City of Henderson Utilities Project
Environmental Assessment

LC-25-29
May 2025

Prepared for:

United States Department of the Interior
Bureau of Reclamation
Lower Colorado Basin Region
Boulder City, Nevada

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Acronyms and Abbreviations

ADA	American Disabilities Act
APE	Area of Potential Effects
BLM	Bureau of Land Management
BMP	Best Management Practices
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FONSI	Findings of No Significant Impacts
GHG	Greenhouse Gas
IPaC	Information for Planning and Consultation
ITP	Incidental Take Permit
MBTA	Migratory Bird Treaty Act
MDM	Mount Diablo Meridian
NDOW	Nevada Department of Wildlife
NDOT	Nevada Department of Transportation
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act

NI	No Impact
NP	Not Present
NPS	National Park Service
NSPHO	Nevada State Historic Preservation
NRHP	National Register of Historic Places
NVCRIS	Nevada Cultural Resource Information System
OSNHT	Old Spanish National Historical Trail
PI	Potential Impact
PL	Public Law
PRPA	Paleontological Resources Protection Act
OHV	Off-Highway Vehicle
RCB	Reinforced Concrete Block
Reclamation	Bureau of Reclamation
ROD	Record of Decision
ROW	Right-of-Way
SDWA	Safe Drinking Water Act
SFM	Sewer Force Main
SNWA	Southern Nevada Water Authority
TCC	Telecommunications
US	United States
USC	United States Code
USFWS	United States Fish and Wildlife Service
VAA	Visual, Auditory and Atmospheric

1.0 PROJECT DESCRIPTION AND PURPOSE AND NEED

1.1 Project Description

The City of Henderson (City) proposes a utilities and drainage project titled City of Henderson Utilities Project (Project) located near East Lake Mead Parkway and Lake Las Vegas Parkway, City of Henderson, Clark County, Nevada; SW ¼ of Section 34, Township 21 South, Range 63 East, Mount Diablo Meridian (MDM), and the NW ¼ of Section 3, Township 22 South, Range 63 East, MDM (Figure 1-1). The Project is located on private and Bureau of Reclamation (Reclamation) lands.

The City requests a permanent right-of-way (ROW) grant (approximately 25.4-acres) and short-term ROW (approximately 25.4-acres) for access and construction staging. The planned permanent ROW is approximately 2,513 feet in length and varies in width; the planned short-term ROW is approximately 1,817 feet in length and 50 feet in width.

The Project will consist of construction of new temporary and permanent trail segments, stormwater and flood control infrastructure, other municipal infrastructure (sewer, potable water supply, power, gas, and telecommunication [TCC]), and associated access infrastructure, for which the City has submitted a ROW application to Reclamation. The drainage, trail detour, and planned municipal utilities would be placed within the proposed permanent ROW. The proposed facilities are:

- Facility 1: West Channel
- Facility 2: Sewer Force Main
- Facility 3: Water Reservoir and Transmission Main
- Facility 4: Temporary and Permanent Trail Segments
- Facility 5: Power, Gas, Fiber Optic, and TCC Lines

The estimated ground disturbance calculations associated with planned Project activities can be seen in Table 1-1 below. Please note, detailed design plans for Facility 4 and Facility 5 are not available and cannot be accurately designed prior to the construction of the three municipal developments (Facilities 1, 2 and 3). These features of the Project are analyzed in detail based on known construction practices and design thresholds. To ensure all areas of potential development are included in the ROW application, the area of analysis for the Plan of Development has been expanded to include areas which are likely to be developed to include utilities, trails, and a new road (Foothills Drive) and contribute to impacts on or near the Project. A map of the Project area of analysis can be seen in Figure 1-2.

Table 1-1: Ground Disturbance Calculations within Temporary and Permanent ROWs

PERMANENT					
Facility Number	**Project Action**	**Approximate Dimensions (L' x W' x D')(ft)**	**Surface Ground Disturbance**	**Acreage**	**Volume Ground Disturbance**
1	West Channel Storm Drain Installation	4,960 x 20 x 5	99,200 ft^2	2.27	496,000 ft^3
2	Sewer Force Main	4,479 x 4 x 7	17,916 ft^2	0.41	125,412 ft^3
3	Water Transmission Main Installation [a]	5,139 x 6 x 8	30,834 ft^2	0.71	246,672 ft^3
3	Water Reservoir	N/A	2,826 ft^2	0.06	56,520 ft^3
4	Permanent Trail and Temporary Trail	4000 x 25	100,000 ft^2	2.3	N/A
5	Conceptual Power and TCC Conduit	3,550 x 2 x 4	7,100 ft^2	0.16	28,400 ft^3
TEMPORARY					
Facility Number	**Project Action**	**Approximate Dimensions (L' x W' x D')(ft)**	**Surface Ground Disturbance**	**Acreage**	**Volume Ground Disturbance**
1, 4	Grading, staging, and overland travel	N/A	**N/A**	9.08	N/A
2	Grading at the end of sewer line	168 x 168	28,314 ft^2	0.65	N/A
3, 5	Grading, staging, and overland travel	N/A	N/A	13.01	N/A

x

1.2 Purpose and Need for the Action

The purpose of the Project is to provide customer access to utilities and manage storm water runoff. The need for the project is the City's responsibility to protect public and private land from stormwater runoff and provide reliable access to utilities for residents. Reclamation will decide whether to grant or deny the proposed ROW (43 CFR 429, 2025).

This Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA). The purpose of this EA is to evaluate the potential impacts of the Proposed Action and its alternative on the physical and human environment and determine if the impacts would be significant, thus warranting the preparation of an Environmental Impact Statement. Executive Order 14154, Unleashing American Energy (Jan. 20, 2025), and a Presidential Memorandum, Ending Illegal Discrimination and Restoring Merit-Based Opportunity (Jan. 21, 2025), require the Department to strictly adhere to the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq. Further, such Order and Memorandum repeal Executive Orders 12898 (Feb. 11, 1994) and 14096 (Apr. 21, 2023). Because Executive Orders 12898 and 14096 have been repealed, complying with such Orders is a legal impossibility. Reclamation verifies that it has complied with the requirements of NEPA, including the Department's regulations and procedures implementing NEPA at 43 C.F.R. Part 46 and Part 516 of the Departmental Manual, consistent with the President's January 2025 Order and Memorandum. Reclamation has also voluntarily considered the Council on Environmental Quality's rescinded regulations implementing NEPA, previously found at 40 C.F.R. Parts 1500–1508, as guidance to the extent appropriate and consistent with the requirements of NEPA and Executive Order 14154.

Figure 1-1: Regional Location

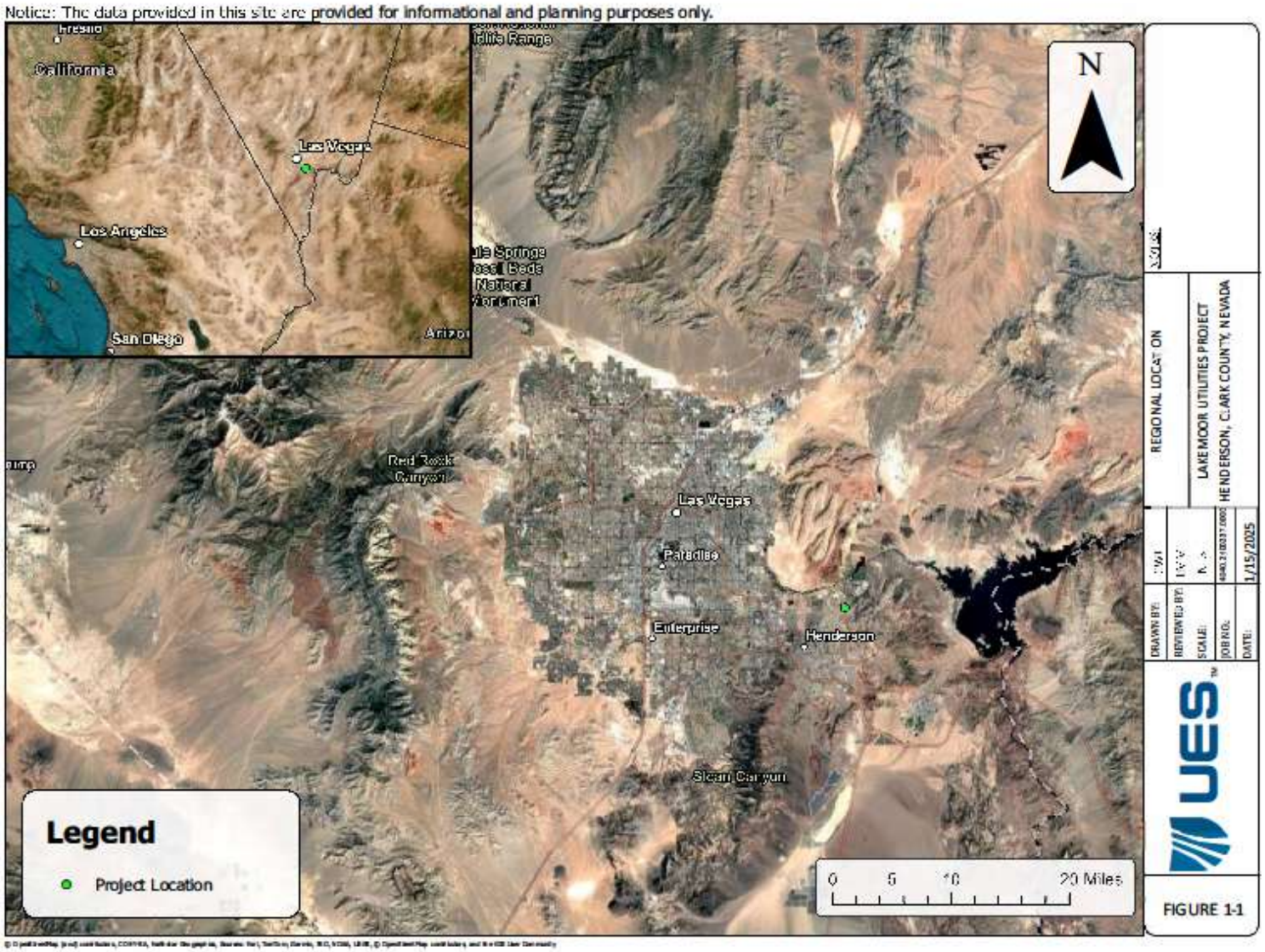
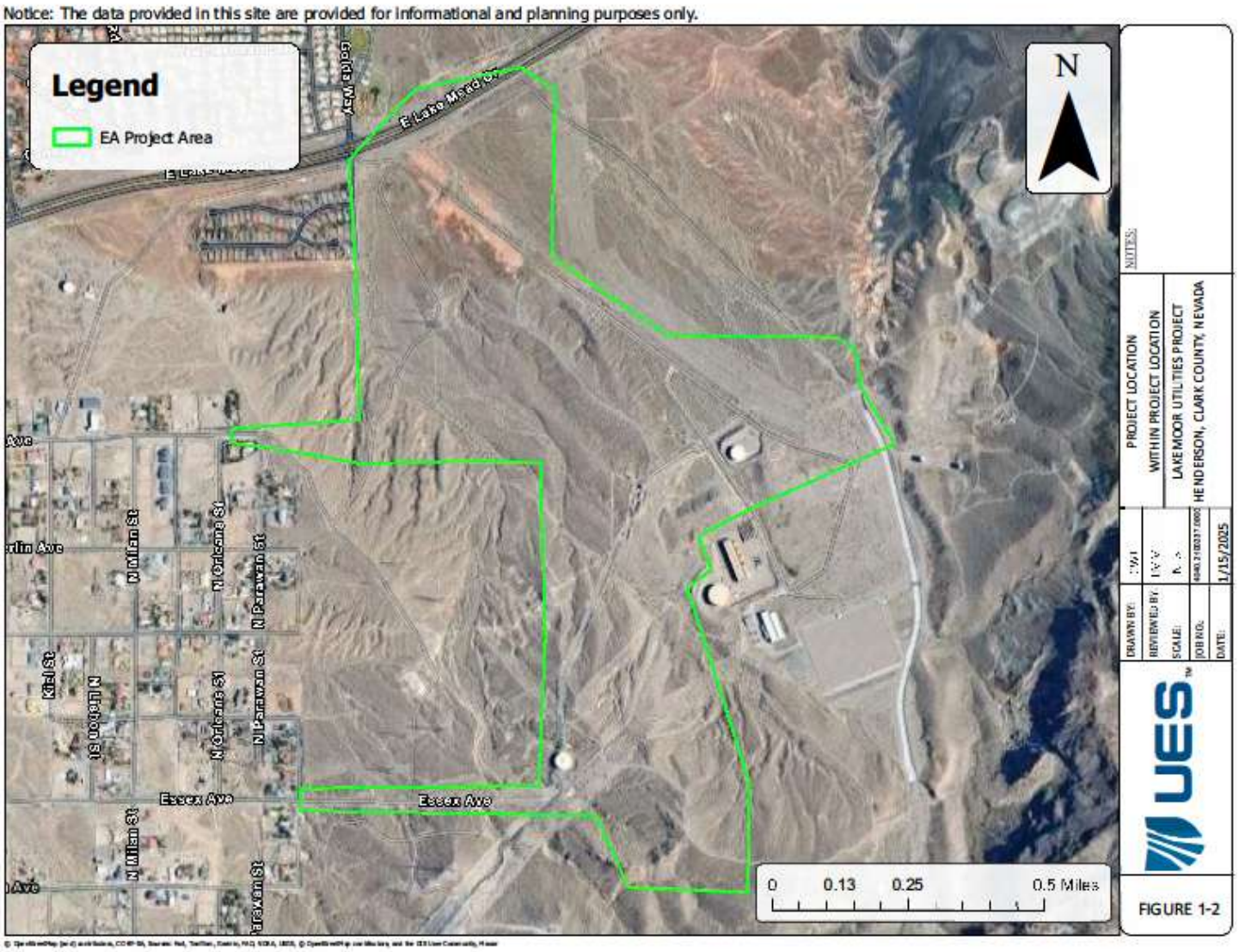


Figure 1-2: Project Location



1.3 Resources Considered for Analysis

Table 1-2 lists the resources that were considered in the process of developing this EA, the rationale for either addressing or not addressing each resource, and, if the resource is addressed, the section in this document where it can be found and which of the following categories it would fall under:

- Not Present (NP);
- Present, but not affected to a degree that detailed analysis is required or not impacted (NI); and
- Present with the potential for relevant impacts that need to be analyzed in detail in the EA (PI).

Table 1-2: Resources Considered for Analysis

Resource	Relevant Authority	NP	NI	PI	Rationale
Air Quality	The Clean Air Act as amended 42 USC 7401 et seq. (1990)		**X**		A dust control permit is required by the Department of Air Quality for all soil disturbing activities of 0.25 acre or greater. The Project would disturb greater than 0.25 acre, therefore, a dust control permit would be obtained. Further, the Project would comply with all permit stipulations.
Cultural Resources	NHPA, as amended. 16 USC 470 (NHPA, 1966)			**X**	To comply with Section 106 of the NHPA, a Class I Cultural Resources Literature Review and Class III Intensive Cultural Resources Inventory Project area reconnaissance survey of the Area of Potential Effect (APE) for the proposed undertaking has been completed. Two resources, the Old Spanish National Historic Trail (OSNHT) and a previously identified intaglio site, exist within the Project area. Based on the results of the Class I Review and Class III Cultural Resources Inventory reconnaissance survey/photographic "viewback" field effort, the Proposed Action has no potential to impact Cultural Resources.
Greenhouse Gas (GHG) Emissions			**X**		Currently, there are no emission limits for suspected GHG emissions and no technically defensible methodology for predicting potential climate change from GHG emissions; however, there are, and will continue to be, several efforts to address GHG emissions from federal activities.
Wildlife, Excluding Federally Listed Species				**X**	The Project has the potential to affect wildlife species. The impacts to wildlife are discussed in Section 3.2. This section addresses general wildlife in the area. Species that are protected under the ESA are addressed in Section 3.3.

Resource	Relevant Authority	NP	NI	PI	Rationale
Floodplains	EO 11988, Floodplain Management (1977)	**X**			The Project is not located within a 100-year flood plain or a flood zone mapped by the Federal Emergency Response Agency. The Project is located within the Las Vegas Valley and the Clark County Regional Flood Control District is responsible for flood control. The construction of the stormwater drainage structures would benefit flood control within the Project area. An area adjacent to the Project site to the east is mapped as Zone A, "Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage." An area adjacent to the Project site to the south-southwest contains a City of Henderson flood control retention basin and is documented as "Flood Discharge Contained in Structure" with a 1% annual chance of flooding. This detention basin is connected to an additional area mapped as Zone A. None of these mapped flood zones overlap with the Project site. This resource will not be addressed in further detail in this EA.
Geology, Mineral Resources, and Energy			**X**		The Project site overlaps with the historic footprint of the Three Kids Mine, an open-pit manganese mine that operated from 1917 to 1961. While the area has known mineral deposits, there are no active mining claims, mineral leases, or mineral material sales contracts within the Project area. The Project would involve ground disturbance for trenching, excavation, and trail construction, but is not anticipated to affect subsurface geological resources or mineral deposits. No oil, gas, or geothermal leases exist in the Project area, and the Project would not affect any energy development potential. The proposed activities would not impede future mineral resource access or development under Reclamation jurisdiction. Therefore, impacts to geology, mineral resources, and energy production is considered negligible and these resources will not be discussed in further detail in this EA.

Resource	Relevant Authority	NP	NI	PI	Rationale
Hydrologic Conditions	EO 11990, Protection of Wetlands (1977) Wild and Scenic Rivers Act, 16 USC 1271 (1968)		**X**		Surface hydrological conditions in the Project area have been previously modified by existing infrastructure, including a concrete stormwater channel and retention basin adjacent to the site. No permanent (intermittent or perennial) surface waters or wetlands exist within the Project area. The only aquatic resources within the Project site are ephemeral streams that flow only in direct response to precipitation events. These ephemeral features would not be significantly altered, as the Project includes appropriate stormwater drainage infrastructure designed to maintain existing flow patterns and meet local flood control requirements. Construction activities would implement standard erosion control measures and best management practices (BMPs) to protect water quality during storm events. The Project area is located within the Las Vegas Valley groundwater basin, where depth to groundwater typically exceeds 300 feet below ground surface in the Henderson area. The steep topography and shallow soils of the River Mountains area, combined with high evapotranspiration of the Las Vegas Valley, result in minimal natural groundwater recharge in the Project area. Most precipitation that doesn't immediately run off is lost to evapotranspiration before it can percolate to groundwater. Given that Project activities would involve only shallow excavation, there would be no impacts to the hydrologic connection of groundwater. Given the absence of permanent water features, the depth to groundwater, and the incorporation of appropriate stormwater management features, impacts to hydrological resources would not occur. Therefore, this resource will not be addressed in further detail in this EA.

Resource	Relevant Authority	NP	NI	PI	Rationale
Invasive Species and Noxious Weeds	EO 13112, Invasive Species (1999)		**X**		The Project site is located mostly within previously disturbed areas. Small areas of relatively undisturbed desert also exist within the Project site. Accidental introduction of weeds or contaminants from construction, operation, and minor maintenance activities could result in impacts to desert tortoise habitat; however, impacts can be minimized and mitigated by ensuring vehicles and equipment are cleaned with a high-pressure washer prior to arrival in desert tortoise habitat and prior to departure from areas of known invasive weed and nonnative grass infestations to prevent or at least minimize the introduction or spread of these species. In addition, avoid using noxious or invasive plants in landscaping and use weed free materials where possible. Continue to apply BMPs to prevent the spread of weeds. A detailed analysis is not required in this EA as the above identified minimization measures and BMPs are likely to mitigate most if not all weed management concerns.
Land and Access			**X**		The Project is in an already disturbed area and is not located adjacent to any ROW holders with the potential to be affected by the Proposed Action. There is no effect on land and access due to the Proposed Action.
Migratory Birds	Migratory Bird Treaty Act of 1918, as amended, 16 U.S.C. 703 et seq (1918) EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (2001)			**X**	The Project has the potential to affect migratory birds. Impacts to migratory birds are addressed in Section 3.2.

Resource	Relevant Authority	NP	NI	PI	Rationale
National Historic Trails			X		The OSNHT is a historical trade route that connected northern New Mexico to Los Angeles, California. The Mojave Road segment is currently mapped as crossing the Project area, but no remaining features of this road segment are evident today and the Proposed Action would not affect the nature, purpose, and primary uses of the OSNHT Mojave Road segment. Additionally, the Project site's general area is disturbed and no trail features are evident. A reconnaissance cultural survey was conducted and no evidence of the OSNHT was found.
Paleontology		X			The area proposed for disturbance is not located in any of the sensitive areas identified for paleontological material; therefore, this resource will not be addressed in this EA.
Rangeland Health Standards			X		There are no rangelands present in the Project area: therefore, this resource will not be addressed in this EA.
Recreation				X	The River Mountains Loop Trail exists within the Project area. Construction would require a temporary re-route of the River Mountains Loop Trail (up to 6 months). In the southern portion of the Project area, trail closures may occur for several hours, but not for an entire day. Mitigation measures would be designed and implemented to preserve the visitor experience to the extent feasible, provide uninterrupted recreation user access, while maintaining visitors' safety regarding traffic and construction activities.
Soils			X		No new issues as this Project is located in an area of disturbance.
Threatened or Endangered Animal Species	Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq. (ESA;1973)			X	The Project is likely to adversely affect determination for desert tortoise, which is addressed in Section 3.3.
Water Quality	SDWA 43 USC 300f et seq (1974) Clean Water Act		X		This project is located in a previously disturbed area and there are no features affecting water quality. Detailed analysis is not required.

Resource	Relevant Authority	NP	NI	PI	Rationale
	of 1987, 33 USC 1251 et seq (1987)				
Wetlands and Riparian Zones	EO 11990, Protection of Wetlands (1977)	**X**			No permanent (intermittent or perennial) surface waters or wetlands exist in or near the Project area. The only aquatic resources within the Project site are ephemeral streams that flow only in direct response to precipitation events. Ephemeral streams do not support riparian areas. Further, the flow of stormwater through the Project site would be appropriately maintained with the construction of the proposed stormwater drainage infrastructure. Therefore, this resource will not be addressed in further detail in this EA.
Vegetation, Excluding Federally Listed Species				**X**	The Proposed Action will impact approximately 25.4 acres of creosote bursage scrub vegetation. Based on habitat requirements and known population occurrences, no special status plant species are expected to be present. These resources are addressed in Section 3.1.
Visual Resources			**X**		The Project is not located on land managed for visual resources. The Project does not include the construction of structures or excavation of lands in viewsheds with the potential to impact the aesthetics of the site or surrounding areas within the viewshed. The Project would occur in an area surrounded by other developments and existing modifications.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

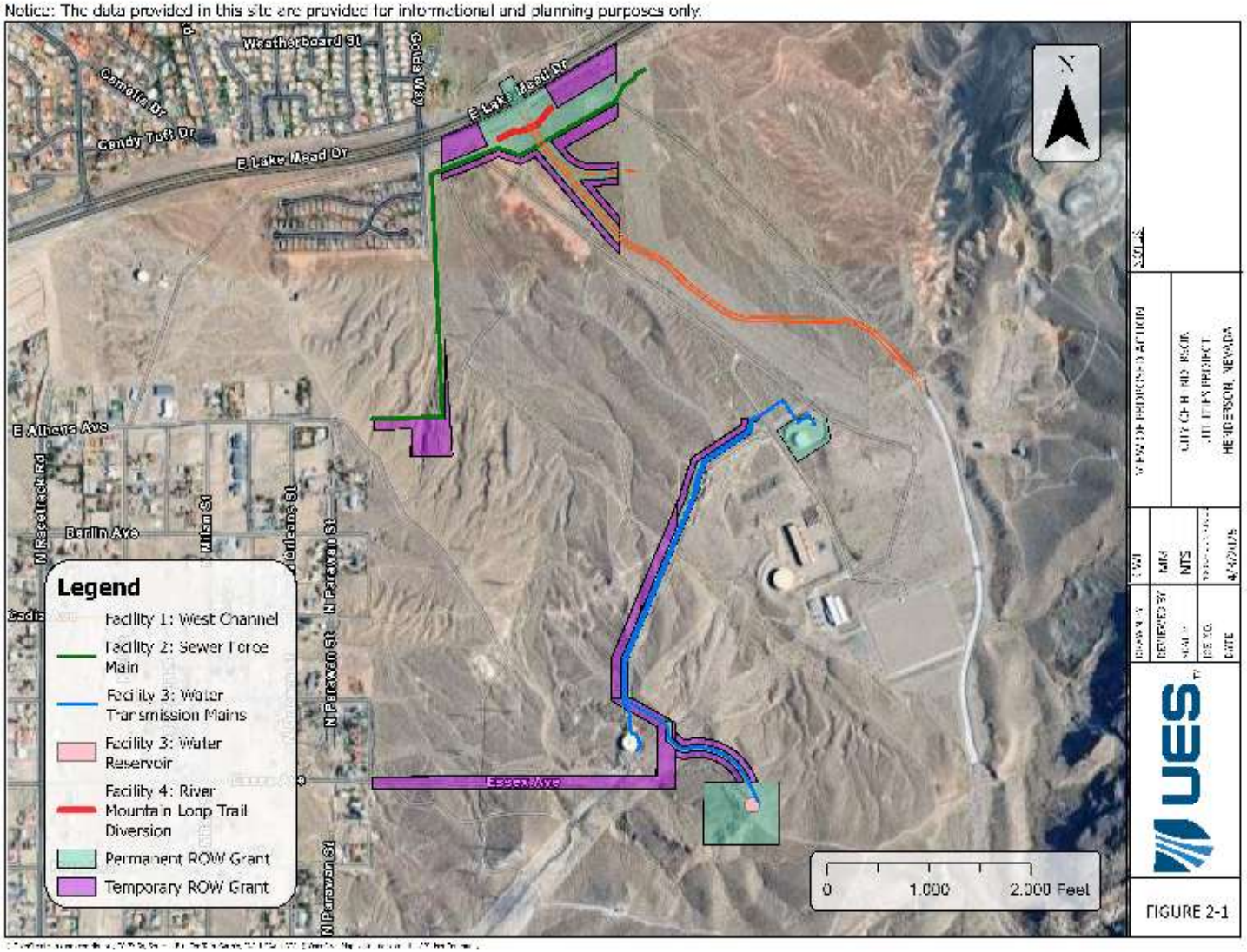
The "Proposed Action," or the City of Henderson Utilities Project (Project), refers to construction of new temporary and permanent trail segments, stormwater and flood control infrastructure, other municipalities infrastructure (sewer, potable water supply, power, gas, cable, and telephone), and associated access infrastructure, for which the City of Henderson has submitted a ROW application to Reclamation. The Project would result in temporary and permanent impacts across both the ROWs. The proposed permanent ROW is approximately 25.4 acres and 2,513 feet in length. The proposed permanent ROW would be for the trail, drainage/stormwater, and municipal utilities. The proposed short-term ROW is approximately 25.4 acres and would be for grading and construction staging. The drainage, trail detour, and municipal utilities would be placed within the proposed permanent ROW. The proposed facilities include:

- Facility 1: West Channel
- Facility 2: Sewer Force Main
- Facility 3: Water Reservoir and Transmission Main
- Facility 4: Temporary and Permanent Trail Segments
- Facility 5: Power, Gas, Fiber Optic, and TCC Lines

2.1.1 Facility Developments

Preliminary design drawings for Facilities 1-3 developments are shown in Appendix A of this document. Facilities 4 and 5 are conceptually shown in Appendix A, but the exact location and design of those facilities is not known. Therefore, Facilities 4 and 5 are discussed in this EA in terms of thresholds, known construction standards, and relative location within the EA analysis area. There will be no above-ground utility line development associated with this Project. A map of the planned Proposed Action can be found in Figure 2-1.

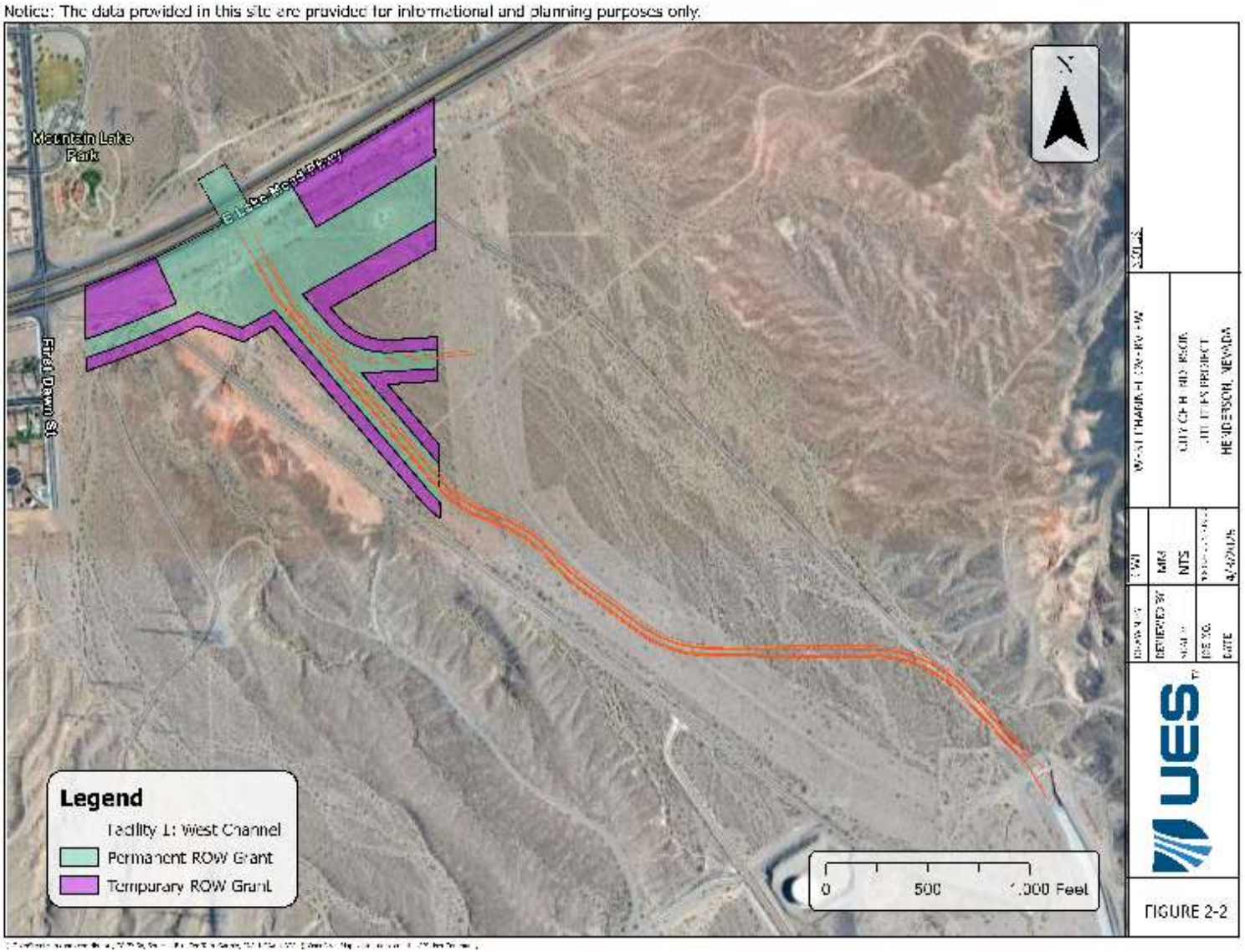
Figure 2-1: View of Proposed Action



2.1.1.1 Facility 1: West Channel

The City proposes to construct a concrete storm drain channel that connects to an existing Southern Nevada Water Authority (SNWA) facility and flows north to existing reinforced concrete boxes (RCBs) under Lake Mead Parkway. The proposed channel within Reclamation land is a 20 foot by 5-foot concrete channel of varying width (up to 52 feet) at transitions and approximately 1,250 feet total length. The channel is at-grade and only the six-foot post and cable fence extends above grade. There are two smaller storm drain channel/pipes/RCBs that tie into the main channel from the east along the alignment. A portion of the River Mountains Loop Trail will need to be altered to continue access. The current plan for detour is shown on the West Channel plans and is seen below in Figure 2-1 and Figure 2-5 (below). During construction a temporary loop trail detour will be created from the junction of the Lake Mead Parkway Trail and the River Mountains Loop Trail to divert bike traffic out to Lake Mead Parkway via First Dawn St. to utilize the bike lane. Bicycle traffic will re-enter the trail off Lake Mead Parkway approximately 2000 feet east. The City is currently working with the Nevada Department of Transportation (NDOT) to develop plans to secure the bike lane safely and provide uninterrupted access to the River Mountains Loop Trail. All necessary NDOT permits will be obtained by the City and all necessary barriers will be installed according to NDOT guidelines. Construction access will be within the requested ROW. Excess excavated material will be hauled to the privately owned Lakemoor site. At its maximum point, the permanent ROW for this facility is 125 feet wide. Please see Figure 2-2 for Project plans in regard to the west channel installation including temporary and permanent ROWs.

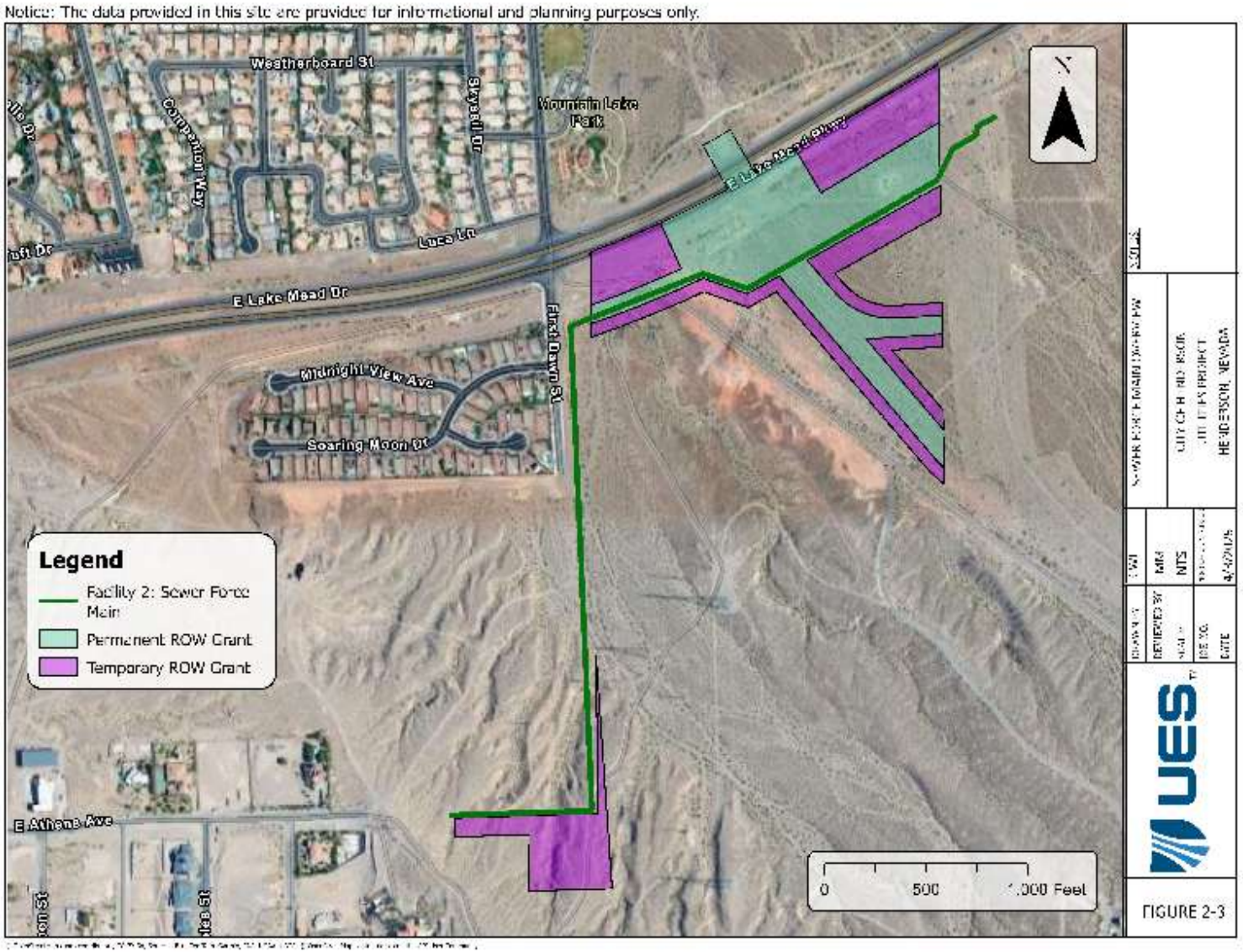
Figure 2-2: West Channel Overview



2.1.1.2 Facility 2: Sewer Force Main (SFM)

Facility 2 consists of three underground SFM lines (10", 12", & 16") running parallel to Lake Mead Parkway from the Lakemoor Lift Station to First Dawn Street, then south along First Dawn Street, partly within the Pulte Homes property to Athens Drive. All three sewer lines will be installed concurrently in separate trenches. Each trench will be approximately 4 feet wide with a total disturbance of approximately 7 feet in depth for an approximate length of 1,150 feet. At its maximum point, the permanent ROW for this facility is 70 feet wide. A temporary ROW is requested for grading at the top of Athens Drive of approximately 0.65 acres. Grading will be completed by bulldozer, loader, excavator, and water trucks. A crossing is required at the River Mountains Loop Trail and the SNWA Access Road. A temporary shoofly will be created so traffic will be uninterrupted. The trail and road will be cut, and sleeves installed for a quicker installation, allowing the trail and road to be back in service within two days. The City is currently working with the NDOT to develop plans to secure the bike lane safely and provide uninterrupted access to the River Mountains Loop Trail. No permanent access road is required over force main pipes. A manhole for transition from force main to gravity sewer will be installed at the end of Athens Drive pavement. Please see Figure 2-3 for Project plans in regard to the SFM installation including temporary and permanent ROWs.

Figure 2-3: Sewer Force Main Overview



2.1.1.3 Facility 3: Water Reservoir and Transmission Main

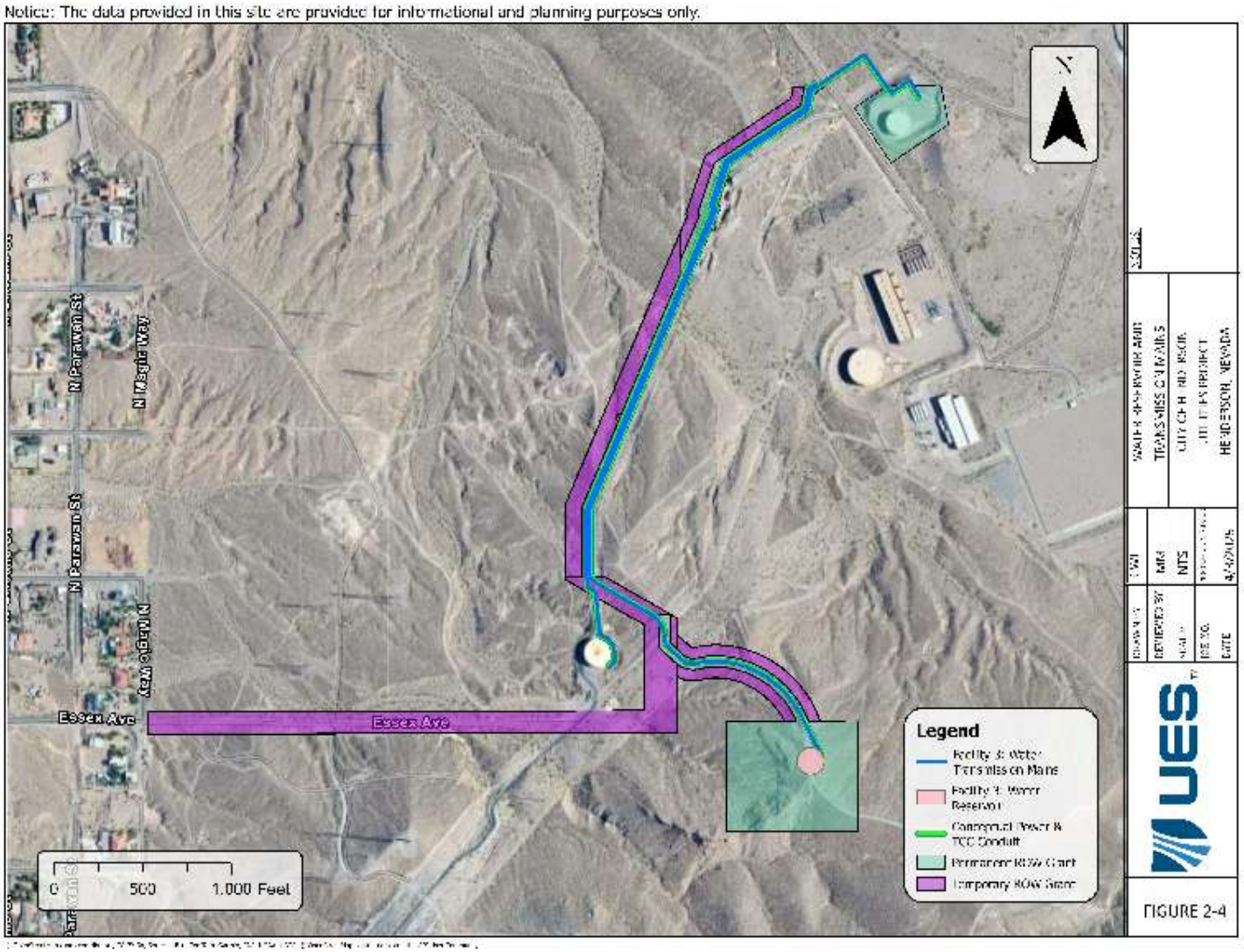
The water transmission main consists of two phases. Phase 1 includes the 16" water main from R-7 Reservoir to R-12 Reservoir. Trenching will be completed by using a trencher. Pipe for the water main will be installed using an excavator and backfilled with a loader with water trucks. To facilitate operations, power and TCC conduit will be installed alongside the water mains, which is conceptually included in Figure 2-4. The Phase 1 pipeline will consist of approximately 4,200 feet (2,600 feet on Reclamation land) of ductile iron pipe and will be equipped with:

- Isolation valves located within valve vaults,
- Above-ground air valves within covered structures,
- Blowoff facilities, and
- Cathodic protection to mitigate corrosion.

Phase 2 includes the construction of a new R-68 concrete reservoir and installation of two water mains, 16" and 24" in diameter, from R-7 to the new R-68 Reservoir. Trenching will be completed by using a trencher to excavate 6 feet wide by 8 feet deep trench for approximately 2,500 feet. The maximum trenching depth would be 12 feet. Pipe will be installed using an excavator and backfilled with a loader with water trucks. Power and TCC conduit will be installed alongside the water mains to facilitate operations. Sleeves for Phase 2 crossings will be included at two locations when crossing the River Mountains Loop Trail. The loop trail crossings will have detours so bike traffic will be uninterrupted. The R-68 Reservoir will require excavations approximately 20 feet below grade and will extend above ground, approximately 12 feet above the existing grade. The 60-foot diameter reservoir will be concrete and have a 1.4-million-gallon capacity. Excavation and fill will be completed by a bulldozer with a ripper and an excavator with water trucks. Reservoir construction will use work trucks, a crane, man-lifts, excavator, loaders, concrete trucks, and water trucks. Excavation spoils will be removed and transferred to a privately owned site.

It is estimated that the buried pipeline will be at a minimum cover depth of approximately six feet. At its maximum point, the permanent ROW for this facility is 75 feet wide, excluding the reservoir area, which is 500 feet wide by 600 feet long rectangle. Please see Figure 2-4 for Project plans in regard to the transmission main and water reservoir installation including temporary and permanent ROWs.

Figure 2-4: Water Reservoir and Transmission Mains Overview

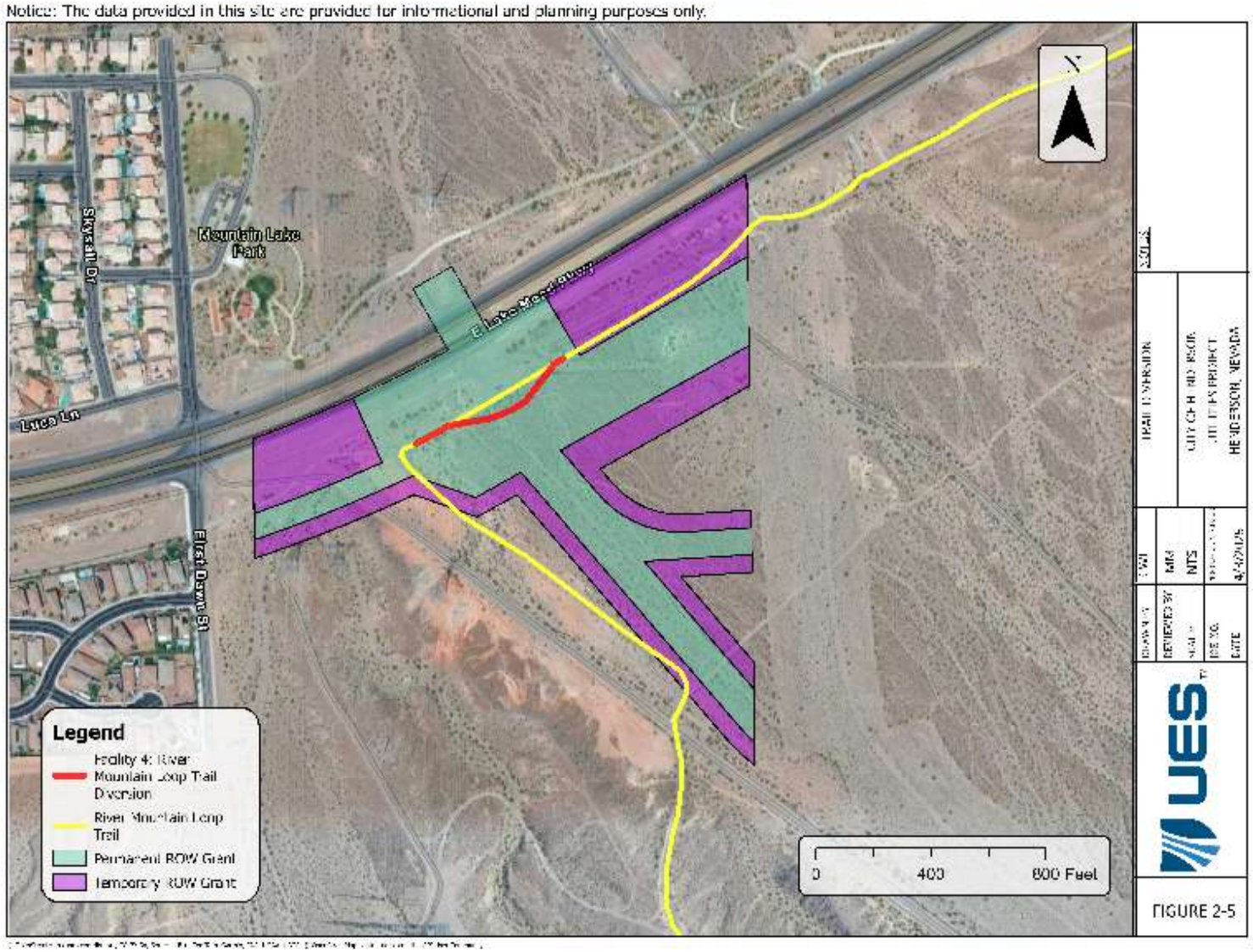


2.1.1.4 Facility 4: Temporary and Permanent Trail Segments

The construction of temporary trail segments will be required to create the temporary diversion of the River Mountains Loop Trail during the construction of Facility 3. The total length of temporary trail required to enter and exit the existing trail is approximately 400 feet. The temporary trail would be created using minimum grading to create a safe surface for all permitted activities. The permanent trail diversion required after Facility 3 is constructed will be approximately 489 feet long and will cross the newly constructed stormwater main. The construction design of the new permanent trail diversion will be approved by all interested parties and will meet the safety and construction requirements for all permitted activities on River Mountains Loop Trail.

It is anticipated that another 4,000 feet of additional, new permanent trails will be created within the Project site. These trails initially will be graded dirt but will ultimately be constructed as asphalt or concrete. The maximum width of the anticipated additional trails would be 25 feet. Detailed design plans are not available for these trail features to date. Please see Figure 2-5 for Project plans in regard to the trail diversion including temporary and permanent ROWs.

Figure 2-5: Trail Diversion Overview



2.1.1.5 Facility 5: Power, Gas, Fiber Optic, and TCC Lines

These utilities are only conceptual at this time and no specific design is available; however, these utilities can be discussed using existing construction practices and guidance from the prospective utility providers. Within the Project site, it is anticipated that there will be no more than 3,550 linear feet of underground power, gas, fiber optic, and TCC lines installed.

According to Southwest Gas (2025), the following specifications will be used for any gas line installation on the Project site:

- Sleeving will be 4-inch yellow PVC with a "natural gas sleeving" stamp. It will be installed at least 30 inches below finished grade, and 12 inches above electric lines within a joint trench.
- Trenches will be at least 34 inches from final grade.
- Shading material will be 1.5 minus in size and 6 inches above sleeve.
- There will be a minimum clearance between all utilities.

All power lines will be installed underground by NVEnergy and based on NVEnergy RT-G, Revision 6 general requirements for underground service (NVEnergy, 2019). Lines will be buried a minimum of 36" from the edge of water and gas pipes. All excavated materials will be placed a minimum of two feet from either edge of the trench. Backfill will be performed according to RT-1 general requirements and meet all applicable government codes and ordinances. The minimum trench depth for the electric conduit will be 48 inches.

To facilitate operations, power and TCC conduit will be installed alongside the water mains, as shown in Figure 2-3, above. Fiber optic and TCC lines will be installed between 24 and 48 inches deep and will be buried based on location of other installed utilities. There will be no above ground gas, power, fiber optic, or TCC lines installed.

2.1.2 Construction Activities and Schedule

The following construction details are scripted for each Project and utilize prescribed construction methods. All required monitoring, mitigation, or avoidance measures resulting from Section 106 and Section 7 consultation will be utilized to protect sensitive biological and cultural resources during construction.

2.1.3 Surveying and Staking

Prior to ground disturbance activities, Wallace Morris Kline Surveying, LLC (WMK) will survey and stake the requested ROW boundaries. One Call Line Locate (dial 811) will mark existing utility lines, culverts, and other existing features. These will be staked to prevent accidental damage during construction.

2.1.4 Clearing, Grubbing, and Grading

Clearing will occur within the staked boundaries of the permanent and temporary ROWs and include removal of materials that will interfere with construction activities, create hazards or unsafe conditions,

or impair subsequent site work. The ROW will be grubbed by removing a deep surface layer that includes stumps and roots. Grading of the ROW will most likely be conducted by a bulldozer or track hoe.

2.1.5 Best Management Practices

Construction activities will follow standard procedures and BMPs. Sites will be cleared, graded, and compacted, and areas that were temporarily disturbed during construction will be restored.

2.1.6 Trenching

Excavators, backhoes, track hoes, cranes, trenchers, or other similar equipment will be used for the open trench pipeline construction. The depth from the ground surface to the top of the pipe will be a minimum of six feet. The maximum depth of trenching will be 12 feet at the deepest point. Material excavated from the trench will be stockpiled adjacent to the trench and reused if feasible. All unused soil will be collected and distributed per permitting requirements or hauled off. The length of open trench segments will be managed to minimize the duration of construction disturbance.

2.1.7 Bedding

Engineered bedding materials will be laid in the bottom of the pipeline trench eventually extending approximately 12 inches above the invert of the pipe. These bedding materials may consist of screened or otherwise processed excavated materials or materials imported from borrow pits.

2.1.8 Trench Backfill

Following upper pipe zone backfilling, the remainder of the trench will be backfilled to approximately finished grade using a backhoe, track hoe, bulldozer, or similar equipment. Material that is six inches in diameter or less will be used as backfill. Trench backfills will meet BMPs, and be:

- Selected or processed to be clean, well graded earth material,
- Free of excessive fine particles, vegetation, or other deleterious materials,
- Compacted in place for maximum pipeline stability, and
- Moistened or dried before backfilling to ensure optimum moisture content.

2.1.9 Hydrostatic Testing

Hydrostatic testing will need to be conducted to pressure test the completed pipeline. The testing will be conducted in segments when major portions of the pipeline are completed. Water used for hydrostatic testing is anticipated to be obtained from existing local permitted sources. Water from hydrostatic testing of individual pipeline segments will either be released into a downstream pipeline segment for continued hydrostatic testing or will be discharged through a drain valve into adjacent dry washes where the water will eventually percolate into the ground surface. Discharges into dry washes will be conducted in accordance with a State of Nevada temporary discharge permit. An energy dissipator or similar device will be used to reduce the potential of discharges to erode and scour dry washes. Until facility design is

completed, and construction phasing is determined, the specific discharge locations cannot be determined. Prior to discharge, clearance surveys for and avoidance of, migratory birds, cultural resources, and special status plants and wildlife will occur, as applicable.

2.1.10 Pipe Disinfection

Pipeline disinfection will need to be conducted to prepare the pipeline for commissioning and start up. The disinfection process will likely be conducted in segments by moving a large 'slug' of chlorinated water through the pipeline. The slug will be introduced at one end of the pipeline and pushed through to the other end with testing done along the way to ensure chlorine levels are maintained. Water used for the disinfection is anticipated to be obtained from existing local permitted sources. Once the slug has traveled through the pipeline and testing has confirmed the disinfection process is completed the highly chlorinated water will be treated and discarded through a drain valve into adjacent dry washes.

The following table shows a construction timeline of the utilities:

Table 2-1: Project Timeline

Facility	Phase	Start Construction	Construction Complete
Facility 1	West Channel	May 2025	November 2025
Facility 2	Sewer Force Main	May 2025	November 2025
Facility 3	Water Main	June 2025	February 2026
Facility 3	Water Main-Phase 2	March 2026	April 2027
Facility 3	R-68 Reservoir	March 2026	April 2027
Facility 4	New Trails*	TBD	TBD
Facility 5	Power, Gas, Fiber Optic*	TBD	TBD

*These facilities have no anticipated start and end dates for construction currently.

2.1.11 Dust Control and Construction Water Needs and Sources

Dust control measures will be implemented consistent with Clark County Department of Air Quality and Reclamation requirements. Water would be the primary means of dust abatement during all phases of construction. Water will also be required to complete certain work activities on site to achieve soil compaction. Both potable and non-potable water could be used depending on availability and type of use permitted. Water will be hauled to the site, obtained by permit from on-site sources, and/or stored in J-stand or portable tanks.

2.1.12 Access Roads

No new access roads will be needed for construction. Construction access will be from existing paved and dirt roads as shown in the attached exhibits. In areas where improvements are necessary, the improvements will be made at the beginning of construction activities and will include minimal grading with a grader and a water truck, only when necessary.

2.1.13 Equipment Staging

Staging areas for equipment, materials, and vehicles would be located within the proposed ROW, as well as any other off-site locations secured by the construction contractor (i.e., nearby private land, contractor facilities, etc.). Staging areas within the proposed ROW will receive minimal grading with a bulldozer, grader, and water truck to level the surface and will be reclaimed in accordance with Reclamation grant stipulations after work is complete. All Reclamation BMPs will be implemented.

2.1.14 Temporary Construction Areas

Temporary construction areas are required. All staging and grading activities will be located within the proposed short-term ROW or on private property. The short-term ROW is approximately 1,817 feet in length and 50 feet in width. Any ground disturbance from staging and grading will be reclaimed to Reclamation standards post construction. All Reclamation BMPs will be implemented.

2.1.15 Borrow and Fill Materials

Cut and fill balancing will be maximized for this Project. If balancing is not possible, additional materials can be procured off-site such as operating gravel pits and hauled to the Project site. Excess materials would be exported under free use permit and hauled by truck to approved dump sites or other City sites that require fill materials or stockpiled on site for future disposal with specific approval by Reclamation.

2.1.16 Resource Protection

Site specific resource protection measures will be developed from the grant stipulations developed for this Project and from Reclamation's review of the application, preliminary design, Plan of Development, and NEPA documentation. In addition, the following practices and processes will be implemented:

2.1.16.1 Wastes - Hazardous or Solid

No hazardous materials would be used on the ROW. The contractor would comply with applicable local, State, and Federal laws pertaining to proper usage and disposal of potentially hazardous materials. Trash and solid waste generated from construction activities would be stored in closed containers and disposed of in accordance with regulatory requirements. Any spills would be cleaned up as soon as safely possible and reported as necessary. All spill materials would be labeled and disposed of at an approved waste management facility. Construction sites would be kept in an orderly condition and free of trash during construction. The following best BMPs will be implemented during construction to prevent and minimize the effect of hazardous waste spills:

- All construction vehicles will be maintained in accordance with the manufacturers' recommendations. All vehicles will be inspected for leaks prior to entering the jobsite.
- All discovered leaks would be contained with a suitable container or absorbent materials until repairs can be made.
- All hazardous waste materials will be properly labeled in accordance with Title 40 of the CFR Part 262 (EPA, 1980).

- Spilled materials of any type will be cleaned up immediately. A shovel and spill kit will be maintained onsite to respond to spills.
- All sanitary waste will be collected in portable, self-contained toilets until other facilities at all construction staging areas are operational and other construction operation areas and managed in accordance with local requirements.
- All excess or waste construction materials, such as asphalt, will be removed from the site for proper disposal.

2.1.16.2 Cultural and Paleontological Resources

Cultural resources are defined as tangible and intangible elements of the environment that have traditional, religious, or community-based significance to a particular group or society. Examples include buildings, sites, structures, objects, or landscapes, each of which has historical, architectural, archeological, cultural, and/or scientific importance. Numerous laws, regulations, and statues on both the federal and state levels seek to protect and target the management of cultural resources.

2.1.16.3 Biological Resources

Reclamation is consulting with USFWS under Section 7 of the ESA. All requirements resulting from Section 7 Consultation and all stipulations and mitigation measures required as a condition of approval for the ROW grant will be implemented.

2.1.16.4 Reclamation

Reclamation following construction will be performed in accordance with Reclamation grant stipulations.

2.1.16.5 Maintenance and Operation

Maintenance and operation of Project facilities will be incorporated into the City's existing infrastructure program and performed in accordance with Reclamation grant stipulations.

2.1.17 Project Construction Schedule

Typical construction work schedules are expected to be Monday through Friday, during daylight hours, which complies with the local noise ordinance restrictions for construction activity of 7:00 a.m. to 7:00 p.m., except Sundays and federal holidays.

2.1.18 Project Workforce

It is expected that no more than 20 workers will be present on site at any given time. Workers will park personal vehicles in an unknown location off-site and only travel in construction vehicles permitted for access.

2.1.19 Construction Equipment

The equipment needed for construction includes excavators, disposal transport trucks, asphalt paving and concrete installation vehicles, and water trucks for dust control.

2.2 No Action Alternative

The No Action Alternative means that ROW grant would not be approved, and the proposed trail, stormwater infrastructure, municipal utilities, and associated access would not be built. The need for providing access to these facilities would not be met.

2.3 Alternatives Considered but Not Analyzed in Detail

Alternatives considered included differing alignments for each of the facilities and alternative construction methods to reduce the amount of time that construction impacts access to existing trails. Each alignment posed different ratios of suitability for the activity, costs of installation, and impacts to resources. The Proposed Action presents the most utility to the public with the least impacts to resources (aquatic, natural, and social) without incurring substantial increases in costs. Construction of a temporary trail detour crossing the proposed channel to the south of the existing trail would require construction of the storm drain to occur in phases. This would prolong the trail detour and require additional ground disturbance. Additionally, reclamation of the temporary trail would be needed to prevent the public from continued use resulting in long term impacts.

2.4 Reasonably Foreseeable Actions

According to 43 CFR 46.30, Reasonably foreseeable future actions include those federal and non-federal activities not yet undertaken, but sufficiently likely to occur, that a Responsible Official of ordinary prudence would take such activities into account in reaching a decision. These federal and non-federal activities that must be taken into account in the analysis of impact include, but are not limited to, activities for which there are existing decisions, funding, or proposals identified by Reclamation. Reasonably foreseeable future actions do not include those actions that are highly speculative or indefinite.

The purpose of the Project is to provide customer access to utilities and manage storm water runoff. The need for the Project is the City's responsibility to protect public and private land from stormwater runoff and provide reliable access to utilities for residents. Completion of the Proposed Project will provide reliable property access and utilities to the development area. This will result in an area well equipped for residential development. Therefore, it is reasonable to assume there will be further development in or near the Project area in the future. Housing, commerce, trails, roads, parks, streetscapes, utilities, and infrastructure projects not included or anticipated at the time of this EA could potentially be proposed at an unknown point in time. Development of these actions is dependent upon the federal, state, and local economies; public need; and possible unknown factors. These actions are highly speculative at this time, so have been determined to meet the definition provided in 43 CFR 46.30 (2008).

3.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION

The Project area lies on the eastern edge of the Las Vegas Valley. The Las Vegas Valley extends in a northwest-southeast direction and drains generally toward the southeast through the Las Vegas Wash and into Lake Mead. Surrounding the alluvium-filled valley are relatively steep mountain ranges. Lake Las Vegas exists approximately 1.4 aerial (straight) miles to the north of the Project Site.

The Project site is in the northeast portion of the City of Henderson in Clark County, Nevada. The northern perimeter of the Project area is adjacent to East Lake Mead Parkway. Residential development borders the Project site to the west. The foothills of the River Mountains border the Project site to the east. The area to the east of the Project site is a mix of privately owned and federal land that is managed by Reclamation (which overlaps the Project site) and land that is managed by the Bureau of Land Management and the National Park Service, as part of the Lake Mead National Recreation Area (which is all outside of the Project site). The Project site and surrounding area is a mixture of land that had been previously disturbed, primarily by mining activities, and land that is undeveloped and relatively undisturbed. A flood control facility, with an associated concrete stormwater channel and retention basin, operated by the SNWA, overlaps a portion of the Project site and borders the remainder of the east-central portion of the Project site. A portion of this facility is surrounded by fencing that would exclude tortoises and other wildlife.

A portion of the Project area overlaps with the footprint of the former Three Kids Mine, an open-pit manganese mine that began operation in 1917. This is no longer an active mining site and remediation activities have occurred at this site. Several recreational trails transect the Project site, including a segment of the River Mountains Loop Trail. Photos of the Project area are included in Figures 3-1 and 3-2 below.

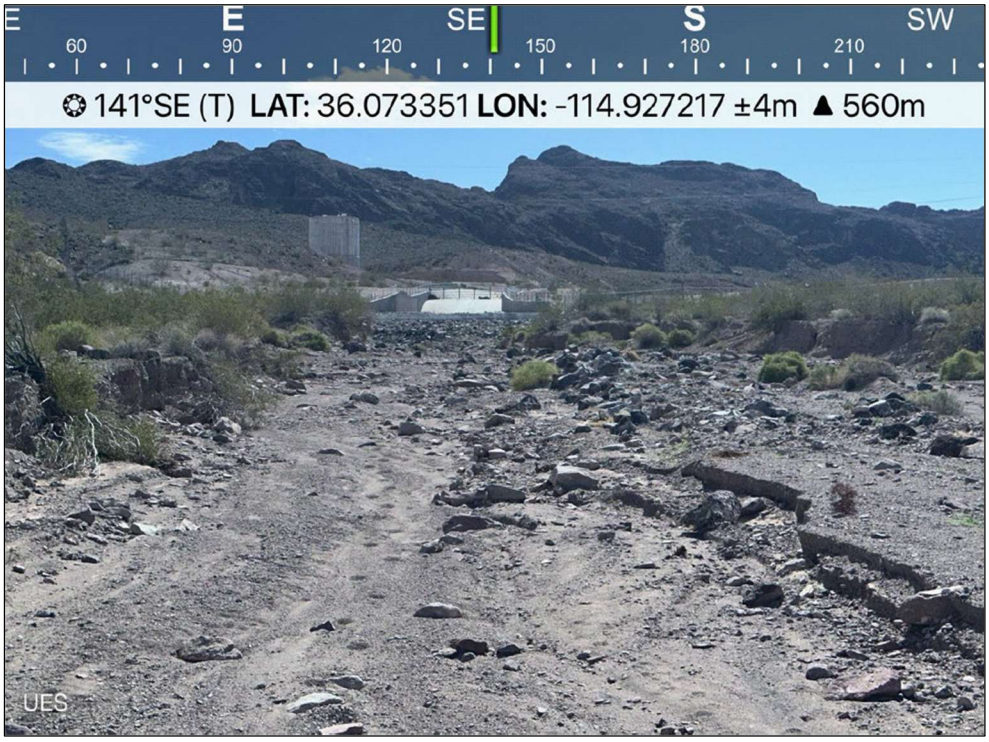


Figure 3-1: A southeast view towards the regional flood facility.

Figure 3-2: A southern view towards the Project Area near East Lake Mead Parkway.

3.1 Vegetation

3.1.1 Affected Environment

The Project area falls within the Mojave Basin and Range ecoregion, which is part of the Warm Deserts Level II ecoregion classification under the broader North American Deserts level I ecoregion (EPA). This area is further subdivided into more specific Level IV ecoregions that describe the landscape and vegetation characteristics within the Mojave Basin and Range.

- Arid Valleys and Canyonlands (14e) – Characterized by broad valleys and canyon systems, this ecoregion typically has sparse desert vegetation. The dominant flora includes drought-tolerant shrubs and occasional grasses adapted to the arid conditions, with vegetation coverage that decreases further in lower elevations and in areas with exposed, erodible soils.
- Eastern Mojave Low Ranges and Arid Footslopes (14b) – This subregion consists of low mountain ranges and arid foothills. Vegetation in this area includes creosote bush scrubland and scattered desert shrubs. The terrain is rocky and supports plant communities adapted to steep, well-drained slopes, where vegetation is primarily limited to hardy shrub species.
- Eastern Mojave Basins (14a) – Located in flat basin areas, this ecoregion supports vegetation typical of Mojave Desert basins, such as saltbush and creosote bush, which dominate the landscape. These basins are subject to occasional flooding and salt accumulation, influencing both soil chemistry and plant distribution.

Vegetation within the proposed Project area previously has been disturbed by various activities. Creosote bush (*Larrea tridentata*) and bursage (*Ambrosia dumosa*) are the most conspicuous plant species present. Table 3-1 lists the plant species identified during field surveys conducted in October 2024.

Table 3-1: Plant Species Observed

Common Name	Genus	Species
cheesebush	*Ambrosia*	*salsola*
white bursage	*Ambrosia*	*dumosa*
fourwing saltbush	*Atriplex*	*canescens*
desertbroom	*Baccharis*	*sarothroides*
Asian mustard	*Brassica*	*tournefortii*
red brome	*Bromus*	*rubens*
devil's spineflower	*Chorizanthe*	*rigida*
silver cholla	*Cylindropuntia*	*echinocarpa*
branched pencil cholla	*Cylindropuntia*	*ramosissima*
low woolygrass	*Dasyochloa*	*pulchella*
cottontop cactus	*Echinocactus*	*polycephalus*
brittlebush	*Encelia*	*farinosa*
desert trumpet	*Eriogonum*	*inflatum*
flatcrown buckwheat	*Eriogonum*	*deflexum*
smallseed sandmat	*Euphorbia*	*polycarpa*
creosote bush	*Larrea*	*tridentata*
catclaw acacia	*Senegalia*	*greggii*
desert globemallow	*Sphaeralcea*	*ambigua*

3.1.2 Environmental Consequences

The following sections describe the Project-related impacts to vegetation from the No Action Alternative and the Proposed Action, respectively.

3.1.2.1 No Action Alternative

Under the No Action Alternative, the Project would not be constructed; therefore, no Project related impacts to vegetation would occur.

3.1.2.2 Proposed Action

Construction of the Proposed Action would permanently affect up to 25.4 acres of vegetation. Much of this area has previously been disturbed and native vegetation is not intact. Future developments in the greater Las Vegas area contribute incrementally to vegetation disturbance and removal; however, consolidated development within this area would allow growth without developing more rural areas. Development of rural areas could contribute more to habitat fragmentation than consolidated

development. Consolidated development allows more contiguous habitat to remain intact, while focusing human disturbance in a more urbanized area.

3.1.3 Mitigation

These effects are expected to be minimal; therefore, mitigation is not warranted nor proposed.

3.2 Wildlife Excluding USFWS Designated Species

This section addresses general wildlife in the area. Species that are protected under the ESA are addressed in Section 3.3.

3.2.1 Affected Environment

This section describes the general wildlife and migratory birds that may occur in the Project area.

3.2.1.1 General Wildlife

The proposed Project area could support and is adjacent to lands that could potentially support wildlife characteristic of the Mojave Desert. Biological diversity varies according to topography, plant community, and proximity to water, soil type, and season. Common wildlife may include species such as the Great Basin whiptail (*Cnemidophorus tigris*), desert horned lizard (*Phrynosoma platyrhinos*), black-tailed jack rabbit (*Lepus californicus*), kit fox (*Vulpes macrotis*), coyote (*Canis latrans*), cactus mice (*Peromyscus* spp.), and kangaroo rats (*Dipodomys* spp.).

3.2.1.2 Migratory Birds

The Migratory Bird Treaty Act of 1918, as amended, 16 U.S.C. 703 et seq. defines the responsibility of the federal agencies to protect migratory birds. MBTA and subsequent amendments state that it is unlawful to take, kill, or possess migratory birds (1918). Numerous bird species travel through Nevada during spring and fall migrations. A list of MBTA protected birds can be found in 50 CFR 10.13 (USFWS, 2025). The list of birds protected under this regulation is extensive and the Project area has potential to support many of these species.

Typically, the breeding season is when these species are most sensitive to disturbance, which generally occurs from February 15 through August 31.

It is assumed that habitat near the action area contains potential nesting and foraging habitat for a wide range of migratory birds including the loggerhead shrike (*Lanius ludovicianus*) and burrowing owl (*Athene cunicularia*).

The western burrowing owl is a diurnal bird of prey specialized for shrub-steppe habitats. Burrowing owl habitat in the Mojave Desert typically consists of open, dry, treeless areas on the desert floor. Burrowing owls most frequently use mammal burrows created by other animals such as ground squirrels (*Spermophilus* spp.), coyotes (*Canis latrans*), or desert tortoises (*Gopherus agassizii*). The burrows are used for nesting, roosting, cover, and caching prey. In recent decades, the range and species count has been declining primarily due to agricultural, industrial, and urban developments that reduce burrow

availability. The owls also face increased mortality rates from pesticides and edge-effect predation (Haug et al., 1993).

The loggerhead shrike prefers open country with nesting habitat preference toward scattered trees and shrubs. They are commonly found in shrub habitat types comprising savanna, desert scrub, and occasionally, open woodland. Perches are an important habitat component used for hunting. If natural perches are unavailable, they will perch on poles, wires, or fence posts. Population trend data in Nevada has shown an unexplained 5 percent decline per year since 1966.

3.2.2 Environmental Consequences

The following subsections describe the Project-related impacts to general wildlife and migratory birds from the No Action Alternative and the Proposed Action.

3.2.2.1 No Action Alternative

Under the No Action Alternative, the Project would not be constructed; therefore, no Project related impacts to wildlife, sensitive species, or migratory birds would occur.

3.2.2.2 Proposed Action

3.2.2.2.1 General Wildlife

Wildlife species would be displaced, as 25.4 acres of habitat would be disturbed within the Project area. The primary impacts on wildlife from the Proposed Action, would be killing or injury of ground dwelling animals, displacement of individuals, permanent loss of habitat, increased potential for harassment of wildlife, and increased noise during construction. During construction, ground-disturbing activities could result in mortality to various wildlife species. Some species that are particularly mobile might be able to avoid injury or mortality by leaving the site and colonizing surrounding lands. However, some wildlife, such as nocturnal species or species that use burrows, might be more susceptible to injury or mortality. Although temporary in nature, noise and activity associated with construction could cause animals to avoid the area, thus altering their normal behavior patterns.

Wildlife species in the general area are common and widely distributed throughout the area and the loss of some individuals and/or their habitat should have a negligible impact on populations of the species throughout the region. Future development in the valley could continue to displace wildlife within the great Las Vegas area; however, consolidated development will allow for urbanization to be focused in one area and will allow more rural, contiguous habitat to remain intact.

3.2.2.2.2 Migratory Birds

Without mitigation, migratory birds could be injured or killed during vegetation removal and grading activities as the Project would be removing 25.4 acres of habitat. With implementation of mitigation, no take or mortality to any avian species is anticipated. Depending on the time of year for construction, operation, or maintenance, there is a potential to disturb nesting birds within the Project area or interrupt typical behavior patterns. Past, present, and future development in the Las Vegas Valley may disrupt normal migratory patterns within the greater Las Vegas area.

3.2.3 Mitigation

The following sections discuss mitigation measures and BMPs for wildlife, and migratory birds.

3.2.3.1 General Wildlife

Implementing BMPs will reduce impacts to any wildlife that may be present in the Project area.

3.2.3.2 Migratory Birds

To reduce impacts to migratory birds, including burrowing owls, in the Project area the following mitigation measures/BMPs will be implemented:

- **Avoidance during nesting season:** In compliance with the MBTA, habitat-altering projects or portions of projects should be scheduled outside bird breeding season (between February 15 and August 31) whenever possible. For work occurring during the nesting period, an experienced biologist would survey the area for nests within 3 days of initial grading and vegetation removal. This shall include burrowing and ground-nesting species in addition to those nesting in vegetation. Work will be stopped if an active nest is encountered, and a 250' buffer instituted until Reclamation and/or USFWS is consulted to reduce buffer size.
- **Reduced lighting:** Lighting, if installed as part of the Project, should be kept to the minimum number allowable, minimum intensity, and should be down directed to keep light within the boundaries of the site.

3.3 Threatened, Endangered, or Candidate Animal Species

According to the USFWS online tool, Information for Planning and Consultation (IPaC), threatened, endangered, and candidate species that might occur within the Project area are the yellow-billed cuckoo (*Coccyzus americanus*), Yuma Ridgeway's rail (*Rallus obsoletus yumanensis*), desert tortoise, and monarch butterfly (*Danaus Plexippus*). The yellow-billed cuckoo and Yuma's Ridgeway's rail require riparian and/or marsh habitats, which are not present within the Project area. The Monarch butterfly requires milkweed (*Asclepias spp*.), which was not documented within the Project area. The desert tortoise, listed as threatened under the ESA, is the only federally protected species with potential to occur in the Project area and that could be supported by habitat at the Project site. Thus, the desert tortoise will be the only federally listed wildlife species to be evaluated in this EA.

3.3.1 Existing Environment

Threatened and endangered species are placed on a federal list by USFWS and receive protection under the ESA, as amended. The only federally protected species known to occur in the vicinity of the Project area is the threatened desert tortoise. USFWS has established critical habitat for this sensitive species; however, no critical habitat occurs within the Project area. The Piute-Eldorado Area of Critical Environmental Concern, located approximately 10 miles to the south, is the closest designated critical habitat for the species.

The Project area, while not currently showing any evidence of desert tortoise presence, is situated near the greater Las Vegas Wash corridor, approximately 1.1 miles to the north, which is a significant area for

the threatened desert tortoise population in southern Nevada. This 28-mile corridor links the Las Vegas Valley to Lake Mead, providing a vital pathway for tortoises to move between habitats west of the City and areas to the south near Lake Mead. Portions of this corridor support suitable desert tortoise habitat, including creosote bush scrub and sandy soils, and surveys over the years have documented both live tortoises and burrows within this corridor (SWCA 1998, 2006; SNWA, 2006). Portions of the Project area offer similar suitable habitat.

In October 2024, a UES Biologist, experienced with the biota of southern Nevada, conducted pre-Project tortoise surveys within the entire Project area in accordance with USFWS 2010 protocol (including the 2018 updates). During the surveys, no tortoises or signs of their presence were observed, and no prior tortoise observations have been recorded within the analysis area (GBIF). Infrastructure and urban development within and near the Project action area have fragmented much of the tortoise habitat, with high-density housing, roads, and other infrastructure reducing connectivity and habitat quality. Other disturbances, such as recreational use, illegal dumping, and off-highway vehicles (OHVs), further impact tortoise movement and survival. Tortoise fencing is in place along several access roads and around existing facilities within the Project area to help prevent tortoise entry and mitigate potential impacts. Nevertheless, this species could be encountered during construction and maintenance activities in the Project area. For more details regarding consultation, please see Biological Opinion in Appendix B.

3.3.2 Environmental Consequences

This section discusses the Project related impacts to desert tortoise for the No Action Alternative and the Proposed Action.

3.3.2.1 No Action Alternative

Under the No Action Alternative, the Project would not be built; therefore, no Project related effects on desert tortoise would occur.

3.3.2.2 Proposed Action

There would be a loss of up to 25.4 acres of potential tortoise habitat with implementation of the Proposed Action.

Despite the absence of recorded presence or sign, the Project poses potential risks to tortoises should individuals be present within the Project area. Vehicle traffic related to Project activities, including OHVs, creates a risk of harassment, injury, or take, as tortoises may be at risk of being struck or otherwise disturbed. Additionally, temporary construction features, such as open ditches, present a mortality risk. These ditches may inadvertently trap tortoises, leading to fatal outcomes due to exposure, predation, or inability to escape. Furthermore, the development of Project components will lead to a permanent loss of suitable habitat, reducing available resources and potentially impacting nearby tortoise populations.

The Proposed Action *may affect and is likely to adversely affect* the desert tortoise. As no critical habitat is present within the Project area, there will be no effects to critical habitat for the desert tortoise. The Project site is currently not known to be occupied by species; however, there is suitable habitat in the surrounding areas and these animals could enter the Project footprint, therefore, an Incidental Take

Permit (ITP) is recommended, covering a maximum take limit of one adult desert tortoise mortality and five harassment takes.

As future development occurs within proximity to the Project area, private development, with a federal nexus, is required to consult with USFWS regarding their proposed plans. If the USFWS feels the project has potential to affect a threatened, endangered, and candidate species or their critical habitat, a BA will be required. If the BA and associated surveys show potential to jeopardize the survival of the species, the project will be cancelled or modified. Consultation with USFWS ensures private developers are in compliance with the ESA, preventing any unnecessary harm to these at-risk species, as the law was intended to do.

3.3.3 Mitigation

Most impacts from proposed Project implementation are anticipated to be temporary, with permanent impacts unlikely to adversely affect the desert tortoise or its habitat. At present, protective fencing is installed along access roads and around existing facilities to minimize tortoise entry into active work zones. Measures such as these, along with strict adherence to BMPs and further mitigation measures are expected to significantly reduce the likelihood of adverse effects on any tortoises that may enter the Project area.

Development and maintenance conducted in the Project will follow BMPs to minimize disturbance and prevent habitat degradation. Common BMPs that will be implemented for the Project are listed below:

- Utilize existing disturbed areas for staging and storage to minimize habitat loss.
- Restrict OHVs and other construction vehicles to designate routes to avoid accidental encounters. There is potential for harassment, injury, and take from vehicle traffic; therefore, low-speed limits (15 mph or less) are suggested to be enforced within the Project.

The minimization measures listed below are recommended and would be required to reduce potential impacts, including take of desert tortoise. The terms and conditions will be disclosed in the ROW Grant and in the Biological Opinion. Furthermore, implementation of recommended mitigation measures from the USFWS desert tortoise ITP will be required. Recommended mitigation includes the following:

- **Desert Tortoise Clearance Survey**: a one-pass preconstruction survey to ensure no tortoise have entered the work zone for habitat in the Project vicinity
- **Biological Monitor:** During all Project phases, qualified biologists should monitor active work areas to detect and manage any potential encounters with desert tortoises.
- **Worker Environmental Education Program:** providing a ‘tailgate’ training describing measures for construction staff should a tortoise be observed.
- **Cover Open Excavations Overnight:** Implement trenching protocols to prevent tortoise mortality. Open trenches must be covered or have escape ramps if left open overnight to avoid accidental falls by tortoises, which could lead to entrapment or injury.

3.4 Waste Management and Hazardous Materials

This section discusses solid and hazardous waste potentially in the Project area.

3.4.1 Existing Environment

A Phase I Environmental Site Assessment was conducted of the Project site in general accordance with ASTM E-1527-05 (UES, 2023). That study included a review of the site history, historical aerial photographs, and review of environmental databases. Based on a review of historical sources, the Project site has been undeveloped. During site reconnaissance, UES documented the following findings:

- No Recognized Environmental Conditions (RECs) were observed,
- No historical recognized conditions were observed,
- No controlled recognized conditions were observed,
- No vapor encroachment conditions were observed, and
- Except for the scattered debris that are considered *de minimis* conditions, no wastes or formal waste containers were identified on the site.

General solid waste debris consisting of wood, plastic, metal, and glass were observed across the proposed Project area. The Phase I Environmental Site Assessment revealed no evidence of recognized environmental conditions. UES (2024) concluded that no further investigation is warranted at this site.

The Phase I Environmental Site Assessment for the Three Kids Mine and Mill Site (Appendix C), located adjacent to the east side of the Project site, was performed in December 2007 by Zenitech Environmental and the following REC was identified:

- **Mine and Mill Site Impacts:** The generalized result of manganese ore mining and processing at the subject property is the widespread release of arsenic, lead, manganese, in concentrations greater than background levels. The leaching of these metals during erosion or storm events could have an impact on the subject property.

3.4.2 Environmental Consequences

This section discusses the Project related impacts from hazardous wastes for the No Action Alternative and the Proposed Action.

3.4.2.1 No Action Alternative

Under the No Action Alternative, the Project would not be built; therefore, no Project related effects regarding the release of hazardous materials would occur. However, as the site has accumulated trash presumably by dumping, if the area remains undeveloped more unauthorized dumping could occur. Under the No Action Alternative, leaching still could occur due to erosion or storm events.

3.4.2.2 Proposed Action

The construction of the Project will generate solid waste in the form of soil and brush from limited clearing and grubbing and building materials for construction. Solid waste generated during construction will be transported for disposal to a licensed waste management facility. Leaching, as addressed in the Three Kids Mine and Mill Site Assessment, could occur within the proposed Project site due to erosion or storm events. The implementation of the Project is not anticipated to increase erosion in the Project site. During the construction phase, a SWPPP will be required under the National Pollutant Discharge System permit, which generally includes an erosion and sedimentation plan to limit potential runoff. The Las Vegas Valley climate is one of the most arid and hot areas in North America, so heavy storm events are not expected. Per the UES's Phase 1 Site Assessment, there are no RECs observed within the proposed Project site; thus implementation of the Project is not expected to be impacted by hazardous materials.

Future development within proximity to the Project site will require their own site analysis for hazardous materials and waste to ensure that the development of the project would not be affected by hazardous waste or materials.

3.4.2.3 Mitigation Measures

The following BMPs would be taken during construction to prevent and minimize the effect of hazardous waste spills:

- **Vehicle Maintenance**: Construction vehicles will be maintained according to the manufacturers' recommendations. All vehicles will be inspected for leaks prior to entering the jobsite.
- **Spill/Leak Prevention and Response:** Discovered leaks will be contained with a bucket or absorbent materials until repairs can be made. Spilled materials of any type will be cleaned up immediately. A shovel and spill kit will be maintained on site to respond to spills.
- **Proper Labeling:** Hazardous waste materials will be properly labeled according to Title 40 of the CFR Part 262 (1980).
- **Waste Management:** Sanitary waste will be collected in portable, self-contained toilets at all construction staging areas and other construction operation areas and managed in accordance with local requirements.

3.5 Cultural and Historical Resources

This section addresses cultural and historical resources in the Project area.

3.5.1 Affected Environment

67 previously recorded archaeological sites and 43 previously conducted archaeological and architectural inventories were identified within the APE and a 1-mile research radius during the background research for the Project. No new archaeological sites, features, or isolated objects were identified during the background research or the reconnaissance survey (photographic "viewbacks") for the Project. UES revisited three eligible resources, two of which were located outside the APE, to determine if they should

remain eligible for listing in the National Register of Historic Places (NRHP) and to assess the visual impacts of the proposed undertaking on these resources.

UES conducted a Class I background literature review for the Project on October 25, 2024. This consisted of a search of the Nevada Cultural Resources Information System (NVCRIS) for the Project boundary and a 1-mile research radius. This buffer radius was considered sufficient to develop the visual, auditory, and atmospheric (VAA) APE due to the proposed nature of the undertaking. The NVCRIS search indicated that approximately 75% of the Project Area has been included in previous archaeological surveys, with 22 surveys encompassing at least a part of the APE. These and other inventories recorded 67 archaeological and architectural resources within the one-mile buffer radius, nine of which exist within the Project APE. Of these nine resources, eight are considered ineligible and one, a segment of the Las Vegas Valley Aqueduct, has not been evaluated for listing on the NRHP, because it is a subterranean resource. Within the one-mile radius, two resources have been considered eligible for listing: the Three Kids Mine and the Las Vegas Wash Intaglio.

On November 21, 2024, UES conducted a reconnaissance survey adjacent to the Project APE. A UES archaeologist inspected the area for cultural resources such as artifacts, above ground features, or evidence of subsurface features and took photographs from the resources listed above toward the current APE. The survey boundary was disturbed along existing access roads, water tanks, a water reservoir, pump station, concrete channels, and linear water transmission alignments. Outside these areas of disturbance, the APE is characterized by intact desert pavement with sparse desert scrub vegetation. No new cultural resources were observed during the reconnaissance efforts.

The UES archaeologist also visited the eligible resources outside the APE—the intaglio but could not access the Three Kids Mine Site due to existing chain link fencing—to provide view back photos toward the direct APE to determine what visual impact, if any, the proposed undertaking would have on these resources. No new or conspicuous disturbances were observed that could have adversely affected the intaglio. For the intaglio, rock stacks mentioned in previous site evaluations remain extant and generally recorded across the site area. Access to the Three Kids Mine Site was limited, as fences and warning signs prevent unauthorized use to the abandoned mine. A UES archaeologist walked along the southern edge of the Mine site where access was permitted. The goal of visiting the mine was not to assess its integrity, but to provide view back photos assessing potential visual impacts of the undertaking on the resource. The mine site is predominantly located in the hills to the northwest. Many of its structures were located on the northern face of the hills, overlooking the Lake Mead Parkway. Due to distance and topography, the proposed undertaking will only be minimally visible from the mine site, and only on its most southern edge. vibrational effects and given the existing built environment around the resources—especially the intaglio—there will be no visual impacts to the resources.

3.5.1.1 Effects of the Proposed Project

The proposed Project consists of constructing a water reservoir, associated facilities, and an adjoining linear alignment in Henderson near Lake Las Vegas. Based on the results of the Class I and reconnaissance effort, UES recommends that there will be no effect to historic properties associated with the undertaking, as none are present. The one unevaluated resource within the Project APE is a terranean aqueduct, which

will not be affected by the proposed undertaking. UES does not recommend additional archaeological work.

3.5.2 Environmental Consequences

The following subsections describe the Project-related impacts to cultural and historic resources from the No Action Alternative and the Proposed Action.

3.5.2.1 No Action Alternative

Under the No Action Alternative, the Project would not be constructed; therefore, no Project related impacts to cultural or historic resources would occur.

3.5.2.2 Proposed Action

Implementation of the proposed Project is anticipated to disturb approximately 25.4 acres but is not expected to create permanent impacts to cultural resources. Temporary impacts to resources are possible from vibrations from construction equipment and anthropogenic presence within the Project area; however, of the nine resources found within the Project's APE, eight are considered ineligible and one is a subterranean resource which has not been evaluated for listing on the NRHP. Therefore, no Project related impacts to cultural or historic resources would occur.

As future developments with a federal nexus occur in proximity to the Project site, the private developer will require additional surveys and analysis for impacts to Cultural and Historic Resources. As with any ground disturbing construction action, NHPA and Section 106 will apply.

3.5.3 Mitigation

The following sections discuss mitigation measures and BMPs for cultural and historic resources.

3.5.3.1 Cultural Resources

Implementation of the following mitigation measures and strict adherence to BMPs will ensure no impacts to cultural resources occur:

- **Archeological/Human Remains Discoveries:** If any archeological or paleontological artifacts are discovered, or if any human remains are uncovered, please stop all work and call Justin DeMaio, Regional Archaeologist, at 702-293-8359.

3.5.3.2 Historic Resources

Due to no historical resources being recorded within the Project's APE, standard mitigation measures and BMPs will ensure no impacts to historic resources occur:

- **Archeological/Human Remains Discoveries:** If any archeological or paleontological artifacts are discovered, or if any human remains are uncovered, please stop all work and call Justin DeMaio, Regional Archaeologist, at 702-293-8359

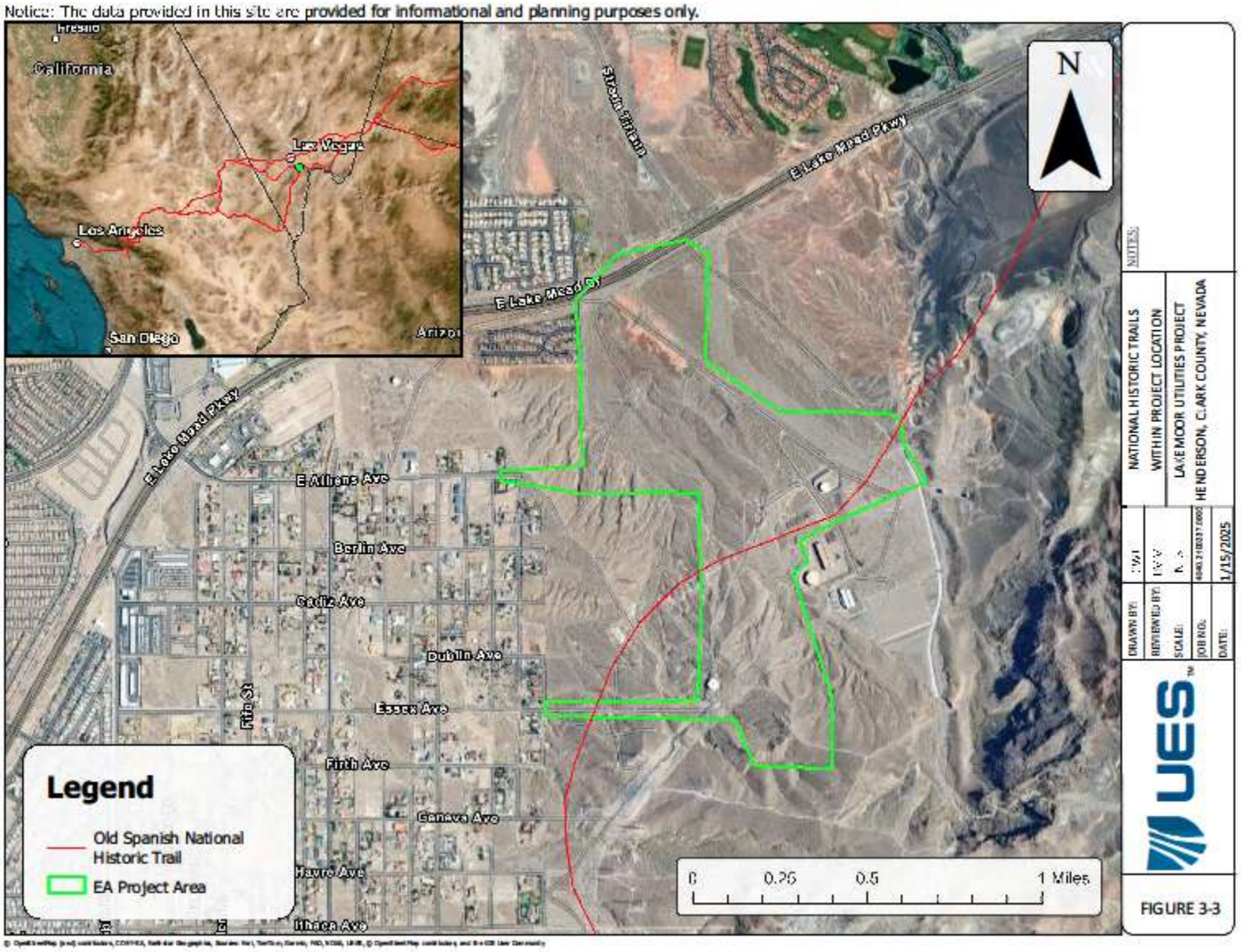
3.6 Recreation

This section addresses recreational resources in the Project area.

3.6.1 Affected Environment

The Project area contains existing recreational resources, specifically segments of the River Mountains Loop Trail and the OSNHT. The River Mountains Loop multi-use trail is an important regional recreational asset for the greater Henderson area. The 34-mile paved multi-use trail provides connectivity between Lake Mead National Recreation Area, Boulder City, Henderson, and other regional recreational destinations. A small segment (approximately 4,179 feet) of the OSNHT is known to cross the Project site at two locations (NPS, 2025); however, the OSNHT is not detectable or visible due to years of disturbance in the Project area. Figure 3-3 below shows the areas of the Project site that the OSNHT crosses. This is the case for most of the trail as it crosses disturbance, development, and natural features across multiple states. OSNHT is considered and analyzed as a cultural resource and not as a recreational resource for the purpose of this Project.

Figure 3-3: OSNHT and the Project Site.



3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

Under the No Action Alternative, the Project would not be constructed; therefore, no Project related impacts to recreational resources would occur.

3.6.2.2 Proposed Action

The Project would result in both temporary and permanent impacts to recreational resources.

3.6.2.2.1 Temporary Impacts

- Temporary diversion of Mountain Loop Trail for 3–6-month construction period is a temporary impact. This will alter the length of the trail segment during construction; however, the increase in length is negligible and is less than a 1% increase in the length of the trail overall.
- Construction-related noise, dust, and visual disturbances could affect trail user experience; however, as discussed in other sections of this EA, these impacts are minimized through BMP's including compliance with local noise ordinances and compliance with air quality standards and are considered negligible.
- Trail rerouting could create confusion among users and reduce the quality of their recreational experience.
- Restricted parking access at trailheads within the construction zone.
- Modified recreational use patterns that could influence increased use and potential crowding on alternative trails in the region as trail users are displaced and seek substitute locations during construction.
- Temporary economic impacts from reduction in recreational visitors in the immediate area.
- Potential safety concerns from users attempting to access closed trail segments.

3.6.2.2.2 Permanent Impacts

- Physical modification of existing trail alignments where utility corridors intersect current trail locations.
- Construction of new recreational trail segments as part of the project design.
- Changed viewshed where new utility infrastructure parallels or crosses trail corridors.
- Enhanced recreational opportunities for residents of newly served areas who would gain improved access to the trail system.
- Potential long-term increases in trail usage due to improved accessibility and connectivity.
- Modified user experience due to changes in trail alignments and infrastructure presence.
- Potential for increased maintenance requirements due to new trail segments and configurations.

The majority of adverse impacts would be temporary in nature and primarily occur during the construction phase. Permanent impacts are anticipated to be predominantly beneficial, as the Project would result in construction of new trail segments that would expand total regional trail mileage, improve the trail network/connectivity, and enhance recreational opportunities/accessibility for the community. All impacts would be minimized through implementation of the mitigation measures described below.

Future development within proximity to the Project area may create similar situations of temporary trail diversions during infrastructure installations or improvements or create the increased need for trail maintenance or trail improvements; however, the Mountain Loop Trail is part of the National Trails System and must remain open. Therefore, there will be negligible impacts on recreational resources due to development in the foreseeable future.

3.6.3 Mitigation

Trail access must remain open except for temporary closures for maintenance or emergencies. Temporary closures would not last more than 24 hours. From time to time, trail detours are designed to mitigate impacts to access resulting from maintenance activities, trail improvements, and construction activities in the trail area. Most recently, National Park Service (NPS) released a public notice regarding a temporary detour and closures on the River Mountains Loop Trail which is located 2.5 miles from the proposed West Channel crossing. NPS advised cyclists and hikers to use Lakeshore Road as an alternative route. There is no bike lane on Lakeshore Road and in some areas, there is no shoulder. The proposed Project will provide safety barricades along Lake Mead Parkway and continued trail access during construction. This will not only allow continued access for pedestrians and cyclists but will also allow equestrian use. Although the affected trail segment is not popular with equestrians, the trail is permitted for equestrian use, and this mitigation measure will not alter any of the permitted uses of the trail or alter the accessibility of the trail. This alternative route creation and design was developed after consulting with both Reclamation and City Recreation Specialists and research of prior detours and closures.

To minimize recreational disruptions, the Project will implement comprehensive mitigation strategies. These will include:

- **Prior Notification:** Providing clear, advanced public notification of trail closures at least 60 days prior to construction, with detailed alternative route information; this information would be provided to residents through local signage, social media, and a public notice on City of Henderson's website.
- **Trail Detour Signage:** Developing and implementing a comprehensive trail detour and signage plan to redirect trail users safely around active construction zones.
- **Maintain Trail Accessibility:** Maintaining trail accessibility for recreational users during all construction phases.
- **Local Recreation Department Coordination:** Coordinating with local recreation departments and trail user groups to minimize user inconvenience.

- **Maintain Trail ADA Standards:** Ensuring all temporary trail closures and re-routes meet Americans with Disabilities Act (ADA) accessibility standards.
- **Develop Trail Maintenance and Restoration:** Any temporarily impacted trail segments are returned to pre-construction condition or better, with enhanced surface quality and improved user amenities in some areas.

BMPs will include maintaining continuous trail corridor integrity through re-routes, minimizing total disturbed areas, rapid restoration of disturbed trail surfaces, and comprehensive site rehabilitation following construction activities. During the construction phase, impacts to any recreational resource are limited by the mitigation measures. Following the construction phase, the Project and future development in proximity to the Project site would have permanent beneficial impacts to recreation in the area; thus, with implementation of all mitigation measures and BMPs, impacts to recreational resources are expected to be negligible.

4.0 CONSULTATION AND COORDINATION

The implementation of the Project involves consultation with multiple federal agencies and federally recognized tribes. Detailed consultation information can be found in the sections below:

4.1 USFWS

In order to comply with Section 7 of the Endangered Species Act of 1973, USFWS must be consulted. Consultation with USFWS began on October 2024 via IPaC, which identified three species have potential to occur within the Project area. To ensure implementation of the proposed Project does not jeopardize any federally listed, or threatened species, a BA was conducted, including a survey of the Project location. In February 2025, Reclamation sent the BA to USFWS for approval, and the USFWS issued the BO in April 2025 (Appendix B).

4.2 Nevada SHPO

In order to comply with Section 106 of the National Historic Preservation Act, Nevada State Historic Preservation Office (NSHPO) must be consulted. Information from Class III surveys were provided to NSHPO on March 19, 2025.

4.3 Federally Recognized Tribes

Reclamation consulted with the following tribes regarding the proposed Project on February 13, 2025:

- Chemehuevi Indian Tribe
- Colorado River Indian Tribes
- Fort Mojave Indian Tribe
- Hopi Tribe
- Hualapai Tribe
- Kaibab Band of Paiute Indians
- Las Vegas Paiute Tribe
- Moapa Band of Paiute Indians
- Twenty-Nine Palms Band of Mission Indians

The Reclamation regional archaeologist and the Moapa Band of Paiutes THPO went out to the Las Vegas Intaglio site on 3/5/25 to assess and discuss indirect impacts to the site from the project, as well as provide the opportunity for the THPO to perform a spiritual blessing at the intaglio. The THPO agreed that this undertaking would not have an impact mainly because of the development being undertaken on the south side of Lake Mead Parkway, which has impeded all view towards the Pulte project area. There are no concerns from any tribes.

5.0 LIST OF PREPARERS

Table 5-1: Table of Preparers

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Jennifer Thomason	Environmental Scientist, Surface and Groundwater
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Ted Roberts, M.A.,RPA	Archaeologist, Director of Cultural Resources
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Lisbeth Carmona	Environmental Scientist, Hazardous Waste
Laurrie Perez	NEPA Administrative Support
Emily Parsons	NEPA Administrative Support
Nereida Gomez	NEPA Administrative Support

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