

July 2026

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Environmental Assessment

DOI-BLM-CA-D090-2025-0018-EA



I have considered the factors mandated by the National Environmental Policy Act (NEPA). This environmental assessment represents the Bureau of Land Management's (BLM's) good-faith effort to fulfill NEPA's requirements by prioritizing documentation of the most important relevant considerations within the statutorily mandated page limits and timeline. This prioritization reflects the BLM's expert judgment; and any considerations addressed briefly or left unaddressed are, in the BLM's judgment, comparatively non-substantive and would not meaningfully inform the BLM's consideration of environmental effects and the decision to be made. The EA is substantially complete, considers the factors mandated by NEPA, and, in my judgment, contains analysis adequate to inform the BLM's decision regarding the Proposed Action.

U.S. Department of the Interior
Bureau of Land Management
California Desert District
Needles Field Office
1303 S US 95
Needles, CA 92363

TABLE OF CONTENTS

ACRONYM LIST	IV
CHAPTER 1. INTRODUCTION.....	1
1.1. Background	1
1.2. Purpose and Need	5
1.3. Decision to be Made	6
1.4. Relationship to Statutes and Regulations	6
1.5. Land Use Plan Conformance	7
1.6. Scoping and Issues	8
CHAPTER 2. ALTERNATIVES.....	10
2.1. Alternative A – No Action Alternative.....	10
2.2. Alternative B – Proposed Action	10
2.2.1. Construction and Conversion.....	11
2.2.1. Operations	14
2.2.2. Design Features, Avoidance, and Minimization Measures.....	15
2.3. Alternatives Considered but Eliminated from Detailed Analysis	25
CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS	26
3.1. Issue 1: Biological Resources	27
3.1.1. Affected Environment.....	27
3.1.2. Environmental Impacts	29
3.2. Issue 2: Air Quality	31
3.2.1. Affected Environment.....	31
3.2.2. Environmental Impacts	32
3.3. Issue 3: Recreation and Visitation.....	36
3.3.1. Affected Environment.....	36
3.3.2. Environmental Impacts	36
3.4. Issue 4: Cultural Resources & Tribal Interests	39
3.4.1. Affected Environment.....	39
3.4.2. Environmental Impacts	40
3.5. Issue 5: Lands and Realty	42
3.5.1. Affected Environment.....	42
3.5.2. Environmental Impacts	46

3.6. Issue 6: Soils, Geology & Mineral Resources	50
3.6.1. Affected Environment.....	50
3.6.2. Environmental Impacts	50
3.7. Issue 7: Paleontological Resources	52
3.7.1. Affected Environment.....	52
3.7.2. Environmental Impacts	52
3.8. Issue 8: Hydrologic Resources	53
3.8.1. Affected Environment.....	53
3.8.2. Environmental Impacts	53
3.9. Issue 9: Visual Resources	55
3.9.1 Affected Environment.....	55
3.9.1. Environmental Impacts	58
3.10. Issue 10: Grazing and Range Resources.....	60
3.10.1. Affected Environment.....	60
3.10.2. Environmental Impacts	62
CHAPTER 4. PUBLIC INVOLVEMENT, CONSULTATION AND COORDINATION.....	62
4.1. Public Involvement	62
4.2. Consultation and Coordination	62
4.2.1. NHPA Section 106.....	62
4.2.2. Section 7 of the Endangered Species Act	64
CHAPTER 5. LIST OF PREPARERS	65
CHAPTER 6. REFERENCES	66

FIGURES

Figure 1. Pipeline Overview.....	2
Figure 2. Northern Pipeline Land Ownership	3
Figure 3. Preliminary Rendering for a Typical Pump Station Site Layout	12
Figure 4. Typical Air Release/Air Vacuum Valve at Grade	13
Figure 5. OHV Routes.....	38
Figure 6. Pump Stations within ACECs.....	43
Figure 7. Visual Resource Management (VRM) Classification.....	56
Figure 8. Grazing Allotment	61

TABLES

Table 1.	Acreage Calculation of the Northern Pipeline Right-of-Way.....	11
Table 2.	Construction Emissions.....	34
Table 3.	Operations Emissions.....	35
Table 4.	Special Designated Areas	46
Table 5.	List of Preparers.....	65

APPENDICES

Appendix A.	Summary of Previous Environmental Documentation
Appendix B.	Plan of Development
Appendix C.	Pump Station Location Figures
Appendix D.	Invasive Plant Management Plan
Appendix E.	Biological Resources Survey Report
Appendix F.	Air Emissions Modeling Report
Appendix G.	Correspondence with State Historic Preservation Officer for Section 106 Consultation
Appendix H.	Regional Economic Impact Analysis for the Fenner Gap Mutual Water Company Northern Pipeline

ACRONYM LIST

AAQS	Ambient Air Quality Standards
ACEC	Area of Critical Environmental Concern
AMM	Avoidance and Minimization Measure
AR/AV	Air Release / Air Vacuum valves
ATCM	Airborne Toxic Control Measures
BESS	Battery Energy Storage System
BLM	Bureau of Land Management
BMP	Best Management Practice
BO	Blow-offs
BSA	Biological Study Area
CAA	Clean Air Act
Cadiz	Cadiz Real Estate, LLC
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARA	Comment and Response Application
CARB	California Air Resources Board
CBC	California Building Code
CDCA	California Desert Conservation Area Plan
CDFW	California Department of Fish and Wildlife
CDNCL	California Desert National Conservation Lands
CEQA	California Environmental Quality Act
CMA	Conservation and Management Actions
CNPS	California Native Plant Society
CO	Carbon Monoxide
CRA	Colorado River Aqueduct
CWA	Clean Water Act
CalEEMod	California Emissions Estimator Model

DoD	Department of Defense
DPM	Diesel Particulate Matter
DRECP	Desert Renewable Energy Conservation Plan
EA	Environmental Assessment
EAFB	Edwards Air Force Base
EKAPCD	Eastern Kern Air Pollution Control District
EPA	Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ESA	Environmental Science Associates
ESA	Endangered Species Act
FGMWC	Fenner Gap Mutual Water Company
FLPMA	Federal Land Policy and Management Act
GHG	Greenhouse Gas
GMMMP	Groundwater Management, Mitigation and Monitoring Plan
HRA	Health Risk Assessment
I-40	Interstate Highway 40
LUPA	Land Use Plan Amendment
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MLA	Mineral Leasing Act
MTCO _{2e}	Metric Tons of Carbon Dioxide Equivalent
MTNM	Mojave Trails National Monument
NAAQS	National Ambient Air Quality Standards
NO ₂	Nitrogen Dioxide
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetlands Inventory
O ₃	Ozone
OHV	Off-Highway Vehicle

PM2.5 and PM10	Suspended Particulate Matter
Pb	Lead
PDF	Project Design Feature
RCS	Respirable Crystalline Silica
RNA	Resource Natural Area
ROW	Right of Way
SO2	Sulfur Dioxide
SCADA	Supervisory Control and Data Acquisition
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SRMA	Special Recreation Management Area
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geologic Society
VRI	Visual Resource Inventory
VRM	Visual Resource Management

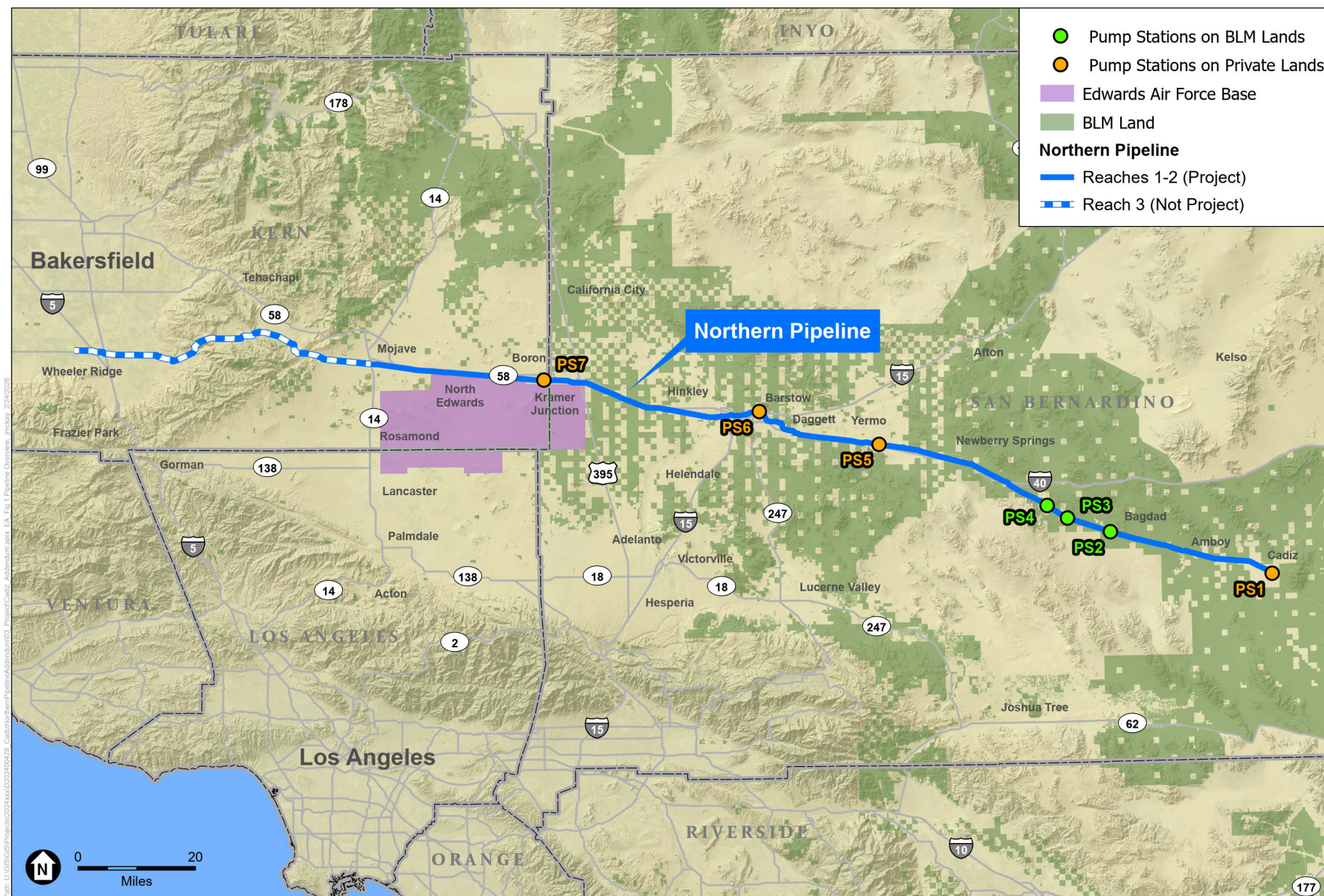
CHAPTER 1. INTRODUCTION

1.1. Background

The Northern Pipeline is an approximately 217-mile portion of what was formerly known as the “All-American Pipeline,” a buried 30-inch steel pipeline authorized by the United States Bureau of Land Management (“BLM”) as a right-of-way (“ROW”) in 1985 under the Mineral Leasing Act (“MLA”) (30 U.S.C. § 185). The BLM approved the assignment of the MLA ROW from Plains All American Pipeline Company to El Paso Natural Gas (“EPNG”) in 2001, and then renewed the MLA ROW in September 2020. On December 15, 2023, the BLM approved the assignment of the MLA ROW from EPNG to Cadiz Real Estate LLC (“Cadiz”), executing the MLA ROW on January 19, 2024 (CACA106273421). The existing MLA ROW authorizes Cadiz to operate and maintain the existing oil/natural gas pipeline.

The Fenner Gap Mutual Water Company¹ (“FGMWC” or “Applicant”) has proposed to convert approximately 162 miles of the Northern Pipeline between Cadiz, California and Mojave, California, for the conveyance of water. The Northern Pipeline traverses private parcels, federal lands managed by the BLM and United States Department of War (“DoW”), and California state-owned lands managed by the California State Lands Commission. As part of their effort to change the use of the Northern Pipeline, FGMWC has applied to the BLM for a new ROW under the Federal Land Policy and Management Act (“FLPMA”). This new ROW would authorize the use of the existing infrastructure, originally developed and currently authorized under the MLA, and facilitate the use of the Northern Pipeline to convey water across BLM-managed public lands under federal jurisdiction. Of the 162-mile pipeline, 83 miles cross federal lands (65 miles on BLM-managed public lands and 18 miles on DoW lands). FGMWC’s proposal also includes additional facilities (e.g., new pump stations and access roads) necessary for transporting water through the existing pipeline. In coordination with the BLM, the Applicant is also seeking an easement from DoW for the portions of the Northern Pipeline crossing Edwards Air Force Base (“EAFB”). These lands are included in the existing MLA ROW. **Figure 1** depicts the existing 217-mile Northern Pipeline, including portions of the pipeline that are not part of the application for the new ROW. Reach 3 would remain authorized under the current MLA ROW and is not part of this Proposed Action. Reach 1 and Reach 2 would be under the new ROW for water conveyance. **Figure 2** depicts the property ownership along the Northern Pipeline proposed for conversion under the Proposed Action.

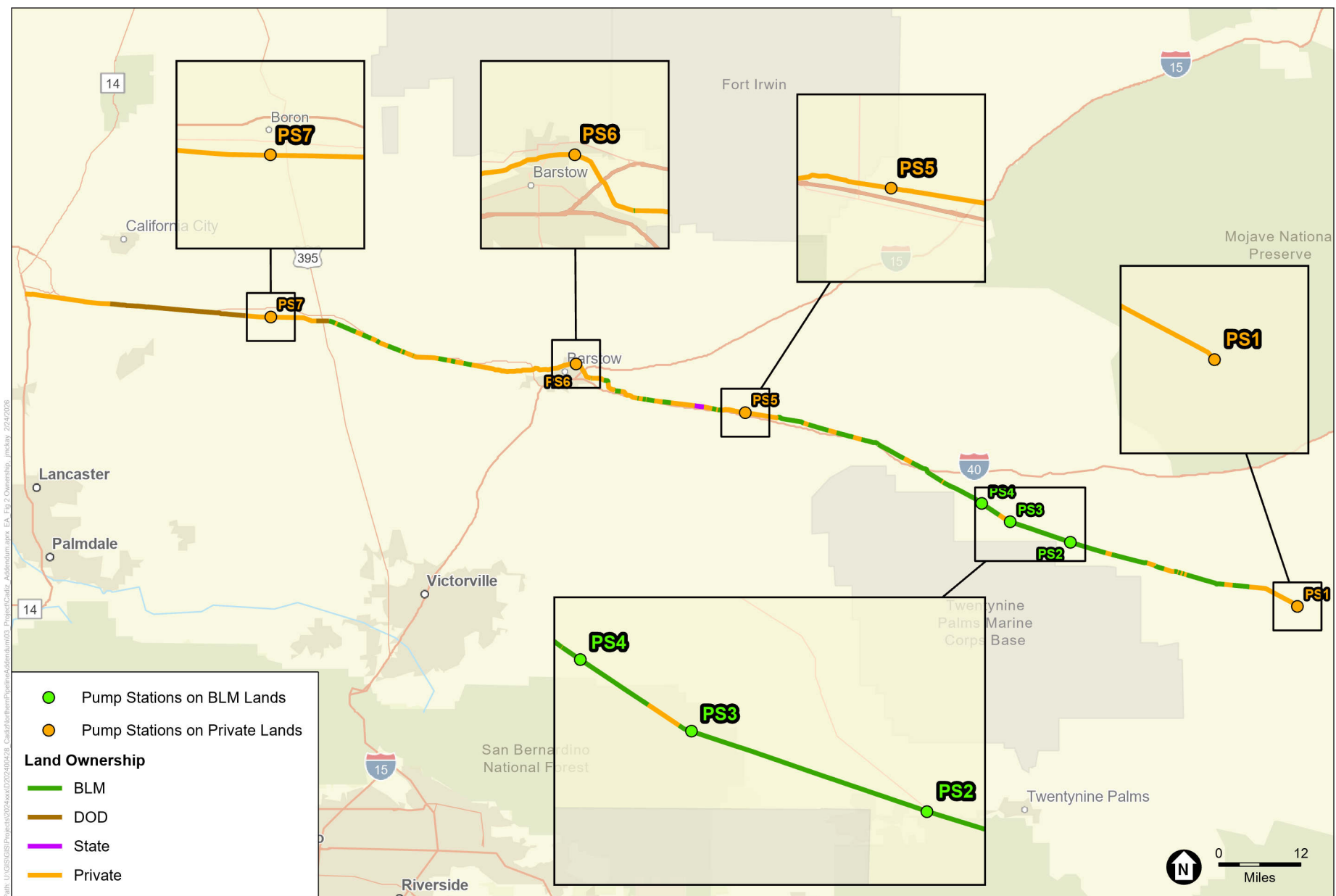
¹ FGMWC is a California nonprofit mutual benefit corporation formed by Cadiz Inc. in 2010 whose purpose is to develop, acquire, purchase, distribute, supply and deliver water on a wholesale basis to its members for irrigation, municipal, industrial, domestic or any other beneficial use at cost. FGMWC is responsible for overseeing groundwater recovery operations of the Mojave Groundwater Bank at the Cadiz Ranch, in compliance with the Groundwater Management, Monitoring and Mitigation Plan approved by San Bernardino County (see Section 1.1 and Appendix A for additional information).



SOURCE: ESRI; BLM; ESA, 2026

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 1
Pipeline Overview



SOURCE: ESRI; BLM; ESA, 2026

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 2
Northern Pipeline Land Ownership

Pursuant to the National Environmental Policy Act (“NEPA”), this Environmental Assessment (“EA”) evaluates the environmental effects of the Proposed Action, which includes: converting, operating, and maintaining approximately 162 miles of the existing Northern Pipeline for water conveyance; constructing, operating, and maintaining new pump stations and associated appurtenant facilities; and the potential termination and decommissioning of the pipeline or its segments, as applicable. Although this EA considers the environmental effects of the Proposed Action, the BLM’s jurisdiction over the Proposed Action is limited to only those portions across or on public lands for which the BLM has authority to approve, approve with modifications, or deny the Applicant’s proposal to use public lands consistent with the requirements of FLPMA. Consistent with NEPA and the U.S. Department of the Interior Handbook of National Environmental Policy Act Implementing Procedures (“DOI Handbook of NEPA Procedures”) (see Section 1.5(c) and Appendix 1), the BLM has defined the scope of analysis for the Proposed Action in this EA to include the area associated with the proposed right-of-way and the appurtenant pipeline facilities, including the new pump stations and new access roads (both temporary and permanent). This scope of analysis considers the reasonably foreseeable environmental effects resulting from the “project at hand,” which allows for the use of an existing, underground pipeline with minimal new surface disturbance. *See* DOI Handbook of NEPA Procedures, Appendix 1 at 41.

Likewise, DoW’s jurisdiction over the Proposed Action is limited to the proposed easement on EAFB lands, and DoW NEPA procedures provide that the analysis will focus on the effects of the proposed action or project at hand.

The BLM’s previous position in approving Cadiz’s assignment of the MLA ROW in 2023 was that any proposal to convert the Northern Pipeline to allow for the transport water would require consideration of the impacts to environmental and historic resources associated with the extraction of water. But that position was prior to the Supreme Court’s decision in *Seven County Infrastructure Coalition v. Eagle County, Colorado*, 605 U.S. 168, 182, 186 (2025) and the Department’s corresponding changes to its NEPA procedures. In light of those new developments, and as explained in more detail below, the BLM has reassessed that previous position and determined that the scope of analysis of the reasonably foreseeable effects of the Proposed Action should not be expanded to encompass the extraction of groundwater that Fenner Gap Mutual Water Company (FGMWC) may convey through the existing pipeline. The water source for the pipeline would be groundwater pumped on private lands owned by Cadiz. A property owner’s extraction of groundwater underlying its property is governed by California state and local law. Cadiz’s rights to extract and use groundwater originate in California common law, and San Bernardino County authorized Cadiz’s groundwater extraction project pursuant to its own home rule authority, including through a Groundwater Management, Monitoring, and Mitigation Plan (“GMMMP”), in 2012. As part of its review process, San Bernardino County, along with other local agencies, analyzed and documented the effects of Cadiz’s groundwater pumping consistent with the California Environmental Quality Act (“CEQA”) and San Bernardino County’s Desert Groundwater Management Ordinance. Although groundwater extraction is outside the scope of this analysis as described below, this EA nonetheless identifies the source of water to address issues raised in past litigation and in recognition that the Applicant submitted related analyses and its groundwater authorizations as

part of its application. For the convenience of the reader, the extensive analysis of Cadiz’s groundwater extraction is summarized in Appendix A.²

Moreover, groundwater extraction is outside the federal scope of this Proposed Action and reasonably considered to be outside of the scope of analysis for this EA. As explained in the DOI Handbook of NEPA Procedures, Appendix 1 at 41, the BLM and DoW must consider the environmental effects resulting from the “project at hand.” The BLM has discretion to define a reasonable scope of analysis and consider how far to go in considering indirect environmental effects from the project at hand. It is not required to consider environmental effects from *other* projects that “(1) are separate in time or place from the project at hand, (2) fall outside the agency’s regulatory authority, or (3) are carried out independently by third parties.” (DOI Handbook of NEPA Procedures, Appendix 1, page 45 (citing *Seven County Infrastructure Coalition v. Eagle County, Colorado*, 605 U.S. 168, 182, 186 (2025))). Here, Cadiz’s ability to extract groundwater underlying its property is outside of the jurisdiction of the BLM (i.e., the BLM has no authority to regulate Cadiz’s groundwater pumping), Cadiz already has necessary approvals that permit it to extract groundwater, and the effects of the groundwater project could occur regardless of the Proposed Action because water could be transported through other methods. *See id.* at 188-189.

Consequently, the BLM has reasonably determined that the impacts of groundwater withdrawal associated with Cadiz’s groundwater extraction project are outside the scope of analysis for the Proposed Action analyzed in this EA and additional analysis is unnecessary for the BLM to make a reasoned decision on the issuance of a FLPMA ROW for the existing pipeline.

1.2. Purpose and Need

The purpose of BLM’s action is to consider a ROW grant application under FLPMA for the proposed use of BLM managed-public lands for the conveyance of water through the Northern Pipeline.

The pipeline has already been constructed and is currently authorized under an MLA ROW grant to convey oil/natural gas. The need for federal action is established by the BLM’s statutory and regulatory responsibilities regarding ROWs pursuant to Title V of FLPMA, the BLM’s implementing regulations (43 CFR 2800), and other applicable federal laws, regulations, and policies.

The purpose of DoW’s action is to respond to an application for an easement authorizing the conveyance of water through the existing Northern Pipeline that crosses lands within the EAFB. The need for the federal action is established by DoW’s property management authority for granting easements, pursuant to 10 U.S.C. § 2668, and other applicable federal laws, regulations, and policies.

² Notably, non-governmental organizations challenged the environmental analysis (Final Environmental Impact Report (“FEIR”)) under CEQA for the Cadiz groundwater extraction project in California state court. California state courts upheld the sufficiency of the FEIR both at the lower court level and at the appellate court level. *See, e.g., Ctr. for Biological Diversity v. County. of San Bernardino*, 247 Cal. App. 4th 326 (2016).

1.3. Decision to be Made

The BLM as the Lead Agency and EAFB as a Cooperating Agency will use the analyses in this EA to make an informed decision to approve, approve with modifications or conditions, or disapprove the Applicant's request for a ROW grant and easement, respectively, to convert, construct, operate and maintain the Northern Pipeline and associated pump stations and air valves on BLM-administered lands, consistent with applicable land use plans and regulations, and on EAFB lands.

1.4. Relationship to Statutes and Regulations

In addition to the specific land use plans and policies summarized below, the ROW may also be subject to other federal laws, regulations, and guidance, including but not limited to:

- NEPA (42 U.S.C. §§ 4321 *et seq.*), and Department of the Interior NEPA implementing regulations (43 CFR Part 46) and Handbook of NEPA Procedures (February 2026); and DoW NEPA Implementing Procedures (July 2025),
- Clean Air Act (42 U.S.C. §§ 7401 *et seq.*),
- Clean Water Act (33 U.S.C. §§ 1251 *et seq.*),
- National Historic Preservation Act (54 U.S.C. § 306108),
- Endangered Species Act (16 U.S.C. §§ 1531 *et seq.*),
- Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. § 703),
- Federal Insecticide, Fungicide, and Rodenticide Act, as amended (7 U.S.C. §§ 136–136y),
- Federal Noxious Weed Act of 1974 (7 USC §§ 2801–2814),
- Fish and Wildlife Conservation Act (16 U.S.C. §§ 2901–2911),
- National Trails System Act of 1968 (16 U.S.C. §§ 1241–1251),
- 43 CFR 2800, which provides standards for FLPMA ROWs, and
- BLM Manual 2800-2807, which provides guidance in issuing and managing FLPMA ROWs.
- Section 106 consultation for the Proposed Action has been completed in accordance with 36 CFR Part 800, including the objection procedures at 36 CFR 800.5(c).
- Additional Policies and Procedures for activities on EAFB:
 - Edwards Air Force Base-Main Base Water System Permit Amendment No. 03-19-12PA-003 Kern County System No. 1510701
 - US Department of Airforce, Edwards Airforce Base Integrated Natural Resources Management Plan
 - Department of Airforce Manual DAFMAN 32-7002 regarding air quality management
 - Department of Airforce Manual DAFMAN 32-1067 regarding water quality
 - Executive Order (EO) 13112/13751, *Invasive Species*;
 - EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*;
 - EO 11988, *Floodplains Management*
 - EO 11514, *Protection and Enhancement of Environmental Quality*
 - California Desert Native Plants Act
 - California Endangered Species Act of 1970 (CFG Code, Division 3, Chapter 1.5)

- Federal Environmental Pesticide Act of 1972
- Federal Noxious Weed Act of 1974 (7 USC §§ 2801–2814)
- Fish and Wildlife Conservation Act (PL 96-366, 94 Stat. 1322; 16 USC §§ 2901–2911)
- Management of Fish and Wildlife on Military Lands (CFG Code, Division 4, Part 1, Chapter 2, Article 6)
- Protected Reptiles and Amphibians (CFG Code Division 5, Chapter 1, Article 1)
- Western Joshua Tree Conservation Act
- DoD Instruction (DoDI) 4150.07, *DoD Pest Management Program*, dated 29 May 2008
- DoDI 4715.03, *Natural Resources Management*
- DoDI 4715.28, *Military Installation Resiliency*
- AFRD 32-70, *Environmental Quality*
- Edwards AFB Integrated Natural Resources Management Plan
- Edwards AFB Habitat Restoration Plan
- Edwards AFB Integrated Pest Management Plan
- Edwards AFB Invasive Species Management Plan
- Edwards AFB Wildland Fire Management Plan

The Proposed Action would comply with all applicable statutes and regulations, including the BLM’s obligation to manage the public lands consistent with FLPMA’s multiple use and sustained yield principles.

1.5. Land Use Plan Conformance

The Proposed Action is subject to the California Desert Conservation Area Plan (“CDCA”) of 1980, as amended by the Desert Renewable Energy Conservation Plan (“DRECP”) (see 43 CFR 1610.5-3(a), 1601.0-5(b)-(c)):

- The objectives and management actions for Areas of Critical Environmental Concern (“ACECs”) in the DRECP allow the BLM to issue FLPMA rights-of-way that are compatible with the ACEC’s management goals:
 - “Land use authorization proposals (new, renewal, and amendment) will be analyzed on a case-by-case basis to assess whether they are compatible with the ACEC and its management goals” (DRECP, Appendix B, pp.479, 613, 649, 704).
 - “To the degree possible, new utility rights-of-ways shall be sited as close together as practical given engineering specifications, human safety, and other limiting factors” (DRECP Appendix B, pp. 613, 649, 704).
- Regarding California Desert National Conservation Lands (“CDNCL”) under the DRECP, “[t]he conservation and management actions (CMAs) allow for a variety of uses as long as they can be managed to be compatible with protecting the California Desert National Conservation values.” (DRECP, Appendix A, p. A-3).

- The CDCA Plan requires pipelines with diameters greater than 12 inches to be located within designated utility corridors (CDCA, Page 93; see also DRECP LUPA-LANDS-8).³ The existing pipeline is located within a designated corridor.
- The CDCA Plan requires new water transmission facilities to be located within designated utility corridors (CDCA, Page 15, Table 1, 7. Transmission Facilities). New proposed supporting facilities are located within a designated corridor.

1.6. Scoping and Issues

The BLM has considered input received during internal scoping under NEPA, as well as during review of site-specific issues and resources affected. Internal scoping was conducted in the BLM Needles Field Office by an interdisciplinary team. Impacts to resources were identified by resource specialists relative to the Proposed Action. While Issue #4 below specifically calls out cultural resources and Tribal interests, it is acknowledged based on scoping efforts that Tribal interests may extend to other issues analyzed, including but not limited to visual resources, water, wildlife, and access.

The issues analyzed in detail in this EA include:

- Issue #1 –Biological Resources:

How would the Proposed Action affect vegetation, special-status species, and their habitat and how will the Proposed Action be compliant with local, regional, and state plans?

- Issue #2 –Air Quality:

How would the Proposed Action affect air quality and ensure compliance with applicable federal, state, and regional air quality standards?

- Issue #3 – Recreation and Visitation:

How would the Proposed Action affect recreational access and the visitor experience within BLM-managed lands, including the National Trails Viewshed Special Recreation Management Area?

- Issue #4 – Cultural Resources & Tribal Interests:

How would the Proposed Action impact cultural and historical properties, including previously unidentified archaeological sites and areas of cultural significance?

³ The DRECP defines “existing transmission/utility corridors” as “Linear corridors on public lands designated through the West Wide Energy Corridor Programmatic Environmental Impact Statement, the CDCA Plan, or other Resource Management Plan as a preferred location for pipelines, transmission lines, and other linear infrastructure. Corridors are meant to minimize adverse impacts of these facilities and minimize the proliferation of rights-of-way across public lands.” (DRECP p. xiv)

- Issue #5 – Lands and Realty:

How would the Proposed Action be compatible with applicable land use plan management goals, his existing realty authorizations, and utility corridors including 368 Energy Corridors?

- Issue #6 – Soils, Geology & Mineral Resources:

How would the Proposed Action affect soils, geology, and mineral resources?

- Issue #7 – Paleontological Resources:

How would the Proposed Action affect paleontological resources?

- Issue #8 – Hydrologic Resources:

How would the Proposed Action affect hydrologic resources?

- Issue #9 – Visual Resources:

How would the Proposed Action affect visual resources?

- Issue #10 – Grazing and Range Resources:

How would the Proposed Action affect grazing and range resources?

The issues not analyzed in detail in this EA include:

- Socioeconomics: Socioeconomics were not identified as a substantive issue warranting assessment during internal scoping. Nonetheless, construction and operation of the Proposed Action would benefit the local economy through creation of construction jobs and related local and regional economic activity (Greene Economics, 2025). The Greene Economics report is included as Appendix H of this EA. The Proposed Action is also anticipated to benefit the quality of life of the American people by providing access to a new reliable water supply for communities in Southern California and increase regional water delivery flexibility.
- Noise: Noise was not identified as a substantive issue warranting assessment during internal scoping. While construction and operation activities, including operation of pumps, would generate limited noise, as described in Chapter 2, acoustic treatment would be applied at pump stations to reduce noise. Further, the location of the Proposed Action in generally remote locations reduces the potential for impacts to human receptors. (Note that noise was analyzed in the 2025 EIR Addendum for the Northern Pipeline at pages 71-73).

CHAPTER 2. ALTERNATIVES

This chapter describes the two alternatives that will be analyzed in Chapter 3: the No Action Alternative and the Proposed Action. This chapter also describes one alternative that was considered and eliminated from detailed analysis due to the potential for increased environmental effects compared to the Proposed Action.

2.1. Alternative A – No Action Alternative

Under Alternative A (No Action Alternative), the BLM and DoW would not approve the new ROW and easement requests, and activities to convert the Northern Pipeline as described in the Proposed Action would not occur. The existing MLA ROW authorization would continue to be in effect until its expiration (currently scheduled for December 31, 2049). Under the terms of the existing MLA ROW (CACA106273421), the Northern Pipeline would remain an idle oil/gas pipeline, the holder may seek authorization to put the pipeline into service for the transportation of oil or natural gas, or the BLM would approve a termination and rehabilitation plan to decommission and reclaim the ROW. Cadiz may continue to use groundwater underlying its property under California law.

2.2. Alternative B – Proposed Action

FGMWC has proposed to convert approximately 162 miles of the Northern Pipeline between Cadiz, California and Mojave, California, to convey water (the “Project”). The Northern Pipeline traverses private lands, federal lands managed by BLM and DoW, and state-owned lands managed by the California State Lands Commission. FGMWC has applied to BLM for a ROW under FLPMA and to DoW for an easement authorizing use of the Northern Pipeline to convey water across approximately 83 miles of federal lands.

Converting the Northern Pipeline to convey water would require the construction of pump stations and associated appurtenances such as air valves and blowoffs, some of which would be located on federal land managed by BLM. Each pump station would disturb approximately two acres outside the existing MLA ROW, totaling approximately seven acres on BLM-managed land and seven acres on private lands. Installation of appurtenances would be entirely within the existing MLA ROW. In addition, to ensure that the pipeline meets performance expectations, sections of pipeline would be upgraded or replaced in accordance with FGMWC’s Plan of Development, Sections 3. Operations and 4. Maintenance (See Appendix B).

The proposed ROW and easement would cross approximately 65 miles of federal lands managed by the BLM and 18 miles of lands managed by EAFB located in portions of San Bernardino and Kern County, California. The proposed ROW, along with the proposed pump stations, are shown in Figure 1.

The total acreages of federal, state and private lands traversed by the Northern Pipeline ROW are shown in **Table 1** below.

Table 1. Acreage Calculation of the Northern Pipeline Right-of-Way

Land Ownership/Management	Miles	Acres	Access Road Acres	Total ROW Acres
Public Lands (BLM – subject to proposed FLPMA Title V ROW Grant)	53.57	324.67	123.51	454.6
Public Lands acquired by BLM after construction of the Northern Pipeline (not subject to proposed FLPMA Title V ROW Grant) ⁴	11.02	66.79	21.81	91.93
Military Lands (subject to proposed EAFB easement)	17.81	107.94	36.19	144.13
State (not subject to proposed FLPMA Title V ROW Grant)	1.10	6.67	3.06	9.73
Private (not subject to proposed FLPMA Title V ROW Grant)	78.75	477.27	164.46	646.23
Total	162.26	983.34	349.02	1346.62

2.2.1. Construction and Conversion

In order to convey water through the existing pipeline, seven pump stations would be constructed, three of which would be on BLM-managed lands, none of which would be located on EAFB, and four of which would be located on private lands. Each pump station would require approximately two acres of land to accommodate construction and operation. These pump stations would be located adjacent to the pipeline and would extend approximately 325 feet from the pipeline centerline. The pump stations would consist of the following typical main components: Tank(s), Surge Tanks, Vertical Turbine Pumps or Horizontal Pumps (up to 6 Duty Pumps + 2 Standby Pumps), Natural Gas Generators, Electrical Switchgear, Electrical Transformers and Hydraulic Surge Control System. Additionally, each pump station would require an air-conditioned masonry block wall building, housing motor control centers, control and monitoring panels, and instrumentation equipment. This building would include roof mounted solar panels to provide power for lighting, ventilation, and AC systems. Each pump station would be painted to blend in with the surrounding environment. A concept rendering of a typical pump station layout is shown in **Figure 3**. Pump station locations and footprints are included in Appendix C.

⁴ Easements granted in 1985 by the Southern Pacific Land Company authorize water conveyance through the Northern Pipeline over these lands. These easements predated BLM's acquisition of these lands and are therefore valid existing rights.



Figure 3. Preliminary Rendering for a Typical Pump Station Site Layout

For each pump station, natural gas would be supplied from an existing natural gas pipeline that parallels the Northern Pipeline. To access natural gas, an underground pipeline would be installed to connect each proposed pump station to the parallel existing gas pipeline, generally a distance less than 100 feet. Each pump station site would be paved with a concrete surface and a fence or wall would be constructed around the perimeter with access gates. The natural gas-powered generators would be installed on pads within the pump station fence-line.

The Proposed Action also includes installation of appurtenances visible on the surface, including air and vacuum relief valves, blow-off facilities, and access manholes as required for operations. The exact location of these appurtenances would be determined during final design. The Air Release / Air Vacuum valves (AR/AV) would be installed to allow for air release and to manage vacuum conditions in the pipeline and blow-offs (BO) to allow for filling and draining the pipeline as needed for maintenance. **Figure 4** provides an example of a typical AR/AV. The existing pipeline includes several existing valves; these existing valves would be maintained and a maximum of 140 new AR/AVs, and 140 new BOs would be installed. Use of the BOs would occur rarely, only when the pump stations were turned off due to maintenance or malfunction. Water within the pipeline would be released after such maintenance or repairs from BOs into leach fields installed within the pipeline ROW (described further below). No water would be released into uncontrolled drainages. To install these appurtenances, excavation would be required to access the existing buried pipeline. All ground disturbance related to construction and operation of AR/AVs and BOs would be conducted within the ROW.



Figure 4. Typical Air Release/Air Vacuum Valve at Grade

The area typically needed for a finished AR/AV assembly is approximately 36 to 50 square feet, and 16 to 25 square feet for a BO unit. The AR/AV assembly would be mounted at grade in a 24-inch diameter enclosure that is approximately 4 feet tall. AR/AVs can also be installed belowground in precast vaults with a 3 to 4-inch vent pipe extending approximately 36 inches above grade, which can be painted to blend with surrounding environment. In areas of high OHV traffic, reflective tape may be used to enhance visibility. The BO unit can be an aboveground riser pipe with a cap, or an underground camouflaged unit dependent on specific location and existing terrain. Each BO would be equipped with an infiltration area sufficient to disperse the water released from the pipeline during infrequent maintenance or malfunction. A subsurface infiltration gallery would be constructed within the ROW that would vary in size but generally be less than 250 by 24 feet in size (or approximately 6,000 sf). Actual size of each gallery would depend on the pipeline segment served by the BO. The BOs would convey water into the galleries at a rate that each gallery could accommodate without over-filling. Each BO would have a different flow rate and total volume of discharge depending on the segment of pipe being drained and local infiltration rates. The area would be excavated three to five feet and a perforated pipeline gallery would be installed. The soil would be backfilled, and the site graded to its original contour.

To prepare the existing pipeline for water conveyance, a thorough inspection would be conducted to determine whether any portion of the underground pipeline is in need of repair or rehabilitation. To complete the inspection, inspection points would be located approximately every 20-30 miles. The pipeline would be accessed at these points from the surface with an excavator. The inspectors would cut into the pipe and install cameras and other inspection equipment inside the pipeline to assist in the assessment of the pipeline's condition and integrity. The inspection points will provide access to inspect the interior of entire pipeline. No inspection points will be located on EAFB. If damage is identified, rehabilitation may consist of lining the pipeline, repairing sections of the pipeline, or replacing sections of the pipeline, as required. Each access point would include an area of disturbance along the pipeline alignment, within the existing ROW boundary. To install new pipeline segments, the damaged pipeline segments

would be uncovered, cut into manageable pieces, and removed by truck. Alternatively, the damaged pipeline segments may be left in place in coordination with the BLM Authorized Officer, with the new pipeline installed side-by-side in the excavated trench. Excavated material would be stockpiled within the ROW, while the new pipeline segments are delivered to the sites via the existing access road and installed within the open trench. The pipe trench would be backfilled with the stockpiled material and graded to match the surrounding topography. All work areas and staging areas would be located within the existing ROW and the new approximate two-acre pump station sites.

Construction of the pump stations would require approximately 20 worker trips, 10 vendor trips, and 24 haul truck trips per day. Construction of each pump station is anticipated to take approximately 9 months to one year depending on the availability and procurement time of pumps and major equipment. Construction of pump stations 3, 4 and 7 may occur later than the others to ramp up to full capacity over time. Construction would include site preparation; construction of mechanical, structural and electrical facilities; installation of underground pipelines to connect the pump station to the existing buried pipeline; and installation of reinforced concrete support pads for pumps, valves, tanks, and other infrastructure. Additional construction equipment such as excavators, cranes and pavers would also be used for some construction elements.

Access to the work areas would be provided through the existing maintenance access road serving the existing underground pipeline. These roads are primitive roads that are not paved. They are accessible from the nearest highway, including either State Route 66, State Route 58, or Interstate 40. For pump stations 3 and 4, a new dirt road would be developed to connect the pump stations to the existing access road. These new roads would be within the new ROW. To install the AR/AVs and BOs, work vehicles would drive on the access roads parallel to the installation point and drive across the ground to the existing ROW. Installation of each AR/AV and BO would be constructed concurrently along the pipeline with other construction activities before the pipeline is put into service. No new permanent access roads would be created for these appurtenant facilities.

The existing cathodic protection system may need to be repaired or replaced along the entirety of the pipeline. Where it is necessary to replace and install anodes connected to the existing pipeline, a 12- to 18-inch temporary trench may be needed to access the pipeline. The trench would be backfilled once the repair is complete. Old and defective cathodic protection equipment currently mounted above grade near the pipeline may be replaced as necessary. These repair activities would occur concurrently with other construction activities and could last throughout the construction phase. Repairs would be conducted by approximately three to five people and two to three trucks at each repair location. All of the repair work would be conducted within the ROW.

2.2.1 Operations

Once the pump stations are operational, the pipeline would be flushed with water as part of condition assessment surveys as well as startup and commissioning in order to clean the interior of the pipeline. Water may be flushed through the pipeline several times over approximately 1 to 2 months. A total of approximately 15 acre-feet of water would be conveyed through the pipeline for flushing over the course of a few hours to determine the water quality at the delivery point.

Additionally, hydrostatic (pressure) testing would be conducted along the pipeline using the same water used for flushing.

As part of the broader conversion of the Northern Pipeline, a holding pond for the retention of flushed and hydrostatic testing water may be constructed on private lands intersecting the pipeline alignment near the City of Barstow, near EAFB, and/or within private property on the eastern end of the pipeline. The construction of and the use of the holding pond would occur entirely on private property.

Once the pump stations and appurtenant facilities are installed, water would be conveyed through the pipeline in either direction. Operations would be managed from Pump Station 1 (“PS1”), located on private property near Cadiz, California. A Supervisory Control and Data Acquisition (“SCADA”) system, located near PS1, would be used to remotely control and monitor the operation of all pump stations along the pipeline. While the SCADA system supports the transmission of water across public and DoW lands, its infrastructure and operation would be located entirely on private lands and are not included as part of the proposed federal action. The pump stations would primarily be unmanned, but regular site inspections of the mechanical and electrical equipment would occur up to two times day. Use and operation of the pipeline would be year-round. The pumps at each pump station would be housed within a concrete block structure, which would be surrounded by a concrete block perimeter wall. Noise from the operation of the pumps would be attenuated with acoustic treatment within the concrete block structure to minimize noise emissions consistent with County noise ordinances.

Routine maintenance of the pipeline would be conducted similar to existing maintenance activities under the MLA ROW, and is further described in the Plan of Development (Appendix B Section B). The facility operators would be subject to safety procedures and impact minimization standard practices for all work in remote desert areas including when using access roads.

2.2.2. Design Features, Avoidance, and Minimization Measures

The Applicant has proposed a number of Project Design Features (“PDFs”) and avoidance and minimization measures (“AMMs”) which would be implemented as part of the Proposed Action to avoid and minimize potential impacts to the environment. These PDFs are intended to minimize potential adverse effects to the environment identified and are included in the Plan of Development, Appendix B and attached plans. Specifically, the following measures would be implemented during Project construction and operations:

- **BLM-Approved Color Painting Palette:** The appurtenant facilities would be painted using BLM-approved paint tones. Specifically, structures would be painted with muted earthtones meant to blend in with the surrounding natural desert environment. The Applicant would also ensure the chosen paint tone lacks any sheen or reflectivity to prevent unnecessary glare. Paint pallets used by the Applicant within the ROW would either be prescribed by the BLM or submitted to the BLM by the Applicant for review and approval. Painted ROW structures would be properly maintained and repainted as needed.
- **Spill Prevention Plan:** Prior to construction, a spill prevention plan would be approved by FGMWC that requires the contractor to minimize spill potential and to develop protocols for emergency response to any spill of oils or other chemicals that may be present on site during construction. Spill prevention kits will be present at all construction

sites within the ROW. No fuels or other hazardous materials would be stored in the ROW. The spill prevention measures cover mobile equipment and vehicles that contain lubricating oils and diesel fuel within the equipment only. No drums, totes, or other aboveground or underground bulk storage containers of petroleum products would be stored within the ROW. The Plan of Development includes spill prevention and counter measures covering operations of the pump stations. Each pump station would provide spill kits and secondary containment for the storage of small quantities of chemicals needed such as lubrication oils and cleaning fluids.

- **Wildfire Prevention Plan:** Prior to operation, a wildfire prevention plan will be prepared to ensure the pump stations and appurtenant facilities are maintained in a manner that minimizes fire risks. The plan will include at a minimum the following:
 - Worker education protocols,
 - Mandatory on-site fire suppression equipment,
 - Pump station housekeeping requirements,
 - Maintenance protocols for fire suppression equipment,
 - Communication protocols, and
 - Contact information for the local fire department.
- **Grazing Land Coordination.** Prior to constructing AV/ARs or BOs within the Bissell grazing allotment west of EAFB, FGMWC shall coordinate with any active grazing permittee to minimize disruption to livestock and to protect installed equipment.
- **EAFB Activity Approval.** Prior to conducting maintenance activities on EAFB land, FGMWC will submit a Department of the Air Force (DAF) Form 813 at least 60 days prior to the scheduled activity, for additional environmental analysis of the proposed major maintenance activity. EAFB will provide FGMWC with a set of Environmental Management Measures that shall be complied with prior to and/or during the proposed activity consistent with the EAFB Integrated Natural Resources Management Plan.
- **Hazardous Materials Management.** FGMWC shall ensure all hazardous materials are authorized and managed in compliance with applicable management plans including FAR Clause 52.223-3, Hazardous Material Identification and Material Safety Data, FAR Clause 52.223-5, Pollution Prevention and Right-to-Know Information and applicable sections of Department of the Air Force Manual 32-7002.

For all chemicals/materials (paints, adhesives, solvents, lubricants, cleaners, etc.) procured for this project by any means other than an installation HAZMART, the Proponent/Contractor shall provide the following to the 412 CEG/CEVC HM Program Manager, at least 45 days prior to the start of the project Completed Contractor Hazardous Materials Usage Tracking Form. FGMWC shall continue to provide material usage updates to the 412 CEG/CEVC HM Program Manager by the 5th of each month until the term of the work conducted on EAFB land.

Air Quality: The following measures shall be implemented during construction and operations in accordance with state, federal, and regional air quality standards:

Dust Control Measures:

- FGMWC shall comply with applicable requirements, including Eastern Kern Air Quality Management District Rule 402 and Mojave Desert Air Quality Management District Rule 402, for any construction activity on any site involving 10 or more contiguous acres of disturbed surface area, or any earthmoving activity exceeding a daily volume of 10,000 cubic yards, or relocating more than 2,500 cubic yards per day of bulk materials at least three days per year.
- All soil excavated or graded shall be sufficiently watered to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soil areas. Water will be sourced from the closest available bulk water service and delivered via water truck.
- Watering shall take place a minimum of twice daily on unpaved/untreated roads in areas with active operations.
- Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.
- Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method such as non-toxic soil binders to prevent wind-blown fugitive dust.
- On-site vehicle speed on unimproved roads shall be limited to 15 miles per hour.
- Streets adjacent to the construction site shall be kept clean and construction-related accumulated silt shall be removed.
- Any construction activity on any site involving 10 or more contiguous acres of disturbed surface area, or any earthmoving activity exceeding a daily volume of 10,000 cubic yards, or relocating more than 2,500 cubic yards per day of bulk materials at least three days per year, additional mitigation measures are required per Eastern Kern Air Quality Management District Rule 402 and Mojave Desert Air Quality Management District Rule 402.

Air Emissions:

- All equipment shall be maintained as recommended by manufacturer's manuals.
- Idling engines shall be shut down when not in use for over 15 minutes.
- Electric equipment shall be used where available from existing power lines in lieu of diesel or gasoline powered equipment.

Biological Resources: Biological resources surveys were conducted in 2024 and 2025, which included the ROW area. Although special-status species have the potential to occur within the ROW area, avoidance measures would be implemented to protect sensitive biological resources in the area.

Pre-construction Wildlife Surveys: Immediately prior to construction activities, pre-construction surveys that comply with U.S. Fish and Wildlife Service ("USFWS") protocol shall be conducted to document any and all locations of burrows and desert tortoise sightings within all proposed disturbance areas that provide potential habitat for the species. If any active burrows are located in facility construction areas, to completely

avoid impact on the burrows, construction will be delayed only to be resumed after a qualified biologist has determined that the tortoise has left the area and the burrow is inactive.

Pre-construction Floristic Surveys: During the spring prior to construction activities, floristic surveys shall be conducted to document any and all locations of rare plants within all proposed disturbance areas where there is a potential for rare plants such as small-flowered androstephium, Borrego milkvetch, and winged cryptantha to occur. If any rare plants are located in facility construction areas, seeds will be collected, and replanting shall be conducted along the pipeline trench ROW near the plant sitings. The surveys shall be conducted during the appropriate blooming period(s) by an authorized plant ecologist/biologist according to protocols established by the USFWS, California Department of Fish and Wildlife (“CDFW”), and California Native Plant Society (“CNPS”). Special-status plant species will be avoided if feasible if they are found to be present during the preconstruction surveys. This includes avoiding unnecessary or unauthorized trespass by workers and equipment, staging and storage of equipment and materials, refueling activities, and littering or dumping debris in areas known to contain special-status plant species that are not within the designated construction footprint. A no-work zone (50-foot buffer) shall be established around special-status plant populations detected during pre-construction surveys.

Joshua Tree Avoidance: Measures shall be taken to avoid removal of Joshua trees to the greatest extent possible. This includes avoiding unnecessary or unauthorized trespass by workers and equipment, staging and storage of equipment and materials near the designated construction footprint. If any Joshua trees are found within the project area, a no-work zone shall be established around each tree. A 10-foot buffer zone shall be established for specimens greater than 1 meter tall and a 50-foot buffer zone for specimens greater than 5 meters tall. To protect Joshua trees from impacts to the critical root zone, a silt fence shall be installed at the perimeter of the buffer zone to prevent siltation if soils have been destabilized or there is a greater than 40 percent chance of rainfall within two days of ground disturbance activities.

Kit Fox Avoidance: In areas identified as suitable habitat, preconstruction surveys will occur 30 days prior to construction for the desert kit fox. If the species is present, construction would be avoided in or adjacent to occupied habitat during breeding season. Kit fox burrows will be avoided.

Invasive Plant Species Management: Prior to the start of construction activities, staff shall be trained to inspect and clean equipment and personal gear to minimize the spread of invasive plant species. Following construction, invasive plant management shall be implemented to treat disturbed areas as needed for up to two years post-construction. After two years, invasive plant surveys will be conducted as needed to prevent infestations from being established. Treatment would include either the use of herbicide compliant with state and federal regulations or weeding.

FGMWC will control invasive species consistent with the applicable invasive plant management plans. Washing all equipment prior to use will be required to prevent the spread of noxious weeds. Additional standard BMPs include closely monitoring the

types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species; conduct monitoring sufficient to ensure early detection and eradication of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas; use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers. When available, native seed of known origin will be used, as labeled by state seed certification programs that is free of noxious and invasive weeds, as determined and documented by a seed inspection test by a certified seed laboratory. All BMPs would be in accordance with current environmental compliance and standards. An Invasive Plant Management Plan Outline is included in Appendix D. Use of herbicides would be subject to BLM standard operating procedures including: DOI-BLM-WO-WO2100-2007-0002-EIS (Appendix B Herbicide Treatment Standard Operating Procedures); DOI-BLM-WO-WO2100-2012-0002-EIS (Appendix A Herbicide Treatment Standard Operating Procedures and Mitigation Measures); DOI-BLM-WO-2200-2022-0001-EIS (Appendix A Prevention Measures and Standard Operating Procedures). All invasive species management actions conducted on EAFB would be subject to DoD Instruction (DoDI) 4150.07, *DoD Pest Management Program*, dated 29 May 2008, DoDI 4715.03, *Natural Resources Management*, AFD 32-70, *Environmental Quality*, Edwards AFB Integrated Natural Resources Management Plan, Edwards AFB Habitat Restoration Plan, Edwards AFB Integrated Pest Management Plan, Edwards AFB Invasive Species Management Plan. Exclusion Fencing and Monitoring: A chain-link or tortoise fence (one-inch by two-inch welded wire mesh attached to the chain-link fence, with approximately two feet above-ground and one foot buried below ground) shall be installed to exclude small wildlife species from entering the active pump station construction areas in areas of documented occurrences of special-status ground dwelling wildlife as determined during pre-construction surveys by a qualified biologist or as directed by USFWS. These temporary fences must completely surround all stationary construction sites (including staging areas) and will be monitored by an authorized biologist or biological monitor at all times during active construction.

Desert Tortoise Avoidance and Protection Plan: A Desert Tortoise Avoidance and Protection Plan shall be developed and adopted in consultation with the USFWS prior to construction. Elements of the plan shall include, but are not limited to the following:

- Designated Project personnel will implement the avoidance and protection plan. A Field Contact Representative will be designated to oversee compliance with all tortoise avoidance and protective measures during Project construction, operation and maintenance. The Field Contact Representative will have the authority to halt work if there is non-compliance with any of the plan measures and will do so as needed.
- A step-by-step protocol to be implemented whenever a desert tortoise is observed by construction or operational personnel. USFWS personnel contacts will be identified for Technical Assistance on take avoidance if needed during construction.
- Flagging and delineation requirements for located burrows and areas with tortoise activity.
- An education program for all construction, operation, and maintenance employees. Program will be conducted onsite prior to the onset of construction and will be provided repeatedly as needed to ensure that all Project contractors (firms) as well as

- all individuals complete the training. Participation will be recorded and verified. Tortoise protection will be emphasized during all scheduled safety meetings.
- Enforcement of speed limits and checking under vehicles for tortoise prior to leaving Project areas during construction and long-term operations and maintenance.
 - Biological monitoring requirements for all ground disturbance activities. All construction sites and activities will be monitored by Authorized Biological Monitors. An Authorized Biologist (approved by USFWS) will plan and oversee all construction monitoring activities in the field. The authorized biologist will identify, train, and oversee biological monitors for day-to-day monitoring and reporting activities.
 - Construction trenches will be backfilled with previously excavated material once work is complete. Before any holes or trenches are filled, they should be thoroughly inspected for trapped animals. Additional BMPs will include:
 - All excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials, all voids and holes beneath the material should be filled to prevent wildlife from entering them. Escape ramps may also be required;
 - The length of the trench left open at any given time shall not exceed that distance which will remain open for one week or less in duration.
 - Pipes and culverts greater than 4 inches in diameter will be covered and stored to prevent wildlife from taking refuge if possible. If this not possible the Project Designated biologist will need to be consulted to develop an alternative.
 - An inspection for wildlife will occur prior to moving the materials. Open trenches shall be regularly inspected by the Project Designated Biologist at a minimum of once per day.
 - To prevent increased use of the ROW area by common ravens and coyotes, implementation of measures such as trash management, removal of unnatural sources of standing water, and other means. A clean workplace will be maintained in all areas. No trash is to be thrown on the ground or left in open containers, equipment, or truck beds. Refuse receptacles with lids will be provided for all construction personnel and are to be maintained and emptied on a regular basis and at least weekly. Trash collection will be conducted in all construction areas as needed to keep all areas clean on a daily basis. Portable toilets will be provided and used by all construction personnel.
 - The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.
 - At the end of construction all equipment removal will monitored by Authorized Biologists or Biological Monitors.

Temporary Construction Halt: If a desert tortoise is observed within 300 feet of construction activities or is determined by the Authorized Biologist to be in harm's way, then construction activities shall be halted in the vicinity as directed by the Authorized

Biologist. Work shall only continue once the Authorized Biologist determines there is no risk to the desert tortoise.

Mohave Ground Squirrel: Project Designated Biologist(s) will conduct, and oversee where appropriate, activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The designated biologist(s) will submit weekly monitoring reports. During the typical active Mohave ground squirrel season (February 1 through August 31), clearance surveys shall be conducted throughout the site, immediately prior to initial ground disturbance. In the cleared areas, monitoring shall be conducted to determine if squirrels have entered cleared areas. Ground disturbance shall be contained to areas cleared of squirrels. Detected occurrences of Mohave ground squirrel will be avoided, with a minimum avoidance area of 50 feet, until the squirrels have moved out of harm's way.

Bird Nesting Surveys: If construction and vegetation removal is proposed for the bird nesting period of February 1 through August 31, then pre-construction surveys for nesting bird species shall begin 30 days prior to construction disturbance with subsequent weekly surveys, the last one being no more than three days prior to work initiation. The surveys shall include habitat within 300 feet (500 feet for raptors) of the construction limits. Active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone established dependent on the species and in consultation with USFWS. This buffer zone shall be delineated in the field with flagging, stakes, or construction fencing. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.

Construction Zone Limits: Prior to construction, construction zone limits shall be marked by a qualified biologist and shall be staked, flagged, fenced, or otherwise clearly delineated to ensure that the construction zone is limited to minimize impacts on special-status plant species. These limits shall be identified on the construction drawings. No earth-moving equipment shall be allowed outside demarcated construction zones unless pre-approval is obtained from a qualified biologist.

Restoration: FGMWC will restore areas impacted by construction to pre-construction contours. Passive restoration methods will be implemented for most disturbance areas. For areas west of Barstow hydroseeding of disturbed areas may be conducted. All disturbed areas would be monitored for weed control for up to two years post-construction. Weed treatment would include either the use of herbicide compliant with state and federal regulations, or mechanical weed removal by a qualified professional as outlined in the Invasive Plant Management Plan (Appendix D). Restoration activities on EAFB would comply with the EAFB Habitat Restoration Plan.

Worker Education Program: All activities, as determined appropriate on an activity-by-activity basis, will include a worker education program. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide

interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about:

- Site specific biological and non-biological resources.
- Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with compliance requirements intended to protect site-specific biological and non-biological resources.
- The required and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc.
- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist.
- Observations of desert tortoises or their sign during maintenance shall be conveyed to the field supervisor and a biological monitor. Employees shall be notified that they are not authorized to handle or otherwise move tortoises encountered on the project site unless directed to do so by a qualified biologist.
- Measures that personnel can take to promote the conservation of biological and non-biological resources.

Cultural Resources & Tribal Interests

Pre-Construction Resource and Construction Delineation: Prior to construction, a qualified archaeologist shall carry out delineation of the boundaries of significant resources or unevaluated resources that are within or within 100 m of construction areas. A buffered exclusion zone will be designated around those resources to ensure that construction activities do not take place there and impact the resources. These exclusion zones shall be staked, flagged, fenced, or otherwise clearly marked. If the construction zones marked by the biologists include areas that were not subject to cultural resources survey for the Project, a pre-construction inventory effort of those areas will be conducted by a qualified archaeologist. Construction activities will be limited to areas subject to cultural resources intensive pedestrian inventory efforts conducted by qualified archaeologists. These limits shall be identified on the construction drawings. Periodic assessments of the conditions of the resources within exclusion zones and the status of the construction limits will be conducted by a qualified archaeologist until all construction is completed.

Construction Monitoring: Prior to construction, a plan for archaeological monitoring, post-review discoveries, and unanticipated effects shall be developed by a qualified archaeologist in consultation with the involved agencies and interested Native American tribes. The plan will outline required actions to comply with NAGPRA, including a plan of action if discoveries occur. The plan will also outline tribal participation. Prior to commencement of ground disturbing activities in an area, an archaeologist and a tribal monitor will provide on-site personnel with a worker education program focused on archaeological and tribal values, work provisions, discovery protocols, and salient

regulations. An archaeological monitor shall be retained to monitor all ground-disturbing activities, including brush clearance and grubbing. The monitor shall work under the supervision of the qualified archaeologist. If ground-disturbing activities are occurring simultaneously in areas located more than 500 feet apart, additional monitors shall be retained. If requested by a Tribe, a tribal monitor shall be present during all ground-disturbing activities. The qualified archaeologist, in consultation with the BLM and other agencies, shall have the discretion to modify the monitoring requirements based on in-field observations of subsurface conditions. In the event that cultural resources are unearthed during ground-disturbing activities, the archaeological monitor and/or tribal monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the find so that the find can be evaluated and appropriate treatment determined.

Unanticipated Discovery: If there are unanticipated post review discoveries of archaeological materials, the “Discoveries without prior planning” provisions in 36 CFR 800.13(b) will be followed as applicable. Upon encountering an archaeological resource, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist. If the qualified archaeologist, in consultation with the relevant agency, determines that the resources may be significant, he or she will develop an appropriate treatment plan for the resources. Appropriate Native American representatives shall be consulted in determining appropriate treatment for newly identified cultural resources if the resources are pre-contact or may be of interest to Tribes. Work may proceed on other parts of the ROW area while mitigation for cultural resources is being carried out. The results of monitoring efforts, post review discoveries, and unanticipated effects on resources will be documented in an appropriate technical memorandum or report format that will be submitted to the appropriate CHRIS information center and to the records systems of appropriate agencies.

Operations and Maintenance Assessments: The FLPMA ROW and the EAFB easement agreement will extend for 50 years after grant. While no ground disturbance is currently planned beyond what is specified in the Project Description, over those 50 years unplanned activities may need to occur. During those 50 years, potential resources that do not yet meet the age threshold to be considered historic properties may need documentation and evaluation. Over that time, changing conditions or advances in archaeological science and techniques may also cause the need for identification, documentation, and analysis efforts. To account for any future needs, a qualified archaeologist will be retained to provide support for operations and maintenance activities. Prior to any operations and maintenance activities that could involve ground disturbance or overland travel, a qualified archaeologist will conduct an assessment of the sensitivity of the area and the likelihood of encountering unknown resources or impacting known resources. At minimum, this will include a desktop review using information from cultural studies, records searches, pedestrian inventories, and the results of any post review discoveries that relate to the Project, along with an assessment of the soils and geology of the area of planned activities. If warranted by the desktop review, such as when there have been no field inventory efforts for the past 5 years, the assessment may include additional field identification efforts, establishment of temporary exclusion zones, and archaeological and tribal monitoring efforts. Decisions regarding level of

effort will be made by the qualified archaeologist in consultation with the relevant agency. The plan for archaeological monitoring, post-review discoveries, and unanticipated effects will be in effect for these activities as well. The results of any assessments that generate new data will be submitted to the appropriate CHRIS information center and to the records of appropriate agencies.

Paleontological Resources

Excavation in Previously Undisturbed Soils. All excavation activities within areas that have not been previously disturbed by the original installation of the pipeline shall be monitored by a qualified paleontologist, until the paleontologist determines that sediments are previously disturbed or there is no reason to continue monitoring in a particular area due to other depositional factors which would make fossil preservation unlikely or deemed scientifically insignificant. If paleontological resources are encountered, they shall be documented or recovered, and curated, as appropriate.

Hydrologic Resources

Storm Water Pollution and Erosion Prevention: Prior to construction activities, a construction Storm Water Pollution Prevention Plan (“SWPPP”) shall be prepared and any necessary permit coverage obtained under the National Pollutant Discharge Elimination System (“NPDES”). The SWPPP shall document all Best Management Practices (“BMPs”) selected for the project that correspond to the nature and phase of the construction activities. The SWPPP and any inspection reports shall be made available to the BLM upon request.

At a minimum, the SWPPP shall include the following:

- Good site management measures (i.e., “housekeeping”) for construction materials that could possibly be a threat to water quality if discharged or exposed to stormwater (e.g., store chemicals in watertight containers with secondary containment, minimize exposure of construction materials to precipitation, control the off-site tracking of sediment, limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist).
- Good housekeeping measures for waste management (i.e., provide secondary containment for portable toilets, cover waste disposal containers at the end of every business day and during a precipitation event, contain and secure stockpiled waste material, contain concrete washout areas and cover prior to and during a precipitation event).
- Good housekeeping for vehicle/equipment storage and maintenance (i.e., contain fuel, grease, and oil to prevent them from leaking into the ground, storm drains, or surface waters, use designated areas with BMPs for equipment fueling, maintained, and storage, clean leaks immediately and dispose of leaked materials properly in accordance with the law).
- Good housekeeping measures on the linear construction site, and of site operations, to control aerial deposition of site materials. Such particulates can include, but are not limited to, metals, nutrients, organics, sediment, other particulates, and trash.

- Practices to eliminate or minimize erosion. Practices to be implemented include using effective wind erosion controls, preserving existing vegetation, minimizing the amount of soil exposed during construction, stabilizing disturbed areas, and reestablishing vegetation as soon as practicable. Erosion control BMPs (with the exception of sprayed products) shall be available on-site, or at a nearby location (e.g., common lay-down yard), year-round with trained persons able to deploy the product under the direction of the Qualified SWPPP Practitioner.
- Identification and use of the following site sediment controls:
 - Establish and maintain effective perimeter controls;
 - Stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site;
 - Design, install, and maintain effective sediment controls to minimize the discharge of pollutants utilizing site-specific BMPs; and
 - Design sediment basins and impoundments according to the California Stormwater Quality Association's ("CASQA") current Construction BMP Guidance Handbook and utilize outlet structures that withdraw water from the surface, unless infeasible. Linear project dischargers utilizing sediment basins shall complete installation prior to other land disturbance activities unless infeasible.

2.3. Alternatives Considered but Eliminated from Detailed Analysis

The Proposed Action would authorize water conveyance through an existing buried pipeline. An alternative that would involve construction of a new underground pipeline either parallel to the existing Northern Pipeline or in a new location was considered. Because construction of a new underground pipeline would necessarily result in substantially greater disturbance and resource impacts, such an alternative was eliminated from detailed analysis. Additionally, no other existing pipelines, similar to the Northern Pipeline, are capable of conveying water from Cadiz, CA to the vicinity of Mojave, CA. Alternative routes to convey water have been previously analyzed under NEPA and CEQA (see Section 1.1 and Appendix A). Alternatives were also previously analyzed for the original Northern Pipeline route as part of the CEQA/NEPA analysis of the construction of the Northern Pipeline for transportation of oil (1984-1985 All American Pipeline EIS/EIR) and the conversion of the pipeline from oil to gas (2002-2005 El Paso Pipeline Conversion EA/EIR). At this time the Northern Pipeline is the most feasible existing infrastructure to transmit water from Cadiz privately owned lands to California communities without creating a completely new pipeline.

BLM policy (Manual 6280) requires the BLM to consider alternatives when it finds that a Proposed Action may impact a National Trail. The Proposed Action here does intersect with the Old Spanish National Historic Trail. However, the analysis shows that the Proposed Action is consistent with the purposes of the Old Spanish Trail designation, and any visual disturbance is located within an already-designated Energy Corridor. Due to the consistency in land use and the substantially greater disturbance that would result from the construction of a new underground pipeline, the BLM eliminated this alternative from more detailed analysis.

In addition to Alternatives A and B and the other previously analyzed alternatives described above, an additional alternative option involving the use of renewable energy to power the Northern Pipeline pump stations was considered. The alternative was excluded from detailed analysis based upon constraints imposed by existing land use, topographic constraints, operational restrictions, and the potential to generate additional and/or greater environmental effects. The eliminated alternative is briefly summarized below.

In place of natural gas-powered pumps, an alternative was considered that would utilize renewable energy sources such as solar-power, green hydrogen power, or fuel cells, to power the pump stations rather than connecting to the existing parallel Kinder Morgan natural gas pipeline. This alternative would require a battery energy storage system (“BESS”) to power the Northern Pipeline during nighttime hours.

Under this alternative, there would be no need to connect to the existing Kinder Morgan natural gas underground pipeline infrastructure that runs parallel to the Northern Pipeline, and air emissions from combustion of natural gas would be avoided. However, constructing photovoltaic solar panel arrays sufficient to power the water conveyance pipeline would require significantly greater amounts of land in the area and increase construction impacts associated with installing and maintaining the solar array. Use of fuel cells would be substantially more costly, would present logistical challenges, and would be less proven for large-scale pumping in remote or rugged environments. Although the use of renewable energy would reduce air emissions caused by the combustion of natural gas, it would be technically more complex, result in greater impacts from construction and development within BLM-managed lands, and would be economically infeasible. Due to the potential for increased impacts, this alternative was eliminated from further analysis.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

This chapter describes the affected environment, meaning the environmental conditions including reasonably foreseeable environmental trends and planned actions, that have the potential to be affected by activities related to the No Action Alternative and the Proposed Action described in Chapter 2, as well as the anticipated environmental consequences of implementing those alternatives.

The scope of analysis for the Proposed Action includes all areas that would be disturbed as part of the activities to convert the Northern Pipeline for water conveyance (including pump stations, repairs, and installation of appurtenant facilities) and operate and maintain the Northern Pipeline for water transportation in the long-term (“Project area” or “ROW area”). This analysis describes the affected environment and environmental impacts within the Project area as well as reasonably foreseeable environmental trends and planned actions to assist with agency decision making.

3.1. Issue 1: Biological Resources

How would the Proposed Action affect vegetation, special status species, and their habitat and how will the Proposed Action be compliant with local, regional, and state plans?

3.1.1. Affected Environment

The Northern Pipeline is located in remote desert areas of California supporting sensitive ecosystems. A general habitat assessment field investigation of the ROW and seven proposed pump station sites was conducted in March 2024 and May 2025 to document existing conditions within the areas to be disturbed by conversion activities and operation of the pipeline. A report of the surveys is included as Appendix E of this EA. Prior to conducting the site survey, Environmental Science Associates conducted a literature review and records search to determine which special-status biological resources have the potential to occur on or within the general vicinity of the ROW area.

Vegetation: A list of special-status species that could be found within the Project area, including CNPS Sensitive is included in the biological survey included as Appendix E of this EA. During the field investigations, seven vegetation communities were observed: creosote bush scrub, disturbed creosote bush scrub, disturbed creosote bush-white bursage scrub, disturbed brittlebush scrub, disturbed allscale scrub, stabilized and partially stabilized sand dunes, and dry desert wash. In addition, two land cover types classified as disturbed habitat and disturbed were observed within the ROW area. No plant species listed as threatened or endangered under the Endangered Species Act (“ESA”) or BLM Sensitive Plant Species were observed in the ROW area during field surveys; no sensitive vegetation communities were observed.

Wildlife: A list of special-status species that could be found within the Project area, including ESA-listed, BLM Sensitive, and California Fish and Wildlife Sensitive, is included in the biological survey included as Appendix E of this EA. The following sections summarize findings of the survey:

- **Reptiles:** The scrub habitats, partially stabilized sand dunes, and dry desert wash plant communities provide suitable foraging and nesting habitat for a variety of reptilian species adapted to conditions within the Mojave Desert. Reptilian species observed during the field investigation included western zebra-tailed lizard (*Callisaurus draconoides rhodostictus*), common side-blotched lizard (*Uta stansburiana elegans*), and common chuckwalla (*Sauromalus ater*), Great Basin whiptail (*Apidoscelis tigris tigris*). Additional reptilian species that could be expected to occur on-site include desert iguana (*Dipsosaurus dorsalis dorsalis*), desert horned lizard (*Phrynosoma platyrhinos calidiarum*), long-nosed leopard lizard (*Gambelia wislizenii*), desert spiny lizard (*Sceloporus magister*) Mojave desert sidewinder (*Crotalus cerastes cerastes*), southwestern speckled rattlesnake (*Crotalus mitchellii pyrrhus*) and northern Mojave rattlesnake (*Crotalus scutulatus scutulatus*), California kingsnake (*Lampropeltis californiae*), and Great Basin gopher snake (*Pituophis catenifer deserticola*). Four of the seven proposed pump site locations, including the three pump stations on BLM-managed lands support suitable habitat for the ESA-listed (threatened) desert tortoise (*Gopherus agassizii*). None of the pump stations would be located within desert tortoise designated critical

habitat. Desert tortoise were not observed in the ROW area during the 2025 field investigation.

- **Birds:** Avian species observed during the field investigation include American raven (*Corvus corax*), and house finch (*Haemorrhous mexicanus*). Common avian species expected to occur on-site include lesser goldfinch (*Spinus psaltria*), American crow (*Corvus brachyrhynchos*), cactus wren (*Campylorhynchus brunneicapillus*), rock wren (*Salpinctes obsoletus*), and red-tail hawk (*Buteo jamaicensis*), greater roadrunner (*Geococcyx californianus*), and Phainopepla (*Phainopepla nitens*).
- **Nesting Birds:** No active nests or nesting behaviors were observed during the field investigation, but the habitat types in the area provide foraging and nesting habitat for year- round and seasonal avian residents, as well as migrating songbirds that have adapted to conditions in the Mojave Desert.
- **Mammals:** Most mammal species are nocturnal and are difficult to observe during a diurnal field visit. Mammalian species observed or detected during the field investigation were black-tailed jackrabbit (*Lepus californicus*), and white-tailed antelope ground squirrel (*Ammodontomys leucurus*). Additional common mammalian species that have potential to occur on-site include kangaroo rat (*Dipodomys* sp.), and desert woodrat (*Neotoma lepida*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*) and bat species (*Myotis*, *Lasiurus*, and *Antrozous* sp.). The Project area supports rocky habitat and bridges that provide potential roosting habitat for local bat species.

Invertebrates: Invertebrate species were not observed during the field investigation, but potential for occurrence due to habitat types exists. Invertebrates with the potential for occurring in the area include Crotch's bumble bee (*Bombus crotchii*). Monarch butterfly (*Danaus plexippus*) is not expected to occur within the Project area.

Wildlife Corridors & Linkages: Although partially constrained by existing facilities and infrastructure, the open and natural habitats on and surrounding the pipeline corridor allow for local wildlife to move freely through the undeveloped surrounding areas in search of food, shelter, or nesting habitat. Primary linkage inhibitors include the highways 66, 40 and 58. Despite these constraints, the area functions as a major wildlife movement corridor or linkage.

Wetland habitats: No riparian corridors, creeks, springs, seeps or wetlands were identified within the proposed disturbance areas during surveys of those areas. Dry ephemeral washes and dry wash habitats were observed throughout the areas.

Federal Jurisdictional Areas: There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The U.S. Army Corps of Engineers regulates discharge of dredge and/or fill materials into "waters of the United States" pursuant to Section 404 of the Federal Clean Water Act ("CWA"). Of the State agencies, the California State Water Resources Control Board and Regional Water Quality Control Boards regulate discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act and the "CDFW" regulates alterations to streambed and associated plant communities pursuant to Section 1602 of the California Fish and Game Code.

The USFWS National Wetlands Inventory and the U.S. Geological Survey ("USGS") National Hydrography Dataset were reviewed to determine if any blue line streams or riverine resources

have been documented within or immediately surrounding the Project area. Based on this review, riverine features (desert dry washes) were identified within the area of proposed disturbance. These ephemeral features follow onsite topography with surface flows only provided by direct precipitation from storm events. In addition, the Mojave River located in proximity to the existing pipeline is an ephemeral river responding to precipitation events, but has been considered a water of the U.S.. However, no jurisdictional waters of the U.S. were identified during the field investigation within areas of proposed disturbance.

3.1.2. Environmental Impacts

3.1.2.1. *Impacts of the Alternative A – No Action Alternative*

Under the No Action Alternative, the BLM and DoW would not approve the new ROW and easement requests, and FGMWC would not utilize the Northern Pipeline between Cadiz, California and Mojave, California, for the conveyance of water. Consistent with the terms of the MLA ROW Grant, the existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the ROW may be terminated and decommissioned. Potential effects to biological resources from ongoing maintenance would not increase compared with the affected environment, but decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in disturbance and impacts to biological resources. Cadiz may continue to use groundwater underlying its property under California law.

3.1.2.2. *Impacts of the Alternative B – Proposed Action*

Vegetation: Plant communities would be impacted during site grading, fencing, and excavation activities when constructing the pump stations and installing AR/AVs and BOs. Permanent loss of up to 8 acres of desert scrub habitat (including disturbed creosote bush scrub, disturbed creosote bush-white bursage scrub, disturbed brittle bush scrub and disturbed white bursage scrub) would occur on BLM-managed land during construction of the pump stations. Temporary impacts to vegetation could occur from installation of AR/AVs and BOs, but much of these affected areas would be passively revegetated. None of the impacted vegetation types have a federal special-status designation.

No special-status plant species were observed on-site during the field investigation. However, prior to disturbance, springtime surveys would be conducted during the blooming period for all of the special-status plant species to determine presence or absence in planned disturbance areas. Based on habitat requirements for the identified special-status species, and known distributions, the disturbance areas have a low potential to support three species listed on the CNPS list of special-status plant species: small-flowered androstephium, Borrego milkvetch, and winged cryptantha.

Borrego milk-vetch and winged cryptantha are CNPS Rare Plant Rank 4 species, which is a watch list of plants of limited distribution and are fairly common in the Mojave Desert, and small-flowered androstephium is a CNPS Rare Plant Rank 2B species, which are plants that are considered rare, threatened, or endangered in California, but more common elsewhere. These species are not regulated under the federal or state Endangered Species Acts; however, these species were listed within the Mojave Trails National Monument (“MTNM”) Proclamation. If small-flowered androstephium, Borrego milk-vetch, and winged cryptantha are found within or

near the ROW area during spring surveys, the plants would be avoided, or a restoration plan would be implemented to encourage these species to colonize the disturbed areas. No additional protection or mitigation measures are proposed for these special-status species.

Potential for introduction of invasive plant species exists within the Northern Pipeline alignment through soil disturbance and equipment transfer during construction. Invasive plant species in disturbed areas will be managed pursuant to avoidance and minimization measures outlined in Section 2.2.3. An Invasive Plant Management Plan is included as Appendix D. Implementation of the invasive management plan in conformance with state and federal regulations and land use management plan requirements from EAFB and BLM would minimize risks of invasive plant infestations within the ROW.

Special-Status Wildlife Species: No special-status wildlife species were observed in the ROW area during the habitat assessment. Based on habitat requirements for specific species and the availability and quality of on-site habitats, the ROW area has a high potential to support federally threatened desert tortoise, state threatened Mohave ground squirrel, and a state species of special concern the San Joaquin coachwhip. The ROW area provides only marginally suitable habitat for the other special-status wildlife species known to occur in the area and their potential to occur is moderate as summarized in Table 1 of Appendix E.

In order to avoid impacts to the special-status wildlife, a pre-construction nesting bird clearance survey would be conducted prior to ground disturbance, and a preconstruction desert tortoise clearance survey would be implemented to ensure desert tortoise are absent from the work areas within the ROW, including the new pump stations. If a desert tortoise is observed in the proximity of disturbance, all construction activities will cease until the individual leaves the area. Similarly, construction activities will be monitored for Mohave ground squirrel to avoid impacting individuals. Impacts to wildlife species would be avoided through implementation of AMMs, and would therefore be minimal.

Use of pesticides, rodenticides, or insecticides is not anticipated during construction or routine operations at the pump stations and within the ROW.

Riparian Habitat and Special-Status Natural Communities: Riverine resources were identified within the ROW as dry, ephemeral washes. These features are isolated ephemeral features that follow on-site topography. Surface flows within these features are only provided by direct precipitation from storm events. No surface water was observed during the field investigation. Construction of the pump stations, AR/AVs and BOs would avoid the riverine resources where feasible. If avoidance is infeasible, the affected resources would be restored following construction activities. Site designs would accommodate stormflows in a manner that would avoid creating downstream scouring. Further, no sensitive natural communities would be impacted from the Proposed Action.

Wildlife Corridors: The undeveloped land in the immediate vicinity of the ROW area provides local wildlife movement opportunities for wildlife species moving through the immediate area. Construction of the proposed pump stations would not prevent local wildlife from moving through the area because wildlife would be able to migrate around the pump stations. Once constructed, the maintenance activities will be similar to existing conditions. As such, implementation of the Proposed Action is expected to have a minimal impact to wildlife movement opportunities or prevent local

wildlife movement through the area since there is ample habitat adjacent to the disturbance areas to support wildlife movement opportunities.

Local, Regional, and State Plans: The ROW area is not located within the planning area of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. Therefore, impacts to any local, regional, or state habitat conservation plans are not expected to occur from development of the proposed project, and mitigation is not required.

Certain desert plant species (i.e., smoke trees, cacti, Mojave yuccas [*Yucca schidigera*]) are regulated pursuant to Section 88.01.060 of the San Bernardino County Development Code and Section 80073 of the California Desert Native Plant Act. While Joshua Tree was observed and documented near PS7 (which occurs on private land), these trees would be avoided, and no Joshua trees or other species protected under the California Desert Native Plant Act would be disturbed as a result of the Proposed Action.

Conclusion: The proposed Action would permanently occupy approximately 14 acres on lands adjacent to an existing ROW including 7 acres of BLM-managed land. These areas are sparsely vegetated with desert scrub habitats. Through consultation with USFWS, the BLM has determined that the Proposed Action is within the scope of the CDCA programmatic consultation and associated programmatic biological opinion (PBO) (USFWS, 2017) and therefore Conservation Measures included in the CDCA PBO to protect sensitive wildlife, vegetation, and habitats apply to the Proposed Action. Similarly, EAFB has determined through consultation with USFWS that the Proposed Action is within the scope of the EAFB Operations PBO (USFWS, 2014), and subject to applicable Conservation Measures therein. With implementation of these Conservation Measures and the AMMs listed in Section 2.2.3, the potential for impacts to wildlife and sensitive habitats would be minimized through monitoring and impact avoidance measures. The Proposed Action would avoid affecting special-status plant and wildlife species. Disturbance within desert tortoise Critical Habitat would be minor and limited to AV/AR/BO installations within the ROW. Impacts to biological resources would not be significant.

3.2. Issue 2: Air Quality

How would the Proposed Action affect air quality and ensure compliance with applicable federal, state, and regional air quality standards?

3.2.1. Affected Environment

The Project area is located in the Mojave Desert Air Basin (“MDAB”) and is within the jurisdiction of the Mojave Desert Air Quality Management District (“MDAQMD”) for the San Bernardino County portion of the MDAB and the Eastern Kern County Air Pollution Control District (“EKAPCD”) for the eastern Kern County portion of the MDAB. The western most portion of the existing pipeline (approximately 10 to 11 percent of the total linear distance) extends into the San Joaquin Valley Air Basin (“SJVAB”), which is within the jurisdiction of the San Joaquin Valley Air Pollution Control District (“SJVAPCD”).

Criteria Pollutants & Toxic Air Contaminants (“TACs”): Both the State and the Federal government have established health-based criteria called Ambient Air Quality Standards

(“AAQS”) for common air pollutants. The two main categories of air pollutants are criteria, and toxic air contaminants (“TACs”). Criteria pollutants are common and thus affect an entire region during episodic events generally coinciding with meteorological conditions that retard dispersion and or promote formation of secondary pollutants in the atmosphere (e.g., sunlight plays a role in the formation of ozone from oxides of nitrogen, carbon monoxide, and volatile organic compounds). These “criteria pollutants” include ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and suspended particulate matter (PM_{2.5} and PM₁₀). The MDAB is designated as “unclassified/attainment” for all National AAQS criteria pollutants with the exception of O₃, of which the southwest corner of the desert portion of San Bernardino County (i.e., west Mojave Desert) region and the eastern Kern County region are in non-attainment, and PM₁₀, where the entirety of the San Bernardino County portion of the MDAB and the East Kern County portion of the MDAB are also in non-attainment.^{5 6} The SJVAB is nonattainment under the National AAQS for O₃ and PM_{2.5}, and an attainment maintenance area for PM₁₀.

TACs may result in health effects from localized concentrations and are regulated by health risk assessment which determines cumulative impact by considering toxicity, end-point, and receptor distance, rather than comparing the amount or concentration of each pollutant emitted by a project to a value. Diesel particulate matter (“DPM”) and respirable crystalline silica (“RCS”) are two potential TACs of concern in the region.

3.2.2. Environmental Impacts

3.2.2.1. *Impacts of the Alternative A – No Action Alternative*

Under Alternative A (No Action Alternative), the BLM and DoW would not approve the new ROW and easement requests, and activities to convert the Northern Pipeline as described in the Proposed Action would not occur. Consistent with the terms of the MLA ROW Grant, the existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the ROW may be terminated and decommissioned. Potential effects to air quality from ongoing maintenance would not increase compared with the affected environment, but decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in disturbance, air emissions, greenhouse gas (“GHG”) emissions., and fugitive dust emissions. Cadiz may continue to use groundwater underlying its property under California law.

3.2.2.2. *Impacts of the Alternative B – Proposed Action*

Emissions associated with the Proposed Action were estimated using various methodologies and emission factors published by the U.S. Environmental Protection Agency (“EPA”), California Air Resources Board (“CARB”) and California Air Pollution Control Officers Association

⁵ MDAQMD, Mojave Desert AQMD Attainment Status, <https://www.mdaqmd.ca.gov/home/showpublisheddocument/1267/636337468837000000>. Accessed June 27, 2025.

⁶ USEPA, Nonattainment Areas for Criteria Pollutants (Green Book), <https://www.epa.gov/green-book>. Accessed June 27, 2025.

(“CAPCOA”) as part of their California Emissions Estimator Model (CalEEMod), version 2022.1. (CAPCOA, 2022). See Appendix F for the complete air emissions calculations for the Project.

Additionally, appropriate emissions factors published by the EPA as part of their AP-42, Compilation of Air Pollutant Emissions Factors (EPA, 2009), emission factors from the CARB OFFROAD inventory, and EMFAC2021 models were also used as appropriate. Default emission factors used in this analysis appear in the CalEEMod User’s Guide Appendix D (CAPCOA, 2021). Details on the assumptions, emission factors, and calculated quantities of emissions are presented in Appendix F.

Federal Conformity: A project is conforming if it complies with all applicable rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). A project is non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan. Conformity with growth forecasts can be established by demonstrating that the Project is consistent with the land use plan that was used to generate the growth forecast. An example of a non-conforming project would be one that increases the gross number of dwelling units, increases the number of trips, and/or increases the overall vehicle miles traveled in an affected area (relative to the applicable land use plan).

The Federal Conformity regulation (40 C.F.R. § 93) and MDAQMD Rule 2002, which mirrors the federal regulation, were adopted to ensure that federal actions conform to the applicable implementation plan. Federal actions where the total of direct and indirect emissions in a nonattainment or maintenance area is less than specified rates would screen out of conformity analysis. The Project area is within the MDAQMD’s jurisdiction and is designated as severe non-attainment for federal ozone, and moderate non-attainment for federal PM₁₀ standards. The Project area is also located in portions of the EKAPCD jurisdiction, of which eastern Kern County is designated moderate non-attainment for federal ozone standards. A small segment of the pipeline (less than 10 percent of the total linear distance) is located within the East Kern County portion of the MDAB that is designated serious non-attainment for federal PM₁₀. The western-most portion of the Project area (approximately 10 to 11 percent of the total linear distance) extends into the SJVAB, which is designated extreme non-attainment for federal ozone, serious non-attainment for federal PM_{2.5}, and attainment maintenance for federal PM₁₀ standards.

The vast majority of the Project area (more than 80 percent) is located within the MDAB. Since the attainment designation classifications within the eastern Kern County portion of the MDAB are less severe than those of the San Bernardino County portion of the MDAB, the air quality analysis is based on the attainment designation classifications of the San Bernardino County portion of the MDAB. Because the Project area is located in a portion of the MDAB that is in non-attainment status for ozone (with NO_x and VOC as precursors) and PM₁₀, federal agency actions are subject to Clean Air Act (CAA) general conformity review requirements. Based on those attainment designations, the Project would screen-out of conformity analysis if:

- NO_x and VOC emissions are each less than 25 tons per year.
- PM₁₀ emissions are less than 100 tons per year, and
- Emissions are less than 10% of the non-attainment area emissions inventory.

Minimal portions of the Project area are located in the East Kern County portion of the MDAB, which is designated serious non-attainment for federal PM₁₀, and the SJVAB, which is designated extreme non-attainment for federal ozone, serious non-attainment for federal PM_{2.5}, and attainment maintenance for federal PM₁₀ standards. Emissions of PM_{2.5} are also presented below. Based on the emissions results presented below, when proportioned to account for the relatively minimal length of the Project area located within the East Kern County portion of the MDAB (i.e., less than 10 percent of the total linear distance), emissions would be well below the *de minimis* levels for serious PM₁₀ non-attainment areas, extreme ozone non-attainment areas, and serious non-attainment PM_{2.5} areas. No construction activities would occur within the SJVAB.

The Proposed Action would result in short-term emissions of DPM from the use of heavy-duty diesel equipment, vendor trucks, and worker vehicles. Due to the transitory and temporary nature of activity during pipeline construction, any one specific sensitive receptor location would not be exposed to prolonged periods of construction activity. Construction equipment and trucks would be required to comply with applicable provisions of regulations to improve fuel efficiency and CARB ATCM to limit heavy-duty diesel motor vehicle idling to 15 minutes or less at any given location. Therefore, emissions from construction activities would not be anticipated to result in the exposure of sensitive receptors to levels that exceed applicable standards. The Proposed Action would result in a negligible impact relating to exposure of sensitive receptors to emissions of TACs. **Table 2, Construction Emissions**, shows the construction-related criteria pollutant emissions estimated for the Proposed Action.

Pump station operations and maintenance activities would result in a negligible impact relating to exposure of sensitive receptors to emissions of TACs. **Table 3, Operational Emissions**, shows the operation-related criteria pollutant emissions estimated for the Project.

Table 2. Construction Emissions

Parameters	Annual Emissions (tons/year)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Pipeline Inspection & Rehabilitation	0.08	0.62	0.79	<0.01	0.08	0.03
AR/AV & BO Installation	0.12	0.99	1.26	<0.01	0.12	0.05
Cathodic Protection Repair	0.03	0.24	0.31	<0.01	0.02	0.01
Pump Station	1.35	1.23	1.52	<0.01	0.15	0.05
Annual Construction Emissions	1.57	3.08	3.88	0.01	0.36	0.15
Annual Emissions Threshold ^A	25	25	100	100	100	100
Exceedance?	No	No	No	No	No	No
Notes:						
^A Annual Thresholds based on MDAQMD – Rule 2002 (General Federal Actions Conformity) ⁷						

⁷ <https://ww2.arb.ca.gov/sites/default/files/classic/technology-clearinghouse/rules/RuleID2003.pdf>

Table 3. Operations Emissions

Parameters	Annual Emissions (tons/year)					
	VOC	NOx	CO	SOx	PM ₁₀	PM _{2.5}
Operational Emissions (Federal Lands Managed by the BLM) ^A	0.44	0.51	0.77	0.24	0.42	0.42
Operational Emissions (Total) ^A	2.09	2.62	4.98	1.12	1.98	1.98
Annual Emissions Threshold^B	25	25	100	100	100	100
Exceedance?	No	No	No	No	No	No
Notes:						
^A See Appendix F for emissions calculations.						
^B Thresholds based on MDAQMD – Rule 2002 (General Federal Actions Conformity) ⁸						

As shown above, construction and operational emissions associated with the Proposed Action would not exceed the applicable MDAQMD nor the de minimis thresholds of significance derived from general conformity regulations, and, therefore, would satisfy the NAAQs. See the air emissions calculations presented in Appendix F for additional detail. Thus, operational-related annual emissions would result in a minimal impact.

Greenhouse Gas (“GHG”) Emissions: The MDAQMD has established a GHG significance threshold of 100,000 metric tons carbon dioxide emissions per year (MTCO₂e/year) to address the CARB Scoping Plan measures and EPA regulations. While the MDAQMD threshold is higher than other local agency screening criteria (i.e., SCAQMD 10,000 MTCO₂e/year; San Bernardino County Climate Action Plan 3,000 MTCO₂e/year), it is supported by substantial evidence and most directly applicable to the Project. Specifically, 100,000 tons/year of GHG emissions from a single facility constitutes a major source that requires a Federal operating permit from EPA. Similarly, the MDAQMD NO_x significance threshold of 25 tons/year is equal to the major source threshold applicable to areas designated severe nonattainment for ozone.

GHG emissions associated with the Proposed Action are calculated using the assumptions described above. Construction-related GHG emissions are estimated to be a total of 1,859 MTCO₂e throughout the construction duration. Operation-related GHG emissions are estimated to be a maximum of 35,440 MTCO₂e/year, which is below the applicable MDAQMD threshold. The contribution of GHG emissions from a single proposed land management action cannot be accurately translated into any localized effects in the area specific to the action and existing models are unable to forecast local or regional effects on resources resulting from the full range of emissions analyzed, or from any specific subset of emissions. There are no established federal thresholds or standards, qualitative or quantitative, for NEPA analysis to assess the GHG emissions in terms of the action’s effect from this proposed action. .

Fugitive Dust: Construction equipment and on- and off-road vehicle traffic associated with construction and operations have the potential to generate particulate matter from ground-

⁸ <https://ww2.arb.ca.gov/sites/default/files/classic/technology-clearinghouse/rules/RuleID2003.pdf>

disturbing activities. Additionally, wind erosion of surfaces exposed during ground disturbance and activities on unpaved surfaces can also cause fugitive dust emissions. Routine maintenance of the pipeline would be conducted similar to existing maintenance activities. Additionally, during the grading activities and ongoing operations, a water truck would be deployed as needed to minimize fugitive dust in accordance with applicable MDAQMD rules and regulations. The small portions of the Project area within the EKAPCD and SJVAPCD jurisdictions would comply with applicable rules and regulations for those air districts including for air district-specific fugitive dust control requirements. Therefore, the Proposed Action would result in a negligible impact relating to fugitive dust.

Conclusion: With implementation of the AMMs listed in Section 2.2.3, and compliance with applicable air district regulations and permits, the Proposed Action would have negligible adverse impacts to air quality.

3.3. Issue 3: Recreation and Visitation

How would the Proposed Action affect recreational access and the visitor experience within BLM-managed lands, including the National Trails Viewshed Special Recreation Management Area?

3.3.1. Affected Environment

The natural desert landscape is highly valued by local communities and recreational visitors. Dispersed recreation opportunities are available across BLM land use designations, including wilderness areas, campgrounds, and off-highway vehicle (“OHV”) routes. Recreational uses on public lands within the ROW area are guided by the DRECP LUPA and areas have been designated within the DRECP as Special Recreation Management Areas (“SRMAs”). The use of BLM-administered lands for recreation is typically concentrated in the cooler months from September to May, when seasonal residency and visitation to the region is highest. The pipeline traverses the National Trails Viewshed SRMA established by the DRECP.

Visitation to the ROW area is generally associated with motorized camping, OHV recreation, hunting, hiking, wildflower and wildlife viewing, bird watching, photography, and commercial uses. As such, the majority of public lands within the ROW area have recreation opportunities that can be appropriately managed while conserving natural, biological, and cultural resources as prescribed by the BLM’s multiple-use mission and planning documents. The Northern Pipeline is not located within a BLM- designated OHV area. However, the Mojave Desert is relatively accessible and attractive for OHV use, and therefore portions of the ROW area could have historically been utilized for OHV recreation.

3.3.2. Environmental Impacts

3.3.2.1. *Impacts of the Alternative A – No Action Alternative*

Under Alternative A (No Action Alternative), the BLM and DoW would not approve the new ROW and easement requests, and activities to convert the Northern Pipeline as described in the Proposed Action would not occur. Consistent with the terms of the MLA ROW Grant, the existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the

ROW may be terminated and decommissioned. Potential effects to recreation resources from ongoing maintenance would not increase compared with the affected environment, but decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in disturbance and impacts to recreation resources. Cadiz may continue to use groundwater underlying its property under California law.

3.3.2.2. *Impacts of the Alternative B – Proposed Action*

The Proposed Action would not alter the existing network of publicly accessible roads or recreational areas within the existing utility corridor. The Proposed Action would not adversely affect the public's continued use of nearby roadways.

OHV Travel: Although the ROW is not within a designated OHV area, OHV travel routes are used in the area, including the existing pipeline access road. OHV routes 6740 and 6742 in the vicinity of pump stations 2 and 3 are the existing pipeline utility access roads as shown on **Figure 5**. OHV use may be temporarily affected by construction and operation activities along this access road and in the general vicinity of the ROW. These established routes would remain open for public use during construction. The new pump stations would not block access to the existing designated OHV routes. The Proposed Action would include safety protocols to protect public land users and provide suitable alternative crossings within the ROW. New AR/AV and BO facilities installed near popular OHV areas would be made more visible with reflective tape or other means as appropriate. Pump stations would be fenced to prevent access for non-authorized personnel. When alternative crossings outside the existing MLA ROW are deemed necessary, FGMWC would coordinate with the BLM Authorized Officer.

Recreational Facilities: The Proposed Action would not result in physical impacts to surrounding recreational facilities and would not result, directly or indirectly, in an increase in population. The Northern Pipeline is an existing facility with an access road along its length that is generally open to the public. During construction, trucks on the access road may slow travel through the area, but no areas would be blocked off and no access roads would be closed. The construction activity and new facilities would be located within and adjacent to the existing utility corridor. The Proposed Action would not increase recreational visitation that could affect natural resources of the area. The use of the existing pipeline to convey water rather than natural gas would not conflict with the goals of the National Trails Viewshed SRMA.

Conclusion: The Proposed Action would minimally affect on-going recreational activities, site access, or alter the visitor experience.

3.4. Issue 4: Cultural Resources & Tribal Interests

How would the Proposed Action impact cultural and historical properties, including previously unidentified archaeological sites and areas of cultural significance?

3.4.1. Affected Environment

The Northern Pipeline is an existing pipeline within a previously excavated pipe trench disturbed during the original construction of the pipeline. The proposed pump stations, AR/AVs and BOs would be located within and adjacent to the existing Northern Pipeline alignment. The seven pump stations would be constructed adjacent to the existing pipeline easement on areas that may be undisturbed. See Appendix G for a map of the Area of Potential Effects (APE) and explanatory memorandum. The horizontal APE for the ROW conversion includes the 162 miles of ROW, easements, and private property that the existing pipeline crosses, the access roads used for operations and maintenance, the locations of the pumpstations, and the space between the access road and the appurtenance locations. The APE includes the ROW and access roads on federal land, the locations of the appurtenances on non-federal land, the pumpstation locations, and the area of potential pipeline replacement. The ROW extends 53.61 miles across BLM-managed lands and 17.1 miles across lands managed by DoW and is generally 50 ft in width. A Class III Inventory Report that provides precontact, ethnographic, and historic-era contexts, summary of records search and background research, and methods and results of the inventory of the ROW and access roads on BLM managed lands and the potential ground disturbance areas (proposed pump stations, AR/AVs and BO locations, and area of potential pipeline replacement) was prepared to support the analysis in this EA, in conformance with the National Historic Preservation Act (NHPA) assessment and consultation requirements. The Class III Inventory Report presents the results of a survey completed by qualified experts between July and October 2025. Using the combined Class I/III report, resource records, and the scope of the undertaking, the BLM made determinations of eligibility for cultural resources and treated other resources as eligible for the purposes of the undertaking, pursuant to 36 CFR 800.4.

The Class III Inventory of the BLM ROW, proposed pump stations, AR/AVs and BO locations, and the potential pipeline replacement sections identified six historic properties (properties listed on or determined eligible for listing on the National Register of Historic Places [NRHP]) that intersect the ROW and the report recommends that another four resources be determined eligible for listing on the NRHP. Three of the historic properties are built environment resources: a road, a railroad, and a transmission line that would not, by their nature, be impacted by the Project. The other three are archaeological sites consisting of two multi-component sites and one precontact site. The four resources recommended as eligible include three archaeological sites with precontact components and one historic-era archaeological site. Additionally, a total of 26 resources are unevaluated or their eligibility status is unknown. Six of these are roads and are, by their nature, unlikely to be impacted by the Project. Nine of the sites are mapped overlapping the surveyed area but no archaeological materials were found within that surveyed area, and two were represented by single artifacts. This leaves nine unevaluated archaeological sites that cover portions of the surveyed area. A previously recognized but not fully documented precontact district overlaps the surveyed area and nine unevaluated sites and three sites recommended individually not eligible may be contributors to the eligibility of the district as a whole. Finally, the surveyed area overlaps with three other resources determined not eligible for listing on the

NRHP, 41 resources recommended not eligible for listing, and 45 newly identified loci of P-36-002910 (National Old Trails Highway and Route 66) that are recommended as not contributing to the eligibility of that resource.

As summarized in the Consultation and Coordination section, government-to-government consultation was initiated with fourteen Tribal Nations and Tribal groups (via letters sent) to invite participation in the project and to identify historic properties of religious and cultural significance. The BLM also consulted with the SHPO, regarding the APE, identification of historic properties, NRHP-eligibility, and the finding of effect. The National Parks Conservation Association and Fenner Gap Mutual Water Company also requested to participate as consulting parties and the BLM granted both requests, and included the organizations in Section 106 Consultation. During consultation, the BLM considered input from consulting parties.

3.4.2. Environmental Impacts

3.4.2.1. *Impacts of the Alternative A – No Action Alternative*

Under Alternative A (No Action Alternative), the BLM and DoW would not approve the new ROW and easement requests, and activities to convert the Northern Pipeline as described in the Proposed Action would not occur. The existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the ROW may be terminated and decommissioned. Potential effects to cultural and tribal resources from ongoing maintenance would not change compared with the affected environment, but decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in disturbance and impacts to cultural and tribal resources. Prior to any new future actions resulting in measurable ground disturbing activities associated with decommissioning, the BLM would consult with Tribal Nations. Cadiz may continue to use groundwater underlying its property under California law.

3.4.2.2. *Impacts of the Alternative B – Proposed Action*

As described in 3.4.1 Affected Environment, there are a total of 85 cultural resources identified intersecting the surveyed portion of the APE, including six historic properties, one of which has 45 loci within the surveyed portion of the APE. No human remains were identified within the surveyed area. However, this does not preclude the possibility of inadvertently uncovering human remains, including those interred outside of formal cemeteries, during Project implementation. Based on the identification efforts completed to date and the proposed avoidance and minimization measures incorporated into the Proposed Action, the BLM has concluded that the undertaking would result in no adverse effect to historic properties under Section 106 of the NHPA. The BLM completed consultation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR Part 800). Following SHPO's comments on the BLM's finding of No Adverse Effect, the BLM provided supplemental documentation addressing each issue raised and requested review and comment from the Advisory Council on Historic Preservation pursuant to 36 CFR 800.5(c)(2)(i). The ACHP did not provide comments within the fifteen-day review period prescribed by 36 CFR 800.5(c)(3)(i). Accordingly, the BLM completed the Section 106 process and finalized its finding of No Adverse Effect. The AMMs listed in Section 2.2.3 of this EA will be implemented

in order to avoid impacting significant archaeological resources. To the extent possible, the final design of the Project will use the results of cultural resources surveys to avoid impacting resources and the facilities will be placed in areas that pose minimal impacts to existing resources. The known and recently identified sites and resources will be mapped as exclusion areas by qualified archaeologists during final design of the pump stations in order to ensure avoidance during construction. The pump stations are located in areas of low potential for sensitive resources. Where previously recorded resources have not yet been formally evaluated but are assumed eligible for the National Register in relation to this undertaking only, project design incorporates avoidance measures that provide protection regardless of eligibility status. Accordingly, unevaluated resources intersecting the surveyed portion of the APE would be avoided or otherwise treated conservatively pending completion of any future evaluations that may be warranted. Although known archaeological resources will be avoided in these ways, there exists the possibility that previously unidentified archaeological deposits underlie the Project area.

To install the appurtenances, excavation would be required to access the existing buried pipeline. Construction of the pump stations would require minimal excavation to connect to the buried pipeline. Accessing the natural gas pipeline would require excavating a trench less than 100 feet in length and ten feet deep from the pump stations to the buried natural gas pipeline, which itself is in a previously excavated trench. Excavation in previously undisturbed areas (to access the natural gas pipeline at seven locations) may encounter cultural and tribal resources, but the implementation of AMMs in the event that cultural and tribal resources or human remains are encountered would avoid and minimize potential impacts to these resources. The Proposed Action would have the potential to contribute only minor disturbance to cultural and tribal resources. With the implementation of AMMs, the construction and operation of the Proposed Action is unlikely to measurably affect cultural resources.

Conclusion: Based on the identification efforts completed to date, the Proposed Action has been designed to avoid identified historic properties through project siting, exclusion areas, and other avoidance and minimization measures incorporated into the undertaking. Accordingly, implementation of the Proposed Action is not anticipated to result in adverse impacts to cultural resources under NEPA. All identified and unevaluated historic properties intersecting the surveyed portion of the APE would be avoided or otherwise protected through implementation of applicable laws, project design features, and avoidance and minimization measures. The BLM completed consultation pursuant to Section 106 of the National Historic Preservation Act prior to issuance of this Environmental Assessment. Based on the completed administrative record—including consultation with Indian Tribes, consulting parties, the California State Historic Preservation Officer, and expiration of the ACHP review period without comment—the BLM concluded that the Proposed Action will result in No Adverse Effect to historic properties pursuant to 36 CFR 800.5. Although government-to-government relationships with Tribes continue beyond completion of the Section 106 process, the BLM has satisfied its procedural responsibilities under 36 CFR Part 800 for the Proposed Action..

3.5. Issue 5: Lands and Realty

How would the Proposed Action be compatible with applicable land use plan management goals, existing realty authorizations, and utility corridors including 368 Energy Corridors?

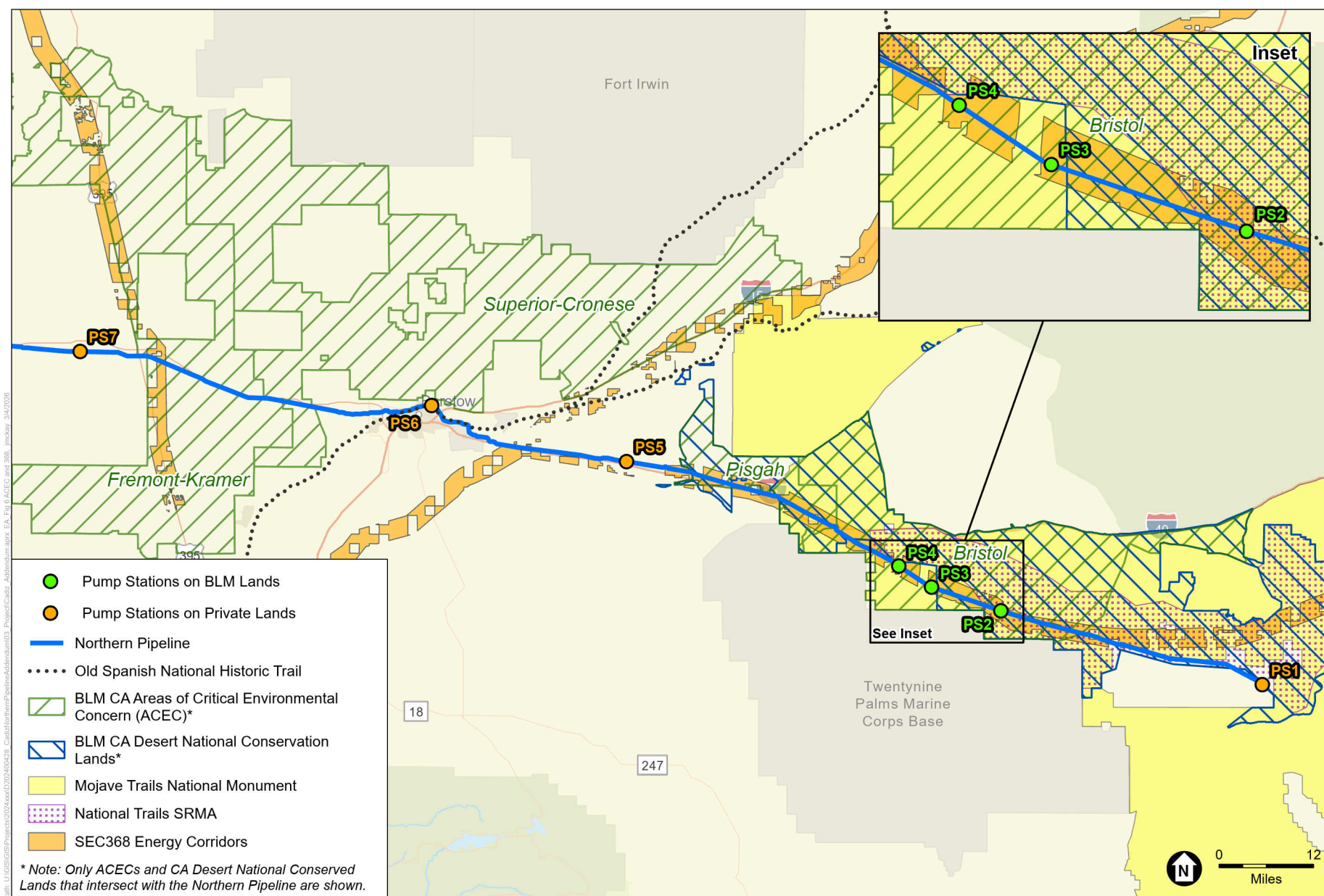
3.5.1. Affected Environment

The Northern Pipeline is an existing buried pipeline located in a corridor parallel to other existing utility infrastructure, including a buried natural gas pipeline. The Northern Pipeline was constructed between 1985-1988. It crosses approximately 53.57 miles of public lands managed by the BLM, 11.02 miles of public lands acquired by BLM after the Northern Pipeline was constructed⁹, 17.81 miles of military lands, 1.1 miles of school lands managed by the California State Lands Commission, and 78.75 miles of private lands.

BLM first published the California Desert Conservation Area Plan (“CDCA”) in 1980 pursuant to Section 601 of FLPMA. The CDCA outlines land use goals and objectives for a large portion of California’s Mojave Desert. As the most recent amendment to the CDCA, BLM approved the DRECP LUPA in 2016 with additional amendments adopted most recently in 2022. The DRECP LUPA provides planning goals and objectives for BLM-managed public lands within the interagency DRECP Plan Area. The Northern Pipeline is located entirely within the BLM’s DRECP planning area.

As part of the DRECP, the BLM established Areas of Critical Environmental Concern (“ACECs”) to protect and prevent irreparable damage to important historical, cultural, and scenic values; fish or wildlife resources, or other natural systems or processes; or to protect human life and safety from natural hazards. The Project area overlaps the Bristol ACEC, Pisgah ACEC, Superior Cronese ACEC, and Fremont-Kramer ACEC. Other special designated lands within the ROW area include the South Mojave – Amboy National Conservation Lands (“NCL”), National Trails Viewshed SRMA, and the Mojave Trails National Monument (“MTNM”). The existing pipeline is also located within a portion of the Section 368 Energy Corridor, which is a corridor designated by BLM as a priority corridor for oil, natural gas, and hydrogen pipelines, as well as electricity transmission and distribution infrastructure. **Figure 6** shows the portion of the Northern Pipeline that traverses the Bristol ACEC near the MTNM.

⁹ Easements granted in 1985 by the Southern Pacific Land Company authorize the conveyance of water through the Northern Pipeline over the 11.02 miles of public lands acquired by BLM after the Northern Pipeline was constructed. These easements predated BLM’s acquisition of these lands and are therefore valid existing rights. (See Table 1).



SOURCE: ESRI; BLM; ESA, 2026

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 6
Pump Stations within ACECs

Mojave Trails National Monument (“MTNM”)

On February 12, 2016, Proclamation 9395¹⁰ established the Mojave Trails National Monument. The Proclamation describes paleontological, cultural, and ecological resources in the Mojave Trails area, including rare plant species, endangered wildlife species, springs, and riparian areas. The MTNM is in San Bernardino and Riverside Counties, California, and encompasses approximately 1.6 million acres of BLM-administered lands. The BLM manages the MTNM as a unit of the National Landscape Conservation System to protect the objects identified in the Proclamation. The BLM has not yet developed a management plan for the monument.

The Proclamation includes the following provision related to existing infrastructure within the boundary of the MTNM:

“Nothing in this proclamation shall be construed to preclude the renewal or assignment of, or interfere with the operation or maintenance of, or with the replacement, modification, or upgrade within or adjacent to an existing authorization boundary of, existing flood control, utility, pipeline, or telecommunications facilities that are located within the monument in a manner consistent with the care and management of the objects identified above. Existing flood control, utility, pipeline, or telecommunications facilities located within the monument may be expanded, and new facilities may be constructed within the monument, but only to the extent consistent with the care and management of the objects identified above.”

Old Spanish National Historic Trail

The Old Spanish National Historic Trail (NHT) was established by Congress in 2002 under P.L. 107-325 as part of the National Trails System under the authority of the National Trails System Act of 1968. The period of significance for the Old Spanish NHT, as identified in the legislation, extends from 1829 to 1848. The designation of the trail commemorates the commercial trading activities between New Mexico and California. A portion of the NHT that generally follows the modern-day Mojave Road intersects the project area. In March 2025 BLM completed an inventory of the NHT, based on the guidance provided in BLM Manuals 6250 and 4250 in the vicinity of Mojave Trails National Monument and this area was included in Inventory Assessment Unit (IAU) 4, the Needles segment.

The assessment of the segment found historic remnants or artifacts. No physical traces of Old Spanish NHT were located and they likely would have been obscured by natural forces of erosion and the creation of OHV/UTV roads throughout the IAU. The assessment identified non-motorized cross-country non-motorized travel along the Mojave Road as a sustainable and premier trail-related opportunity. Some vicarious experiences are available in the IAU in its entirety. There are no high potential historic segments or sites in the IAU.

¹⁰ Executive Office of the President, Establishment of the Mojave Trails National Monument, 81 Fed. Reg. 8371 (Feb. 12, 2016), available at <https://www.federalregister.gov/documents/2016/02/18/2016-03544/establishment-of-the-mojave-trails-national-monument>.

South Mojave-Amboy California Desert National Conservation Lands

The South Mojave-Amboy area comprises approximately 638,000 acres along Interstate 40 south of the Mojave National Preserve. (DRECP Appendix A, pp. A-46 to A-50) This area is part of approximately 3,956,000 acres of California Desert National Conservation Lands (“CDNCL”) within the DRECP decision area. The South Mojave-Amboy area includes nationally significant landscapes with important ecological, cultural, and scientific values, such as diverse geologic features, fossils, habitat for desert tortoise and other sensitive wildlife and plants, hydrologic resources including Bonanza Spring, an unusual invertebrate assemblage associated with lava tubes, historically significant trails and travel corridors, among other resources.

Areas of Critical Environmental Concern (“ACECs”)

The ROW area includes portions of four ACECs: Bristol Mountains, Pisgah Resource Natural Area (“RNA”), Fremont-Kramer and Superior-Cronese. The BLM’s goal for managing these ACECs is generally to “[p]rotect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses.” (DRECP Appendix B, pp. 477, 611, 647, 701)

National Trails Viewshed Special Recreation Management Area

The National Trails Viewshed SRMA comprises approximately 417,129 acres along Route 66. (DRECP Appendix C, pp. 204-213) The National Trails Viewshed SRMA “is a linear site encompassing the longest unspoiled section of Route 66 (1929), the Atchison, Topeka and Santa Fe Railroad Line (1911), the Mojave Trail (1870) and a relatively unknown section of the Old Spanish National Historic Trail (1765). These routes depict the movement of immigration into California for the past 400 year[s].” (DRECP Appendix C, p. 204) The National Trails SRMA is managed for the “outstanding scenic and historic recreational opportunities” associated with historical sites and desert viewsheds. The SRMA includes several recreation management zones that provide a range of recreational experiences.

Designated Utility Corridors

The existing pipeline is located within an existing utility corridor identified in the CDCA that accommodates two additional oil or natural gas pipelines. The BLM approved a land use plan amendment to allow the construction of portions of the existing pipeline outside of a designated utility corridor (CDCA Plan at 96). In addition, Section 368 of the Energy Policy Act of 2005 (Public Law 109-58) directed federal agencies to designate corridors for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities on Federal land in the 11 contiguous Western States and incorporate the designated corridors into the relevant agency land use and resource management plans, among other actions. In 2009, following environmental review, the BLM amended 92 land use plans to designate energy transport corridors. (BLM, Approved Resource Management Plan Amendments/Record of Decision for Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States [2009]) Relevant to this Proposed Action, the Section 368 process amended the CDCA to establish energy transport corridor 27-41 which traverses the MTNM south of the Mojave National Preserve, and overlaps the existing Northern Pipeline alignment for approximately 80 miles. Corridor 27-41 is designated for compatible multimodal uses. (*Id.* at A-5) The Northern

Pipeline also crosses corridors 27-266 and 23-25. While the designated Section 368 corridors are preferred locations for future energy transportation infrastructure, the BLM may authorize non-energy uses within Section 368 corridors, consistent with FLPMA and other provisions of applicable land use plans.

3.5.2. Environmental Impacts

3.5.2.1. *Impacts of the Alternative A – No Action Alternative*

Under Alternative A (No Action Alternative), the BLM and DoW would not approve the new ROW and easement requests, and activities to convert the Northern Pipeline as described in the Proposed Action would not occur. Consistent with the terms of the MLA ROW Grant, the existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the ROW may be terminated and decommissioned. Potential effects to land uses from ongoing maintenance would not change compared with the affected environment, but decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in impacts to land uses. Cadiz may continue to use groundwater underlying its property under California law.

3.5.2.2. *Impacts of the Alternative B – Proposed Action*

The Proposed Action is a modification of the use of an existing pipeline that is currently authorized under an MLA ROW grant. No changes in land use are proposed. The existing Northern Pipeline traverses lands with special designations outlined in the CDCA, DRECP, and MTNM proclamation. **Table 4** accounts for acreages of the proposed ROW within special designated areas. The analysis describes how the existing MLA ROW grant overlaps these special designated lands, and where the Proposed Action would include new disturbance within these areas.

Table 4. Special Designated Areas

Special Designated Area	Affected Environment	Proposed Action		
	Total Acres Within Existing MLA ROW area	Acres of New Development Outside MLA ROW area on BLM-managed Land (pump stations)	Number of AR/AV/BOs (within existing MLA ROW area)	Acreage of AR/AV/BOs (3,000 square feet per component)
Mojave Trails National Monument	233 Acres	7 Acres (PS 2, 3, 4)	74	5
South Mojave-Amboy National Conservation Lands	282 Acres	2 Acres (PS, 2)	81	6
Bristol Mountains ACEC	172 Acres	7 Acres (PS 2,3,4)	52	4
Pisgah ACEC	83 Acres	None	26	2
Fremont-Kramer ACEC	87 Acres	None	29	2

Special Designated Area	Affected Environment	Proposed Action		
	Total Acres Within Existing MLA ROW area	Acres of New Development Outside MLA ROW area on BLM-managed Land (pump stations)	Number of AR/AV/BOs (within existing MLA ROW area)	Acreage of AR/AV/BOs (3,000 square feet per component)
Superior-Cronese ACEC	23 Acres	None	7	<1
National Trails SRMA	169 Acres	2 Acres (PS 2)	42	3
Desert Tortoise Critical Habitat	95.13 Acres	None	30	2.09

Mojave Trails National Monument. The Proposed Action under review (conversion and operation of the existing Northern Pipeline and associated facilities within the designated right-of-way on BLM-managed lands) would result in approximately 7 acres of new disturbance on previously undisturbed BLM-managed lands within the MTNM. The Proposed Action is consistent with the Proclamation because:

- the Northern Pipeline is an existing pipeline and the Proposed Action is limited to elements within and adjacent to the existing MLA ROW (and therefore it “may be expanded, and new facilities may be constructed . . . to the extent consistent with the care and management of” monument objects), and as described in Sections 3.1 (Biological Resources), 3.4 (Cultural Resources & Tribal Interests), 3.6 (Soils, Geology & Mineral Resources), 3.7 (Paleontological Resources), and 3.8 (Hydrologic Resources), the Proposed Action would not measurably affect the important resources and objects in the Project area.¹¹

Old Spanish National Historic Trail. The historical and cultural landscape element, scenic element, recreation element and natural elements of the Old Spanish NHT in the project area

¹¹ As described in Section 1.1, any impacts that may result from groundwater pumping would not be caused by the Proposed Action and are outside the scope of this analysis because the groundwater project is located on private lands, has already been permitted by San Bernardino County, and is outside of the BLM’s regulatory authority. Nonetheless, to address issues in prior litigation, in response to comments received from the public, and in light of the BLM’s obligation under FLPMA to ensure that ROWs are used in a manner that prevents unnecessary or undue degradation to public lands (see 43 C.F.R. § 2801.2), the BLM considered prior analyses addressing potential impacts from groundwater pumping to water resources, including springs in nearby watersheds and the MTNM. See Appendix A; GMMMP at 57-58. These analyses found that groundwater pumping is not anticipated to impact springs. *Id.* See also L. Stevens and D. Kreamer, *Informing Future Management Decisions by Comparison of the Largest Freshwater Spring in the Southeastern Mojave Desert with Groundwater Quality from Downgradient Wells, Mojave Trails National Monument, USA*, Hydrogeology Journal (Nov. 13, 2025). Nonetheless, the GMMMP includes precautionary monitoring and mitigation measures related to natural springs. Those prior analyses further evaluated the effects of withdrawal of water from the groundwater project on wildlife, plants, and other important resources elsewhere within MTNM and on federal lands. The BLM has found that these analyses, which were prepared by qualified experts and peer reviewed, are a reliable data source. These prior analyses, the protective measures in the GMMMP, and the existing CEQA record, support a determination that the ROW would be used in a manner that prevents unnecessary or undue degradation to public lands, even if impacts from groundwater pumping were within the scope of this analysis (which they are not).

would generally be unchanged by the proposed action. New disturbance in the vicinity of the existing pipeline area will not result in impacts to trail trace or historic sites associated with the trail's identified period of significance because there are none described in IAU 4. Access to non-motorized trail-related recreational activities will continue. Mitigation actions identified in the proposed action to benefit natural and visual resources will also be beneficial to the scenic and natural qualities of the NHT.

In addition to assessing impacts to recreation, access, and physical elements of the trail, BLM policy (Manual 6280) requires the BLM to assess impacts to the viewshed of the National Historic Trail. This analysis is contained below, under the heading National Trails Viewshed Special Recreation Management Area, and Visual Resources are more broadly addressed in Issue 9: Visual Resources. Both analyses found that the project will not change the overall visual character of the landscape, including within the viewshed of the Old Spanish Trail. Although segments of the project will be visible from the trail, those sites will be within an existing energy corridor. Pump stations will be spaced in a way as to not impact the overall long-range, uninterrupted desert views, and will not impact the character, cultural values, or historic resources within the viewshed.

California Desert National Conservation Lands. BLM manages ground disturbance in CDNCL areas through implementation of a one percent ground disturbance cap. (NLCS-DIST-1; NLCS-DIST-2; DRECP pp. 162-168, Appendix A) Where overall disturbance within the CDNCL unit exceeds the cap, disturbance mitigation is generally required. However, mitigation is not required for portions of proposed activities that are located on land previously disturbed by an existing, valid authorized/approved action. (DRECP pp. 162-168)

CDNCL areas are ROW avoidance areas.¹² (NLCS-LANDS-1) The Proposed Action would result in approximately 2 acres of disturbance on previously undisturbed BLM-managed lands within the South Mojave-Amboy CDNCL subarea. As described in Sections 3.1, 3.6, 3.7, 3.8 and 3.9 the Proposed Action would not measurably affect resources in the vicinity of the Northern Pipeline ROW. Applicant proposed design features and BLM proposed impact avoidance measures (see Section 2.2.3) would be implemented to avoid and reduce impacts to resources that the CDNCL areas and CMAs were developed to address. Although not required, FGMWC has voluntarily included compensatory mitigation at a 3:1 ratio, which meets or exceeds the minimum mitigation requirements of the DRECP Land Use Plan Amendment ("LUPA").

The Northern Pipeline is an existing underground pipeline in a designated utility corridor adjacent to other linear infrastructure, and the supporting infrastructure under the Proposed Action would be co-located within the bounds of the existing corridor. The new disturbance area for pump station 2 would therefore be a permissible use within the existing utility corridor on CDNCL lands.

¹² The DRECP defines "right-of-way avoidance area" as "[a]n area that is to be avoided by, but may be available for, location of land use authorizations and non-renewable energy activities, if the authorization has special stipulations to meet planning goals and objectives for that area. If a land use authorization already exists in an avoidance area, a new authorization would be encouraged, and may be required, to collocate within the bounds of the existing use authorization." (DRECP p. xxii)

Areas of Critical Environmental Concern. ACECs are ROW avoidance areas under the DRECP; the BLM may authorize ROWs within ACECs that are compatible with the ACEC's management goals, do not impair wildlife connectivity. (ACEC-LANDS-1; DRECP Appendix B, pp. 479, 613, 649, 704) In the Fremont-Kramer ACEC, ROWs must also be sited as close together as practical. (ACEC-LANDS-1; DRECP Appendix B, p. 704) The Proposed Action is not expected to result in measurably adverse impacts to wildlife habitat or connectivity (see Section 3.1), plants (see Section 3.1), cultural resources (see Section 3.4), or hydrology (see Section 3.8). The Northern Pipeline was constructed parallel to other pipelines and infrastructure including railroads and roads. The pump stations are sited according to the lift requirements in close proximity to the existing buried pipeline within the designated energy corridor. The ROW would therefore be compatible with the ACEC management goals.

Like CDNCL lands, the DRECP also imposes a disturbance cap for ACECs. (ACEC-DIST-1; ACEC-DIST-2; DRECP pp. 173-179) The disturbance cap is one percent for the Bristol Mountains ACEC (DRECP Appendix B, p. 615) and Pisgah RNA ACEC (DRECP Appendix B, p. 648). The disturbance cap is 0.5 percent for the Superior-Cronese ACEC (DRECP Appendix B, p. 478) and Fremont-Kramer ACEC (DRECP Appendix B, p. 702). The Proposed Action would not bring any ACEC over the disturbance cap. Although not required, FGMWC has voluntarily included compensatory mitigation at a 3:1 ratio, which meets or exceeds the minimum mitigation requirements of the DRECP.

The BLM manages tortoise areas in the Fremont-Kramer Desert Tortoise Critical Habitat Unit and Superior-Cronese ACEC for tortoise conservation and recovery consistent with the Desert Tortoise Recovery Plan.¹³ None of the pump stations would be located within designated critical habitat. As described in Sections 2.2.3 and 3.1.2, the Proposed Action includes measures to avoid impacts to desert tortoise.

National Trails Viewshed Special Recreation Management Area. The Proposed Action would affect approximately 4 acres of previously undisturbed lands within the National Trails Viewshed SRMA. The Proposed Action is not expected to result in adverse impacts to recreation in the SRMA because the Northern Pipeline would remain buried, and the location of appurtenant infrastructure adjacent to the existing pipeline in the existing utility corridor the would result in minimal adverse visual impacts, including to the Old Spanish National Historic Trail (see Section 3.9), or interfere with recreation opportunities outside of the existing MLA ROW (see Section 3.3).

Utility Corridors. The conversion of the Northern Pipeline to convey water would not interfere with the existing operation or maintenance of the other active pipelines. Traffic on the access road is sparse and would not change substantially compared with existing conditions. The new BOs to be installed on the Northern Pipeline would periodically percolate water within designated leach fields, but would not interfere with neighboring pipelines that occur 50 – 500 feet from the Northern Pipeline. Furthermore, the new pump stations would be supplied natural gas to power the pump stations from the adjacent natural gas pipeline. The new pump stations

¹³ U.S. Fish and Wildlife Service, Revised Recovery Plan for the Mojave Population of the Desert Tortoise (May 6, 2011), available at <https://www.fws.gov/sites/default/files/documents/USFWS.2011.RRP%20for%20the%20Mojave%20Desert%20Tortoise.pdf>.

and AR/AVs and BOs would be designed to be consistent with the West-Wide Energy Corridor Guidebook, which outlines specifications for safe construction methods and designs within the Section 368 Energy Corridor.

Conclusion: Applicant proposed design features and BLM proposed impact avoidance measures (see Section 2.2.3) would be implemented so that the issuance of a FLPMA ROW would not measurably impact resources that the CDNCL areas and CMAs were developed to address, and thus the Proposed Action does not negatively affect the values for which the CDNCL are designated. The Proposed Action would mitigate effects by replacing and providing substitute resources and/or habitats through the enhancement or restoration of lands consistent with the DRECP LUPA. The Proposed Action conforms with applicable land use plans and the MTNM Proclamation and would minimally impact activities in other existing ROWs and other land uses.

3.6. Issue 6: Soils, Geology & Mineral Resources

How would the Proposed Action affect soils, geology, and mineral resources?

3.6.1. Affected Environment

Soils: The Project area contains many soil types, as might be expected in a zone that spans the transition from low desert to rocky desert mountains. Diverse soil types are the result of diversity in parent material, relief, climate, living organisms, and age of the soils. It is important to maximize and maintain functional biological and physical characteristics of these soils. Soil types of key concern, some that are unique to these desert environments, include sand dunes, desert pavements, carbonate soils, gypsum-containing soils, saline and alkali soils, hydric soils of wetland habitats, and highly erosive soils (BLM, 2016).

Geologic Setting: The Project area crosses the following Alquist-Priolo Fault Zones: Helendale-South Lockhart, Calico-Hidalgo, Pisgah-Bullion, and Lavic Lake. These faults are all active, meaning they have experienced movement within Holocene time (within the last 11,700 years). Consequently, the Northern Pipeline is located in a seismically active region due to the proximity of these and other faults located further away (e.g., San Andreas Fault Zone).

Mineral Resources: The DRECP indicates that the ROW area does not overlap any known significant locations of critical minerals on BLM-managed land (DRECP EIS Section III.15.2.2, Figure III.15-2 and III.15-4), but there are several locatable, leasable and saleable mineral resources in the vicinity of the ROW area. The closest priority mining operations include the Bristol Dry Lake Evaporate Operation, Hector Clay Mine, and the US Borax Boron Mine. The existing MLA ROW does not overlap with these operations.

3.6.2. Environmental Impacts

3.6.2.1. *Impacts of the Alternative A – No Action Alternative*

Under Alternative A (No Action Alternative), the BLM and DoW would not approve the new ROW and easement requests, and activities to convert the Northern Pipeline as described in the Proposed Action would not occur. Consistent with the terms of the MLA ROW Grant, the existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the ROW may be

terminated and decommissioned. Potential effects to soil resources and geology from ongoing maintenance would not change compared with the affected environment, but decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in disturbance and impacts to soil resources. Cadiz may continue to use groundwater underlying its property under California law.

3.6.2.2. *Impacts of the Alternative B – Proposed Action*

Soils & Erosion: The Proposed Action would include ground disturbance activities, such as site clearing, grading, or excavation. The design of the pump stations and construction activities would be subject to stormwater AMMs to minimize the potential for erosion resulting from installation of new facilities. These construction-related BMPs would be implemented to reduce potential soil erosion impacts such that they would be minimal. Operation and maintenance is not anticipated to result in further ground disturbance.

Geology: The ROW area includes the following Alquist-Priolo Fault Zones: Helendale-South Lockhart, Calico-Hidalgo, Pisgah-Bullion, and Lavic Lake. These faults are all active, meaning they have experienced movement within Holocene time (within the last 11,700 years). Consequently, the Project area is located in a seismically active region due to the proximity of these and other faults located further away (e.g., San Andreas Fault Zone). The Northern Pipeline is expected to be subjected to seismic shaking over the life of the project. Although the Proposed Action would not directly or indirectly cause rupture of an active fault or seismic shaking rupture along or seismic shaking on active faults could damage the pipeline and interrupt the water supply. Breaks in the pipeline would require a temporary and short-term shutdown of water supply operations. However, the breaks would be repaired by accessing and replacing the broken pipeline section, an effort that would not require a long-term interruption of water supply service. In addition, the existing Northern Pipeline is underground, thus protecting the pipeline from potential landslides. The pump stations would be designed to conform to California Building Code seismic standards, accommodating potential seismic ground shaking appropriate for the different pump station locations. Conformance with seismic standards would minimize potential effects of seismic hazards.

Mineral Resources: The Proposed Action would not restrict mineral exploration or extraction within the ROW area. The proposed structures, such as pump stations, AR/AVs, and BOs would be constructed within the existing pipeline alignment and would not extend into areas where mineral resources may be developed. Additionally, care would be taken to ensure that access and safety for mining claim holders or rockhounds are not adversely affected during or after construction.

Conclusion: The Proposed Action would temporarily stockpile excavated soils within the ROW and would return the material as backfill. AMMs would be implemented to minimize erosion on the stockpiles. As a result, the Proposed Action would negligibly affect soils, geology, or mineral resources.

3.7. Issue 7: Paleontological Resources

How would the Proposed Action affect paleontological resources?

3.7.1. Affected Environment

The ROW area is located in the Mojave Desert Geomorphic Province, which is a broad interior region of isolated mountain ranges of igneous and metamorphic bedrock as well as valleys made up of Tertiary to recent sedimentary deposits. Paleontological resources in this vast area are extensive and varied ranging from Precambrian-era fossils through Paleozoic and Cenozoic eras. The DRECP has mapped areas of fossil-bearing formations throughout the region with designations of very low to very high sensitivity. The ROW area traverses areas of low to high sensitivities, mostly within the medium sensitivity range.

3.7.2. Environmental Impacts

3.7.2.1. *Impacts of the Alternative A – No Action Alternative*

Under Alternative A (No Action Alternative), the BLM and DoW would not approve the new ROW and easement requests, and activities to convert the Northern Pipeline as described in the Proposed Action would not occur. Consistent with the terms of the MLA ROW Grant, the existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the ROW may be terminated and decommissioned. Potential effects to paleontological resources from ongoing maintenance would not increase compared with the affected environment, but decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in disturbance and impacts to paleontological resources. Cadiz may continue to use groundwater underlying its property under California law.

3.7.2.2. *Impacts of the Alternative B – Proposed Action*

The Northern Pipeline is an existing pipeline where all soil along the route was previously disturbed during the original construction of the pipeline. The proposed pump stations, AR/AVs and BOs would be located within and adjacent to the existing Northern Pipeline alignment. Therefore, the probability of impacting paleontological resources is low. To install the appurtenances, excavation would be required to access the existing buried pipeline. Construction of the pump stations would require minimal excavation to connect to the buried pipeline. Accessing the natural gas pipeline would require excavating a trench less than 100 feet in length and ten feet deep from the pump stations to the buried natural gas pipeline, which itself is in a previously excavated trench. Excavation in previously undisturbed areas (to access the natural gas pipeline at seven locations) may encounter paleontological resources, but the implementation of AMMs in the event that paleontological resources are encountered would avoid and minimize potential impacts to these resources. The Proposed Action would have the potential to contribute only minor disturbance to paleontological resources. With the implementation of AMMs, the construction and operation of the Proposed Action would not measurably affect paleontological resources.

3.8. Issue 8: Hydrologic Resources

How would the Proposed Action affect hydrologic resources?

3.8.1. Affected Environment

The ROW area is located in the Mojave Desert Geomorphic Province, which is a broad interior region of isolated mountain ranges separated by expanses of desert plains encompassing approximately 54,000 acres of southeastern California. The proposed ROW stretches 162 miles from the Fenner Watershed on the east to the Antelope Valley to the west. The region consists of closed surface water watersheds and playas, also referred to as dry lakes where the only natural outlet for surface water is through percolation or evaporation at the dry lake surfaces, including Bristol and Rogers Dry Lakes. These surfaces are normally dry but flash flooding from high intensity rainstorms can result in standing water that can remain for weeks before evaporating. Key surface water resources in the region include the Mojave River, numerous springs and seeps, and numerous ephemeral waterways.

3.8.2. Environmental Impacts

3.8.2.1. *Impacts of the Alternative A – No Action Alternative*

Under Alternative A (No Action Alternative), the BLM and DoW would not approve the new ROW and easement requests, and activities to convert the Northern Pipeline as described in the Proposed Action would not occur. Consistent with the terms of the MLA ROW Grant, the existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the ROW may be terminated and decommissioned. Potential effects to water resources from ongoing maintenance would not increase compared with the affected environment. There would be no potential to discharge sediment and construction-related pollutants in storm water runoff, and thus, no effects on water quality of surface and groundwater. With no construction of pump stations and appurtenant facilities, there would be no increase in impervious surfaces, and thus no changes to surface flows and groundwater recharge, and no effects to local drainages. However, decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in disturbance and impacts to water resources. Cadiz may continue to use groundwater underlying its property under California law.

3.8.2.2. *Impacts of the Alternative B – Proposed Action*

Surface Water: The Proposed Action would include ground disturbance activities, such as site clearing, grading, or excavation that could contribute to substantial soil erosion or the loss of topsoil. During construction, heavy equipment such as bulldozers, graders, heavy trucks, trenching equipment and other construction machinery is likely to be used. Such activity could cause pollutants in runoff in the form of sediment and other contaminants such as fuels, oil, lubricants, hydraulic fluid, etc. The Proposed Action includes stormwater and erosion control BMPs (as noted in Section 2.2.1, Project Design Features) that would avoid and minimize impacts in those work areas that may be susceptible to sediment erosion during a large storm event. BMPs would include the use of physical barriers to prevent erosion and siltation as well as straw wattles, hay bales, setbacks and buffers, and other similar methods that reduce the energy

in surface water flow. The BMPs would be inspected routinely to ensure effective working order. Pump stations and appurtenant facilities would be placed outside of visible drainages; and grading would be designed to disperse runoff from the site in a manner that minimizes scour potential of storm water.

Any locations that drain to waters of the US (not dry lake beds), would be required to comply with the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order WQ 2022-0057-DWQ) (NPDES NO. CAS000002) referred to as the California Construction General Permit. This permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) that identifies BMPs to be implemented, as well as requirements for BMP inspections, water quality monitoring, and annual reporting to the SWRCB. Areas not requiring SWPPPs would be subject to stormwater AMMs.

The Proposed Action includes seven pump stations, three of which are on BLM-managed land, each with an impervious foundation of about two acres. Stormwater falling on the pump stations would flow off to the surrounding soil and infiltrate into the ground as it does now. The pump stations would be designed to detain stormflows sufficient to avoid off-site scouring. The pump stations and AR/AVs and BOs would be located in areas that avoid drainages where feasible. There would be no adverse changes to surface drainage patterns or flow. Proposed supporting structures (e.g., pump stations, AR/AVs and BOs) would be constructed outside the local drainages. A discussion on the potential for the pump stations and appurtenant facilities to encroach into or disturb state or federal jurisdictional waters, is provided in Section 3.3, Biological Resources.

Groundwater: The Northern Pipeline would be used to convey groundwater from private, non-federal lands within the Cadiz Valley to the Barstow area and Antelope Valley. As previously described in Section 1.1 of this EA and Appendix A, the transport of groundwater from Cadiz's property in the Cadiz Valley through the Northern Pipeline was evaluated and authorized by state and local entities through separate compliance processes and otherwise beyond the scope of BLM's jurisdiction.¹⁴ The Proposed Action only relates to the conversion of the existing infrastructure of the Northern Pipeline, a buried 30-inch steel pipeline, from an oil/natural gas conveyance to a water conveyance through the issuance of a new ROW grant from BLM and an easement from DoW.

Conclusion: The Proposed Action would not contribute to the degradation of surface water or groundwater quality and/or quantity or otherwise adversely affect water resources within the ROW area. The Proposed Action incorporates BMPs in their plan of development, including an SWPPP and Spill Prevention and Countermeasure Plan (SPCP) to protect hydrologic resources.

¹⁴ The record of prior analysis in Appendix A includes a detailed evaluation of potential impacts on groundwater resources concluding that groundwater pumping is not anticipated to impact hydrological resources and that implementation of the GMMMP would prevent measurable adverse impacts to water resources, among other findings. See GMMMP at 57-58; Santa Margarita Water District, CEQA Findings: Facts and Findings Related to the Environmental Impact Report for the Cadiz Valley Water Conservation, Recovery and Storage Project, adopted by San Bernardino County Board of Supervisors Resolution No. 2012-176.

3.9. Issue 9: Visual Resources

How would the Proposed Action affect visual resources?

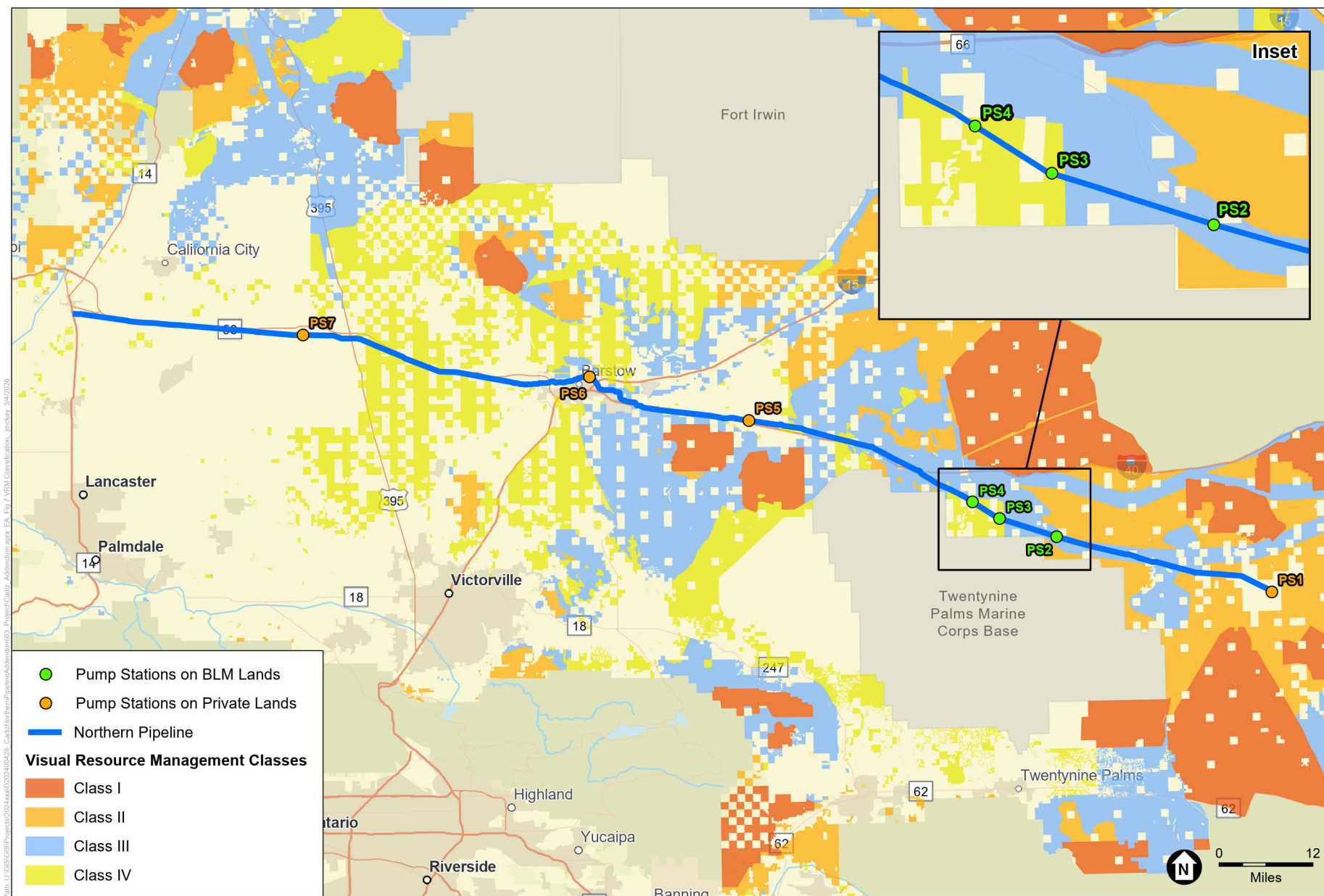
3.9.1 Affected Environment

The Project area is located entirely within the BLM's DRECP planning area. Visual Resources Management ("VRM") is a category of goals and objectives in the BLM's DRECP LUPA. (BLM 2016). The vast open long views and landscapes of the California desert framed by distant mountain ranges are important attributes of this region. The landscapes have been inventoried using BLM's Visual Resource Inventory ("VRI") classification system. Through the DRECP LUPA process, BLM designated VRM Classes to all public lands in the CDCA. The VRM classes set VRM objectives for lands in each class, as well as the level of visual change in the landscape character that is allowed as a result of proposed management activities. In all situations, actions are taken to minimize visual contrasts through careful project design. The severity of effect the Proposed Action would have on visual resources is determined by assessing the visual contrast the Proposed Action would create and how that would be consistent or detract from the objectives of the VRM Classes assigned in the Project area. See **Figure 7** for a map showing the Proposed Action components and their locations within the VRM classifications.

The Project area does not include any county, state or federally designated scenic vistas. AR/AVs and BOs would be constructed within the existing Northern Pipeline ROW. Pump stations 2, 3, and 4 would be constructed within a BLM-designated ACEC, a Section 368 Energy Corridor, and the Mojave Trails National Monument.

Proposed pump station 2 would be located within a VRM Class III area and pump stations 3 and 4 would be located within a VRM Class IV area. All other proposed pump stations would be constructed on non-BLM land and not rated for VRM.

The objective of VRM Class III, as described in the DRECP, is to partially retain the existing character of the landscape. The level of change to the characteristic landscape can be moderate. Management activities and uses may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements of the predominant natural features of the landscape. The objective of VRM Class IV, as described in the DRECP, is to allow for management activities and uses requiring major modifications to the natural landscape. The level of change to the characteristic landscape can be high. Management activities and uses may dominate the view and be a major focus of the viewer's attention. However, every attempt should be made to mitigate the impacts of activities through careful location and repeating the visual elements of the landscape (BLM 2016).



SOURCE: ESRI; BLM; ESA, 2026

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 7
Visual Resource Management (VRM) Classification

The visual character of the area traversed by the existing pipeline is that of a desert environment. The Project area generally follows roadways and rail lines and passes through few developed areas. Aside from the roadways and rail lines, utility transmission structures comprise very few constructed features seen on the landscape with the exception of developed areas discussed below. Areas adjacent to the alignment are level, and light tan in color, dotted with scrubby bushes that are green in color (depending on time of year) which provide a mottled visual texture. These level areas provide a strong horizontal linear form and are bounded by rugged hills and mountains which create a jagged linear feature and define the horizon. The hills and mountains tend to be brownish-gray to dark gray in color. The amount of level land to be seen varies with the alignment's proximity to the hills and mountains. In some cases, the level land can stretch out for tens of miles stretching into the background views (i.e., beyond 3 miles from the viewer). In other cases, the alignment is at the foot of the mountains, limiting views to the foreground (i.e., up to one-half mile from the viewer). Generally, the visual area of potential effect (APE) at each of the AR/AV and BO sites varies and is defined by the topography framing each view, as well as available sight distance.

Development in the Project area is primarily concentrated around Barstow, North Barstow, and Daggett, although the existing Northern Pipeline does not pass through these communities. The visual character is that of sparse residential development, abandoned structures, and industrial/warehousing. There are also smaller communities scattered along the alignment that developed Scenic vistas may be designated by a federal, State, or local agency. Scenic vistas can also include an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing. These desert areas exhibit long range scenic views made up of open desert in the fore- and middle-ground framed by distant mountain ranges in the background views. However, there are no county, state or federally designated scenic vistas in the Project area.

As the Project area parallels roadways and rail lines for most of its length, the primary viewer groups would be motorist and rail passengers. As these viewers are mobile and passing through the area at highway speeds (i.e., 55+ miles per hour), the viewing opportunities would be brief and fleeting. Recreationists driving the access roads or hiking through the desert would be able to see the new facilities from long-range viewsheds.

National Trails Viewshed Special Recreation Management Area

The National Trails Viewshed SRMA comprises approximately 417,129 acres along Route 66. (DRECP Appendix C, pp. 204-213) The National Trails Viewshed SRMA "is a linear site encompassing the longest unspoiled section of Route 66 (1929), the Atchison, Topeka and Santa Fe Railroad Line (1911), the Mojave Trail (1870) and a relatively unknown section of the Old Spanish National Historic Trail (1765). These routes depict the movement of immigration into California for the past 400 year[s]." (DRECP Appendix C, p. 204) The National Trails SRMA is managed for the "outstanding scenic and historic recreational opportunities" associated with historical sites and desert viewsheds.

3.9.1. Environmental Impacts

3.9.1.1. *Impacts of the Alternative A – No Action Alternative*

Under Alternative A (No Action Alternative), the BLM and DoW would not approve the new ROW and easement requests, and activities to convert the Northern Pipeline as described in the Proposed Action would not occur. Consistent with the terms of the MLA ROW Grant, the existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the ROW may be terminated and decommissioned. Potential effects to visual resources from ongoing maintenance would not change compared with the affected environment, but decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in disturbance and impacts to visual resources. Cadiz may continue to use groundwater underlying its property under California law.

3.9.1.2. *Impacts of the Alternative B – Proposed Action*

Under the Proposed Action, new pump stations, AR/AVs and BOs would be constructed within or adjacent to the ROW of the existing pipeline, set back from public roadways. The new facilities would not be of a physical scale to block views. The construction phase of the Proposed Action would be short-term and temporary. Construction of each pump station is expected to take approximately nine months to one year, while installation of each AR/AV and BOs would take about one week per location. Pump station construction would involve site preparation, installation of underground pipelines, construction of mechanical and electrical facilities, and placement of reinforced concrete pads. These activities would require construction equipment such as excavators, cranes, and pavers. Facilities would be low profile made with non-glare materials and painted to blend into the surrounding environment. The use of non-glare materials and earth-toned paint would help the facilities blend into the natural landscape. These features would reduce visual contrast by softening color and texture, minimizing reflective surfaces, and maintaining low, simple forms that align with the existing environment. Overall, this would lessen the visual impact on the area's color, line, texture, and form. While implementation of the Proposed Action modifications would add new constructed elements to areas along the existing Northern Pipeline, these minor additions would be consistent with other utility uses along the existing pipeline and roadways, and would negligibly alter or block scenic views along the Northern Pipeline corridor.

As noted above, BLM has assigned its lands along the Northern Pipeline alignment and pump station sites as Classes III and IV, dependent on location along the alignment. AR/AVs and BOs would be constructed along this alignment within the ROW of the existing pipeline. Figure 3 provides a preliminary rendering for a typical pump station layout and Figure 4 provides a view of typical AR/AVs at grade. Proposed pump stations 2, 3, and 4 would be constructed within a BLM ACEC, a Section 368 energy corridor, and the Mojave Trails National Monument. Proposed pump station 2 would be located within a VRM Class III area and proposed pump stations 3 and 4 would be located within VRM Class IV areas.

Proposed pump station 2 would be located on BLM lands rated as VRM Class III, where the existing character of the landscape should be maintained. Pump Stations 3 and 4 would be located on BLM rated as VRM Class IV, which allows for management activities and uses

requiring major modifications to the natural landscape. Pump Stations 2, 3, and 4 would be located within both a Section 368 energy corridor and the Mojave Trails National Monument. While the pump stations would introduce a facility that would create a substantial visual contrast in the existing landscape at each site within the national monument proper, they would be located in an energy corridor where such facilities would not be out of character. The viewing experience would also be limited for motorists passing by each site reducing the visual experience of the contrast. Therefore, the presence of these facilities would not conflict with the objectives of both VRM Classes III and IV. The Proposed Action would result in minor effects to the visual resources of the area and would not adversely affect the character of the surrounding vast desert open space.

Proposed pump station 2 would be located along Route 66, the National Trails Highway. The primary viewer group at this site would be motorists experiencing the historic roadway. The visual character is similar to that of the rest of the Northern Pipeline alignment. Here the roadway is paralleled by an electric utility line and railroad. The construction and operation of a pump station at this site would add industrial-appearing element and create visual contrast compared to the existing visual character. However, the motorists would be traveling at highway speeds and the view would be fleeting and only a few seconds in duration.

Proposed pump stations 3 and 4 are not as accessible by paved roads. The visual character is similar to that of the rest of the existing Northern Pipeline alignment, although the hills and mountains at the Pump Station 4 site would create an enclosed view. While the presence of the pump stations would add industrial-appearing elements in these locations, the viewership would be very low.

Although the facilities may be visible within long-range viewsheds, the facilities would not block views or substantially alter viewsheds of the surrounding open desert. Furthermore, the facilities would be located within an existing utility corridor. For those pump stations, AR/AV and BOs located within the Needles Field Office unit, all aboveground facilities would be a painted Covert Green and Shale Green in a matte or non-reflective finish, as shown in the BLM Standard Environmental Color Tool (BLM undated). For those facilities within the Barstow Field Office unit, the colorization would be Covert Green and Carlsbad Canyon, also in a matte or non-reflective finish. These design features would minimize visual contrast, degradation of visual character, and the quality of public views.

Consistent with design features that would be implemented as part of the Proposed Action, the pump stations, AR/AVs, and BOs would be designed to visually blend into the long-range views from surrounding areas. AR/AVs can be installed belowground in precast vaults that would keep most of the structure out of sight. The only visible element would be a 3 to 4-inch vent pipe extending approximately 36 inches above grade and can be painted to match the surrounding environment, further reducing visual contrast.

National Trails Viewshed Special Recreation Management Area. As shown in Figure 6, the Proposed Action occurs near the Old Spanish National Historic Trail. Pump Stations 2, 3, and 4 would be located within National Trails Viewshed SRMA. While the pump stations would introduce a facility that would be visible within the existing landscape at each site within the viewshed, they would be located in an existing energy corridor where such facilities would not be out of character. The new pump stations would be spaced with several miles between each

site and would not result in development massing that could modify the long-range, uninterrupted desert views that are characteristic values of the SMRA. The Proposed Action would result in minor effects to the visual resources of the area and would not adversely affect the character, cultural values, or historic resources within the viewshed.

Light and Glare. Pump stations would be equipped with lighting that would add new intermittent light sources during operations of the Proposed Action. The nighttime lighting would only be on when visited for maintenance activities during nighttime hours, which would be rare. Sensitive receptors would not be present or very few in number and passing by a pump station site. Measures to reduce potential impacts from light and glare would be implemented as part of the Proposed Action, including ensuring that construction lighting shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way and that outdoor lighting shall be minimized and installed for safety and security purposes only.

The potential for glare would be controlled through surface treatments at the Proposed Action facilities on BLM-managed lands. For those pumps stations, AR/AV, and BOs located within the Needles Field Office unit, all aboveground facilities would be a painted blend of Covert Green and Shale Green, as shown in the BLM Standard Environmental Color Tool (BLM undated). For those facilities within the Barstow Field Office unit, the colorization would be Covert Green and Carlsbad Canyon. The paint finishes would be a matte or other non-reflective finish to reduce the opportunity for glare.

With implementation of the lighting controls and surface treatments mentioned above, the Proposed Action would have a negligible adverse effect with regard to light and glare on BLM-managed lands.

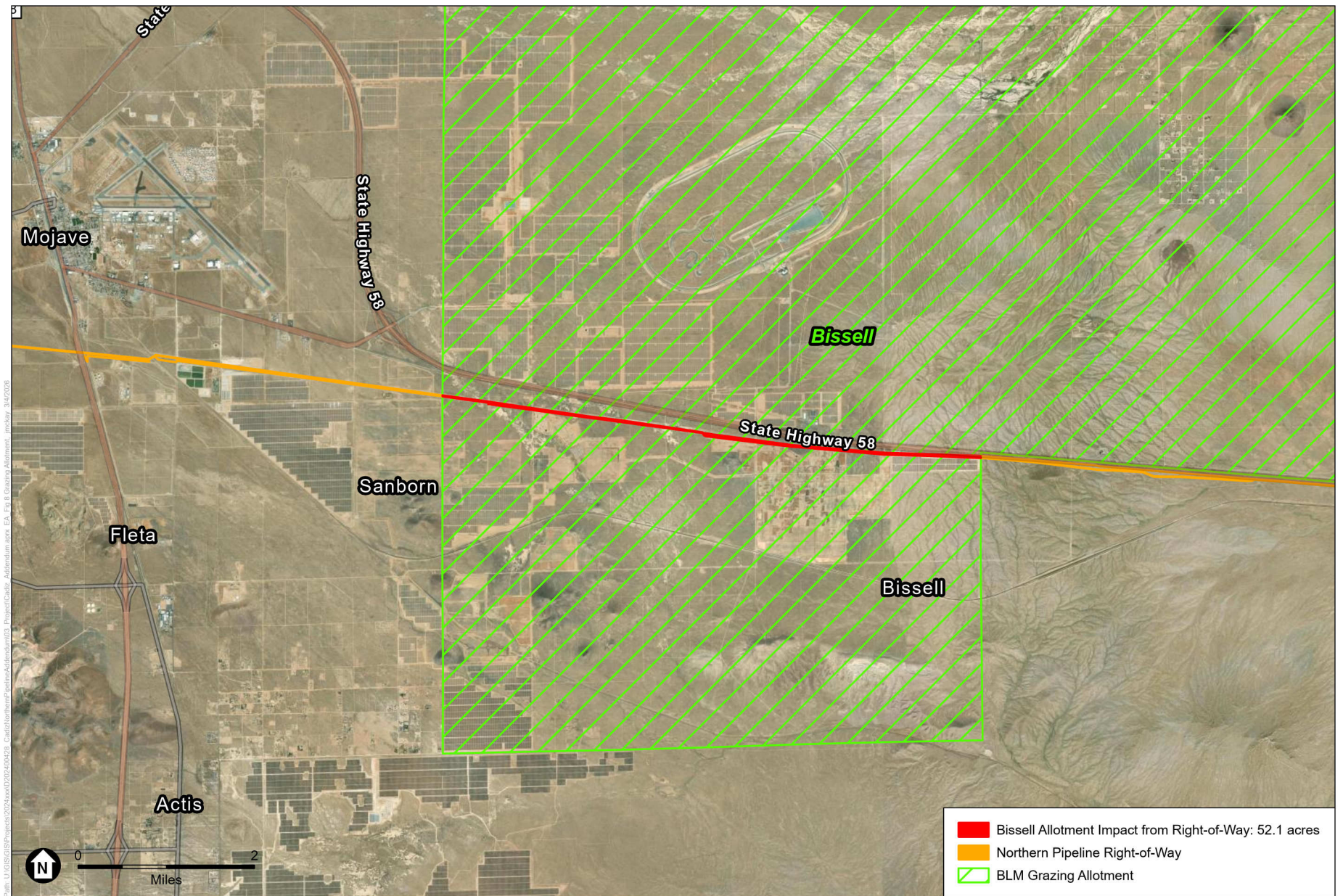
Conclusion: With implementation of the proposed design features and AMMs, the Proposed Action would result in minor and negligible effects to the visual resources of the Project area.

3.10. Issue 10: Grazing and Range Resources

How would the Proposed Action affect grazing and range resources?

3.10.1. Affected Environment

The BLM manages rangelands for the use of wildlife and livestock. The rangelands are divided into allotments for management purposes. The severity of effect the Proposed Action would have on grazing and range resources is determined by assessing the acreage of the Proposed Action within BLM grazing allotments and whether the Proposed Action may impact allotment acreage for forage, land health, disturbance to livestock, or range improvement projects. The Project area includes a portion of the Bissell grazing allotment (BLM 2024). See **Figure 8** for a map showing the Proposed Action and its location in relation to the Bissell allotment.



SOURCE: ESRI; BLM; ESA, 2026

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 8
Grazing Allotment

3.10.2. Environmental Impacts

3.10.2.1. *Impacts of the Alternative A – No Action Alternative*

Under the No Action Alternative, the BLM and DoW would deny the requested authorizations, and FGMWC would not convert approximately 162 miles of the Northern Pipeline between Cadiz, California and Mojave, California, for the conveyance of water. Consistent with the terms of the MLA ROW Grant, the existing natural gas pipeline may continue to be maintained in idle status, the holder may seek authorization to put the Northern Pipeline into service for oil or natural gas transportation, or the ROW may be terminated and decommissioned. Potential effects to grazing and range resources from ongoing maintenance would not change compared with the affected environment, but decommissioning activities or actions to put the pipeline into service (subject to appropriate environmental review) may result in disturbance and impacts to grazing and range. Cadiz may continue to use groundwater underlying its property under California law.

3.10.2.2. *Impacts of the Alternative B – Proposed Action*

As noted above, a portion of the existing pipeline runs through the Bissell allotment. The total acreage of the ROW within the Bissell allotment is 52.1 acres. While implementation of the Proposed Action modifications would add new constructed elements to areas along the existing Northern Pipeline, these minor additions would be within the alignment and would minimally alter or block grazing along the Northern Pipeline corridor. No pump stations would be constructed within the Bissell allotment. Approximately 11 AV/ARs may be constructed within the Bissell allotment, comprising up to 0.01 acres of permanent development. Under the Proposed Action, the overlap between the ROW and the Bissell allotment would remain the same (52.1 acres).

Conclusion: Installation of AV/ARs or BOs within the ROW would permanently develop up to 0.01 acres of land within the Bissell allotment, resulting in negligible effects to the grazing and range resources within the Project area.

CHAPTER 4. PUBLIC INVOLVEMENT, CONSULTATION AND COORDINATION

4.1. Public Involvement

NEPA does not require public involvement when a bureau prepares an EA. See DOI NEPA Handbook at p. 29. Nevertheless, BLM published information and updates about the Proposed Action, including BLM contact information, on the BLM National NEPA Register and considered comments received from the public in the course of preparing this EA.

4.2. Consultation and Coordination

4.2.1. NHPA Section 106

In accordance with 36 CFR 800.3(a), the BLM found the Proposed Action constitutes an undertaking as defined in 36 CFR § 800.16(y). EAFB agreed that the BLM would serve as federal lead agency for the undertaking consistent with 36 CFR 800.2(a)(2). Using the Tribal consultation lists from the Needles, Barstow, and Ridgecrest Field Offices and the list maintained by EAFB, the BLM sent out notification letters for the undertaking to fourteen

Tribes. On August 8, 2025, BLM sent notification letters to the 29 Palms Band of Mission Indians, Agua Caliente Band of Cahuilla Indians, Chemehuevi Indian Tribe, Colorado River Indian Tribes (CRIT), Fort Independence Tribe of Paiute Indians, Fort Mojave Tribe, Kern Valley Indian Community, Las Vegas Tribe of Paiute Indians, Moapa Band of Paiute Indians, Morongo Band of Mission Indians, Soboba Band of Luiseno Indians, Tejon Indian Tribe, Timbisha Shoshone Tribe, and Yuhaaviatam of San Manuel Nation. These letters invited the Tribes to participate in government-to-government consultation, provided a description of the undertaking and map of the APE, and requested information regarding the presence of historic properties of religious and cultural significance to those Tribes. Note that following the initial notification, the Yuhaaviatam of San Manuel Nation and the Morongo Band of Mission Indians separately requested government-to-government consultation and were subsequently added as consulting Tribes. The BLM thereafter consulted with those Tribes throughout the remainder of the Section 106 process on the same basis as the initially notified Tribes. Three Tribes replied requesting government-to-government consultation with the BLM regarding the Project: the Chemehuevi Tribe, the Fort Mojave Indian Tribe, and Moapa Band of Paiutes. In their responses, Tribes provided comments regarding the extent of the APE and culturally significant landscape features involved in religious activities and requested additional information regarding the Project. The BLM identified the National Parks Conservation Association and the Fenner Gap Mutual Water Company as additional consulting parties to include in the NHPA Section 106 process.

The BLM initiated Section 106 consultation with the SHPO (November 20, 2025) and provided maps and a memorandum describing the APE. SHPO submitted a response letter (December 19, 2025) requesting that the BLM reconsider the extent of the APE. BLM sent SHPO a letter (February 10, 2026) responding to comments about the APE and explaining BLM's rationale. On March 10, 2026, BLM submitted a letter to SHPO transmitting resource identification efforts that included maps, survey reports, and findings of effect. SHPO provided a response to the BLM's letter on April 8, 2026, requesting additional information on APE maps, reports documenting Class I and Class III surveys, and ongoing Tribal consultations. BLM submitted a letter to SHPO on April 24, 2026 including findings of effect of the proposed undertaking. SHPO submitted a letter in response on May 22, 2026 with requests for additional information and clarification. BLM provided a response to SHPO on June 15, 2026 responding to SHPO's requests and concluding findings of effect. BLM sent a letter to the Advisory Council on Historic Preservation (ACHP) on June 15, 2026, invoking the objection procedure under 36 CFR 800.5(c)(2)(i) and requesting ACHP review pursuant to 36 CFR 800.5(c)(3)(i). The BLM concluded that referral was appropriate because, although the California SHPO expressed general methodological concerns regarding the identification effort and effects analysis, it did not identify specific historic properties, National Register eligibility determinations, or findings of effect with which it disagreed, leaving no discrete issue capable of resolution through additional consultation.. The ACHP did not provide comments within the fifteen-day review period prescribed by 36 CFR 800.5(c)(3)(i). Accordingly, the BLM completed the objection procedure and finalized its finding of No Adverse Effect for the undertaking. Completion of the ACHP review period without comment concluded the Section 106 objection procedure under 36 CFR 800.5(c)(3)(i). The BLM therefore completed its Section 106 responsibilities for the Proposed Action prior to issuance of this Environmental Assessment.

Other consulting parties included the National Parks Conservation Association and the Fenner Gap Mutual Water Company.

The consultation record demonstrates that consulting parties provided comments regarding potential impacts to cultural landscapes and water-related resources, reflecting the importance of these resources to Tribal identity and practice. These comments have generally been articulated at a regional or conceptual level, and no consulting party has identified historic properties within the defined APE during the NHPA Section 106 identification process. The BLM has responded by carefully considering all input, maintaining an APE consistent with BLM policy, regulatory requirements and agency jurisdiction, incorporating Tribal knowledge into its analysis, and continuing consultation. At the same time, the BLM has appropriately distinguished between issues that fall within the scope of NHPA Section 106 and those that are more properly addressed under other environmental and land management authorities.

4.2.2. Section 7 of the Endangered Species Act

The BLM initiated consultation under Section 7 of the Endangered Species Act (ESA) in August of 2025 with the submittal of an Activity Request for coverage under the existing Programmatic Biological Opinion covering activities within the CDCA planning area (USFWS, 2017). The BLM submitted the Plan of Development, Biological Resources Survey Report, and impact Avoidance and Minimization Measures. The BLM and EAFB have met jointly with the US Fish and Wildlife Service (USFWS) to discuss the Plan of Development and ESA consultation requirements. The Biological Resources Report addressed all wildlife and habitats with the potential to occur within the project area including common and special-status species and habitats. USFWS has found the Proposed Action, including the imposition of specific impact Avoidance and Minimization Measures, to be consistent with the current Programmatic Biological Opinion covering activities within the CDCA planning area and has prepared a letter of concurrence that includes appropriate desert tortoise conservation measures. The USFWS concluded consultation with an email addressed to BLM on March 13, 2026 confirming that the proposed activity may be implemented under the auspices of the Programmatic Biological Opinion.

EAFB consulted informally with the USFWS in February 2026, providing the Plan of Development for activities on EAFB, the Biological Resources Survey Report, and impact Avoidance and Minimization Measures. The Biological Resources Report addressed all wildlife and habitats with the potential to occur within the project area on EAFB including common and special-status species and habitats. The informal consultation concluded that the Proposed Action, including the imposition of specific impact Avoidance and Minimization Measures, was within the scope of activities covered under EAFB's existing Programmatic Biological Opinion for Operations and Activities at EAFB Potentially Affecting Desert Tortoise (USFWS, 2014) as an action that May Affect, But Not Likely to Adversely Affect desert tortoise. The informal consultation concluded in February, 2026.

CHAPTER 5. LIST OF PREPARERS

Table 5. List of Preparers

Name	Title	Area of Responsibility
Tom Barnes	Principal Associate, ESA	Project Manager
Alan Sako	Principal Consultant, Air Quality, Climate & Acoustics, ESA	Air Quality
Caleb Mantanona	Air Quality & Acoustics Analyst, ESA	Air Quality
Brenda McMillan	Biologist, ESA	Biological Resources
Kate Tovey	Environmental Planner, ESA	Recreation and Visitation, Lands and Realty, Grazing and Range Resources
Evan Tudor Elliot	Cultural Resources Specialist, ESA	Cultural Resources & Tribal Interests, Paleontological Resources
Daniel Woodward	Cultural Resources Regional Business Group Director, ESA	Cultural Resources & Tribal Interests, Paleontological Resources
Stephanie Villegas	Environmental Planner, ESA	Visual Resources
Dave Davis	Environmental Planner, ESA	Visual Resources
Justin Nguyen	Environmental Planner, ESA	Soils, Geology & Mineral Resources, Recreation and Visitation, Hydrologic Resources

CHAPTER 6. REFERENCES

- Bureau of Land Management. (2021). *BLM Standard Environmental Color Tool*. U.S. Department of the Interior. [https://www.blm.gov/sites/default/files/docs/2021-06/BLM_Gov_website_quick_links_color_tool%20\(1\).pdf](https://www.blm.gov/sites/default/files/docs/2021-06/BLM_Gov_website_quick_links_color_tool%20(1).pdf)
- Bureau of Land Management. (2016). *Desert Renewable Energy Conservation Plan: BLM Land Use Plan Amendment* (DRECP BLM LUPA). U.S. Department of the Interior. https://eplanning.blm.gov/public_projects/?doc=%2Fflup%2F66459%2F133474%2F163144%2FDRECP_BLM_LUPA.pdf
- Bureau of Land Management (BLM). (2015). *Desert Renewable Energy Conservation Plan (DRECP) Proposed Land Use Plan Amendment and Final Environmental Impact Statement*, Chapter III.20: Visual Resources.
- Bureau of Land Management (BLM). (2025). *Livestock grazing*. U.S. Department of the Interior. <https://www.blm.gov/programs/natural-resources/rangelands-and-grazing/livestock-grazing>
- Bureau of Land Management (BLM). (2023). *Mojave Trails National Monument Resource Management Plan – Draft* (508-compliant version). Available at: https://www.blm.gov/sites/default/files/docs/2023-07/MojaveTrailsNM_508_0.pdf
- Bureau of Land Management. (2008, December 12). *MS 6840 – Special Status Species Management* (Release 6-125) [PDF]. https://www.blm.gov/sites/default/files/docs/2025-12/MS%206840%20Rel.%206-125_0.pdf
- Bureau of Land Management. (2008). *National Environmental Policy Act Handbook (H-1790-1)*. https://www.ntc.blm.gov/krc/system/files?file=legacy/uploads/16011/BLM_NEPA_Handbook_H-1790.pdf
- Bureau of Land Management (BLM). (undated). Visual Resources – BLM Standard Environmental Color Tool. [PDF]. https://www.blm.gov/sites/default/files/docs/2021-06/BLM_Gov_website_quick_links_color_tool%20%281%29.pdf
- California Air Pollution Control Officers Association. (2022). *CalEEMod User Guide: Version 2022.1*. Prepared by ICF in collaboration with Sacramento Metropolitan Air Quality Management District, Fehr & Peers, STI, and Ramboll. https://www.caleemod.com/documents/user-guide/01_User%20Guide.pdf
- California Department of Public Health, Division of Drinking Water and Environmental Management, Southern California Drinking Water Field Operations Branch. (2012, March 16). *Edwards Air Force Base–Main Base Water System, Kern County*.
- California Invasive Plant Council. (2012). *Prevention BMPs for transportation and utility corridors*. California Invasive Plant Council. <https://www.cal-ipc.org/resources/library/publications/tuc/>
- Clinton, W. J. (2001, January 10). *Executive Order 13186—Responsibilities of Federal Agencies To Protect Migratory Birds*. Weekly Compilation of Presidential Documents, 37(2), 77–84. U.S. Government Publishing Office. <https://www.govinfo.gov/content/pkg/WCPD-2001-01-15/pdf/WCPD-2001-01-15-Pg77.pdf>

- Department of the Air Force. (2018). *Air Force Policy Directive 32-70: Environmental considerations in Air Force programs and activities*. https://static.e-publishing.af.mil/production/1/saf_ie/publication/afpd32-70/afpd32-70.pdf
- Department of the Air Force. (2025). *Department of the Air Force Manual 32-1067: Civil engineering—Water and fuel systems*. <https://www.e-publishing.af.mil/>
- Department of the Air Force. (2025). *Department of the Air Force Manual 32-7002: Environmental compliance and pollution prevention*. Department of the Air Force. <https://www.e-publishing.af.mil/>
- Greene Economics. (2025). Regional Economic Impact Analysis for the Fenner Gap Mutual Water Company Northern Pipeline
- Legal Information Institute. (n.d.). *10 U.S. Code § 2668 – Easements for rights-of-way*. Cornell Law School. <https://www.law.cornell.edu/uscode/text/10/2668>
- Mojave Desert Air Quality Management District. (2025). *MDAQMD attainment status*. <https://www.mdaqmd.ca.gov/air-quality/mdaqmd-attainment-status>
- Mojave Desert Air Quality Management District. (n.d.). *Regulation 2002 – General Federal Actions Conformity*. <https://www.mdaqmd.ca.gov/rules/rule-book/regulation-xx-conformity#docaccess-7907bd2182e60ca9cefe418f8e7551bdb7abeac9de4c0bac1230acc112995336>
- Pacific Crest Trail Association, 2026. Interactive Pacific Crest Trail Map. Available online: <https://www.pcta.org/discover-the-trail/maps/>. Accessed February 24th 2026.
- U.S. Department of Defense. (2019). *DoD Instruction 4150.07: DoD Pest Management Program*. <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/415007p.pdf>
- U.S. Department of Defense. (2024). *DoD Instruction 4715.28: Military installation resilience (Change 1, 2025)*. <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/471528p.PDF>
- U.S. Department of Defense. (2024). *DoD Instruction 4715.03: Natural resources management (Change 1, 2025)*. <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/471503p.pdf>
- U.S. Department of the Interior. (2025). *DOI Handbook of NEPA Implementing Procedures*. <https://www.doi.gov/media/document/doi-handbook-nepa-procedures>
- U.S. Department of the Interior. (2026). *DOI NEPA Handbook Appendix 1*. <https://www.doi.gov/media/document/doi-handbook-nepa-procedures>.
- U.S. Environmental Protection Agency. (2026). Current nonattainment counties for all criteria pollutants. <https://www3.epa.gov/airquality/greenbook/anc1.html>
- U.S. Fish and Wildlife Service. (2011). *Revised recovery plan for the Mojave Desert Tortoise (Gopherus agassizii)*. U.S. Fish and Wildlife Service, Pacific Southwest Region. https://ecos.fws.gov/docs/recovery_plan/RRP%20for%20the%20Mojave%20Desert%20Tortoise%20-%20May%202011_1.pdf

- U.S. Fish and Wildlife Service. (2014). Biological Opinion for Operations and Activities at Edwards Air Force Base
- U.S. Fish and Wildlife Service. (2017). Biological Opinion for Activities in the California Desert Conservation Area.
- U.S. National Park Service, 2025. Old Spanish National Historic Trail Map. Available online: <https://www.nps.gov/olsp/planyourvisit/maps.htm>. Accessed February 24th 2026.
- U.S. National Park Service, 2024. Juan Bautista de Anza National Historic Trail Map. Available online: <https://www.nps.gov/juba/planyourvisit/maps.htm>. Accessed February 24th 2026.