would not occur. With implementation of North Baja's general mitigation measures, the North Baja Pipeline Expansion Project is not expected to reduce the abundance of or alter habitat important for the brown-crested flycatcher that could contribute to a trend towards Federal or State listing. As a result, impacts on this species would be less than significant.

4.7.6.4 Burrowing Owl

The burrowing owl is a California species of special concern and a BLM sensitive species. This species is found in parts of the western United States, and inhabits open, dry grasslands, deserts, agricultural areas, and scrublands with low-growing vegetation. Burrowing owls are subterranean nesters and are typically found using burrows made by small mammals, such as ground squirrels or badgers.

Burrowing owls are known to occur in the irrigated desert agricultural areas along the proposed B-Line and along the IID Lateral in the Imperial Valley, showing that burrowing owl populations have adapted to agricultural activities in these areas. The B-Line would cross suitable burrowing owl habitat from MPs 0.0 to 12.0 (which includes 18th Avenue), and the IID Lateral would cross suitable burrowing owl habitat from MPs 28.0 to 46.0. FERC staff observed several burrowing owls adjacent to the road shoulders along 18th Avenue in summer 2005. North Baja conducted a survey for special status species along the proposed Arrowhead Extension in the Spring of 2006. North Baja identified one probable burrowing owl burrow and an individual burrowing owl adjacent to a burrow at approximate MP 1.5. Burrowing owls are also occasionally seen in the open desert. One pair was noted south of Interstate 8 in an OHV area during construction of the A-Line in 2002.

A primary component of North Baja's impact minimization efforts would include identification of active burrows before construction. Owls occupying burrows within 250 feet of the construction work area would be left alone and monitored or passively or actively relocated to appropriate and previously installed artificial or available alternate natural burrows. Only biologists approved by the CDFG in advance would handle owls or install one-way doors during relocation activities. The management

strategy utilized would be determined on a case-by-case basis. In addition to relocation or monitoring efforts, North Baja would implement the following measures to minimize impacts on the burrowing owl:

- Direct impacts on burrowing owl habitat would be minimized by constructing in the road pavement or road shoulder in agricultural areas or by boring/drilling beneath habitat areas (e.g., canals and drains).

- Preconstruction surveys during the breeding season would be conducted by biologists who would visually check all potential habitat within 250 feet of both sides of the proposed construction work area within 1 week before construction.

- Unoccupied burrows discovered within the construction right-of-way during preconstruction surveys would be collapsed or excavated before construction activities to prevent occupancy by burrowing owls.

- Artificial burrows, installed to minimize the effect of burrow loss, would be placed within the home range of individual owls that would be affected before burrow excavation or installation of one-way doors.

In addition to these avoidance and minimization efforts, if any active burrows are damaged by construction activities, North Baja would provide compensation at the equivalency rate of 6.5 acres of foraging habitat for burrowing owls for each active burrow damaged.

North Baja has indicated that implementation of these measures through an adaptive management plan during construction of the A-Line effectively avoided or minimized impacts on burrowing owls. Although individual burrowing owls could be affected by construction activities, with implementation of North Baja's proposed measures, the Project is not expected to reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the burrowing owl. As a result, impacts on this species would be less than significant.

4.7.6.5 Crissal Thrasher

The Crissal thrasher is a species of special concern in California. This migratory bird species is generally intolerant of human disturbance and occurs in the southwestern deserts of the United States, including along the lower Colorado River in California. This species inhabits brushy thickets or dense understories of desert riparian and desert wash habitats. Loose soils (not too firm or sandy) suitable for digging up insect prey are a strong habitat indicator for this species.

Potential habitat for the Crissal thrasher occurs along the B-Line near the Colorado River and the town of Blythe (MPs 0.0 to 3.0), the town of Palo Verde (MPs 24.0 to 29.0), and the Davis Lake area (MPs 31.0 to 33.0). One individual was observed near the pipeline route along 18th Avenue in Blythe during construction of the A-Line in 2002. Additionally, a Crissal thrasher was reported in the area of Stallard Road (MP 25.0) during the southwestern willow flycatcher surveys in 2005. No potential habitat for the Crissal thrasher was identified along the Arrowhead Extension or the IID Lateral.

Because habitat for this species would recover slowly after construction, any impacts would result in a long-term reduction of available habitat. If Crissal thrashers are present during the breeding season (early February to June), the noise from construction could indirectly affect these birds. Birds disturbed by construction of the proposed Project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities and annual production for one season. North Baja currently proposes to

complete construction of the B-Line after the breeding season. Per its general conservation measures, North Baja would preclear vegetation along the B-Line if the schedule was modified such that construction would be necessary during the breeding season, thereby preventing individuals from nesting in areas that would be disturbed during construction. Additionally, per the Agency Staffs' recommendation in Section 4.6.2.3, preconstruction clearing would be conducted in accordance with recommendations from the FWS, the BLM, and the CDFG. The minor, incremental loss of unoccupied habitat would not be expected to have direct or indirect impacts on individuals or reduce the abundance of the Crissal thrasher in the area because the proposed Project would be adjacent to an existing cleared right-of-way. Thus, fragmentation of undisturbed suitable habitat would not occur.

Further, North Baja would minimize the potential for long-term impacts on the Crissal thrasher by compensating for loss of microphyll woodland habitat through payment of an assessed financial contribution at a ratio approved by the FWS, the BLM, and the CDFG for those areas not already covered by desert tortoise habitat compensation.

With the implementation of North Baja's conservation measures and compensatory mitigation proposal, the Project is not expected to reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the Crissal thrasher. As a result, impacts on this species would be less than significant.

4.7.6.6 Ferruginous Hawk

The ferruginous hawk is a California species of special concern. This hawk is a migratory, non-breeding winter resident of California from September through April. Ferruginous hawks prefer open grasslands, desert scrub, and low foothills surrounding valleys where they hunt for small mammals, birds, reptiles, and amphibians. They are considered uncommon migrants in the Colorado River area and in grasslands and agricultural areas in southern California.

The ferruginous hawk is an occasional migrant within the Project area. Construction of the proposed Project would have no impact on this species.

4.7.6.7 Le Conte's Thrasher

The Le Conte's thrasher is a migratory California species of special concern and a BLM sensitive species. This species lives mainly in the lowest, most barren and hottest desert plains of southwestern and western Arizona and southeastern California. The Le Conte's thrasher occupies desert scrub, open washes, and Joshua tree habitats.

Potential habitat for the Le Conte's thrasher occurs along the proposed B-Line from MPs 12.0 to 79.8. This species may also be present along the proposed IID Lateral in the scattered creosote bush scrub habitat between the ISDRA and the Imperial Valley from MPs 8.0 to 28.0. In lieu of conducting species-specific surveys, North Baja has indicated that it is assuming that the species is present throughout the area of suitable habitat.

Because the habitat for this species would recover slowly after construction, any impacts would result in a long-term reduction of available habitat. If Le Conte's thrashers are present during the breeding season (early February to June), the noise from construction could indirectly affect these birds. Birds disturbed by construction of the proposed Project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities and annual production for one season. However, North Baja currently proposes to complete construction of the B-Line after the breeding season. Per its general

conservation measures, North Baja would preclear vegetation along the B-Line if the schedule was modified such that construction would be necessary during the breeding season, thereby preventing individuals from nesting in areas that would be disturbed during construction. Additionally, per the Agency Staffs' recommendation in Section 4.6.2.3, preconstruction clearing would be conducted in accordance with recommendations from the FWS, the BLM, and the CDFG. The minor, incremental loss of unoccupied habitat would not be expected to have direct or indirect impacts on individuals or reduce the abundance of the Le Conte's thrasher in the area because the proposed Project would be adjacent to an existing cleared right-of-way. Thus, fragmentation of undisturbed suitable habitat would not occur.

Further, North Baja would minimize the potential for long-term impacts on the Le Conte's thrasher by compensating for loss of microphyll woodland habitat through payment of an assessed financial contribution at a ratio approved by the FWS, the BLM, and the CDFG for those areas not already covered by desert tortoise habitat compensation.

With the implementation of North Baja's general conservation measures and compensatory mitigation proposal, the Project is not expected to reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the Le Conte's thrasher. As a result, impacts on this species would be less than significant.

4.7.6.8 Summer Tanager

The summer tanager is a California species of special concern that has historically utilized southern California as a major breeding area along the lower Colorado River and the Imperial Valley. This species is a rare fall and winter visitor and a late spring transient (Small 1994). The summer tanager inhabits desert riparian habitat along the lower Colorado River and requires cottonwood-willow riparian areas for nesting and foraging (CDFG 2000). Deforestation along the lower Colorado River has destroyed much of the available habitat, and the population has been much reduced (Small 1994).

Suitable habitat for the summer tanager is present along the proposed B-Line along the lower Colorado River basin (MPs 22.0 to 23.0, 35.0 to 36.0, 41.0 to 46.0, 50.0 to 53.0, and 59.0 to 66.0) (Konecny 2000). Because habitat for this species would recover slowly after construction, any impacts would result in a long-term reduction of available habitat. If summer tanagers are present during the breeding season (early February to June), the noise from construction could indirectly affect these birds. Birds disturbed by construction of the proposed Project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities and annual production for one season. However, North Baja currently proposes to complete construction of the B-Line after the breeding season. Per its general conservation measures, North Baja would preclear vegetation along the B-Line if the schedule was modified such that construction would be necessary during the breeding season, thereby preventing individuals from nesting in areas that would be disturbed during construction. Additionally, per the Agency Staffs' recommendation in Section 4.6.2.3, preconstruction clearing would be conducted in accordance with recommendations from the FWS, the BLM, and the CDFG. The minor, incremental loss of unoccupied habitat would not be expected to have direct or indirect impacts on individuals or reduce the abundance of the summer tanager in the area because the proposed Project would be adjacent to an existing cleared right-of-way. Thus, fragmentation of undisturbed suitable habitat would not occur.

With the implementation of North Baja's general conservation measures, Project-related impacts that would reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the summer tanager are not expected. As a result, impacts on this species would be less than significant.

4.7.6.9 Vermilion Flycatcher

The vermilion flycatcher is a species of special concern in California, and is a common and widespread breeder along the lower Colorado River and in the Coachella and Imperial Valleys. The vermilion flycatcher occurs in desert riparian habitat adjacent to irrigated fields, irrigation ditches, pastures, and other open mesic sites.

Suitable habitat for the vermilion flycatcher occurs along the proposed B-Line in the desert riparian areas of the lower Colorado River basin (MPs 0.0 to 12.0, 22.0 to 29.0, 31.0 to 33.0, 35.0 to 53.0, 59.0 to 66.0, and 79.0 to 79.8). The vermilion flycatcher is not known to occur in the area of the proposed Arrowhead Extension or the IID Lateral. Because habitat for this species would recover slowly after construction, any impacts would result in a long-term reduction of available habitat. If vermillion flycatchers are present during the breeding season (early February to June), the noise from construction could indirectly affect these birds. Birds disturbed by construction of the proposed Project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities and annual production for one season. However, North Baja currently proposes to complete construction of the B-Line after the breeding season. Per its general conservation measures, North Baja would preclear vegetation along the B-Line if the schedule was modified such that construction would be necessary during the breeding season, thereby preventing individuals from nesting in areas that would be disturbed during construction. Additionally, per the Agency Staffs' recommendation in Section 4.6.2.3, preconstruction clearing would be conducted in accordance with recommendations from the FWS, the BLM, and the CDFG. The minor, incremental loss of unoccupied habitat would not be expected to have direct or indirect impacts on individuals or reduce the abundance of the vermillion flycatcher in the area because the proposed Project would be adjacent to an existing cleared right-of-way. Thus, fragmentation of undisturbed suitable habitat would not occur.

Potential habitat for the vermilion flycatcher at the B-Line Colorado River crossing location is substantially degraded. Additionally, the use of the HDD method to install the pipeline beneath the river would serve to avoid impacts on this already degraded habitat. The implementation of the HDD method in addition to North Baja's general conservation measures would serve to substantially reduce the potential impacts of the Project on the vermilion flycatcher. As such, Project-related impacts that would reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the vermillion flycatcher are not expected. As a result, impacts on this species would be less than significant.

4.7.6.10 Yellow-breasted Chat

The yellow-breasted chat is a California species of special concern. This species is a fairly common breeder and is local to the lower Colorado River extending south to Yuma (Small 1994). The yellow-breasted chat inhabits riparian thickets of willow and other bushy tangles near watercourses (CDFG 2000). Widespread habitat deterioration and elimination, coupled with brood parasitism by brown-headed cowbirds, has diminished its status to an uncommon spring migrant from early-April to mid-May.

Suitable habitat for the yellow-breasted chat was identified along the proposed B-Line along the Colorado River in Blythe (MPs 0.0 to 3.0), the town of Palo Verde (MPs 22.0 to 23.0), and the Davis Lake area (MPs 31.0 to 33.0) (Konecny 2000). There is no suitable habitat for this species along the proposed Arrowhead Extension or the IID Lateral. Because habitat for this species would recover slowly after construction, any impacts would result in a long-term reduction of available habitat. If yellow-breasted chats are present during the breeding season (early February to June), the noise from

construction could indirectly affect these birds. Birds disturbed by construction of the proposed Project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities and annual production for one season. However, North Baja currently proposes to complete construction of the B-Line after the breeding season. Per its general conservation measures, North Baja would preclear vegetation along the B-Line if the schedule was modified such that construction would be necessary during the breeding season, thereby preventing individuals from nesting in areas that would be disturbed during construction. Additionally, per the Agency Staffs' recommendation in Section 4.6.2.3, preconstruction clearing would be conducted in accordance with recommendations from the FWS, the BLM, and the CDFG. The minor, incremental loss of unoccupied habitat would not be expected to have direct or indirect impacts on individuals or reduce the abundance of the yellow-breasted chat in the area because the proposed Project would be adjacent to an existing cleared right-of-way. Thus, fragmentation of undisturbed suitable habitat would not occur.

With the implementation of North Baja's general conservation measures, Project-related impacts that would reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the yellow-breasted chat are not expected. As a result, impacts on this species would be less than significant.

4.7.6.11 Colorado River Toad

The Colorado River toad, also called the Sonoran Desert toad, is a California species of special concern. This species is closely associated with permanent or semi-permanent water sources, usually flowing water, and was historically present in California along the channel of the lower Colorado River and in the southern Imperial Valley. These toads are documented to occur up the Colorado River from Fort Yuma to the Blythe-Ehrenberg area. Severe habitat alteration in the lower Colorado River region has impacted this species.

The proposed B-Line would cross the Colorado River and associated riparian areas at about MP 0.2 using the HDD method. This method would not require surface disturbance within the river or in the adjacent banks or wetlands. If a frac-out occurred during the HDD of the river, drilling mud could be released into areas adjacent to the river and North Baja's efforts to contain those drilling mud could further affect potential habitat for the Colorado River toad. However, successful HDDs of the Colorado River have been completed in the vicinity of the B-Line crossing and North Baja does not anticipate difficulties with the crossing for the proposed Project. The Agency Staffs agree that the proposed HDD crossing is likely to be successful; therefore, the North Baja Pipeline Expansion Project is not expected to reduce the abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts on the Colorado River toad that could contribute to a trend towards Federal or State listing. As a result, impacts on this species would be less than significant.

4.7.6.12 Couch's Spadefoot Toad

The Couch's spadefoot toad is a California species of special concern that can be found in a variety of vegetation types, including desert dry wash woodland, creosote bush scrub, and alkali sink scrub. This species is adapted to an arid environment and spends up to 11 months a year in underground burrows surviving off stored fat reserves. During wet conditions, spadefoot toads breed in temporary rain pools or temporary overflow areas.

The CDFG has indicated that a population of spadefoot toads is historically known to occur along one of the dry washes crossed by the proposed B-Line (the Milpitas Wash [MP 35.3]). Additionally, one

Couch's spadefoot toad was found during construction of the A-Line in the Stallard Road wash area (MP 25.0) in 2002 (North Baja 2002). There are no recorded occurrences of this species in the CNDDB database quadrangles of the IID Lateral.

Construction of the proposed Project in areas of occupied habitat could result in mortality or injury to individual Couch's spadefoot toads due to entrapment in open trenches or as a result of being crushed by vehicles and displaced soil. Construction disturbances to rain pools or temporary overflow areas could disrupt breeding activities and annual production for one season, which could potentially significantly affect local populations of Couch's spadefoot toad.

To minimize impacts on individuals and populations of the Couch's spadefoot toad, North Baja has proposed the following mitigation measures:

- If local thunderstorms occur in the habitat identified by the CDFG and provide substantial moisture under warm conditions (temperatures over 90 °F) in July, August, or September, and if construction has not already been completed in that area, North Baja biologists would examine potential Couch's spadefoot toad habitat for persistent pools. The CDFG would notify North Baja if appropriate conditions prevail, and North Baja would coordinate with the CDFG to complete the surveys.

- Authorized biologists would monitor temporary pools for persistence and would examine them daily for eggs, tadpoles, or toadlets.

- Construction activities would not be conducted within 150 feet of temporary pools. If water fails to persist within shallow pools for 10 days, or if no Couch's spadefoot toad eggs, tadpoles, or toadlets are found within 10 days, then construction would resume in the area.

- If any Couch's spadefoot toads are found, the CDFG would be immediately notified. A report on the findings would be submitted to the CDFG within 30 days of completion of the construction activities within the area.

With implementation of North Baja's general conservation measures as well as the specific measures detailed above, Project-related impacts that would reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the Couch's spadefoot toads are not expected. As a result, impacts on this species would be less than significant.

4.7.6.13 Flat-tailed Horned Lizard

The flat-tailed horned lizard is a California species of special concern and a BLM sensitive species. The proposal to list the flat-tailed horned lizard as a federally threatened species under the ESA was withdrawn by the FWS on June 20, 2006 (Federal Register 71:36745). The range of the flat-tailed horned lizard includes the Salton Sea and the Imperial Sand Dunes of California, as well as the low deserts of southwestern Arizona, northern Baja California, and the northwestern Sonoran Desert. This species is most abundant in areas of creosote bush, but may also be found in desert scrub, desert wash, succulent scrub, and alkali scrub habitats. Vegetation is usually scant in occupied areas, consisting of creosote bush or other scrubby growth. The present range of this species, and abundance in that range, has been greatly reduced over recent years by human activities such as development and recreational use of prime habitat.

Suitable habitat for the flat-tailed horned lizard occurs along the proposed B-Line route from Ogilby extending south to the All-American Canal (MPs 71.0 to 79.8). North Baja's biologists conducted surveys in the suitable habitat area in 2001 and categorized habitats as favorable (0.4 mile), transitional (4.1 miles), or unfavorable (4.3 miles) according to the *Flat-tailed Horned Lizard Range Management Strategy* (FTHLICC 2003). Flat-tailed horned lizards were observed between MPs 77.0 and 78.0 during surveys in 2000 and 2001, and were abundant between MPs 75.2 and 79.6 during construction of the A-Line. They are assumed to still be present in that area and are expected to occur in the same general locations during construction of the B-Line.

Suitable habitat for the flat-tailed horned lizard is present along the IID Lateral from MPs 8.0 to 28.0, and the presence of the flat-tailed horned lizard is assumed within this milepost range. The IID Lateral would be adjacent to the East Mesa Management Area, which is set aside primarily for protection of flat-tailed horned lizard habitat (BLM 2004). However, the *Flat-tailed Horned Lizard Range Management Strategy, Revision 2003* specifies that areas within the road right-of-way of Evan Hughes Highway are not considered flat-tailed horned lizard habitat, and that the management area stops at the north edge of the road right-of-way (FTHLICC 2003). The IID Lateral would be entirely within the road right-of-way and, in some places, would be in the road shoulder. From MPs 13.6 to 16.2, the IID Lateral would be north of the existing transmission lines within the road right-of-way. A total of 25.2 acres of suitable flat-tailed horned lizard habitat would be disturbed during construction of the IID Lateral.

Construction of the pipeline through habitat occupied by the flat-tailed horned lizard could result in direct mortality or injury of individual lizards as a result of being crushed by vehicles, movement of soil, and entrapment in open trenches. If construction occurs during extremely hot summer months, lizards can die if entrapped in open trenches. Ten lizards were known to have died and 15 were successfully relocated during construction of the A-Line in 2002. Construction noise and activity could also indirectly affect lizards by pushing them into similar adjacent habitat farther away from the construction work area; however, flat-tailed horned lizards would likely return to the habitat in the immediate vicinity of the right-of-way upon completion of construction activities.

Based on the experience gained during construction of the A-Line, North Baja would implement the following mitigation measures to reduce impacts on flat-tailed horned lizards during construction of the B-Line (MPs 75.2 to 79.6) and the IID Lateral (MPs 8.0 to 28.0):

- Authorized biologists would conduct preconstruction surveys to verify all flat-tailed horned lizard habitat in the construction area. Within 7 days before construction, biologists would identify habitat areas subject to direct construction-related ground disturbance.

- Biologists would conduct a final clearance survey 1 to 2 days before construction activities, which would include excavating potential burrows and relocating lizards to nearby suitable habitat. North Baja would implement the management strategy guidelines for relocation of flat-tailed horned lizards described in the *Flat-tailed Horned Lizard Range Management Strategy* (FTHLICC 2003).

- A field contact representative would initiate a worker education program and would have the authority to ensure compliance with protective measures for flat-tailed horned lizards.

- A biological monitor would be present in each area of active construction within flat-tailed horned lizard habitat throughout the work day from initial clearing through habitat restoration. The biological monitors would have sufficient education, field experience, and training with this species to understand its biology and behavior. The monitors

would ensure that all activities are in compliance with the management strategy guidelines for relocation of flat-tailed horned lizards. The biological monitors would also have the authority and responsibility to halt activities that are in violation of the management strategy guidelines.

- In areas of suitable habitat (MPs 75.2 to 79.6 of the B-Line and MPs 8.0 to 28.0 of the IID Lateral), North Baja would restrict the amount of trench open at any one time to 2 miles. Trench walkers would be employed in those areas such that each portion of open trench would be observed every 30 minutes when ground temperatures exceed 85°F (29.5 °C). Each trench walker can cover 2 miles per hour; therefore, the open portion of trench (2 miles) would require two trench walkers during hot weather to provide the desired coverage. Trench walkers would be construction workers with no other duties than to walk along the side of the open trench and look for flat-tailed horned lizards. These workers would receive specialized flat-tailed horned lizard training under the supervision of the BLM biologist and would be directly supervised by a qualified biologist who has also received flat-tailed horned lizard training. Additionally, all hazardous sites, such as open pipes, trenches, holes, or deep excavations would be inspected for the presence of lizards before backfilling.

- If lizards are found trapped in an excavation, the authorized biologist would capture by hand and relocate the affected lizard. The management strategy guidelines for relocation of flat-tailed horned lizards described in the *Flat-tailed Horned Lizard Range Management Strategy* (FTHLICC 2003) would be used.

The Agency Staffs recognize that individual lizards may be harmed or killed, reducing abundance of the species in the area, and that occupied habitat would be adversely impacted by construction. However, based on the mitigation measures described above (e.g., preconstruction clearance surveys, biological monitors present during construction, lizard relocation as necessary, restricted open trench lengths), the Project is not expected to reduce the overall population of the species in the area or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the flat-tailed horned lizard.

Nonetheless, based on impacts expected during construction of the proposed Project, including direct impacts temporarily lowering abundance of the species in the area, impacts on this species and its habitat would be considered significant. Therefore, approval of the Project would be subject to a Statement of Overriding Considerations under the CEQA.

4.7.6.14 Fairyduster

The fairyduster has been listed as a category 2 species (rare throughout all or portions of its range in California, but common beyond the boundaries of California) by the CNPS. This species is a deciduous shrub known to occur in Imperial and San Diego Counties in California, and is found in Sonoran Desert scrub, creosote bush scrub, and desert dry wash woodland habitats, as well as along desert washes (Skinner and Pavlik 1994).

North Baja's botanists surveyed the proposed B-Line route and identified fairyduster plants from a series of locations between MPs 45.1 to 49.8, 53.6 to 57.4, and 65.1 to 66.6. Marginal habitat for this species may occur along the IID Lateral. In lieu of conducting species-specific surveys, North Baja has indicated that it is assuming that the species is present throughout the area of suitable habitat along the IID Lateral.

Pipeline construction activities (e.g., clearing, grading, trenching, backfilling, excavation) would directly affect plants found within the construction work area. However, the loss of individual plants is not anticipated to affect the local or regional population of the species due to the relative abundance in the area. Construction would temporarily affect suitable habitat for the fairyduster. However, post-construction surveys of the A-Line right-of-way have shown that restoration of the pipeline right-of-way allows native plants to re-establish in areas disturbed by construction.

Although North Baja's general conservation measures, including topsoil segregation, would substantially reduce impact on this species, construction of the B-Line and the IID Lateral may result in the removal of individual plants. However, the reproduction potential of the local population would not be affected; therefore, construction of the B-Line and IID Lateral would not have an adverse impact on the population of fairyduster. As such, the Project is not expected to reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the fairyduster. Therefore, impacts on this species would be less than significant.

4.7.6.15 Giant Spanish-needle

The giant Spanish-needle is a Federal species of concern, has been designated category 1B by the CNPS, and is a BLM sensitive species. This plant is an annual herb that occurs in the Sonoran Desert of southeastern Imperial County within active and stable sand dunes (Skinner and Pavlik 1994). The giant Spanish-needle blooms from February to May, and its main threat is OHV traffic (CDFG 2000).

Suitable habitat for the giant Spanish-needle is found along the IID Lateral in the southern Algodones Dunes within the ISDRA (MPs 0.5 to 7.9). In lieu of conducting species-specific surveys, North Baja has indicated that it is assuming that the species is present throughout the area of suitable habitat. Although the general mitigation measures, including topsoil segregation, would substantially reduce impact on this species, construction of the IID Lateral may result in the removal of individual plants. However, construction of the IID Lateral would not adversely impact the reproduction potential of the local population of the giant Spanish-needle. As a result, with the implementation of North Baja's general conservation measures, including the efforts to minimize the spread of non-native species, the Project is not expected to reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the giant Spanish-needle. Therefore, impacts on this species would be less than significant.

4.7.6.16 Sand Food

The sand food is a category 1B species as designated by the CNPS. This plant is a perennial herb that occurs in the Sonoran Desert of southeastern Imperial County, western Arizona, and northwestern New Mexico (Skinner and Pavlik 1994), and occurs on the lee side of stabilized and partially stabilized desert dunes (CDFG 2000). The sand food blooms from April to June and is primarily threatened by OHV traffic and military activities (Skinner and Pavlik 1994).

Suitable habitat for the sand food is found along the proposed IID Lateral in the southern Algodones Dunes within the ISDRA (MPs 0.5 to 7.9). In lieu of conducting species-specific surveys, North Baja has indicated that it is assuming that the species is present throughout the area of suitable habitat. Although North Baja's general conservation measures, including topsoil segregation, would substantially reduce impact on this species, construction of the IID Lateral may result in the removal of individual plants. However, the reproduction potential of the local population would not be affected; therefore, construction of the IID Lateral would not adversely impact the population of the sand food. As

a result, with the implementation of North Baja's general conservation measures, including the efforts to minimize the spread of non-native species, the Project is not expected to reduce the overall abundance of the species in the area, cause a temporary loss or alteration of important habitat for the species, or result in other direct or indirect impacts that could contribute to or result in Federal or State listing of the sand food. Therefore, impacts on this species would be less than significant.

4.7.7 Cumulative, Interdependent, and Interrelated Effects

Section 7 of the ESA requires the Federal action agency to provide an analysis of cumulative effects when it requests initiation of formal consultation. Under the ESA, cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action are not considered because they would require a separate consultation pursuant to section 7 of the ESA.

Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Several other existing or planned activities in the general area of the proposed Project could have a cumulative impact with North Baja's proposed Project. Table 4.15-1 lists the projects that the Agency Staffs are aware of through the scoping process and additional research. In general, the projects listed that have the potential to impact wildlife and vegetation are those most likely to have a cumulative impact on special status species.

The geographic area considered in determining past, present, and reasonably foreseeable projects that could also have impacts on wildlife and vegetation includes the planning areas as designated by the BLM, the Palo Verde Valley, and the Imperial Valley. To determine non-Federal projects that are reasonably foreseeable, the Agency Staffs included those that have made formal proposals or engaged in a permitting process, and those that are included in agency plans or forecasts. A detailed discussion of projects considered for this cumulative impact analysis is included in Section 4.15.

When projects are constructed at the same time or are timed closely together, they could have a cumulative impact on vegetation and wildlife living in the area where the projects are built, even if the impacts are temporary. The removal of desert vegetation could have long-term consequences because the regeneration of vegetation in arid desert environments is slow. This effect is more severe in desert wash woodlands, which are less prevalent locally and provide more diverse wildlife habitat than creosote bush scrub. In addition to the proposed Project, the transmission line projects, the landfill, and the Mesquite Mine expansion would all adversely impact desert wash woodlands. Each of these projects is required to provide compensatory payments or land purchases equivalent to at least 3 acres for each acre disturbed. This, and the minimization of construction in desert wash woodlands, as required in each project by the terms of the section 1603 permit issued by the CDFG would reduce or mitigate the individual and cumulative impacts of these projects on desert wash woodlands. Further, none of the pipeline facilities would result in permanent impacts on vegetation or habitat, although regrowth would be slow.

The amount of desert wash woodland, desert dunes, and creosote bush scrub habitat that may be affected by these projects is relatively small compared to the abundance of habitat in the area. These projects would not fragment vegetation/habitat in addition to the fragmentation already existing due to the A-Line right-of-way, Interstate 8, the existing canal, and the existing recreation and Border Patrol access roads. All of the projects in California would involve mitigation measures designed to minimize the potential for long-term chronic erosion, increase the stabilization of site conditions, control the spread of noxious weeds, minimize the potential for accidental spills of materials into surface waters, and minimize the impact on special status species. This mitigation would minimize the degree and duration of the cumulative impacts of these projects.

4.7.8 Summary of Determinations of Effect for Federally Listed Species

Based on informal consultation with the FWS, 9 federally listed species were identified as potentially occurring in the general vicinity of (within the counties crossed by) the Project. After further consultations with the FWS, the BLM, and the CDFG, and completion of field surveys, a determination of effect for each of these species was developed. Two of the 9 species (desert tortoise and Peirson's milk-vetch) were identified as likely to be adversely affected by the proposed Project. Critical habitat for the desert tortoise was also identified as likely to be adversely affected. Table 4.7.8-1 provides a summary of the impact evaluation for federally listed species (and critical habitat, if present in the Project area) and for State-listed species with the potential to occur in the North Baja Pipeline Expansion Project area. Despite the potential for direct and indirect impacts of the proposed Project on listed species, the proposed Project would not restrict the range of endangered, rare, or threatened species.

In compliance with section 7 of the ESA, the Agency Staffs submitted the draft EIS/EIR to the FWS with a request for concurrence with the determinations of effect and to initiate formal consultation for the desert tortoise and the Peirson's milk-vetch. In a letter dated November 1, 2006, the FWS concurred with the determinations of effect. In the BO issued on April 20, 2007, the FWS concluded that the proposed action is not likely to jeopardize the continued existence of the desert tortoise and its critical habitat and the continued existence of the Peirson's milk-vetch.

TABLE 4.7.8-1

Summary of Assessment of Project Impacts on Listed Species

Species or Critical Habitat	Federal Status	State Status	Project Impact
Species listed under both Federal and California Endangered Species Acts			
Peirson's milk-vetch	Threatened	Endangered	May affect, likely to adversely affect
Razorback sucker	Endangered	Endangered	May affect, not likely to adversely affect
Razorback sucker critical habitat			May affect, not likely to adversely affect
Desert pupfish	Endangered	Endangered	No effect
Bonytail chub	Endangered	Rare	No effect
Desert tortoise	Threatened	Threatened	May affect, likely to adversely affect
Desert tortoise critical habitat			May affect, likely to adversely affect
Brown pelican	Threatened	Endangered	No effect
Bald eagle	Threatened	Endangered	No effect
Southwestern willow flycatcher	Endangered	Endangered	May affect, not likely to adversely affect
Yuma clapper rail	Endangered	Threatened	May affect, not likely to adversely affect
Species listed only under the California Endangered Species Act			
Algodones Dune sunflower		Endangered	May affect individuals, unlikely to adversely affect population
Wiggins's croton		Rare	May affect individuals, unlikely to adversely affect population
Arizona Bell's vireo		Endangered	No adverse effect
Western yellow-billed cuckoo	Candidate	Endangered	No adverse effect
Elf owl		Endangered	No effect
California black rail		Threatened	No adverse effect
Gila woodpecker		Endangered	No adverse effect

As required by the CESA, consultation has occurred with the CDFG to determine the proposed Project's effect on California-listed species. As described above, it is expected that the North Baja Pipeline Expansion Project would avoid adverse impacts on individuals or populations of the following California-listed threatened or endangered species: razorback sucker, desert pupfish, brown pelican, bald eagle, southwestern willow flycatcher, Yuma clapper rail, Algodones dune sunflower, Arizona bell's

vireo, western yellow-billed cuckoo, elf owl, California black rail, and Gila woodpecker. However, the Federal and California-listed threatened desert tortoise and the federally listed threatened and California-listed endangered Peirson's milk-vetch would likely be adversely affected by construction of the Project. Because these species are California-listed as well as federally listed, the CDFG would review the BO prepared by the FWS and consider the issuance of a consistency determination pursuant to section 2080.1 of the California Fish and Game Code. Alternatively, the CDFG may issue an Incidental Take Permit under section 2081 of the California Fish and Game Code. Additionally, approval of the Project would require the CSLC to prepare a Statement of Overriding Considerations under the CEQA if, after mitigation is applied, the CSLC finds that the impacts of the Project would not be reduced to a level that is less than significant.

Because the CDFG has not yet issued its conclusions regarding the impact of the Project on California-listed species, **the Agency Staffs recommend that:**

- **North Baja shall not begin Phase I-A or Phase II construction activities <u>until</u>:**

  a. the CDFG makes a consistency determination on the FWS' BO pursuant to section 2080.1 of the California Fish and Game Code or issues an Incidental Take Permit that covers both federally and State-listed species that may be affected;

  b. North Baja obtains an Incidental Take Permit under section 2081 of the California Fish and Game Code for all State-listed species that may be affected, or receives concurrence from the CDFG that an Incidental Take Permit is not required; and

  c. North Baja has received written notification from the Executive Officer of the CSLC that construction or use of conservation measures may begin.

Construction of the proposed Project is currently scheduled to be completed in three phases, with construction of the last phase beginning in late summer of 2009. Due to the potential inhabitation of suitable habitats found to be lacking individuals during surveys in 2005, and the potential for new species to become listed under State or Federal law in the future, **the Agency Staffs recommend that:**

- **For those portions of the Project facilities where construction would occur more than 1 year from the date of issuance of the FERC and CSLC approvals for the Project, North Baja shall consult with the FWS, the BLM, and the CDFG to update the species list and to verify that previous consultations and determinations of effect are still current. Documentation of these consultations, and the need for additional surveys and survey reports (if required), and FWS, BLM, and CDFG comments on the surveys and survey reports and their conclusions (as applicable), shall be filed with the FERC and the CSLC <u>before construction begins on those facilities</u>.**

4.7.9 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the

potential impacts on federally and State-listed or other special status species identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.8 LAND USE, SPECIAL MANAGEMENT AREAS, RECREATION AND PUBLIC INTEREST AREAS, AND AESTHETIC RESOURCES

4.8.1 Significance Criteria

An adverse impact on land use, special management areas, recreation and public interest areas, and aesthetic resources would be considered significant and would require mitigation if Project construction or operation would:

- conflict with existing land use plans, policies, or regulations established by a jurisdiction directly affected by the Project (see Section 1.5);
- convert more than 1 percent of agricultural lands in a county to a non-agricultural use or impair the productivity of more than 1 percent of agricultural land in a county;
- result in the loss of more than 1 percent of the acreage planted in a county's most valuable crop;
- displace a business or permanent residence from its established location, or disrupt access to a business or permanent residence for more than 14 days;
- conflict with any approved residential or commercial development plans;
- cause long-term property damage and create construction-related hazards to residents of dwellings within 100 feet of the pipeline;
- physically divide an established community;
- prevent access to an established recreation area during its peak use periods or for more than 1 year;
- result in the loss of 10 percent or more of an established or planned recreation site, or prevent access to the site, during its peak use periods or for more than 1 year;
- adversely affect ACECs, wilderness areas, wilderness study areas, or other areas of special environmental concern;
- provide access to previously inaccessible, environmentally sensitive areas;
- result in reductions in the quality of the recreation experience for more than one visitor use season (such as from increased noise and dust, reduced visual quality from landscape modifications and night illumination, reduced visibility, and reduced water quality);
- cause inconsistency with adopted Visual Resource Management (VRM) Plans or local ordinances. In those areas where no VRM Plans exist, significant impacts are determined by examining the study area for sensitive viewsheds, areas of high user volumes, and areas of unique visual resources. Sensitive resources are then examined on a case-by-case basis to determine level of impact. Significant impacts are those that dominate the viewshed from sensitive locations and change the character of the landscape both in terms of physical characteristics and land uses;

- result in a substantial adverse effect on a scenic area or vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic area or highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

4.8.2 Land Use and Ownership

Construction of the North Baja Pipeline Expansion Project would disturb approximately 1,760.5 acres of land, including the pipeline facilities, aboveground facilities, pipe storage and contractor yards, and access roads. Approximately 109.0 acres of the 1,760.5 acres used for construction would be required for operation of the Project. Of this total, about 106.9 acres would be for the pipeline facilities, 2.0 acres would be for the aboveground facilities, and 0.1 acre would be for permanent access roads associated with the proposed facilities. The remaining 1,651.5 acres of land would be restored and allowed to revert to former use. Table 4.8.2-1 summarizes the acres of each land use that would be affected by construction and operation of the Project.

Pipeline Facilities

The Project would involve the construction of 127.6 miles of pipeline facilities of various diameters in La Paz County, Arizona and Riverside and Imperial Counties, California (see Table 2.1.1-1). Of the 127.6 miles of proposed pipeline route, approximately 126.9 miles (99 percent) would be constructed in or adjacent to various existing rights-of-way (see Table 2.2.1-1). The B-Line and the Arrowhead Extension would be entirely in or adjacent to existing rights-of-way. Of the 45.7 miles associated with the IID Lateral, 0.7 mile (2 percent) would be constructed on newly created right-of-way that does not parallel existing rights-of-way.

Table 4.8.2-2 lists the land uses that would be crossed by the proposed pipeline facilities. The predominant land use that would be crossed is open land, comprising about 80.1 miles (63 percent) of the pipeline routes. Anthropogenic (i.e., industrial/commercial/utility) uses are the second most prevalent land use, comprising 43.9 miles (34 percent) of the proposed pipeline routes. Other land uses that would be crossed by the pipeline facilities include 3.3 miles (3 percent) of agricultural land and 0.4 mile (less than 1 percent) of open water.

Land use impacts associated with the Project would include the disturbance of existing land uses within the construction right-of-way during construction and retention of a new permanent right-of-way for operation of the pipeline facilities. North Baja proposes to generally use a 105-foot-wide construction right-of-way for the B-Line, consisting of North Baja's existing 50-foot-wide permanent right-of-way and 55 feet of temporary workspace. In most areas, about 80 feet of the construction right-of-way would overlap the previously disturbed right-of-way. The B-Line would be installed within North Baja's existing 50-foot-wide permanent right-of-way using a standard 25-foot offset from the existing A-Line. No new permanent right-of-way would be required for operation of the B-Line.

TABLE 4.8.2-1

Acres of Land Affected by Construction and Operation of the North Baja Pipeline Expansion Project

	Open Land [a]		Anthropogenic [b]		Agriculture [c]		Open Water [d]		Total		
Facility	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	New Dist.	Oper.
B-Line											
Pipeline Facilities											
Pipeline Right-of-Way	869.8	0.0	117.7	0.0	28.0	0.0	0.0	0.0	1,015.5	234.0	0.0
Temporary Extra Workspace	93.5	0.0	0.0	0.0	34.7	0.0	0.0	0.0	128.2	51.2	0.0
Pipeline Facilities Subtotal	*963.3*	*0.0*	*117.7*	*0.0*	*62.7*	*0.0*	*0.0*	*0.0*	*1,143.7*	*285.2*	*0.0*
Aboveground Facilities	1.5	0.5	0.8	0.0	0.0	0.0	0.0	0.0	2.3	2.3	0.5
Pipe Storage and Contractor Yards	5.0	0.0	45.4	0.0	0.0	0.0	0.0	0.0	50.4	0.0	0.0
Access Roads	97.4	0.0	0.0	0.0	2.3	0.0	0.0	0.0	99.7	0.0	0.0
B-Line Subtotal	*1,067.2*	*0.5*	*163.9*	*0.0*	*65.0*	*0.0*	*0.0*	*0.0*	*1,296.1*	*287.5*	*0.5*
Arrowhead Extension											
Pipeline Facilities											
Pipeline Right-of-Way	0.0	0.0	7.2	0.0	13.4	4.7	0.0	0.0	20.6	20.6	4.7
Temporary Extra Workspace	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.7	1.7	0.0
Pipeline Facilities Subtotal	*0.0*	*0.0*	*7.2*	*0.0*	*15.1*	*4.7*	*0.0*	*0.0*	*22.3*	*22.3*	*4.7*
Aboveground Facilities	0.0	0.0	1.0	0.3	1.0	0.8	0.0	0.0	2.0	2.0	1.1
Pipe Storage and Contractor Yards	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Access Roads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.	0.0
Arrowhead Extension Subtotal	*0.0*	*0.0*	*8.2*	*0.3*	*16.1*	*5.5*	*0.0*	*0.0*	*24.3*	*24.3*	*5.8*
IID Lateral											
Pipeline Facilities											
Pipeline Right-of-Way	113.5	42.5	245.7	59.7	1.0	0.0	0.0	0.0	360.2	360.2	102.2
Temporary Extra Workspace	25.0	0.0	3.4	0.0	14.7	0.0	0.0	0.0	43.1	43.1	0.0
Pipeline Facilities Subtotal	*138.5*	*42.5*	*249.1*	*59.7*	*15.7*	*0.0*	*0.0*	*0.0*	*403.3*	*403.3*	*102.2*
Aboveground Facilities	0.4	0.2	2.5	0.2	0.0	0.0	0.0	0.0	2.9	2.9	0.4
Pipe Storage and Contractor Yards	0.0	0.0	22.7	0.0	0.0	0.0	0.0	0.0	22.7	22.7	0.0
Access Roads	3.8	0.1	1.3	0.0	6.1	0.0	0.0	0.0	11.2	0.2	0.1
IID Lateral Subtotal	*142.7*	*42.8*	*275.6*	*59.9*	*21.8*	*0.0*	*0.0*	*0.0*	*440.1*	*429.1*	*102.7*

TABLE 4.8.2-1 (cont'd)

Acres of Land Affected by Construction and Operation of the North Baja Pipeline Expansion Project

	Open Land [a]		Anthropogenic [b]		Agriculture [c]		Open Water [d]		Total		
Facility	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	New Dist.	Oper.
Project Subtotal											
Pipeline Facilities											
Pipeline Right-of-Way	983.3	42.5	370.6	59.7	42.4	4.7	0.0	0.0	1,396.3	614.8	106.9
Temporary Extra Workspace	118.5	0.0	3.4	0.0	51.1	0.0	0.0	0.0	173.0	96.0	0.0
Pipeline Facilities Subtotal	*1,101.8*	*42.5*	*374.0*	*59.7*	*93.5*	*4.7*	*0.0*	*0.0*	*1,569.3*	710.8	106.9
Aboveground Facilities	1.9	0.7	4.3	0.5	1.0	0.8	0.0	0.0	7.2	7.2	2.0
Pipe Storage and Contractor Yards	5.0	0.0	68.1	0.0	0.0	0.0	0.0	0.0	73.1	22.7	0.0
Access Roads	101.2	0.1	1.3	0.0	8.4	0.0	0.0	0.0	110.9	0.2	0.1
Project Total	1,209.9	43.3	447.7	60.2	102.9	5.5	0.0	0.0	1,760.5	740.9	109.0

[a] Open land includes undeveloped, desert scrub-shrub lands, and wetlands.

[b] Anthropogenic land includes paved or unpaved roadways (e.g., 18th Avenue and Imperial County roadways) as well as road crossings and other industrial/commercial/utility uses.

[c] Agricultural land includes cropland, which typically consists of alfalfa, wheat, cotton, and irrigated pasture, and, to a lesser extent, vegetable truck crops.

[d] Open water includes open expanses of water such as the Colorado River, All-American Canal, and Highline Canal crossings. Because these waterbodies would be crossed using the horizontal directional drill method, no open water would be affected by construction or operation of the Project.

Const. = Construction.

Oper. = Operation.

New Dist. = New disturbance (i.e., not disturbed during construction of the A-Line).

Note: The totals shown in this table may not equal the sum of addends due to rounding.

TABLE 4.8.2-2

Land Uses Crossed by the Pipeline Facilities Associated with the North Baja Pipeline Expansion Project (miles)

Facility	Open Land [a]	Anthropogenic Land [b]	Agricultural Land [c]	Open Water [d]	Total
B-Line	68.3	9.1	2.2	0.3	79.8
Arrowhead Extension	0.0	1.0	1.1	0.0	2.1
IID Lateral	11.8	33.8	0.0	0.1	45.7
Project Total	80.1	43.9	3.3	0.4	127.6
	(63%)	(34%)	(3%)	(<1%)	(100%)

[a] Open land includes undeveloped, desert scrub-shrub lands, and wetlands.

[b] Anthropogenic land includes paved or unpaved roadways (e.g., 18th Avenue and Imperial County roadways) as well as road crossings and other industrial/commercial/utility uses.

[c] Agricultural land includes cropland, which typically consists of alfalfa, wheat, cotton, and irrigated pasture, and, to a lesser extent, vegetable truck crops.

[d] Open water includes open expanses of water such as the Colorado River, All-American Canal, and Highline Canal crossings. Because these waterbodies would be crossed using the horizontal directional drill method, no open water would be affected by construction or operation of the Project.

Note: The totals shown in this table may not equal the sum of addends due to rounding.

Where the B-Line would be installed within or abutting the paved portion of 18th Avenue (a distance of about 7.6 miles), rights to build and operate the pipeline within the county road right-of-way would be authorized under a franchise agreement with Riverside County. Franchise agreements do not typically grant a specific strip of land, but simply allow the pipeline to be installed and operated within the road right-of-way. North Baja proposes to use a 60-foot-wide construction right-of-way to install the B-Line in the paved portion of 18th Avenue.

North Baja proposes to generally use a 100-foot-wide construction right-of-way for the Arrowhead Extension except when in the Arrowhead Boulevard roadway or road shoulder where a 60-foot-wide construction right-of-way would be used. The permanent right-of-way in all areas except when in the Arrowhead Boulevard roadway or road shoulder would be 35 feet wide. Rights to build and operate the pipeline within the Arrowhead Boulevard right-of-way would be authorized under an agreement between North Baja and Riverside County.

Where the IID Lateral parallels existing electric transmission lines, North Baja proposes to generally use an 80-foot-wide construction right-of-way and a 30-foot-wide permanent right-of-way. North Baja proposes to use a 60-foot-wide construction right-of-way and a 30-foot-wide permanent right-of-way where the lateral would be installed between a transmission line and a road. A 60-foot-wide construction right-of-way would also be used where the IID Lateral would be installed within or abutting the traveled portion of county roads. Rights to build and operate the IID Lateral within county road rights-of-way would be authorized under a franchise agreement between North Baja and Imperial County. Franchise agreements do not typically grant a specific strip of land, but simply allow the pipeline to be installed and operated within the road right-of-way. For the portion of the IID Lateral located in Evan Hewes Highway and other county roads, a 2-foot-wide permanent right-of-way has been assumed. In some cases, where the road right-of-way has not been expressly dedicated to the county, North Baja may acquire additional easements from private landowners. In these areas, a 30-foot-wide permanent right-of-way has been assumed.

Comments were received during the scoping process expressing concern that there is not enough room in the easements of Imperial County roadways for a pipeline. North Baja selected the proposed route in Imperial County roadways based, in part, on a field reconnaissance survey to identify roads with

fewer existing surface and buried utilities as well as consultation with the Imperial County Department of Public Works. Few obstacles were identified or noted that would prevent placement of a pipeline in the road easements. Where such constraints were identified (e.g., the Holtville-Orchard Road Overpass of Hunt Road), North Baja adjusted the proposed route to move outside the road right-of-way for a short distance.

In addition to the construction right-of-way, North Baja has identified temporary extra workspaces that would be required for staging areas and construction at waterbodies, roads, and railroads, and in areas of steep slopes and rugged terrain. The approximate locations and sizes of temporary extra workspaces identified by North Baja are listed in Table D-1 in Appendix D.

Construction of the pipeline facilities would affect a total of about 1,569.3 acres of land, including 1,396.3 acres for the pipeline rights-of-way and 173.0 acres for temporary extra workspace. About 858.5 acres or 55 percent is previously disturbed area associated with construction and operation of North Baja's existing A-Line. Open land would be the primary land use affected by construction of the pipeline facilities totaling about 1,101.8 acres (70 percent) (see Table 4.8.2-1). The remaining land uses that would be disturbed consist of 374.0 acres (24 percent) of anthropogenic land and 93.5 acres (6 percent) of agricultural land. No open water would be affected by construction of the pipeline facilities because open expanses of water such as the Colorado River, All-American Canal, and Highline Canal would be crossed using the HDD method (see Section 2.3.2).

Of the 1,569.3 acres of land that would be affected by construction of the pipeline facilities, about 106.9 acres would be retained as new permanent right-of-way. Of the 106.9 acres permanently retained, 59.7 acres (56 percent) is anthropogenic land, 42.5 acres (40 percent) is open land, and 4.7 acres (4 percent) is agricultural land. The land retained as permanent right-of-way would be allowed to revert to former use; however, tree crops such as orchards and aboveground structures would be prohibited on the permanent right-of-way. There are no restrictions on how close structures (e.g., houses) can be to the permanent pipeline right-of-way. The remaining 1,462.4 acres used for temporary construction right-of-way and temporary extra workspace would be allowed to revert to prior uses following construction with no restrictions.

The most valuable crops in the Project area include alfalfa in La Paz County, nursery stock in Riverside County, and vegetables and melons in Imperial County. Approximately 4.7 acres of agricultural land would be affected by operation of the proposed pipeline facilities and an additional 0.8 acre would be affected by operation of the proposed aboveground facilities. Because Riverside County has about 572,000 acres of farmland, the 5.5 acres that would be affected by operation of the proposed Project represents less than 0.001 percent of the total farmland in the county. Therefore, the Project would not result in the conversion of more than 1 percent of agricultural lands to a non-agricultural use or impair the productivity of more than 1 percent of agricultural land in a county. The Project would also not result in the loss of more than 1 percent of the acreage planted in a county's most valuable crop.

Construction and operation activities on approximately 89 percent of the lands affected by the Project would be authorized by various governmental entities including: the BLM (for Federal lands managed by the BLM, the BOR, and the FWS [53 percent]), California counties (36 percent), the States of Arizona or California or cities (less than 1 percent), or the CSLC (less than 1 percent). The remainder of the land that would be affected (11 percent) is privately owned. Table 4.8.2-3 summarizes the land ownership along the proposed pipeline facilities.

An easement would be used to convey both temporary (for construction) and permanent rights-of-way to North Baja. The easement gives the company the right to construct, operate, and maintain the pipelines, and establish a permanent right-of-way. In return, the company compensates the landowner for

use of the land. The easement agreement between the company and the landowner typically specifies compensation for loss of use during construction, loss of nonrenewable or other resources, damage to property during construction, and allowable uses of the permanent right-of-way after construction.

TABLE 4.8.2-3

Summary of Land Ownership Crossed by the North Baja Pipeline Expansion Project (miles)

Facility	Federal [a]	County	Private	CSLC	Other (State or City)	Total
B-Line	59.3	8.2	11.7	0.2	0.4	79.8
Arrowhead Extension	0.0	1.0	1.1	0.0	0.0	2.1
IID Lateral	8.1	36.5 [b]	0.7	0.0	0.4	45.7
Project Total	67.4	45.7	13.5	0.2	0.8	127.6
	(53%)	(36%)	(11%)	(<1%)	(<1%)	(100%)

[a] Lands authorized by the BLM, including lands managed by the BLM, BOR, and the FWS. The BLM would issue a Right-of-Way Grant that would apply to all affected Federal lands after receipt of concurrence from the BOR and the FWS.

[b] Of this total, about 17.6 miles would be located within county road rights-of-way across BLM land.

Note: The totals shown in this table may not equal the sum of addends due to rounding.

If an easement cannot be negotiated with a landowner and the Project has been certificated by the FERC, North Baja may use the right of eminent domain granted to it under section 7(h) of the NGA and the procedures set forth under the Federal Rules of Civic Procedure (Rule 71A) to obtain the right-of-way and temporary extra workspace areas. North Baja would still be required to compensate the landowner for the right-of-way and damages incurred during construction. However, the level of compensation would be determined by a court according to State or Federal law. In either case, North Baja would compensate landowners for use of the land. Eminent domain does not apply to lands under Federal ownership (i.e., BLM, BOR, and FWS land).

Aboveground Facilities

Modifications at existing and construction of new aboveground facilities associated with the proposed Project would affect 7.2 acres of land. Of the 7.2 acres, 2.0 acres would be permanently converted for operation of these facilities. Table 4.8.2-4 summarizes the land requirements and land use for the aboveground facilities associated with the North Baja Pipeline Expansion Project.

The installation of a new pig receiver at the Ehrenberg Compressor Station would take place within the existing fenceline of the facility and would not require any additional land for construction or operation; however, a header pipe associated with the new pig receiver would be outside of the fenceline of the facility and would require 0.7 acre of anthropogenic land for construction (no permanent right-of-way would be required because the line would be installed on North Baja fee property). The aboveground modifications at the Ehrenberg Compressor Station and the adjacent El Paso Meter Station to allow for northbound flow of gas would take place within the existing fencelines of the facilities.

The addition of a pig launcher and receiver at Rannells Trap would require an expansion of the facility by 0.3 acre on private land during both construction and operation. The modifications and additional pig launcher and receiver at the Ogilby Meter Station would require an expansion of the facility by 0.2 acre for both construction and operation. This expansion would affect anthropogenic land managed by the BLM.

TABLE 4.8.2-4

Aboveground Facilities Associated with the North Baja Pipeline Expansion Project

Facility	Approx. Milepost	Existing Land Use	Land Affected During Construction (acres)	Land Affected During Operation (acres)
B-Line				
Ehrenberg Compressor Station Modifications and Pig Receiver [a]	0.0	Anthropogenic (Industrial/ Commercial/Utility)	0.7	0.0
El Paso Meter Station Modifications [a]	0.0	Anthropogenic (Industrial/ Commercial/Utility)	0.0	0.0
Rannells Trap Pig Launcher and Receiver	11.7	Open Land	0.3	0.3
Valve #1 [b]	0.0	Anthropogenic (Industrial/ Commercial/Utility)	0.0	0.0
Valve #2	5.7	Anthropogenic (Industrial/ Commercial/Utility)	0.3	0.01
Valve #3 [c]	11.7	Open Land	0.0	0.0
Valve #4 [c]	11.7	Open Land	0.0	0.0
Valve #5	28.0	Open Land	0.3	0.0
Valve #6	41.6	Open Land	0.3	0.0
Valve #7	60.3	Open Land	0.3	0.0
Valve #8 [d]	75.2	Anthropogenic (Industrial/ Commercial/Utility)	0.0	0.0
Valve #9 [d]	75.2	Anthropogenic (Industrial/ Commercial/Utility)	0.0	0.0
Ogilby Meter Station Modifications, and Pig Launcher and Receiver	75.2	Anthropogenic (Industrial/ Commercial/Utility)	0.2	0.2
B-Line Subtotal			*2.3*	*0.5*
Arrowhead Extension				
Two Taps at the A-Line and B-Line, Crossover Piping, and Pig Launcher	0.0	Agricultural	1.0	0.8
Blythe-Arrowhead Meter Station and Pig Receiver	2.1	Anthropogenic (Industrial/ Commercial/Utility)	1.0	0.3
Arrowhead Extension Subtotal			*2.0*	*1.1*
IID Lateral				
Tap at B-Line and Pig Launcher	0.0	Open Land	0.2	0.2
Valve #1 [e]	0.0	Open Land	0.0	0.0
Valve #2	7.6	Open Land	<0.1	0.0
Valve #3	27.2	Open Land	<0.1	0.0
Valve #4	38.7	Agricultural	<0.1	0.0
El Centro Meter Station and Pig Receiver	45.7	Anthropogenic (Industrial/ Commercial/Utility)	2.5	0.2
IID Lateral Subtotal			*2.9*	*0.4*
Project Total			7.2	2.0

[a] Modifications at the Ehrenberg Compressor Station and the adjacent El Paso Meter Station would take place within the existing fencelines of these facilities; however, a header pipe associated with the new pig receiver would be outside of the fenceline of the facility and would require 0.7 acre for construction.

[b] This facility would be collocated with the Ehrenberg Compressor Station and would not require any additional land during construction and operation.

[c] This facility would be collocated with Rannells Trap and would not require any additional land during construction and operation.

[d] This facility would be collocated with the Ogilby Meter Station and would not require any additional land during construction and operation.

[e] This facility would be collocated with the tap at the B-Line and would not require any additional land during construction and operation.

Note: The totals shown in this table may not equal the sum of addends due to rounding.

Four new valves associated with the B-Line would be collocated with existing valves along the A-Line and would require an expansion of the existing 50-foot by 50-foot sites to 75-foot by 150-foot sites during construction. A total of about 1.0 acre of open and anthropogenic land would be affected by construction of these facilities. No new permanent right-of-way would be required for the new valves, except for valve #2 along 18th Avenue. This valve would require a 12-foot by 24-foot expansion of the existing fenced site, which would affect privately owned anthropogenic land. The other five valves would be within the sites of the Ehrenberg Compressor Station, Rannells Trap, and Ogilby Meter Station and would not require any additional land for construction or operation.

The taps, crossover piping, and pig launcher associated with the Arrowhead Extension would require a 150-foot by 225-foot site on private land on the northeast corner of the intersection of 18th Avenue and Arrowhead Boulevard. A total of 1.0 acre and 0.8 acre of agricultural land would be required for construction and operation, respectively. A 115-foot by 110-foot site within the fenced yard of SoCalGas' existing Blythe Compressor Station would be required for operation of the proposed Blythe-Arrowhead Meter Station and pig receiver. A total of 1.0 acre and 0.3 acre of anthropogenic land would be required for construction and operation, respectively.

The tap at the B-Line and pig launcher for the IID Lateral would require an 80-foot by 100-foot site on BLM land for construction and operation. A total of 0.2 acre of open land would be required for construction and operation of these facilities. The proposed El Centro Meter Station and pig receiver would be installed within the existing fenceline of the El Centro Power Generating Station but would require 2.5 acres of anthropogenic land for construction and would also require North Baja to obtain a 0.2-acre easement from the IID within the generating station yard. One of the four new valves would be collocated with the tap at the B-Line and pig launcher and would not require any additional land for construction or operation. The three remaining valves along the IID Lateral would each require 10-foot by 25-foot fenced sites within North Baja's permanent right-of-way. Two of these valves would be on open land and the third would be on agricultural land (see Table 4.8.2-4). Valve #4 would permanently affect less than 0.1 acre of agricultural land. Because this permanent conversion of agricultural land represents less than 1 percent of the agricultural land in Imperial County, impacts associated with this conversion would be less than significant.

Pipe Storage and Contractor Yards

To support construction activities, North Baja proposes to use four pipe storage and contractor yards on a temporary basis. These yards would temporarily affect about 73.1 acres of land consisting of about 68.1 acres of anthropogenic (i.e., industrial/commercial/utility) land and 5.0 acres of open land.

Access Roads

North Baja proposes to use several existing roads for temporary right-of-way access during construction. These access roads are primarily paved or dirt roads and/or jeep trails that would be graded or otherwise improved as needed to move equipment and materials to the construction right-of-way. An additional 485 feet of new temporary access roads would be required for the Project, of which about 60 feet would be retained as permanent access to the proposed Blythe-Arrowhead Meter Station at the end of the Arrowhead Extension and 160 feet would be retained as permanent access to the proposed tap at the B-Line and pig launcher at the beginning of the IID Lateral. A permanent access road would also be required to proposed valve #2 at MP 7.6 of the IID Lateral, but North Baja would utilize existing roads with some modification and would not need to construct a new road. A total of about 110.9 acres of land would be affected by using these access roads during construction (101.2 acres of open land, 8.4 acres of agricultural land, and 1.3 acres of anthropogenic land). Of the 110.9 acres, about 0.1 acre would be required for operation of the permanent access road to the Blythe-Arrowhead Meter Station and proposed tap at the B-Line and pig launcher at the beginning of the IID Lateral. The locations, conditions, lengths, and acres of the proposed access roads are listed in Table D-2 in Appendix D.

4.8.3 Existing Residences and Planned Developments

4.8.3.1 Existing Residences

Although no residential land would be directly crossed by the proposed pipeline facilities, the adjacent land uses along 18th Avenue on the B-Line, Arrowhead Boulevard on the Arrowhead Extension, and Imperial County roads on the IID Lateral include a mix of rural residential and agricultural land. A total of 24 residences and 2 businesses are along the portion of 18th Avenue that would be affected by construction of the Project. Of the 24 residences, 18 would be within 100 feet of North Baja's proposed construction work area (i.e., construction right-of-way and temporary extra work areas). Both of the businesses along 18th Avenue would also be within 100 feet of the proposed construction work area. There are three residences along the portion of Arrowhead Boulevard that would be affected by construction of the Project; however, no residences or businesses would be located within 100 feet of the Arrowhead Extension. The closest residence, at MP 1.2, is approximately 126 feet from the edge of the construction right-of-way. Along the roadways in Imperial County that would be affected by the proposed IID Lateral, a total of 28 residences and 6 businesses are present. Of these structures, 19 residences and 4 businesses would be within 100 feet of North Baja's proposed construction work area. Table 4.8.3-1 lists the residences within 100 feet of North Baja's proposed construction work area by milepost and indicates the distance and orientation of each from the construction work area. There are no residences within 100 feet of the modified or proposed aboveground facilities.

In residential areas, the two most significant impacts associated with construction and operation of a pipeline are disturbance during construction and encumbrance of property for future uses caused by the easement. This includes the limitation on future permanent structures within the permanent right-of-way. The residences and businesses within 100 feet of the construction work area may experience the effects of construction and operation of the Project. In general, as the distance from the construction work area increases, the impacts on residences decrease. No permanent residences or businesses would be displaced from their established locations as a result of the Project.

Temporary construction impacts on residential areas could include inconvenience caused by noise and dust generated by construction equipment, personnel, and trenching of roads or driveways; ground disturbance of lawns; removal of trees, landscaped shrubs, or other vegetative screening between residences and/or adjacent rights-of-way; potential damage to existing septic systems or wells; disruption of access to the property; and removal of aboveground structures, such as fences, sheds, or trailers, from within the right-of-way.

In general, construction in the 7.6-mile-long paved segment of 18th Avenue in Riverside County, in the Arrowhead Boulevard roadway or road shoulder in Riverside County, and in the various Imperial County roadways would be accomplished using urban construction techniques. All construction activities would be confined to the width of the roadways, including the paved roadway and road shoulders. Excavated materials would be used as a temporary road base for construction traffic to reduce wear on the existing road surface. Through traffic would be routed around segments of road where construction is active; however, North Baja would maintain access to residents, farm workers, and emergency response vehicles throughout the period of construction (estimated to be about 2 weeks in any given location). North Baja has developed Traffic Management Plans for 18th Avenue and Imperial County Roads (see Appendix H). These plans are discussed in further detail in Section 4.10.2 along with the Agency Staffs' recommendation that North Baja develop a Traffic Management Plan for Arrowhead Boulevard.

TABLE 4.8.3-1

Residences and Businesses Within 100 Feet of the Construction Work Area Associated with the North Baja Pipeline Expansion Project

Facility/ Milepost	Residence/ Business	Distance from Edge of Construction Work Area (feet)	Orientation from the Construction Work Area	Site-Specific Plan Number(s)[a]	Feature(s) Potentially Affected	North Baja's Proposed Mitigation Measure(s)
B-Line						
2.92	Residence	6	North	4200-E-SS-101	Driveway, lawn, access, gravity flow irrigation system	Repair driveway, replant lawn, shift stockpiled material, install temporary ditch
3.30	Residence	51	South	4200-E-SS-102	Driveway access	Repair driveway, use stove-pipe construction technique
3.62	Residence	19	South	4200-E-SS-103	Access	Temporary use of PVID canal
3.64	Residence	75	South	4200-E-SS-104	Access	Temporary use of PVID canal
3.72	Residence	86	North	4200-E-SS-105	Driveway, palm trees	Repair driveway, install barrier fencing to protect palm trees, install plate over trench
3.75	Residence	62	North	4200-E-SS-106	Driveway, shrubs, access	Repair driveway, replant shrubs and install barrier fencing to protect others, install plate over trench
3.77	Residence	83	North	4200-E-SS-107	Driveway, mailbox	Repair driveway, replace mailbox, install plate over trench
3.84	Residence	72	North	4200-E-SS-108	Driveway, mailbox	Repair driveway, replace mailbox, install plate over trench
3.92	Residence	60	South	4200-E-SS-110	None	NA
4.23	Business	49	North	4200-E-SS-112	Driveway, mailbox, lawn, access	Repair driveway, replace mailbox, replant lawn, install plate over trench, use stove-pipe construction technique
4.42	Residence	91	North	4200-E-SS-113	Driveway, palm trees, lawn, access	Repair driveway, install barrier fencing to protect trees, replant lawn, install plate over trench, use stove-pipe construction technique
4.64	Residence	40	North	4200-E-SS-114	Driveway, fence, shrubs, access	Repair driveway, replace fence, replant shrubs, install plate over trench, use stove-pipe construction technique
4.93	Residence	76	South	4200-E-SS-115	Driveway, palm trees, lawn, restricted access	Repair driveway, install barrier fencing to protect trees, replant lawn, use stove-pipe construction technique
5.25	Business	49	North	4200-E-SS-116	Driveway, access	Repair driveway, install plate over trench
5.72	Residence	84	South	4200-E-SS-117	Driveway, lawn	Repair driveway, replant lawn
6.38	Residence	52	North	4200-E-SS-120	Driveway, lawn	Repair driveway, replant lawn, install plate over trench, use stove-pipe construction technique

TABLE 4.8.3-1 (cont'd)

Residences and Businesses Within 100 Feet of the Construction Work Area Associated with the North Baja Pipeline Expansion Project

Facility/ Milepost	Residence/ Business	Distance from Edge of Construction Work Area (feet)	Orientation from the Construction Work Area	Site-Specific Plan Number(s)[a]	Feature(s) Potentially Affected	North Baja's Proposed Mitigation Measure(s)
7.66	Residence	84	South	4200-E-SS-121	Lawn, access	Replant lawn, use stove-pipe construction technique
7.91	Residence	74	North	4200-E-SS-122	Driveway, palm trees, shrubs, mailbox, access	Repair driveway, install barrier fencing to protect trees, replant shrubs shift stockpiled material, install plate over trench
8.20	Residence	54	North	4200-E-SS-123	Driveway, trees and shrubs, mailbox, access	Repair driveway, install barrier fencing to protect trees and shrubs, shift stockpiled material, use stove-pipe construction technique
8.66	Residence	70	South	4200-E-SS-124	Shrubs	Replant shrubs
Arrowhead Extension				-None-		
IID Lateral						
8.90	Residence	79	North	4200-E-SS-201	None	NA
27.84	Residence	71	North	4200-E-SS-202	Gravel driveway	Repair driveway, install plate over trench
27.94	Residence	60	North	4200-E-SS-203	Gravel driveway	Repair driveway, install plate over trench
28.12	Residence	93	North	4200-E-SS-204	Gravel driveway, mailbox	Repair driveway, install plate over trench, replace mailbox
29.54	Residence	80	South	4200-E-SS-205	None	NA
40.40	Business	37	North	4200-E-SS-207	Driveway, fence, trees, mailbox	Repair driveway, install plate over trench, install barrier fencing to protect trees and fence, replace mailbox
40.44	Residence	19	North	4200-E-SS-207	Driveway, tree, fence, trees, mailbox	Repair driveway, install plate over trench, install barrier fencing to protect trees and fence, replace mailbox
41.40	Residence	68	North	4200-E-SS-209	Gravel driveway, mailbox	Repair driveway, install plate over trench, replace mailbox
41.42	Residence	45	West	4200-E-SS-210	None	NA
41.94	Residence	66	West	4200-E-SS-211	None	NA
41.99	Residence	95	West	4200-E-SS-212	None	NA
42.12	Residence	57	West	4200-E-SS-215	None	NA
42.89	Residence	59	Northeast	4200-E-SS-216	Mailbox	Replace mailbox
42.92	Residence	100	North	4200-E-SS-217	Mailbox	Replace mailbox

TABLE 4.8.3-1 (cont'd)

Residences and Businesses Within 100 Feet of the Construction Work Area Associated with the North Baja Pipeline Expansion Project

Facility/ Milepost	Residence/ Business	Distance from Edge of Construction Work Area (feet)	Orientation from the Construction Work Area	Site-Specific Plan Number(s)[a]	Feature(s) Potentially Affected	North Baja's Proposed Mitigation Measure(s)
43.04	Business	58	North	4200-E-SS-218	None	NA
43.72	Business	89	South	4200-E-SS-219	Gravel road, fence, scales and scale house	Repair road, replace fence, install barrier fencing to protect scales and scale house, use stove-pipe construction method
45.24	Residence	76	North	4200-E-SS-220	None	NA
45.26	Residence	88	North	4200-E-SS-221	None	NA
45.30	Residence	70	North	4200-E-SS-222	None	NA
45.32	Business	74	North	4200-E-SS-223	None	NA
45.34	Residence	56	North	4200-E-SS-223	None	NA
45.36	Residence	80	North	4200-E-SS-224	None	NA
45.40	Residence	91	North	4200-E-SS-225	Transmission tower	Install barrier fencing around tower

[a] Site-specific plans are in Appendix O.

NA = Not applicable.

North Baja would implement the following general measures to minimize construction-related hazards and maintain access to the residences and businesses that would be affected by the Project:

- minimize the amount of trench left open at the end of the workday and cordon off the trench during non-work hours;
- cover the trench with steel plates where necessary to allow traffic passage and reduce safety hazards;
- install safety fencing for a minimum of 100 feet on either side of residences that are within 100 feet of the construction work area;
- secure and patrol construction areas during non-work hours to minimize safety issues associated with open trenches;
- maintain an emergency ingress and egress near all residences and businesses throughout the construction process;
- maintain at least one lane of restricted traffic movement through the construction area for access to residences and for emergency vehicles;
- minimize noise by maintaining equipment in good operating condition; and
- suppress dust with the use of water trucks and regular spraying.

In addition to the measures identified above, North Baja has prepared and would follow Site-specific Residential Construction Mitigation Plans to minimize disruption and to maintain access to the residences and businesses within 100 feet of the construction work area associated with the B-Line and IID Lateral. The site-specific mitigation measures North Baja would use for each of the features potentially affected at the residences and businesses identified along 18th Avenue and Imperial County roadways are summarized in Table 4.8.3-1. Appendix O contains dimensioned site plans that show the following items within a minimum of 100 feet of the construction work area:

- the proposed centerline of the pipeline;
- the limits of the construction work area;
- the edge of the paved road surface;
- each residence/business and associated structures;
- existing pipelines and powerlines;
- waterbodies, roads, driveways, fences, trees or other landscaping, and private wells; and
- the location of safety fencing that would be installed during construction.

Implementation of North Baja's general mitigation measures as well as its Site-specific Residential Construction Mitigation Plans and Traffic Management Plans would reduce the potential impacts of construction on residences and businesses to less than significant levels.

Because the pipeline facilities in residential areas would be located in county road rights-of-way, which already restrict land use, operation of the pipelines would not have an incremental effect upon residential owners' current land uses or activities and would not cause any long-term property damage. In addition, because the pipelines would be buried, they would not physically divide an established community.

4.8.3.2 Planned Developments

Planned developments within 0.25 mile of the proposed pipeline facilities and associated aboveground facilities were identified through consultations with local planning agencies and landowners and are summarized below. Section 4.15 includes an analysis of potential cumulative effects of these projects when considered in conjunction with the proposed Project. Based on contact with county planning officials and landowners, North Baja is not aware of any planned developments that would affect current land uses near the Arrowhead Extension.

Development plans for the Edgewater Lane Planned Residential Community have been submitted and approved by the City of Blythe. The residential development would be located along Riviera Drive, adjacent to the Colorado River and North Baja's existing pipeline easement for the A-Line. Construction of the development is scheduled to occur in 2007. North Baja has reached an agreement with the developer of the Edgewater Lane Planned Residential Community regarding the mutual compatibility of the proposed pipeline easement across the property and the residential development.

The Imperial County Planning Department has prepared a specific plan for "Felicity," a 2,345-acre master planned community that would be north of Interstate 8 and primarily west of Sidewinder Road (Imperial County 1998). At its nearest point, the existing A-Line and proposed B-Line, as well as the expanded Ogilby Meter Station, would be approximately 2 miles west of the proposed development. Although the specific plan has been approved and adopted by the Imperial County Board of Supervisors, implementation of the Felicity planned community has been put on hold indefinitely (Imperial County 2005).

Although not residential in nature, several other projects have been proposed by various agencies and could be affected by the proposed Project. These projects include the All-American Canal Lining Project, the Drop 2 Storage Reservoir Project, and the USCIS Border Fence.

The IID has issued plans to line 23 miles of the 82-mile-long All-American Canal to prevent the continual seepage that has been occurring since the canal originally started delivering water to Imperial Valley in 1940. The final EIS for the project was issued in 1997; however, a scheduled start date for the project has not yet been established. The IID Lateral would be constructed in the same vicinity as the lining project between MPs 2.3 and 7.9. North Baja has consulted with the IID on the location of the two projects to avoid locational conflicts and would continue to coordinate with the IID as both projects move forward. Details on alternatives evaluated in this area are presented in Section 3.2.3.2.

The BOR has proposed a water storage reservoir at the former Brock Research Station, referred to as the Drop 2 Storage Reservoir Project. A new canal would extend eastward from the reservoir. The alignment of the new canal would either be just north of Evan Hewes Highway or in the center of the highway itself (the highway would be removed). The proposed IID Lateral alignment would be just south of the current paved roadway but it may be moved to an alignment just north of the highway if the new canal is built where Evan Hewes Highway now lies (see Section 3.2.4.1). North Baja has consulted with the BOR to avoid conflicts and would continue to coordinate with the BOR as both projects move forward.

The U.S. Congress is considering a bill to authorize construction of a fence along the entire U.S.-Mexico border to assist in homeland security and border control issues. Currently the USCIS only maintains a 15-mile-long border fence in the San Diego area. There are no definitive plans for constructing a border fence along the border at MP 79.8 where the B-Line crosses from the United States into Mexico or along the IID Lateral where it is closest to the border between MPs 7.9 and 16.0.

Because North Baja would continue to work with the developers and applicable agencies associated with these projects to ensure that the proposed Project does not conflict with the development plans, impacts on these areas are expected to be less than significant.

4.8.4 Special Management Areas

4.8.4.1 California Desert Conservation Area

Approximately 64.4 miles (81 percent) of the B-Line route in California are within the CDCA (MPs 3.5 to 22.3 and MPs 34.2 to 79.8). The entire 2.1 miles of the Arrowhead Extension and 45.7 miles of the IID Lateral route are within the CDCA. Pursuant to the FLPMA, the BLM prepared a comprehensive land use management plan for the area (the CDCA Plan) in 1980. The intent of the CDCA Plan is to "…provide for the immediate and future protection and administration of the public lands in the California Desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality" (BLM 1980). Figure 4.8.4-1 shows the location of the CDCA boundary in relation to BLM land and the proposed pipeline routes.

None of the 2.1 miles associated with the Arrowhead Extension would cross BLM-managed land within the CDCA. About 50.7 miles of the B-Line and 25.7 miles[3] of the IID Lateral within the CDCA are managed by the BLM (see Figure 4.8.4-1). All of the public lands within the CDCA under BLM management have been designated geographically into four MUCs (BLM 1980): Controlled Use ("C"), Limited Use ("L"), Moderate Use ("M"), and Intensive Use ("I"). Along the proposed B-Line route MUCs "L" (25.2 miles) and "M" (25.5 miles) would be crossed. Along the proposed IID Lateral route MUCs "L" (20.8 miles) and "I" (4.9 miles) would be crossed. The CDCA Plan stipulates that new gas transmission facilities located in MUCs "L," "M," and "I" lands may be allowed only within designated corridors.

Under the Energy Production and Utility Corridors Element of the CDCA Plan, 16 planning corridors were identified to address utility facilities, including all pipelines with diameters greater than 12 inches (BLM 1980). Eight additional corridors are currently identified as contingent corridors. Approximately 35.1 miles of the B-Line route within the CDCA would be within designated Utility Corridors J and L, of which 29.9 miles are managed by the BLM (see Figure 4.8.4-1). Utility Corridor J is a 2-mile-wide corridor that runs north-south through the southeastern portion of California. The B-Line is within Utility Corridor J between MPs 10.8 and 22.3, MPs 36.5 and 53.8, and MPs 65.2 and 68.3. Between MPs 74.3 and 77.4, the proposed B-Line crosses Utility Corridor L, which is an east-west running corridor along Interstate 8.

Approximately 20.4 miles of the IID Lateral route within the CDCA would be within designated Utility Corridor L, of which 18.9 miles are managed by the BLM (see Figure 4.8.4-1). The IID Lateral is within Utility Corridor L between MPs 0.0 and 18.9 and MPs 26.0 and 27.5.

All other portions of the proposed B-Line and IID Lateral within the CDCA would be outside a designated utility corridor. The portions of the proposed route that are on lands within the CDCA and managed by the BLM but outside a designated utility corridor (approximately 20.8 miles for the B-Line and 6.8 miles for the IID Lateral) are in conflict with the CDCA Plan and would require an amendment to the plan.

[3] Of this total, about 17.6 miles would be located within county road rights-of-way across BLM land.

Non-Internet Public

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Figure 4.8.4-1 Location of Special Management Areas in Relation to BLM Land and the Proposed Pipeline Routes

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Although approximately 20.8 miles of the proposed B-Line on BLM lands are in conflict with the CDCA Plan because they are outside of a designated utility corridor, approximately 1.5 miles of the 20.8 miles are within a contingent utility corridor. Between MPs 69.7 and 72.5, the proposed B-Line bisects Utility Corridor T, which runs in a general northwest to southeast direction adjacent to the Southern Pacific Railroad (see Figure 4.8.4-1). The CDCA Plan identifies this corridor as a contingent utility corridor having some potential for use in the future (BLM 1980). A contingent utility corridor is not an officially designated utility corridor until a plan amendment for the use of the corridor is approved. While this portion of the proposed route would still require a plan amendment, it would be within a utility corridor that has been identified for future potential use.

Although the proposed Project is not consistent with the current CDCA Plan, it would be consistent with previous projects and the goal of grouping similar land uses. The proposed B-Line would be entirely adjacent to North Baja's existing A-Line, which was the subject of an amendment to the CDCA Plan and previously approved by the BLM in 2002. In addition, the portion of the IID Lateral route outside of designated utility corridors would be within or adjacent to existing transportation (Interstate 8 and Imperial County roadways) and transmission line rights-of-way.

North Baja submitted an amended Right-of-Way Grant application to the BLM in May 2005 and would need to receive the BLM's approval in order to locate the pipeline facilities on BLM lands. It would also be the BLM's responsibility to amend the CDCA Plan (see Section 1.7). The plan amendment would avoid conflict with the CDCA Plan and would, therefore, not be a significant impact. The amendment would only accommodate the North Baja Pipeline Expansion Project and would not create a new corridor or modify existing corridors.

4.8.4.2 Milpitas Wash Special Management Area

The proposed B-Line crosses the Milpitas Wash SMA generally between MPs 29.4 and 34.2, crossing approximately 4.4 miles of BLM managed land (see Figure 4.8.4-1). The Milpitas Wash SMA is managed by the BLM Yuma Field Office under the Yuma District Plan. The purpose of the Yuma District Plan is to provide a comprehensive framework for managing public land and resources in the Yuma District. The Yuma District Plan adopted the preferred alternative analyzed during an EIS process addressing six major issues and concerns identified by the public, other agencies, and BLM staff. The six issues included wildlife habitat, special management areas, grazing, land ownership adjustment, rights-of-way, and recreation. The theme of the preferred alternative adopted by the Yuma District Plan is to "balance competing demands by providing for development of needed resources while protecting important and sensitive environmental values" (BLM 1985). As part of the Yuma District Plan, several areas were identified to be managed under special management prescriptions, including the Milpitas Wash SMA. The Milpitas Wash SMA was designated for its natural values, which include undisturbed desert vegetation, wildlife habitat, and cultural resources. The Yuma District Plan prohibits new utilities or rights-of-way across the Milpitas Wash SMA.

Of the approximately 4.4 miles crossed by the proposed B-Line within the Milpitas Wash SMA, 2.5 miles are managed by the BLM. Allowing construction of the proposed B-Line across these 2.5 miles would require an amendment to the Yuma District Plan.

This EIS/EIR proposes to modify the land use plan decisions to the extent needed to allow the BLM to issue North Baja a permit to cross the Milpitas Wash SMA. The Yuma District is currently in the process of revising its plan and is considering a proposal that would reroute the utility corridor to follow SR 78. The revision to the Yuma District Plan is a separate action from the proposed North Baja Pipeline Expansion Project. On December 15, 2006, the EPA published a Notice of Availability of the *Yuma Field Office Draft Resource Management Plan and Draft Environmental Impact Statement* in the Federal

Register.[4] Because the B-Line would be within this new utility corridor, adoption of this revision would eliminate the need for a plan amendment for the proposed North Baja Pipeline Expansion Project. The revised plan, however, is not expected to be completed before the environmental review process for the proposed Project is completed. Therefore, for the North Baja Pipeline Expansion Project, this EIS/EIR will be used by the BLM to consider amending the current Yuma District Plan.

Although the B-Line deviates from designated utility corridors within the Milpitas Wash SMA, it would be collocated with North Baja's existing A-Line. The BLM approved an amendment to the Yuma District Plan to accommodate this pipeline in 2002. North Baja submitted an amended Right-of-Way Grant application to the BLM in May 2005 and would need to receive the BLM's approval to locate the B-Line on BLM lands. It would also be the BLM's responsibility to amend the Yuma District Plan to accommodate the B-Line (see Section 1.7). The plan amendment would avoid conflict with the Yuma District Plan and would, therefore, not be a significant impact. The amendment would only accommodate the North Baja Pipeline Expansion Project and would not create a new corridor or modify existing corridors.

4.8.4.3 Imperial Sand Dunes Recreation Area

The ISDRA was created in 1977 for the purpose of providing a formal space for OHV use (Congressional Resources Committee 2005). The ISDRA covers 248 square miles, with a length of more than 40 miles and an average width of about 5 miles (see Figure 4.8.4-1). The ISDRA is managed by the BLM El Centro Field Office and is a popular OHV use area. OHV recreation in the dunes became an important recreational activity in the post-World War II era with the availability of surplus U.S. Army Jeeps (BLM 2003). The ISDRA typically hosts 1.4 million OHV visitors per year, mostly between the months of September and May, when the weather is cooler (summer dunes temperatures reach well past 110 °F). Camping (with recreational vehicles or vacation trailers) and sightseeing are also popular activities in this area.

The ISDRA is divided into eight management areas, of which six are open to OHV use. The two management areas not open to OHV use are the North Algodones Dunes Wilderness, which is completely closed to motorized traffic, and the Adaptive Management Area, where limited use has been established while monitoring is taking place. The management areas that are open to OHV use include: Mammoth Wash, Ogilby, Glamis, Gecko, Dune Buggy Flats, and Buttercup (BLM 2003). The Gecko and Buttercup Management Areas have formal campgrounds; these include pit toilets, some paved driving surfaces, and signage. The B-Line would cross the Ogilby Management Area between MPs 71.1 and 74.5. The IID Lateral would cross the Ogilby Management Area between MPs 0.0 and 2.3 and the Buttercup Management Area between MPs 2.3 and 7.9.

The Ogilby Management Area is designated MUC "M" by the ISDRA Plan and is popular with families and groups that enjoy OHV use away from intensively used areas in the ISDRA. The Buttercup Management Area is designated MUC "I" by the ISDRA Plan and is used for camping, sightseeing, commercial vending, education, filming, and rights-of-way.

Between MPs 71.1 and 74.5, the B-Line would be within North Baja's existing right-of-way associated with the A-Line and would also be adjacent to Ogilby Road, which marks the eastern edge of the ISDRA and the Ogilby Management Area. This portion of the route is in an area of lighter OHV use and away from any developed recreational facilities. As a result, the B-Line is not expected to have a significant impact on this area and agencies have not expressed concern about this portion of the Project.

[4] The *Yuma Field Office Draft Resource Management Plan and Draft Environmental Impact Statement* is available for viewing on the Internet at http://www.blm.gov/az/LUP/planning.htm or at the Yuma Field Office.

However, agencies have expressed concern about locating the IID Lateral through the more heavily used portions of the ISDRA.

North Baja selected the proposed IID Lateral route based on an evaluation of alternative routes and in consultation with the BOR, the IID, the BLM, and the members of the ISDRA Technical Review Team. Alternatives that were considered for the route through this area are discussed in Section 3.2.3.2. The location of the proposed route alignment accounts for concerns that arose during consultation meetings.

The eastern end of the proposed IID Lateral (west of the All-American Canal and Interstate 8) would be adjacent to an existing 500-kilovolt (kV) transmission line from MPs 0.1 to 2.3. This portion of the route is in the Ogilby Management Area in an area of lighter OHV use and away from any developed recreational facilities. Between MPs 2.3 and 2.6, the pipeline would be installed beneath Interstate 8 and the All-American Canal using the HDD method. From MP 2.6, the alignment continues west adjacent to the CalTrans right-of-way associated with Interstate 8 as well as existing transmission lines for 3.1 miles to MP 5.7. In this segment the route traverses the northern edge of the Buttercup Campground, avoiding the main parking and vendor area by staying close to the CalTrans right-of-way. This alignment was suggested by the ISDRA Technical Review Team. North Baja made other alignment adjustments in this stretch at the suggestion of the BLM, with the goal of avoiding the most intensively used areas.

At MP 5.7, the IID Lateral would cross Interstate 8 to an area between the freeway and the All-American Canal where there is no access for OHV users. The IID Lateral would cross this area between MPs 5.7 and 7.9, adjacent to an area that would be used by the IID for its All-American Canal Lining Project (see Section 4.8.3.2). The IID Lateral would be installed beneath the All-American Canal (and exit the ISDRA) at MP 7.9. A valve would be located at MP 7.6 in an area between the Interstate 8 right-of-way and the All-American Canal, which is closed to OHV activity.

Peak OHV use season in the ISDRA is from Labor Day to Easter, and is especially high in November and December. This prompted a suggestion from BLM recreation planners and the ISDRA Technical Review Team that construction of the IID Lateral take place during the summer months to avoid conflict with the high-use recreational season (BLM 2005). North Baja has incorporated this suggestion into its proposed construction schedule (see Section 2.4). The ISDRA Technical Review Team also raised concerns that various recreational activities might conflict with the pipeline if it was buried at standard depths. In response to these concerns, North Baja would bury the IID Lateral to ensure 6 feet of cover (3 feet more than typical pipeline depths) between MPs 2.7 and 5.7.

During construction, the work area within the ISDRA would be fenced to prevent recreational users from entering the construction area. This would result in a short-term restriction on recreational use in the area. Because it would be short term (i.e., considerably less than 1 year) and would occur during the summer months when use of the area is at its lowest, this impact would not be considered significant. Once the IID Lateral has been installed, surface contours would be re-established and the pipeline right-of-way would not be restricted for OHV use. As a result, no significant impacts on recreational use would occur during normal pipeline operations. Short-term recreational impacts could result from operation and maintenance activities if North Baja needed to perform major maintenance work, such as pipeline repairs; however, such major work would be rare and, if needed, would be completed in less than 1 year so no significant impacts would occur. Routine maintenance at the valve at MP 7.6 would occur inside the fenced valve site and would not affect recreational use.

4.8.5 Recreation and Public Interest Areas

The proposed pipeline facilities would not cross any national or State forests, National or California Wild and Scenic Rivers, registered national natural landmarks, lands designated under a Habitat Conservation Plan, golf courses, or areas designated under the National Trails System. However, the B-Line and IID Lateral would cross 11 recreation or public interest areas and be adjacent to several others. Table 4.8.5-1 lists the locations and crossing length (if applicable) for each of these areas. A more detailed discussion of each area is provided below. The Arrowhead Extension would not cross or be adjacent to any recreation or public interest areas. Schools in the Project area are discussed in Section 4.9.4.

TABLE 4.8.5-1

Recreation and Public Interest Areas Crossed by or Adjacent to the North Baja Pipeline Expansion Project

Facility	Milepost Location	Name of Area	Crossing Length
B-Line			
	0.0	Ehrenberg Sandbowl Off-Highway Vehicle (OHV) Area	NA – 1.0 mile southeast
	0.1	Colorado River access area	NA – 0.1 mile south
	0.2	Colorado River	768 feet
	15.7	Mule Mountains Area of Critical Environmental Concern (ACEC)	NA – 0.9 mile west
	18.3	Bradshaw Trail	50 feet
	19.2-22.3	Metropolitan Water District Property	3.1 miles
	25.0	Palo Verde Mountains County Park	NA – 1.3 miles east
	25.5	Oxbow Recreation Site	NA – 1.1 miles east
	29.2-29.6	Bureau of Reclamation quarry	NA – 0.1 mile west
	31.0	Palo Verde Wilderness Area	NA – 1.0 mile west
	29.9-32.3 [a]	Cibola National Wildlife Refuge	1.2 miles
	35.2-50.0	Wildlife Habitat Management Area	14.8 miles
	49.0	Indian Pass Wilderness Area	NA – 1.9 miles east
	66.5	Tumco Mine Area Landmark	NA – 1.2 miles east
	71.1-74.5	Imperial Sand Dunes Recreation Area (ISDRA), Ogilby Management Area	3.4 miles
	79.6	Pilot Knob ACEC	NA - 1.0 mile east
Arrowhead Extension		-None-	
IID Lateral			
	0.0-2.3	ISDRA, Ogilby Management Area	2.3 miles
	2.3-4.3	Plank Road ACEC	NA – 0.1 mile southeast
	4.9-5.6	Plank Road ACEC	0.7 mile
	6.8	Plank Road Interpretive Site	NA – 0.1 mile southeast
	2.3-7.9	ISDRA, Buttercup Management Area	5.6 miles
	13.7-18.7	East Mesa ACEC	5.0 miles
	13.7-21.1	East Mesa Flat-tailed Horned Lizard Management Area	7.4 miles
	27.4	Hot Springs Long Term Visitor Area	NA – 0.1 mile north
	27.3-27.6	Lake Cahuilla ACEC	0.3 mile

[a] The B-Line would cross the Cibola National Wildlife Refuge intermittently between MPs 29.9 and 32.3 for a total of 1.2 miles. Specifically, the B-Line would cross the Cibola National Wildlife Refuge between MPs 29.9-30.0, 30.3-30.4, 30.7-30.8, 30.9-31.3, and 31.8-32.3.

NA = Not applicable.

One of the primary concerns when crossing recreation and public interest areas is the impact of construction on the purpose for which the area was established (e.g., the recreational activities, public access, and resources the area aims to protect). Construction would alter visual aesthetics by removing existing vegetation and disturbing soils. Construction would also generate dust and noise, which could be a nuisance to recreational users. Construction could also interfere with or diminish the quality of the recreational experience by affecting wildlife movements or disturbing trails. In general, impacts on recreational and public interest areas would be temporary and would be limited to the period of active construction, which typically would last only several days to several weeks in any one area.

In general, North Baja would minimize construction-related impacts on these areas by:

- installing the B-Line entirely within the existing right-of-way maintained for the A-Line;
- installing the IID Lateral almost entirely within or adjacent to existing road and transmission line rights-of-way;
- timing construction to avoid peak usage periods, when practical; and
- ensuring effective post-construction reclamation of the right-of-way to preconstruction conditions.

Off-Highway Areas and Use

OHV use in the Project area is variable in terms of both season and location. OHV use occurs most frequently during the winter months with the heaviest use occurring on the weekends. The Ehrenberg Sandbowl OHV Area is 1.0 mile southeast of the Ehrenberg Compressor Station site. Further south, along the terminus of the proposed B-Line and along the beginning of the proposed IID Lateral, the ISDRA provides a large area of OHV use (see Section 4.8.4.3). In addition, OHV use is common but regulated on BLM lands outside of these areas and along the routes of the B-Line and IID Lateral.

BLM land within the CDCA is designated open, closed, or limited for vehicle use. Route designations are generally made on the basis of MUCs. MUC "M" (approximately 25.5 miles of the B-Line), MUC "L" (approximately 25.2 miles of the B-Line and 20.8 miles of the IID Lateral), and MUC "I" (approximately 4.9 miles of the IID Lateral) fall under the limited vehicle use designation. Limited vehicle access means that motorized-vehicle access is allowed only on certain routes of travel, which include roads, trails, and washes (BLM 1980). At a minimum, use is restricted to existing routes of travel. An existing route of travel is a route that was established before approval of the CDCA Plan in 1980 with a minimum width of 2 feet, showing significant surface evidence of prior vehicle use or, for washes, history of prior use. On MUC "M" lands, access is allowed on existing routes unless it is determined that use on specific routes must be limited further. On MUC "L" lands, vehicle access is directed toward use of approved routes of travel due to higher levels of resource sensitivity in this MUC. On MUC "I" lands, those areas not designated as open are limited to existing routes.

During construction, the Project could have an impact on OHV areas and users by restricting access to areas designated for OHV use. Conversely, the pipeline rights-of-way could increase accessibility for OHV use into previously inaccessible, environmentally sensitive areas. To reduce the potential for interference between pipeline construction activities and authorized OHV use, as well as unauthorized OHV use of the pipeline rights-of-way after construction, North Baja developed an Off-Highway Vehicle Management Plan (OHV Plan) that addresses the initial siting, construction, and operation of the proposed facilities. North Baja's OHV Plan was developed in consultation with BLM recreation specialists and biologists in 2001 and 2002 during planning for the original North Baja Pipeline

Project and again in 2005 during planning for the proposed Project. The OHV Plan is also based on experience North Baja has gained while operating, maintaining, and managing the A-Line right-of-way since 2002. The OHV Plan is provided in Appendix P.

In the area that would be crossed by the B-Line, OHV use is permitted only on BLM-designated routes of travel except between MPs 71.1 and 74.5 (see Section 4.8.4.3). Before construction, North Baja would clearly mark the extent of the construction work area. Where active construction is underway, the right-of-way would be occupied by workers and equipment and restricted for OHV use. OHV users would be directed back to designated routes of travel. Additional measures North Baja would implement to minimize construction-related impacts on OHV users in the ISDRA are discussed in Section 4.8.4.3. Because any impacts associated with restricted OHV use would be short term (i.e., considerably less than 1 year), they would not be considered significant.

Where the proposed pipelines would be in areas of authorized OHV use, the pipeline rights-of-way would not be restricted for OHV use. However, to minimize the potential for the pipeline rights-of-way to increase accessibility for OHV use into previously inaccessible, environmentally sensitive areas, North Baja would implement various blocking measures where it has been determined that such measures may be effective in discouraging OHV use. These measures are described below.

- Berms would be placed across the right-of-way where it intersects an existing OHV road. Berm slopes would not exceed 30 percent.
- Berms would be placed across the right-of-way as part of erosion control and strategically placed to reduce visibility and mimic local topography.
- Rock redistribution and strategic placement, without making it into a challenging obstacle course, would occur across the right-of-way where large rock is available and such work would “erase” the visual cues of “road.”
- The right-of-way would be backbladed or raked by bulldozer or by hand, to erase the traces of the intersection of the right-of-way with an existing OHV route or dirt road.
- Ocotillo and large cacti would be salvaged and replanted where they are available with the understanding that survival criteria would not be applied because even dead specimens provide convincing visual clues of “no road.”
- Other desert species, including creosote bush scrub and desert wash woodland species (e.g., palo verde, ironwood, smoke tree, etc.) would also be salvaged and replanted with the understanding that they would be unlikely to survive but could still provide value as a visual block.
- Woody material removed during construction would be redistributed across the right-of-way to both disguise the right-of-way and serve as “vertical mulch.”

An assessment and detailed description of where these blocking measures would be implemented is presented in the OHV Plan (see Appendix P).

The Yuma District of the BLM commented that it would like North Baja to place additional signs and vegetative barriers at access points along the right-of-way to prohibit OHV use. North Baja has agreed to place signs and/or vegetative barriers at access points along the right-of-way if requested by the Yuma District.

A scoping comment was received regarding OHV management within or near the Cibola NWR. North Baja met with the manager of the Cibola NWR to review the effects of construction of the A-Line within the refuge and to determine the appropriate OHV management measures to be considered for the proposed B-Line. The refuge manager recommended that North Baja replace fencing originally installed after construction of the A-Line but subsequently destroyed by OHV users. It was also suggested that North Baja maintain the fence for 2 years because in remote parts of the refuge, it takes 2 years for fencing to become an effective OHV barrier. North Baja has agreed to install and maintain the fencing for 2 years along this portion of the B-Line.

A scoping comment was also received regarding OHV management on the Nowell property near Riviera Drive at approximately MP 0.4 of the B-Line. After construction of the A-Line, an earthen berm was installed across North Baja's right-of-way on the western edge of Riviera Drive to discourage OHV users from gaining access to other parts of the property from that location. North Baja states that the berm proved effective in discouraging access down the right-of-way from this location; however, OHV traffic originating from other locations has been relatively heavy on North Baja's and the adjacent SoCalGas rights-of-way. According to North Baja, this appears to be a continuation of an OHV use pattern established before its right-of-way was created. North Baja proposes to reconstruct the earthen berm at Riviera Drive after construction of the B-Line and, with the property owner's concurrence, would leave the right-of-way with a rougher surface instead of the smooth finished grade that matches the adjacent ground surface. This could make the right-of-way less attractive as a travel way. North Baja would also offer to procure and install signs for the property owner, should he choose to attempt to discourage OHV access at the main entry points on the property (unrelated to the pipeline right-of-way).

In comments on the draft EIS/EIR, the EPA and the ICAPCD expressed concern about the generation of fugitive dust emissions associated with OHV use of the right-of-way. These agencies also commented that North Baja's OHV Plan did not address enforcement and future monitoring of the proposed OHV blocking measures. Therefore, **the Agency Staffs recommend that:**

- **North Baja shall revise its OHV Plan to include:**

  a. the agency or agencies responsible for enforcement of the OHV Plan;

  b. the frequency of monitoring that would be conducted to ensure that the implemented OHV blocking measures are functioning properly;

  c. the methodology for reassessing the implemented OHV blocking measures in the future; and

  d. **enforcement measures.**

  North Baja shall file the revised OHV Plan with the FERC and the CSLC for the review and written approval of the Director of OEP and the Executive Officer of the CSLC <u>before construction of Phase I-A and Phase II</u>.

Implementation of North Baja's proposed measures as well as the Agency Staffs' recommendation would reduce the potential impacts associated with unauthorized OHV use of the right-of-way to less than significant levels.

Colorado River and Access

The proposed B-Line would cross the Colorado River at MP 0.2, and an access area to the river is 0.1 mile south of the Ehrenberg Compressor Station. The Colorado River is an area of high recreational use, including boating and fishing. The Colorado River would be crossed using the HDD method, which would minimize impacts on the river and would not limit the use of the river for recreational purposes. However, access to the river may be restricted during welding of the pipe and the pullback for the HDD crossing. The period of limited public access would be short term (i.e., considerably less than 1 year) and would, therefore, not result in any significant impacts on this area.

Areas of Critical Environmental Concern

The FLPMA defines an ACEC as an area within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards. According to the CDCA Plan, the ACEC designation is a process for determining what special management certain important environmental resources or hazards require.

The B-Line would be within 1 mile of two BLM-designated ACECs. The Mule Mountains ACEC is about 0.9 mile west of MP 15.7 and the Pilot Knob ACEC is about 1.0 mile east of MP 79.6. The management objective of both these ACECs is to protect cultural resources. Because these areas would not be crossed by the B-Line, the designated use of these areas would not be affected by the Project and no impacts are anticipated. A detailed discussion of cultural resources potentially affected by the proposed Project is presented in Section 4.11.

The IID Lateral would cross three ACECs: Plank Road, East Mesa, and Lake Cahuilla. The IID Lateral would be within 0.1 mile of the Plank Road ACEC between MPs 2.3 and 4.3 and would cross this ACEC between MPs 4.9 and 5.6. The IID Lateral would cross the Lake Cahuilla ACEC between MPs 27.3 and 27.6. Both of these ACECs are managed to protect cultural resources. Almost all of the route in these locations would be in a designated utility corridor and, therefore, consistent with the designated use of the area. As a result, impacts on these areas would be less than significant. A detailed discussion of cultural resources potentially affected by the proposed Project is presented in Section 4.11.

The IID Lateral would also cross the East Mesa ACEC between MPs 13.7 and 18.7. In 2003, the effective function of the ACEC was replaced by the adoption of a plan amendment providing for a range-wide management strategy for this species within the East Mesa Flat-tailed Horned Lizard Management Area crossed by the IID Lateral between MPs 13.7 and 21.1. The IID Lateral would be at the extreme southern boundary of the area within Imperial County road rights-of-way. Additional information on the flat-tailed horned lizard, including mitigation measures North Baja would implement to minimize impacts on this species, is presented in Section 4.7.6.13.

Designated Trails

At MP 18.3 the proposed B-Line would cross the Bradshaw Trail. The Bradshaw Trail is a BLM-designated Back-Country Byway. Back-Country Byways are a network of low-standard roads and trails or “adventure routes” that are designated as such by the BLM because they cross public lands with high scenic or public interest value. Between 1862 and 1877, the Bradshaw Trail was used to transport miners and supplies to the gold mines of La Paz (now Ehrenberg), Arizona. The trail was also used as a stagecoach route and was the first road through Riverside County. The existing 70-mile-long section of this dirt road extends from the North Shore area near the Salton Sea to within 14 miles of the City of

Blythe. The Bradshaw Tail is periodically graded by the Riverside County Transportation Department. The land at the location of the proposed pipeline crossing is managed by the BLM.

The effects of pipeline construction across the Bradshaw Trail could include restricted or temporary loss of use to the public. To mitigate the impacts of construction on public use of the Bradshaw Trail, North Baja proposes to perform construction activities during off-peak periods and to complete pipeline installation across the trail in just a few days. No adverse impacts on use of the trail are known to have occurred during construction of the A-Line, and minimal impact is expected to occur during construction of the B-Line. Because the period of limited public access would be short term (i.e., considerably less than 1 year), impacts on Bradshaw Trail would be less than significant. No other designated trails would be crossed by the proposed Project.

Metropolitan Water District Property

North Baja's existing A-Line crosses about 3.1 miles of undeveloped desert property owned by the MWD between MPs 19.2 and 22.3. North Baja has stated that it is unaware of any development plans for the property. North Baja's existing right-of-way agreement with the MWD allows placement of a second pipeline within the 50-foot-wide easement. The right-of-way agreement also stipulates certain terms such as restoration of surface contours, payment for actual damages caused by North Baja's construction, reconstruction or ingress/egress, and other standard conditions. North Baja would adhere to the terms of its easement. By adhering to the terms of its right-of-way agreement, impacts on this property would be less than significant.

Parks and Recreation Sites

The Palo Verde County Park and Oxbow Recreation Site are 1.3 miles and 1.1 miles, respectively, from the proposed B-Line. Because these are low-intensity use areas that are over 1 mile from the proposed facilities, no impacts associated with the proposed Project on these areas are anticipated.

Quarries

Between MPs 29.2 and 29.6 the B-Line would pass near a rock quarry operated by the BOR. The quarry is currently inactive. No impacts on the quarry are known to have occurred during or after construction of the A-Line. Similarly, construction of the proposed B-Line is not expected to have an effect on any possible use of or access to the quarry. No other quarries would be affected by the proposed Project.

Wilderness Areas

The Palo Verde Mountains Wilderness Area is about 1.0 mile west and the Indian Pass Wilderness Area is about 1.9 miles east of the B-Line route at MPs 31.0 and 49.0, respectively. The 1964 Wilderness Act defined wilderness as areas in generally natural condition; areas having outstanding opportunities for solitude or a primitive and unconfined type of recreation; areas at least 5,000 acres or large enough to preserve use as wilderness; and areas containing ecological, geological, or other features of scientific, scenic, or historical value. The Palo Verde Mountains Wilderness Area is a 32,310-acre area designated as part of the California Desert Protection Act of 1994. Distinguishing this wilderness area are twin buttes known as the Flat Tops, which stand out as a landmark against a range of jagged peaks. About 32,083 acres are included in the Indian Pass Wilderness Area, which is a distinctive part of the Chocolate Mountains. According to the 1964 Wilderness Act, there shall be no commercial enterprise, no permanent road (except as necessary to meet minimum requirements for the administration of the area),

no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area. The area of the proposed Project does not intersect or overlap with any wilderness areas, and thus no impacts are anticipated.

Wildlife Refuges

The proposed B-Line would cross a total of 1.2 miles of the Cibola NWR at various locations between approximately MPs 29.9 and 32.3. The refuge was established in 1964 to protect the wintering grounds for migratory birds and other wildlife. Access to the refuge and use of the area by humans is strictly controlled to protect wildlife habitat. As discussed in Section 1.5.2, a decision that allows a crossing of the Cibola NWR must be compatible with the FWS Refuge Management Regulations in Part 603 FW 2.10(D). In approving a proposed utility right-of-way across the Cibola NWR, the Refuge Manager must find that none of the conditions listed in Part 603 FW 2.10(D) exist with regards to the proposed Project. The existing A-Line complied with these conditions and a favorable Compatibility Determination was issued for the installation of that pipeline. Therefore, a favorable Compatibility Determination is expected to be issued for the proposed B-Line. As a result, no significant impacts on this area are anticipated. No other State or national wildlife refuges would be crossed by or adjacent to the proposed pipelines.

Wildlife Habitat Management Area

The proposed B-Line would cross a multi-species WHMA between MPs 35.2 and 50.0. This segment of the route also crosses two portions of proposed WHMAs for bighorn sheep (MPs 35.2 to 42.0 and MPs 49.0 to 50.0). North Baja would also expand an existing valve site within this area (valve #6 at MP 41.6). Construction-related activities could impact wildlife in the WHMA. The majority of the pipeline route in this area would be within a designated utility corridor. Management goals for the WHMA include the maintenance of naturally occurring distributions of 28 special status animal species and 30 special status plant species. A second goal is to maintain proper functioning conditions in all natural communities with special emphasis on communities that are present in small quantities, have a high species richness, and support many special status species. The third goal is to maintain ecological processes by maintaining naturally occurring interrelationships among various biotic and abiotic elements of the environment.

According to the BLM, required mitigation measures within the WHMA include limiting construction activities to between July 1 and December 1 if Crissal thrashers are present, implementation of special mitigation measures to avoid disturbance of Couch's spadefoot toad habitat, and compensation for disturbance of desert dry wash woodland and desert chenopod scrub communities. Details on North Baja's proposed mitigation measures for the Crissal thrasher and the Couch's spadefoot toad are presented in Sections 4.7.6.5 and 4.7.6.12, respectively. North Baja's proposed mitigation measures for disturbance of desert wash woodlands and other desert vegetation communities are described in Section 4.5.3.

Registered Natural and Historical Landmarks

One registered natural landmark, the Tumco Mine area, is about 1.2 miles east of the B-Line route at MP 66.5. Historically, the Tumco Mine area was a gold camp that reached its peak development between 1893 and 1899 (Donald Laird Consulting 2000). This site was evaluated before construction of the A-Line and no effects associated with construction of the B-Line construction are anticipated.

The Plank Road, a California State Historical Landmark, lies in the vicinity of the proposed IID Lateral. At its nearest point, the Plank Road interpretive site is about 0.1 mile southeast of MP 6.8 of the IID Lateral. The Plank Road was a wooden, portable driving surface to provide for the passage of automobiles across the Algodones Dunes and was in use from 1916 through 1926 (BLM 1998). Because the locations of segments of the Plank Road are unknown, it could be encountered during construction of the IID Lateral. Additional information on the Plank Road is provided in Section 4.11.

Camping

Informal camping occurs in areas near the proposed Project facilities but is variable in nature with most of the activity occurring in the winter. The area surrounding the Ogilby Meter Station, in particular, is a popular camp site throughout the winter months. Construction-induced effects such as traffic, noise, and dust may affect the quality of some campers' recreational experiences, but any effects would be temporary in nature (i.e., considerably less than 1 year) and would not result in any significant impacts.

Hot Springs Long Term Visitor Area

The Hot Springs Long Term Visitor Area is located about 0.1 mile north of the proposed IID Lateral at MP 27.4. The area includes a historic and still active hot spring that attracts both local and winter visitors. Construction-induced effects such as traffic, noise, and dust may affect the quality of some visitors' recreational experiences, but any effects would be temporary in nature (i.e., considerably less than 1 year) and would not result in any significant impacts.

4.8.6 Hazardous Waste Sites

The CEQA process requires the identification of hazardous material sites pursuant to Government Code section 65962. The Department of Toxic Substances and Control (DTSC), Site Mitigation Group, was contacted regarding the proper approach to identifying hazardous material sites pursuant to the CEQA requirements. In order to fulfill these requirements, the CAL-SITES list and leaking underground storage tank (LUST) list were reviewed. The CAL-SITES is a database maintained by the DTSC that contains potential or confirmed substance release properties and is released quarterly. The LUST list, maintained by the CSWRCB, contains an inventory of reported underground storage tank incidents.

A review of the CAL-SITES database did not identify any sites that are currently on or adjacent to the proposed Project. A review of the LUST list revealed a single incident of a leaking underground fuel tank along the IID Lateral route in El Centro (case #7T2243030). The case was closed by the CRWQCB on August 28, 1992 and is not considered to be an issue for the proposed Project.

If contamination is encountered during construction of the Project, North Baja would notify the appropriate agencies. In addition, North Baja has prepared an SPCC Plan that provides preventive and mitigative measures that would be implemented to avoid or minimize the potential impact of hazardous material spills during construction (see Appendix F).

Although not classified as hazardous waste sites, two solid waste facilities and a former livestock feed yard are adjacent to the proposed facilities. The Palo Verde Solid Waste Site is 0.1 mile west of the proposed B-Line at MP 26.4, and a former solid waste disposal site was adjacent to the proposed 18th Avenue Yard near MP 5.5. No impacts on or from these facilities occurred during construction of the existing A-Line and no impacts associated with the proposed B-Line are anticipated.

A former livestock feed yard was located at the proposed 18th Avenue Yard (MPs 5.5 to 5.7). No impacts on or from this facility occurred during construction of the existing A-Line and no impacts associated with the proposed B-Line are anticipated.

4.8.7 Aesthetic Resources

The BLM uses a VRM system to identify and manage scenic values on public lands. The VRM system includes a visual resource inventory, which classifies resources on BLM land in one of four categories: class I, II, III, or IV, with class I having the highest visual sensitivity and class IV being the least sensitive.[5] The degree of modification allowed to the basic elements of the landscape in these classes includes:

- class I: modifications should not be evident in the landscape. The level of change to the characteristic landscape should be very low and must not attract attention;
- class II: modifications should not be evident in the landscape. Contrasts are seen, but should not attract the attention of the casual observer;
- class III: modifications are evident, but should remain subordinate to the existing landscape; and
- class IV: modifications may dominate the view and be the focus of viewer attention; however, every effort should be made to minimize the impact of these activities.

Within the Project area, the BLM land in Imperial County under the jurisdiction of the El Centro and Yuma Field Offices has been categorized into VRM classes. BLM land along the proposed B-Line in Riverside County under the jurisdiction of the Palm Springs-South Coast Field Office has not been classified. Accordingly, interim VRM classes have been established for the area crossed by the pipeline route in Riverside County. The interim VRM classes are included in the summary above. The supporting VRM evaluation establishing these interim VRM classes is provided in Appendix Q.

Of the 55.2 miles of BLM-managed lands that would be crossed by the B-Line, 24.9 miles are VRM class II, 23.5 miles are VRM class III, and 6.8 miles are VRM class IV. Of the 25.7 miles of BLM-managed lands that would be crossed by the IID Lateral, 20.8 miles are VRM class II and 4.9 miles are VRM class IV. No VRM class I lands would be affected by the proposed Project.

There are two types of potential impact on visual resources associated with construction and operation of the Project facilities: that resulting from alteration of terrain and vegetation patterns due to facility construction or right-of-way maintenance and that resulting from the presence of new aboveground facilities.

Pipeline Facilities

During construction, the cleared and graded right-of-way, as well as construction equipment operating on the right-of-way, would be visible from any surrounding residences and local roads. Because the terrain over much of the Project area is relatively flat, views of the construction activity may extend for some distance. Following construction, the primary visual impact would be the right-of-way, which due to the arid climate and slow regeneration of native vegetation could be noticeable for many years. The visual impact of the right-of-way following construction depends on the visual contrast in

[5] A full description of the BLM's VRM system is available at http://www.blm.gov/nstc/VRM/8410.html.

form, line, color, and texture created between the proposed facilities and the existing landscape. These factors are discussed by facility and milepost below.

B-Line

The B-Line would be constructed adjacent to North Baja's existing A-Line and would result in similar impacts on visual resources as those experienced during construction and operation of that pipeline. The landscape along the B-Line route is characterized by flat agricultural and rural residential areas, playa/alluvial fan landscapes (i.e., flat terrain, creosote scrub vegetation, desert washes), and mountain foothills. Specific segments of the pipeline route fall into one of these general categories as described below.

MPs 0.0 to 11.7 – This portion of the B-Line route comprises flat terrain with a mix of agricultural and rural residential landscapes on both sides of 18th Avenue. Agricultural operations would resume following construction. Construction activity would create a short-term visual intrusion to residents along 18th Avenue. There would be no long-term impact on visual resources in this area because little or no vegetation clearing would be required where the B-Line would be installed within the right-of-way associated with 18th Avenue. The Colorado River would be crossed using the HDD method, and setbacks from the river would protect existing vegetation. Therefore, views from the river and adjacent areas would not be affected.

Lands within this route segment in the CDCA are not managed by the BLM and do not have a VRM classification. Therefore, construction of this segment of the B-Line would not cause an inconsistency with an adopted VRM Plan. As described above, construction in this area would also not result in a substantial adverse effect on a scenic area or vista, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the area or its surroundings. As a result, impacts on visual resources along this segment of the B-Line would be less than significant.

MPs 11.7 to 22.3 – Past 18th Avenue, the B-Line route joins the Western Area Power Administration transmission line corridor and continues south across the Palo Verde Mesa to the Palo Verde Mountains foothills. In this flat desert landscape, a low degree of visual impact would occur initially and would be further reduced over time. Visibility resulting from the very slight contrast in soil color and vegetative pattern between the right-of-way and adjacent areas would be offset by limited viewing opportunities afforded by areas with flat to low topographic relief and views that include existing manmade features of electric transmission lines.

The area that would be crossed has an interim VRM classification of IV. The degree of contrast with the characteristic landscape that would result from the B-Line would be consistent with the visual management objectives of this class. Changes in form, line, color, and texture would be reduced where the route would be adjacent to other linear facilities, including the existing electric transmission lines. Overall, construction in this area would not result in a substantial adverse effect on a scenic area or vista, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the area or its surroundings. For these reasons, impacts on visual resources along this segment of the B-Line would be less than significant.

MPs 22.3 to 29.7 and MPs 31.5 to 79.8 – South of the Palo Verde Mountains, the surroundings of the corridor assume characteristics typical of playa/alluvial fan landscapes until the route reaches the intersection of Ogilby Road and Interstate 8. At that point, the route heads southeast through the Pilot Knob Mesa to the U.S.-Mexico border, adjacent to the sand dune system that dominates the surrounding visual setting and contributes to a moderate to high landscape quality.

In the desert landscape environment of these two route segments, a low degree of visual impact would occur initially and would be further reduced over time. Visibility resulting from the contrast in soil color and vegetative pattern between the right-of-way and adjacent areas would be partially offset by limited viewing afforded by areas with flat to low relief and views that include existing manmade features. Adjacent features along most of the length of these segments include paved and desert wash roads, levees, canals, and electric transmission lines. Over time, the contrast would diminish and the visual effect of the installed pipeline would be minimal.

The BLM lands along these two segments of the route include VRM class II and VRM class III. The degree of contrast with the characteristic landscape that would result from the B-Line would be consistent with the visual management objectives of these classes. Changes in form, line, color, and texture would be reduced where the route would be adjacent to other linear facilities. Overall, construction in this area would not result in a substantial adverse effect on a scenic area or vista, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the area or its surroundings. For these reasons, impacts on visual resources along these segments of the B-Line would be less than significant.

MPs 29.7 to 31.5 – In this segment of the route, the B-Line would cross hilly to flat terrain with a backdrop created by the steeper slopes of the Palo Verde Mountains to the west. Potential viewing locations include SR 78, which is parallel to a portion of the route in this segment. Few longitudinal views down North Baja's existing right-of-way occur in this area. Glimpses of the existing right-of-way can be seen while traveling on SR 78, but the dominant feature is the mid-distance views of the Colorado River bottom covered by expanses of tamarisk. The highway alignment in this area is curvilinear with vertical changes in grade. A single lane exists in either direction. All of these features compete with the viewer's attention.

Lands in this route segment are VRM class III. The degree of contrast with the characteristic landscape that would result from the B-Line would be consistent with the visual management objectives of this class. Overall, construction in this area would not result in a substantial adverse effect on a scenic area or vista, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the area or its surroundings. As a result, impacts on visual resources along this segment of the B-Line would be less than significant.

Arrowhead Extension

The route associated with the Arrowhead Extension would cross flat terrain with a mix of agricultural and rural residential landscapes on both sides of Arrowhead Boulevard. Agricultural operations would resume following construction. Construction activity would create a short-term visual intrusion along Arrowhead Boulevard. There would be no long-term impact on visual resources in this area because little or no vegetation clearing would be required where the pipeline would be installed within the right-of-way associated with Arrowhead Boulevard, and agricultural operations would resume following construction where the pipeline would be outside the road right-of-way. The lands affected by the Arrowhead Alternative are not managed by the BLM and do not have a VRM classification.

IID Lateral

The IID Lateral would be constructed within or adjacent to existing rights-of-way for the majority of the route. The landscape along the IID Lateral route is characterized by sand dunes, playa/alluvial fan landscapes (i.e., flat terrain, creosote scrub vegetation, desert washes), and agricultural areas. Specific segments of the lateral route fall into one of these general categories as described below.

MPs 0.0 to MP 7.9 – This portion of the IID Lateral would cross the ISDRA, which contains the largest mass of sand dunes in California. The ISDRA is recognized for its frequent use as a backdrop for commercials and movies because of its unique beauty and landscape. Very little vegetation is present due to intense OHV use. Manmade modifications in the vicinity of the IID Lateral in this area include Interstate 8, the All-American Canal, the Coachella Canal, and several wood-pole and steel-lattice-tower electric transmission lines that traverse the dunes in an east-west direction.

The BLM lands along this segment of the route include VRM class II and VRM class IV. The degree of contrast with the characteristic landscape that would result from the IID Lateral would be consistent with the visual management objectives of these classes. Changes in form, line, color, and texture would be reduced where the route would be adjacent to other linear facilities. Moreover, wind-deposited sand is expected to mask most remaining visual evidence of the right-of-way within a relatively short period following construction. Overall, construction in this area would not result in a substantial adverse effect on a scenic area or vista, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the area or its surroundings. For these reasons, impacts on visual resources along this segment of the IID Lateral would be less than significant.

MPs 7.9 to 27.6 – The landscapes that would be crossed by the IID Lateral through this area include desert environments adjacent to or within manmade features such as Evan Hewes Highway and other Imperial County roadways as well as electric transmission lines. In the desert landscape environment of this route segment, a low degree of visual impact would occur initially and would be further reduced over time. Visibility resulting from the contrast in soil color and vegetative pattern between the right-of-way and adjacent areas would be partially offset by limited viewing afforded by areas with flat to low relief and views that include existing manmade features. Over time, the contrast would diminish and the visual effect of the installed pipeline would be minimal.

The BLM lands along this segment of the route include VRM class II. The degree of contrast with the characteristic landscape that would result from the IID Lateral would be consistent with the visual management objectives of this class. Changes in form, line, color, and texture would be reduced where the route would be adjacent to other linear facilities. Overall, construction in this area would not result in a substantial adverse effect on a scenic area or vista, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the area or its surroundings. For these reasons, impacts on visual resources along this segment of the IID Lateral would be less than significant.

MPs 27.6 to 45.7 – This portion of the IID Lateral comprises flat terrain with a mix of agricultural and rural residential landscapes on both sides of several Imperial County roadways. Agricultural operations in these areas would resume following construction. Construction activity would be a short-term visual intrusion to residents along the roadways. There would be no long-term impact on visual resources in this area because little or no vegetation clearing would be required where the lateral would be installed within the road rights-of-way.

Lands within this route segment in the CDCA are not managed by the BLM and do not have a VRM classification. Therefore, construction of this segment of the IID Lateral would not cause an inconsistency with an adopted VRM Plan. Construction in this area would also not result in a substantial adverse effect on a scenic area or vista, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the area or its surroundings. As a result, impacts on visual resources along this segment of the IID Lateral would be less than significant.

Aboveground Facilities

The area near the Ehrenberg Compressor Station has a mix of industrial and rural landscape characteristics. During modifications at the station, the presence of construction workers and equipment in the Project area would be a minor detraction. All modifications at the facility would be at or near ground level and would be visually unobtrusive. Because the facility is not on BLM land, it does not have a VRM classification.

Rannells Trap is within an open scrub-shrub desert landscape near the boundary of the agricultural area of the Palo Verde Valley to the east. The facility would be expanded by 0.3 acre to accommodate the new pig launcher and receiver. The land for this facility is not managed by the BLM and does not have a VRM classification.

The existing Ogilby Meter Station is on flat terrain within an open scrub-shrub desert landscape. This site is on land managed by the BLM and has a VRM designation of class II. The modifications and additional pig launcher and receiver at the Ogilby Meter Station would require an expansion of the facility by 0.2 acre for both construction and operation. The modified structure would be visible to travelers on Interstate 8 but it would be seen in the context of the existing facility as well as other manmade structures such as electric transmission lines. The degree of contrast would not attract attention and would be consistent with the visual management objectives for VRM class II areas.

Four new valves associated with the B-Line would be collocated with existing valves along the A-Line. No new permanent right-of-way would be required for these valves, except for valve #2 along 18th Avenue. This valve would require a 12-foot by 24-foot expansion of the existing fenced site. The land for this expanded valve is not managed by the BLM and does not have a VRM classification. The other five valves would be within the sites of the Ehrenberg Compressor Station, Rannells Trap, and Ogilby Meter Station and would not result in any additional impacts on visual resources.

The Blythe-Arrowhead Meter Station and pig receiver would be constructed in the existing utility yard associated with SoCalGas' Blythe Compressor Station. Its appearance would be consistent with the existing character of the area and would result in only a minor change in the visual landscape. The pig launcher and portions of the valves would be the only aboveground structures at the site in the northeast corner of the intersection of 18th Avenue and Arrowhead Boulevard at the beginning of the Arrowhead Extension. The pig launcher would extend approximately 6 to 8 feet above the surface, the valve stem operator would be 5 feet in height, and a blowdown silencer would be about 6 to 8 feet in height. The land for these facilities is not managed by the BLM and does not have a VRM classification.

The tap at the B-Line and pig launcher for the IID Lateral would require an 80-foot by 100-foot site for construction and operation. The land for this facility is managed by the BLM and has a VRM classification of II. The degree of change associated with this facility would be consistent with the visual management objectives of this class.

The proposed El Centro Meter Station and pig receiver would be installed within the existing fenceline of the El Centro Power Generating Station. Its appearance would be consistent with the existing character of the area and would result in only a minor change in the visual landscape. Because the facility is not on BLM land, it does not have a VRM classification.

One of the four new valves associated with the IID Lateral would be collocated with the tap at the B-Line and pig launcher as discussed above. The three remaining valves along the IID Lateral would each require 10-foot by 25-foot fenced sites within North Baja's permanent right-of-way. The valves at MPs 7.6 and 27.2 would be on BLM land with a VRM classification of II. The degree of change

associated with these facilities would be consistent with the visual management objectives of this class. The valve at MP 38.7 would not be on land managed by the BLM and does not have a VRM classification.

Construction of the new aboveground facilities would have a permanent impact on visual resources. Modifications at the existing aboveground facilities would result in an incremental increase in impacts on visual resources but would generally be minor because of the presence of the existing facilities. Overall, for those facilities on BLM land, the degree of contrast with the characteristic landscape resulting from each of the facilities would be consistent with the visual management objectives of the affected classes. In addition, North Baja would paint the new or additional facilities so they would blend with the surrounding landscape. Construction of these facilities would not result in a substantial adverse effect on a scenic area or vista, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the area or its surroundings.

Security lighting at the aboveground facilities would be low sodium vapor light that would be angled toward the interior of the station. Some small floodlights would be used at the sites but they would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

For these reasons, impacts on visual resources associated with the aboveground facilities would be less than significant.

Pipe Storage and Contractor Yards

With the possible exception of minor grading activities and surfacing, soils at the pipe storage and contractor yards would not be disturbed. As a result, there would be no permanent impacts on visual resources associated with the use of these yards.

Access Roads

North Baja proposes to use several existing roads for temporary right-of-way access during construction. These access roads are primarily paved or dirt roads and/or jeep trails that would be graded or otherwise improved as needed to move equipment and materials to the construction right-of-way. Because these are existing roads, these activities would not result in significant impacts on visual resources.

Approximately 485 feet of new temporary access roads would be required for the Project, of which about 60 feet would be retained as permanent access to the proposed Blythe-Arrowhead Meter Station at the end of the Arrowhead Extension and 160 feet would be retained as permanent access to the proposed tap at the B-Line and pig launcher at the beginning of the IID Lateral. A permanent access road would also be required to proposed valve #2 at MP 7.6 of the IID Lateral but North Baja would utilize existing roads with some modification and would not need to construct a new road. The land associated with the new permanent access road to the Blythe-Arrowhead Meter Station is not managed by the BLM and does not have a VRM classification. The land associated with the new permanent access road to the proposed tap at the B-Line and pig launcher at the beginning of the IID Lateral is managed by the BLM and has a VRM classification of II. The degree of change associated with this new road would be consistent with the visual management objectives of this class. Overall, no significant impacts on visual resources associated with these access roads are anticipated.

4.8.8 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on land use identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.9 SOCIOECONOMICS

The socioeconomic study area considered for this analysis includes La Paz County, Arizona, and Riverside and Imperial Counties, California. Socioeconomic information is presented based on county-level census data for La Paz and Imperial Counties. With the exception of tax revenues, information for Riverside County is based on data from Congressional District 45, which encompasses the eastern portion of the county. Because the western portion of the county is more densely populated, data from Congressional District 45 are more reflective of the Project area than data from all of Riverside County.

4.9.1 Significance Criteria

An adverse socioeconomic impact would be considered significant and would require mitigation if Project construction or operation would:

- cause a permanent population increase of 3 percent or more in a county affected by the Project;
- cause the vacancy rate for temporary housing to fall to less than 5 percent; or
- increase the short- or long-term demand for public services in excess of existing and projected capacities.

4.9.2 Population, Economy, and Employment

All three counties are sparsely populated in the vicinity of the proposed Project. Within the study area, Congressional District 45 (within Riverside County) has the highest population and density; however, this is due to the significantly higher population density in the western half of the district. Table 4.9.2-1 provides a summary of selected demographic and socioeconomic statistics for Arizona and California and each of the counties where Project facilities are proposed.

The counties within the study area experienced small to moderate population growth between 2000 and 2004. The population within La Paz County increased by only 0.9 percent, which is significantly lower than the 12.0 percent population increase for the State of Arizona. Within California, Imperial County experienced population growth of 7.1 percent and Riverside County (Congressional District 45) experienced population growth of 14.7 percent. Both of these growth rates are higher than the overall growth rate for the State of California (6.0 percent).

Table 4.9.2-2 identifies the anticipated workforce and construction schedule for the facilities associated with the Project. Due to the specialized nature of pipeline construction, North Baja expects to hire most construction personnel from outside the study area. Based on the brief construction period, and the small number of workers who brought their families during construction of the A-Line, North Baja anticipates that most non-local construction workers would not be accompanied by their families. North Baja estimates that the peak workforce would be between 300 and 400 workers during construction of the B-Line in late 2009. During this phase of construction, 240 to 320 workers are expected to temporarily relocate to the Project area. Based on the current population size within the study area, and the relatively small number of construction workers who would temporarily relocate to the area, impacts on the population numbers in the Project area would be minor and short term.

TABLE 4.9.2-1

Existing Socioeconomic Conditions in the North Baja Pipeline Expansion Project Study Area

State/County	Population 2000	Population 2004	Population Percent Change	Population Density [a] 2000	Population Density [a] 2004	Per Capita Income 1999	Per Capita Income 2003	Civilian Labor Force 2004	Unemployment Rate (percent) 2004	Top Two Employment Industries 2004
Arizona	5,130,632	5,743,834	12.0	45.1	50.5	$20,275	$27,232	2,762,612	5.0	1. Educational, health and social services 2. Retail Trade
La Paz	19,715	19,898	0.9	4.4	4.4	$14,916	$18,653	7,500	6.7	1. Arts, entertainment, recreation, accommodation, and food services 2. Educational, health and social services
California	33,871,648	35,893,799	6.0	217.2	230.1	$22,711	$33,415	17,522,300	6.2	1. Educational, health and social services 2. Manufacturing
Riverside [b]	639,088	732,855	14.7	106.9	122.6	$19,423	$22,201	323,918	5.8	1. Educational, health and social services 2. Retail trade
Imperial	142,361	152,448	7.1	34.1	36.5	$13,239	$20,674	59,900	17.1	1. Educational, health and social services 2. Retail Trade

[a] Persons per square mile based on population and land area: Arizona (113,642.2 square miles), La Paz County (4,518 square miles), California (155,973.2 square miles), Riverside County (Congressional District 45 - 5,979.9 square miles), and Imperial County (4,175.1 square miles).

[b] Represents Congressional District 45, which encompasses the Project area in the eastern portion of Riverside County.

Sources: U.S. Department of Commerce, Bureau of the Census, State and County Quickfacts, Estimates for 2004.
U.S. Department of Commerce, Bureau of the Census, American Community Survey, Fast Facts for Congress, Estimates for 2004.
U.S. Department of Commerce, Bureau of the Census, California Congressional Districts by Urban and Rural Population and Land Area.
Bureau of Economic Analysis, Regional Economic Accounts for 2003.
Employment Development Department 2005.

TABLE 4.9.2-2

Anticipated Construction Workforce for the North Baja Pipeline Expansion Project

Facility	Approximate Mileposts	Time Period	Construction Duration	Anticipated Workforce		County/State
				Local	Non-local	
Arrowhead Extension, Blythe-Arrowhead Meter Station, Aboveground Facility Modifications	Various	2007	2 to 4 months	10	40	La Paz, AZ Riverside, CA Imperial, CA
B-Line	0.5 to 79.8	Late 2009	4 to 6 months	60 to 80	240 to 320	Riverside, CA Imperial, CA
IID Lateral	0.0 to 13.7	Summer/Fall 2008	2 to 3 months	20 to 30	80 to 120	Imperial, CA
	13.7 to 45.7	Late 2008/early 2009	3 to 4 months	20 to 30	80 to 120	Imperial, CA

Because North Baja currently operates an existing pipeline system in the Project area, no additional permanent employees would be required. Personnel from North Baja's existing staff would assume operation and maintenance of the new facilities as part of their existing routine workload. Therefore, the Project would not cause a permanent population increase in any of the affected counties.

Annual per capita income in 2003 (estimated) was lower in all three counties that would be affected by the proposed Project than the respective State averages ($27,232 in Arizona and $33,415 in California), ranging from $18,653 in La Paz County to $22,201 in Riverside County (Congressional District 45). Educational, health, and social services rank as the largest employment industries in both Arizona and California and in two of the three affected counties (see Table 4.9.2-1). In La Paz County, accommodations and food services are the top industries by employment, reflecting the importance and impact of tourism relative to other economic sectors in that county.

Unemployment rates in the three counties affected by the Project ranged from 5.8 percent in Riverside County to 17.1 percent in Imperial County. North Baja anticipates that up to 80 local workers would be employed during the peak construction period of the Project (construction of the B-Line). Given the relatively high unemployment rates in the study area, sufficient numbers of local workers are expected to be available for construction of the Project.

During the three phases of construction (see Table 4.9.2-2), North Baja estimates that the total Project payroll would be about $50,000,000, a portion of which would be spent locally for the purchase of housing, food, gasoline, and entertainment. These direct payroll expenditures would have a beneficial impact on local economies.

4.9.3 Housing

Housing characteristics within the study area are presented in Tables 4.9.3-1 and 4.9.3-2. Table 4.9.3-1 presents an overview of the total housing units, including owner- and renter-occupied units, median value and monthly rental rates, and vacancy rates in the study area. Table 4.9.3-2 lists the number of units available for temporary use. All three counties have lower median rents and higher rental vacancy rates than their respective State averages.

TABLE 4.9.3-1

2000 Housing Characteristics in the North Baja Pipeline Expansion Project Study Area

State/County	Total Housing Units	Owner Occupied (percent)	Renter Occupied (percent)	Median Value, Owner Occupied Units	Median Gross Monthly Rent	Owner Vacancy Rate (percent)	Rental Vacancy Rate (percent)
Arizona	2,189,189	68	32	$121,3000	$619	2.1	9.2
La Paz	15,133	78	22	$86,500	$442	3.7	14.8
California	12,214,549	56.9	43.1	$211,500	$747	1.4	3.7
Riverside [a]	278,037	69.2	30.8	$138,400	$644	3.0	9.0
Imperial	43,891	58.3	41.7	$100,000	$504	1.4	4.9

[a] Represents Congressional District 45, which encompasses the Project area in the eastern portion of Riverside County.

Source: U.S. Department of Congress, Bureau of the Census 2000 State and County Quickfacts.

TABLE 4.9.3-2

2000 Temporary Housing Characteristics in the North Baja Pipeline Expansion Project Study Area

State/County	Units for Rent	Vacant for Seasonal, Recreational, or Occasional Use	Vacant for Migrant Workers	Other Vacant
Arizona	61,781	141,965	636	43,026
La Paz	320	5,237	31	856
California	190,321	236,857	2,205	139,253
Riverside [a]	3,054	2,865	2	1,019
Imperial	842	2,081	38	997

[a] Represents Congressional District 45, which encompasses the Project area in the eastern portion of Riverside County.

Source: U.S. Department of Congress, Bureau of the Census 2000, Vacant Housing Units.

Temporary housing availability varies seasonally and geographically within the counties and the few communities crossed by the proposed pipeline facilities. Temporary housing is least available during the winter, when residents of northern states come to take advantage of the warmer weather. There is less demand for temporary housing during the hot summer months. Reflecting the importance of tourism in La Paz County, there are nearly twice as many units available for seasonal, recreational, or occasional use than in either Riverside or Imperial Counties.

In the study area, temporary housing is available in the form of apartments as well as daily, weekly, and monthly rentals in motels, hotels, campgrounds, and rooming houses. The Quartzsite area east of Ehrenberg, Arizona, for example, has more than 50 recreational vehicle (RV) and mobile home parks that help accommodate more than 1 million visitors each year (Quartzsite Chamber of Commerce 2004). Additionally, temporary housing is available in Yuma, Arizona, which lies about 10 miles southeast of the terminus of the B-Line in Yuma County, Arizona.

Construction of the Project could affect the availability of temporary housing in the Project area. However, because the construction periods for the proposed phases of the Project are relatively short, and because most non-local workers are expected to come alone without their families due to the temporary nature of the relocations, most workers are likely to use hotels, motels, apartments, and campgrounds within commuting distance of the Project area. Non-local workers should be able to locate temporary housing in the Blythe area; in the campgrounds and RV parks east of Ehrenberg; or near Yuma.

Assuming that local construction workers do not require housing, up to 320 housing units may be required for the non-local workers. Previous pipeline experience, including construction of the A-Line in 2002, suggests that non-local workers typically select a variety of temporary housing accommodations, with approximately 30 percent providing their own housing units (i.e., travel trailers or RV campers). Given the vacancy rates in the area and the number of seasonal, recreational, or occasional use units available, construction crews should not encounter difficulty in finding temporary housing and would not cause the vacancy rate for temporary housing to fall to less than 5 percent in La Paz or Riverside Counties. Although the vacancy rate for temporary housing in Imperial County is currently about 5 percent, this rate is unlikely to change due to construction. Based on previous experience during construction of the A-Line, most non-local workers temporarily relocating to the southern portion of the Project area would likely find housing near Yuma. In addition, construction of the portion of the IID Lateral that would cross the ISDRA would occur during the summer, when the availability of temporary housing is at its highest. Therefore, construction of the Project would not significantly affect the Imperial County vacancy rate. As a result, impacts on housing associated with the proposed Project would be less than significant.

4.9.4 Public Services

A wide range of public services and facilities are offered in Ehrenberg and Yuma, Arizona (at the origin of the proposed B-Line and about 10 miles southeast of the terminus of the B-Line, respectively) and in Blythe and El Centro, California (near MP 5.0 of the proposed B-Line and at the western terminus of the proposed IID Lateral, respectively). Available services and facilities include emergency services (e.g., full-service law enforcement, fire departments, emergency response services, and hospitals), utilities and public service systems (e.g., water and sewer services), solid waste disposal, and schools. Public services potentially affected by the Project are discussed below.

Emergency Services

Emergency services for the Project would be provided by a combination of State, county, and local departments. In the area near the Ehrenberg Compressor Station, emergency fire and medical services are provided by the Ehrenberg Fire Department, which is currently finishing an expansion to include a new 12,000 square foot facility. Ambulance service is dispatched from Quartzsite, Arizona with dispatch services provided by the La Paz County Sheriff's Department (La Paz County Sheriff's Department 2004). In portions of Riverside County and northern Imperial County, emergency services are provided by the Blythe Police and Fire Departments. In areas of Riverside County that do not have a city fire department, fire and medical emergency services are provided primarily by the California Department of Forestry. In Imperial County, the Imperial County Fire Department provides fire and medical emergency services. The Winterhaven Fire Protection District is the closest emergency response agency to North Baja's existing A-Line; however, emergency personnel and vehicles can be dispatched from El Centro, Palo Verde, Brawley, Holtville, or a number of other locations within Imperial County depending on the nature and exact location of the emergency. Services can be dispatched through the sheriff's office, California Highway Patrol, El Centro Police Department, or other entities depending upon where the emergency call originates (Capitol Impact 2005). In comments on the draft EIS/EIR, both the Ehrenberg Fire Department and Winterhaven Fire Protection District expressed support for the proposed Project.

Because the non-local workforce would be small relative to the current population, construction of the pipeline facilities would result in minor, temporary, or no impact on local community facilities and services such as police, fire, and medical services. Local communities have adequate infrastructure and community services to meet the needs of the non-local workers that would be required for the Project. Other construction-related demands on local agencies could include increased enforcement activities

associated with issuing permits for vehicle load and width limits, local police assistance during construction at road crossings to facilitate traffic flow, and emergency medical services to treat injuries resulting from construction accidents. North Baja would work with local firefighters and other emergency responders to coordinate activities for effective emergency response and would develop an Emergency Response Plan (see Section 4.14.2). As part of the Emergency Response Plan, North Baja would establish and maintain communications with local fire, police, and public officials and would make personnel, equipment, tools, and materials available at the scene of an emergency. The degree of impact on public services would vary from community to community depending on the number of non-local workers (and accompanying family members, if any, as previously indicated) that temporarily reside in each community, how long they stay, and the size of the community. Although these factors are too variable to accurately predict the severity of the impact, the effects would be short term and would not be in excess of existing and projected capabilities and are therefore not significant.

Utilities and Public Service Systems

During construction, the Project would require the temporary use of water for hydrostatic testing of the pipelines, but the water would not be permanently removed from the supply system. North Baja would also withdraw water for dust control during construction. This water would be procured from irrigation districts, North Baja's own water sources, or other local water purveyors (see Section 4.3.4). The Project has no wastewater treatment requirements and would not require construction of new or expanded wastewater facilities, or stormwater drainage facilities that could cause significant environmental effects.

North Baja would consult with the local governments as well as the Underground Service Alert of Southern California before construction to establish the precise locations of underground utilities along the proposed pipeline and lateral routes. All water delivery systems, water wells, water lines, and underground utilities would be clearly marked and would be avoided during construction; however, if these facilities are encountered, the required separations would be maintained by North Baja. In the event that any of these facilities are inadvertently affected during construction, North Baja would immediately notify the utility operator so that repairs could be made promptly.

Operation of the Project would have no additional permanent water supply needs and would not require the construction or expansion of wastewater or stormwater facilities. North Baja would comply with all Federal, State, and local statutes and regulations related to wastewater and stormwater.

Because the Project would not increase the short- or long-term demand for these services in excess of existing and projected capabilities, any impacts associated with these facilities would be less than significant.

Solid Waste

Construction of the Project would generate modest amounts of solid waste (e.g., food containers, packaging, and construction scraps) over a relatively short period of time. Existing disposal services and landfills in the Project area include Imperial County Sanitation in Imperial; Palo Verde Valley Disposal Service in Blythe; and Suburban Sanitation Services and the South Yuma County Landfill in Yuma. These facilities would be able to accommodate the solid waste generated by the Project. Operation of the Project would not require any additional employees and would not result in the construction or expansion of any landfills. North Baja would comply with all Federal, State, and local statutes and regulations related to solid waste disposal. As a result, no significant impacts are anticipated.

Schools

Comments were received during the scoping process regarding the proximity of the proposed facilities to school property and potential impacts on school bus routes. The Palo Verde Unified School District, El Centro Elementary School District, and Holtville Unified School District serve students in the Project area. The closest school to the proposed Project is Meadows Elementary School, which is more than 0.75 mile west of the terminus of the IID Lateral in El Centro. No potentially significant impacts on this school are anticipated from either construction or operation of the proposed Project.

Potential impacts on school bus routes could occur during construction of the proposed Project. The Palo Verde Unified School District manages school bus routes in Blythe that travel along 18th Avenue. In addition, bus routes cross 18th Avenue at the intersections of Intake Boulevard, South C & D Canal Boulevard, South Broadway, DeFrain Boulevard, Arrowhead Boulevard, Neighbors Boulevard, and Keim Boulevard. During construction, bus traffic may be slightly disrupted in the same manner as other traffic; however, access by school buses would not be precluded. Potential impacts on traffic as a result of the proposed Project are discussed in detail in Section 4.10.

Because most of the non-local workers are expected to come alone without their families during the construction period and because no additional permanent employees would be required during operation of the proposed facilities, the Project would not result in any increases in demand for school-related services.

4.9.5 Property Values

Comments were received during the scoping process regarding the impacts of the proposed Project on property values. North Baja currently maintains easements to operate its A-Line. Placement of the B-Line adjacent to the existing A-Line should not change or affect the value of a property. Because the B-Line would be entirely within North Baja's existing easement, North Baja would not need to acquire new permanent easements or property to operate this facility. North Baja would, however, need to acquire temporary easements or property to construct the proposed facilities. North Baja would also need to acquire the applicable easements for the Arrowhead Extension and the IID Lateral. The easement acquisition process is described in Section 4.8.2.

The effect that a pipeline easement may have on property value is a damage-related issue that would be negotiated between the landowner and North Baja during the easement acquisition process. The easement acquisition process is designed to provide fair compensation to the landowner for the right to use the property for pipeline construction and operation. Appraisal methods used to value land are based on objective characteristics of the property and any improvements. The impact a pipeline may have on the value of a tract of land depends on many factors, including the size of the tract, the values of adjacent properties, the presence of other utilities, the current value of the land, and the current land use. Subjective valuation is generally not considered in appraisals. This is not to say that the pipeline would not affect resale values. A potential purchaser of property may make a decision to purchase land based on his or her planned use, such as agricultural, future subdivision, or second home on the property in question. If the presence of a pipeline renders the planned use unfeasible, it is possible that a potential purchaser would decide not to purchase the property. However, each potential purchaser has different criteria and differing capabilities to purchase land.

The Interstate Natural Gas Association of America (INGAA) conducted a national case study to determine if the presence of a pipeline on a piece of property affected the property value or sale price of the property. The *INGAA Foundation Natural Gas Pipeline Impact Study* (2001) found that there was not a significant impact on the sale price of properties along natural gas pipelines. The study further

concluded that neither the size of the pipeline (diameter) nor the product carried by a pipeline has any significant impact on sale price.

Property taxes for a piece of property are generally based on the actual use of the land. Construction of the pipeline would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right-of-way. If a landowner believes that the presence of a pipeline easement reduces the value of his or her land, resulting in an overpayment of property taxes, he or she may appeal the issue of the assessment and subsequent property taxation to the local property tax agency. This is the proper forum for this issue to be addressed.

Comments were received during the scoping process that installation of the pipeline adjacent to Parker Road in El Centro would have a negative impact on income from rental property. The effect that construction may have on income derived from rental property is a damage-related issue and should be negotiated between the parties during the easement acquisition process. This negotiation is outside of the scope of this EIS/EIR.

4.9.6 Tax Revenues

Construction and operation of the Project would have a beneficial impact on local tax revenue, based on the tax revenue projections contained in Tables 4.9.6-1 and 4.9.6-2. Revenue from sales tax would be greater during construction due to the temporary influx of workers to the area. The increase in property tax revenue, about $3.4 million annually, would be generated throughout the life of the Project.

TABLE 4.9.6-1

Estimated Property Tax Payments for Facilities Associated with the North Baja Pipeline Expansion Project

Facility	Location	Estimated Annual Tax Payment
Ehrenberg Compressor Station Modifications, El Paso Meter Station Modifications, and B-Line	La Paz County, Arizona	$145,000
B-Line, Arrowhead Extension, and Blythe-Arrowhead Meter Station	Riverside County, California	$786,000
B-Line, Ogilby Meter Station Modifications, IID Lateral, and El Centro Meter Station	Imperial County, California	$2,512,000
Project Total		$3,443,000

TABLE 4.9.6-2

Estimated Sales Tax Revenue Generated by the North Baja Pipeline Expansion Project

	Project Total	La Paz County, Arizona	Riverside County, California	Imperial County, California
Payroll	$50,000,000	NA	NA	NA
Percent of total income spent for taxable sales	38.8	NA	NA	NA
Income spent for taxable sales	$19,400,000	NA	NA	NA
Percent spent in each county	--	5%	55%	40%
Income spent for taxable sales by county	--	$970,000	$10,670,000	$7,760,000
Tax rate - State jurisdiction	--	5.6%	6.25%	6.25%
Tax rate - county/city jurisdiction	--	1.0%	1.5%	1.5%
Sales tax to State	--	$54,320	$666,875	$485,000
Sales tax to county/city	--	$9,700	$160,050	$116,400

Source: California State Board of Equalization 2005.
Arizona Department of Revenue 2006.

NA = Not Available.

As discussed in Section 4.9.2, North Baja estimates that the total Project payroll would amount to about $50,000,000. Of this total, North Baja anticipates that about 40 percent would be spent for taxable sales (see Table 4.9.6-2). Sales taxes in the counties affected by the Project in Arizona and California are 6.6 percent and 7.75 percent, respectively. The majority of this amount (5.6 percent in Arizona and 6.25 percent in California) would go to the State. The remainder (1.0 percent in Arizona and 1.5 percent in California) would go to the county and local governments, resulting in annual sales tax revenues of $9,700 to La Paz County, $160,050 to Riverside County, and $116,400 to Imperial County.

4.9.7 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential socioeconomic impacts identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.10 TRANSPORTATION AND TRAFFIC

The local road and highway system in the vicinity of the Project facilities is well developed. The principal north/south roadways are SRs 78 and 111, and the principal west/east roadways are Interstates 8 and 10. Most local public roads in the vicinity of the proposed Project are paved. There is also rail service in the Project area. Construction of the North Baja Pipeline Expansion Project could affect transportation and traffic during construction across and within roadways and railroads and due to increased vehicle traffic associated with the commuting of the construction workforce to the Project area as well as the movement of construction vehicles and delivery of equipment and materials to the construction work area.

4.10.1 Significance Criteria

An adverse impact on transportation and traffic would be considered significant and would require mitigation if Project construction or operation would:

- result in a short- or long-term decrease in the level of service of a roadway;
- cause the closure of an arterial or collector roadway for more than 48 hours consecutively;
- prevent movement of emergency vehicles;
- conflict with planned transportation projects or adopted public transportation policies;
- create noticeable deterioration of local roadway surfaces; or
- create a safety hazard for vehicles, pedestrians, or rail operations.

4.10.2 Construction Across and Within Roadways and Railroads

Construction across roads and highways would result in short-term impacts on public transportation while construction activities pass through the Project area. Table 4.10.2-1 lists the named roads and highways that would be crossed by the proposed Project, as well as North Baja's proposed construction method.

North Baja would apply for the permits necessary for road crossings and would comply with all permit stipulations. The railroad crossings would be bored. Boring typically requires temporary extra workspace on both sides of the crossing for excavating bore pits to the depth of the pipeline. The bore pits are typically just outside of the road or railroad right-of-way limits; however, site-specific conditions, such as the presence of structures or waterbodies, may require the bore pits and temporary extra workspace to be moved within the road right-of-way. In some cases, 24-hour operations are required during difficult boring operations where ground conditions and ambient daytime temperatures contribute to overheating of the equipment and operators. Roadways and railroads crossed using the bore construction method typically remain open so that construction would not prevent the movement of emergency vehicles. Overall, there would be little or no disruption to traffic at road or railroad crossings that are bored. Bored crossings would also minimize the potential for safety hazards for vehicles and rail operations. No work would occur within the road or railroad rights-of-way unless expressly permitted by the applicable agency. As a result, impacts on roads and railroads that would be crossed using the bore construction method would be less than significant.

TABLE 4.10.2-1

Named Roads Crossed by the North Baja Pipeline Expansion Project

Facility/Location	Milepost	Road Name	Proposed Crossing Method
B-Line			
La Paz County, Arizona		- None Crossed -	
Riverside County, California	0.4	Riviera Drive	HDD
	3.4	Intake Boulevard	Open cut
	4.0	Jones Road	Open cut
	4.4	C & D Boulevard	Bore
	4.9	South Broadway Road	Open cut
	5.4	Lovekin Boulevard	Bore
	5.4	Arizona – California Railroad	Bore
	6.5	DeFrain Boulevard	Open cut
	7.4	Arrowhead Boulevard	Open cut
	8.5	State Route 78	Bore
	9.5	Stephenson Boulevard	Open cut
	10.5	Keim Road	Bore
	11.5	Rannells Road	Open cut
Imperial County, California	25.6	Old Palo Verde Road	Open cut
	28.2	State Route 78	Bore
	31.4	Old Mitchell's Camp Road	Open cut
	33.1	Three Slashes Road	Open cut
	35.0	Walters Camp Road	Open cut
	49.0	Black Mountain Road	Open cut
	55.0	Ogilby Road (County Highway S34)	Bore
	66.4	Gold Rock Ranch Road	Open cut
	70.9	Ted Kipf Road	Open cut
	71.0	American Girl Mine Road	Open cut
	71.4	Union Pacific Railroad	Bore
	74.5	Ogilby Road (County Highway S34)	Bore
	75.0	Center of the World Drive	Bore
	75.1	Interstate 8	Bore
Arrowhead Extension			
Riverside County, California			
	1.0	Seeley (16th) Avenue	Bore
	1.5	Arrowhead Boulevard	Bore
	2.0	14th Avenue	Bore
IID Lateral			
Imperial County, California	2.4	Interstate 8	HDD
	3.5	Grays Well Road	Open cut
	4.4	Grays Well Road	Open cut
	5.6	Grays Well Road	Open cut
	5.7	Interstate 8	Bore
	8.5	Gordons Well Road	Open cut
	13.1	Brock Research Road	Bore
	13.6	Evan Hewes Highway	Open cut
	26.0	Evan Hewes Highway	Open cut
	27.3	Interstate 8	Bore
	28.5	Vanderlinden Road	Open cut
	29.5	Miller Road (County Highway S33)	Bore

TABLE 4.10.2-1 (cont'd)

Named Roads Crossed by the North Baja Pipeline Expansion Project

Facility/Location	Milepost	Road Name	Proposed Crossing Method
	30.5	Enz Road	Open cut
	31.5	Bonds Corner Road	Bore
	32.0	Schali Road	Open cut
	33.2	Towland Road	Open cut
	34.2	State Route 7 (Holtville Orchard Road)	Bore
	34.9	Mets Road	Open cut
	35.9	Anderholt Road	Open cut
	36.9	Barbara Worth Road	Open cut
	37.9	Meloland Road	Open cut
	27.4	Holdridge Road	Open cut
	39.1	Interstate 8	Bore
	40.4	Bowker Road/East Ross Road	Bore
	41.7	East Hamilton Road	Open cut
	42.2	East Gillette Road	Open cut
	42.9	East Evan Hughes Road	Bore
	43.4	State Route 111	Bore
	44.7	Cooley Road	Open cut
	45.6	North Dogwood Road (County Highway S31)	Bore

Most smaller, unpaved roads and driveways would be open cut where permitted by local authorities or landowners. North Baja would implement several mitigation measures at open-cut crossings to ensure safety and to minimize traffic disruptions. For example, no roads would be closed unless adequate detours are provided. If a detour is required, traffic would be rerouted to another nearby road. This would not result in a significant change in the level of service of Project-area roadways (see Section 4.10.3). If no reasonable detour is feasible, North Baja would leave at least one lane of traffic open. Where Project construction crosses roads necessary for access to private residences and no alternative entrance exists, North Baja would implement measures (e.g., plating over the open portion of the trench) to maintain passage for landowners and emergency vehicles. Most open-cut crossings would be completed and the road resurfaced in 1 or 2 days; therefore, construction would not cause the closure of a roadway for more than 48 hours consecutively.

During the scoping process, comments were received regarding the potential for future settling of roads that would be crossed using the open-cut method. To address these concerns and to further minimize the potential for noticeable deterioration of local roadway surfaces, North Baja would prepare construction specifications that are designed to avoid settling of the finished grade and would also require the contractor to repair any settling, should it occur. If road settlement attributed to pipeline construction occurs after the pipeline is in operation, North Baja would make the necessary repairs as required by the jurisdictional agency. Implementation of North Baja's proposed mitigation measures for open-cut road crossings would reduce impacts associated with the Project to less than significant levels.

During the scoping process, the USCIS expressed concern about the ability to maintain access across roads used by the Border Patrol. North Baja consulted with the Border Patrol about any concerns it may have and the Border Patrol stated that it has not identified any concerns about the Project (Whipple 2006).

In addition to the roads crossed, several miles of both the B-Line and IID Lateral as well as the Arrowhead Extension would be within or adjacent to roadways (see Table 2.2.1-1). Major roadways potentially affected by construction and operation of these facilities include 18th Avenue, Arrowhead Boulevard, SR 78, Ogilby Road, Interstate 8, and several Imperial County roadways (e.g., Evan Hewes Highway, Hunt Road, and East Ross Road). A discussion of each of these roadways is provided below.

18th Avenue

Construction of the B-Line would take place within the road or road shoulder of 18th Avenue for about 7.6 miles between MPs 2.9 and 10.5. The B-Line would also be adjacent to the roadway for another 0.6 mile between MPs 2.3 and 2.9. Although 18th Avenue is not a heavily traveled roadway, 24 residences and 2 businesses are along the proposed route. To minimize road closures or periods of restricted access, North Baja plans to designate a specialized crew for construction within 18th Avenue. This crew would have experience with working in congested areas and would have two major components. The first crew would install the pipeline through the major crossings, and the second crew would be responsible for the installation of pipeline sections between crossings. Construction would advance at an estimated 500 feet per day; however, to expedite completion and thereby minimize the duration of inconvenience to residents, construction may occur at numerous locations along 18th Avenue simultaneously. Direct construction impacts at any given location are expected to last about 2 to 3 weeks (excluding repaving).

North Baja has developed a Traffic Management Plan for 18th Avenue in consultation with the County of Riverside Transportation Department (see Appendix H). The plan identifies traffic control measures; traffic signage requirements; construction measures to comply with the CalTrans Traffic Manual; construction hours; vehicular, pedestrian, and emergency vehicle access provisions; nightly shut-

down procedures; clearance distance between excavations and vehicular traffic; placement of safety fencing; and construction equipment storage. The plan identifies the following mitigation measures to minimize traffic-related impacts associated with construction within 18th Avenue:

- the pipeline would be installed with a minimum of 36 inches of cover and 12 inches of separation from other utilities or obstructions. A minimum of 2 feet would be maintained under canals and 5 feet over drains;

- intersections would be bored or trenched (trenched intersections would be steel plated if construction does not occur on consecutive days);

- North Baja would contact each owner and/or tenant of the properties abutting the road to explain the construction process and identify any special conditions or concerns that need to be incorporated into the construction plans. In addition, these adjacent residents and businesses would be notified by hand-delivered flyers 2 weeks before construction. The flyers would include the dates of construction, work hours, traffic detours, and contact numbers for North Baja and the contractor. Emergency response agencies would also be notified of the work schedule;

- the Underground Service Alert would be notified at least 48 hours before beginning work;

- flag persons would be provided to route traffic around construction equipment and obstructions;

- work would be scheduled during daylight hours unless alternative schedules are authorized;

- access would be maintained to all residences or businesses except during actual trenching operations. Steel plates would be available to maintain access to driveways during periods when the trench is open;

- non-local traffic would be detoured around construction activities;

- one lane of restricted traffic movement would be maintained through the construction area. This would allow residences, businesses, and emergency vehicles reasonable access during the construction activities;

- during non-work times, the work area would be secured and patrolled to minimize safety hazards associated with open trenches, heavy equipment, and other construction operations; and

- open trenches would be covered or cordoned off during non-working hours.

The non-local traffic that would be detoured around construction activities would be directed to a road parallel and typically only 1 block north or south of 18th Avenue. This would not result in a significant change in the level of service of Project-area roadways (see Section 4.10.3). Implementation of North Baja's Traffic Management Plan for 18th Avenue would reduce impacts associated with construction of the B-Line to less than significant levels.

Arrowhead Boulevard

Between 18th and Seeley Avenues (MPs 0.0 and 1.0), the Arrowhead Extension would be within the right-of-way of Arrowhead Boulevard. North Baja would use the same construction methods between MPs 0.0 and 1.0 of the Arrowhead Extension as those described above for portions of the proposed B-Line within 18th Avenue. North Baja has indicated that it would implement the measures identified in its Traffic Management Plan for 18th Avenue (see Appendix H) to also minimize traffic-related impacts along Arrowhead Boulevard; however, the Traffic Management Plan for 18th Avenue is not specific to Arrowhead Boulevard. Therefore, to ensure that site-specific conditions along Arrowhead Boulevard are addressed, **the Agency Staffs recommend that:**

- **North Baja shall prepare a Traffic Management Plan for Arrowhead Boulevard in consultation with the County of Riverside Transportation Department to detail the specific measures that would be used to control traffic during construction of the Arrowhead Extension. North Baja shall file the plan with the FERC and the CSLC for the review and written approval of the Director of OEP and the Executive Officer of the CSLC <u>before construction</u>.**

Implementation of North Baja's proposed measures and the Agency Staffs' recommended Traffic Management Plan for Arrowhead Boulevard would reduce impacts associated with construction of the Arrowhead Extension to less than significant levels.

State Route 78

SR 78 is a two-lane State-maintained facility with wide shoulders. The B-Line would cross SR 78 in two locations (MPs 8.5 and 28.2). North Baja would bore these two crossings. The B-Line would also be adjacent to SR 78 between MPs 30.9 and 31.3 and MPs 37.0 and 47.4 but it would not be within the road right-of-way except at the two road crossings. Because these two crossings would be bored, no significant impacts on this roadway have been identified.

Ogilby Road

Ogilby Road is a two-lane county roadway that connects SR 78 with Interstate 8. Ogilby Road would be crossed twice during construction of the B-Line (MPs 55.0 and 74.5). North Baja would bore these two crossings. In addition, the B-Line would be adjacent to Ogilby Road between MPs 55.0 and 61.0 and between MPs 66.8 and 74.5 but it would not be within the road right-of-way except at the two road crossings. Because these two crossings would be bored, no significant impacts on this roadway have been identified.

Interstate 8

Interstate 8 is a major east-west freeway crossing southern Arizona and California. Interstate 8 would be crossed by the B-Line at MP 75.1 and by the IID Lateral in four locations (MPs 2.4, 5.7, 27.3, and 39.1). North Baja would either HDD or bore each of these crossings. The HDD method is described in Section 2.3.2. Similar to the bore construction method, the HDD method would result in little or no disruption to traffic. As a result, no significant impacts on this roadway have been identified.

Imperial County Roadways

Construction of the IID Lateral would occur within several Imperial County roadways (e.g., Evan Hewes Highway, Hunt Road, and East Ross Road). To avoid or minimize impacts along these roadways, North Baja developed a Traffic Management Plan for Imperial County Roads (see Appendix H). The plan identifies the same mitigation measures as discussed above for 18th Avenue. In addition, North Baja would install the pipeline in sections and would have a specialized crew designated for construction to minimize road closures or periods of restricted access along Imperial County roadways. In contrast to construction procedures for 18th Avenue, North Baja would close off 0.5- to 1.0-mile-long sections of road and reroute traffic around the area through the use of signs and detours (while maintaining access for residents and emergency vehicles). The detours would direct traffic to another nearby roadway and would not result in a significant change in the level of service of the roadway. No more than 2 miles of work area would be active at any one time, and construction would advance along the roadway at an estimated 0.5 mile per day. Excluding any repaving that may be required, direct construction impacts at any given location would last no more than 2 to 3 weeks. Implementation of these measures and North Baja's Traffic Management Plan for Imperial County Roads would reduce impacts associated with construction of the Project to less than significant levels.

4.10.3 Increased Vehicle Traffic

Construction of the North Baja Pipeline Expansion Project would result in temporary increases to traffic levels due to the commuting of the construction workforce to the Project area as well as the movement of construction vehicles and delivery of equipment and materials to the construction work area. Table 4.10.3-1 identifies the average daily traffic counts and the existing level of service of the major roadways potentially affected by the Project. As indicated in Table 4.10.3-1, the roadways in the Project area have a level of service of A or B.

Table 4.10.3-2 lists the types of construction vehicles and estimated number of trips associated with the Project. North Baja estimates that during peak construction up to 400 people would be working along the B-Line. Based on an industry standard of 1.3 people per car, the resulting number of roundtrips per day is expected to be about 308. Because pipeline construction work is generally scheduled to take advantage of all daylight hours, workers would commute to and from the contractor yards and construction right-of-way during off-peak traffic hours (e.g., before 7:00 AM and after 6:00 PM). Construction workers would typically meet at the contractor yards and share rides to the construction right-of-way, thereby reducing overall traffic. In addition, work would be spread along the length of the construction spread, which would reduce the impact on traffic at any one location.

TABLE 4.10.3-1

Major Roadways Potentially Affected by the North Baja Pipeline Expansion Project

Facility/County/Road	Mileposts	Average Daily Traffic Count	Existing Level of Service [a]
B-Line			
Riverside			
18th Avenue	2.3 - 10.5	636	A
State Route 78	8.5	1,700	B
Imperial			
State Route 78	28.2	1,700	B
	30.9 - 31.3	2,700	
	37.0 - 47.4		
Ogilby Road	55.0 - 61.0	540	--
	66.8 - 74.5	700	A
Interstate 8	75.1	12,000	A
Arrowhead Extension			
Riverside			
Arrowhead Boulevard	0.0 - 2.1	--	--
IID Lateral			
Imperial			
Interstate 8	2.4, 5.7, 27.3, 39.1	12,000	A
Evan Hewes Highway	8.0 - 27.1	1,000 [b]	--
Hunt Road	27.6 - 38.7	--	--
East Ross Road	39.6 - 41.3	5,630	--

[a] Level of service is defined as a qualitative measure describing operational conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. A level of service of A indicates that a roadway has little or no delay or congestion. A level of service of B indicates that a roadway has slight congestion or delay.

[b] Through the City of El Centro, Evan Hewes Highway serves as Adams Avenue (a four-lane facility) and is estimated to carry approximately 9,000 vehicles per day; however, most other segments of the highway, including those affected by the proposed Project, provide only one travel lane per direction and are estimated to carry approximately 1,000 vehicles per day.

-- Average daily traffic counts and/or level of service have not been established for these roadways.

Source: California Department of Transportation 2002.

TABLE 4.10.3-2

Anticipated Construction Traffic Associated with the North Baja Pipeline Expansion Project

Facility	Duration (months)	Daily Workforce Vehicle Roundtrips	Truck Roundtrips		Contractor Yard	
			Pipe Stringing	Daily Other Trucks	Pipe	Materials
Arrowhead Extension, Blythe-Arrowhead Meter Station, Aboveground Facility Modifications	2 to 4	38	3 trips daily, over 3 weeks	30	Ripley Yard	18th Avenue Yard
B-Line	4 to 6	308	40 trips daily, over 12 to 16 weeks	100	Ripley Yard	18th Avenue Yard
IID Lateral	2 to 4	115	5 trips daily, over 10 to 20 weeks	70	Ripley Yard	IID Lateral Yard

In addition to the construction workforce, the delivery of construction equipment and materials to the construction work area could temporarily congest existing transportation networks at specific locations. The construction equipment would be initially staged at a pipe storage and contractor yard and then transported to the construction right-of-way using surfaced streets and approved access roads (see Table 4.10.3-2). Once a vehicle leaves the pipe storage or contractor yard, its exact route would vary depending on the current location of construction activity. Equipment would be dropped off in one location and would then move in a linear direction along the right-of-way. As a result, most equipment would be on the pipeline right-of-way and would not affect traffic on local roads after its initial delivery to the construction site. Truck traffic associated with pipe hauling during construction of the B-Line would have the greatest potential to impact traffic levels. During B-Line construction, pipe in lengths of 60 to 80 feet would be hauled from the yards by trailer trucks during the daylight hours for an approximately 12- to 16-week period. It is estimated that during this period 40 truck loads of pipe would travel between the Ripley Contractor Yard and the pipeline route each day. North Baja states that the movement of materials and equipment to the construction work area would add as many as 100 truck trips per day and that most of these deliveries would occur during early morning and evening hours.

Overall, the number and frequency of construction vehicle trips would be low on any particular roadway at any one time because construction would move sequentially along the Project right-of-way. A discussion of impacts on transportation during construction across and within roadways is presented in Section 4.10.2. Trips by vehicles that would visit the right-of-way on a regular basis (e.g., pickup trucks, crew vehicles) would be distributed along the length of the route as the pipe is installed and construction activity progresses to a different part of the right-of-way. Truck traffic associated with transporting pipe and other materials to the construction work area could result in temporary detours or obstructions in traffic flow due to vehicle size or may require short-term assistance from local police in limited instances. However, the Project would not cause an increase in traffic that would be substantial in relation to the existing traffic load and capacity. As a result, because most roadways in the Project area currently operate at a level of service of A or B, the relatively minor increase in traffic associated with the Project would not result in a significant change in the level of service on any roadway. Therefore, impacts associated with increased traffic levels during construction of the Project would be less than significant.

North Baja and its contractors would comply with local road weight limits and restrictions and would keep roads free of mud and other debris that may be deposited by construction equipment; therefore, the Project would not create a safety hazard for vehicles or pedestrians. Track-driven equipment would cross roads on tires or equipment pads to minimize road damage. Because North Baja would repair any roadways damaged by construction activities, the Project would not result in noticeable deterioration of local roadway surfaces.

No significant impacts would be expected during operation of the Project because there would be only minimal traffic associated with operation and maintenance of the pipelines. Because no new permanent employees would be required to operate the facilities, traffic levels during operation would be the same as currently experienced for operation of North Baja's A-Line.

4.10.4 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the

potential impacts on transportation and traffic identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.11 CULTURAL RESOURCES

4.11.1 Significance Criteria

An adverse impact on cultural resources would be considered significant and would require mitigation if Project construction or operation would result in an unresolvable adverse effect on the characteristics that contribute to the eligibility of a historic or prehistoric property for listing on the NRHP or the CRHR. Adverse effects may include, but are not limited to, the following:

- physical destruction of or damage to all or part of the property;
- change in the character of the property's use or of physical features within a property's setting that contribute to its historic significance (e.g., by isolating the property from its setting); and
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.

4.11.2 Regulatory Requirements

Federal

The FERC is responsible for complying with section 106 of the NHPA, which requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. The procedures for complying with section 106 are outlined in the ACHP's regulations (Title 36 CFR Part 800). The effects of the Project on properties of traditional religious and cultural importance to Native Americans must also be considered in accordance with section 101 (d)(6) of the NHPA and the American Indian Religious Freedom Act. North Baja, as a non-Federal party, is assisting the FERC in meeting its obligations under section 106 and the implementing regulations in Title 36 CFR Part 800. In addition, the BLM must consider Native American religious and cultural concerns for the portion of the Project crossing Federal lands in accordance with the Archaeological Resource Protection Act, the Native American Graves Protection and Repatriation Act, and Sacred Sites Executive Order 13007.

As the lead Federal agency, the FERC is responsible for determining NRHP eligibility and Project effects in consultation with the Arizona and California State Historic Preservation Offices (SHPOs); the BLM; the BOR; the FWS, Cibola NWR; and Native American tribes, as applicable. If, after completing review, the consulting parties agree that cultural resources found during surveys are ineligible for the NRHP, no further consideration of these resources would be required.

In evaluating cultural resources, several criteria are considered. First, significant cultural resources (as defined for Federal undertakings) include those prehistoric and historic sites, districts, buildings, structures, and objects, as well as properties with traditional religious or cultural importance to Native Americans or other groups, that are listed, or are eligible for listing, on the NRHP (historic properties) according to the criteria outlined in Title 36 CFR Part 60.4. Second, cultural resources that do not meet the NRHP criteria but may qualify as a unique characteristic of an area are considered under NEPA.

CEQA

The CSLC is responsible for complying with all provisions of the CEQA covering cultural resources, including the CEQA sections 21083.2 and 21084.1, and section 15064.5 of the Guidelines for Implementing the CEQA. Cultural resources include prehistoric and historic-period archaeological sites,

districts, and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events or sites of traditional/cultural importance. The State CEQA Guidelines section 15064.5 indicates a project may have a significant environmental effect if it causes "substantial adverse change" in the significance of an historic resource as defined in section 15064.5(a)(1) through (a)(4). Under the CEQA, the CSLC is also required to take into account the effect on properties eligible for listing on the CRHR or that meet the definition of a unique archaeological resource in the CEQA section 21083.2.

Under the CEQA, archaeological resources are sometimes treated differently than "historical resources." Thus, it is important to first determine whether certain archaeological sites are "historical resources" for purposes of the CEQA. An archaeological resource is considered an historic resource if it is listed, or determined eligible for listing, on the CRHR, included in a local register of historical resources, or identified as significant in an historical resource survey. For archaeological resources that are not "historical resources," it must then be determined if they are "unique" archaeological resources according to Public Resources Code 21083.2 (g). The distinction may be important because mitigation measures sometimes differ for archaeological and historical resources.

4.11.3 Cultural Resources Assessment

North Baja contacted the Arizona and California SHPOs regarding the proposed Project and the applicability of previous surveys conducted for the A-Line. On March 20, 2006, the Arizona SHPO concurred that the current area of potential effect and previous survey efforts conducted for the A-Line are adequate for the proposed Project. The California SHPO indicated that the guidelines regarding methods for identifying potential subsurface sites have changed since the A-Line was constructed. The SHPO suggested North Baja use the data from the A-Line data recovery and construction monitoring to address the potential for buried sites, or alternatively to develop new field methods regarding such sites. North Baja addressed these comments in its Evaluation Plan.

As part of its application, North Baja provided the FERC with its Overview and Survey Report, and its Unanticipated Discovery Plan (see Section 4.11.4). The report provided the results of the previous A-Line survey and the results of the current surveys of the IID Lateral and the remaining ancillary areas associated with the proposed Project. The report was also provided to the CSLC; the BLM; the BOR; the FWS, Cibola NWR; and the California SHPO. To date, comments have been received from the BLM, the BOR, and the California SHPO.

North Baja subsequently provided the FERC and the CSLC with Addendum Reports 2 and 3. Addendum Report 2 documents the results of surveys of the Arrowhead Alternative (see Section 3.2.5). Addendum Report 3 documents the results of a records search for the Corridor L Alternative (see Section 3.2.3.2). North Baja provided Addendum Report 2 to the California SHPO but did not provide the report to the BLM or the BOR because the report is not applicable to Federal lands. Addendum Report 3 has been provided to the California SHPO and the BLM and the BLM has provided comments. It is not applicable to the BOR.

North Baja provided its Evaluation Plan to the FERC; the CSLC; the BLM; the BOR; the FWS, Cibola NWR; and the California SHPO. The BLM has provided comments on the Evaluation Plan. The California SHPO and the FWS have indicated that they will not be commenting. Following completion of its evaluations, North Baja provided its draft Evaluation Report to the FERC; the CSLC; the BLM; the BOR; the FWS, Cibola NWR; and certain Native American tribes (see Section 4.11.5). The BLM provided comments and the FWS has indicated that it will not be commenting. North Baja subsequently provided its revised Evaluation Report to the California SHPO.

North Baja provided its draft Historic Properties Treatment Plan to the FERC; the CSLC; the BLM; the BOR; the FWS, Cibola NWR; certain Native American tribes (see Section 4.11.5); and the Arizona SHPO. North Baja received comments on the draft Historic Properties Treatment Plan from the BLM; the BOR; the FWS, Cibola NWR; and the Quechan Indian Tribe and provided its revised Historic Properties Treatment Plan to the FERC and the California SHPO. To date, no comments have been received on the revised Historic Properties Treatment Plan from the California SHPO.

B-Line

North Baja surveyed a 220-foot-wide corridor in 2000 and 2001 for the construction of the A-Line, which also covers the construction work area for the proposed B-Line. No cultural resources were identified in Arizona. Ninety cultural resources were identified along the B-Line route in California. Of these, 25 are historic-period sites (including 1 railroad, 3 transmission lines, 15 canals and other irrigation features [including the All-American Canal], debris scatters, and the townsite of Ogilby), 53 are prehistoric sites (including lithic and ceramic scatters, trails, rock features, milling, rock art, geoglyphs, and cleared circles), and 12 sites include both prehistoric and historic-period components. Subsequent to its initial surveys, North Baja completed evaluations at 12 sites to determine their eligibility for listing on the NRHP and the CRHR. Based on the initial surveys and evaluations, six cultural resources are recommended as not eligible for listing on the NRHP and the CRHR and no further work is recommended. Thirty-four cultural resources have not been evaluated to determine eligibility and 50 sites are recommended as eligible for listing on the NRHP and the CRHR. Of these, two NRHP-eligible cultural resources (Site CA-IMP-7911/H and the All-American Canal) were specifically identified by the BOR as important cultural resources. North Baja currently plans to mitigate impacts on Site CA-IMP-7911/H by completing data recovery and monitoring the site during construction. North Baja would avoid impacts on the All-American Canal by use of the HDD crossing method. In addition, the BOR identified several cultural resources that individually may not be eligible for the NRHP, but collectively contribute to an archaeological district being proposed by the BOR as part of a separate project that partially overlaps the proposed Project. Impacts on the other canals and irrigation features would be mitigated by North Baja's proposal to monitor construction activities. North Baja would mitigate impacts on the remaining unevaluated and eligible sites by the use of avoidance measures (including installation of exclusion fencing), construction monitors, data recovery, and/or narrowing of the construction right-of-way. These methods are discussed in North Baja's Historic Properties Treatment Plan.

Arrowhead Extension

North Baja surveyed a 92- to 100-foot-wide corridor along the Arrowhead Extension route on Arrowhead Boulevard. Between MPs 0.0 and 1.0, the survey corridor was 92 feet centered over the paved road, which included the 60-foot-wide construction right-of-way and 16 feet on each side. A 100-foot-wide corridor adjacent to and east of the road pavement was surveyed for the portion of the pipeline route between MPs 1.0 and 1.5. A 100-foot-wide corridor adjacent to and west of the road pavement was surveyed for the portion of the pipeline route between MPs 1.5 and 2.0. The aboveground facility sites and temporary extra workspaces associated with the Arrowhead Extension were also surveyed.

North Baja's surveys identified six historic cultural resources, one of which (the C-05 Canal) was previously recorded. The remaining five cultural resources consist of two wood pole utility lines and three unnamed canals. All six cultural resources identified are unevaluated for eligibility for listing on the NRHP and the CRHR. The wood pole utility lines would not be affected by construction. The Arrowhead Extension would cross the C-05 Canal and two of the unnamed canals. The unnamed canals are private ditches that are not part of the PVID irrigation system. North Baja would cross the two unnamed canals using the open-cut method and would restore the canals to their previous condition after construction. North Baja would avoid impacts on the C-05 Canal by use of the bore crossing method.

IID Lateral

North Baja surveyed a 100- to 200-foot-wide corridor along about 43.0 miles of the proposed IID Lateral route. The remainder of the proposed route was not surveyed due to denied access. Between MPs 0.0 and 8.4, North Baja surveyed a 200-foot-wide corridor centered on the proposed centerline. From MP 8.4 to the end of the route, North Baja surveyed a 100-foot-wide corridor adjacent to the pavement of Evan Hewes Highway. North Baja has indicated it would complete surveys along the remaining portion of the IID Lateral route when landowner permission is obtained.

North Baja's surveys identified 98 cultural resources, 8 of which were previously recorded. These included 73 canals/drains (including the All-American Canal), 14 transmission/telephone lines or poles, 2 historic-period sites, 4 prehistoric sites (including ceramic and lithic scatters), 2 roads, 1 railroad, and 2 isolated finds. Subsequent to its initial surveys, North Baja completed evaluations at five sites to determine their eligibility for listing on the NRHP and the CRHR. Based on the initial surveys and evaluations, six cultural resources are recommended as not eligible for listing on the NRHP and the CRHR and no further work is recommended. Four cultural resources (the All-American Canal and Sites CA-IMP-8314, CA-IMP-8327, and CA-IMP-8389) are recommended as eligible for listing on the NRHP and the CRHR. North Baja would avoid impacts on the All-American Canal by use of the HDD crossing method. North Baja would mitigate impacts on Site CA-IMP-8327 by avoiding and monitoring it during construction and on Site CA-IMP-8389 by implementing data recovery and monitoring it during construction. Site CA-IMP-8314 is one of several cultural resources that collectively contribute to an archaeological district being proposed by the BOR. The BOR, the Quechan Indian Tribe, and the Kwaaymii Laguna Band of Indians requested that Site CA-IMP-8314 be avoided. The Agency Staffs' recommendation in Section 3.2.3.2 that North Baja adopt the Modified ISDRA Transmission Line Alternative would avoid impacts on this site. In response to other Native American requests, North Baja would have a monitor present during ground-disturbing activities along the alternative route south of Site CA-IMP-8314. The remaining 88 cultural resources have not been evaluated to determine eligibility for listing on the NRHP and the CRHR. Two of these sites would not be within the construction work area. Seventy-two of the unevaluated cultural resources are canals or other irrigation features, 13 are transmission/telephone lines or poles, and 1 is a railroad. North Baja would mitigate impacts on these features by monitoring them during construction to ensure avoidance. These methods are discussed in North Baja's Historic Properties Treatment Plan.

During the scoping process, the BOR identified the Coachella Canal as an important cultural resource. The IID Lateral route does not cross the Coachella Canal. In addition, a comment was received regarding the Plank Road. As discussed in Section 4.8.5, the Plank Road was a wooden, portable driving surface to provide for the passage of automobiles across the Algodones Dunes and was in use from 1916 through 1926 (BLM 1998). The Plank Road is a California State Historic Landmark. A portion of this cultural resource, consisting of remnants of metal strapping, was identified during surveys along the Modified ISDRA Transmission Line Alternative. As discussed above, the Agency Staffs have recommended in Section 3.2.3.2 that North Baja adopt the Modified ISDRA Transmission Line Alternative to avoid impacts on Site CA-IMP-8314. North Baja would avoid impacts on the portion of the Plank Road along the alternative alignment by installing exclusion fencing and monitoring the site during construction.

Ancillary Facilities

North Baja completed surveys of the 18th Avenue, Ripley, Ogilby, and IID Lateral (El Centro) Contractor Yards. No eligible cultural resources were identified at these yards.

North Baja has indicated it would complete surveys along any access roads that require improvements or modifications.

4.11.4 Unanticipated Discovery Plan

North Baja provided its Unanticipated Discovery Plan to be used in the event that cultural resources or human remains are discovered during construction. The plan includes contact procedures for the FERC; the SHPOs; the BLM; the BOR; the FWS, Cibola NWR; and Native American tribes, as appropriate. The plan provides for the protection in place of any unanticipated discoveries until appropriate evaluation and consultation have occurred. In the event that the discovery is determined to be of NRHP significance, a treatment plan (such as avoidance, monitoring, and/or scientific data recovery) would be developed and implemented in consultation with the appropriate parties. A member of one Native American tribe, the Kwaaymii Laguna Band of Indians, commented that the Unanticipated Discovery Plan should be updated to reflect recent burial legislation passed in California. North Baja has stated that it would update its plan to reflect this information.

4.11.5 Native American Consultation

North Baja originally contacted 18 Native American tribes whose traditional territories are crossed by the Project or who had been identified by the SHPOs or another knowledgeable party as having a potential cultural resources concern (see Table 4.11.5-1). North Baja sent initial consultation letters to the tribes on November 16, 2005. These letters described the Project and provided the tribes with the opportunity to comment on the Project and identify sites or places that might be of religious or cultural significance to the tribe. In early December 2005, North Baja conducted follow-up contacts with the Native American tribes by telephone. In addition, the tribes were contacted regarding participation in the cultural resources survey of the proposed pipeline route. Members of the Quechan Indian Tribe and the Campo Band of Mission Indians participated in the cultural resources surveys as Native American monitors.

At the time of North Baja's follow-up consultations, the majority of the tribes indicated they had no concerns about the proposed Project or had not yet reviewed the Project materials. Some of these tribes also requested to receive future Project updates. North Baja was not able to complete follow-up contacts with the Fort McDowell Yavapai Nation. The Gila River Indian Community and the Hualapai Tribe indicated they would defer comments to the Colorado River Indian Tribe. The Hualapai Tribe and the Torres-Martinez Desert Cahuilla Indians identified concerns about existing trails in the Project area. As discussed in Section 4.11.3, North Baja would monitor construction activities to avoid impacts on trails. The Salt River Pima-Maricopa Indian Community indicated it would defer comments to the Tohono O'odham Nation, which indicated it would defer comments to the Colorado River and Quechan Indian Tribes and the Mojave and Cocopah Tribes. The Hopi Tribe stated it would defer comments to the SHPO and other interested parties, that it had an interest in the White Tanks area, and that no known traditional cultural properties were in the Project area. The proposed Project would not affect the White Tanks area, which is near Phoenix. No Native American religious concerns were identified.

On September 27, 2006, North Baja met with members of the Quechan Indian Tribe, the Soboba Band of Luiseno Indians, the Cocopah Tribe, the BLM, and the BOR to discuss the Project status and provide a summary of the survey results and recommendations. North Baja provided its Evaluation Report and Historic Properties Treatment Plan to these tribes. In addition, members of the Quechan Cultural Committee met with representatives from North Baja and its cultural resources consultant on December 13, 2006, to discuss the Project status and the Quechan Indian Tribe's November 20, 2006 letter to the FERC providing comments on the draft EIS/EIR (see Section 6.0).

TABLE 4.11.5-1

North Baja's Native American Consultations Conducted for the North Baja Pipeline Expansion Project

Tribe/Contact Name	Date	Description of Consultation
AhaMaKav Cultural Society		
Elda Butler, Director [a]	12/8/05	Identified additional contact (Linda Otero).
Linda Otero	Multiple	Had not yet reviewed the initial consultation letter; would like to have a planning meeting with several invited tribes to discuss overall Project activities.
Ak-Chin Indian Community		
Terry O. Enos, Chairman [a]	12/7/05	The proposed Project is outside the tribe's area; requested to receive future Project updates.
Cabazon Band of Mission Indians		
John James, Chairperson [a]	12/7/05	No comments; requested to receive future Project updates.
Steve Thomas [a]	12/7/05	No comments; requested to receive future Project updates.
Cocopah Tribe		
Sherry Cordova, Chairwoman [a]	Multiple	Provided additional contact information (Paul Soto).
Paul Soto, Planning Department	12/13/05	Provided additional contact information (Cathi Alonzo, who identified Lisa Wanstall).
Lisa Wanstall, Museum Director	1/19/06	Provided another copy of the November 16, 2005 letter and copies of previous reports and maps.
	9/21/06	Provided copy of the Evaluation Report.
	11/30/06	Provided copy of the Historic Properties Treatment Plan.
Jill McCormick	9/27/06	Meeting with Project representatives to discuss the Project status and North Baja's survey results and recommendations.
Colorado River Indian Tribes		
Betty Cornelius [a]	12/7/05	Identified additional contact (Eric Shepard).
Daniel Eddy, Jr., Chairman [a]	Multiple	Requested a copy of the letter be sent to Eric Shepard.
Eric Shepard	12/8/05	Provided copy of November 16, 2005 letter.
	Multiple	Identified additional contact (Michael Tsosie).
	12/13/05	Has not yet reviewed the initial consultation letter.
Michael Tsosie	Multiple	Requested a copy of the initial consultation letter; requested copies of the background reports, data, and maps for review by the Cultural Committee.
	3/2/06	Provided Project information and survey reports.
	9/21/06	Provided copy of the Evaluation Report.
	11/30/06	Provided copy of the Historic Properties Treatment Plan.
Fort McDowell Yavapai Nation		
Raphael Bear, President,[a] Vince Lujan, and Debbie, Planning Department	Multiple	Multiple contacts and voicemails.
Fort Mojave Indian Tribe		
Nora McDowell, Chairwoman [a]	12/7/05	Identified additional contact (Dorothy Hallock).
Dorothy Hallock, Planning Department	Multiple	Indicated she would bring the consultation letter to a December 20, 2005 meeting and expected the tribe to provide a "no interest-no comment" decision.
	9/21/06	Provided copy of the Evaluation Report.
	11/30/06	Provided copy of the Historic Properties Treatment Plan.
Gila River Indian Community		
Richard Narcia, Governor [a]	Multiple	The tribe will defer comments to the Colorado River Indian Tribe.
Barnaby Lewis	11/30/06	Provided copy of the Historic Properties Treatment Plan.

TABLE 4.11.5-1 (cont'd)

North Baja's Native American Consultations Conducted for the North Baja Pipeline Expansion Project

Tribe/Contact Name	Date	Description of Consultation
Havasupai Tribe		
Linda Mahone, Chairwoman [a]	Multiple	Identified additional contact (Rex Toilusie).
Rex Toilusie, Environmental	Multiple	The tribe has no concerns about the proposed Project.
Hopi Tribe		
Wayne Taylor, Jr., Chairman [a]	12/2/05	Identified additional contact (Terry Morgart).
Terry Morgart	12/2/05	The tribe will defer comments to the State Historic Preservation Office and other interested parties; has an interest in the White Tanks area; no known traditional cultural properties are in the Project area of potential effect.
Hualapai Tribe		
Louise Benson, Chairwoman [a]	Multiple	Identified new tribal chairman (Charles Vaughn).
Charles Vaughn, Chairman	Multiple	Identified concerns about existing trails from Baja across the tribe's territory to a place called Wyckham, a prehistoric gathering spot; requested to receive future Project updates; identified additional contact (Loretta Jackson).
Loretta Jackson	12/9/05	The tribe will defer comments to the Colorado River Indian Tribe; requested to receive future Project updates.
	9/21/06	Provided copy of the Evaluation Report.
	11/30/06	Provided copy of the Historic Properties Treatment Plan.
Kwaaymii Laguna Band of Indians		
Carmen Lucas	2/9/07	Provided comments on the Project.
	3/13/07	Meeting with representatives of North Baja to discuss the Project, consultations with Native American tribes, Site CA-IMP-8314, the Unanticipated Discovery Plan, cumulative impacts on cultural resources, and site visits.
Los Coyotes Band of Mission Indians		
Katherine Saubel, Spokesperson [a]	12/8/05	No comments on the Project, which is outside the tribe's area; the tribe does not wish to receive further paperwork about this Project.
Quechan Indian Tribe-Ft. Yuma Indian Reservation		
Mike Jackson, Sr., President [a]	Multiple	Identified additional contact (Pauline Jose).
Pauline Jose	12/13/05	Provided copy of November 16, 2005 letter.
	Multiple	Requested another copy of the initial consultation letter.
	1/19/06	Meeting with Project representatives. The tribe requested to have a monitor accompany the cultural resources survey of the IID Lateral, asked about future plans for the Project, and requested another meeting to clarify additional planning and engineering questions.
	3/2/06	Provided Project information and survey reports.
	9/21/06	Provided copy of the Evaluation Report.
	2/2/07	Meeting with representatives of the BLM and North Baja to discuss Site CA-IMP-8314.
Earl Hawes [a]	12/8/05	No longer with the tribal government.
Bridget R. Nash-Chrabascz, Historic Preservation Officer	9/27/06	Meeting with Project representatives to discuss the Project status and North Baja's survey results and recommendations.
	11/20/06	Letter providing comments on the draft EIS/EIR.
	11/30/06	Provided copy of the Historic Properties Treatment Plan.
	2/2/07	Meeting with representatives of the BLM and North Baja to discuss Site CA-IMP-8314.
Quechan Cultural Committee	12/13/06	Meeting with Project representatives to discuss the Project status and the tribe's comments on the draft EIS/EIR.
Manfred Scott, Quechan Tribal Council	2/2/07	Meeting with representatives of the BLM and North Baja to discuss Site CA-IMP-8314.
Emilio Escalante, Quechan Tribal Council	2/2/07	Meeting with representatives of the BLM and North Baja to discuss Site CA-IMP-8314.

TABLE 4.11.5-1 (cont'd)

North Baja's Native American Consultations Conducted for the North Baja Pipeline Expansion Project

Tribe/Contact Name	Date	Description of Consultation
Salt River Pima-Maricopa Indian Community		
Joni Ramos, President [a]	Multiple	The tribe will defer comments to the Tohono O'odham Nation; requested to receive future Project updates.
Evelyn Andrews	Multiple	Requested copy of the initial consultation letter.
	12/20/05	Provided copy of November 16, 2005 letter.
	9/21/06	Provided copy of the Evaluation Report.
	11/30/06	Provided copy of the Historic Properties Treatment Plan.
Soboba Band of Mission Indians		
Robert J. Salgado, Sr., Chairman [a]	12/8/05	Identified new tribal chairman (Charlene Ryan).
Charlene Ryan, Cultural	Multiple	Requested copy of the initial consultation letter; believes the tribe will not have any comments on the proposed Project.
Benee Calac	9/21/06	Provided copy of the Evaluation Report.
	9/27/06	Meeting with Project representatives to discuss the Project status and North Baja's survey results and recommendations.
	11/30/06	Provided copy of the Historic Properties Treatment Plan.
Steven Estrada	9/27/06	Meeting with Project representatives to discuss the Project status and North Baja's survey results and recommendations.
Tohono O'odham Nation		
Vivian Juan-Saunders, Chairwoman [a]	Multiple	Multiple contacts and voicemails.
Peter Steer, Manager of Cultural Affairs	1/6/06	The tribe will defer comments to the Colorado River and Quechan Indian Tribes and the Mojave and Cocopah Tribes; requested a copy of the original survey report.
	9/21/06	Provided copy of the Evaluation Report.
	11/30/06	Provided copy of the Historic Properties Treatment Plan.
Torres-Martinez Desert Cahuilla Indians		
Ray Torres, Sr., Chairperson [a]	12/8/05	Identified new tribal chairman (Joe Loya).
Joe Loya	Multiple	Identified some concerns about the local trail systems near the proposed Project; requested to receive future Project updates.
Twenty-Nine Palms Band of Mission Indians		
Dean Mike, Chairperson [a]	12/8/05	Requested another copy of the initial consultation letter.
	12/22/05	The tribe has no concerns about the proposed Project.

[a] Recipients were sent North Baja's November 16, 2005 initial consultation letter.

On February 2, 2007, North Baja met with members of the Quechan Indian Tribe to discuss measures to reduce or avoid impacts on Site CA-IMP-8314. As discussed in Sections 3.2.3.2 and 4.11.3, Site CA-IMP-8314 would be avoided by the adoption of the Modified ISDRA Transmission Line Alternative.

A member of the Kwaaymii Laguna Band of Indians provided comments on the Project to North Baja in a letter dated February 9, 2007. North Baja subsequently met with the tribal member on March 13, 2007. Specifically, the tribal member provided comments on the consultations with Native American tribes, site visits, potential impacts on Site CA-IMP-8314, the Unanticipated Discovery Plan, and cumulative impacts on cultural resources. North Baja arranged site visits for the tribal member in mid-April 2007. As stated in Section 4.11.3, Site CA-IMP-8314 would be avoided by the adoption of the Modified ISDRA Transmission Line Alternative. In addition, North Baja would have a monitor present during ground-disturbing activities along the alternative route south of Site CA-IMP-8314. As discussed in Section 4.11.4, North Baja has stated that it would update its Unanticipated Discovery Plan to reflect recent burial legislation passed in California. Section 4.15.7 has been revised to include additional discussion of potential cumulative impacts on cultural resources.

No traditional cultural properties have been identified in the proposed Project's area of potential effect to date. North Baja has indicated it would continue consultations with Native American tribes throughout the Project.

In addition to North Baja's contacts, the NOI/NOP dated August 30, 2005 was sent to 64 individuals from 33 Native American tribes that were identified by the California Native American Heritage Commission. One tribe, the Ramona Band of Cahuilla, provided comments in response to the NOI/NOP. The tribe expressed concern regarding Native American sites and Native American artifacts that may be discovered during excavation. The tribe also commented that a Native American monitor should be present during field studies and construction and requested copies of the report. Native American monitors were present during the survey, and North Baja has indicated that it would invite Native American representatives on field visits to cultural resources sites that would be affected by the proposed Project. In addition, North Baja would include Native American tribes in consultations regarding the recommended mitigation measures at potentially significant cultural resources that may be of concern to the tribes. No other responses have been received to date.

4.11.6 General Impact and Mitigation

Project impacts or effects include not only the physical disturbance of a historic property, but may also include the introduction, removal, or alteration of various visual or auditory elements, which could alter the traditional setting or ambience of the property. Once cultural resources surveys and evaluations are complete, the FERC, in consultation with the SHPOs; the BLM; the BOR; the FWS, Cibola NWR; and Native American tribes, as applicable, would make determinations of eligibility and Project effects. Impacts on sites determined non-significant per NRHP eligibility criteria are not considered effects, and no further treatment or consideration is accorded these sites before construction and related Project activities. If a property listed on or eligible for listing on the NRHP would be affected, mitigation would be necessary. Mitigation may include, but not be limited to, one or more of the following measures: (1) avoidance through the use of realignment of the pipeline route, relocation of temporary extra workspaces, or changes in the construction and/or operational design; (2) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of photographs and/or measured drawings documenting standing structures; and (3) the use of landscaping or other techniques that would minimize or eliminate effects on the historic setting or ambience of standing structures.

The Arizona SHPO indicated that the previous surveys were adequate for the currently proposed Project areas in Arizona. Any newly proposed areas not previously surveyed would be surveyed and reported in an addendum. Inventory in California is not complete. Once cultural resources surveys and evaluations are complete, the FERC and the consulting parties discussed above would make determinations of eligibility and Project effects. If historic properties would be adversely affected, the FERC, as the lead Federal agency, would notify the ACHP to afford it an opportunity to participate in consultation. The CSLC would make the determination of eligibility for the CRHR for CEQA purposes. North Baja has prepared a treatment plan that specifies measures to reduce or mitigate impacts. Once the treatment plan is approved, a Memorandum of Agreement would be executed by the appropriate parties. North Baja would implement the specific treatment measures before Project construction is authorized by the FERC and the CSLC in any given area. Implementation of treatment would occur only after certification of the proposed Project. Implementation of treatment would ensure that Project-related adverse effects would be resolved for purposes of section 106 compliance, and reduced to less than significant levels for the purposes of NEPA compliance.

Generally under the CEQA, a project that follows the Secretary of Interior's Standards shall be considered as mitigated to a level of less than a significant impact on the historical resources. However, in some cases, documentation as mitigation is not sufficient to reduce the impact to a level that is less than significant (State CEQA Guidelines section 15126.4[b][2]). Thus, documentation of an "historical resource" may not necessarily mitigate the effects "to a point where clearly no significant effect on the environment would occur" as it does under section 106. Archaeological sites that are important for their data alone can usually be mitigated through data recovery (excavation).

To ensure that the FERC's responsibilities under the NHPA and its implementing regulations and the CSLC's responsibilities under the CEQA are met, **the Agency Staffs recommend that:**

- **North Baja shall defer implementation of any treatment plans/mitigation measures (including archaeological data recovery), construction of facilities, and use of all staging, storage, or temporary work areas and new or to-be-improved access roads on each respective Project phase <u>until North Baja files with the FERC and the CSLC, as applicable, the materials listed in items a. through g., and the steps listed in items h. through j. below have been completed</u>:**

  a. any FWS, Cibola NWR comments on the Overview and Survey Report;

  b. any BOR comments on the Evaluation Plan;

  c. any comments from the BOR and Native American tribes on the draft Evaluation Report;

  d. the revised Evaluation Report;

  e. the California SHPO's comments on Addendum Reports 2 and 3, the revised Evaluation Report, and the revised Historic Properties Treatment Plan;

  f. all additional cultural resources survey reports for denied access areas and any additional areas requiring survey, evaluation reports, and any necessary treatment plans as well documentation that these reports and plans were submitted to the SHPO(s); the BLM; the BOR; the FWS, Cibola NWR; and Native American tribes, as applicable;

g. any comments of the SHPO(s); the BLM; the BOR; the FWS, Cibola NWR; and Native American tribes, as applicable, on all additional cultural resources reports and plans;

h. the CSLC reviews and approves all cultural resources reports and plans prepared for the California portion of the Project and notifies North Baja in writing that construction may proceed;

i. the ACHP is afforded an opportunity to comment, if historic properties would be adversely affected; and

j. the Director of OEP reviews and approves all applicable cultural resources reports and plans and notifies North Baja in writing that treatment plans/mitigation measures may be implemented or construction may proceed.

All material filed with the FERC containing <u>location, character, and ownership information</u> about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "<u>CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE</u>."

4.11.7 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on cultural resources identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.12 AIR QUALITY

4.12.1 Significance Criteria

An adverse impact on air quality would be considered significant and would require mitigation if Project construction or operation would:

- conflict with or obstruct implementation of an applicable air quality or attainment plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- 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 that exceed quantitative thresholds for ozone precursors);
- expose the public (especially schools, day care centers, hospitals, retirement homes, convalescence facilities, and residences) to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to one in a million and/or a hazard index (non-cancerous risk) greater than or equal to 0.1;
- impair air quality in a mandatory Class I Federal area; or
- create objectionable odors affecting a substantial number of people or affecting a lesser number of people for a substantial duration.

4.12.2 Existing Air Quality

Climatic conditions in the Palo Verde Valley and the Imperial Valley, which include the entire Project area, are governed by the large-scale sinking and warming of air in the semi-permanent subtropical high-pressure center of the Pacific Ocean. The coastal mountains prevent the intrusion of cool, damp marine air, which results in the Palo Verde and Imperial Valleys experiencing clear skies, low humidity, extremely hot summers, and mild winters. Moderate winds and deep thermal convection are produced by the flat terrain of the valleys and the strong temperature differentials created by intense solar heating. The combination of subsiding air, protective mountains, and distance from the ocean all combine to severely limit precipitation. Rainfall is highly variable and usually amounts to less than 2 inches annually. Occasionally, heavy storms can produce rainfall that exceeds the annual average.

National Ambient Air Quality Standards and Background Air Quality

Ambient air quality is protected by Federal, State, and local regulations. The EPA has established National Ambient Air Quality Standards (NAAQS) for criteria pollutants for the purpose of protecting human health (primary standards) and public welfare (secondary standards). These criteria pollutants are: nitrogen dioxide (NO_2), carbon monoxide (CO), ozone, SO_2, lead (Pb), PM_{10}, and $PM_{2.5}$.

The EPA established designations for a new 8-hour ozone standard, which are now in effect while the 1-hour ozone standard was revoked on June 15, 2005 in most areas, including the Project area. In addition to the Federal NAAQS, State ambient air quality standards have been established for Arizona and California. The Arizona ambient air quality standards are the same as the Federal standards.

California has adopted ambient air quality standards that are stricter than the Federal standards with the exception of the 8-hour CO standard.

The existing ambient air concentrations in the Project area were evaluated by reviewing representative air monitoring data from Imperial County and Riverside County monitoring locations in the Salton Sea and Mojave Desert Air Basins for the years 2003 through 2005. Table 4.12.2-1 lists the Federal and State ambient air quality standards and the background values estimated for each of the pollutants and averaging periods. These monitoring data show that the existing ambient air concentrations for ozone, PM_{10}, and $PM_{2.5}$ are above the Federal and State ambient air quality standards while the concentrations for Pb, NO_2, and SO_2 are below the Federal and State ambient air quality standards. CO ambient concentrations are below the Federal standards for both the 1-hour and 8-hour averaging periods. However, the 1-hour CO concentration exceeds the State ambient air quality standard.

TABLE 4.12.2-1

Federal and State Air Quality Standards and Existing Air Quality in the Project Area

Pollutant	Averaging Period	Federal/Arizona Primary Standards	Federal/Arizona Secondary Standard	California Standards	Highest Background Values [a]
O_3	1 Hour	-	Same as Primary	0.09 ppm	0.159 ppm [b]
	8 Hour	0.08 ppm		0.070 ppm	0.127 ppm [c]
PM_{10}	24 Hour	150 $\mu g/m^3$	Same as Primary	50 $\mu g/m^3$	227 $\mu g/m^3$ [b]
	Annual AM [d]	50 $\mu g/m^3$		20 $\mu g/m^3$	75 $\mu g/m^3$ [d]
$PM_{2.5}$	24 Hour	65 $\mu g/m^3$	Same as Primary	-	77 $\mu g/m^3$ [e]
	Annual AM	15 $\mu g/m^3$		12 $\mu g/m^3$	24.8 $\mu g/m^3$ [d]
Pb	Quarter	1.5$\mu g/m^3$	Same as Primary	1.5 $\mu g/m^3$	0.02 $\mu g/m^3$ [d]
CO	1 Hour	35 ppm	None	10 ppm	12.4 ppm [b]
	8 Hour	9 ppm		9.0 ppm	8.6 ppm [b]
NO_2	1 Hour	-	Same as Primary	0.25 ppm	
	Annual AM	0.053 ppm		-	0.022 ppm [d]
SO_2	1 Hour	-	-	0.25 ppm	
	3 Hour	-	0.5 ppm	-	
	24 Hour	0.14 ppm	-	0.04 ppm	0.015 ppm [b]
	Annual AM	0.030 ppm	-	-	

[a] Background value is the highest value reported by the EPA for the years 2003 through 2005 for monitors located in Imperial County and Riverside County.

[b] Second highest value.

[c] Fourth highest value.

[d] Arithmetic mean.

[e] 98th percentile value.

O_3 = ozone

PM_{10} = particulate matter having an aerodynamic diameter less than or equal to 10 microns

$PM_{2.5}$ = particulate matter having an aerodynamic diameter less than or equal to 2.5 microns

Pb = lead

CO = carbon monoxide

NO_2 = nitrogen dioxide

SO_2 = sulfur dioxide

NA = No data available

ppm = parts per million

Note: The lead standard for California is a 30-day averaging period.

Air Quality Control Regions (AQCRs) and Attainment Status

The AQCRs were established by the EPA and local agencies, in accordance with section 107 of the Clean Air Act (CAA), as a means to implement the CAA and comply with the NAAQS through State Implementation Plans (SIPs). The AQCRs are intra- and interstate regions such as large metropolitan areas where the improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or portion thereof, is designated as attainment, unclassifiable, maintenance, or nonattainment for the NAAQS. The designations are based on compliance with the NAAQS. Areas where the ambient air pollutant concentration is determined to be below the applicable ambient air quality standard are designated attainment. Areas where no data are available are designated unclassifiable. Areas where the ambient air concentration is greater than the applicable ambient air quality standard are designated nonattainment. Areas that have been designated nonattainment but have since demonstrated compliance with the ambient air quality standard(s) are designated maintenance for that pollutant. Maintenance areas are treated similarly to attainment areas for the permitting of stationary sources; however, specific provisions may be incorporated through the State's approved maintenance plan to ensure that the air quality would remain in compliance with the ambient air quality standard(s) for that pollutant.

La Paz County, Arizona is designated as attainment or unclassifiable for all criteria pollutants. Portions of Riverside and Imperial Counties that are within the Project area are designated as nonattainment for ozone and PM_{10} and attainment for all other criteria pollutants including $PM_{2.5}$.

4.12.3 Regulatory Requirements

The proposed Project is potentially subject to a variety of Federal, State, and local regulations pertaining to the construction or operation of air emission sources. The CAA, 42 USC 7401 et seq., as amended in 1977 and 1990, and Title 40 CFR Parts 50 through 99 are the basic Federal statutes and regulations governing air pollution in the United States. The ADEQ is the governing agency for the portion of the Project that passes through La Paz County, Arizona. The Mojave Desert Air Quality Management District (AQMD) and the ICAPCD are the governing agencies for the portions of the Project within California.

The North Baja Pipeline Expansion Project would involve modifications at the existing Ehrenberg Compressor Station, El Paso Meter Station, and Ogilby Meter Station to allow northbound flow of natural gas. The Project would also involve the construction of 127.6 miles of natural gas pipeline, 2 meter stations, 13 valves, 4 pig launchers, 5 pig receivers, and 3 taps and crossover piping. Except for the construction equipment and activities associated with building these facilities, there would be no air emissions generated by these aboveground or pipeline facilities (i.e., no emissions would occur during operation).

Federal Air Quality Requirements

Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR) – Ambient air quality is protected by the EPA's PSD and Nonattainment NSR programs. The PSD regulations apply to new major stationary sources or major modifications to stationary sources located in attainment areas. The Nonattainment NSR regulations apply to new or modified stationary sources located in nonattainment areas. The PSD regulations, as codified in Title 40 CFR Part 52.21, define a major source or major modification as:

- a source with a potential-to-emit (PTE) of more than 100 tons per year (tpy) of any criteria pollutant for a facility that is one of the 28 industrial source categories listed in Title 40 CFR Part 52.21(b)(1)(i)(a);

- a source with a PTE of more than 250 tpy of any criteria pollutant for a facility that is not one of the 28 industrial source categories listed in Title 40 CFR Part 52.21(b)(1)(i)(a);

- a modification to an existing major source that results in a net emissions increase greater than the PSD significant emission rate specified in Title 40 CFR Part 52.21 (b)(23)(i); or

- an existing minor source proposing a modification that is major by itself.

One of the factors considered in the PSD permit review processes is potential impacts on protected Class 1 Federal areas. If a project is located within 100 kilometers of a Federal Class I area, additional modeling analysis may be required to determine the potential impact on the area. The Nonattainment NSR/PSD requirements apply to stationary sources. The proposed Project would not have any stationary source emissions associated with the operation of the Project; therefore, the Project is not subject to the Nonattainment NSR/PSD requirements. Because the modifications at the existing Ehrenberg Compressor Station would not trigger PSD review, an air quality impact determination would not be required. Additionally, the Project would not be located within 100 kilometers of a Federal Class I area; therefore, additional modeling analysis would not be necessary and it can be concluded that the potential for the Project to impact air quality in any Federal Class 1 areas would be less than significant.

Other Federal regulations (e.g., the New Source Performance Standards, the National Emission Standards for Hazardous Air Pollutants, and Title V of the CAA) that only apply to stationary sources are not applicable as well.

Mobile Source Regulations – Title II of the CAA Amendments of 1990 contains provisions relating to highway and off-road mobile sources. Regulations aimed at reducing pollution from heavy-duty diesel engines, including marine and locomotive engines, that have been promulgated or proposed include:

- Title 40 CFR Parts 69, 80, and 86, Final Rule, Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements – This rule requires a reduction in emissions from on-road diesel engines and establishes sulfur limits for diesel fuel. Currently, the requirements are for new engines only and the standards will begin to take effect in model year 2007. Although the emissions standards are for new engines only, the reduced sulfur diesel fuel, which is required to have a sulfur content less than 0.05 percent (500 parts per million by weight [ppmw]), a limit that was lowered to 15 ppmw starting in June 2006, would also reduce particulate and sulfur oxides (SO_x) emissions from existing diesel engines.

- Title 40 CFR Parts 9 and 69 et al., Final Rule, Control of Emissions of Air Pollution from Non-road Diesel Engines and Fuel – This rule requires emissions reductions from non-road diesel engines by establishing emissions limits and sulfur content limits. This rule targets agricultural equipment, construction equipment, and other non-road diesel engines. As with the previous rule, the reduced sulfur fuel would lower emissions from existing diesel engines even though the emissions limits would only apply to new engines.

Both non-road and highway use vehicles and construction equipment used for the Project would be required to use the new low sulfur diesel fuel as soon as it is commercially available.

General Conformity Determination – The EPA promulgated the General Conformity Rule on November 30, 1993 in Volume 58 of the Federal Register Page 63214 (58 Federal Register 63214) to implement the conformity provision of Title I, section 176(c)(1) of the CAA. Section 176(c)(1) requires that the Federal government not engage, support, or provide financial assistance for licensing or permitting, or approving any activity not conforming to an approved CAA implementation plan.

The General Conformity Rule is codified in Title 40 CFR Part 51, Subpart W and Part 93, Subpart B, *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*. The General Conformity Rule applies to all Federal actions except programs and projects requiring funding or approval from the DOT, the Federal Highway Administration, the Federal Transit Administration, or the Metropolitan Planning Organization. In lieu of a conformity analysis, these latter types of programs and projects must comply with the Transportation Conformity Rule promulgated by the DOT on November 24, 1993 (58 Federal Register 62197).

The General Conformity Rule applies to projects that are located in nonattainment or maintenance areas and evaluates the impacts of both direct and indirect emissions from a proposed project. Accordingly, in the draft EIS/EIR, the Project emissions evaluated in the conformity applicability analysis included those associated with the construction and operation of the pipeline, specifically those direct and indirect emissions occurring in designated nonattainment areas. No new direct operating emission sources are proposed as part of the project and therefore are not included in the general conformity review. Various commentors on the draft EIS/EIR, including the EPA, the SCAQMD, the ICAPCD, and the Border Power Plant Working Group, indicated that the Agency Staffs' definition of the proposed Project and its emissions is too limited in focus. As discussed in Section 1.1, these commentors assert that the supplies of LNG-source gas that would be transported on the North Baja system would have a higher WI compared to existing supplies and, therefore, the introduction of the LNG-source gas would increase emissions of NO_x in the SCAB. These commentors state that a full General Conformity analysis should be conducted that considers the indirect air quality impacts of the end use of the gas.

As the lead Federal agency responsible for authorizing the proposed Project, the FERC has identified the emissions that would result from the Project in accordance with the published definitions of "direct" and "indirect" emissions in Title 40 CFR Part 51.852/93.152 and the supplementary information provided in the EPA's final rule for *Determining Conformity of General Federal Actions to State or Federal Implementation Plans* contained in 58 Federal Register 63214. This Project definition is supported by the EPA's response to comments included in 58 Federal Register 63214 on the proposed rule.

The General Conformity Rule was proposed on March 15, 1993 (58 Federal Register 13836). The preamble to the proposed rule invited comments on two proposed definitions of indirect emissions – "inclusive" and "exclusive." As defined in the final General Conformity Rule (58 Federal Register 63214), "exclusive" indirect emissions are "emissions of a criteria pollutant or its precursors that: (1) are caused by the Federal action, but may occur later in time and/or may be further removed in distance from the action itself but are still reasonably foreseeable; and (2) the Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency." The EPA states that this definition was selected because it met the requirements of section 176(c) of the CAA and because it was consistent with the Transportation Conformity Rule, can be reasonably implemented, and best fits within the overall framework of the CAA. The inclusive definition (which was broader and did not include the second part of the exclusive definition) was not selected because: (1) the mitigation

measures required may not be enforceable; (2) it is not consistent with the Transportation Conformity Rule; (3) it would impose an unreasonable burden due to the large number of affected Federal actions: and (4) it establishes an overly broad role for the Federal government in attaining the NAAQS. Further, the exclusive definition requires Federal agencies to consider only those emissions over which, under their legal authorities, they can exercise and maintain practicable control and over which they have continuing program responsibilities.

The final General Conformity Rule further states that "the exclusive definition assures that Federal actions will meet the intent of section 176(c) and the States will retain the primary responsibility to attain and maintain the air quality standards." Also, "a Federal agency has no responsibility to attempt to limit emissions that do not meet those tests, or that are outside the Federal agency's legal control. Moreover, neither section 176(c) of the CAA nor this regulation requires that a Federal agency attempt to 'leverage' its legal authority to influence or control non-Federal activities that it cannot practicably control, or that are not subject to a continuing program responsibility, or that lie outside the agency's legal authority."

"Reasonably foreseeable" emissions are defined in the final General Conformity Rule as "projected future indirect emissions that are identified at the time the conformity determination is made; the location of such emissions is known and the emissions are quantifiable, as described and documented by the Federal agency based on its own information and after reviewing any information presented to the Federal agency." An attempt to determine whether emissions from the end use of the natural gas delivered by the North Baja system are reasonably foreseeable for general conformity applicability identified several factors about the natural gas to be delivered by North Baja and the end use that are not known at this time. These factors include: (1) the precise WI of the natural gas to be delivered, other than it would meet the existing standards set by the CPUC for SoCalGas and SDG&E; (2) the sector of the SoCalGas market to which the gas would be delivered (no specific end users have been identified with the exception of the El Centro Generating Station in El Centro, California, which North Baja proposes to serve through a new lateral pipeline); (3) the ultimate character of the natural gas at the end user (the gas received by North Baja may be blended within the SoCalGas distribution system and the resultant WI of such blend is unknown); and (4) whether or not the gas would be consumed within the SCAB. The markets of North Baja's shippers are not limited to the SCAB, and capacity constraints on the SoCalGas system would prevent all of the gas volumes proposed in Phase II from moving into SoCalGas' system. Because the new supplies of North Baja's shippers would compete with existing gas supplies, it is impossible to determine at this time where LNG-source gas would be burned, how much LNG gas would be burned, and (due to limited data) the extent of changes in NO_x emissions associated with the burning of LNG gas. Also, the final General Conformity Rule provides examples of actions not reasonably foreseeable. One of these examples includes the resulting emissions from the use of electric power. This example was considered not reasonably foreseeable because the emissions cannot be precisely located or quantified. Similarly, the emissions from the end use of natural gas are not reasonably foreseeable.

The EPA has noted that "the requirements of this final rule will apply only in nonattainment and maintenance areas, as proposed," which is further supported in the June 5, 2006 EPA memorandum *Revision to General Conformity Applicability Questions and Answers*. This memorandum states "The purpose of this memorandum is to make you aware of a recent revision to our questions and answers (Q&A) document for the EPA's General Conformity regulations. Some questions have arisen concerning whether emissions generated outside a nonattainment area should be accounted when making a General Conformity determination for a Federal action. We are revising our Q&A document issued July 13, 1994, to clarify that only direct or indirect emissions originating in a nonattainment or maintenance area need to be analyzed for conformity with the applicable SIP." The new guidance states that the EPA interprets this statutory amendment to mean that any direct and indirect emissions originating in an attainment or

unclassifiable area do not need to be analyzed for General Conformity purposes, even if such emissions may transport into a nonattainment or maintenance area."

As supported by the General Conformity definitions, supplemental information, and subsequent guidance memos, the FERC has appropriately defined the Project's direct and indirect emissions to be those associated with the construction and operation of the pipeline facilities in the nonattainment counties where the Project would be located. With respect to General Conformity, the Project does not include emissions associated with construction and operation of any portion of the Project in areas designated as attainment or unclassifiable, areas outside the United States, or areas where future end users of the gas are or would be located.

One segment of the Project is located in a serious PM_{10} nonattainment area within Imperial County as well as a Subpart 2 marginal ozone nonattainment area in Imperial County. The Project does not include any nonattainment areas within Arizona and is not located within any maintenance areas. Relevant General Conformity regulations for the two jurisdictions with nonattainment areas include the ICAPCD Regulation IX, Rule 925, adopted on November 29, 1994; and the Mojave Desert AQMD Rule 2002, adopted on October 26, 1994. Rules 925 and 2002 were approved in revisions to both the California and Arizona SIPs in the Federal Register on April 23, 1999 (64 Federal Register 19916).

General Conformity assessments must be completed when the total direct and indirect emissions of a planned project would equal or exceed specified pollutant thresholds per year in each nonattainment area. With regard to the proposed Project, the relevant General Conformity pollutant thresholds are:

- $PM_{10:}$ 70 tpy for projects located in serious nonattainment areas; or
- ozone precursors: 100 tpy of VOC or NO_x for projects located in ozone nonattainment areas that are not within an ozone transport region and are not classified as serious, severe, or extreme.

As discussed in Section 4.12.4, Project emissions would be below General Conformity thresholds; therefore, a general conformity determination is not required.

State Air Quality Requirements

Because there would be no stationary sources or operational emissions associated with the proposed Project, the stationary source permitting requirements of the California Air Resources Board (CARB), ADEQ, the Mojave Desert AQMD, and the ICAPCD do not apply.

Mobile source and fugitive dust regulations adopted by the CARB, the ADEQ, the Mojave Desert AQMD, and the ICAPCD do apply to the construction activities associated with the proposed Project. Table 4.12.3-1 lists the mobile source and fugitive dust/opacity regulations that apply to the Project. These requirements include EPA Reasonably Available Control Measures such as using wetting agents, dust suppressants, and other means to prevent particulates from becoming airborne. Permits are not required for pipeline construction emissions from any of the above-noted agencies.

TABLE 4.12.3-1

Mobile Source and Fugitive Emissions (Dust) Rules

Agency	Rule Number	Rule Description
California Air Resources Board	CCR Title 13 Division 3	Mobile Source Operational and Pollution Control Requirements
Arizona Department of Environmental Quality	R18-2-604	Construction fugitive dust limitations
	R18-2-605	Road construction fugitive dust limitations
	R18-2-606	Material handling fugitive dust limitations
	R18-02-607	Storage pile fugitive dust limitations
	R18-2-702	Visible emission limitations
	R18-2-802	Off-road machinery opacity limitations
	R18-2-804	Roadway and site clearing opacity limitations
Mojave Desert Air Quality Management District	401	Visible emission limitations
	402	Nuisance
	403	Fugitive dust control
Imperial County Air Pollution Control District	401	Visible emission limitations
	407	Nuisance
	800-805 (Regulation VIII)	Fugitive dust control rules

Although CO_2 is not a regulated pollutant, it is associated with greenhouse gas (GHG) emissions, along with other gases such as methane and chlorofluorocarbons. GHG emissions are vital to life on earth because they help to maintain ambient temperatures. However, excess GHG emissions augment this effect and are considered by many experts to contribute to overall global climatic changes, typically referred to as global warming. CO_2 emissions are a product of fossil fuel combustion and tropical forest destruction, which are human activities that contribute to global climatic changes. Large quantities of GHG emissions would decrease the amount of infrared or heat energy radiated by the earth back to space and upset the heat balance. Global warming may ultimately contribute to a rise in sea level, destruction of estuaries and coastal wetlands, and changes in regional temperature and rainfall pattern, with significant agricultural and coastal community implications.

4.12.4 Air Emission Impacts and Mitigation

Construction activities for the proposed facilities (including the pipeline) would take place in the following four sequences: site preparation/trenching; foundation work; installation of equipment, structures, and pipeline; and right-of-way/site restoration. The anticipated construction periods for the various components of the proposed Project are described in Section 2.4. As discussed in Section 2.4, construction of Phase I would occur over a 2- to 4-month period in 2007, construction of Phase I-A would occur over a 2- to 4-month period in 2008 and 2009, and construction of Phase II would occur over a 4- to 6-month period in 2009. The construction activities that would generate emissions include land clearing, ground excavation, and cut and fill operations. These construction activities would occur 6 days per week for up to 12 hours per day during the construction periods. The intermittent and short-term emissions generated by these activities would include dust from soil disruption and combustion emissions from the construction equipment. Emissions associated with construction equipment include PM_{10}, $PM_{2.5}$, NO_2, CO, volatile organic compounds (VOC), SO_2, and small amounts of air toxics. These emissions could result in minor, temporary impacts on air quality in the vicinity of pipeline installation. Table 4.12.4-1 lists the estimated emissions of these criteria pollutants that would be generated by construction of the proposed Project facilities by year of construction in attainment and nonattainment areas.

TABLE 4.12.4-1

Estimated Emissions of Criteria Pollutants from Project Construction by Year

Source Category	PM_{10} (tons)	$PM_{2.5}$ (tons)	NO_x (tons)	CO (tons)	SO_x (tons)	VOC (tons)
2007/Arrowhead Extension/Riverside County/Attainment Area						
Construction Equipment [a]	0.43	0.39	8.19	3.27	1.52	0.76
Fugitive Dust	4.82	0.60	0.00	0.00	0.00	0.00
Commuter Traffic	0.00	0.00	0.01	0.05	0.00	0.01
Delivery Vehicles	0.01	0.01	0.66	0.25	0.00	0.04
2007 Attainment Area Total	*5.26*	*1.00*	*8.86*	*3.57*	*1.52*	*0.81*
2008/IID Lateral/Imperial County/Nonattainment Area						
Construction Equipment [a]	0.44	0.40	8.41	3.36	1.57	0.77
Fugitive Dust	31.76	4.77	0.00	0.00	0.00	0.00
Commuter Traffic	0.01	0.01	0.17	1.61	0.00	0.17
Delivery Vehicles	0.17	0.16	9.21	2.57	0.13	0.45
2008 Nonattainment Area Total	*32.38*	*5.34*	*17.79*	*7.54*	*1.70*	*1.39*
2009/IID Lateral/Imperial County/Nonattainment Area						
Construction Equipment [a]	0.05	0.05	1.04	0.41	0.19	0.10
Fugitive Dust	3.93	0.59	0.00	0.00	0.00	0.00
Commuter Traffic	0.00	0.00	0.02	0.20	0.00	0.02
Delivery Vehicles	0.02	0.02	1.14	0.32	0.02	0.06
2009/ B-Line/Imperial County/Nonattainment Area						
Construction Equipment [a]	1.21	1.11	22.37	9.22	4.13	2.13
Fugitive Dust	47.87	9.22	0.00	0.00	0.00	0.00
Commuter Traffic	0.01	0.01	0.10	0.93	0.00	0.10
Delivery Vehicles	0.18	0.17	9.40	6.19	0.01	0.88
2009 Nonattainment Area Total	*53.27*	*11.17*	*34.07*	*17.27*	*4.35*	*3.29*
2009/B-Line/Riverside County/Attainment Area						
Construction Equipment [a]	0.91	0.84	16.92	6.97	3.12	1.61
Fugitive Dust	36.21	6.98	0.00	0.00	0.00	0.00
Commuter Traffic	0.00	0.00	0.08	0.70	0.00	0.08
Delivery Vehicles	0.13	0.13	7.11	4.69	0.01	0.67
2009/B-Line/Imperial County/Attainment Area						
Construction Equipment [a]	1.01	0.93	18.67	7.69	3.44	1.78
Fugitive Dust	39.94	7.69	0.00	0.00	0.00	0.00
Commuter Traffic	0.01	0.00	0.08	0.77	0.00	0.08
Delivery Vehicles	0.15	0.14	7.84	5.17	0.01	0.74
2009 Attainment Area Total	*78.36*	*16.71*	*50.70*	*25.99*	*6.58*	*4.96*

[a] Construction equipment emissions include both on- and non-road construction equipment.

Emissions from construction of the pipeline and aboveground facilities are not expected to cause or significantly contribute to a violation of an applicable ambient air quality standard or contribute substantially to an existing or projected air quality violation because the construction equipment would be operated on an as-needed basis during daylight hours only and the emissions from gasoline and diesel engines would be minimized because the engines must be built to meet the standards for mobile sources established by the EPA. Most of the construction equipment would be powered by diesel engines and would be equipped with typical control equipment (e.g., catalytic converters), and Project-related vehicles and construction equipment would be required to use the new low sulfur diesel fuel as soon as it is

commercially available. In addition, North Baja would implement the following measures to minimize impacts on air resources.

- minimize idling time for diesel equipment whenever possible;
- ensure that diesel-powered construction equipment is properly tuned and maintained, and shut off when not in direct use;
- prohibit engine tampering to increase horsepower;
- use California Air Resources Board-certified low sulfur diesel fuel (less than 15 parts per million); and
- reduce construction-related trips as feasible for workers and equipment, including trucks.

Fugitive dust emissions (e.g., PM_{10}) would depend on the moisture content and texture of the soils that would be disturbed. The construction emissions would vary from day to day depending on the level of activity, the specific operations, and prevailing weather. The fugitive dust emissions due to construction activities on the pipeline segments as listed in Table 4.12.4-1 were estimated using an uncontrolled emission factor of 0.11 tons/acre-month based on a study conducted for the SCAQMD by the Midwest Research Institute (1996). Typically, the emission factor in the EPA's AP-42 *Compilation of Air Pollutant Emission Factors* is used; however, the Agency Staffs used the more relevant SCAQMD factor.[6] The emission factor for estimating fugitive dust from unpaved roads is based on empirical equations that include several factors, including silt content of the soil, average vehicle weight, and surface moisture content under natural conditions. The equation for estimating the emission factor for unpaved roads is found in AP-42, Section 13.2.2. The calculated emission factor for unpaved roads includes an assumed average silt content of 25 percent (average value derived from the Eastern Imperial County and Eastern Riverside County soil survey data), an average vehicle weight of 4.3 tons, and a surface soil moisture content of 1 percent. The number of days with measurable rain (greater than 0.01 inch) is also taken into account. The emissions estimate for worker travel (commuter traffic) includes the use of multi-passenger vehicles to transport construction workers from central staging areas.

Fugitive dust generated by construction activities would be minimized by the implementation of North Baja's Dust Control Plan (see Appendix L). The Dust Control Plan includes control measures identified as best management practices by some of the regulating agencies. The measures that would be implemented include:

- take every reasonable precaution to minimize fugitive dust emissions from construction activities;
- take every reasonable measure to limit visible density (opacity) of emissions to less than or equal to 20 percent;
- apply water one or more times per day to all affected unpaved roads, and unpaved haul and access roads;
- reduce vehicle speeds on all unpaved roads, and unpaved haul and access roads;

[6] The Mojave Desert AQMD has not developed its own emission factor.

- clean up track-out and/or carry-out areas at paved road access points at a minimum of once every 48 hours;

- if bulk transfer operations are required, spray handling and transfer points with water at least 15 minutes before use;

- cover all haul truck loads, or maintain at least 6 inches of freeboard space in each cargo compartment. Ensure that all haul truck cargo compartments are constructed and maintained to minimize spillage and loss of materials, and clean or wash each cargo compartment at the delivery site after removal of the bulk materials;

- apply water to active construction areas to limit visible density (opacity) of emissions to less than or equal to 20 percent;

- apply water to open and/or unvegetated areas to limit visible density (opacity) of emissions to less than or equal to 20 percent; and

- for temporary surfaces during periods of inactivity, restrict vehicular access by means of either fencing or signage, and apply water to comply with the stabilized surface requirements.

Although many of these measures clearly specify the performance requirement, some of the measures are vague and open to interpretation and, consequently, would be difficult to enforce during construction. Therefore, **the Agency Staffs recommend that:**

- **North Baja shall prepare a revised Project-wide Dust Control Plan that specifies the following:**

  a. the precautions that would be taken to minimize fugitive dust emissions from construction activities;

  b. the measures that would be taken to limit visible density (opacity) of emissions to less than or equal to 20 percent;

  c. how visual density would be measured to determine that it is less than or equal to 20 percent;

  d. how compliance with the 20 percent visual density requirement would be documented;

  e. the individuals with authority to determine if/when water needs to be reapplied for dust control;

  f. the speed limit that would be required on unpaved roads and unpaved haul and access roads; and

  g. the individuals with authority to stop work if the contractor does not comply with dust control measures.

The revised Project-wide Dust Control Plan shall be filed with the FERC and the CSLC for the review and written approval of the Director of OEP and the Executive Officer of the CSLC <u>before construction</u>.

In its comments on the draft EIS/EIR, the ICAPCD noted that North Baja's Dust Control Plan does not meet the Best Available Control Measures of the ICAPCD's Regulation VIII with regard to clean up of track-out areas. The ICAPCD also noted that additional track-out control devices and further dust control measures must be utilized if construction vehicle trips per day exceed the thresholds established in Regulation VIII. The ICAPCD asked that traffic at unpaved to paved intersections be quantified in the Dust Control Plan and the Dust Control Plan modified accordingly. To address the ICAPCD's comments on the draft EIS/EIR, **the Agency Staffs recommend that:**

- **North Baja shall prepare an Imperial County-specific Dust Control Plan that includes the measures of the revised Project-wide Dust Control Plan and meets the requirements of the ICAPCD's Regulation VIII. The Imperial County-specific Dust Control Plan shall be filed with the CSLC for the review and written approval of the Executive Officer of the CSLC <u>before construction of the Imperial County portions of Phase I-A and Phase II</u>.**

As discussed in Section 4.8.5, in their comments on the draft EIS/EIR, the EPA and the ICAPCD expressed concern about the generation of fugitive dust emissions associated with OHV use of the right-of-way and commented that North Baja's OHV Plan did not address enforcement and future monitoring of the proposed OHV blocking measures. In Section 4.8.5, the Agency Staffs have recommended that North Baja file a revised OHV Plan that addresses enforcement and future monitoring with the FERC and the CSLC before construction.

With the implementation of the Agency Staffs' recommendations, fugitive dust from Project construction activities and OHV use of the right-of-way is not expected to result in a violation of Federal or State ambient air quality standards or contribute substantially to an existing or projected air quality violation due to the transient and temporary nature of the construction activities. Further, all activities would be done in compliance with each agency's rules and regulations.

Construction of the Project would generate emissions of non-regulated GHG. CO_2 would be formed as a primary product of combustion of the diesel and gas engines used to power construction equipment and vehicles.

None of the proposed facilities would result in increased air emissions of criteria pollutants during operation; however, emissions of GHG could occur. Direct releases of methane could occur as a result of pipeline repair or maintenance operations. These releases would be infrequent over the lifetime of the Project and would likely involve only an isolated section of pipeline resulting in a negligible increase in GHG emissions.

The gas transported on the North Baja system to SoCalGas would be odorized by SoCalGas using its existing odorant facilities. Therefore, the Project would not create objectionable odors that would affect a substantial number of people or affect a lesser number of people for a substantial duration.

During the scoping process, the ICAPCD commented that the Mexican standards for gas quality and the WI are inadequate to protect air quality in the United States and requested that a comparison of the U.S. and Mexican standards be provided. In comments on the draft EIS/EIR, the EPA, the SCAQMD, the ICAPCD, and the Border Power Plant Working Group expressed concern that the supplies of LNG-source gas that would be transported on the North Baja system would have a higher WI compared to

existing supplies. These commentors assert that the introduction of the LNG-source gas would potentially increase emissions of NO_x in the SCAB, directly affecting air quality and making attainment of the Federal air quality standards more difficult. Some of the commentors requested that the FERC and the CSLC impose an upper limit on the WI for the gas received into North Baja's system and urged the Project approval to be conditioned upon the treatment of the gas prior to its delivery into the SCAB. Section 1.1 presents a detailed discussion of the current gas quality standards applicable to the SoCalGas and SDG&E systems.

The Agency Staffs have also concluded that they do not have legal authority to control nor do they have continuing program responsibility over the construction and operation of facilities located in Mexico (see Section 1.4). These upstream facilities are subject to the Mexican environmental regulatory review process and standards. However, in response to scoping comments, the air quality impacts on the United States from the associated upstream facilities are addressed in the cumulative impact analysis in Section 4.15.

4.12.5 Health Risk Assessment

A Health Risk Assessment was not conducted for the proposed Project because it would not result in increased operational emissions. Therefore, the potential for the Project to expose the public to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to one in a million and/or a hazard index (non-cancerous risk) greater than or equal to 0.1, would be less than significant.

A Health Risk Assessment was conducted to address the cumulative impacts associated with nonjurisdictional upstream facilities (see Section 4.15).

4.12.6 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on air quality identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.13 NOISE

4.13.1 Significance Criteria

An adverse impact on environmental noise levels would be considered significant and would require mitigation if Project construction or operation would cause:

- 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;
- exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project; or
- substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

4.13.2 Existing Noise Levels

At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week. This variation is caused in part by changing weather conditions and the effects of seasonal vegetative cover and human activity. Federal agencies use two measures to relate the time-varying quality of environmental noise to its known effect on people. The $L_{eq(24)}$ is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. A second measure, the day-night equivalent sound level (L_{dn}) is calculated by adding 10 decibels on the A-weighted scale (dBA) to the nighttime sound levels between the hours of 10 PM and 7 AM to account for the greater sensitivity of people to sound during the nighttime hours. The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is 3 dBA.

The Project would occur primarily in rural range, desert, and agricultural areas. Noise sources in rural areas are predominantly natural, including insects, birds, wind, and weather. Accordingly, existing ambient noise levels near most of the pipeline routes are low. Background noise levels in wilderness and rural areas typically range between 35 dBA and 45 dBA (L_{dn}). The primary sources of noise in the rural residential and agricultural areas are roadway traffic and farm machinery on a seasonal basis. Background noise levels are approximately 40 dBA in rural residential areas and 45 dBA in agricultural cropland with equipment operating (FERC 2002, EPA 1978).

Noise-sensitive areas (NSAs) include residences, schools and day care facilities, hospitals, long-term care facilities, places of worship, libraries, and parks and recreational areas specifically known for their solitude and tranquility such as wilderness areas. The majority of the pipeline and aboveground facilities would be located in areas with little to no human population and few NSAs.

The existing Ehrenberg Compressor Station is considered a noise-generating facility. Principal noise sources at the compressor station include the air inlet, exhaust, and casing of the engines. Secondary noise sources include cooling fans, yard piping, and valves. Post-construction noise compliance testing after the Ehrenberg Compressor Station was constructed and placed into service confirmed that noise levels at nearby NSAs were below the FERC's limitation of 55 dBA L_{dn} with the

power turbines for all three compressors operating simultaneously at maximum horsepower. The proposed modifications at the existing Ehrenberg Compressor Station would not increase operational noise levels at the station.

4.13.3 Regulatory Requirements

The FERC guidelines do not specifically cover operational noise for the North Baja Pipeline Expansion Project aboveground facilities such as the meter stations, pig launchers, or pig receivers. Neither the States of Arizona nor California have Statewide noise regulations that would limit noise from these facilities; noise is regulated at the local level in both States.

In 1974, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA 1974). This publication evaluates the effects of environmental noise with respect to health and safety, and provides information for State and local governments to use in developing their own ambient noise standards. The EPA has determined that in order to protect the public from activity interference and annoyance outdoors in residential areas, noise levels should not exceed an Ldn of 55 dBA. An L_{dn} of 55 dBA is equivalent to a continuous noise level of 48.6 dBA for facilities that operate at a constant level of noise. The FERC has adopted the EPA guidelines.

The State of California does not promulgate Statewide standards for environmental noise but requires each county to include a noise element in its general plan (California Government Code section 65302[f]). In addition, Title 4 of the California Code of Regulations has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure.

The La Paz County, Arizona Department of Community Development has approved a nuisance ordinance that prohibits any actions that are "offensive to the senses." No numerical standards for noise exist in the county. Imperial and Riverside Counties have community-based noise standards, which are implemented in the specific general plans for each region.

Chapter 7 of the Riverside County General Plan contains a noise element that sets the basic community standards for noise levels and allowable impacts from a wide range of commercial and industrial activities, including construction noise. The Riverside County noise element identifies construction noise as a temporary impact and establishes a set of policies to deal with noise mitigation during construction activities. These policies are identified as N12.1, N12.2, and N12.4. These policies are in large part related to land use because of the effects of noise on sensitive land uses. Stationary source land use noise standards for Riverside County are presented in Table 4.13.3-1 (Riverside County 2003).

TABLE 4.13.3-1

Stationary Source Land Use Noise Standards for Riverside County

Land Use	Interior Standards [a]	Exterior Standards [a]
Residential		
10:00 PM to 7:00 AM	40 L_{eq} (10 minute)	45 L_{eq} (10 minute)
7:00 AM to 10:00 PM	55 L_{eq} (10 minute)	65 L_{eq} (10 minute)

[a] L_{eq} (10 minute) = average noise level over a 10-minute period expressed in dBA.

The Imperial County General Plan also contains a community noise element that specifies the basic standards for acceptable noise levels from operational- (stationary) or construction-related sources as shown in Table 4.13.3-2.

TABLE 4.13.3-2

Noise Standards for Imperial County

Operation Noise Standards

Land Use Zone	Time	Applicable Limit Average Sound Level (dB)
Residential Zones	7 AM to 10 PM	50
	10 PM to 7 AM	45
Multi-residential Zones	7 AM to 10 PM	55
	10 PM to 7 AM	50
Commercial Zone	7 AM to 10 PM	60
	10 PM to 7 AM	55
Light Industrial/Industrial Park Zones	Anytime	70
General Industrial Zones	Anytime	75

Construction Noise Standards

Duration of Construction	Noise Source	Sound Level (dB Leq) [a]	Period of Averaging (hours)	Restricted Hours of Operation
Short-term (days or weeks)	Single piece of construction equipment	75	8	7 AM to 7 PM Monday-Friday 9 AM to 5 PM Saturday No commercial construction operation is permitted on Sundays and holidays.
Short-term (days or weeks)	Combination of pieces of construction equipment	75	8	7 AM to 7 PM Monday-Friday 9 AM to 5 PM Saturday No commercial construction is permitted on Sundays and Holidays
Extended-term [b]	Single piece of construction equipment	75	1	7 AM to 7 PM Monday-Friday 9 AM to 5 PM Saturday No commercial construction is permitted on Sundays and Holidays
Extended-term [b]	Combination of pieces of construction equipment	75	1	7 AM to 7 PM Monday-Friday 9 AM to 5 PM Saturday No commercial construction is permitted on Sundays and Holidays

[a] As measured at the nearest sensitive receptor.

[b] The standards assume a construction period, relative to an individual sensitive receptor, of days or weeks. The standard can be made more restrictive in cases of extended-length construction times.

dB = decibel

Source: County of Imperial General Plan Noise Element 1997c.

4.13.4 Noise Level Impacts and Mitigation

Construction Noise

Noise would be generated during construction of the pipeline and aboveground facilities. Noise associated with construction activities would be both temporary and intermittent because equipment would be operated on an as-needed basis during daylight hours. Therefore, the potential for construction

activities to result in the generation of or exposure of persons to excessive ground-borne vibration or ground-borne noise levels would be less than significant.

The most prevalent sound source during construction is anticipated to be the internal combustion engines used to provide mobility and operating power to construction equipment. The sound level impacts at NSAs from construction operations would depend on the type of equipment used, the mode of operation of the equipment, the length of time the equipment is in use, the amount of equipment used simultaneously, and the distance between the sound source and sensitive site. All of these factors would constantly change throughout the construction period, making the calculation of an L_{dn} or L_{eq} and, hence, the quantification of impacts difficult. Table 4.13.4-1 presents generalized data on construction noise at typical construction sites and its potential impacts on receptors at specified distances from the construction corridor. In general, receptors at distances greater than 1,650 feet should not experience noise levels above the community standards, and receptors closer than 1,650 feet should only experience noise levels above the community standards on an intermittent basis during daylight hours.

TABLE 4.13.4-1

Typical Noise Levels from Construction Equipment and Operations

Equipment Type	Measured Noise Level at 50 feet (dBA)	Predicted Noise Level at 500 feet (dBA)	Predicted Noise Level at 1,000 feet (dBA)	Predicted Noise Level at 2,000 feet (dBA)	Predicted Noise Level at 3,000 feet (dBA)
Crane	88	68	62	56	52
Backhoe	85	65	59	53	49
Pan Loader	87	67	61	55	51
Bulldozer	89	69	63	57	53
Fuel Truck	88	68	62	56	52
Water Truck	88	68	62	56	49
Grader	85	65	59	53	44
Roller	80	60	54	48	52
Mechanic Truck	88	68	62	56	52
Flat Bed Truck	88	68	62	56	52
Dump Truck	88	68	62	56	52
Tractor	80	60	62	56	44
Concrete Truck	86	66	60	54	50
Concrete Pump	82	62	56	50	46
Front End Loader	83	63	57	51	47
Scraper	87	67	61	55	51
Air Compressor	82	62	56	50	46
Average Construction Site	85	66	59	53	49

dBA = decibels of the A-weighted scale.

Pipeline construction would proceed at rates averaging about 1 mile per day. However, construction activities in any one area could last from several weeks to several months on an intermittent basis. Construction equipment would be operated on an as-needed basis during this period. Nighttime construction noise would be limited to HDDs at the Colorado River, All-American Canal, and the East Highline Canal crossings; hydrostatic testing activities; and bores under major highways or railroads. In some cases, these operations could require 24-hour work days; however, the duration of activities would be generally less than several days at road or railroad crossings although they could extend for up to 2 weeks at the HDD crossings. Hydrostatic testing would be limited to one 24-hour interval at four to five scattered locations.

Although certain noise-generating activities associated with pipeline construction (e.g., HDDs and bore operations) would occur at a single location for extended time periods and include nighttime activities, most activities would occur for limited lengths of time at a specific location and would occur during daytime hours. Additionally, a majority of the activities would occur away from population centers; therefore, the potential for the Project to result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project would be less than significant.

North Baja would comply with the noise elements included in the Riverside County and Imperial County General Plans; therefore, the potential for the Project to result in the 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 would be less than significant.

Operational Noise

During operation, there may be short-term noise impacts from aboveground facilities due to vehicles and equipment performing routine maintenance. A more intense noise impact would result from the infrequent blowdowns at the valves that would be located at Blythe and Ogilby, the El Centro Meter Station, and the Ehrenberg Compressor Station. Blowdowns involve the evacuation of gas, which enables piping to be taken out of service, typically for major repairs or maintenance. Blowdowns occur only on rare occasions; therefore, the noise impacts would be infrequent and temporary. As an example, no blowdowns have occurred on North Baja's existing system since it was placed in service 4 years ago. Despite the infrequency of blowdowns, in residential areas, North Baja would install silencers to reduce noise levels. In the event of a blowdown, nearby residences would be notified in advance if possible and North Baja would provide traffic control along public roadways near the blowdown location as needed. The proposed modifications at the Ehrenberg Compressor Station would not increase noise at the station during operation. Because the Project would not result in significant operational noise levels, the potential for the Project to result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project would be less than significant.

4.13.5 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on noise levels identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.14 RELIABILITY AND SAFETY

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

Methane has an ignition temperature of 1,000 °F and is flammable at concentrations between 5 percent and 15 percent in air. Unconfined mixtures of methane in air are not explosive. However, a flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

4.14.1 Significance Criteria

An adverse impact on public safety would be considered significant and would require mitigation if Project construction or operation would:

- result in a substantial potential for incidents that would cause serious injury or death to members of the public;
- substantially diminish the level of fire and police services (reduction of acceptable response times);
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- significantly increase fire hazard in areas with flammable materials.

4.14.2 Safety Standards

The DOT is mandated to provide pipeline safety under Title 49, USC Chapter 601. The Pipeline and Hazardous Materials Safety Administration's (PHMSA), Office of Pipeline Safety (OPS) administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards that set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. The PHMSA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with State agency partners and others at the Federal, State, and local level. Section 5(a) of the Natural Gas Pipeline Safety Act provides for a State agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the Federal standards, while section 5(b) permits a State agency that does not qualify under section 5(a) to perform certain inspection and monitoring functions. A State may also act as the DOT's agent to inspect interstate facilities within its boundaries; however, the DOT is responsible for enforcement action. The majority of the States have either section 5(a) certifications or section 5(b) agreements, while nine States act as interstate agents. Both Arizona and California have section 5(a) certifications.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. Part 192 of Title 49 CFR specifically addresses natural gas pipeline safety issues.

Under a Memorandum of Understanding on Natural Gas Transportation Facilities (Memorandum) dated January 15, 1993 between the DOT and the FERC, the DOT has the exclusive authority to promulgate Federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an Applicant certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with Federal safety standards and plans for maintenance and inspection, or shall certify that it has been granted a waiver of the requirements of the safety standards by the DOT in accordance with section 3(e) of the Natural Gas Pipeline Safety Act. The FERC accepts this certification and does not impose additional safety standards other than the DOT standards. If the FERC becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert the DOT. The Memorandum also provides for referring complaints and inquiries made by State and local governments and the general public involving safety matters related to pipelines under the FERC's jurisdiction.

The FERC also participates as a member of the DOT's Technical Pipeline Safety Standards Committee, which determines if proposed safety regulations are reasonable, feasible, and practicable.

As part of the leasing process in California, the CSLC reviews pipeline projects to ensure that they are designed in compliance with applicable Federal and California standards, and that they reflect current geologic and seismic information. The CSLC's engineering and environmental review assesses both siting and safety issues, such as the location of the Project relative to seismic and populated areas, and the adequacy of the information contained in the Applicant's construction, operations, maintenance, and emergency response plans (e.g., proposed internal and external maintenance inspection processes, integrity testing methods to be applied, corrosion monitoring and testing and calibration of the cathodic protection system, leak monitoring, and emergency response plans and procedures). In determining whether or not to approve or amend a lease and/or certify the CEQA documentation for a project, the CSLC may consider if standards above the DOT minimum standards provided for in Title 49 CFR Part 192 are warranted in fault zone and populated areas, and may require additional safety measures, such as the installation of automatic shutoffs in these areas. For approved projects, the CSLC staff also reviews (for consistency with the CSLC's action on the lease) post-construction documentation, including "as-built" construction plans showing any design changes or other amendments to the project as approved, pipeline test results (e.g., smart pig and hydrostatic testing), and details of any extraordinary occurrences such as spill incidents and accidents.

The pipeline and aboveground facilities associated with the North Baja Pipeline Expansion Project would be designed, constructed, operated, and maintained in accordance with or to exceed the DOT Minimum Federal Safety Standards in Title 49 CFR Part 192 and the CPUC, General Order 112-E. These regulations, which are intended to protect the public and to prevent natural gas facility accidents and failures, include specifications for material selection and qualification; odorization of gas; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion. To address seismic hazards, the facilities would be designed to meet or exceed the latest edition of the Uniform Building Code or International Building Code and to incorporate current seismological engineering standards, including the *Guidelines for the Design of Buried Steel Pipe* (American Lifelines Alliance 2001) and G*uidelines for the Seismic Design and Assessment of Natural Gas and Liquid Hydrocarbon Pipelines* (Pipeline Research Council International, Inc. 2004). In addition, North Baja's construction contractors would be required to comply with the OSHA Safety and Health Regulations for Construction in Title 29 CFR Part 1926.

The standards in the Federal regulations become more stringent as the human population density in the vicinity of the pipeline increases. Part 192 also defines area classifications, based on population density in the vicinity of the pipeline, and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are as follows:

- Class 1 – Location with 10 or fewer buildings intended for human occupancy;
- Class 2 – Location with more than 10 but less than 46 buildings intended for human occupancy;
- Class 3 – Location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period; and
- Class 4 – Location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. Pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock. All pipelines installed in navigable rivers, streams, and harbors must have a minimum cover of 48 inches in soil or 24 inches in consolidated rock. North Baja would design all railroad crossings in accordance with the AREMA *Manual for Railway Engineering, Part 5 Pipeline* and Title 49 CFR Part 192 *Transportation of Natural Gas by Pipeline: Minimum Federal Safety Standards*. The AREMA specifications require a minimum distance of 10 feet from the bottom of the rail to the top of the pipe. All road crossings would be designed to comply with Title 49 CFR Part 192 *Transportation of Natural Gas by Pipeline: Minimum Federal Safety Standards*, which specifies a minimum depth of cover of 3 feet in road ditches. In addition, all roadway and highway crossings would be designed to meet the applicable State and local agency permit requirements and the latest edition of American Petroleum Institute 1102 requirements.

Pipe wall thickness and pipeline design pressures, MAOP, hydrostatic test pressures, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas. For the B-Line, North Baja proposes to use Class 1 pipe in comparable areas of the A-Line: between MPs 11.7 and 79.8. Class 2 pipe would be used between MPs 0.0 and 11.7 and at all road and railroad crossings within Class 1 locations. For the Arrowhead Extension, Class 2 pipe would be used. For the IID Lateral, Class 2 pipe would be used between MPs 45.0 and 45.7. Class 3 pipe would be used between MPs 0.0 and 0.25, 3.1 and 3.7, and 8.5 and 9.1. Class 1 pipe would be used in all other locations. The design pressure and MAOP of the pipeline facilities would be 1,150 psig. The normal operating pressure would be 1,050 psig. Hydrostatic test pressures would be 90 to 100 percent of the specified minimum yield strength of the pipe being tested.

If a subsequent increase in population density adjacent to the right-of-way indicates a change in class location for the pipeline, North Baja would be required to reduce the MAOP or replace the segment with pipe of sufficient grade and wall thickness to comply with the DOT code of regulations for the new class location.

Class locations also specify the maximum distance to sectionalizing remote manual block valves (referred to as valves in other sections of this document). Part 192 regulations require at least one valve

every 20 miles in Class 1 locations, every 15 miles in Class 2 locations, every 8 miles in Class 3 locations, and every 5 miles in Class 4 locations. The spacing between the valves for the North Baja Pipeline Expansion Project would meet or exceed the DOT requirements for the appropriate class location. The valves proposed for the B-Line would be adjacent to the existing valves on the A-Line.

External corrosion control measures include the protective coating on the exterior of the pipe and use of cathodic protection systems. These systems are designed to meet requirements established by the DOT for protection of metallic facilities from external, internal, and atmospheric corrosion. North Baja plans to use an impressed current system using deep well anodes placed in areas where their effect would provide the required negative-induced potential to resist external corrosion. The deep well anodes would be within the pipeline right-of-way. Aboveground facilities would be painted with a suitable anti-corrosion coating. Internal corrosion is not expected to be a factor because North Baja would monitor the pipeline interior through the use of internal corrosion probes, on-line pigging tools, or a combination of the two.

The aboveground cathodic protection facilities proposed for the Project include electrical rectifiers to provide the necessary electrical current and test leads for conducting system voltage tests. Rectifiers are generally mounted on power poles inside locked metal electrical boxes, where test leads are generally protected from weather in capped plastic risers designed for that purpose. During the scoping process, a question was raised whether North Baja plans any specific vandalism protection measures in high-use recreational areas. North Baja reports that no acts of vandalism along the existing A-Line have occurred to rectifiers and, therefore, it does not plan to implement any extraordinary vandalism protection measures on the cathodic protection devices. North Baja states that its biggest concern for possible vandalism would be rectifier installations in the ISDRA portion of the IID Lateral route; however, North Baja believes that the cathodic protection system can be designed for the pipeline facilities without utilizing this area for rectifier installations.

North Baja would x-ray all girth welds over 6 inches in diameter where possible to ensure pipeline structural integrity and compliance with the applicable DOT regulations. Where x-ray inspection is impossible or impractical, other means of non-destructive inspection would be conducted. Those welds that do not meet established specifications would be repaired or replaced. Once the welds are approved, the welded joints would be coated with a protective coating and the entire pipeline would be visually inspected for any faults, scratches, or other coating defects. Any damage would be repaired before the pipeline is installed.

After construction, North Baja would clearly mark the pipeline at line-of-sight intervals, roads, railroads, and other key points to alert the public to the presence of the pipeline. The markers would provide contact information for North Baja in the event of an emergency. In accordance with the DOT regulations in effect since 1982, North Baja would participate in all communication and notification "One-Call" services to prevent outside damage to the pipeline. These services provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts.

In 2002, Congress passed an act to strengthen the nation's pipeline safety laws. The Pipeline Safety Improvement Act of 2002 (HR 3609) was passed by Congress on November 15, 2002, and signed into law by the President in December 2002. By December 17, 2004, gas transmission operators were required to develop and follow a written integrity management program that contains all the elements described in Part 192.911 and addresses the risks on each covered transmission pipeline segment. Specifically, the law establishes an integrity management program that applies to all high consequence areas (HCAs). The DOT (68 Federal Register 69778, 69 Federal Register 18228, and 69 Federal Register

29903) defines HCAs as they relate to the different class zones, potential impact circles, or areas containing an identified site as defined in Part 192.903 of the DOT regulations.

The OPS published a series of rules from August 6, 2002 to May 26, 2004 (69 Federal Register 29903), that defines HCAs where a gas pipeline accident could do considerable harm to people and their property and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate in Title 49, USC 60109 for the OPS to prescribe standards that establish criteria for identifying each gas pipeline facility in a high-density population area.

The HCAs may be defined in one of two ways. In the first method (Method 1), an HCA includes:

- current Class 3 and 4 locations;
- any area in Class 1 or 2 locations where the PIR[7] is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle;[8] or
- any area in Class 1 or 2 locations where the potential impact circle includes an identified site.[9]

In the second method (Method 2), an HCA includes any area within a potential impact circle that contains:

- 20 or more buildings intended for human occupancy; or
- an identified site.

Once a pipeline operator has determined the HCAs on its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. The DOT regulations specify the requirements for the integrity management plan at Part 192.911. The pipeline integrity management rule for HCAs requires inspection of the entire pipeline in HCAs every 7 years.

Before placing a natural gas pipeline into service, the DOT requires the facility operator to prepare an Operation and Maintenance Plan in accordance with the requirements in Title 49 CFR Part 192. North Baja would prepare and implement a plan that includes the following activities:

- employee qualification to operate and maintain the pipeline system in accordance with the Title 49 CFR Part 192 Operator Qualification Rule;
- air patrols of the pipeline right-of-way to monitor its condition, including any indications of third-party encroachment;
- on-the-ground leak surveys with leak detector equipment;
- annual contact of property owners, utilities, local government agencies, contractors, and other interested parties to inform them of the pipeline location and procedures to be followed in reporting and responding to a pipeline emergency;

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[7] The potential impact radius is calculated as the product of 0.69 and the square root of the maximum allowable operating pressure of the pipeline in pounds per square inch multiplied by the pipeline diameter in inches.

[8] The potential impact circle is a circle of radius equal to the potential impact radius.

[9] An identified site is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

- participation in a "One Call" system in each State where the pipeline is located, including staking and marking service for third-party construction and landowner requests;

- internal audits of field locations to ensure compliance with existing operating and maintenance standards and safe-work procedures;

- periodic pipe-to-soil potential surveys and rectifier inspections to maintain the line's cathodic protection;

- annual in-house training for operation and maintenance personnel to maintain skill levels and review safety procedures in case of a pipeline emergency; and

- annual testing and inspection of pressure-limiting devices and emergency shutdown systems at the compressor stations.

Section 14.14.4 includes an assessment of potential HCAs associated with the North Baja Pipeline Expansion Project.

The existing pipeline system is monitored and controlled 24 hours a day for pressure drops in the pipeline that could indicate a leak or other operating problem through a SCADA system. A detailed description of the SCADA system is included in Section 2.6. In addition, a crew that conducts on-site operations and maintenance is at the Ehrenberg Compressor Station, and is on-call 24 hours a day. When completed, the B-Line, Arrowhead Extension, and IID Lateral would be operated in conjunction with the existing system and subject to the same operation and maintenance procedures.

The pipeline would be designed to be piggable, allowing for the future use of smart pigs for internal integrity inspection. In addition, North Baja would run a gauging plate and, if warranted, a caliper tool to determine if there are any dents in the pipeline as a result of construction. Dents that exceed those allowable by code would be removed before placing the pipeline into service.

Within the first 6 months of placing the pipeline into operation, North Baja would conduct an internal inspection of the pipeline. This inspection would use an in-line magnetic flux leakage inspection tool (i.e., smart pig). The record of this inspection would serve as an initial set of data that would be compared to future internal inspections so that changes in pipe condition, primarily pipe wall thickness loss, can be readily determined and corrected. The initial test would likely not indicate any anomalies that would require correction because the pipeline would be new and would have completed a successful hydrostatic test. Following the initial test, internal inspections with a high resolution instrument would be conducted on a periodic basis, at a minimum of one inspection every 10 years, or sooner if the evidence suggests that significant corrosion or defects exist or if any new Federal or State regulations require more frequent or comparable inspections.

The pipeline system would be inspected by air and on the ground to observe right-of-way conditions and identify indications of leaks, evidence of pipeline damage, evidence of encroachment (i.e., landowners building permanent structures on the permanent right-of-way), or damage to erosion controls resulting from erosion or washouts. North Baja would comply with other DOT surveillance, leak detection requirements such as leakage surveys, aerial surveys, and pedestrian surveys of its facilities.

To ensure that North Baja's operation and maintenance commitments are documented in a comprehensive plan and to assist the CSLC in reviewing the Project for consistency with the CSLC's action on the amended lease across California's Sovereign and School Lands, **the Agency Staffs recommend that:**

- **<u>Before placing the pipeline system into service in California</u>, North Baja shall submit to the CSLC for approval an Operation and Maintenance Plan. This plan shall address internal and external maintenance inspections of the completed facility, including but not limited to details of integrity testing methods to be applied, corrosion monitoring and testing of the cathodic protection system, and leak monitoring. The Operation and Maintenance Plan shall also specify that North Baja would, unless expressly prohibited by DOT regulations, conduct an internal inspection with a high-resolution instrument on a periodic basis, at a minimum of one inspection every 10 years, or sooner if the evidence suggests that significant corrosion or defects exist or if any new Federal or State regulations require more frequent or comparable inspections. <u>Within 3 months following any new Federal or State regulations</u>, North Baja shall update the Operation and Maintenance Plan and submit a revised copy to the CSLC. In addition, the Operation and Maintenance Plan shall include procedures for implementing operational mitigation measures recommended (if any) by the site-specific seismic hazard evaluation reports for the Project.**

In accordance with Part 192.615, North Baja would develop an Emergency Response Plan comparable to that developed for the A-Line that includes procedures to respond to and minimize the hazards from a natural gas pipeline emergency along its system. The Emergency Response Plan would include the following:

- local field headquarters to contact;
- listing of company personnel, local police, and fire authorities to contact;
- listing of equipment available at field locations;
- description of the roles of field supervisors, gas control operators, field crews, and support personnel during an emergency;
- description of procedures for maintaining communication between gas control operators and local fire, police, and government authorities;
- description of procedures for securing additional help from non-company resources; and
- requirements for logging emergency events and reporting the emergency to company and regulatory authorities.

Key elements of the plan also include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- making personnel, equipment, tools, and materials available at the scene of an emergency;
- protecting people first and then property, and making them safe from actual or potential hazards; and

- emergency shutdown of the system and safe restoration of service.

In the unlikely event of a pipeline rupture caused by a seismic event (or any other cause), North Baja would implement its emergency response procedures. All North Baja facilities would be designed with remote manual pipeline block valves with automatic shutdown capability that are programmed to sense pipeline ruptures and to isolate a specific pipeline valve section in the case of a catastrophic rupture in that valve section. Like the existing North Baja system, a precipitous pressure drop would trigger an alarm at North Baja's Gas Control Center, which is staffed 24 hours a day. The operator would have 10 minutes in which to determine whether the pressure drop is caused by something other than a rupture and either override the alarm or initiate a shutdown. If neither of these actions is taken by the operator within 10 minutes, or if line pressure decreases to a pre-determined threshold before 10 minutes, the valve would close automatically.

North Baja currently has procedures in place in the event of an emergency to utilize the Spokane, Washington operations center as an emergency call center. This call center is in the process of being changed to Redmond, Oregon. By the time the proposed Project would be in operation, the Redmond center would likely be operational. There would also be a corporate call center in Calgary, Alberta, Canada. The purpose of the call centers in the first few minutes following a rupture is to mobilize company resources to secure the incident site and notify local first responders of the incident. The incident site is surrendered to local first responders upon their arrival. Procedures are also in place to notify Sempra of any incident occurring on the North Baja facilities so that it can respond appropriately with regard to its facilities and jurisdictions in Mexico. North Baja's valves and emergency response procedures would reduce the potential for significant fire hazard in areas with flammable materials.

4.14.3 Pipeline Accident Data

If a pipeline rupture were to occur after pipeline operation has begun, natural gas would percolate through the soil and rapidly dissipate into the atmosphere. The potential outcome would depend on the volume of natural gas released and whether an ignition source is available. A pipeline break could result in soil and debris being thrown from the area of the break, destruction of nearby vegetation, and, in the case of ignition, explosion or fire causing injury or property damage.

Since February 9, 1970, Title 49 CFR Part 191 has required all operators of transmission and gathering systems to notify the DOT of any reportable incident and to submit a report on form F7100.2 within 20 days. Reportable incidents are defined as any leaks that:

- caused a death or personal injury requiring hospitalization;
- required taking any segment of transmission line out of service;
- resulted in gas ignition;
- caused estimated damage to the property of the operator, or others, or both, of a total of $5,000 or more;
- required immediate repair on a transmission line;
- occurred while testing with gas or another medium; or
- in the judgment of the operator was significant, even though it did not meet the above criteria.

The DOT changed reporting requirements after June 1984 to reduce the amount of data collected. Since that date, operators must only report incidents that involve property damage of more than $50,000, injury, death, release of gas, or that are otherwise considered significant by the operator. Table 4.14.3-1 presents a summary of incident data for the 1970 to 1984 period, as well as more recent incident data for 1986 through 2005, recognizing the difference in reporting requirements. The 14.5-year period from 1970 through June 1984, which provides a larger universe of data and more basic report information than subsequent years, has been subject to detailed analysis, as discussed in the following sections.[10]

TABLE 4.14.3-1

Natural Gas Service Incidents by Cause

	Incidents per 1,000 miles of pipeline (percentage)	
Cause	1970-1984	1986-2005
Outside force	0.70 (53.8)	0.10 (38.5)
Corrosion	0.22 (16.9)	0.06 (23.1)
Construction or material defect	0.27 (20.8)	0.04 (15.4)
Other	0.11 (8.5)	0.06 (23.1)
Total	1.30	0.26

During the 14.5-year period, 5,862 service incidents were reported over the more than 300,000 total miles of natural gas transmission and gathering systems nationwide. Service incidents, defined as failures that occur during pipeline operation, have remained fairly constant over this period with no clear upward or downward trend in annual totals. In addition, 2,013 test failures were reported. Correction of test failures removed defects from the pipeline before operation.

Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. Table 4.14.3-1 provides a percentage distribution of the causal factors as well as the annual frequency of each factor per 1,000 miles of pipeline in service.

The dominant incident cause is outside forces, constituting 53.8 percent of all service incidents between 1970 and 1984 and 38.5 percent between 1986 and 2005. Outside forces incidents result from the encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; weather effects such as winds, storms, and thermal strains; and willful damage. Table 4.14.3-2 shows that, of the service incidents caused by outside forces, human error in equipment usage was responsible for approximately 75 percent of the incidents. Since April 1982, operators have been required to participate in “One-Call” public utility programs in populated areas to minimize unauthorized excavation activities in the vicinity of pipelines. The 1986 through 2005 data show that the portion of incidents caused by outside forces has decreased to 38.5 percent (see Table 4.14.3-1).

TABLE 4.14.3-2

Outside Forces Incidents by Cause (1970-1984)

Cause	Percent
Equipment operated by outside party	67.1
Equipment operated by or for operator	7.3
Earth movement	13.3
Weather	10.8
Other	1.5

[10] American Gas Association 1986. "An Analysis of Reportable Incidents for Natural Gas Transportation and Gathering Lines 1970 Through June 1984." NG-18 Report No. 158, Pipeline Research Committee of the American Gas Association. D.J. Jones, G.S. Kramer, D.N. Gideon, and R.J. Eiber.

As noted above, outside forces can include geologic hazards. The primary geologic hazard that could affect the North Baja Pipeline Expansion Project would be seismicity. The potential seismic impacts associated with the Project and North Baja's proposed mitigation measures are discussed in Section 4.1.4.

The pipelines included in the data set in Table 4.14.3-1 vary widely in terms of age, pipe diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

The frequency of service incidents is strongly dependent on pipeline age. While pipelines installed since 1950 exhibit a fairly constant level of service incident frequency, pipelines installed before that time have a significantly higher rate, partially due to corrosion. Older pipelines have a higher frequency of corrosion incidents, because corrosion is a time-dependent process. Further, new pipe generally uses more advanced coatings and cathodic protection to reduce corrosion potential.

Older pipelines have a higher frequency of outside forces incidents partly because their location may be less well known and less well marked than newer lines. In addition, smaller diameter pipelines constitute a disproportionate number of the older pipelines, which have a greater rate of outside forces incidents. Small diameter pipelines are more easily crushed or broken by mechanical equipment or earth movements.

Table 4.14.3-3 clearly demonstrates the effectiveness of corrosion control in reducing the incidence of failures caused by external corrosion. The use of both an external protective coating and a cathodic protection system, required on all pipelines installed after July 1971, significantly reduces the rate of failure compared to unprotected or partially protected pipe. The data show that bare, cathodically protected pipe actually has a higher corrosion rate than unprotected pipe. This anomaly reflects the retrofitting of cathodic protection to actively corroding spots on pipes.

TABLE 4.14.3-3

External Corrosion by Level of Control (1970-1984)

Corrosion Control	Incidents per 1,000 miles per year
None-bare pipe	0.42
Cathodic protection only	0.97
Coated only	0.40
Coated and cathodic protection	0.11

4.14.4 Impact on Public Safety

The service incident data summarized in Table 4.14.3-1 include pipeline failures of all magnitudes with widely varying consequences. Approximately two-thirds of the incidents were classified as leaks, and the remaining third classified as ruptures, implying a more serious failure.

Table 4.14.4-1 presents the average annual fatalities that occurred on natural gas transmission and gathering lines from 1970 to 2005. Fatalities between 1970 and June 1984 have been separated into employees and nonemployees, to better identify a fatality rate experienced by the general public. Of the total 5.0 nationwide average, fatalities among the public averaged 2.6 per year over this period. The simplified reporting requirements in effect after June 1984 do not differentiate between employees and nonemployees. However, the data show that the total annual average for the period 1984 through 2005 decreased to 3.6 fatalities per year. Subtracting two major offshore incidents in 1989, which do not reflect the risk to the onshore public, yields a total annual rate of 2.8 fatalities per year for this period.

TABLE 4.14.4-1

Annual Average Fatalities - Natural Gas Transmission and Gathering Systems [a, b]

Year	Employees	Nonemployees	Total
1970-June 1984	2.4	2.6	5.0
1984-2005 [c]	-	-	3.6
1984-2005 [c]	-	-	2.8 [d]

[a] 1970 through June 1984 - American Gas Association 1986.
[b] DOT Hazardous Materials Information System.
[c] Employee/nonemployee breakdown not available after June 1984.
[d] Without 18 offshore fatalities that occurred in 1989 (11 fatalities resulted from a fishing vessel striking an offshore pipeline and 7 fatalities resulted from an explosion on an offshore production platform).

The nationwide totals of accidental fatalities from various manmade and natural hazards are listed in Table 4.14.4-2 in order to provide a relative measure of the industry-wide safety of natural gas pipelines. Direct comparisons between accident categories should be made cautiously, however, because individual exposures to hazards are not uniform among all categories. Nevertheless, the average 2.6 public fatalities per year is relatively small considering the more than 300,000 miles of transmission and gathering lines in service nationwide. Furthermore, the fatality rate is approximately two orders of magnitude (100 times) lower than the fatalities from natural hazards such as lightning, tornados, floods, earthquakes, etc.

TABLE 4.14.4-2

Nationwide Accidental Deaths [a]

Type of Accident	Fatalities
All accidents	90,523
Motor vehicles	43,649
Falls	14,985
Drowning	3,488
Poisoning	9,510
Fires and burns	3,791
Suffocation by ingested object	3,206
Tornado, flood, earthquake, etc. (1984 to 1993 average)	181
All liquid and gas pipelines (1978 to 1987 average) [b]	27
Gas transmission and gathering lines Nonemployees only (1970 to 1984 average) [c]	2.6

[a] All data, unless otherwise noted, reflect 1996 statistics from the U.S. Department of Commerce, Bureau of the Census, "Statistical Abstract of the United States 118th Edition."
[b] U.S. Department of Transportation "Annual Report on Pipeline Safety - Calendar Year 1987."
[c] American Gas Association 1986.

The available data show that natural gas pipelines continue to be a safe, reliable means of energy transportation. Based on approximately 301,000 miles in service, the rate of public fatalities for the nationwide mix of transmission and gathering lines in service is 0.01 per year per 1,000 miles of pipeline. Using this rate, the pipeline facilities associated with the North Baja Pipeline Expansion Project might result in a public fatality about every 793 years. This would represent a slight increase in risk to the nearby public and would not result in a substantial potential for incidents that would cause serious injury or death to members of the public.

As discussed in Section 4.14.2, North Baja would be required to develop an integrity management program that applies to all HCAs. There are no indicated HCAs for North Baja's existing

A-Line, but preliminary data indicate that it is likely that two locations along the proposed B-Line might qualify as HCAs. These locations are near MPs 27.0 and 75.0. There are no locations along the Arrowhead Extension that would classify as an HCA. Along the IID Lateral, the ISDRA portion of the route (MPs 0.0 to 7.0) would classify as an HCA and the newly constructed RV park near MP 9.0 might classify as an HCA using Method 1 of the HCA determination protocols. No HCAs were identified along the Project using Method 2. The HCAs potentially crossed by the proposed Project are listed by milepost and pipeline class in Table 4.14.4-3. As required by the DOT, North Baja would conduct a comprehensive HCA assessment of the new pipeline segments following construction. The existing North Baja pipeline facilities are presently managed under an Integrity Management Program plan that ensures compliance with Title 49 CFR Part 192, Subpart O. The newly constructed facilities would be incorporated into the existing plan. Pipeline inspection within identified HCAs would be conducted every 7 years in accordance with the pipeline integrity management rule for HCAs. Additional discussion of potential impact radii as they relate to minority and low-income populations is provided in Section 4.17.4.

TABLE 4.14.4-3

Preliminary Identification of High Consequence Areas (HCAs) Crossed by the North Baja Pipeline Expansion Project [a]

Facility/Milepost Range per Pipeline Class	Pipeline Class	HCA Milepost
B-Line		
0.0 - 11.7	Class 2	None
11.7 - 79.8	Class 1	27.0, 75.0
Arrowhead Extension		
0.0-2.1	Class 2	None
IID Lateral		
0.0-0.25	Class 3	0.0-0.25
0.25-3.1	Class 1	0.25-3.1
3.1-3.7	Class 3	3.1-3.7
3.7-8.5	Class 1	3.7-7.0
8.5-9.1	Class 3	9.0
9.1-45.0	Class 1	None
45.0-45.7	Class 2	None

[a] All HCAs were determined by Method 1.

HCA Determination Method 1 = current Class 3 and 4 locations or any area in Class 1 or 2 locations where the potential impact radius is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle; or any area in Class 1 or 2 locations where the potential impact circle includes an identified site.

Part 192 requires that each operator must establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials. Local police and fire departments would be informed of North Baja's Operation and Maintenance and Emergency and Response Plans. Annual meetings would be held with local police and fire authorities to review the plans and discuss procedures to follow in case of an emergency. Police and fire departments would also receive emergency telephone numbers where they can contact North Baja 24 hours a day. North Baja would provide the appropriate training to local emergency service personnel before the pipeline is placed in service. No additional specialized local fire protection equipment would be required to handle pipeline emergencies. As a result of North Baja's coordination with local

emergency providers, the level of fire and police services would not be substantially diminished. North Baja has continued to coordinate with local police and fire departments during operation of the A-Line. The Winterhaven Fire Projection District and the Ehrenberg Fire Department submitted comments on the draft EIS/EIR in support of the Project and citing North Baja's commitment to safety. North Baja's continued coordination with local emergency providers would reduce the potential to impair implementation of or interference with any local adopted emergency response or evacuation plans.

4.14.5 Terrorism

In the aftermath of the terrorist attacks that occurred on September 11, 2001, terrorism has become a very real issue for the facilities under the FERC's jurisdiction. The FERC, like other Federal agencies, is faced with a dilemma in how much information can be offered to the public while still providing a significant level of protection to energy facilities. Consequently, the FERC has removed energy facility design plans and location information from its Internet website to ensure that sensitive information is not readily available (RM02-4-000 and PL02-1-000 issued February 20, 2003).

Since September 11, 2001, the FERC has been involved with other Federal agencies in developing a coordinated approach to protecting the energy facilities of the United States, and continues to coordinate with these agencies to address this issue. In addition, interstate natural gas companies are actively involved with several industry groups to chart how best to address security measures in the current environment. A Security Task Force has been created and is addressing ways to improve pipeline security practices, strengthen communication within the industry and the interface with government, and extend public outreach efforts.

Increased security awareness has occurred throughout the industry and the nation. The Office of Homeland Security was established with the mission of coordinating the efforts of all executive departments and agencies to detect, prepare for, prevent, protect against, respond to, and recover from terrorist attacks within the United States. The FERC, in cooperation with other Federal agencies and industry trade groups, has joined in the efforts to protect the energy infrastructure, including the approximately 300,000 miles of interstate natural gas transmission pipelines. The pipeline system would be inspected by air and on the ground in accordance with DOT surveillance requirements as discussed in Section 14.4.2. Security measures at the aboveground facilities would include secure fencing, locked buildings, security lighting, and automated alarm systems. Employees would be required to wear identification cards, and approved visitors would need to sign in and wear identification badges.

Safety and security are important considerations in any action undertaken by the FERC and the CSLC. The attacks of September 11, 2001 have changed the way pipeline operators as well as regulators must consider terrorism, both in approving new projects and in operating existing facilities. However, the likelihood of future attacks of terrorism or sabotage occurring along the proposed Project, or at any of the myriad of natural gas pipeline or energy facilities throughout the United States is unpredictable given the disparate motives and abilities of terrorist groups. The continuing need to construct facilities to support the future natural gas pipeline infrastructure is not diminished from the threat of any such future acts. Moreover, the unpredictable possibility of such acts does not support a finding that this particular Project should not be constructed.

4.14.6 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use

Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the potential impacts on public safety identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.

4.15 CUMULATIVE IMPACTS

Cumulative impacts may result when the environmental effects associated with a proposed project are superimposed on, or added to, either temporary (construction related) or permanent (operation related) impacts associated with past, present, or reasonably foreseeable future projects. Although the individual impact of each separate project may be minor, the additive or synergistic effects of multiple projects could be significant.

Existing environmental conditions in the Project area reflect changes based on past projects and activities. Much of the Project area is rural and relatively undeveloped. However, significant changes to portions of the Project area have resulted from activities related to agriculture, mining, water diversion, transportation projects, recreation, exotic species introductions, and residential/commercial development.

Table 4.15-1 lists present or reasonably foreseeable future projects or activities that may cumulatively or additively impact resources that would be affected by construction and operation of the North Baja Pipeline Expansion Project. Construction schedules of the future projects depend on factors such as economics, funding, and regulatory considerations. Projects and activities included in this analysis are generally those of comparable magnitude and nature of impact, and are located within the same counties that would be affected by the North Baja Pipeline Expansion Project. With some exceptions, more geographically distant projects are not assessed because their impact would generally be localized and, therefore, would not contribute significantly to cumulative impacts in the proposed Project area.

4.15.1 Geology and Soils

The facilities associated with the North Baja Pipeline Expansion Project are expected to have a temporary but direct impact on near-surface geology and soils. Impacts on geology and soils could lead to poor revegetation potential and indirectly affect wildlife and aquatic resources as a result of poor vegetative cover and increased erosion and sedimentation. The soil stabilization and revegetation requirements included in North Baja's CM&R Plan would prevent or minimize any indirect impacts. Because the direct effects would be highly localized and limited primarily to the period of construction, cumulative impacts on geology and soils would only occur if other projects are constructed at the same time and place as the proposed facilities. The construction of several of the projects listed in Table 4.15-1 would coincide with the schedule proposed for the North Baja Pipeline Expansion Project. Projects that require significant excavation or grading such as the Drop 2 Storage Reservoir Project, the landfill and mine expansions, and residential developments would also have temporary direct impacts on near-surface geology and soils. The additive impact of the North Baja Pipeline Expansion Project on most of these projects would be minimal because they would not occur within the same local vicinity. The Drop 2 Storage Reservoir Project, however, would be relatively close to the IID Lateral. While there would be the potential for cumulative impacts on geological resources and soils if the project was constructed concurrently with the IID Lateral, any cumulative impact on geology and soils would be minimized by the implementation of erosion control and restoration measures during the construction and restoration of the projects. Consequently, any potential cumulative impacts on geological resources and soils would be temporary and minor.

TABLE 4.15-1

Existing or Proposed Activities Cumulatively Affecting Resources of Concern for the North Baja Pipeline Expansion Project

Activity/Project	County	Description	Approximate Acres of Land Affected	Anticipated Construction Dates
Blythe Energy Project Phase II	Riverside	Expansion of electrical generation facilities	66.0	Unknown
Blythe Energy Project Transmission Line Modification	Riverside	Installation of 74.1 miles of 230-kilovolt transmission lines	174.0	2007
Palo Verde-Devers Transmission Line	Riverside	Installation of 230 miles of 500-kilovolt transmission lines	4,015.0	2009
Edgewater Lane Planned Residential Community	Riverside	Residential development including 46 single-family homes	Unknown	2007
All-American Canal Lining Project	Imperial	Install concrete canal lining	2,161.0	2007
Unit 3 Repower	Imperial	Expansion of electrical generation facilities	4.0	2009
Department of Homeland Security, INS Border Fence	Imperial	Construction of a fence along the Mexican border	Unknown	Unknown
Drop 2 Storage Reservoir Project	Imperial	Construction of a reservoir and canal	916.0	2007-2008
BLM ISDRA - expansion Buttercup Valley Recreation Area	Imperial	Establish a ranger station and improvements to campground	Unknown	2007
BLM ISDRA Area Closure maintenance	Imperial	Closures of recreational areas	Unknown	Annual
Mesquite Regional Landfill	Imperial	Construction of regional landfill	4,000.0	2007-2008
Imperial Project	Imperial	Open pit gold mine development	1,302.0	Unknown
Mesquite Mine Expansion	Imperial	Expansion of gold mining operations	142.0	Unknown
Felicity Development	Imperial	Residential development	2,345.0	Unknown
Las Ventanas	Imperial	Residential/commercial development including 1,040 single-family homes	304.0	Unknown
Esmeralda Estates	Imperial	Residential development including 293 single-family homes	80.0	2008
Rancho Diamante	Imperial	Residential/commercial development including 2,257 single-family homes and 1,944 multi-family units	1,350.0	2008
Los Lagos	Imperial	Residential/commercial development including 1,132 single-family homes	500.0	2008
Estrella Subdivision	Imperial	Residential development including 371 single-family homes and 400 multi-family units	150.0	2008
Gasoducto Bajanorte Expansion Project (Phase I) [a]	Mexico	Installation of compression, reconfiguration of an existing pipeline, and construction of a 45-mile-long pipeline lateral	Unknown	2007
Gasoducto Bajanorte Expansion Project (Phase II) [a]	Mexico	Installation of compression and construction of a 140-mile-long pipeline loop	Unknown	2009

[a] The Gasoducto Bajanorte Expansion Project would not be located within the same counties as the North Baja Pipeline Expansion Project; however, cumulative impacts could result if this project were to be constructed at the same time as North Baja's proposed Project, specifically cumulative impacts on air quality. However, based on the analysis in Section 4.15.8, no significant cumulative impacts on air quality would occur.

4.15.2 Waterbodies and Wetlands

The North Baja Pipeline Expansion Project would require the crossing of 2 perennial waterbodies, 73 irrigation canals and drains, and 265 dry washes. The proposed Project would not involve in-stream activities or the construction of permanent diversions or dams and, therefore, is expected to have only temporary impacts, if any, on surface water quality. With the exception of Rannells Drain that would be crossed by the B-line and two unnamed canals that would be crossed by the Arrowhead Extension, all flowing waterbodies would either be crossed via an HDD, a bore, or would be avoided by crossing culverted portions of the waterbodies; therefore, the potential for the North Baja Pipeline Expansion Project to cumulatively affect surface waters within the region is low. The greatest potential for impacts on waterbodies that would be crossed by the proposed Project is if a frac-out were to occur during one of the proposed HDD crossings. Runoff from construction activities near waterbodies could also result in cumulative impacts, although this effect would be relatively minor and would be controlled by implementation of erosion and sediment control measures and by compliance with Federal, State, and local requirements. Additionally, indirect economic impacts on individuals and/or communities could result if surface waters were to become contaminated and/or limitations were placed on the beneficial uses (e.g., potable water supply, recreation, and fishing) of the affected waters. However, the potential for contamination during the construction of the North Baja Pipeline Expansion Project would be minor due to the low frequency and volumes of these occurrences and would be further minimized by implementation of North Baja's SPCC Plan.

Several of the projects listed in Table 4.15-1 are located within the watersheds crossed by the North Baja Pipeline Expansion Project, and some of these projects (e.g., Edgewater residential development, the All-American Canal Lining Project, and the Drop 2 Storage Reservoir Project) could potentially result in impacts on surface waters; however, water quality impacts resulting from construction of the proposed Project, if any, would be temporary. The potential for a frac-out at the proposed waterbody crossings would be low according to North Baja's geotechnical studies and, with the exception of the Rannells Drain crossing, streambank disturbance would be avoided. Additionally, the potential for erosion and sedimentation resulting from the disturbance of areas adjacent to waterbodies in the Project area is low given the typically flat topography and arid climate of the Project area.

Although there is the potential that cumulative impacts could result if the North Baja Pipeline Expansion Project were constructed in addition to other projects listed in Table 4.15-1, the geographic extent and duration of disturbances caused by construction of the Project would be minimal and further minimized by the implementation of North Baja's Project-specific CM&R and SPCC Plans. Therefore, the collective effects of these projects on surface water resources are expected to be minor.

Impacts on wetlands would result from construction of the proposed Project and some of the other reasonably foreseeable future projects. Specifically, the All-American Canal Lining Project would impact wetlands by reducing or eliminating the water source for wetlands that depend on seepage from the currently unlined portions of the canal. In contrast, the North Baja Pipeline Expansion Project would not result in the permanent loss or alteration of wetlands. Wetlands affected by the proposed Project would be restored following construction, and based on the mitigation monitoring reports completed for the A-Line, the primarily tamarisk-dominated wetlands affected would revegetate within 2 to 3 years. Therefore, construction and operation of the North Baja Pipeline Expansion Project would not contribute to cumulative long-term impacts on wetlands within the region.

4.15.3 Vegetation, Wildlife and Habitat, and Aquatic Resources

When projects are constructed at the same time or close to the same time, they could have a cumulative impact on vegetation and wildlife occurring in the area. Right-of-way clearing and grading and other construction activities associated with the North Baja Pipeline Expansion Project along with

other construction projects, including the All-American Canal Lining Project, the Gasoducto Bajanorte Expansion Project, the Edgewater Lane Planned Residential Community, and the mining and landfill expansion projects would result in the removal of vegetation; alteration of wildlife habitat; displacement of wildlife; and other secondary effects such as increased population stress, predation, and the potential establishment of invasive plant species. These effects would be greatest where the other projects are constructed within the same time frame and area as the proposed Project and where the recovery time of the vegetation/habitat is equal to that of the Project (i.e., long term). Because of the long-term impacts that would occur as a result of clearing desert vegetation, the North Baja Pipeline Expansion Project, if constructed along with the other projects listed in Table 4.15-1, would result in cumulative impacts on vegetation and wildlife habitats. North Baja's proposal to overlap its right-of-way onto the previously disturbed construction right-of-way, which is subject to restoration requirements, limit new clearing in desert wash woodlands, and construct within the road shoulder along portions of the B-Line, the Arrowhead Extension, and the IID Lateral would minimize the areas of previously undisturbed vegetation that would be affected and thereby not contribute to additional cumulative impacts on vegetation and wildlife habitats. Implementation of North Baja's CM&R Plan would promote revegetation of the right-of-way following construction. Disturbance in areas of desert wash woodland and areas designated as desert tortoise habitat would require compensatory mitigation in addition to restoration of the right-of-way. Additionally, because the amount of vegetation/habitat affected would be small compared to that which is regionally available, and the entire right-of-way would be allowed to return to preconstruction conditions, any cumulative impact may be long term but would be less than significant.

The projects listed in Table 4.15-1 that are linear in nature have the greatest potential to fragment wildlife habitat; however, this effect would be minimal because most of these projects (e.g., the All-American Canal Lining project, and the Gasoducto Bajanorte Expansion Project) would be adjacent to existing linear facilities and would only incrementally widen existing corridors. Similarly, many of the non-linear projects (i.e., the Drop 2 Storage Reservoir Project and the mine and landfill expansions), would occur within or adjacent to previously disturbed locations and only incrementally increase the extent of disturbance. Potential habitat fragmentation resulting from the proposed Project would be minimal because the areas would be allowed to return to pre-existing conditions although, in the case of desert habitats, this would occur over the long term. All of the projects would implement mitigation measures designed to minimize the potential for long-term erosion, increase the stability of site conditions, and in many cases control the spread of noxious weeds, thereby minimizing the degree and duration of the cumulative impacts of these projects.

Construction of the North Baja Pipeline Expansion Project at the same time as other projects listed in Table 4.15-1 that would affect waterbodies could cause cumulative impacts on aquatic resources within the Project area. The crossing of the Colorado River has the greatest potential to affect aquatic resources because it is the only waterbody with a designated fishery that would be affected by the Project. Because the river would be crossed using the HDD method, impacts are not expected to occur. As previously noted, the potential for a frac-out at the Colorado River crossing location would be low and impacts resulting from a frac-out, should one occur, would be minimized by the implementation of North Baja's HDD Plan. The duration of any disturbances caused by construction of the North Baja Pipeline Expansion Project would be minimal and further minimized by the implementation North Baja's CM&R, SPCC, and HDD Plans in addition to any conditions required by the COE and CDFG as part of their respective permit approvals. Additionally, none of the projects listed in Table 4.15-1 would involve direct in-stream impacts on the Colorado River.

Animal and plant species that are federally and/or State-listed threatened and endangered species and their critical habitat would be affected by the North Baja Pipeline Expansion Project. Cumulative impacts on these species could result if other foreseeable future projects would also affect the same species or their habitats. However, conservation measures would likely be required for each of these

projects by the jurisdictional agencies to minimize potential impacts on federally and State-listed species. Additionally, conservation measures may be recommended for candidate species and species of concern. Conservation measures would be project-specific and would be expected to reduce impacts such that the projects would not adversely affect the majority of special status species or would not jeopardize the continued existence of a species or cause the adverse modification of critical habitat. However, the Agency Staffs have determined that two species, the desert tortoise and Peirson's milk-vetch, as well as critical habitat for the desert tortoise, would be likely adversely affected by the Project (see Section 4.7) and would result in cumulative impacts on a special status species if other projects listed in Table 4.15-1 would also occur within desert habitats that support these species.

4.15.4 Land Use, Special Management Areas, Recreation and Public Interest Areas, and Aesthetic Resources

The proposed Project and several other foreseeable future projects would result in both temporary and permanent changes to current land uses. Much of the land that would be disturbed by construction is open land. The facilities associated with the North Baja Pipeline Expansion Project would temporarily disturb about 1,760.5 acres of land of which 69 percent would be open land, 25 percent would be developed land, and 6 percent would be agricultural land. The All-American Lining Project, Drop 2 Storage Reservoir Project, and mining and landfill expansion projects listed in Table 4.15-1 would disturb hundreds of additional acres of land affecting a variety of land uses. The residential development projects proposed for Imperial County would primarily affect farmlands. While most of these projects would have permanent impacts on land uses, the majority of land use impacts associated with the North Baja Pipeline Expansion Project would be temporary, as most land uses would be allowed to revert to prior uses following construction. Permanent impacts on land use would be small because 94 percent of the land affected by construction of the pipeline facilities would be allowed to revert to prior uses following construction with no restrictions and only 2.0 acres of additional land would be required for the operation of aboveground facilities.

The proposed Project, if built at the same time as other foreseeable future projects, could result in cumulative impacts on recreational and public interest areas if these projects would affect the same area or feature (e.g., trails) at the same time. The proposed pipeline facilities would cross 11 recreation or public interest areas and would be adjacent to several others. However, because the North Baja Pipeline Expansion Project would be constructed primarily within or adjacent to existing rights-of-way and would not substantially affect the current land uses, most Project-related impacts would be short term, often lasting only for the duration of construction through that area, after which the area would be restored to its preconstruction condition.

The visual character of the existing landscape is defined by historic and current land uses such as agricultural, recreation, conservation, and development. The visual qualities of the landscape are further influenced by existing linear installations such as highways, railroads, pipelines, and electrical transmission and distribution lines. Within this context, the proposed meter stations, valves, and other aboveground facilities would have the most visual impact, while the pipeline portion of the proposed Project would be visually subordinate to the existing landscape character and would contribute only incrementally to overall visual conditions, particularly after completion of reclamation and the re-establishment of vegetation. However, the majority of the Project would affect desert vegetation where the impact would be greater because it would take many years to regenerate. Of the projects listed in Table 4.15-1, the electrical generation facility, mines and landfill expansions, and the residential subdivisions would have the most impact on visual resources in the area. Because 99 percent of the proposed Project would be located within or adjacent to existing rights-of-way, the visual impact would be minimal. Additionally, the majority of the proposed aboveground facilities would be collocated with other aboveground facilities. This collocation would lessen the visual impact of the aboveground facilities because their presence would be consistent with the current viewshed in the area. The

aboveground facilities that would not be collocated with existing facilities would be painted to blend with the surrounding landscape. Therefore, the proposed Project would not significantly contribute to cumulative effects on visual resources.

4.15.5 Socioeconomics

Present and reasonably foreseeable future projects and activities could cumulatively impact socioeconomic conditions in the Project area. Employment, housing, infrastructure, and public services could experience both beneficial and detrimental impacts.

Economy and Employment

The projects considered in this section would have cumulative effects on employment during construction if more than one project is built at the same time. The North Baja Pipeline Expansion Project expects to employ up to 400 workers during the peak construction months for the B-Line but would be considerably less during other phases of construction. North Baja estimates that 25 percent of its construction workforce would be local hires. If the larger projects, such as the All-American Canal Lining Project, landfill and mine expansions, and residential development projects are built simultaneously, the demand for workers could exceed the local supply of appropriately skilled labor. The counties affected by the Project have a civilian labor force of about 2,230,030 people and an average unemployment rate of 6.5 percent. This suggests that the local labor force could meet much of the employment needs induced by construction of these projects, although it is unknown whether a sufficient number of these unemployed persons have the necessary skills to work on these projects. Therefore, if these projects are constructed at the same time, the demand for local workers may exceed supply. It is assumed that the remainder of the employment positions would be filled by non-local hires. Because North Baja currently operates pipeline facilities in the area, no additional permanent employees would be required.

In addition to impacts on local employment, these projects would provide an increase in tax revenue for California, the counties, and other local economies through the payment of payroll tax, sales tax, property tax, and other taxes and fees. As discussed in Section 4.9.6, the estimated payroll for the proposed North Baja Pipeline Expansion Project would be $50 million during the construction phase and the annual property taxes are anticipated to be $3.4 million. A similar net increase in payroll and tax revenues could be expected from the other projects listed in Table 4.15-1. The proposed Project would have both short- and long-term beneficial impacts on State, county, and local economies.

Temporary Housing

Temporary housing for the construction workers would be needed for the portion of the workforce not drawn from the local area. For the proposed North Baja Pipeline Expansion Project, it is estimated that a maximum of 320 housing units would be needed per month to accommodate the non-resident construction workforce. Given the vacancy rates, the number of rental housing units in the area, and the number of hotel/motel rooms and campgrounds available in the cities and towns in the vicinity of the Project, construction crews should not encounter difficulty in finding temporary housing. If construction occurs concurrently with other projects, temporary housing would still be available but may be slightly more difficult to find and/or more expensive to secure. Regardless, these effects would be temporary, lasting only for the duration of construction, and there would be no long-term cumulative effect on housing from the proposed Project.

Public Services

The cumulative impact of the North Baja Pipeline Expansion Project and the other projects listed in Table 4.15-1 on infrastructure and public services would depend on the number of projects under

construction at one time. The small incremental demands of several projects occurring at the same time could become difficult for police, fire, and emergency service personnel to address. This problem would be temporary, occur only for the length of construction, and could be mitigated by the various project sponsors providing their own personnel to augment the local capability or by providing additional funds or training for local personnel. Two fire departments within the Project area, the Winterhaven Fire Protection District and the Ehrenberg Fire Department, submitted comments in support of the Project. No long-term cumulative effect on infrastructure and public services is anticipated from the proposed Project.

4.15.6 Transportation and Traffic

Where installation of the proposed Project occurs at road crossings, road traffic could be temporarily disrupted or delayed. The transportation system in the three counties where the proposed facilities would be constructed is well developed. Construction activities could disrupt traffic flow, and result in cumulative impacts on traffic in the Project area if several projects are being constructed at once. North Baja developed Traffic Management Plans for 18th Avenue in Riverside County and for Imperial County roadways (see Appendix H) to mitigate impacts associated with construction along road shoulders. In Section 4.10.2, the Agency Staffs have recommended that North Baja develop a Traffic Management Plan for Arrowhead Boulevard. Other major roads and highways would be bored and construction would not affect traffic. The addition of traffic associated with construction personnel commuting to and from the Project sites could affect traffic congestion in the region if several of the projects listed in Table 4.15-1 would occur within the same time frame. However, workers associated with the North Baja Pipeline Expansion Project would commute to and from the pipe storage and contractor yards or aboveground facility sites during off-peak traffic hours (e.g., before 7:00 AM and after 6:00 PM). Workers traveling between the pipe storage and contractor yards and the construction site would likely share rides. Moreover, it is unlikely that each project would reach peak traffic conditions simultaneously; therefore, potential cumulative impacts on traffic from construction, should they occur, are expected to be temporary and short term. In its comments on the draft EIS/EIR, the BOR noted that the construction schedule of the IID Lateral has the potential to coincide with the BOR's Drop 2 Storage Reservoir Project. Because these two projects would be within close proximity to one another, the construction of North Baja Pipeline Expansion Project at the same time as the Drop 2 Storage Reservoir Project would result in cumulative impacts on traffic congestion. To avoid or reduce potential traffic impacts, North Baja would continue to coordinate activities associated with construction of the IID Lateral with the BLM and the BOR. Once construction of the proposed Project is complete, there would be no impacts on traffic from operation or maintenance of the facilities.

4.15.7 Cultural Resources

Past disturbances to cultural resources sites in the Project area have been related to legal collecting; accidental disturbance by OHV users; intentional destruction or vandalism; and construction and maintenance operations associated with existing roads, railroads, and transmission lines, including North Baja's existing A-Line. The currently proposed projects listed in Table 4.15-1 that are defined as Federal actions would include mitigation measures designed to avoid or minimize additional direct impacts on cultural resources. Where direct impacts on significant cultural resources are unavoidable, mitigation (e.g., recovery and curation of materials) would occur before construction. Non-Federal actions would need to comply with any mitigation measures required by the State. Increased access by rights-of-way and service roads would increase the potential for trespass or vandalism at previously inaccessible sites. However, to minimize the potential for the pipeline rights-of-way to increase accessibility for OHV use into previously inaccessible, environmentally sensitive areas, North Baja would implement various blocking measures where it has been determined that such measures may be effective in discouraging OHV use (see Section 4.8.5). In addition, North Baja would mitigate impacts on unevaluated sites and sites that are eligible for listing on the NRHP by the use of avoidance measures (including installation of exclusion fencing), construction monitors, narrowing of the right-of-way, and/or

data recovery. Therefore, the proposed Project would only incrementally contribute to the effects of the other projects and would not result in significant cumulative impacts on cultural resources in the area.

4.15.8 Air Quality

The North Baja Pipeline Expansion Project and the projects listed in Table 4.15-1 would all involve the use of heavy equipment that would generate emissions of air contaminants and fugitive dust. The majority of these impacts would be minimized because the construction activities would occur over a large geographical area. Any air impacts would be localized and confined primarily to the airsheds in which the projects occur. Cumulative impacts on air quality, therefore, would be limited primarily to areas where more than one project is proposed within the same airshed and would be constructed simultaneously. Several projects, primarily industrial and housing development projects, are planned in the vicinity of the Project and may be constructed within the same time frame. These effects could temporarily add to the ongoing effects from agricultural activities, traffic, and OHV use in the Project area. Mitigation measures similar to those outlined in Section 4.12.4 for the proposed Project would likely be required for these other projects. Because the projects listed in Table 4.15-1 would take place over a large area; have varying construction schedules; and adhere to Federal, State, and local regulations for the protection of ambient air quality, long-term cumulative impacts on air quality would not be anticipated. Additionally, because no additional compression would be installed as part of the North Baja Pipeline Expansion Project, the proposed Project would not add any stationary or permanent sources of NO_x, CO, VOC, PM_{10}, $PM_{2.5}$, or SO_2 to the environment; therefore, operation of the North Baja Pipeline Expansion Project would not contribute cumulatively to air quality. In their comments on the draft EIS/EIR, the EPA, the SCAQMD, the ICAPCD, and the Border Power Plant Working Group indicated that the Agency Staffs' definition of the proposed Project is too limited in focus. Sections 1.1, 1.4, and 4.12 have been revised to include additional information supporting the Agency Staffs' Project definition and cumulative impacts evaluation.

The North Baja Pipeline Expansion Project is not proposed to serve any new, modified, or expanded power plants in the Project area. However, it could be speculated that in the future the Project could transport gas for new or expanded power plants; therefore, the Project could result in a cumulative impact on the region's air quality. Any new projects, including modification of existing facilities, would have to meet applicable air quality standards of the regions where they are located.

As discussed in Section 1.4.1, Sempra's existing Gasoducto Bajanorte pipeline would be expanded in coordination with North Baja's phased expansion. The Gasoducto Bajanorte pipeline, which currently takes gas from the North Baja system at the U.S.-Mexico border and moves it west, would be reconfigured to move gas in the opposite direction, similar to the reconfiguration of the North Baja system that would occur during Phase I. Transport of the initial volumes of LNG-source gas would also require the construction of a 45-mile-long pipeline lateral from the ECA terminal to connect to the Gasoducto Bajanorte pipeline and a new compressor station (Algodones Compressor Station) on the Gasoducto Bajanorte pipeline. This compressor station would be constructed about 2.5 miles south of the California-Mexico border and 3 miles west of the Arizona-Mexico border in the State of Baja California del Norte just southwest of the border town of Algodones. All of the permits have been obtained for the construction of the lateral, the reconfiguration of the Gasoducto Bajanorte pipeline, and the construction of the Algodones Compressor Station, which are planned for completion in late 2007.

The capacity of the Gasoducto Bajanorte pipeline system would similarly be expanded in coordination with North Baja's Phase II expansion. Up to 100 percent looping of the Gasoducto Bajanorte pipeline and additional compression would be required, both at the Algodones Compressor Station and at a new compressor station near Mexicali (Mexicali Compressor Station). These facilities would be constructed in 2009 to be operational by 2010. These facilities are shown on Figure 1.4-1.

Because of the proximity of the proposed compressor stations in Mexico, the potential exists for operating emissions to affect air quality in the United States, specifically in the Imperial Valley portion of Imperial County. The cumulative impacts are described below by project phase.

Phase I Air Quality Impacts – Algodones Compressor Station

Sempra would install two 15,000 horsepower (hp) combustion turbines at the Algodones Compressor Station for a total of 30,000 hp of compression. However, only one 15,000-hp turbine would be operated at a time; the other turbine would be kept on reserve and rotated in and out of service. Using data provided by the turbine manufacturer and the operational data provided by Sempra, the emissions from one 15,000-hp turbine were modeled to determine the impact on nearby receptor locations. The EPA's ISCST3 dispersion model with the default regulatory options and 5 years of representative meteorological data from Yuma, Arizona provided by the ADEQ were used. Table 4.15.8-1 presents a summary of the modeling analysis results at the maximally impacted receptor in the vicinity of the U.S.-Mexico border from one turbine. The data in Table 4.15.8-1 indicate that emissions from the Algodones Compressor Station would result in impacts below Federal significant impact levels and the U.S. and California State standards.

TABLE 4.15.8-1

Phase I Algodones Compressor Station Impacts [a]

Pollutant	Averaging Period	Background ($\mu g/m^3$)	Modeled Impact ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	Federal/State Standards ($\mu g/m^3$) [b]	Is Standard Currently Exceeded?
NO_2	1 hour	355	2.625	NA	NS/470	No
	Annual AM	25	.044	1	100/NS	No
CO	1 hour	-	3.748	2000	40,000/23,000	No
	8 hour	9,478	1.325	500	10,000/10,000	No
PM_{10}	24 hour	509	.083	5	150/50	Yes [c]
	Annual AM	80	.007	1	NS/20	Yes [c]
$PM_{2.5}$ [d]	24 Hour	51.4	.083	5	35/NS	Yes [c]
	Annual	11.9	.007	1	15/12	No
SO_2	1 hour	-	.017	NA	655/NS	No
	3 hour	-	.015	25	1,300/NS	No
	24 hour	8	.003	5	365/105	No
	Annual AM	-	<.001	1	80/NS	No

$\mu g/m^3$ = micrograms per cubic meter
NO_2 = nitrogen dioxide
AM = arithmetic mean
CO = carbon monoxide
PM_{10} = particulate matter having an aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$ = particulate matter having an aerodynamic diameter less than or equal to 2.5 microns
SO_2 = sulfur dioxide

[a] Modeled impacts are at a location in the vicinity of the U.S.-Mexico border, which is approximately 4 kilometers (4,000 meters or 13,100 feet) from the compressor station site. Only one of the two proposed turbines would operate at any single time (i.e., the cumulative run time for both turbines would not exceed 8,760 hours per year, and two turbines would not run simultaneously.)

[b] Federal standard/State standard. NS = no standard.

[c] The Algodones Compressor Station's incremental impact does not exceed the applicable Significant Impact Level and is well below 0.5 percent of the applicable Federal and/or State standards; therefore, it would not significantly impact the existing nonattainment area.

[d] $PM_{2.5}$ emissions from the turbine were assumed to equal emissions of PM_{10} per particulate matter specification profiles from the California Air Resources Board.

It should be noted that the $PM_{10}/PM_{2.5}$ impacts from the turbine would be insignificant (i.e., below the significant levels for PSD Class II areas[11] of 5 micrograms per cubic meter ($\mu g/m^3$) on a 24-hour basis, and 1 $\mu g/m^3$ on an annual basis) and they are also below the significant monitoring concentration levels for PM_{10} of 10 $\mu g/m^3$ on a 24-hour basis. However, a portion of Imperial County that is within the Project area (specifically the Imperial Valley) is nonattainment for PM_{10} and unclassified for $PM_{2.5}$, primarily due to ambient concentrations of windblown dust, not due to ambient concentrations of $PM_{10}/PM_{2.5}$ from combustion sources.

Phase II Air Quality Impacts – Algodones and Mexicali Compressor Stations

Sempra has not yet signed precedent agreements with all of the potential shippers in Phase II and, therefore, has not developed design details for its Phase II expansion. Sempra has indicated to North Baja, however, that the following design assumptions would be applicable for purposes of analyzing the potential cumulative impacts of the future compression additions on the Sempra system as follows:

- The Mexicali Compressor Station would be located on or adjacent immediately to the existing facilities (i.e., either the La Rosita Power Complex [LRPC] or the Termoelectrica de Mexicali Power Plant [TDM Plant]).

- The horsepower needed at the Mexicali Compressor Station would be approximately 75,000, while the required horsepower proposed for the Algodones Compression Station would be approximately 116,000 (of which approximately 15,000 hp would be contributed by the two turbines [with one compressor in continual reserve] already proposed for Phase I, which would leave an additional need at the site of approximately 100,000 hp).

- The turbines would be equipped with the following emissions control technologies:

  - installation and operation of low-NO_x combustors;
  - good combustion practices (e.g., measurement and control of air flow, optimizing air/fuel ratios, etc.) would be implemented to reduce emissions of CO and VOC; and
  - clean fuels (natural gas) would be used to reduce emissions of PM_{10} and $PM_{2.5}$.

If the new turbines would be located near the existing power plants west of Mexicali, the result would be the mixing of the new exhaust plumes with the existing plumes at the existing sites. A complete and rapid mixing of the plumes allows for the characterization of new impacts using the modeling scenarios established in the previous Imperial-Mexicali 230kV Transmission Lines (Imperial-Mexicali) final EIS (DOE 2004). This was accomplished assuming that the resulting downwind impacts would be directly proportional to emissions levels. Table 4.15.8-2 shows the predicted concentrations at the maximally impacted receptor in the vicinity of the U.S.-Mexico border resulting from both the LRPC and TDM Plant emissions as documented in Table 4.3-6 of the Imperial-Mexicali final EIS (DOE 2004). These estimated impacts are based on the power plants emitting at the proposed maximum rates and are conservative.

[11] All areas not classified as a Federal Class I area are classified as a Class II area in accordance with section 162(b) of the Clean Air Act.

TABLE 4.15.8-2

LRPC and TDM Plant Estimated Impacts

Pollutant	Average Period	Impact at Maximum U.S. Receptor ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
CO w/o catalyst	8 Hour	7.67	500	40,000
CO w/catalyst	8 Hour	1.09	500	40,000
NO_2	1 Hour	6.41	NA	NA
$PM_{10}/PM_{2.5}$	24 Hour	4.07/4.07	5/5	150/65

$\mu g/m^3$ = micrograms per cubic meter
NO_2 = nitrogen dioxide
CO = carbon monoxide
PM_{10} = particulate matter having an aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$ = particulate matter having an aerodynamic diameter less than or equal to 2.5 microns
NAAQS = National Ambient Air Quality Standards

Table 4.15.8-3 shows the cumulative totals of emissions from the Mexicali Compressor Station added to the LRPC and TDM Plant, and emissions associated with the Phase I/Phase II Algodones Compressor Station.

TABLE 4.15.8-3

Cumulative Estimated Emissions by Site

Pollutant	LRPC and TDM Plant (tpy)	LRPC, TDM Plant, and Mexicali Compressor Station (tpy)	Algodones Compressor Station Phase I and Phase II (tpy)
NO_x	608	842	355.7
CO	3,089	3,383	442.1
VOC	1,069	1,080.0	16.4
SO_x	30	31.5	2.5
$PM_{10}/PM_{2.5}$	1,208/1,208	1,247.4/1,247.4	60.6/60.6

tpy = tons per year
NO_x = nitrogen oxides
CO = carbon monoxide
VOC = volatile organic compounds
SO_x = sulfur oxides
PM_{10} = particulate matter having an aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$ = particulate matter having an aerodynamic diameter less than or equal to 2.5 microns

Table 4.15.8-4 shows the resultant scaled ambient air quality impacts at the maximally impacted receptor location in the vicinity of the U.S.-Mexico border, considering the addition of the Mexicali Compressor Station emissions and the Phase I/II impacts at the Algodones Compressor Station for the same scenarios.

TABLE 4.15.8-4

Resultant Estimated Impacts at Maximum U.S. Receptor Locations

Pollutant	Average Time	LRPC, TDM Plant, and Mexicali Compressor Station ($\mu g/m^3$)	Algodones Compressor Station Phase I and Phase II ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
CO	8 Hour	8.40	3.56	500	40,000
NO_2	1 Hour	8.88	7.88	NA	NA
$PM_{10}/PM_{2.5}$	24 Hour	4.2/4.2	0.28/0.28	5/5	150/65

$\mu g/m^3$ = micrograms per cubic meter
NO_2 = nitrogen dioxide
CO = carbon monoxide
PM_{10} = particulate matter having an aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$ = particulate matter having an aerodynamic diameter less than or equal to 2.5 microns
NAAQS = National Ambient Air Quality Standards

As shown in Table 4.15.8-4, no emitted pollutants at the Mexicali or Algodones Compressor Station sites would result in a predicted concentration above an established Significant Impact Level at the maximally impacted receptor located in the vicinity of the U.S.-Mexico border.

The Algodones Compressor Station emissions were not included with the LRPC and TDM Plant and Mexicali Compressor Station site emissions for purposes of modeling the cumulative impacts due to the following:

- the Algodones Compressor Station would be approximately 50+ miles (80+ kilometers) from the LRPC and TDM Plant sites;
- the generally accepted distance limitations of the ISCST3 dispersion model[12] is 31 miles or 50 kilometers; therefore, application of the model at distances greater than 50 kilometers would produce questionable results; and
- the cumulative impact of emissions from the Algodones Compressor Station on the LRPC/TDM Plant impact area, or vice versa, would be minimal considering the previous modeling performed for the LRPC/TDM Plant, and the recent modeling performed for the Algodones Compressor Station, which were conducted using the ISCST3 model, predicted concentrations below the established Significant Impact Levels within a few kilometers of the individual plant sites.

In addition, SO_2 emissions were not evaluated in the cumulative impacts analysis due to the following:

- emissions of SO_2 from all of the plants involved would not cumulatively add up to a value that exceeds the NSR or PSD major source threshold values;
- each individual plant site has SO_2 emissions that are considered minor;
- the previous Imperial-Mexicali final EIS (DOE 2004) analysis of emissions from the LRPC and TDM Plant only considered impacts from NO_2, PM_{10}, and CO, with no

[12] At the time the analysis was conducted, the EPA's ISCST3 was the preferred dispersion model for SIP revisions to existing sources and for NSR and PSD programs. While other air dispersion models are now currently available, the ISCST3 model is still deemed to be acceptable for this analysis.

modeling data presented for SO_2; therefore, it was not included in the cumulative impacts analysis; and

- SO_2 impact data are presented for the Algodones Compressor Station (Phase I) in Table 4.15.8-1. The predicted ambient concentrations of SO_2 were so low that impacts for the Algodones Compressor Station (Phase II) were not predicted based on the assumption that modeled ambient concentrations are directly proportional to emissions, and the SO_2 emissions at the Algodones Compressor Station only increased by approximately 1.87 tpy, which if scaled from the Phase I impacts would not result in any SO_2 standard or Significant Impact Level to be exceeded.

Based on the above preliminary analysis, it is unlikely that emissions from the proposed future compressor stations would result in any significant cumulative ambient air quality impacts at receptors in the vicinity of or across the U.S. border.

Air Toxics Emissions and Health Risk Impacts

A Health Risk Assessment was conducted to determine the potential impacts of the toxic air pollutants emitted by the existing power plants and proposed compressor stations. The analysis also includes the LRPC and TDM Plant.

Tables H-1 and H-2 of the Imperial-Mexicali final EIS (DOE 2004) indicate that the total Hazardous Air Pollutants (HAPs) emissions from the LRPC and TDM Plant are 35.2 and 9.9 tpy, respectively. Estimated HAPs emissions for the future compressors at the Mexicali Compressor Station and for the compressors at the Algodones Compressor Station would be 3.03 tpy and 4.03 tpy, respectively. Assuming that the risks at the maximally impacted receptor are directly proportional to emissions, and keeping all the modeling and risk assessment parameters constant to those used in the HAPs risk assessment modeling undertaken in the Imperial-Mexicali FEIS, the changes in risk can be directly calculated via the ratio of known emissions and known risks to expected future emissions. Table 4.15.8-5 presents the resultant scaled risk values subsequent to addition of the future compressor emissions.

TABLE 4.15.8-5

Existing and Future Potential Risks

Facility	Cancer Risk per Million [a]	Chronic Hazard Index [b]	Acute Hazard Index [c]
Existing LRPC	0.54	0.002	0.02
Existing TDM Plant	0.06	0.0007	0.007
Algodones Compressor Station (Phase I)	0.008	0.0002	0.0005
LRPC and Mexicali Compressor Station	0.59	0.0022	0.022
TDM Plant and Mexicali Compressor Station	0.078	0.0009	0.009
Algodones Compressor Station (Phase II)	0.062	0.0015	0.004
Significance Threshold	1.0	1.0	1.0
SCAQMD Threshold	0.5	0.5	0.5

[a] Average risk values per Table H-6, Imperial-Mexicali final EIS (DOE 2004).

[b] Chronic hazard results from long-term exposure.

[c] Acute hazard results from short-term exposure.

As shown in Table 4.15.8-5, the average cancer risks, as well as the chronic and acute hazard indexes, would be well below the established significance thresholds used by California air districts. In addition, the future chronic and acute hazard indexes would also be well below the more stringent thresholds set by the SCAQMD for these evaluations at a level of 0.5. Therefore, the cumulative risks associated with the emissions from the existing power plants and the future compressor stations would be considered less than significant.

A comment was received requesting the identification of air impacts resulting from the total number of power plants and future development projects that could be constructed within the Southeast Desert Air Basin (SEDAB) and evaluation of the potential long-term air quality deterioration and possible human health impacts. Table 4.15-1 contains all "reasonably foreseeable future projects" within the SEDAB. Section 15144 of the State CEQA Guidelines states, in part, "While foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can."

4.15.9 Noise

Because the impact of noise is highly localized and attenuates quickly as the distance from the noise source increases, cumulative impacts associated with construction or operation would be unlikely unless one or more of the projects listed in Table 4.15-1 is constructed at the same time in the same location. However, even short-term additional noise during construction could, for example, create enough disturbance to nesting birds or breeding toads to constitute a potential adverse impact. Although the Project could result in cumulative noise impacts if other projects listed in Table 4.15-1 would be constructed within the same time frame and vicinity, the majority of these impacts would be limited to the period of construction.

4.15.10 Reliability and Safety

Impact on reliability and public safety would be mitigated through the use of the DOT Minimum Federal Safety Standards in Title 49 CFR Part 192 and the CPUC, General Order 112-E., which are intended to protect the public and to prevent natural gas facility accidents and failures. In addition, North Baja's construction contractors would be required to comply with the OSHA Safety and Health Regulations for Construction in Title 29 CFR Part 1926. Should a pipeline failure occur on the A-Line and the B-Line simultaneously, the PIR would fall within the PIR footprint of a failure of the proposed B-Line; therefore, the close proximity of the A-Line to the B-Line would not result in a cumulative impact on the PIR calculated for the Project. No cumulative impacts on safety and reliability would be anticipated to occur.

4.15.11 Environmental Justice

As discussed in Section 4.17, some communities within the PIR of the Project have low-income and minority populations compared to the affected counties as a whole. As a result, there is a potential for these populations to bear a disproportionate share of an adverse impact. However, none of the potential impacts of the Project that could affect environmental justice issues are considered significant. Therefore, the Project would neither result in a disproportionately high and adverse effect or impact on minority or low-income populations nor contribute to a cumulative impact on these populations.

4.15.12 Conclusion

The majority of cumulative impacts would be temporary and minor. However, long-term cumulative impacts would occur on vegetation, wildlife habitat, and special status species. Long-term

cumulative benefits would be realized from the boost to the local economy associated with tax revenues. Short-term cumulative benefits would also be realized through jobs and wages and purchases of goods and materials.

4.15.13 No Project Alternative

Under the No Project Alternative, no resources as discussed in each section would be affected; therefore, no cumulative impacts would result from this alternative.

4.16 GROWTH-INDUCING IMPACTS

The CEQA requires the consideration and discussion in an EIR of the growth-inducing impact of a proposed project. NEPA does not have a similar requirement. As specified in sections 15126.2 (d) of the State CEQA Guidelines, an EIR shall:

Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristics of some projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Most development projects could induce growth in the area in which they are located. The following six criteria are used as a guide to evaluating the growth-inducing potential for the proposed Project.

1. Would the North Baja Pipeline Expansion Project foster growth or remove obstacles to economic or population growth?

The Project area is already served by various fuel supplies and economic activity is already taking place. The demand for energy and the proposed pipeline and Blythe connection are a result of, rather than a precursor to, development in this region. The region is currently undergoing significant growth and while there is no evidence at this time that the growth is being constrained by the lack of energy availability, the IID's Unit 3 Repower Project would increase its generating capacity by 84 megawatts, from 44 megawatts to 128 megawatts. Although it is recognized that the availability of a new or an alternative source of natural gas may be a contributing factor in stimulating economic and population growth and could result in the construction of additional power infrastructure, the power plant that the Project would serve is not solely dependent on the supply from the proposed Project. However, to the extent that the IID's Unit 3 Repower Project would diversify its suppliers of natural gas, the additional gas supplied by the proposed Project could be a growth-inducing impact. Local factors that could also influence or restrict growth include availability of infrastructure, such as roads and sewer connections, and availability of water.

2. Would the Project provide new employment?

It is anticipated that the proposed North Baja Pipeline Expansion Project would provide temporary employment for between 300 and 400 construction workers during the peak construction period. North Baja does not anticipate adding permanent staff to handle Project operations.

3. Would the Project provide new access to undeveloped or under developed areas?

The Project would require the creation of only two new permanent roads (totaling less than 0.1 mile). These roads would be used to gain access to the Blythe-Arrowhead Meter Station and pig receiver at the end of the Arrowhead Extension and the tap to the B-Line and pig launcher at the beginning of the IID Lateral. North Baja would use either new temporary access roads or existing access roads to access

the remainder of the Project. North Baja would implement OHV controls such as soil or rock berms and salvaged vegetation to prevent OHV use in environmentally sensitive areas.

4. Would the Project extend public service to a previously unserved area?

The Project would not extend public service to areas currently unserved by natural gas. The primary result of the North Baja Pipeline Expansion Project would be to meet increased energy demands from existing customers and to provide an alternate supply of natural gas to an existing power plant.

5. Would the Project tax existing community services?

The number of non-local workers would be small relative to current populations in the Project area and local communities have adequate infrastructure and community services to meet the needs of these non-local workers.

6. Would the Project cause development elsewhere?

As stated above, the power plant that would be served by the North Baja Pipeline Expansion Project is not solely dependent on the Project for an energy source. Therefore, the addition or absence of the gas supply from the proposed Project would not affect development. The Project is being proposed to meet existing energy needs and is not dependent upon future power plant expansions. However, the Project would link markets in southern California and other areas of the Southwest with an alternative source of natural gas.

During the scoping process, a comment was received from the EPA requesting that the growth and resulting impacts attributable to the IID Lateral be addressed. The IID Lateral would provide an alternate source of natural gas to the El Centro Generating Station and would have additional capacity that could support future expansions of the station. As discussed in Section 1.4.1, the IID has proposed an expansion at the station (the Unit 3 Repower) to serve the growing electrical load demands of the region. The El Centro Generating Station could be further expanded if and when IID determines that the electrical needs within its service territory have grown or will grow sufficiently to need additional generation.

While the Project is not associated with or dependent upon any specific expansions of power generation facilities or other industrial or residential developments, the availability of an alternative source of natural gas to the region could affect economic growth by exerting downward pressure on natural gas prices, by increasing competition among gas-producing regions. Lower or stable natural gas pricing could, in combination with other factors, either contribute to a positive economic climate conducive to growth, or moderate a scenario where higher gas prices may inhibit growth.

If the North Baja Pipeline Expansion Project is constructed, additional pipeline capacity would be available, which could potentially accommodate future projected growth in the Southwest and southern California regions. For this additional pipeline capacity to be fully utilized, the capacity of the Gasoducto Bajanorte pipeline would need to be doubled by looping the pipeline and adding compression. However, there is no evidence that the growth projected for the regions would be constrained by any assumed lack of availability of natural gas. Therefore, although the Project could support the projected growth, the growth could occur whether or not the Project is constructed.

Summary

The potential growth-inducing impact of the North Baja Pipeline Expansion Project would be the delivery of an alternative or additional source of natural gas to existing natural gas users as described in Section 1.1. Providing an alternate fuel supply could lead to a positive economic environment conducive to growth or prevent increases in energy costs that might restrict growth. The existing power plant that would be supplied by the North Baja Pipeline Expansion Project (i.e., the IID El Centro Generating Station) would not be solely dependent on the gas supplied by the Project. Potential infrastructure growth might occur with or without the construction of the pipeline and thus would not be attributable to the proposed Project. However, to the extent that the IID Unit 3 Repower Project would diversify its suppliers of natural gas, the additional gas supplied by the proposed Project could be a growth-inducing impact.

4.17 ENVIRONMENTAL JUSTICE

Environmental justice is concerned with the question of whether a proposed project would expose minority or disadvantaged populations to proportionately greater risks or impacts compared to those borne by other individuals. This section identifies populations with a relatively high representation of minority or low-income status and evaluates whether the proposed Project would result in significant adverse effects that disproportionately affect identified minority or low-income populations.

4.17.1 Significance Criteria

An environmental justice impact would be considered significant if Project construction or operation would:

- result in a disproportionately high and adverse effect or impact. This "means an adverse effect or impact that: (1) is predominantly borne by any segment of the population, including a minority and/or a low-income population; or (2) would be suffered by a minority and/or low-income population and is appreciably more severe, or greater in magnitude, than the adverse effect or impact that would be suffered by a non-minority and/or non-low-income population." (*Toolkit for Assessing Potential Allegations of Environmental Injustice* [EPA 2004]).

4.17.2 Background and Regulatory Setting

The EPA defines environmental justice as the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices." Similarly, environmental justice is defined in California State planning law as the "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and polices." The EPA's *Toolkit for Assessing Potential Allegations of Environmental Injustice* (EPA 2004) provides the following definitions for use in analyzing environmental justice impacts:

- Low-income means a person whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines.

- Low-income population means any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant farm workers or Native Americans) who will be similarly affected by a proposed project or action.

- Minority means a person, as defined by the U.S. Bureau of Census, who is a: (1) Black American (a person having origins in any of the black racial groups of Africa); (2) Hispanic person (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); (3) Asian American or Pacific Islander (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or (4) American Indian or Alaskan Native (a person having origins in any of the original people of North America and maintains cultural identification through tribal affiliation or community recognition).

- Minority population means any readily identifiable group of minority persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient

persons (such as migrant farm workers or Native Americans) who will be similarly affected by a proposed project or action. Minority populations should be identified where either: (1) the minority population of the affected area exceeds 50 percent or (2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

The major Federal and State laws, regulations, policies, and plans related to environmental justice are summarized in Table 4.17.2-1. No regional or local environmental justice policies and/or assessments have been performed by agencies within the study area.

To determine whether disproportionately high and adverse effects or impacts would occur, the EPA recommends a four-step process for carrying out an environmental justice assessment: (1) problem formation; (2) data collection; (3) assessment of the potential for adverse impacts; and (4) assessment of the potential for disproportionately high adverse impacts (EPA 2004).

During the problem formation step, the affected area is identified. The data collection step involves identifying environmental sources of stress and the likelihood of exposure, and collecting health-related, demographic, social, and economic data on the affected area. The third step involves assessing the adverse impacts on the environment and human health, and the fourth step is determining whether adverse impacts are disproportionately high in the affected area compared with the reference population. The use of specific components of this methodology is intended to be flexible. These steps are discussed below.

4.17.3 Identification of Affected Area for Environmental Justice Analysis

As discussed in Section 4.14.2, the DOT has developed a criterion for identifying HCAs. HCAs are calculated using a PIR, which is the radius of a circle within which the potential failure of a pipeline could have considerable impact on people or property. The PIR is proportional to the maximum allowable pipeline pressure and the pipeline diameter and was used to determine the specific area of potential impact associated with the Project. After the PIR for the B-Line, Arrowhead Extension, and IID Lateral facilities was determined, the affected census tracts within the PIR were identified. Table 4.17.3-1 identifies the PIR associated with the proposed pipelines as well as the affected census tracts within the PIR.

Within the census tracts affected by the PIR, census block-level data were analyzed for ethnic and racial data and census block group-level data were analyzed for income-related data. As previously discussed, approximately 89 percent of the land affected by construction and operation of the Project would be authorized by the BLM on public lands (including lands managed by the BLM, the BOR, and the FWS) (53 percent), California counties (36 percent), the States of Arizona or California or cities (less than 1 percent), or the CSLC (less than 1 percent). The remainder of the land that would be affected (11 percent) is privately owned. Because of the large amount of public land crossed, most of the census blocks along the proposed pipeline routes (about 79 percent) are unpopulated (see Table 4.17.3-2). In total, the PIR associated with the proposed Project would affect 1 populated census block in La Paz County, 34 populated census blocks in Riverside County, and 40 populated census blocks in Imperial County. These 75 populated census blocks within the PIR were, therefore, considered the area of potential impact for the purposes of the environmental justice analysis.

TABLE 4.17.2-1

Major Laws, Regulatory Requirements, Policies, and Plans for Environmental Justice

Law/Regulation/Policy/Agency	Key Elements and Thresholds
FEDERAL	
Equal Protection Clause of the U.S. Constitution	• The Fourteenth Amendment expressly provides that the States may not "deny to any person within [their] jurisdiction the equal protection of the laws."
Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (referred to as Executive Order 12898) (1994)	• Designed to focus attention on environmental and human health conditions in areas of high minority populations and low-income communities, and promote non-discrimination in programs and projects substantially affecting human health and the environment. • Requires the U.S. Environmental Protection Agency (EPA) and all other Federal agencies (as well as State agencies receiving Federal funds) to develop strategies to address this issue. • Requires that disproportionately high and adverse health or environmental impacts on minority and low-income populations be avoided or minimized to the extent feasible. • Requires Federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health and environmental programs, polices, and activities on minority populations and low-income populations in the United States.
Environmental Justice Implementation Plan (1997)	• Supplements the EPA environmental justice strategy and provides a framework for the development of specific plans and guidance for implementing Executive Order 12898.
Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis (1998)	• Provides a framework for the assessment of environmental justice in the preparation of environmental impact statements (EISs) and environmental assessments under the National Environmental Policy Act (NEPA). • Emphasizes the importance of selecting an analytical process appropriate to the unique circumstances of the potentially affected community.
Toolkit for Assessing Potential Allegations of Environmental Injustice (2004)	• Provides a conceptual and substantive framework for understanding the EPA's environmental justice program. • Presents a systematic approach with reference tools that can be used and adapted to assess and respond to potential allegations of environmental injustice as they occur, or to prevent injustices from occurring in the first place.
Title 49 Code of Federal Regulations Part 192	The Final Rule on Operator Public Awareness Programs (May 2005) states, in part, that: • The operator's [public awareness] program must specifically include provisions to educate the public, appropriate government organizations, and persons engaged in excavation-related activities. • The program must include activities to advise affected municipalities, school districts, businesses, and residents of pipeline facility locations. • The program and the media used must be as comprehensive as necessary to reach all areas in which the operator transports gas. • The program must be conducted in English and in other languages commonly understood by a significant number and concentration of the non-English speaking population in the operator's area.
STATE	
California Constitution	• Provides for equal protection.
Government Code Section 65040.12	• Defines environmental justice and designates the Office of Planning and Research as the coordinator for the State's environmental justice program.
Government Code Section 65040.2	• Requires the Office of Planning and Research to develop environmental justice guidelines for local general plans.

TABLE 4.17.2-1 (cont'd)

Major Laws, Regulatory Requirements, Policies, and Plans for Environmental Justice

Law/Regulation/Policy/Agency	Key Elements and Thresholds
Governor's Office of Planning and Research - State of California General Plan Guidelines	• Provides guidelines for local agencies on integrating environmental justice issues into their general plans. • Identifies procedural and geographic inequity. • Recommends that cities and counties develop public participation strategies that allow for early and meaningful community involvement in the general plan process by all affected population groups. • Recommends gathering socioeconomic data to improve the public participation process, identify underserved neighborhoods, plan for infrastructure and housing, and identify low-income and minority neighborhoods in which industrial facilities and uses that pose a significant hazard to human health and safety may be overconcentrated. • Recommends incorporating polices supportive of environmental justice in all of the mandatory elements of the general plan.
California State Lands Commission (CSLC) – Environmental Justice Policy Statement in April 2002, amended October 2002 (see www.slc.ca.gov for the entire policy statement)	• Developed to ensure equity and fairness in the CSLC's processes and procedures, including that "environmental justice is an essential consideration in the Commission's processes, decision, and programs and that all people who live in California have a meaningful way to participate in these activities." • Stresses equitable treatment of all members of the public and commits to consider environmental justice in its processes, decision-making, and regulatory affairs, which are implemented, in part, through identification of and communication with relevant populations that could be adversely and disproportionately impacted by CSLC projects or programs and by ensuring that a range of reasonable alternatives is identified that would minimize or eliminate environmental impacts affecting such populations. • The staff of the CSLC is required to report back to the Commission on how environmental justice is integrated into its programs, processes, and activities.

TABLE 4.17.3-1

Potential Impact Radius Associated with the North Baja Pipeline Expansion Project

Facility/Milepost Range	Location	Pipe Diameter (inches)	Potential Impact Radius (feet)	Census Tracts Affected
B-Line				
MPs 0.0 to 0.2	La Paz County, Arizona	42	982 [a]	206
MPs 0.2 to 11.7	Riverside County, California	42	982 [a]	459, 460
MPs 11.7 to 22.3	Riverside County, California	48	1,123 [a]	458, 459
MPs 22.3 to 79.8	Imperial County, California	48	1,123 [a]	124
Arrowhead Extension				
MPs 0.0 to 2.1	Riverside County, California	36	842	459
IID Lateral				
MPs 0.0 to 45.7	Imperial County, California	16	374	108, 112.01, 113, 114, 124

[a] A simultaneous failure of the existing A-Line would fall within the footprint of a failure of the proposed B-Line (which is the bigger diameter).

TABLE 4.17.3-2

Unpopulated Census Blocks within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project

State/County	Number of Census Blocks	Number of Unpopulated Census Blocks	Unpopulated Percent
Arizona			
La Paz County	5	4	80.0
California			
Riverside County	94	60	63.8
Imperial County	263	223	84.8
Project Total	362	287	79.3

Source: U.S. Bureau of the Census, American FactFinder 2000a.

4.17.4 Demographic and Economic Data

This section describes the composition and distribution of minority and low-income populations in the States of Arizona and California as well as the counties and populated census blocks affected by the PIR associated with the Project and identifies populations with a relatively high representation of minority or low-income status. Because most of the facilities associated with the proposed Project are in rural, unincorporated areas, county-level data rather than city-level data were used as a reference population in this analysis. The U.S. Census Bureau's American FactFinder 2000 database was analyzed to obtain the racial and ethnic composition of smaller geographic areas, including census tracts, census block groups, and census blocks, to identify potential pockets of minority communities that may not be apparent when analyzing aggregated data on a county or State level.[13] Once populations with a relatively

[13] A census tract, which averages about 4,000 inhabitants, is delineated as a relatively homogeneous unit with respect to population characteristics, economic status, and living conditions. A subdivision of a census tract, a census block group is the smallest geographic unit for which the U.S. Census Bureau tabulates sample data. A census block group consists of all the blocks within a census tract with the same beginning number. A census block is the smallest geographic unit for which the U.S. Census Bureau tabulates 100 percent data. Many census blocks correspond to individual city blocks bounded by streets; however, census blocks, especially in rural areas, may include many square miles and may have some boundaries that are not streets.

high representation of minority or low-income status are identified, the impact analysis in Section 4.17.5 discusses whether the Project would disproportionately affect such identified minority or low-income populations.

4.17.4.1 Minority Population

Table 4.17.4-1 presents the ethnic and racial composition of the population in the States, Counties, and populated census blocks affected by the Project.[14]

TABLE 4.17.4-1

Summary of Racial and Ethnic Demographics within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project [a]

Location	Total Population	Percent White	Percent Black or African American	Percent American Indian & Alaska Native	Percent Asian	Percent Native Hawaiian & Other Pacific Islander	Percent Other Race	Percent Hispanic or Latino -Any Race	Percent Minority
Arizona	5,130,632	75.5	3.1	5.0	1.8	0.1	14.5	25.3	24.5
La Paz County	19,715	74.2	0.8	12.5	0.4	0.1	12.0	22.4	25.8
Census Blocks Affected by the B-Line	4	75.0	0.0	25.0	0.0	0.0	0.0	0.0	25.0
California	33,871,648	59.5	6.7	1.0	10.9	0.3	21.6	32.4	40.5
Riverside County	1,545,387	65.6	6.2	1.2	3.7	0.3	23.0	36.2	34.4
Census Blocks Affected by the B-Line and Arrowhead Extension	725	73.0	4.4	1.7	0.1	0.6	20.3	32.4	27.0
Imperial County	142,361	49.4	4.0	1.9	2.0	0.1	42.6	72.2	50.6
Census Blocks Affected by the B-Line and IID Lateral	622	63.0	3.1	1.3	0.2	0.0	32.5	58.5	37.0

[a] 2004 data are available for the State and county levels, but are not available for census block levels. In order to be consistent, 2000 data were used throughout.

Source: U.S. Bureau of the Census, Census 2000a.

As shown in Table 4.17.4-1, the Hispanic or Latino population within the census blocks affected by the B-Line and IID Lateral in Imperial County is 58.5 percent, which is greater than the 50 percent threshold used by the EPA to define a minority population. However, the percentage of Hispanic population affected by the Project in Imperial County is less than the percentage of the Hispanic population in the county as a whole (72.2 percent). Although there are too few individuals living in La Paz County's affected census blocks for derived statistics to be meaningful (only four people total), they are in the tables of this section for the sake of completeness. In the census blocks potentially affected by the B-Line and Arrowhead Extension within Riverside County, 1.7 percent is American Indian and/or

[14] Historically, the U.S. Census Bureau has classified race and Hispanic origin as two separate concepts. The recent introduction of the option to report more than one race added more complexity to the presentation and comparison of U.S. Census data. Race and Hispanic origin are two separate concepts in the Federal statistical system. People who are Hispanic may be of any race. Each person has two attributes, their race (or races) and whether or not they are Hispanic. Overlap of race and Hispanic origin is the main comparability issue. For more information on the definition of the term "Hispanic" see U.S. Census Bureau, 2004 http://www.census.gov/population/www/socdemo/compraceho.html. This document uses the term "Hispanic or Latino."

Alaska Native, and 0.6 percent is Native Hawaiian and/or Other Pacific Islander, which is an appreciably higher percentage than the county average as a whole (1.2 and 0.3 percent, respectively). Within the census blocks potentially affected by the B-Line and IID Lateral in Imperial County, there are no minority populations that comprise a higher percentage of the total population than the county as a whole. Therefore, the detailed census block analysis of the ethnic composition of the population focuses only on the Hispanic or Latino population in the census blocks potentially affected by the B-Line and IID Lateral in Imperial County (see Table 4.17.4-2), the American Indian and/or Alaska Native population affected by the B-Line in La Paz County (see Table 4.17.4-3), and the American Indian and/or Alaska Native and Native Hawaiian and/or Other Pacific Islander populations affected by the B-Line and Arrowhead Extension in Riverside County (see Table 4.17.4-4).

TABLE 4.17.4-2

Populated Census Blocks Containing Hispanic or Latino Populations within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project in Imperial County

Location	Total Population	Total Number of Hispanic or Latino Individuals	Percent Hispanic or Latino
California	33,871,648	10,966,556	32.4
Imperial County	142,361	102,817	72.2
Census Tract 108, Block 1379	2	2	100.0
Census Tract 108, Block 1398	8	2	25.0
Census Tract 108, Block 2054	5	5	100.0
Census Tract 108, Block 2078	5	5	100.0
Census Tract 108, Block 2083	2	2	100.0
Census Tract 112.01, Block 2014	39	37	94.9
Census Tract 113, Block 1055	9	7	77.8
Census Tract 113, Block 1057	19	12	63.2
Census Tract 113, Block 1058	149	114	76.5
Census Tract 113, Block 1065	48	40	83.3
Census Tract 113, Block 1070	61	45	73.8
Census Tract 113, Block 1072	13	2	15.4
Census Tract 113, Block 1100	8	4	50.0
Census Tract 113, Block 1107	16	8	50.0
Census Tract 113, Block 1115	6	6	100.0
Census Tract 113, Block 1116	8	6	75.0
Census Tract 113, Block 1120	2	2	100.0
Census Tract 113, Block 1152	3	1	33.3
Census Tract 113, Block 2000	53	38	71.7
Census Tract 113, Block 5018	2	1	50.0
Census Tract 124, Block 2101	21	6	28.6
Census Tract 124, Block 2493	6	1	16.7
Census Tract 124, Block 2568	38	18	47.4

Source: U.S. Bureau of the Census, Census 2000a.

TABLE 4.17.4-3

Populated Census Blocks Containing American Indian or Alaska Native Populations within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project in La Paz County

Location	Total Population	Total Number of American Indian or Alaska Native Individuals	Percent American Indian or Alaska Native
Arizona	5,130,632	255,879	5.0
La Paz County	19,715	2,470	12.5
Census Tract 206, Block 1075	4	1	25.0

Source: U.S. Bureau of the Census, Census 2000a.

TABLE 4.17.4-4

Populated Census Blocks Containing American Indian, Alaska Native, Native Hawaiian, and Other Pacific Islander Populations within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project in Riverside County

Location	Total Population	Total Number of American Indian & Alaska Native	Percent American Indian & Alaska Native	Total Number Native Hawaiian & Other Pacific Islander	Percent Native Hawaiian & Other Pacific Islander
California	33,871,648	333,346	1.0	116,961	0.3
Riverside County	1,545,387	18,168	1.2	3,902	0.3
Census Tract 458, Block 6214	68	1	1.5	0	0.0
Census Tract 459, Block 1122	12	6	50.0	0	0.0
Census Tract 460, Block 2014	116	1	0.9	0	0.0
Census Tract 460, Block 2037	30	2	6.7	4	13.3
Census Tract 460, Block 2056	68	2	2.9	0	0.0

Source: U.S. Bureau of the Census, Census 2000a.

The census block data presented in Table 4.17.4-2 show the number and percent of the population that are Hispanic or Latino in the blocks that contain those populations within the PIR of the Project in Imperial County. The percentage of Hispanics or Latinos in each census block are presented in comparison with county and State percentages. When looking at the affected census blocks, 14 of the affected blocks contain greater than 50 percent Hispanic or Latino populations. Of these 14 blocks, 12 also contain a higher percentage of Hispanics or Latinos than the county average as a whole.

Table 4.17.4-3 shows the number and percentage of persons identifying themselves as American Indians and/or Alaska Natives in the populated census block affected in La Paz County. The percentage of American Indians and/or Alaska Natives in this census block is presented in comparison with county and State percentages. In 2000, the percentage of American Indians and/or Alaska Natives comprised 25 percent of the total population in the populated block. This percentage is twice the percentage of the county as a whole, and five times the average for the State of Arizona (12.5 and 5 percent, respectively). It is important to note, however, that this census block contains only four persons, of which one is American Indian or an Alaska Native.

The census block data presented in Table 4.17.4-4 show the number and percent of the population that are American Indians, Alaska Natives, Native Hawaiians, and/or Other Pacific Islanders in the blocks that contain those populations within the PIR of the B-Line and Arrowhead Extension in Riverside County. The percentage of American Indians, Alaska Natives, Native Hawaiians, and/or Other Pacific Islanders in each census block is presented in comparison with county and State percentages. Four of the

five populated census blocks identified in Table 4.17.4-4 have higher percentages of American Indians and/or Alaska Natives than the county as a whole. In addition, one census block has four Native Hawaiians and/or Other Pacific Islanders, comprising 13.3 percent of the population, compared to an average of 0.3 percent for both the county and State.

It should be noted that because of the often irregular sizes and shapes of census blocks, not all residents included in each block identified as having minority populations live in close enough proximity to the proposed pipeline route to be impacted. Nevertheless, the data show that minority populations are present along the proposed pipeline routes and, therefore, there is a potential for disproportionate adverse impacts on these minority communities.

Although the information discussed in this section is based on information from the U.S. Bureau of the Census, the potential exists for migrant minority populations to have been underestimated by the census in the Project area. In California, this can occur in areas with large populations of migrant workers associated with large agricultural operations, particularly orchards. It is possible that such populations exist within the Project area in the agricultural areas concentrated near Blythe and the western portion of the IID Lateral; however, based on a review of aerial photographs, no orchards occur on the land that would be affected by the Project. Nevertheless, there is a potential for disproportionate adverse impacts on these communities.

As discussed in Section 4.17.3, the majority of the census blocks within the PIR associated with the Project are unpopulated. Even though the census blocks are unpopulated, there can still be an environmental justice concern if property is owned by a member of a minority group or there are resources such as traditional cultural properties nearby. The majority of the land associated with the unpopulated census blocks is managed by Federal agencies (i.e., the BLM, the BOR, the FWS). No tribal lands would be crossed. In addition, no traditional cultural properties have been identified in the proposed Project's area of potential effect to date (see Section 4.11.5).

4.17.4.2 Income Distribution in the Project Area

Table 4.17.4-5 presents the income distribution within the Project area based on statistics from the U.S. Census Bureau. The U.S. Census Bureau uses the poverty guidelines developed annually by the U.S. Department of Health and Human Services to determine the percentage of the population living below the poverty line. The poverty guidelines do not vary geographically within the conterminous United States and are determined based on the size of the family, ages of family members, and the total family income. On average, La Paz, Riverside, and Imperial Counties all had significantly lower annual per capita and household income levels and similar or higher poverty levels than their respective State averages. However, in the case of Riverside and Imperial Counties, this is due in part to these counties being more rural than the highly urbanized western portion of the State of California.

TABLE 4.17.4-5

Summary of Income Distribution within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project

Location	Total Population (2000)	Per Capita Income (1999)	Median Household Income (1999)	Percentage of Persons Below Poverty (1999)
Arizona	5,130,632	$20,275	$40,558	13.6
La Paz County	19,715	$14,916	$25,839	19.3
Census Tract 206, Block Group 1	1,356	$14,372	$27,000	22.6
California	33,871,648	$22,711	$47,493	13.9
Riverside County	1,545,387	$18,689	$42,887	13.9
Census Tract 458, Block Group 6	1,440	$11,303	$27,404	28.3
Census Tract 459, Block Group 1	963	$18,562	$40,893	15.3
Census Tract 459, Block Group 2	994	$8,236	$20,625	32.9
Census Tract 460, Block Group 2	702	$20,872	$36,071	29.1
Imperial County	142,361	$13,239	$31,870	20.8
Census Tract 108, Block Group 1	608	$15,776	$34,219	35.2
Census Tract 108, Block Group 2	877	$22,868	$49,844	2.1
Census Tract 112.01, Block Group 2	1,030	$10,526	$30,667	12.0
Census Tract 113, Block Group 1	870	$12,906	$37,625	17.5
Census Tract 113, Block Group 2	1,377	$11,021	$30,815	23.2
Census Tract 113, Block Group 5	1,404	$12,331	$47,083	8.5
Census Tract 124, Block Group 2	637	$13,286	$16,389	28.6

Source U.S. Bureau of the Census, Census 2000a.

A review of the block group data from the 2000 census shows that the poverty rate along the B-Line in La Paz County is 22.6 percent, which is higher than the county average of 19.3 percent although the median household income for the affected block group is higher than the county average ($27,000 compared to $25,839). All four of the block groups within the PIR of the proposed B-Line and Arrowhead Extension in Riverside County have lower median household incomes and higher poverty rates than the county average. In Imperial County, the PIR associated with the B-Line and IID Lateral would affect three block groups with lower median household incomes than the county average. Two of these three block groups also have higher poverty rates than the county average. A third block group also has a higher poverty rate than the county average but its median household income is above the county average. In summary, the data show that low-income populations are present along the proposed pipeline routes. Therefore, there is a potential for disproportionate adverse impacts on these low-income populations.

4.17.5 Impact Analysis

Not all impacts identified in this EIS/EIR are considered to affect minority or low-income populations. Examples of Project-related impacts that are considered impacts with potential environmental justice issues are described below.

The main adverse impacts associated with construction of the proposed Project would be the temporary noise, dust, and traffic congestion, none of which are considered significant adverse impacts after mitigation. These impacts would occur along the entire pipeline routes and in areas with a variety of socioeconomic backgrounds. Therefore, these impacts are not considered to result in a disproportionately high and adverse effect or impact on minority or low-income populations. As a result, this analysis does

not evaluate construction-related impacts any further. Impacts associated with operation of the Project are described below.

None of the proposed facilities would result in increased air emissions during operation (see Section 4.12.4). The pipeline facilities would be buried and would, therefore, not have an impact on visual resources during operation. As discussed in Section 4.8.7, construction of the new aboveground facilities would have a permanent impact on visual resources, and modifications at the existing aboveground facilities would result in an incremental increase in impacts on visual resources but would generally be minor because of the presence of the existing facilities. The impacts on visual resources associated with these facilities are considered to be less than significant and are, therefore, not considered to result in a disproportionately high and adverse effect or impact on minority or low-income populations.

The long-term potential public safety impacts associated with operation of the pipelines (the potential for a release of natural gas from a leak or rupture of the pipelines followed by ignition and burning of the gas cloud) could represent an environmental justice concern. However, construction and operation of the proposed facilities would affect a mix of ethnic and socioeconomic areas in the Project area as a whole. In addition, the pipeline and aboveground facilities associated with the Project would be designed, constructed, operated, and maintained in accordance with or to exceed the DOT Minimum Federal Safety Standards in Title 49 CFR Part 192 and the CPUC, General Order 112-E. These regulations, which are intended to protect the public and to prevent natural gas facility accidents and failures, apply to all areas along the proposed pipeline routes regardless of the presence or absence of minority or low-income populations. As discussed in Section 4.14.2, none of the safety-related potential impacts associated with the Project are considered significant. Therefore, the safety-related impacts are not considered to result in a disproportionately high and adverse effect or impact on minority or low-income populations.

Executive Order 12898 emphasizes the importance of providing opportunities for community input into the NEPA process. Similarly, the CSLC's Environmental Justice Policy stresses communication and public involvement in the decision-making process. Information on the public notification and participation process conducted for the proposed Project is provided in Section 1.3. A recent Final Federal Rule, published in May 2005 for Title 49 CFR Part 192, requires the operator to include, in its public awareness plans, measures to prepare and distribute a comprehensive program that includes activities to advise affected municipalities, school districts, businesses, and residents of pipeline facility locations. The program must be conducted in English and in other languages commonly understood by a significant number and concentration of the non-English speaking population in the operator's area. As discussed in Section 1.3, open houses and public scoping meetings were held in the Project area in July and September of 2005 to inform the public about the Project and provide an opportunity for the public to ask questions and express concerns. The draft EIS/EIR was issued in September 2006 and the public was given 90 days to review and comment on the document in the form of written comments and at two public meetings held in the Project area in December 2006. These public input opportunities were announced in the local newspapers in English and Spanish, and Spanish translators were present at the public meetings.

4.17.6 No Project Alternative

Under the No Project Alternative, the FERC would deny North Baja's application for a Certificate and a Presidential Permit amendment, the CSLC would deny North Baja's application for an amendment to its right-of-way lease across California's Sovereign and School Lands, and the BLM would deny North Baja's application to amend its existing Right-of-Way Grant and obtain a Temporary Use Permit for the portion of the Project on Federal lands. The No Project Alternative means that the Project would not go forward and the Project-related facilities would not be installed. Accordingly, none of the

potential environmental impacts identified for the construction and operation of the proposed Project would occur.

Because the proposed Project is privately funded, it is unknown whether North Baja would fund another energy project in California. However, should the No Project Alternative be selected, the energy needs identified in Section 1.1 would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, these impacts cannot be predicted with any certainty at this time.