

**FINAL ENVIRONMENTAL ASSESSMENT
FOR THE RANGE WASH
FROM LAS VEGAS BOULEVARD TO THE
CONFLUENCE DETENTION BASIN PROJECT
NELLIS AIR FORCE BASE, NEVADA**



**Responsible Agency:
United States Air Force
Nellis Air Force Base
99th Air Base Wing**

**Action Proponent:
City of North Las Vegas**

August 2018

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FINDING OF NO SIGNIFICANT IMPACT

1 NAME OF PROPOSED ACTION

The Range Wash from Las Vegas Boulevard to the Confluence Detention Basin Project

2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This Environmental Assessment (EA) addresses the potential effects from all reasonable alternatives, beneficial and adverse, resulting from the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin.

Range Wash Watershed includes lands under the jurisdictions of the City of North Las Vegas, unincorporated Clark County, and the Bureau of Land Management. The branches of the Range Wash enter Nellis AFB and flow from north to south through Nellis AFB, east of the runways, and ultimately discharge into the Confluence Detention Basin. Flows in the Range Wash are ephemeral, occurring only during rainfall events. Flood flows are generally unconfined and widespread following the natural terrain through Nellis AFB toward the Confluence Detention Basin. Currently, flood flows from the Range Wash overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road. The Hollywood Branch combines with the East Tributary to form a wide natural wash that crosses Nellis AFB south of Munitions Road. Range Wash drains an area of 59 square miles that converges from the north, east, and south at Nellis AFB. The proposed facilities would convey flood flows in a controlled manner through Nellis AFB, providing safe passage for vehicles to cross the Hollywood Branch at Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road, and flood security for the Nellis AFB occupants, runways, and associated infrastructure.

Alternative 1 would provide facilities to collect, confine, and convey flood flows from the Hollywood Branch on Nellis AFB property from Las Vegas Boulevard to the East Tributary. Alternative 1 would construct a concrete-lined channel on Nellis AFB from Las Vegas Boulevard to Munitions Road, a concrete channel or RCB storm drain lateral between Las Vegas Boulevard and Ellsworth Avenue, and an earthen or rock-lined channel/berm to the East Tributary. The approximate area of disturbance would be 47 acres. Excess dirt from the channel construction would be used to fill an existing gravel pit on Nellis AFB property. Gravel maintenance roads occur on each side of the concrete channels. RCB culverts would be constructed where the channel crosses Ellsworth Avenue, O'Bannon Road, and Munitions Road. The flood control facilities proposed in Alternative 1 would confine storm runoff in a narrow channel from Las Vegas Boulevard to Munitions Road and protect the area north of the runways from flooding during a 100-year storm event. The channel would discharge runoff to the existing natural wash of the East Tributary, southeast of the runways. The construction timeline would be approximately 12 months.

Alternative 2 would provide facilities to collect, convey, and detain flood runoff on Nellis AFB property for the Hollywood Branch and East Tributary Watersheds. Under Alternative 2, the City of North Las Vegas would construct all of Alternative 1 RWHW facilities plus the East Tributary facilities. East Tributary facilities would include a concrete channel between Munitions Road and the Dunes South Detention Basin, a berm across the natural wash of the East Tributary directing flow into the Dunes South Detention Basin, and a concrete-lined outfall channel connecting the

Dunes South Detention Basin to the Confluence Detention Basin in accordance with the Master Plan Update (MPU). The location, size, and type of East Tributary facilities are tentative and subject to future MPUs, with Nellis AFB's input, as well as the actual future facility design. The approximate area of disturbance would be 100 acres. Alternative 2 would be constructed in two phases. The first phase would consist of the Alternative 1 facilities. Phase 2 would remove the earthen channel/berm and construct the East Tributary facilities. Constructing engineered flood control facilities to confine storm runoff in a narrow channel from Las Vegas Boulevard to Munitions Road would protect the area north of the runways from flooding during a 100-year storm event. The channel and East Tributary berm would direct runoff to the Dunes South Detention Basin and protect the southeast portion of Nellis AFB. An outfall channel would safely convey the attenuated flow from the new basin to the existing Confluence Detention Basin. The construction timeline would be approximately 28 months.

Under the No Action Alternative, flood control facilities would not be constructed for the Range Wash on Nellis AFB. Excess runoff would continue to overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road and contribute to flooding on Nellis AFB property. Under the No Action Alternative, unconfined flows conveyed in the Range Wash Watershed would continue to affect areas immediately southeast of the Nellis AFB runways.

3 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Ten resource categories were evaluated during the preparation of the EA. Insignificant and/or negligible impacts would be incurred on these resources, as identified below. The No Action Alternative would result in no change and therefore no improvements to existing conditions.

The proposed project would not affect the Air Installation Compatible Use Zone because there would be no change in flight operations.

Land use in the study area would not change from its existing use; however, the land surface would be disturbed during construction activities to install the proposed flood control facilities. After construction is completed, the area would be revegetated and landscaped to restore it to conditions previous to the ground disturbance.

Based on the relatively low noise contributions, the construction activity is not expected to result in perceptible change in existing noise.

Based on the design parameters of the proposed conveyance facilities and the equipment required to construct these facilities, Alternative 1 would produce approximately 0.47 ton of VOCs and 3.4 tons of NOx. These emissions would be far below the general conformity thresholds of 50 tons for VOCs and 100 tons for NOx. Emissions under Alternative 2 would be greater than those under Alternative 1 because Alternative 2 builds on Alternative 1. These activities also occur over a longer time frame.

No significant impacts on water resources have been identified that would result from implementation of the proposed project; however, construction of the proposed flood control facilities would have long-term effects on flood flows. Impacts on groundwater would be negligible and would have minimal impacts on surface water quality. Construction activities could disturb soils, which in turn, could increase the probability of erosion. The construction activity areas do not lie within a major floodplain. Best Management Practices (BMPs) for construction site soil erosion, as specified in the Stormwater Pollution Prevention Plan, would be implemented to prevent the migration of soils, oil and grease, and construction debris into the local stream networks. Erosion from construction activities would be prevented through BMPs used for stormwater and sediment control. Fugitive dust would be mitigated through application of water when necessary. There are no farmlands or soils considered prime farmland in the study area.

No significant impacts on soils or other earth resources have been identified that would result from the implementation of the proposed project.

No significant impacts on safety and occupational health have been identified that would result from implementation of the proposed project. During construction, all actions would be performed in accordance with Air Force Office of Safety and Health directives and Occupational Safety and Health Administration regulations.

During construction activities the use of hazardous materials and petroleum products would be required. Impacts from the accidental release of hazardous materials or petroleum products (fuel and lubricants) would be minimized by following BMPs such as storing fuel tanks within bermed containment to prevent the accidental release of spilled fuel. Management of other hazardous materials in compliance with Hazardous Material Pharmacy requirements and disposal of hazardous wastes as directed by the Hazardous Waste Management Plan would minimize impacts from handling and disposal of hazardous substances. The Hazardous Material Pharmacy concept is designed to improve control of hazardous materials on Air Force installations. By following the procedures identified, impacts from hazardous and toxic substances related to the proposed project would be negligible.

The project area consists of mostly disturbed or previously altered native landscape. No rare or unique habitat is noted in this portion of Nellis AFB, and human disturbance (through typical base activities) would return to current levels following project completion. For areas along the proposed flood control facilities with minimal to no obvious human disturbance, the habitat is representative of typical desert scrub plant communities that are abundant in lands adjacent to Nellis AFB and throughout the lower Mojave Desert valley.

No impacts on cultural resources are expected because no eligible cultural resources are present within the study area.

No long-term impacts on infrastructure are anticipated. The construction of below-grade flood control facilities would have no impact on transportation along Ellsworth Avenue and O'Bannon Road; however, during construction, traffic would follow detours while the roads are disturbed to place the flood control facilities under them. These detours would be temporary.

Because the area proposed for the flood control facilities does not include any residential or commercial development, there would be no direct adverse socioeconomic impacts on the surrounding area associated with the construction or operations of the proposed facilities.

4 CONCLUSION

Based on the analysis of the EA conducted pursuant to the relevant requirements of National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. § 4321 et seq.), the Council on Environmental Quality (CEQ) NEPA Implementing Regulations (40 CFR § 1508.13 et seq.) regulations, and Air Force Environmental Impact Analysis Process (EIAP) (32 CFR Part 989.15), and after careful review of the potential impacts, I conclude that the Range Wash flood control facilities (both Alternatives) and the No Action Alternative would result in no significant impacts on the quality of the human or natural environments. Therefore, a Finding of No Significant Impact is warranted, and an Environmental Impact Statement is not required for this action. The signing of this Finding of No Significant Impact completes the environmental impact analysis process.



CAVAN K. CRADDOCK, Colonel, USAF
Commander

20 DEC 18

Date

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Appendix A: Agency Consultation

Appendix B: Air Quality

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

ACAM	Air Conformity Applicability Model
AFB	Air Force Base
AICUZ	Air Installation Compatible Use Zone
APE	Area of Potential Effect
APZ	Accident Potential Zone
BMP	Best Management Practice
CAS	Close Air Support
CCRFCDD	Clark County Regional Flood Control District
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CTS	Combat Training Squadron
dB	Units of Decibel
dBA	A-weighted Decibel
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EIS	Environmental Impact Statement
Leq	Equivalent Sound Level
Lmax	Maximum Instantaneous Sound Level
MPU	Master Plan Update
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NO _x	Nitrogen Oxides
NO ₂	Nitrogen Dioxide
O ₃	Ozone
PM _{2.5}	Particulate Matter with a Diameter less than or equal to 2.5 Micrometers
PM ₁₀	Particulate Matter with a diameter less than or equal to 10 Micrometers
RCB	Reinforced Concrete Box
RWEA	Range Wash East Tributary
RWHW	Range Wash Hollywood Branch
SHPO	State Historic Preservation Officer
SNWA	Southern Nevada Water Authority
SO ₂	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
TASS	Tactical Air Support Squadron
USAF	United States Air Force
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compound
WRF	Wastewater Recycling Facility

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1.0 PURPOSE OF AND NEED FOR ACTION

This Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321 et seq.), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] §§ 1500–1508), as well as 32 CFR § 989, Environmental Impact Analysis Process (EIAP) for the United States Air Force (USAF), and other pertinent environmental statutes, regulations, and compliance requirements. The authorities described will be addressed in various sections throughout this EA when relevant to particular environmental resources and conditions.

1.1 INTRODUCTION

This EA addresses the potential effects from all reasonable alternatives, beneficial and adverse, resulting from the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

Nellis AFB is located northeast of Las Vegas in Clark County, Nevada, see Figure 1-1. The study area for the purposes of this EA is defined as the approximate 200-foot offset area from the proposed disturbance area of the proposed alternatives (Figure 1-2). It should be clarified that for most of the resource topics discussed in Sections 3 and 4, Affected Environment and Environmental Consequences, respectively, the analyses of potential impacts pertain to the study area shown. However, as discussed in detail in Sections 3 and 4, for some resource areas, including water resources and cultural resources, the study areas extend beyond the boundaries shown on Figure 1-2 to account for the potential impacts beyond the immediate vicinity of the proposed flood control facilities.

Figure 1-1. Site Location

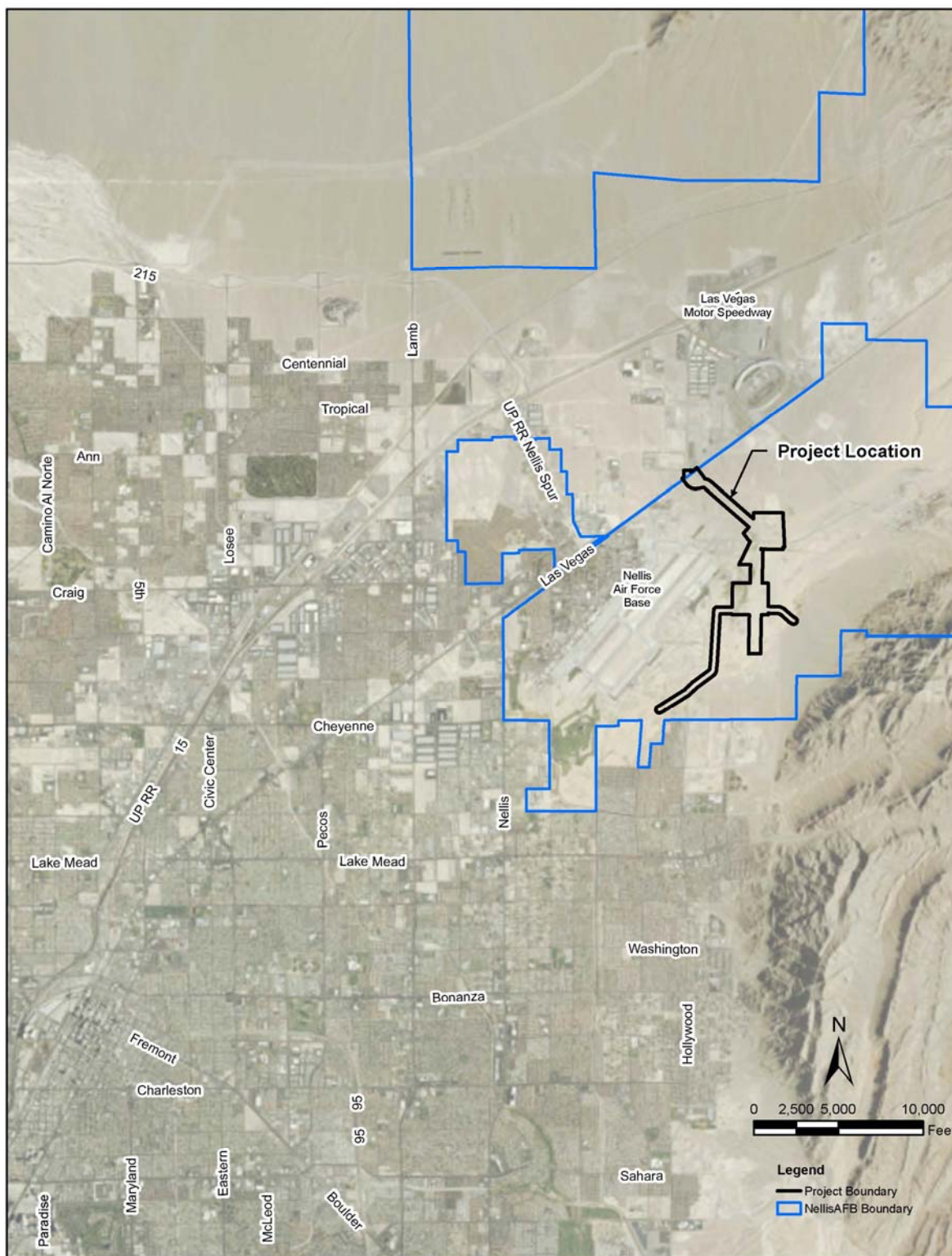
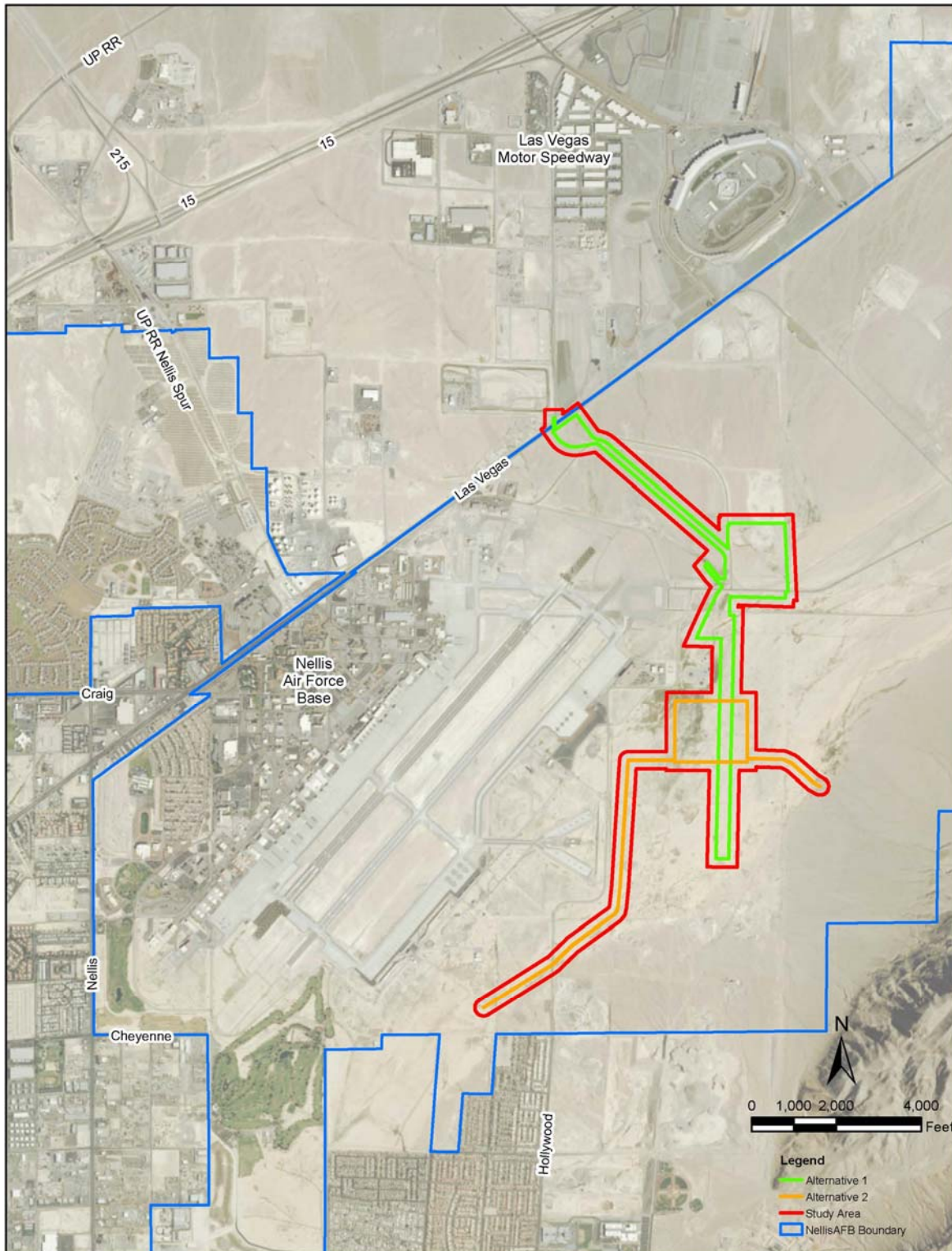


Figure 1-2. Study Area



1.2 BACKGROUND

Range Wash Watershed includes lands under the jurisdictions of the City of North Las Vegas, unincorporated Clark County, and the Bureau of Land Management. The branches of the Range Wash (RWHW and RWEA) enter Nellis AFB and flow from north to south through Nellis AFB, east of the runways, and ultimately discharge into the Confluence Detention Basin. Flows in the Range Wash are ephemeral, occurring only during rainfall events. Flood flows are generally unconfined and widespread following the natural terrain through Nellis AFB toward the Confluence Detention Basin.

The information presented in this EA will serve as the basis for deciding whether the Proposed Action would result in a significant impact on the human environment, requiring the preparation of an Environmental Impact Statement (EIS), or whether no significant impacts would occur, in which case a Finding of No Significant Impact (FONSI) would be appropriate. The proposed flood control facilities for the Range Wash were addressed in the *Final Programmatic Supplemental Environmental Impact Statement, Flood Control Master Plan* that Clark County Regional Flood Control District (CCRFCDD) prepared for the Bureau of Land Management, in cooperation with the U.S. Army Corps of Engineers (CCRFCDD, 2105). The Proposed Action is not anticipated to involve construction in a wetland as defined in Executive Order 11990, *Protection of Wetlands*, or “action” in a floodplain as defined under Executive Order 11988, *Floodplain Management*.

Currently, flood flows from the Range Wash overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road. The Hollywood Branch combines with the East Tributary to form a wide natural wash that crosses Nellis AFB south of Munitions Road. Range Wash drains an area of 59 square miles that converges from the north, east, and south at Nellis AFB. The CCRFCDD 2013 Las Vegas Valley Flood Control Master Plan Update (MPU) identifies flood control facilities that may be constructed to collect, convey, and detain flood flows for Range Wash and its tributaries.

The City of North Las Vegas is planning to construct a storm drain under Hollywood Boulevard, north of Las Vegas Boulevard. In conjunction with that storm drain project, the City has evaluated options to mitigate flooding downstream of Las Vegas Boulevard on Nellis AFB property. The Proposed Action would construct Range Wash flood control facilities on Nellis AFB from Las Vegas Boulevard to the existing Confluence Detention Basin in accordance with the CCRFCDD 2013 MPU, which includes Hollywood Branch facilities RWHW 0000 through RWHW 0136 and East Tributary facilities RWEA 0000 through RWEA 0192. The facilities would convey flood flows in a controlled manner through Nellis AFB, providing safe passage for vehicles to cross the Hollywood Branch at Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road, and flood security for the Nellis AFB occupants, runways, and associated infrastructure.

1.3 PURPOSE OF THE ACTION

The purpose of the Proposed Action is to confine and control flood flows. The Proposed Action would reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road and reduce flooding on Nellis AFB by directing flood flows through established flood control facilities.

1.4 NEED FOR THE ACTION

Facilities that would collect, convey, and detain flood flows for Range Wash and its tributaries are needed to reduce flooding on Nellis AFB.

The proposed flood control facilities would alleviate current issues associated with flooding, resulting in a net positive effect on the environment. The flood control facilities are needed to:

1. Reduce the potential of economic losses to existing businesses in Clark County from flooding.
2. Reduce the potential for economic losses to existing Nellis AFB facilities from flooding.
3. Improve the safety of civilian and military personnel by controlling flood flows and reducing areas that are subject to flooding.
4. Allow for the development of industrial zoned lands in Clark County by reducing areas that are subject to flooding.
5. Allow for improved use of open lands by the USAF by reducing areas in the Nellis AFB that are subject to flooding.
6. Reduce City of North Las Vegas and USAF maintenance costs by avoiding cleanup following flood events.

1.5 DECISION TO BE MADE

The decision to be made is whether to confine and control flood flows across Nellis AFB from Las Vegas Boulevard to the Confluence Detention Basin. The decision options are:

1. Selecting the No Action Alternative, where the City of North Las Vegas would not construct the flood control facilities;
2. Selecting an alternative and preparing a FONSI; or
3. Preparing an EIS if the alternatives are expected to result in significant environmental impacts.

1.6 AGENCY AND INTERGOVERNMENTAL COORDINATION / CONSULTATIONS

1.6.1 Interagency and Intergovernmental Coordination/Consultations

Federal, state, and local agencies with jurisdiction that could be affected by the alternative actions were notified and consulted during the development of this EA. Section 6 of this EA contains the list of agencies consulted during the preparation of the EA, and copies of the correspondence are presented in Appendix A.

1.6.2 Government to Government Consultations

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (6 November 2000), directs federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. The federal nexus for the Proposed Action is the construction of flood control facilities on Nellis AFB. On May 11, 2018 Nellis AFB invited federally recognized tribes that are affiliated historically with the Nellis AFB geographic region to consult on the Proposed Action (see Appendix A). In addition, Nellis AFB conducted tribal consultation at the 2017 Semi Annual Meeting - Spring Tribal Meeting with the tribes in Beatty, Nevada. A presentation on the Proposed Action was included in the semi-annual Nellis AFB – Consolidated Group of Tribes and Organizations symposium on April 6, 2018. None of the consulted tribes expressed any concerns. The Yomba Shoshone Tribe Chairman requested notification of any cultural artifacts that might be discovered during construction activities. Nellis AFB also hosted a tour of the project area on June 11, 2018 to representatives from the Colorado River Indian Tribes (CRIT). CRIT provided a concurrence letter on April 27, 2017 (Appendix A).

The tribal coordination process is distinct from NEPA consultation or the interagency intergovernmental coordination for environmental planning processes and requires separate notification of all federally recognized tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The Nellis AFB point-of-contact for Native American tribes is the Installation Commander, while the point-of-contact for consultation with the Tribal Historic Preservation Officer and the Advisory Council on Historic Preservation is the Cultural Resources Manager. The Installation Commander maintained coordination regarding the Proposed Action during semi-annual meetings with the consulted tribes. None of the tribes expressed any concerns of the Proposed Action.

1.7 Public and Agency Review of the EA

The USAF and Nellis AFB invited public participation in the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. The USAF has a public involvement process that informs local, state, tribal, and federal agencies of proposed projects. All agencies, organizations, and members of the public with a potential interest in the Proposed Action, including minority, low-income, disadvantaged, and Native American groups, are encouraged to participate in the decision-making process.

On October 19, 2017, Nellis AFB mailed letters to the local, state, and federal agencies to inform them of the Proposed Action and the EA development. Responses were received from Clark County Department of Air Quality, Nevada Division of Water Resources, the U.S. Army Corps of Engineers, the Bureau of Water Pollution Control, and the Department of Wildlife. A copy of these communications is included in Appendix A.

Nellis AFB mailed a letter to the State Historic Preservation Officer (SHPO), which was received on April 19, 2017, for consultation on the Proposed Action. A response from the SHPO, dated May 18, 2017, requested clarification on the project description and Area of Potential Effect (APE). A response letter was submitted on September 28, 2017, by the City of North Las Vegas per the request of Nellis AFB to include the additional information. A subsequent letter from SHPO, dated November 30, 2017, required additional data and the Bureau of Land Management Negative Report, which were addressed in the response letter from the City of North Las Vegas to the SHPO on February 8, 2018. The letters and responses are included in Appendix A. SHPO concurrence and a No Adverse Effect response was provided on March 14, 2018.

The public comment period for review of this EA began on July 8, 2018 and ended on August 6, 2018. A copy of the draft EA was available at the Clark County Library located at 1401 East Flamingo Road in Las Vegas, Nevada. Additionally an electronic copy was available for download on the City of North Las Vegas website (http://www.cityofnorthlasvegas.com/departments/public_works/engineering_and_construction_services.php) and on Nellis AFB's website (www.nellis.af.mil/About/Environment). Notice of the public comment period was printed in the Las Vegas Review Journal on July 8 and 15, 2018. In addition, a copy of the draft EA was provided to all agencies listed in Section 6.0 as well as the Nevada SHPO and all Nellis AFB Affiliated Tribes. During the public comment period, two comments were received in the form of a letter from the Clark County Department of Air Quality and an email from CRIT. Responses are incorporated into corresponding sections in this EA (3.3 and 4.7). A complete copy of public comment period notices and comments are provided in Appendix A.

Nellis AFB determined a public meeting was not necessary for this EA.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes the alternatives that are analyzed in this EA. The action alternative analyzed in the EA meets the purpose and need, specifically to ensure effective flood control. As viewed by the CEQ, an alternative is considered reasonable if it is deemed to be “practical or feasible” from a technical and economic standpoint that meets the purpose and need.

2.1 PROPOSED ACTION

The Proposed Action would provide flood control facilities to collect, convey, and detain runoff on Nellis AFB property for the Range Wash from Las Vegas Boulevard to the Confluence Detention Basin. These flood control facilities are listed in the Las Vegas Valley Flood Control MPU prepared by CCRFCD (CCRFCD, 2015) and were evaluated in the *Final Programmatic Supplemental Environmental Impact Statement* (CCRFCD, 2004).

2.2 SELECTION STANDARDS

The selection standards used to screen the alternatives included MPU conformity, reduction of potential economic losses to existing infrastructure, improvement of safety from flooding, allowance for improved use of open lands in Nellis AFB, and reduction of maintenance costs due to flooding. The City of North Las Vegas developed and identified the alternatives for the flood flows from the Range Wash. These alternatives are described below.

2.3 ALTERNATIVES TO THE PROPOSED ACTION

Two alternatives were selected for consideration and analyzed as part of this EA. These alternatives are noted below and compared in Table 2-1 for flood flow control for the Range Wash through Nellis AFB:

Table 2-1. Screening of the Alternatives

	Conforms to Flood Control District Master Plan	Reduces Potential Economic Losses to Existing Businesses and Nellis AFB Facilities	Improves Safety of civilian and military personnel by controlling flood flows	Allows for improved use of open lands in Nellis AFB by reducing flooding	Reduces City and USAF maintenance costs following flood events
No Action Alternative	No	No	No	No	No
Alternative 1	Yes	Yes	Yes	Yes	Yes
Alternative 2	Yes	Yes	Yes	Yes	Yes

2.3.1 Alternative 1 Range Wash – Hollywood Branch Only

Under Alternative 1, the City of North Las Vegas would construct a concrete channel from Las Vegas Boulevard to Munitions Road, a lateral reinforced concrete box (RCB) storm drain between Las Vegas Boulevard and Ellsworth Avenue, and an earthen or rock-lined channel/berm with intermittent cutoff walls that extends south of Munitions Road to discharge 100-year runoff into the broad natural wash of the East Tributary (RWHW 0000 through RWHW 0174) (Figure 2-1).

Excavated soil would be used to fill an existing gravel pit located at the northeast corner of Ellsworth Avenue and O'Bannon Road and to construct berms. This area is also proposed as a temporary construction staging area.

2.3.2 Alternative 2 Range Wash – Hollywood Branch and East Tributary

Under Alternative 2, the City of North Las Vegas would construct the Hollywood Branch facilities identified under Alternative 1 plus the East Tributary flood control facilities (RWEA 0000 through RWEA 0192) (Figure 2-2). This option would convey 100-year flows from Las Vegas Boulevard to the Confluence Detention Basin without discharging any flows onto open land and would retain peak flows to reduce the size of downstream facilities.

Under Alternative 2, the City of North Las Vegas would construct a channel and detention basin on Nellis AFB property to convey 100-year storm flows from the 59-square-mile Range Wash Watershed. However, the full capacity of the facilities would not be used until the upstream watershed is fully developed and all MPU flood control facilities in Range Wash Watershed are constructed (see Figure 2-2).

2.3.3 No Action Alternative

The No Action Alternative would involve no change to the current drainage system. Excess runoff would continue to overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road, and inundate portions of Nellis AFB during large storms.

Figure 2-1. Alternative 1 Range Wash – Hollywood Branch Only

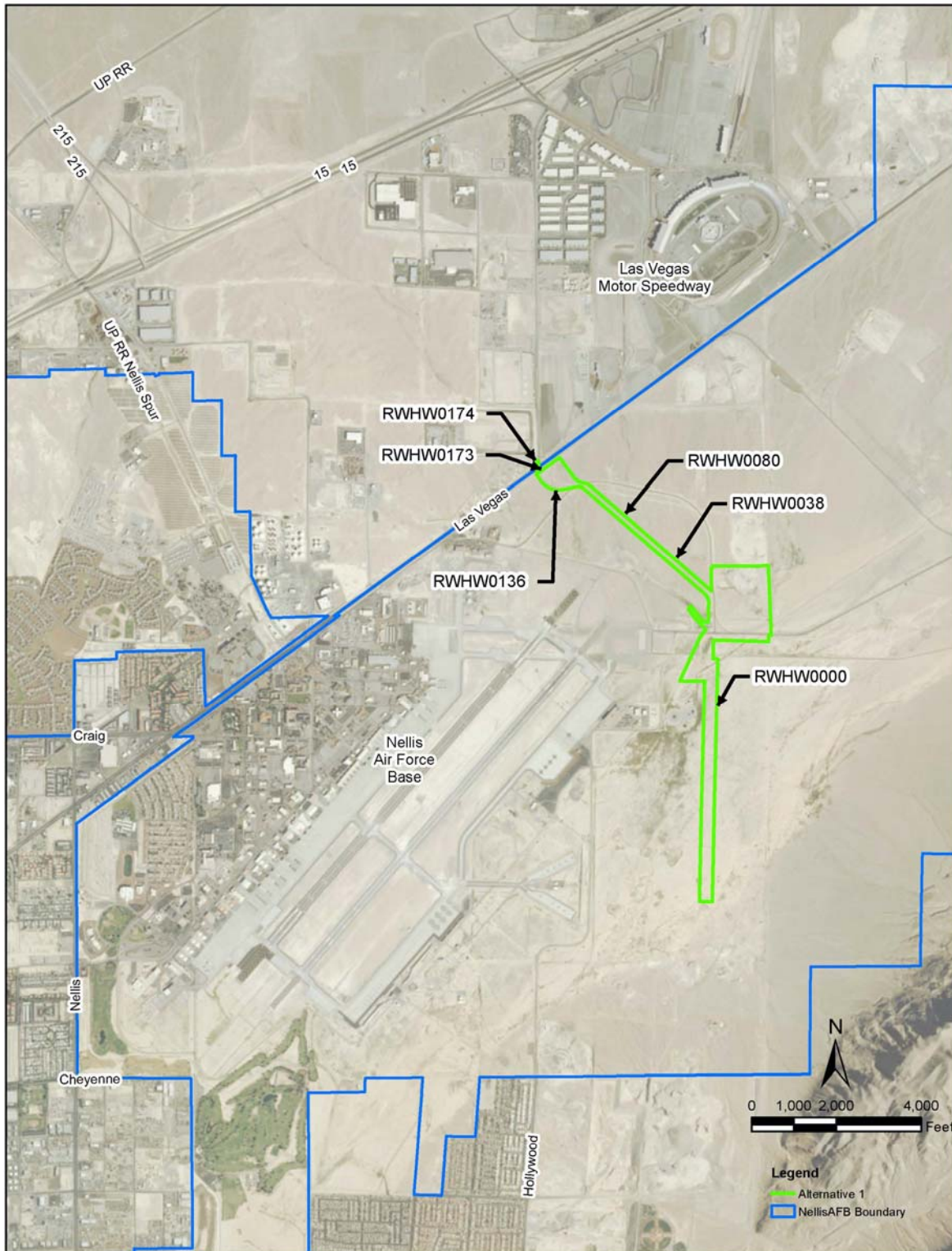
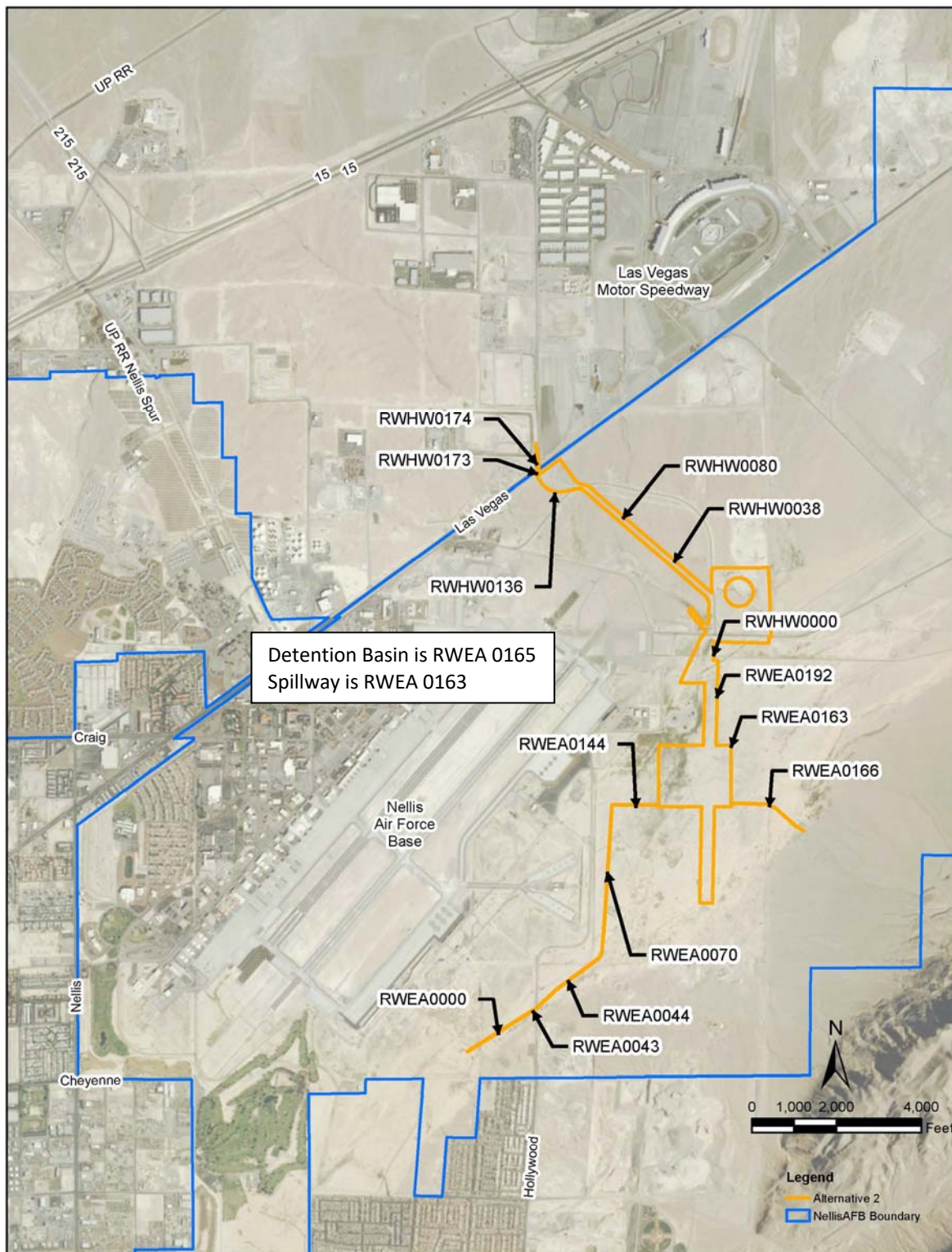


Figure 2-2. Alternative 2 Range Wash – Hollywood Branch and East Tributary



2.4 DETAILED DESCRIPTION OF THE ALTERNATIVES

The NEPA and Environmental Impact Analysis Process is intended to support flexible, informed decision-making. The analysis provided in this EA and feedback from the public and other agencies will inform decisions made about whether, when, and how to execute the Proposed Action. Among the alternatives evaluated is a No Action Alternative. The consequences of not undertaking the Proposed Action are analyzed under the No Action Alternative to establish a comparative baseline for analysis.

2.4.1 Alternative 1 – Range Wash – Hollywood Branch Only

Alternative 1 would provide facilities to collect, confine, and convey flood flows from the Hollywood Branch on Nellis AFB property from Las Vegas Boulevard to the East Tributary. Alternative 1 would construct a concrete-lined channel on Nellis AFB from Las Vegas Boulevard to Munitions Road, a concrete channel or RCB storm drain lateral between Las Vegas Boulevard and Ellsworth Avenue, and an earthen or rock-lined channel/berm to the East Tributary. The approximate area of disturbance would be 47 acres. Excess dirt from the channel construction would be used to fill an existing gravel pit on Nellis AFB property. Gravel maintenance roads occur on each side of the concrete channels. RCB culverts would be constructed where the channel crosses Ellsworth Avenue, O'Bannon Road, and Munitions Road.

The facilities would be designed to convey the 100-year storm flow in the Hollywood Branch of the Range Wash (see Table 2-2); however, the entire capacity of the channel would not be fully used until all of MPU facilities in the Hollywood Branch Watershed are constructed. The proposed channel would be located at least 3,000 feet north of the Nellis AFB runways, outside the runway clearance zone. Table 2-2 provides a summary of the design parameters of the proposed conveyance facilities.

Table 2-2. Summary of Alternative 1 Proposed Facilities

Section Number		Facility Description	Approximate Length (feet)	100-year Flow (cfs)
RWHW	0000	Earthen channel/berm 50 feet x 10 feet	2,000	3,564/3,000
Channel		Rectangular channel	50	3,564
RWHW	0038	Concrete channel 36 feet x 7 feet	2,200	3,003
RWHW	0080	Concrete channel 36 feet x 7 feet	1,800	3,003
RWHW	0136	Concrete channel 25 feet x 7 feet	1,860	1,965
Lateral		Concrete channel or storm drain		
RWHW	0173	RCB (2)12 feet x 6 feet	100	2,195
RWHW	0174	RCB (2)12 feet x 5 feet	~500	2,195

Note: cfs – cubic feet per second

The flood control facilities proposed in Alternative 1 would confine storm runoff in a narrow channel from Las Vegas Boulevard to Munitions Road and protect the area north of the runways from flooding during a 100-year storm event. The channel would discharge runoff to the existing natural wash of the East Tributary, southeast of the runways. The construction timeline would be approximately 12 months.

2.4.2 Alternative 2 – Range Wash – Hollywood Branch and East Tributary

Alternative 2 would provide facilities to collect, convey, and detain flood runoff on Nellis AFB property for the Hollywood Branch and East Tributary Watersheds. Under Alternative 2, the City of North Las Vegas would construct all of Alternative 1 RWHW facilities plus the East Tributary facilities. East Tributary facilities would include a concrete channel between Munitions Road and the Dunes South Detention Basin, a berm across the natural wash of the East Tributary directing flow into the Dunes South Detention Basin, and a concrete-lined outfall channel connecting the Dunes South Detention Basin to the Confluence Detention Basin in accordance with the MPU. The location, size, and type of East Tributary facilities are tentative and subject to future MPUs, with Nellis AFB's input, as well as the actual future facility design. The approximate area of disturbance would be 100 acres.

Alternative 2 would be constructed in two phases. The first phase would consist of the Alternative 1 facilities. Phase 2 would remove the earthen channel/berm and construct the East Tributary facilities.

Similar to Alternative 1, excess dirt from the channel and detention basin excavation may be stockpiled and used on Nellis AFB property. The Hollywood Branch channel would be located outside the runway clearance zone. Gravel maintenance roads are proposed on each side of the concrete channels, and RCB culverts would be constructed where the channel crosses Ellsworth Avenue, O'Bannon Road, and Munitions Road. The Dunes South Detention Basin would provide flood protection for the southeast area of Nellis AFB, intercept the widespread flow from the East Tributary natural wash, and reduce the size of downstream facilities.

Table 2-3 provides a summary of the design parameters for the proposed conveyance and detention facilities. The facilities would be designed to convey the 100-year storm flow in the Hollywood Branch and East Tributary of the Range Wash; however, the entire capacity of Alternative 2 facilities would not be fully used until all of the MPU facilities in the Hollywood Branch and East Tributary Watersheds are constructed.

Table 2-3. Summary of Alternative 2 Proposed Facilities

Section Number		Facility Description	Length (feet)	Flow (cfs)
Conveyance Facilities				
Range Wash – Hollywood Branch				
RWHW	0000	Earthen channel/berm 50 feet x 10 feet	2,000	3,564
Channel		Rectangular channel	50	3,564
RWHW	0038	Concrete channel 36 feet x 7 feet	2,200	3,003
RWHW	0080	Concrete channel 36 feet x 7 feet	1,800	3,003
RWHW	0136	Concrete channel 25 feet x 7 feet	1,860	1,965
Lateral		Concrete channel or storm drain		
RWHW	0173	RCB (2)12 feet x 6 feet	100	2195
RWHW	0174	RCB (2)12 feet x 5 feet	~500	2195
Range Wash – East Tributary				
RWEA	0000	Concrete channel 25 feet x 7 feet	1,925	4,033
RWEA	0043	RCB 10 feet x 8 feet	80	4,033

Section Number		Facility Description	Length (feet)	Flow (cfs)
RWEA	0044	Concrete channel 25 feet x 6.5 feet	1,930	3,230
RWEA	0070	Concrete channel 25 feet x 7 feet	3,565	2,473
RWEA	0144	RCB 8 feet x 6 feet	1,100	732
RWEA	0164	RCB outlet 6 feet x 6 feet	100	732
RWEA	0166	Soil cement berm 13.5 feet	2,000	3,323
RWEA	0192	Concrete channel 75 feet x 9.5 feet	1,500	4,784
Detention Facilities				
RWEA	0163	Probable maximum flood spillway		58,670
RWEA	0165	1,112 acre-feet detention basin		5,867

Note: cfs – cubic feet per second

Constructing engineered flood control facilities to confine storm runoff in a narrow channel from Las Vegas Boulevard to Munitions Road would protect the area north of the runways from flooding during a 100-year storm event. The channel and East Tributary berm would direct runoff to the Dunes South Detention Basin and protect the southeast portion of Nellis AFB. An outfall channel would safely convey the attenuated flow from the new basin to the existing Confluence Detention Basin. The construction timeline would be approximately 28 months.

2.4.3 No Action Alternative

Under the No Action Alternative, flood control facilities would not be constructed for the Range Wash on Nellis AFB. Excess runoff would continue to overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road and contribute to flooding on Nellis AFB property. Under the No Action Alternative, unconfined flows conveyed in the Range Wash Watershed would continue to affect areas immediately southeast of the Nellis AFB runways.

3.0 AFFECTED ENVIRONMENT

3.1 SCOPE OF THE ANALYSIS

This section describes the existing environmental conditions, either human-made or natural, at and surrounding the proposed flood control facilities. It provides a baseline from which to identify and evaluate changes resulting from the proposed flood control facilities to Nellis AFB. Only those resources that have a potential to be affected are discussed per CEQ guidance (40 CFR § 1501.7(3)).

3.1.1 Resource Analyzed

Based on the components of the Proposed Action, the USAF determined that there would be temporary and short-term effects due to construction of the project at Nellis AFB and long-term effects associated with the operation of the proposed flood control facilities. As a result of this review, eleven resource categories are evaluated:

- Air Installation Compatible Use Zone (AICUZ)/Land Use/Noise
- Air Quality
- Water Resources
- Biological Resources
- Earth Resources/Geology and Soils
- Environmental Justice
- Hazardous Materials/Waste
- Cultural Resources
- Infrastructure/Utilities
- Safety and Occupation Health
- Socioeconomics

3.1.2 Resources Eliminated from Detailed Analysis

The USAF assessed numerous resources that have the potential to be affected by the Proposed Action or the No Action Alternative. In accordance with CEQ regulations, this evaluation determined that five resources did not warrant further examination in the EA:

- Environmental Justice – Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was signed on February 11, 1994. Executive Order 12898 requires that federal agencies “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. No disproportionate impacts on environmental justice communities would be expected as a result of the Proposed Action. The construction and renovation activities associated with the Proposed Action would be contained within the Nellis AFB boundaries and would not effect on- or off-base communities. Therefore, no populations (minority, low-income, or otherwise) would be disproportionately or adversely affected, and no adverse effect with regard to environmental justice would result. Implementation of the Proposed Action would not result in increased exposure of children to environmental health risks or safety risks such as those associated with the generation, use, or storage of hazardous materials. Standard construction site safety precautions (e.g., fencing and other security measures) would reduce potential risks to minimal levels, and any potential effect on children would be negligible and short term.

- Fire Management – The proposed flood control facilities would not be located in a fire risk area.
- Visual Resources – The proposed facilities would be located below grade, and landscape would remain consistent with the existing habitat and visual resources.
- Wilderness – The proposed flood control facilities would not be located in or near a wilderness area.
- Wild and Scenic Rivers – No wild and scenic rivers exist in proximity to the proposed flood control facilities.

3.2 AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE/NOISE

3.2.1 Air Installation Compatible Use Zone

Nellis AFB updated its AICUZ Study (Nellis AFB, 2017a). The study outlines the location of runway clear zones, aircraft accident potential zones (APZs), and noise contours and recommends compatible land use for the areas in the vicinity of Nellis AFB. Based on the 2017 AICUZ Study, the proposed flood control facilities would traverse all levels of the 65 to 85 units of decibel (dB) noise contours (See Figure 3-1).

The Nellis AFB runway is approximately 0.3 mile south of the proposed flood control facilities. Due to the distance of the channel to the runway, portions of the Proposed Action would be within both the Clear Zone and APZ I (Figure 3-1). The Clear Zone is at the end of the runway and is an area designated to remain undeveloped. APZ I extends for 5,000 feet after the Clear Zone. In APZ I, land uses are restricted because of its associated higher safety risk.

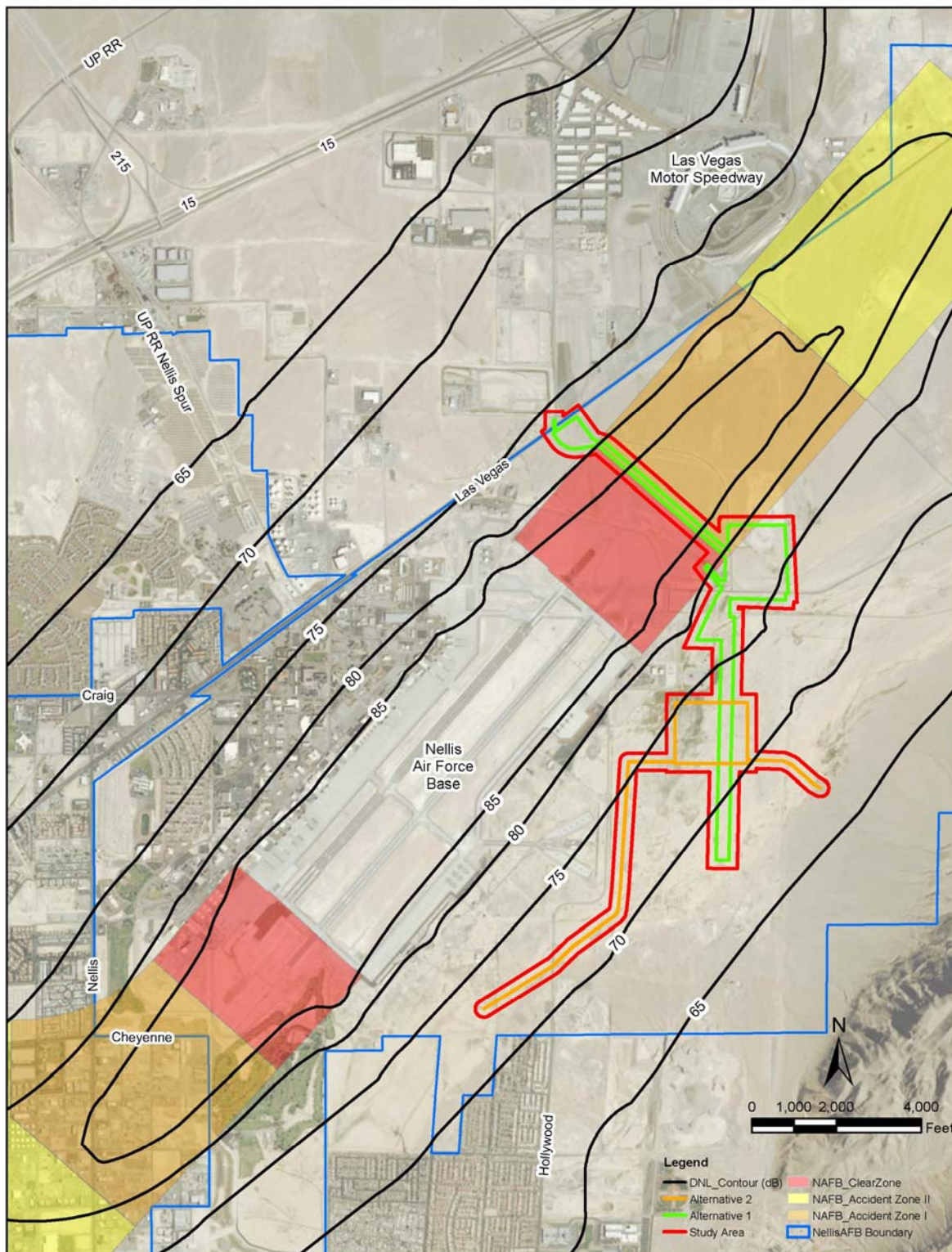
3.2.2 Land Use

Land can be used for residential, commercial, industrial, agricultural, transportation, recreational, or conservation purposes. Management plans, policies, ordinances, and regulations determine the manner in which a specific tract of land may be used. The status of land ownership is the primary driver that determines appropriate land use in a specific area. Nellis AFB is an USAF military reservation, thus, appropriate land use is primarily determined by federal laws, Department of Defense directives, and USAF policy and instructions.

The Proposed Action would occur almost entirely on existing Nellis AFB lands. The majority of the areas that would be affected by the Proposed Action are within the current perimeter fence boundary of Nellis AFB. A small portion of the Proposed Action would be outside the perimeter fencing across Las Vegas Boulevard and along Hollywood Boulevard in existing public right-of-way or parcels under jurisdiction of the USAF.

Nellis AFB includes developed and undeveloped lands. The main categories of developed land uses include airfield; industrial support areas; administrative services areas; and housing, recreation, and services areas. Undeveloped lands are commonly called open space in planning documents and may include natural or cultural resource preservation sites, safety buffers, or other similar land uses.

Figure 3-1. Nellis AFB Noise Contours



Nellis AFB is a well-developed institution that supports a broad spectrum of functions and organizations. It comprises 14,161 acres divided into three areas: Area I (the Main Base); Area II; and Area III. Area I is located east of Las Vegas Boulevard and contains 30 percent of the total base land area. Area I contains the greatest variety of land use activities, including runways; industrial facilities; housing areas; and most of the base's administrative, training, and support facilities. More than 2,000 buildings are located in Area I, including family housing units (enlisted and officers), dormitories, and billeting facilities. Area II is located northeast of the Main Base and accounts for 60 percent of the total base land area, the majority of which is undeveloped. RED HORSE and Security Forces are the primary occupants of the developed acreage in Area II. Area III is west of Las Vegas Boulevard, and it accounts for 10 percent of the total base land area. The majority of base family housing units and recreational facilities are located in Area III. Industrial support areas account for about 39 percent of all Nellis AFB land while open space accounts for about 36 percent. Most of the area designated as industrial is mandatory open space to provide safety zones around munitions storage or similar facilities.

The proposed flood control facilities would be located in Area I, in an area primarily void of development with the exception of a chain link fence and travel routes including Ellsworth Avenue and O'Bannon Road. The area surrounding the proposed project is undeveloped desert land. The Nellis AFB runway and developed Nellis AFB structures are south of the proposed flood control facilities.

Lands off-base and north of Las Vegas Boulevard are industrial and commercial. The areas adjacent to the proposed project are occupied by industrial businesses and automobile and construction debris recyclers.

Views from the proposed project north include undeveloped desert land, sand dunes, and the Las Vegas Mountain Range in the distance. Views to the east are of undeveloped desert land and Sunrise Mountain in the distance. Views to the south of the proposed project include the runway and desert camouflaged Nellis AFB structures, while views to the west are of commercial and industrial areas in the distance.

3.2.3 Noise

Noise is typically defined as unwanted or undesirable sound. The basic parameters of environmental noise that affect human subjective response are intensity or level, frequency content, and variation with time. The intensity of sound is expressed using a logarithmic scale in units of decibel. On a relative basis, a 3 dB change in sound level generally represents a barely noticeable change, whereas a 10 dB change in sound level would typically be perceived as a doubling (or halving) in the loudness of a sound.

The frequency content of noise is related to the tone or pitch of the sound and is expressed based on the rate of the air pressure fluctuation in terms of cycles per second (called Hertz). The human ear can detect a wide range of frequencies, from about 20 Hertz to 17,000 Hertz. However, because the sensitivity of human hearing varies with frequency, the "A-weighting system" is commonly used when measuring environmental noise to provide a single number descriptor that correlates with human subjective response. Sound levels measured using this weighting system are called "A-weighted" sound levels, and are expressed in notation as dBA. Throughout this section, all sound levels are expressed with dBA weighting.

Because environmental noise fluctuates from moment to moment, it is common practice to condense all of this information into a single number, called the "equivalent" sound level (Leq). Leq can be thought of as the steady sound level (or average sound level) that represents the same sound energy as the varying sound levels over a specified time period. In this report, Leq(h) is used to refer to the Leq sound level over a period of one hour. The day-night average sound

level (DNL) is also a commonly used sound level metric that depicts the average noise level over a 24-hour period, with the nighttime noise artificially increased.

For purposes of NEPA, evaluation of noise requires identifying criteria that will be used to assess potentially significant noise impacts that may require consideration of mitigation measures. This section first summarizes the relevant local, state, and federal noise impact criteria, and then identifies the criteria selected as most appropriate for use given the specifics of the proposed roadway.

Chapter 9.16 in the Las Vegas Code of Ordinances prohibits “noise of such character, intensity or duration as to be detrimental to the life or health of any individual, or in disturbance of the public peace and welfare is prohibited.” In addition, the Las Vegas Code of Ordinances prohibits “the erection, including the excavation, demolition, alteration or repair of any building in any new or existing residential district, or the excavation, construction or repair of any right-of-way improvements in any new or existing residential district other than between the hours of seven a.m. and six p.m., except in the case of urgent necessity in the interest of public health and safety and then only with a permit from the designated official” (City of Las Vegas, 2017). Although construction of the alternatives occurs almost entirely on existing Nellis AFB lands, additional traffic is expected to be generated in existing residential districts.

A DNL of 65 dBA is the level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like construction. Acceptable DNL noise levels have been established by the U.S. Department of Housing and Urban Development for construction activities in residential areas (HUD, 1984):

- **Acceptable** (not exceeding 65 dBA DNL) – The noise exposure may be of some concern, but common building construction will make the indoor environment acceptable and the outdoor environment will be reasonably pleasant for recreation and play.
- **Normally Unacceptable** (above 65 but not greater than 75 dBA DNL) – The noise exposure is significantly more severe. Barriers may be necessary between the site and prominent noise sources to make the outdoor environment acceptable. Special building constructions may be necessary to ensure that people indoors are sufficiently protected from outdoor noise.
- **Unacceptable** (greater than 75 dBA DNL) – The noise exposure at the site is so severe that the construction costs to make the indoor noise environment acceptable may be prohibitive, and the outdoor environment would still be unacceptable.

Most of the affected environment consists of existing Nellis AFB military lands. As described above, developed land uses at Nellis AFB include airfield; industrial support areas; administrative services areas; and housing, recreation, and services areas. Noise modeling in the AICUZ identified the noise level contours, in DNL, that would occur based on existing conditions that range from 65 to 85 dB (Figure 3-1). As shown in the figure, the majority of the study area occurs between the 70 and 80 dBA DNL contours. The majority of the noise originates from operations on the runway and practice jet flights conducted on Nellis AFB lands. Additional noise contributions originates from sirens operated during the Honor Guard and presentation of the flag.

3.3 AIR QUALITY

The United States Environmental Protection Agency (USEPA) defined ambient air in 40 CFR § 50.1 as “that portion of the atmosphere, external to buildings, to which the general public has access.” In compliance with the Clean Air Act, USEPA has promulgated National Ambient Air Quality Standards (NAAQS). Air quality is defined by ambient air concentrations of specific criteria pollutants that USEPA determines to be of concern related to the human health and the environment. Primary standards set limits to protect public health, including the health of

“sensitive” populations such as children, the elderly, and those suffering from asthma. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. To date, USEPA has issued NAAQS for six criteria air pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter with a diameter less than or equal to a nominal 10 micrometers or 2.5 micrometers (PM₁₀ and PM_{2.5}, respectively), sulfur dioxide (SO₂), and lead. A description of each criteria air pollutant is below. Table 3-1 shows the federal standards for criteria air pollutants.

- CO is a colorless, odorless gas emitted from combustion processes, including engine exhaust. Elevated CO concentrations can cause adverse health impacts by reducing oxygen delivery to vital organs. Very high concentrations can cause death.
- NO₂ is one of a group of reactive gases called oxides of nitrogen or nitrogen oxides (NO_x). NO_x react with ammonia, moisture, and other compounds to form small particles that penetrate deep in the lungs and can cause or worsen existing respiratory system problems such as asthma, emphysema, or bronchitis. NO_x is also a precursor that can lead to the chemical reactions forming ground-level O₃.
- Ground-level O₃ is an important component of smog and is formed through reactions of NO_x and volatile organic compounds (VOCs) in the presence of sunlight. Sources of NO_x and VOC emissions include both mobile and stationary sources. Health effects of O₃ exposure include respiratory irritation, reduced lung function, and worsening of diseases such as asthma. People with lung disease, children, older adults, and people who are active outdoors may be particularly sensitive to O₃. Elevated O₃ can also affect sensitive vegetation.
- Particulate Matter (PM) is a broad class of air pollutants that exist as liquid droplets or solids with a wide range of size and chemical composition. PM₁₀ and PM_{2.5} are of particular health concern because they can get deep into the lungs and affect respiratory and heart function. Particulates can also affect visibility; damage soil, plants, and water quality; and stain stone materials. Fugitive dust is a primary source of respirable airborne particulate matter. Fugitive dust results from land clearing, grading, excavation, concrete work, blasting, dynamiting, vehicle traffic, and low-flying air traffic. The amount of dust generated is related to the type and duration of mechanical activities, silt and moisture content of the soil, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway characteristics. Particulate matter arising from fugitive dust is regulated by federal, state, and local agencies.
- SO₂ is part of a group of reactive gases called sulfur oxides. Health effects of SO₂ exposure include adverse respiratory effects, such as increased asthma symptoms. The largest sources of SO₂ emissions nationally are from fossil fuel combustion at power plants/industrial facilities, electrical utilities, and residential/commercial boilers. Mobile sources are not a significant source of SO₂ emissions.
- Lead is a toxic heavy metal that can have numerous adverse health impacts, including neurological damage to children and cardiovascular effects in adults. Lead emissions can contribute to exposure directly through the air or indirectly by causing soil/water contamination. Before leaded gasoline was phased out, automobiles were a source of lead emissions. According to USEPA, the major sources of lead emissions today are ore and metal processing and piston-engine aircraft operating on leaded aviation gasoline.

Table 3-1. Federal Standards for Criteria Air Pollutants

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
CO		Primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead		Primary and secondary	Rolling 3-month average	0.15 $\mu\text{g}/\text{m}^3$	Not to be exceeded
NO ₂		Primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and secondary	1-year	53 ppb	Annual mean
O ₃		Primary and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM	PM _{2.5}	Primary	1-year	12.0 $\mu\text{g}/\text{m}^3$	Annual mean, averaged over 3 years
		Secondary	1-year	15.0 $\mu\text{g}/\text{m}^3$	Annual mean, averaged over 3 years
		Primary and secondary	24 hours	35 $\mu\text{g}/\text{m}^3$	98th percentile, averaged over 3 years
	PM ₁₀	Primary and secondary	24 hours	150 $\mu\text{g}/\text{m}^3$	Not to be exceeded more than once per year on average over 3 years
SO ₂		Primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: USEPA, 2017

Notes: ppm – parts per million; $\mu\text{g}/\text{m}^3$ – micrograms per cubic meter; ppb – parts per billion

Counties that do not meet the NAAQS are called nonattainment areas. Former non-attainment areas are called maintenance areas. Federal actions located in nonattainment or maintenance areas are required to demonstrate compliance with the general conformity guidelines established in Determining Conformity of Federal Actions to State or Federal Implementation Plans (40 CFR § 93). Section 93.153 of this rule sets the applicability requirements for projects subject to it through the establishment of *de minimis* levels for annual criteria air pollutant emissions. These *de minimis* levels can vary based on criteria air pollutant nonattainment area designations (e.g., moderate, serious, severe, extreme). Projects with emissions below the *de minimis* levels and projects in counties that are in attainment areas are not subject to the rule. Those projects in nonattainment areas with emissions at or above the *de minimis* levels are required to perform a conformity analysis as established in the rule. The *de minimis* levels apply to direct and indirect sources of emissions that can occur during the construction and operational phases of a project.

There are 15 ambient air quality monitoring stations located in Clark County (CCDAQ, 2017). The Las Vegas Valley Hydrographic Area 212 portion of Clark County—which includes the study area—is designated as marginal non-attainment for the 2015 O₃ NAAQS (effective August 3, 2018), and in attainment for CO and PM₁₀, subject to the provisions of the maintenance plans. Therefore, the general conformity guidelines described above are applicable to this proposed project for O₃, CO and PM₁₀. A general conformity applicability analysis will be conducted for the study area to compare CO and PM₁₀ to the *de minimis* levels discussed above.

Nellis AFB currently operates under a Title V air quality permit for stationary emissions from base operations. Current aircraft operations contribute to an increase in criteria pollutants in the Clark County airshed. However, these emissions have not adversely affected the attainment status of the county.

3.4 WATER RESOURCES

The Clean Water Act of 1972 is the primary federal law that protects the nation's waters, including lakes, rivers, aquifers, and coastal areas. The primary objective of the Clean Water Act is to restore and maintain the integrity of the nation's waters. Other issues relevant to water resources include watershed areas affected by existing and potential runoff and hazards associated with floodplains.

3.4.1 Groundwater

Historically, the principal groundwater aquifer for the Las Vegas Valley provided most of the water supply for residents. In the early 1970s, municipal facilities were built to treat and convey Colorado River water (specifically from the Lake Mead reservoir) to augment groundwater supplies. Today, groundwater provides approximately 10 percent of municipal water supply to Las Vegas and its surrounding communities (SNWA, 2016).

Groundwater in the Las Vegas Valley occurs in three general aquifer systems: shallow aquifers (generally less than 50 feet below grade); near-surface aquifers (more than 50 feet and up to 200 feet below grade); and principal aquifers (more than 200 feet below grade). The principal aquifers can be broken down into three rather distinct zones of confined aquifers including a shallow zone, an intermediate zone, and a deep zone.

The shallow aquifer system is generally unconfined; however, semi-confined conditions occur locally under layers of caliche or other sediments. The water quality of the shallow aquifer does not meet minimum standards set for potable water. The poor water quality is related to dissolution of naturally occurring salts in the fine-grained sediments.

The CCRFCD MPU indicates depth to groundwater in the study area is well over 100 feet below ground surface (CCRFCD, 2004). Review of the Nevada Division of Water Resources well log database indicates the wells within vicinity of the proposed project have a static water level of approximately 80 to 120 feet below ground surface. Based on surface topography, an inferred groundwater flow direction in the vicinity of the proposed project is interpreted to be toward the south.

3.4.2 Surface Water

Surface water includes all lakes, ponds, rivers, streams, impoundments, and wetlands within a defined area or watershed.

Las Vegas Valley runs northwest to southeast through the area ending just beyond the City of Henderson (about 10 miles west of Hoover Dam). The broad portion of the valley is known locally as the Las Vegas Basin. Topography is characterized primarily by flat alluvial deposits within the valley surrounded by numerous mountains and ranges in all directions. To the north (the Desert, Sheep and Las Vegas Ranges) and east (the Black, Frenchman, and Muddy Mountains), they are generally north-south trending ranges. To the west (Spring Mountains) and south (El Dorado Mountains and McCullough Range), the mountains are less linear and not as consistently aligned.

The Range Wash Watershed is in the northeastern part of the Las Vegas Valley. Floodwaters are generated in the mountains to the north and east and flow onto a large upland alluvial fan and then southward from the apex of the fan. These flows are routed overland and through small

braided washes, finally being collected along the Union Pacific Railroad tracks and then southward through existing culverts under the tracks. Flows are overland or directed into eastern and western tributary channels that flow to a dry playa with no connection to any navigable waters.

3.4.3 Floodplains

Nellis AFB lies within the Upper Colorado River Basin Hydrological Region of Nevada. The portion of the Range Wash Watershed in which Nellis AFB is located is characterized by few perennial streams and numerous ephemeral washes.

Flood zone information for the proposed project was reviewed from the Federal Emergency Management Agency's web page. According to this information, the proposed project is not in a 100-year flood zone. Additionally, the panel map provided by the Flood Insurance Rate Map indicates that the proposed project is not located in a Zone X, an area shown as "being protected from the 1 percent annual chance or greater flood hazard by a levee system. Overtopping or failure of any levee system is possible."

3.5 EARTH RESOURCES/GEOLOGY AND SOILS

The area for the proposed flood control facilities is relatively flat, undeveloped desert land with an elevation of approximately 1,870 feet. Generally the topography of the area slopes to the southeast.

Nellis AFB is located within the Las Vegas Valley, which is a topographical depression trending across Clark County, Nevada, and surrounded by mountain ranges. The Las Vegas Valley is structural in origin and has a considerable accumulation of Quaternary alluvium derived from the surrounding mountains and transported to the valley. Coarse material has been deposited closest to the mountain fronts in alluvial fans, while the finer particles have reached the valley bottoms where they were deposited in alluvial floodplain and lacustrine environments (Longwell et al., 1965). The alluvial sediments generally become finer grained from west to east within the valley. Soils in the area include Glencarb loam (silty to fine sand) and Weiser-Wechech association (gravelly sandy loam) (USDA, 2018). Tectonically, the Las Vegas Valley is underlain by a series of Miocene strike-slip faults and normal Quaternary faults capable of producing significant earthquakes. Much of the recent fault movement has been normal faulting associated with subsidence as a result of groundwater withdrawal. The geology of the proposed flood control area is associated with its location in the Las Vegas Valley. No known active faults are located in the area proposed for the flood control facility.

No farmlands or soils considered prime farmland are located within the study area.

3.6 SAFETY AND OCCUPATIONAL HEALTH

The Nellis AFB runway is located south of the proposed flood control facilities. Safety and emergency response for the area located within the base fence-line are currently the responsibility of Nellis AFB, and as part of the base, the fenced area is not accessible to unauthorized entry of non-military personnel. Outside the base, the North Las Vegas Police Department, Las Vegas Metropolitan Police Department Northeast Area Command, and Clark County Fire Department Station 23 serve the study area.

Mike O'Callaghan Federal Medical Center, a 104-bed medical treatment facility in a joint venture project with the Department of Veterans Affairs, serves Nellis AFB. North Vista Hospital, a 177-bed facility, serves the area off-base.

The safety of the public, with respect to the aircraft operation at Nellis AFB, is a primary concern for the USAF. The areas surrounding Nellis AFB have AICUZ guidelines established to define

those areas with the highest potential for aircraft accidents and aircraft noise impacts. The AICUZ guidelines establish flight rules and flight patterns that will have the least effect on the civilian population of Las Vegas and North Las Vegas with regard to safety and noise. With regard to potential aircraft accidents, Clear Zones and APZs have been established to identify the areas with the greatest risk for aircraft accidents and to guide off-base development away from these higher risk areas. Clear Zones extend approximately 3,000 feet from the end of each runway and are totally contained within Nellis AFB. APZ I is an extension of the Clear Zone; it is about 4,000 feet wide and 5,000 feet long (i.e., extends 8,000 feet from the end of the runway). APZ II retains the width of 4,000 feet, but extends another 7,000 feet from the end of APZ I. The greatest potential for aircraft accidents occur within the Clear Zone; risks are reduced as distances from the runway increase. Thus, aircraft accidents are lower in APZ II. While the potential for aircraft accidents within APZ I and APZ II, which are mostly located off-base, does not warrant land acquisition by the USAF, land use planning and controls are strongly encouraged in these areas for the protection of the public (Nellis AFB, 2004).

The USAF identifies categories of aircraft mishaps. Class A mishaps are those that result in a human fatality or permanent total disability, the destruction of an aircraft, or a total cost in excess of \$2 million (\$1 million for mishaps occurring before fiscal year 2010) for injury, occupational illness, or destruction of an aircraft. Class B mishaps are those that result in a permanent partial disability, inpatient hospitalization of three or more personnel, or a total cost in excess of \$200,000 but less than \$1 million for injury, occupational illness, or property damage. Class C mishaps are those that result in total damage in excess of \$20,000 but less than \$200,000; an injury resulting in a lost workday (i.e., duration of absence is at least 8 hours beyond the day or shift during which the mishap occurred); or occupational illness that causes loss of time from work at any time.

While Nellis AFB has not experienced an individual Class A mishap, the mishap rates for all aircraft are calculated based on worldwide deployment of the aircraft type. The mishap rates are based on the number of mishaps per 100,000 flying hours for each type of aircraft. The mishap rate depends on the number of each aircraft type deployed, the time elapsed since the aircraft type has been in operation, the number of hours flown for each type, and the location of the operations. The mishap rates can then be converted to a risk factor for each aircraft type based on the number of hours flown by aircraft type. The F-16 has been in operation for 40 years and for the past 10 years, the average annual hours flown by F-16s worldwide has been 244,8903, with an average Class A mishap rate of 2.08 (USAF Safety Office, 2016).

3.7 HAZARDOUS MATERIALS/WASTE

An Environmental Baseline Survey and supplemental Environmental Baseline Survey were conducted for the study area. Based on the reconnaissance, interviews, environmental database report review, document searches, and historical resource review, the study found no evidence that hazardous substances or petroleum products were released in the area that would pose a threat to proposed improvements, and no further investigation of the area is proposed (Nellis AFB, 2017b).

The proposed project is classified as Standard Environmental Condition of Property Area Category 1, i.e., no storage, release, or disposal of hazardous substances or petroleum products or their derivatives has occurred (including no migration of these substances from adjacent properties). Based on the information gathered during the Environmental Baseline Survey, no evidence of contamination was found in connection with the subject parcels that would pose an environmental risk to the proposed project.

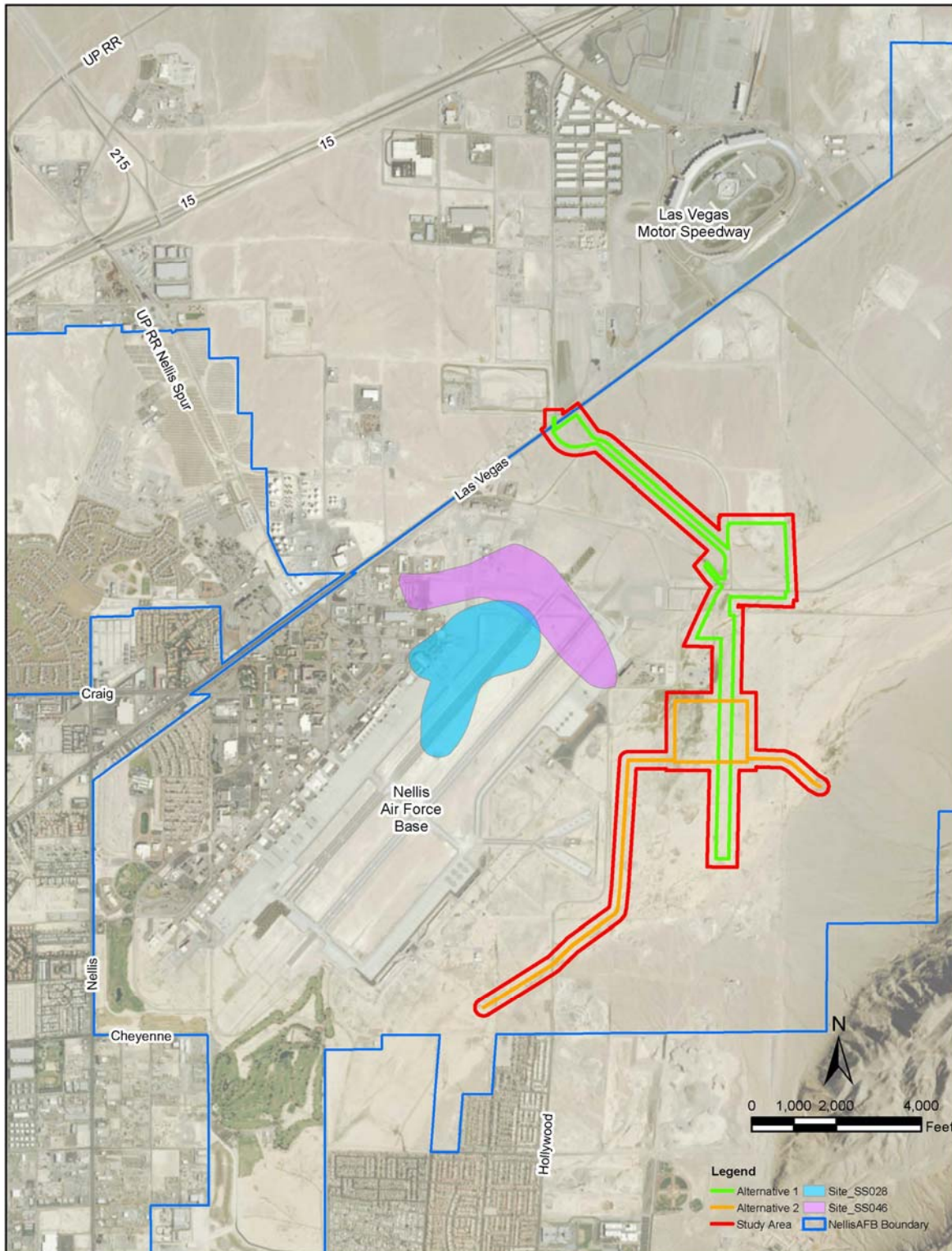
The Final First Five-Year Review Report for Nellis AFB (Nellis AFB, undated) was reviewed for information on the environmental quality of subject parcels within Nellis AFB. Nellis AFB prepared

the Five-Year Review to analyze information regarding environmental conditions at Nellis AFB and to determine whether the remedies currently in place are, and will continue to be, protective of human health and the environment, and in support of Nellis AFB's Environmental Restoration Program. The Environmental Restoration Program at Nellis chose to utilize the Comprehensive Environmental Response, Compensation, and Liability Act process even though Nellis AFB is not on the National Priorities List for Federal Superfund Cleanup.

Nellis AFB Sites SS046 and SS028 are located on the north end of the runway and both are described in the Five-Year Review (Figure 3-2). However, the plume associated with Site SS028, as delineated in the Five-Year Review, occurs southwest of the proposed project and does not encroach on it. The groundwater plume associated with Site SS046 is depicted as much closer to the proposed project and is further described below. Although there are comingled plumes of benzene, toluene, ethylbenzene, and xylenes; methyl tert-butyl ether, and solvents associated with Site SS046, trichloroethylene is the primary chemical of concern at this site. Past solvent disposal practices have been identified as the source of the solvent plume extending from the Propulsion Maintenance Shop (Building 858) to the flightline (Runway 21R). The source of the encroaching methyl tert-butyl ether plume is an off-base Kinder Morgan tank farm. This plume extends west from the base perimeter to the Hush Houses (Buildings 61635 through 61641).

In-situ chemical oxidation using potassium permanganate was the selected remedial technology for the trichloroethylene plume. Full-scale injections began in October 2006 and concluded in August 2008, following eight quarterly injection events. The Nevada Division of Environmental Protection (NDEP) approved A No Further Action Required decision document for the chlorinated solvents plume on June 23, 2010. In 2013, trichloroethylene concentrations generally remained stable in monitoring wells in the downgradient and upgradient portions of the plume. Generally, the overall extent of the solvent plume reflects a stable trend. Based on evaluation of nature and extent of contamination and contaminant fate and transport, Nellis AFB's recommendations for Site SS046 are to continue a long-term monitoring program. Based on the current site conditions, Nellis AFB determined that the remedy selected is protective of human health and should be protective of the environment in the near future.

Figure 3-2. Environmental Restoration Program Sites



3.8 BIOLOGICAL RESOURCES

Natural resources refer to all components of the natural environment absent humankind. Biological resources specifically refer to those natural resources that are derived from the biosphere (living and organic material). These include all living resources (e.g., plants and animals), as well as materials derived from organic material (e.g., petroleum and coal).

3.8.1 Vegetation

The study area is predominately classified by the creosote-white bursage vegetation association, although the density and diversity of vegetation in the study area varies from disturbed-developed to relatively undisturbed native desert scrub.

The portion of the proposed project located off-base is now developed as urban space and no longer retains any of the native vegetation or landscape characters associated with this community. This part of the proposed project runs parallel to and within the public right-of-way of Hollywood Boulevard and Las Vegas Boulevard. Hollywood Boulevard is flanked by developed commercial properties with planted ornamentals and/or privately held business properties that have been cleared but are yet to be developed. Existing vegetation is almost entirely non-native species, primarily Russian thistle (*Salsola tragus*) and dead patches of invasive grasses, including Bermudagrass, Shismus, and *Bromus* spp.

On base, the study area varies from sparse to moderately dense shrubland composed primarily of creosote bush and white bursage, with various other small shrubs, perennials and some cacti (primarily *Opuntia* and *Cholla* spp). On the westernmost side of the proposed project, vegetation is somewhat sparse with open areas of well-developed desert pavement. This area transitions to a more typical creosote-bursage desert scrub community punctuated by areas of previously disturbed habitat where the native vegetation has been mostly replaced with non-native invasive species such as Russian thistle and red brome (*Bromus rubens*). Characteristic of the lower valley desert community, the area is frequently bisected with small ephemeral washes/arroyos, which when intermittently flooded, can exhibit relatively dense blooms of annual forbs. Though usually dry, the deeper channels contain a higher density and richness of desert wash associated vegetation. Although still desert scrub community, the plants are characteristically desert-wash species and include: apache plume (*Fallugia paradoxa*), cheesebush (*Hymenoclea salsola*), catclaw acacia (*Acacia greggi*), fourwing saltbush (*Atriplex canescens*), desert willow (*Chilopsis linearis*), and occasionally honey mesquite (*Prosopis glandulosa*).

In accordance with the Plant Protection Act of 2000, 7 USC §§ 7711-7786, the U.S. government has designated certain plants as noxious weeds. These weeds are injurious to agricultural or horticultural crops, natural habitats or ecosystems, or humans or livestock. According to the Nevada Department of Agriculture, 21 of the 47 state-listed noxious weeds are known to occur in Clark County (University of Nevada Cooperative Extension, 2010). Of these 21 species, most are associated with higher elevations and/or moist soils. While no noxious weed survey was performed, site assessments were completed with no obvious signs of the two most common noxious weeds, saltcedar (*Tamarix* spp) and Sahara (African) mustard (*Brassica tournefortii*) noted. However, the lack of confirmed noxious weeds does not exclude the possibility of seeds remaining active in the seed bank until conditions are more favorable (i.e., supplemental watering during construction). A noxious weed survey of the selected alternative would be completed prior to any surface-disturbing activity to identify any infestations before they are disturbed.

3.8.2 Wildlife

A walking survey of the study area was conducted in October 2016 and again in May 2017. Bird species observed in the area included typical desert scrub/urban environment species such as

gambels quail, Say's phoebe, mourning dove, lesser nighthawk, and common raven. Other wildlife noted included a coachwhip (*Coluber flagellum*), several common whiptail lizards (*Callisaurus draconoides*), and a black tailed jackrabbit (*Lepus californicus*). No small mammals were noted, but signs of their activity was prevalent in sandy soil burrow complexes typical of desert rodents.

Nearly all bird species that are known from the Nellis AFB area are protected under the Migratory Bird Treaty Act of 1918, which prohibits the intentional take of migratory birds or any part, nest, or egg thereof, without appropriate permits. In July 2000, the United States Court of Appeals for the District of Columbia Circuit ruled that the prohibitions in the Migratory Bird Treaty Act apply to federal agencies, and that a federal agency's incidental taking and killing of migratory birds without a permit would violate the Migratory Bird Treaty Act. Although federal courts disagree on these issues, Congress responded by including a waiver for "military readiness activities" in the National Defense Authorization Act for Fiscal Year 2003 (Public Law 107-314), Section 315, and directed the Department of the Interior to promulgate regulations covering such activities.

The United States Fish and Wildlife Service (USFWS) published its final rule in the *Federal Register* on February 28, 2007 (72 *Federal Register* 8931). Per 50 CFR § 21.15, the Armed Forces are allowed to take migratory birds incidental to military readiness; however, if the Armed Forces determine that an activity may result in a significant adverse effect on a population of a migratory bird species, it must confer and cooperate with the USFWS to develop and implement appropriate conservation measures. Public Law 107-314, Section 315(f), defines "military readiness activity" as training operations related to combat and the testing of military systems for proper operation and suitability for combat use. The term does not include routine operation, construction, or demolition of facilities related to routine installation support functions or industrial activities.

Within the study area, areas with higher diversity and density of native vegetation, such as the desert dry washes, provide suitable habitat for many bush and/or ground-nesting birds that would fall under the purview of the Migratory Bird Treaty Act of 1918. Surveys for ground/bush-nesting bird species would need to occur prior to surface disturbance occurring during active breeding season (typically between March 1 and August 31).

3.8.3 Sensitive Species

The USFWS official species list (USFWS, 2016) for the study area lists four federally listed species for consideration during the project assessment: the Pahrump poolfish (*Empetrichthys latos*), the southwestern willow flycatcher (*Empidonax traillii extimus*), the yellow-billed cuckoo (*Coccyzus americanus*), and the Mojave desert tortoise (*Gopherus agassizii*). The primary habitat for both the southwestern willow flycatcher and yellow-billed cuckoo is characterized by dense riparian woodlands in close proximity to surface water. No suitable habitat is present within or near the proposed project. The absence of any bodies of water also precludes the presence of the Pahrump poolfish.

Suitable habitat for the Mojave desert tortoise is present in the study area; however, habitat suitability and therefore tortoise density is predominantly located on the eastern side of Area II (Nellis AFB, 2007). While a tortoise could be encountered in the study area, connectivity between the area with higher densities and the western side of Area II is affected by poor/degraded habitat and permanent Nellis AFB infrastructure. The likelihood of encountering a tortoise in the study area is therefore low. However, in accordance with the terms and conditions of the Programmatic Biological Opinion (USFWS, 2007), the proposed project would be surveyed and cleared of desert tortoise using the USFWS clearance protocol prior to project commencement. Additionally, the presence of a biological monitor during construction would mitigate the potential for project

construction to affect desert tortoises. A project-specific monitoring plan would be developed with and approved by the Nellis AFB resource manager at the appropriate time. A data request submitted to Nevada Natural Heritage Program resulted in records for two species of concern within the study area—western burrowing owl (*Athene cunicularia*) and banded Gila monster (*Heloderma suspectum*).

Western burrowing owls are a state-protected species, also covered under the Migratory Bird Treaty Act. Western burrowing owls are known to use abandoned rabbit and rodent burrows and human-made holes throughout the landfill and golf course in Area III, south of the proposed project. They are known to nest in undisturbed desert and disturbed, undeveloped areas. During the walking surveys in October 2016 and May 2017, no signs of nesting owls were noted, although no species-specific surveys were conducted. Habitat suitable for nesting is available in the study area; therefore, clearance surveys would be required prior to any surface-disturbing activity during breeding/nesting season.

Records for the banded Gila monster are from more than 80 years ago, before any development in the area. No recent accounts of this large lizard have been noted; however, suitable wash habitat is present in the study area. Clearance surveys for desert tortoise would also be aimed at detecting the presence of Gila monsters to avoid potential impacts on this species.

3.9 CULTURAL RESOURCES

The National Historic Preservation Act was established in 1966 to ensure the protection of cultural and historic resources, including archaeological resources. The act established the Advisory Council on Historic Preservation and authorized the creation and maintenance of a National Register of Historic Places (National Register). The National Register is composed of districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. Cultural resources are defined as prehistoric or historic archaeological sites, buildings, structures, districts, artifacts, or other physical evidence of human activity considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons.

Section 106 of the National Historic Preservation Act (implemented under 36 CFR § 800) requires federal agencies to consider the effects of undertakings (i.e., actions) on any district, site, building, structure, or object that is included or eligible for inclusion in the National Register and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. As defined under 36 CFR § 800.5, an “adverse effect” occurs “when an undertaking may alter, directly or indirectly, any of the characteristics of the historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.”

The National Historic Preservation Act also authorized the creation of a SHPO for each state. The SHPO participates in statewide historic preservation planning and surveying activities; nominates properties for the National Register; provides advice, assistance, training, and public outreach; and participates in Section 106 undertaking reviews. If the federal agency proposing the undertaking determines that it may result in an adverse effect on a historic property, the agency must seek ways to avoid, minimize, or mitigate adverse effects.

The City of North Las Vegas, as the project proponent, initiated consultation with the Nevada SHPO November 2, 2017, pursuant to Section 106, the federal nexus being the construction of flood control facilities on Nellis AFB by the USAF.

3.9.1 Area of Potential Effect

Pursuant to 36 CFR § 800.4(a)(1), the APE is defined as the geographic area(s) within which the undertaking may directly or indirectly affect cultural resources. Within the APE, impacts on cultural resources are evaluated for both historic structures (aboveground cultural resources) and archaeology (belowground cultural resources). The APE encompasses all lands within the study area, including proposed detention basins and staging areas. The APE also includes a 5-meter buffer along either side of the channel to account for direct effects from machinery during construction and would include the entire area of ground disturbance (Figure 3-3).

3.9.2 Existing Conditions

Nellis AFB originated as a United States Army school for gunnery, parachute, and pilot training from 1940 to 1948. In 1947, the USAF was created as a separate military department, and the post was renamed Nellis AFB in 1950 in honor of First Lieutenant William H. Nellis of Searchlight, Nevada, who was killed on December 27, 1944, when his P-47 Thunderbolt was downed over Luxembourg (Nellis AFB, 2012).

Nellis AFB has conducted numerous archaeological and historic architectural surveys since the late 1970s. The USAF has surveyed 22,341 acres in the Las Vegas Valley, including all of Area I and part of the Nevada Test and Training Range, for archaeological resources. These surveys have identified 85 sites, only 1 of which, a quarry site, is eligible for listing in the National Register. All other sites were determined to be ineligible for listing through consultation with the Nevada SHPO in 2001 (by letter dated April 12, 2001).

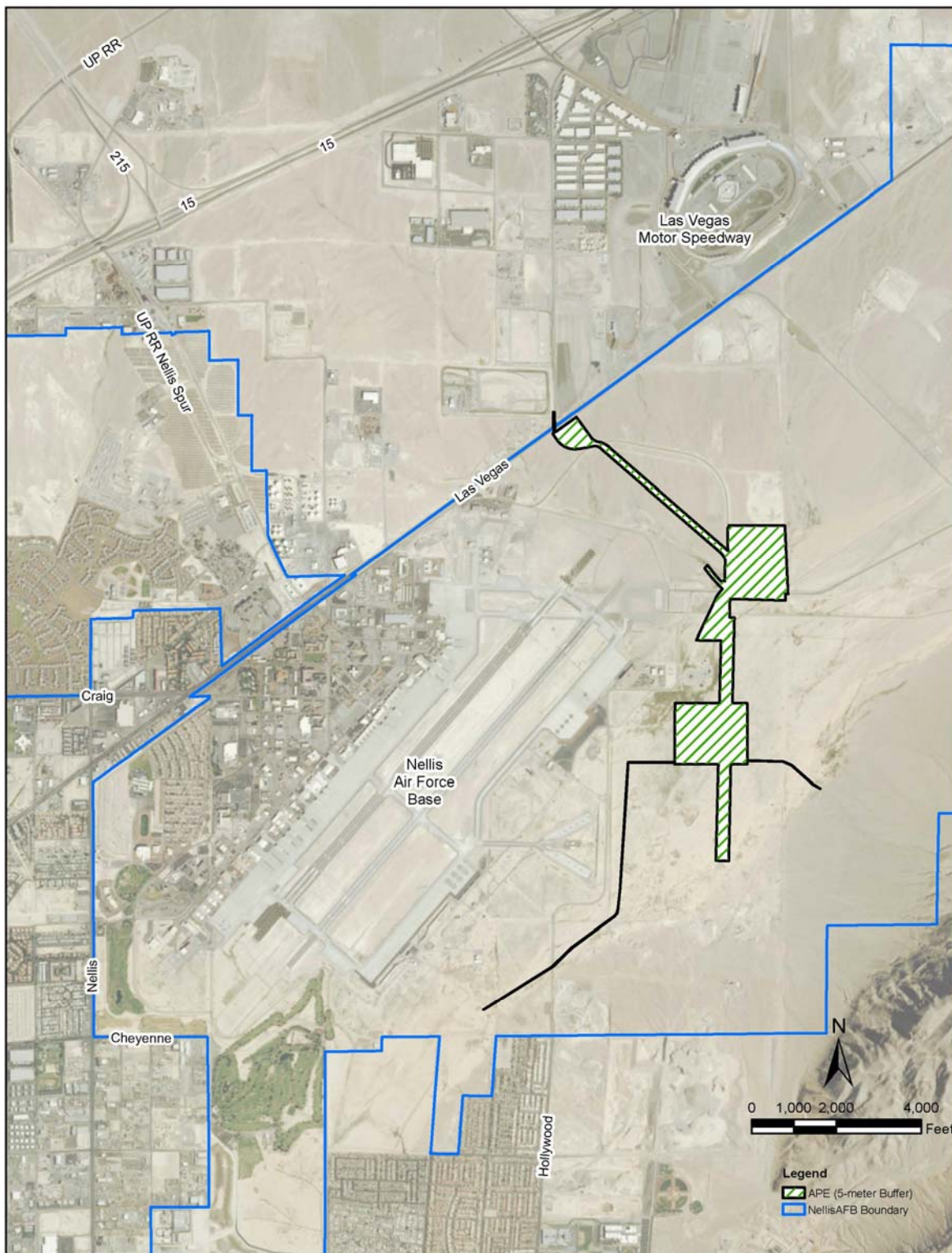
Key surveys conducted in the study area include:

- Archaeology of the Main Cantonment: Nellis Air Force Base, Clark County, Nevada. Kathleen Ann Bergin, 1993 (SHPO Report No. 1361)
- Clark County Regional Flood Control District Final Master Plan: 10-Year Plan Facility Cultural Resource Survey Report. Dames and Moore. BLM report 5-2127, 1991 (SHPO Report No. 13255)
- Nellis Air Force Withdrawal Lands, Clark County, Nevada, 1999 (SHPO Report No. 13137)
- *Cultural Resource Survey of the Las Vegas Motor Speedway*. Knight & Leavitt Associates, 1994 (SHPO Report No. 13301).

A review of the Nevada Cultural Resource Information System was conducted to ascertain whether any previous archaeological sites were located in the study area. Twenty-four archaeological sites have been identified within a mile of the study area. Four sites are recommended as eligible. Two sites are within close proximity to the east end of the proposed project and may be within the limits of ground disturbance. Both sites have been determined ineligible for listing in the National Register.

Three historic building inventories have been completed at Nellis AFB evaluating World War II structures. Page and Turnbull (1988) completed an inventory and evaluation of World War II structures at Nellis AFB and Creech AFB. In a letter dated 14 June 1991, the SHPO reviewed the evaluation and concurred with its recommendations. In 2004, 336 Wherry houses constructed from 1950 to 1957 and 113 Capehart structures built on Nellis AFB in 1960 were proposed for demolition. Deborah Dobson-Brown (2004) conducted the field research and argued the buildings lacked physical integrity for further eligibility consideration. The SHPO concurred with the recommendation. In 1995, Mariah Associates, Inc., completed a preliminary evaluation, interpretation, and prioritization of Cold War facilities for 27 Air Combat Command bases throughout the United States. This report was not subject to SHPO review; however, no facilities were recommended for further review.

Figure 3-3. Area of Potential Effect



The APE for the off-base area was not surveyed because the area is entirely within the existing right-of-way. The proposed construction staging area at the northeast corner of Ellsworth Avenue and O'Bannon Road was previously used as a borrow pit. No archaeological survey was conducted in this area because of the extensive ground disturbance.

3.10 INFRASTRUCTURE/UTILITIES

3.10.1 Infrastructure

Major transportation arteries in the area around Nellis AFB include Las Vegas Boulevard, which runs northeast-southwest through Nellis AFB and separates Area I from Area III. It is a major regional artery connecting the base area with downtown Las Vegas. The Range Road Gate on Las Vegas Boulevard North provides access to Area III. East Craig Road intersects Las Vegas Boulevard North at the Nellis AFB Craig Road Gate (Main Base Gate). It also is a major artery that funnels traffic from Interstate 15 north of the base to Las Vegas Boulevard North. The main gate to the Area III on-base housing is on East Craig Road. Area I of Nellis AFB is bounded on the west by North Nellis Boulevard, which is a major north-south road that connects south Las Vegas with the City of North Las Vegas and Nellis AFB. The Tyndall Avenue Gate provides access from North Nellis Boulevard to Area I.

On base, Nellis AFB has approximately 147 miles of paved roads. Intersections are controlled by stop signs, which can cause minor traffic delays at these intersections. Traffic circles to facilitate vehicle flow have been planned, and two have been constructed – one at the intersection of Ellsworth Avenue and Fitzgerald Boulevard and the other at Ellsworth and Beale Avenues. Unpaved roads are located in Areas II and III, with the majority located along the perimeter of the base. They are minimally used for fence maintenance and security.

3.10.2 Utilities

The Clark County Water Reclamation District currently takes in approximately 1.5 million gallons per day from Nellis AFB. In 2009, Nellis AFB rented land to the City of North Las Vegas for a water reclamation facility. Septic systems are in place for areas that have remote access or no access to pipes. The Clark County Water Reclamation district is a member of the Southern Nevada Water Authority (SNWA) and governs the Clark County section of SNWA. The district services all areas in Clark County and collects and reclaims approximately 83 million gallons of wastewater per day.

Nellis AFB's drinking water is supplied by SNWA from Lake Mead (formed by Hoover Dam and fed by the Colorado River) and nine active wells (USAF, 2015). Water treatment from Lake Mead water is conducted at the Alfred Merritt Smith or River Mountains treatment facilities using a multistage filtration system (USAF, 2015). Water collected by SNWA from wells is chlorinated by Civil Engineering Utilities (USAF, 2015). All water is certified as safe to drink in accordance with the USEPA (USAF, 2015). SNWA predicts that water demand will increase over future years (SNWA, 2015).

The majority of electricity provided to Nellis AFB is provided by NV Energy. The remaining energy is provided by a large solar array stationed on Nellis AFB and owned by NV Energy, which was completed and became fully operational in 2015. The system encompasses about 140 acres and contains approximately 70,000 solar panels. In 2014, the solar array produced 31.202 gigawatt hours (USEIA, 2016).

The majority of solid waste is taken to an approved landfill by Republic Services. In 1991, Nevada legislature set a recycling goal of 25 percent. In 2012 and 2013, Clark County recycling rates were 27.5 and 22.0 percent, respectively (NDEP, 2015).

The distributor of natural gas to heat the base is the Southwest Gas Company through approximately 200,000 linear feet (40 miles) of polyethylene pipes. The base hosts three 1,000-cubic-foot tanks for natural gas storage to be used for equipment.

Jet fuel, diesel, and gasoline are delivered to Nellis AFB by the CALNEV Pipeline (owned and operated by Kinder Morgan) (Clark County Planning Commission, 2006). The CALNEV Pipeline moves fuel from California to Nellis AFB and McCarran International Airport via a 550-mile, two-line pipe system. It provides Clark County with approximately 130,000 barrels of fuel per day (Clark County Planning Commission, 2006).

3.11 SOCIOECONOMICS

Socioeconomic resources include population, race and ethnicity, income, poverty, housing, and employment. Data on existing socioeconomic conditions were collected from the U.S. Census, Bureau, the U.S. Bureau of Labor Statistics, and the Nevada Department of Employment, Training, and Rehabilitation.

According to information obtained from the 2016 American Community Survey's 5-year estimates, there were 2,070,153 residents in Clark County and 230,436 residents in North Las Vegas (Table 3-2). Based on that same data source, the population of Nellis AFB was 3,252. There were 735,475 occupied housing units in Clark County, 69,109 in North Las Vegas, and 832 on Nellis AFB.

Table 3-2. Population and Housing Units

	Population	Occupied Housing Units
Clark County	2,070,153	735,475
City of North Las Vegas	230,436	69,109
Nellis AFB	3,252	832

Source: U.S. Census Bureau (2016)

The largest racial and ethnic group in Clark County and Nellis AFB is non-Hispanic white, accounting for 45.0 and 51.8 percent, respectively (Table 3-3). In the City of North Las Vegas, Hispanics/Latinos are the largest population group (40.4 percent).

Table 3-3. Race and Ethnicity

	Clark County	City of North Las Vegas	Nellis AFB
Non-Hispanic White	45.0%	29.0%	51.8%
Non-Hispanic Black/African American	10.6%	19.5%	23.2%
American Indian/ Alaska Native	0.4%	0.5%	0.0%
Asian	9.2%	5.9%	3.1%
Native Hawaiian/Other Pacific Islander	0.7%	0.9%	0.2%
Non-Hispanic Other Race	0.2%	0.2%	0.0%

	Clark County	City of North Las Vegas	Nellis AFB
Non-Hispanic More than one race	3.6%	3.6%	6.6%
Hispanic/Latino	30.4%	40.4%	15.0%
Total	100%	100%	100%
Minority	55.0%	71.0%	48.2%

Source: U.S. Census Bureau (2016)

The median household income in Clark County and the City of North Las Vegas was about \$53,000 (Table 3-4). The median household income of residents of Nellis AFB was \$45,000. The proportion of the population living in poverty in the City of North Las Vegas (15.7 percent) was also similar to that of Clark County (15.0 percent). On Nellis AFB, the poverty rate was 11.2 percent.

Table 3-4. Income and Poverty

	Median Household Income	Percent Population in Poverty
Clark County	\$52,629	15.0
City of North Las Vegas	\$53,565	15.7
Nellis AFB	\$45,000	11.2

Source: U.S. Census Bureau (2016)

The most recent annual data from the Bureau of Labor Statistics and the Nevada Department of Employment, Training, and Rehabilitation shows that the average employment in Clark County in 2016 was 936,513 (U.S. Bureau of Labor Statistics, 2016).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section addresses potential impacts on environmental resources within or near the proposed project. An impact (consequence or effect) is defined as a modification of the human or natural environment that would result from the implementation of an action. The impacts can be either beneficial or adverse and can be either directly related to the action or indirectly caused by the action. Direct impacts are those effects that are caused by the action and occur at the same time and place (40 CFR § 1508.8(a)). Indirect impacts are those effects that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR § 1508.8(b)). The effects can be temporary, short in duration (short-term), long lasting (long-term), or permanent. For purposes of this EA, temporary effects are defined as those that would last for the duration of the construction period; short-term impacts would last from the completion of construction to 3 years. Long-term impacts are defined as those impacts that would occur from 3 to 10 years after construction, while permanent impacts indicate an irretrievable loss or alteration.

Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. Significant impacts are those effects that would result in substantial changes to the environment (40 CFR § 1508.27) and should receive the greatest attention in the decision-making process. The significance of the impacts presented in this EA is based on existing regulatory standards, scientific and environmental knowledge, and best professional opinions. For the purpose of this analysis, the intensity of impacts would be classified as negligible, minor, moderate, or major.

4.2 AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE/NOISE

4.2.1 Air Installation Compatible Use Zone

Alternative 1

Portions of the proposed project are within the Clear Zone and APZ I; however, the proposed project would not affect the AICUZ because there would be no change in flight operations. The proposed project would not affect compatibility with the defense flying mission.

Alternative 2

The impacts on the AICUZ under Alternative 2 would be similar to those described for Alternative 1.

No Action Alternative

Under the No Action Alternative, the flood control facilities would not be constructed and no impacts on the AICUZ would occur.

4.2.2 Land Use

Alternative 1

Land use in the study area would not change from its existing use; however, the land surface would be disturbed during construction activities to install the proposed flood control facilities. After construction is completed, the area would be revegetated and landscaped to restore it to conditions previous to the ground disturbance.

Alternative 2

The impacts on land use under Alternative 2 would be similar to those described for Alternative 1.

No Action Alternative

Under the No Action Alternative, the proposed flood control facilities would not be constructed, and flood flows would continue to overtop Nellis AFB. No changes to land use would occur.

4.2.3 Noise

Alternative 1

Construction Equipment

Potential noise impacts may result from the combined noise levels emitted from construction equipment during the construction of the proposed project. The noise levels emitted from typical equipment used for the construction of berms, channels, and detention basins are listed in Table 4-1.

Table 4-1. Construction Equipment Noise Emission Reference Levels

Equipment Description	Maximum Instantaneous Sound Level (Lmax) at 50 feet (dBA)
Backhoe	80.0
Compactor	80.0
Dozer	85.0
Dump truck	84.0
Excavator	85.0
Front end loader	80.0
Tractor	84.0
Combined Noise Level	91.6

Source: FHWA (2006)

Sensitive receptors, such as residential properties and parks, near the proposed project were identified. Identified receptors include the Bullring at Las Vegas Motor Speedway, residential properties within Nellis AFB, and additional residential properties along North Hollywood Boulevard and East Cheyenne Avenue.

The distance between the sensitive receptors, including the receptor nearest to the proposed project, and the proposed project was measured. This distance and the noise levels referenced above were used to estimate the noise contribution of the construction equipment at the nearest sensitive receptor. To determine the noise contribution during an expected worst case scenario, the noise levels of all construction equipment was considered in this estimate. The distance between the sensitive receptors and the proposed project is shown in Table 4-2.

Table 4-2. Distance between Sensitive Receptors and Project Footprint

Receptor	Distance from Alternative 1 (feet)	Distance from Alternative 2 (feet)
The Bullring at Las Vegas Motor Speedway	1,900	1,900
Residential property along East Cheyenne Avenue	5,716	890

A sound level decrease of 6 dBA was assumed per doubling of the distance (FHWA, 2017).

For Alternative 1, the sensitive receptor nearest to the proposed project is the Bullring at Las Vegas Motor Speedway (1,900 feet). An additional receptor, a residential property along East Cheyenne Avenue (5,716 feet), was identified and assessed.

The noise contributions from construction activities at the receptors during Alternative 1 is shown in Table 4-3 below.

Table 4-3. Noise Contributions from Construction Activities at Sensitive Receptors during Alternative 1

Receptor	Noise Contribution (dBA)
The Bullring at Las Vegas Motor Speedway	60.0
Residential property along East Cheyenne Avenue	50.0

Based on the relatively low noise contributions shown in Table 4-3 (which are typical of a suburban area background noise), the construction activity is not expected to result in perceptible change in existing noise. In addition, any noise level increase is temporary and expected to occur only during construction hours. Note that noise level changes up to 3 dBA represents a barely noticeable change.

Based on the assessment above, noise impacts would be minor. No significant construction impacts would occur.

Alternative 2

Construction Equipment

The methodology described above for assessing noise impacts from construction equipment was performed for Alternative 2.

For Alternative 2, the distance to the Bullring at Las Vegas Motor Speedway and the residential property along East Cheyenne Avenue was 1900 feet and 890 feet, respectively.

The noise contributions from construction activities at the receptors during Alternative 2 is shown in Table 4-4.

Table 4-4. Noise Contributions from Construction Activities at Sensitive Receptors during Alternative 2

Receptor	Noise Contribution (dBA)
The Bullring at Las Vegas Motor Speedway	60.0
Residential property along East Cheyenne Avenue	66.6

Based on the relatively low noise contributions shown in Table 4-4, the construction activity is not expected to result in a substantial change in existing noise levels. In addition, any noise level increase is temporary and expected to occur only during construction hours.

Based on the assessment above, noise impacts would be minor. No significant construction impacts would occur.

Hauling of Excavated Soil

In addition to the noise generated by the construction equipment, noise is also expected to be generated from dump trucks hauling excavated soil offsite. Assuming that the dump trucks are routed southbound along North Las Vegas Boulevard, residential properties along the street are expected to experience an increase in noise levels.

To assess the potential for noise impacts, a traffic noise screening analysis was performed using the Federal Highway Administration traffic noise model (TNM2.5).

Residential receptors along North Las Vegas Boulevard were identified as sensitive receptors. The background noise at these receptors was assumed to be the existing noise levels, conservatively estimated to be 70 dBA.

Based on the hauling of excavated soil from the detention basin, a traffic increase of 133 heavy duty trucks per hour on each direction along North Las Vegas Boulevard was conservatively estimated.

The receptor with the maximum noise contribution due to the traffic increase had a noise contribution of 60.5 dBA, which is within the range of typical suburban background noise levels. Therefore, a substantial increase in noise at sensitive receptors from temporary daytime haul truck activity is not anticipated.

No Action Alternative

Under the No Action Alternative, no new structures would be built. Therefore, the No Action Alternative would have no impacts on noise.

4.3 AIR QUALITY

The analysis of criteria pollutant emissions from construction activities are presented below were calculated using the USAF's Air Conformity Applicability Model (ACAM). The estimates below represent maximum emissions without mitigation measures. The proposed project would require construction permits from the Clark County Department of Air Quality. Under these permits, emissions would be controlled for all operations producing fugitive dust. The ACAM Record of Conformity Analysis is provided in Appendix B. For all proposed construction actions, the model found that none of the criteria pollutants emitted would exceed the applicable *de minimis*

thresholds. Clark County air quality regulations are applicable to the construction activities include obtaining a dust control permit and implementing a detailed supplemental dust mitigation plan.

Alternative 1

Under Alternative 1, construction activities would include land clearing; excavating soil and rocks (e.g. removal, hauling, crushing, and screening); initial landscaping; establishing staging, parking, and material storage areas; and developing access routes to construction sites. Equipment used for these activities would include, but would not be limited to, bulldozers, graders, loaders, compactors, scrapers, haul trucks, and watering trucks. This equipment would produce criteria air pollutants such as CO, PM₁₀, NO_x, and VOCs. Based on the design parameters of the proposed conveyance facilities and the equipment required to construct these facilities, Alternative 1 would emit less than 61.23 tons of PM₁₀ and 2.1 tons of CO. These emissions are well below the general conformity thresholds of 100 tons for PM₁₀ and 100 tons for CO (USEPA, 2018).

As noted previously, large amounts of NO_x and VOCs in the atmosphere can produce smog. Based on the design parameters of the proposed conveyance facilities and the equipment required to construct these facilities, Alternative 1 would produce approximately 0.47 ton of VOCs and 3.4 tons of NO_x. These emissions would be far below the general conformity thresholds of 50 tons for VOCs and 100 tons for NO_x. Table 4-5 presents the total emissions for construction activities under Alternative 1.

Table 4-5. Alternative 1 – Total Emissions for Construction Activities (tons)

VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
0.47	3.4	2.1	0.01	61.23	0.14

Alternative 2

Emissions under Alternative 2 would be greater than those under Alternative 1 because Alternative 2 builds on Alternative 1. These activities also occur over a longer time frame. More than 200 tons of PM₁₀ would be generated and would require a general conformity threshold determination if this alternative is selected. . Approximately 4.84 tons of CO would be produced, which would be well below the general conformity thresholds of 100 tons for CO. Alternative 2 would produce less than 1.1 tons of VOCs and less than 8.05 tons of NO_x. Table 4-6 presents the total emissions for construction activities under Alternative 2.

Table 4-6. Alternative 2 – Total Emissions for Construction Activities (tons)

VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
1.1	8.05	4.84	0.01	217.01	0.34

No Action Alternative

The No Action Alternative would involve no change to the current drainage system, and no impacts on air quality would occur. Excess runoff would continue to overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road and inundate portions of Nellis AFB during large storms.

4.4 WATER RESOURCES

No significant impacts on water resources have been identified that would result from implementation of the proposed project; however, construction of the proposed flood control facilities would have long-term effects on flood flows. Ground-disturbing activities, such as excavation, grubbing, or vegetation removal that may increase soil erosion or produce fill material

that requires deposition, may lead to filling of potentially jurisdictional ephemeral streams or washes. Increased susceptibility to erosion may lead to some long-term and/or recurring impacts on surface waters that receive increased sedimentation during rain or high wind events that occur.

There would be no impacts on wetlands because no wetlands occur within or in the vicinity of the proposed project. Concurrence from the U.S. Army Corps of Engineers on June 12, 2017, confirmed that water flows into a dry playa and has no connection to traditionally navigable waters (Appendix A).

4.4.1 Alternative 1

Groundwater

Impacts on groundwater would be negligible. Shallow groundwater occurs at depths of a few hundred feet at Nellis AFB, and production wells are monitored for contaminants on a monthly basis. It is unlikely that construction activities would introduce new sources of groundwater contamination. Monitoring for leaks and spills, secondary containment, and other best management practices (BMPs) would be implemented to prevent or reduce any contamination of groundwater during construction activities.

No long-term use of groundwater would occur during construction of the flood control facilities; therefore, no long-term impact on groundwater quality or supply is expected. Water would be used during construction activities for dust suppression and soil compaction; water for these purposes would be drawn from municipal water supplies and would not affect groundwater.

Surface Water

Alternative 1 would have minimal impacts on surface water quality. Construction activities could disturb soils, which in turn, could increase the probability of erosion. Temporary water quality impairments may occur if a major rain event occurs while surfaces are exposed during the placement of additional fill or grading of soils before landscaping and asphalt are installed. Alternative 1 would be required to obtain coverage under the Nevada Construction Stormwater General Permit NV100000 by submitting a Notice of Intent to the Bureau of Water Pollution Control with the Nevada Division of Environmental Protection prior to construction. In addition, the contractor would need to develop a Stormwater Pollution Prevention Plan (SWPPP). SWPPP requirements include an outline of the stormwater drainage system for each discharge point, actual and potential pollutant contact, and surface water locations. The SWPPP would also incorporate stormwater BMPs, such as silt fencing and other stormwater controls. Compliance with the SWPPP would minimize potential impacts on surface water quality. The project may be subject to other Bureau of Water Pollution Control permitting (Nevada Administrative Code 445A.228).

Floodplains

The construction activity areas do not lie within a major floodplain. Minor to negligible impacts on small, localized floodplains and alluvial fans created by networks of ephemeral streams and washes may occur under the Proposed Action. Diverting flood flows through the proposed flood control facilities would have a long-term impacts. Flood flows would terminate in a playa.

4.4.2 Alternative 2

The impacts on groundwater, surface water, and floodplains under Alternative 2 would be similar to those described for Alternative 1.

Groundwater

Water would be used during construction activities for dust suppression and soil compaction; water for these purposes would be drawn from municipal water supplies and would not affect groundwater.

Surface Water

Activities under Alternative 2 would follow provisions in the SWPPP and Spill Prevention, Control, and Countermeasures Plan to control and reduce impacts on surface water.

To limit the potential for debris and pollution of surface water via storm event runoff, all solid waste would be gathered and disposed of at approved sites.

Floodplains

Flood flows would be diverted through permanent proposed flood control facilities with a terminus in a playa.

4.4.3 No Action Alternative

Under the No Action Alternative, there would be no impacts on surface waters, floodplains, wetlands, or groundwater because no flood control improvements would occur at Nellis AFB.

Groundwater

Under the No Action Alternative, flood control facilities would not be installed; therefore, no impacts on groundwater would occur.

Surface Water

Under the No Action Alternative, flood control facilities would not be installed; therefore, flood flows would remain the same with no impacts on surface water.

Floodplains

Under the No Action Alternative, flood control facilities would not be installed; therefore, flood flows would continue to overtop Nellis AFB, causing continued erosion and property destruction.

4.5 EARTH RESOURCES/GEOLOGY AND SOILS

BMPs for construction site soil erosion, as specified in the SWPPP, would be implemented to prevent the migration of soils, oil and grease, and construction debris into the local stream networks. Erosion from construction activities would be prevented through BMPs used for stormwater and sediment control. Fugitive dust would be mitigated through application of water when necessary. No significant impacts on surface water are expected during construction.

4.5.1 Alternative 1

There are no farmlands or soils considered prime farmland in the study area.

No significant impacts on soils or other earth resources have been identified that would result from the implementation of Alternative 1. Site preparation and construction activities would disturb approximately 47 acres. Any soil disturbance that would expose the soils to wind, rain, and stormwater runoff would be stabilized during construction activities. Nellis AFB would be required to obtain inclusion in the Nevada Department of Environmental Protection's Stormwater

construction permit and would maintain a SWPPP. The SWPPP would detail erosion prevention and control measures during construction activities until permanent stabilization.

4.5.2 Alternative 2

Impacts on earth resources, geology, and soils would be similar to those described for Alternative 1. Site preparation and construction activities would disturb approximately 100 acres.

4.5.3 No Action Alternative

Under the No Action Alternative, flood control facilities would not be installed; therefore, flood flows would continue to erode the natural ephemeral washes during storm events.

4.6 SAFETY AND OCCUPATIONAL HEALTH

The safety and occupational health analysis addresses issues related to the health and well-being of construction workers, military personnel, and civilians working or living in the study area.

4.6.1 Alternative 1

No significant impacts on safety and occupational health have been identified that would result from implementation of the proposed project. During construction, all actions would be performed in accordance with Air Force Office of Safety and Health directives and Occupational Safety and Health Administration regulations. No specific aspects of construction would create any unique or extraordinary safety issues. The handling, processing, storage, and disposal of hazardous by-products from these activities would be accomplished in accordance with all federal, state, and local requirements, as well as applicable Nellis AFB plans. All current day-to-day operations have established safety guidelines and procedures that would continue to be observed. No adverse impact on safety would be anticipated under the proposed project.

Construction activities related to Alternative 1 would comply with the applicable regulations and guidance, including 29 CFR § 1926, Safety and Health Regulations for Construction, and applicable subparts of 29 CFR § 1910, Occupational Safety and Health Standards, and would ensure the safety and health of workers during construction. To minimize potential safety hazards to construction workers and the public, Nellis AFB would implement a health and safety program that ensures that construction workers are aware of the hazards associated with the proposed construction activities and the safety measures that must be taken to prevent injury and hazardous conditions within and outside the working environment. The program would identify and address safety issues such as site access, construction hazards, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, unknown hazards, and fire control. It also would identify requirements for temporary fencing around staging areas, storage yards, and excavation areas during construction, as well as measures to be taken during operation of the project to limit public access to potential hazards (e.g., permanent fencing, locked access).

Nellis AFB would also be required to generate an occupational health and safety plan that addresses identification, evaluation, and assessment of all physical, chemical, biological, radiation, or nuclear hazards in all tasks or processes for the project per compliance with Occupational Safety and Health Administration standards and protection of their employees equivalent to AFI 48-145, *Occupational and Environmental Health Program*. The plan would address personal protective equipment usage and risk management that deals with the stated hazards.

To prevent unauthorized members of the public from entering the proposed roadway during construction, construction workers would be clearly identifiable so as to prevent unauthorized persons from entering the site during construction.

4.6.2 Alternative 2

The construction activities related to Alternative 2 would comply with the applicable regulations and guidance described under Alternative 1. Similar to Alternative 1, an occupational health and safety plan would be prepared and submitted.

4.6.3 No Action Alternative

Under the No Action Alternative, no flood control facilities would be constructed and there would be no effect on health and safety.

4.7 HAZARDOUS MATERIALS/WASTE

No significant impacts relative to hazardous materials/waste have been identified that would result from implementation of the proposed project. The extent of the plume provided in the Five-Year Review is in proximity to, but does not reach, the proposed project area. Based on these plume limits, the depth to groundwater (80 to 120 feet below grade), and nature of the proposed project at this time, it does not appear that Environmental Restoration Program Site SS0046 would adversely affect the construction of new facilities as part of the proposed project and would not affect any existing or former Environmental Restoration Program sites.

During construction and remodeling activities, the use of hazardous materials and petroleum products would be required. Impacts from the accidental release of hazardous materials or petroleum products (fuel and lubricants) would be minimized by following BMPs such as storing fuel tanks within bermed containment to prevent the accidental release of spilled fuel. Management of other hazardous materials in compliance with Hazardous Material Pharmacy requirements and disposal of hazardous wastes as directed by the Hazardous Waste Management Plan would minimize impacts from handling and disposal of hazardous substances. By following the procedures identified, impacts from hazardous and toxic substances related to the Proposed Action would be minor.

4.7.1 Alternative 1

Alternative 1 would limit potential impacts on the proposed roadway from hazardous substances (i.e., anti-freeze, fuels, oils, lubricants) used during construction. Although catch pans would be used when refueling, accidental spills could occur as a result of maintenance procedures for construction equipment. A spill could result in adverse impacts on on-site soils and waters. However, the amount of fuel, lubricants, and oil would be limited, and equipment necessary to quickly contain any spills would be present when refueling. A Spill Prevention, Control, and Countermeasures Plan would be in place prior to the start of construction, and all personnel would be briefed on the implementation and responsibilities of this plan.

Other solid wastes associated with construction would include human waste and trash. Portable, self-contained toilets at worksites would be used for human waste disposal. Toilets would be pumped, and the contents hauled away for disposal at an approved sewage disposal facility on a timely basis. All garbage and non-flammable waste material would be disposed of at an approved, off-site facility.

Because the study area has been assessed for the presence of hazardous materials/waste and found to contain none, Alternative 1 would not disturb hazardous materials.

During construction, temporary secondary containment equipment would be used where practicable to ensure accidental releases of hazardous material are prevented or limited in scope. Portable catch basins, containment berms, and other similar equipment would be used for refueling equipment where feasible. Spill kits would be kept on-site to provide easily accessible cleanup materials should a spill occur. No hazardous materials/waste would be used or generated during operation of the new flood control facilities.

4.7.2 Alternative 2

Impacts would be the similar to those described for Alternative 1.

4.7.3 No Action Alternative

Under the No Action Alternative, there would be no construction of flood control facilities, therefore no impacts related to hazardous materials/waste would occur.

4.8 BIOLOGICAL RESOURCES

The portion of Area II under consideration, consists of mostly disturbed or previously altered native landscape. No rare or unique habitat is noted in this portion of Nellis AFB, and human disturbance (through typical base activities) would return to current levels following project completion. For areas along the proposed flood control facilities with minimal to no obvious human disturbance, the habitat is representative of typical desert scrub plant communities that are abundant in lands adjacent to Nellis AFB and throughout the lower Mojave Desert valley.

4.8.1 Alternative 1

Construction of Alternative 1 would result in the temporary disturbance of 100 acres of mostly previously disturbed habitat. Reclamation of the areas outside any permanent structures would consist of grading, contouring, and permanently stabilizing the soil to minimize impacts from invasive/noxious weed establishment. Overall, some existing vegetation would be destroyed during project construction; however, in context of the current condition, disturbance to the existing habitat overall would be negligible.

Preconstruction surveys for nesting birds would be completed prior to project mobilization during breeding/nesting months (typically between March 1 and August 31). If any actively nesting birds are located in the study area, suitable buffer zones would be employed to prevent disturbance until a trained biologist determines that the nest is no longer active. While some potential nesting habitat would be removed, the amount would be minor in comparison to the available resources located in the surrounding area. Therefore, no adverse impacts on birds species covered under the Migratory Bird Treaty Act are expected under this alternative.

Areas of marginally suitable desert tortoise are present within or immediately adjacent to the proposed project. However, because habitat suitability (and therefore tortoise density) tends to increase with distance from disturbed/developed lands, this habitat is considered poor or of low value habitat. While no tortoises or tortoise signs were documented directly during site visits, conditions of the Programmatic Biological Opinion (USFWS, 2007) state that clearance surveys for desert tortoise would be conducted in Area II prior to any surface disturbance. Specific implementation of any additional mitigation besides clearance surveys would be per the direction of Nellis AFB Resource Personnel in consultation with USFWS. Clearance surveys coupled with the use of biological monitor during construction would effectively mitigate any potential adverse impacts on desert tortoise that may move into the area following clearance activities.

Per the direction of the USFWS consultation, construction activities will make every effort to avoid or minimize potential impacts on wildlife during construction, and facility design features will preclude the possibility of protected wildlife from becoming entrapped post-construction (Appendix A). Nevada Department of Wildlife reporting protocols will be followed if Mojave desert tortoises or Gila monsters are observed.

4.8.2 Alternative 2

Impacts on biological resources under Alternative 2 would be the same as those described for Alternative 1.

4.8.3 No Action Alternative

Under the No Action Alternative, the proposed project would not be constructed; therefore biological resources would not be affected.

4.9 CULTURAL RESOURCES

All of Nellis AFB, including Area I, has been previously surveyed for archaeological resources and architectural resources. In 2001, in consultation with Nevada SHPO, 1 quarry site (26CK4825) was determined to be eligible for National Register listing and the remaining 84 archaeological sites were considered to be not eligible due to the limited information potential of the site data and/or the lack of integrity of the cultural deposit (Nellis AFB, 2012). The quarry site is not located in the study area for the Proposed Action.

On October 2, 2017, the City of North Las Vegas, acting on behalf of Nellis AFB, invited federally recognized tribes that are affiliated historically with the Nellis AFB geographic region to consult on the Proposed Action. Follow-up government-to-government consultation was conducted during Nellis AFB's meetings with the tribes and at the semi-annual Nellis AFB – Consolidated Group of Tribes and Organizations symposium on April 6, 2018, where a presentation on the Proposed Action was presented. None of the consulted tribes expressed any concerns. The Yomba Shoshone Tribe Chairman requested notification of any cultural artifacts that might be discovered during construction activities. CRIT suggested monitors on-site during ground disturbing activities. On April 14, 2017, consultation was initiated with the Nevada SHPO for the Proposed Action, and the Nevada SHPO requested additional information on May 18 and November 30, 2017. The City of North Las Vegas provided this information on September 28, 2017, and February 7, 2018. On March 14, 2018, the Nevada SHPO concurred with the City's finding of No Adverse Effect to Historic Properties (Appendix A).

No impacts on cultural resources are expected because no eligible cultural resources are present within the study area. Other than temporary indirect effects from noise and vibration, the proposed project has little potential to have audible or atmospheric indirect effects on historic resources. No changes to lighting or elevation would occur as a result of the project. The new structures would be flush with the ground surface and would not significantly change the landscape.

If construction activities uncover what may be human remains, funerary objects, or items of cultural patrimony, construction would cease within 50 feet of the discovery, and all appropriate personnel, including the tribal contacts would be notified. Any discovered Native American human remains, funerary objects, or items of cultural patrimony would be handled in accordance with the Native American Graves Protection and Repatriation Act. Construction activities would not resume until the Nellis AFB official notice to proceed has been issued.

4.9.1 Alternative 1

No National Register-eligible archaeological or architectural resources are present in the APE. Therefore, no impacts on cultural resources are expected as a result of Alternative 1. Alternative 2

4.9.2 Alternative 2

No National Register-eligible archaeological or architectural resources are present in the APE. Therefore, no impacts on cultural resources are expected as a result of Alternative 2.

4.9.3 No Action Alternative

The No Action Alternative would potentially have an impact on cultural resources because floods, which may affect the condition and integrity of cultural resources, would continue.

4.10 INFRASTRUCTURE/UTILITIES

4.10.1 Alternative 1

No significant impacts on infrastructure/utilities have been identified that would result from implementation of the Proposed Action. The construction of below-grade flood control facilities would have no impact on transportation along Ellsworth Avenue and O'Bannon Road; however, during construction, traffic would follow detours while the roads are disturbed to place the flood control facilities under them. These detours would be temporary. No long-term impacts on infrastructure are anticipated.

Construction and operation of the proposed flood control facilities would not involve the use of any utility resources that would exceed the capacity for delivery by the local authorities. No impacts would occur.

4.10.2 Alternative 2

Impacts would be the similar to those described for Alternative 1.

4.10.3 No Action Alternative

The existing infrastructure and utilities would not be affected under the No Action Alternative. Likewise, Nellis AFB would not experience any change in utility use under the No Action Alternative. The existing conditions and resources would remain the same.

4.11 SOCIOECONOMICS

Any potential adverse impacts of the Proposed Action on the surrounding community are expected to occur within an approximate 200-foot offset area from the proposed area of disturbance. The area proposed for the flood control facilities does not include any residential or commercial development. Benefits of the Proposed Action are expected to affect a larger area. The construction of the proposed facilities would support jobs for residents of Clark County. Once operational, the proposed facilities would offer flood protection to Nellis AFB and surrounding roads. The occupants of Nellis AFB and people residing and/or working in the City of North Las Vegas or Clark County would benefit from the proposed flood control facilities. Therefore, socioeconomic conditions are summarized for Nellis AFB, the City of North Las Vegas, and Clark County.

4.11.1 Alternative 1

Because the area proposed for the flood control facilities does not include any residential or commercial development, there would be no direct adverse socioeconomic impacts on the surrounding area associated with the construction or operations of the proposed facilities. The construction spending associated with Alternative 1 would generate construction jobs for Clark County residents during the construction phase. Once construction is completed, the USAF and occupants of Nellis AFB would benefit from (1) reduced potential for economic losses to Nellis AFB facilities from flooding, (2) improved safety of civilian and military personnel by controlling flooding, and (3) the option to improve the AFB land use by reducing areas that could be subject to flooding. Residents, employees, and businesses in the City of North Las Vegas and Clark County would benefit from reduced economic losses due to flooding of the roadways.

4.11.2 Alternative 2

Impacts would be the same as those described for Alternative 1.

4.11.3 No Action Alternative

Under the No Action Alternative, there would be no flood protection and the USAF, Nellis AFB occupants and residents, employees and business of the City of North Las Vegas and Clark would continue to be at risk for economic and human losses caused by flooding.

4.12 OTHER NEPA CONSIDERATIONS

4.12.1 Unavoidable Adverse Effects

Unavoidable adverse impacts are the effects on natural and human resources that would remain after mitigation measures have been applied. Unavoidable adverse effects associated with the Proposed Action are summarized below.

- Soils: The topsoil within the construction footprint that would be graded, stockpiled, and replaced would be mixed, buried, or lost due to installation activities.
- Native Vegetation/Wildlife Habitats: clearing and grading of native vegetation would result in long-term changes in habitat within the study area.

4.12.2 Relationship of Short-Term Uses and Long-Term Productivity

NEPA requires an analysis of the relationship between a project's short-term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development site reduces future flexibility in pursuing other options or that using a parcel of land or other resources often eliminates the possibility of other uses at that site.

In the short-term, effects on the human environment with implementation of the Proposed Action would primarily relate to the construction of the proposed flood control facilities. These flood control improvements would affect air quality, geological resources (i.e., soils), biological resources, hazardous materials and wastes, and infrastructure in the short term. In the long term, land use and water resources would be affected. The flood control facilities would not significantly affect the long-term natural resource productivity of the area nor would they result in any impacts that would significantly reduce environmental productivity or permanently narrow the range of beneficial uses of the environment. In addition, the flood control facilities and improvements would not pose long-term risks to the health, safety, or the general welfare of the public.

4.12.3 Irreversible and Irretrievable Commitment of Resources

Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. This includes the use of non-renewable resources such as metal and fuel and natural or cultural resources. These resources are irretrievable in that they would be used for this project when they could have been used for other purposes. Human labor is also considered an irretrievable resource. Another impact that falls under this category is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment. The loss of a cultural resource (i.e., through demolition) is also considered irretrievably committed to a project.

Implementation of the proposed flood control facilities would involve human labor, consumption of fuel during construction, the use of non-renewable construction materials, and a loss of natural resources. The Proposed Action would result in a long-term commitment of land to the proposed flood control but would not constitute an irretrievable commitment of resources for Nellis AFB. Construction and operation of these facilities would be an irretrievable commitment of various resources, including labor, capital, and land resources by Nellis AFB, the City of North Las Vegas, and its contractors.

4.12.4 Cumulative Effects

A cumulative impact is defined in 40 CFR § 1508.7 as “the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.” By memorandum dated 24 June 2005, from the Chairman of the CEQ to the Heads of Federal agencies, entitled “Guidance on the Consideration of Past Actions in Cumulative Effects Analysis,” CEQ made clear its interpretation that “generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions,” and that the “CEQ regulations do not require agencies to catalogue or exhaustively list and analyze all individual past actions.” Cumulative effects are most likely when there is a spatial or temporary relationship between the Proposed Action and other actions that overlap with or are in proximity to each other, or have schedules that coincide.

Several projects have recently been constructed on Nellis AFB. The City of North Las Vegas completed construction of a Wastewater Recycling Facility (WRF) located at the southeast corner of Area I on Nellis AFB lands. A new gym and fitness center was recently completed in Area I south of Lomie Gray Heard School. The Lomie Gray Heard School is scheduled to be demolished in the near future to free up lands in Area I for more mission-related support activities; the school will be replaced with a new school to be constructed in Area III.

A solar photovoltaic system is currently under construction at the south end of Area I. A new fire station is planned for Area III. Numerous small repair, modification, and replacement projects are scheduled for Nellis AFB Area I (Nellis AFB, 2013). All capital improvement projects on Nellis AFB comply with NEPA requirements to minimize impacts on human and natural resources.

In 2011, Air Combat Command issued a Final EIS for the implementation of a Force Development Evaluation Program and a Weapons School at Nellis AFB. This action is ongoing at Nellis AFB and, by 2020, would base 36 F-35s at Nellis. The F-35s would include an increase of 17,280 annual airfield operations at Nellis AFB. The infrastructure constructed to accommodate the new action would affect approximately 26 acres, some of which would be adjacent to the MILCON projects proposed for the Beddown of Tactical Air Support Squadron (TASS).

The City of North Las Vegas is continually repairing and improving roads in the city, including some roads in the vicinity of Nellis AFB. The city is also planning to construct a pipeline in the Sloan Channel to convey treated water from the new WRF on Nellis AFB to the Las Vegas Wash (Clark County School District, 2014).

Past and present operations at Nellis AFB are responsible for generation of hazardous waste and, ultimately, the contamination of AFB soil and groundwater. However, it is important to note that the study area itself is currently and has historically been undeveloped, desert land. Furthermore, groundwater in the vicinity of the study area is anticipated to be encountered at an approximate depth of 50 to 120 feet below grade, while proposed excavation activities in the study area would reach a maximum depth of 14 feet.

4.12.5 Past Actions

Nellis AFB recently constructed a solar photovoltaic system and WRF adjacent to the proposed roadway.

Nellis Solar Photovoltaic System

The solar photovoltaic system is intended to increase the use of renewable energy at Nellis AFB in compliance with the USAF Energy Strategic Plan. The USAF provided a renewable outgrant to NV Energy for approximately 160 acres of USAF property for the solar field. An underground electric feeder line was constructed along the western perimeter of Nellis AFB to transfer energy generated at the solar photovoltaic system to the Nellis Northgate Substation. Solar panels were constructed north of Range Wash to generate 10 to 15 megawatts of alternating current. If deemed economically feasible, the outgrant would be renewed; however, if decommissioning occurs, all solar panels would be removed.

North Las Vegas Wastewater Reclamation Facility

The North Las Vegas WRF was constructed to serve the increasing population of the City of North Las Vegas, surrounding areas, and Nellis AFB. The USAF initiated a long-term enhanced use lease with the City of North Las Vegas for approximately 40 acres of Nellis AFB property. The initial WRF processed 20 million gallons per day with the ability to expand to 50 million gallons per day of wastewater. Most of the WRF process structures were constructed belowground, extending no more than 6 to 10 feet above ground level. The processing facilities use membrane technology, ultraviolet disinfection, filtered air emissions for odor control, and solids reduction technology. All processing and holding basins are completely covered. Gated security walls and fencing surround the WRF. The WRF includes administration, maintenance, and process buildings, which were constructed of concrete block and painted to blend with the surrounding landscape. Reclaimed water is discharged through the Range Wash to Sloan Channel, located approximately 2,500 feet east of the property; some reclaimed water returns to Nellis AFB as non-potable for water conservation uses.

4.12.6 Present Actions

Recently approved projects also being constructed on Nellis AFB include the Beddown of TASS and the wastewater treatment facility underground pipeline installation for reclaimed wastewater to the golf course.

Beddown of Tactical Air Support Squadron

The Beddown of TASS is proposed to use up to 16 F-16s to beddown and activate the TASS to enhance the Close Air Support (CAS) training and support. The F-16s are excess aircraft from

Hill AFB that are being replaced with F-35s that were analyzed under a separate NEPA action. Additionally, a new organizational structure will be developed to provide supervision for the desired level of CAS training. The TASS would be organizationally integrated to an existing Operations Group and would reflect USAF emphasis on CAS and the USAF commitment to enhance and preserve the joint CAS culture to 2025 and beyond. The TASS would jointly train with existing Combat Training Squadrons (CTSs) at Nellis AFB (6 CTS and 549 CTS) and Fort Irwin (12 CTS) to fulfill this mission. The new TASS would be an integral element of the CAS Integration Group 1, which is envisioned to be a joint participative (joint billeted) activity that would work to advance the CAS mission set through academics, practical instruction in the air and on the ground, and development and review of CAS doctrine.

Wastewater Pipeline

The City of North Las Vegas is proposing to install a reclaimed water line within an existing utility corridor between the Nellis AFB golf course, known as Sunrise Vista Golf Course, and the City of North Las Vegas WRF. The primary purpose of the reclaimed water line would be to reduce the use of potable water for irrigation purposes on the golf course. Reducing the withdrawals from aquifers in the Las Vegas Valley would be in accordance with the USAF goal to conserve environmental resources where possible. The project would provide reclaimed water for the existing irrigation system at the golf course. Currently Sunrise Vista Golf Course relies on potable water pumped from three wells for its irrigation needs. The demand for potable water in the Las Vegas Valley is growing as the population of the area is steadily increasing, while the replenishment of present water supplies is limited by recent periods of drought in the region.

Hollywood Gravel Pit

Boulder Sand and Gravel, Inc. operates an ongoing gravel pit mining operation at the Hollywood Pit, located near the corner of North Hollywood Avenue and Alto Avenue. Mined gravel is transported throughout the valley from the mine site using arterial and collector streets. The Hollywood Pit has a portable minor source air operating permit for emissions from mining and hauling activities. Nellis AFB operates under a Title V Part 70 operating permit for base-wide fueling operations and combustion equipment.

4.12.7 Air Installation Compatible Use Zone/Land Use/Noise

All noise generated by the construction activities would be temporary, limited to the duration of construction. The addition of the flood control facilities would result in imperceptible increases in the noise level surrounding Nellis AFB. Land use would not be changed above ground level. Therefore, there would be no permanent change to the noise environment or land use on Nellis AFB and no cumulative impacts.

4.12.8 Air Quality

The construction associated with the proposed flood control facilities could create temporary, but cumulative effects on air quality. However, emissions caused by the proposed construction projects would be below any NAAQS thresholds; therefore, the addition of emissions from other construction projects would likely result in minimal cumulative effects. Mitigation of air quality impacts through BMPs for the proposed project would minimize any cumulative air quality impacts on Nellis AFB and the Clark County area.

4.12.9 Water Resources

The proposed construction projects would add to the impermeable surfaces at Nellis AFB. Engineering designs of stormwater controls such as retention basins would consider the additional impermeable areas so that no additional cumulative effects on natural drainages would occur. No impacts on subsurface water resources would result from the proposed project, and surface water impacts would be mitigated through appropriate Nevada Division of Environmental Protection permits. Incorporation of post-construction stormwater controls, including revegetation, would minimize long-term impacts on surface water associated with excess stormwater runoff during rain events, so only minimal cumulative impacts on water resources would result from of the proposed flood control facilities.

4.12.10 Safety and Occupational Health

Cumulative public health and safety impacts from past, present, and future actions in the study area would be less than significant because contractors would implement a health and safety program for the proposed projects and minimize potential significant safety hazards to construction workers and the public. Therefore the proposed project combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts on public health and safety in the study area.

Cumulative public health and safety impacts that would occur with implementation of the proposed project would include impacts from construction-related activities, including construction-related traffic, if construction schedules overlap.

4.12.11 Hazardous Materials/Waste

No impacts on hazardous materials/waste would result from the Proposed Action, so there would be no cumulative impacts.

4.12.12 Biological Resources

The construction activities for the proposed project would comply with the requirements to minimize impacts on native biological resources, including sensitive species. Therefore, the impacts from the proposed project would not contribute to cumulative impacts on biological resources.

4.12.13 Cultural Resources

Impacts on cultural resources from construction and operation of the proposed flood control facilities are not expected because no cultural resources are present within the study area. Therefore, the impacts from the proposed project would not contribute to cumulative impacts on cultural resources.

4.12.14 Infrastructure/Utilities

There would be negligible impacts on utilities and infrastructure with implementation of the proposed project; therefore, there would be no cumulative impacts.

4.12.15 Socioeconomics

There would be no adverse impacts on socioeconomic resources from the construction and operations of the proposed project because there is no residential and commercial development in the project area. Therefore, the proposed project would not contribute to cumulative impacts on socioeconomic resources. The proposed project would benefit socioeconomic resources in the

area surrounding the project area by providing flood protection and would disproportionately high and adverse positively contribute to other actions including road improvements near Nellis AFB.

5.0 LIST OF PREPARERS

The following individual were primarily responsible for preparing this EA.

USAF

Name	Discipline/Expertise	Role/Resource Area	Years of Experience
Tod Oppenborn	Physical Scientist	Nellis AFB Environmental Impact Analysis Process Program Manager	25

City of North Las Vegas

Name	Discipline/Expertise	Role/Resource Area	Years of Experience
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Louis Berger

Name	Discipline/Expertise	Role/Resource Area	Years of Experience
Virginie Amerlynck	Economics	Socioeconomics, Environmental Justice	17
Camilla Deiber	Historic Preservation	Heritage Resource Management, Architectural Historian	18
Syndi Dudley, PhD, PE	Water Resources Engineer	Project Engineer	25
Frisco Elangiyil	CADD Technician	GIS/Drafting	11
Takeshi Hasegawa	Technical Analyst	Noise	5
Sarah Hoffman, CEM	Environmental Geology	Project Manager	13
Deborah Mandell	Editorial	Technical Editing	25
Amanda Neiswenter	Biologist/Environmental Compliance	Biological and Water Resources	15
Derrick W. Rosenbach	Terrestrial Ecology, Environmental Policy and Planning	Air Quality, Greenhouse Gases, and Climate Change	8

6.0 PERSONS AND AGENCIES/TRIBES CONSULTED/COORDINATED

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Chairman
500 South Grand Central Parkway, First
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Planning Manager
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Coalition
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7.0 REFERENCES

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APPENDIX A: AGENCY CONSULTATION

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



OCT 19 2017

99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Nicolee Gaddis, Planning & Environmental Coordinator
Bureau of Land Management
4701 Torrey Pines Drive
Las Vegas, Nevada 89130

Dear Ms. Gaddis,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

The EA will evaluate the Proposed Action (constructing flood control facilities) and the No Action alternatives. The EA will assess the potential impacts associated with the Proposed Action options, including water resources, air quality, natural resources, and socioeconomic impacts. The EA will also examine the cumulative effects when combined with past, present, and any foreseeable future proposals.

Please reach out to my point of contact, provided below on any issues or concerns for the Bureau of Land Management in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Rowland Jr.', with a stylized, flowing script.

CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

1. Site Location Map
2. Study Area Map



**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



OCT 19 2017

99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Commissioner Steve Sisolak, Chairman
Clark County
500 South Grand Central Parkway, First Floor
Las Vegas, Nevada 89155

Dear Mr. Sisolak,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the Clark County in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

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99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



OCT 19 2017

99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Mike Sword, Planning Manager
Clark County Department of Air Quality
4701 West Russell Road, Suite 200
Las Vegas, Nevada 89118

Dear Mr. Sword,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the Clark County Department of Air Quality in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

OCT 19 2017

Mario Bermudez, Planning Manager
Clark County Department of Comprehensive Planning
500 South Grand Central Parkway, First Floor
Las Vegas, Nevada 89155

Dear Mr. Bermudez,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the Clark County Department of Comprehensive Planning in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

Sincerely,

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

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2. Study Area Map



**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



OCT 19 2017

99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Carolyn Edwards, District F Trustee
Clark County School District
5100 West Sahara Avenue
Las Vegas, Nevada 89146

Dear Ms. Edwards,

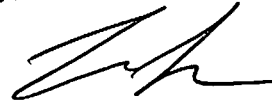
The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the Clark County School District in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Rowland Jr.', with a stylized, cursive script.

CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

1. Site Location Map
2. Study Area Map



**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

OCT 19 2017

Mr. Skip Canfield
Nevada State Clearinghouse
Department of Administration
Division of Budget and Planning
209 East Muster Street, Room 200
Carson City, NV 89701

Subject: Introduction of the Environmental Assessment for Range Wash from Las Vegas Boulevard to Confluence Detention Basin, at Nellis Air Force Base, Nevada

Mr. Canfield,

The purpose of this letter is twofold: to give you an opportunity to review the proposed action in which the Nevada State Clearinghouse may have an interest; and for your organization to provide comments and any potential concerns to Nellis Air Force Base (AFB).

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with the flood control facilities for Range Wash from Las Vegas Boulevard to Confluence Detention Basin on Nellis AFB. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

The EA will evaluate the Proposed Action (constructing flood control facilities) and the No Action alternatives. The EA will assess the potential impacts associated with the Proposed Action options, including water resources, air quality, natural resources, and socioeconomic impacts. The EA will also examine the cumulative effects when combined with past, present, and any foreseeable future proposals.

Please reach out to my point of contact, provided below on any issues or concerns for the Nevada State Clearinghouse in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

Sincerely,

A handwritten signature in black ink, appearing to be 'CWR', written over a horizontal line.

CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

1. Figures
2. Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

OCT 19 2017

Marc Jordan, Acting Director
City of North Las Vegas, Planning & Zoning
2250 Las Vegas Boulevard North, Suite 114
North Las Vegas, Nevada 89030

Dear Mr. Jordan,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

The EA will evaluate the Proposed Action (constructing flood control facilities) and the No Action alternatives. The EA will assess the potential impacts associated with the Proposed Action options, including water resources, air quality, natural resources, and socioeconomic impacts. The EA will also examine the cumulative effects when combined with past, present, and any foreseeable future proposals.

Please reach out to my point of contact, provided below on any issues or concerns for the City of North Las Vegas in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

Sincerely,

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

1. Site Location Map
2. Study Area Map



**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

OCT 19 2017

Cayenne Engel, Resource Management Officer
Nevada Division of Forestry – Las Vegas Office
4747 Vegas Drive
Las Vegas, Nevada 89108

Dear Mr. Engel,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the Nevada Division of Forestry – Las Vegas Office in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



OCT 19 2017

99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Lisa Ortega, Urban & Comm. Forestry
Nevada Division of Forestry – Las Vegas Office
4747 Vegas Drive
Las Vegas, Nevada 89108

Dear Ms. Ortega,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

OCT 19 2017

Tony Wasley, Director
Nevada Department of Wildlife - Headquarters
6980 Sierra Center Parkway, #120
Reno, Nevada 89511

Dear Mr. Wasley,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the Nevada Department of Wildlife - Headquarters in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



OCT 19 2017

99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

D. Bradford Hardenbrook, Supervisory Habitat Biologist
Nevada Department of Wildlife – Southern Region
4747 Vegas Drive
Las Vegas, Nevada 89108

Dear Mr. Hardenbrook,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the Nevada Department of Wildlife – Southern Region in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

OCT 19 2017

Melissa Spears, Office Manager
Nevada Natural Heritage Program
901 South Stewart Street, Suite 5002
Carson City, Nevada 89701

Dear Ms. Spears,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the Nevada Natural Heritage Program in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



OCT 19 2017

99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Tina Quigley, General Manager
Regional Transportation Commission of Southern Nevada
600 South Grand Central Parkway, Suite 350
Las Vegas, Nevada 89106

Dear Ms. Quigley,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the Regional Transportation Commission of Southern Nevada in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

Sincerely,

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

1. Site Location Map
2. Study Area Map



**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



OCT 19 2017

99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Raymond Hess, Director of Planning Services
Regional Transportation Commission of Southern Nevada
600 South Grand Central Parkway, Suite 350
Las Vegas, Nevada 89106

Dear Mr. Hess,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

1. Site Location Map
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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

OCT 19 2017

Commissioner Chris Giunchigliani
Southern Nevada Regional Planning Coalition
500 South Grand Central Parkway, First Floor
Las Vegas, Nevada 89155

Dear Commissioner Giunchigliani,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

OCT 19 2017

US Army Corps of Engineers
Arizona-Nevada Area Office
3636 North Central Avenue, Suite 900
Phoenix, Arizona 85012

Dear Sir/Madame,


The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the US Army Corps of Engineers in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

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CHARLES W. ROWLAND JR.
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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

OCT 19 2017

Teri Knight, District Conservationist
USDA Natural Resources Conservation Service
7080 La Cienega Street, Suite 110
Las Vegas, Nevada 89119

Dear Ms. Knight,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the U.S. Department of Agriculture, Natural Resources Conservation Service in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

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Chief, Portfolio Optimization

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Dan Balduini
U.S. Fish and Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, Nevada 89502

Dear Mr. Balduini,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

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Please reach out to my point of contact, provided below on any issues or concerns for the U.S. Fish and Wildlife Office in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



OCT 19 2017

99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

USGS Henderson Field Office
160 North Stephanie Street
Henderson, Nevada 89074

Dear Sir/Madame,

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with providing flood control facilities to collect, convey and detain runoff on Nellis Air Force Base (AFB) property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

The EA will evaluate the Proposed Action (constructing flood control facilities) and the No Action alternatives. The EA will assess the potential impacts associated with the Proposed Action options, including water resources, air quality, natural resources, and socioeconomic impacts. The EA will also examine the cumulative effects when combined with past, present, and any foreseeable future proposals.

Please reach out to my point of contact, provided below on any issues or concerns for the U. S. Geological Survey, Henderson Field Office in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

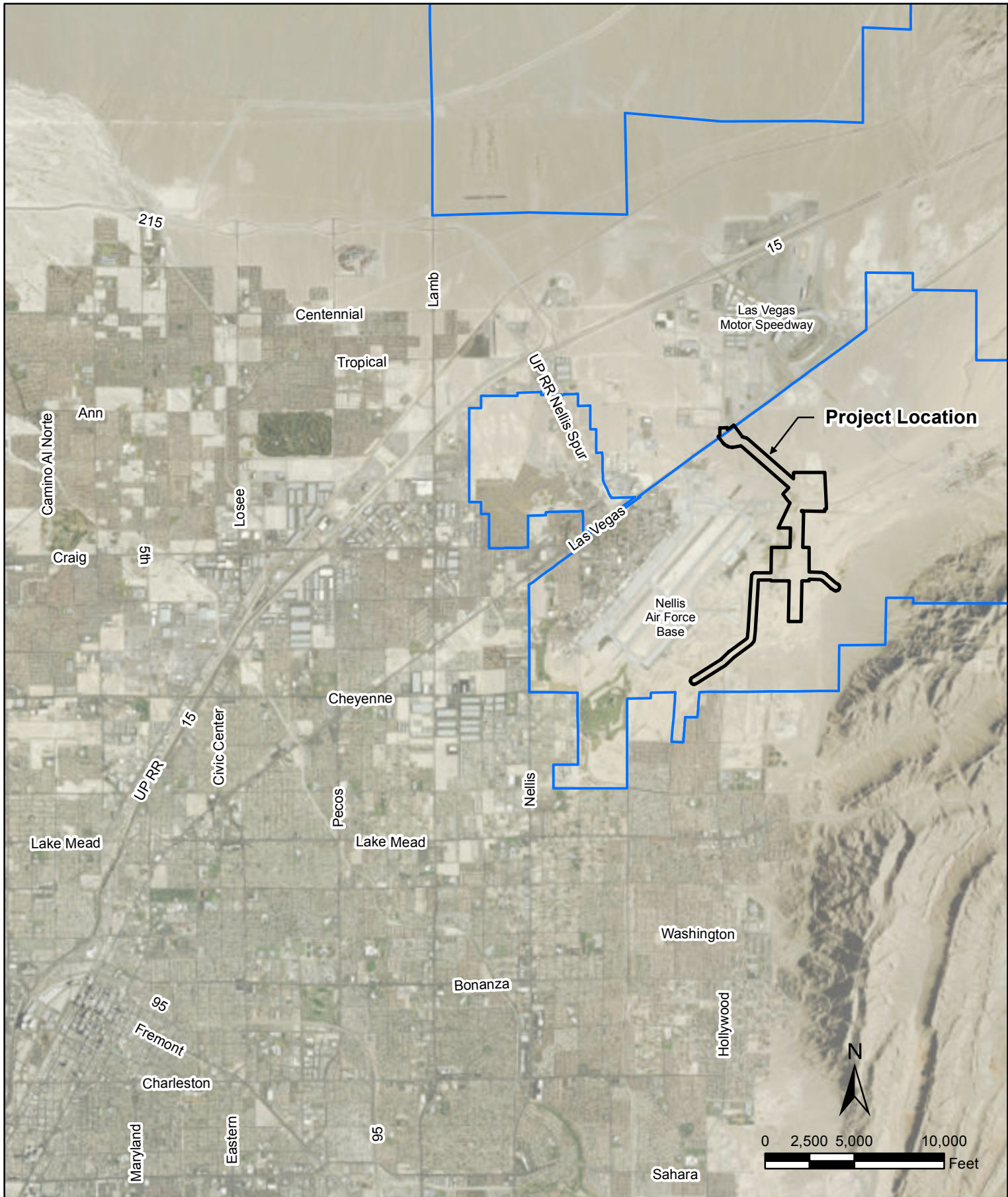
The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191-6520, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

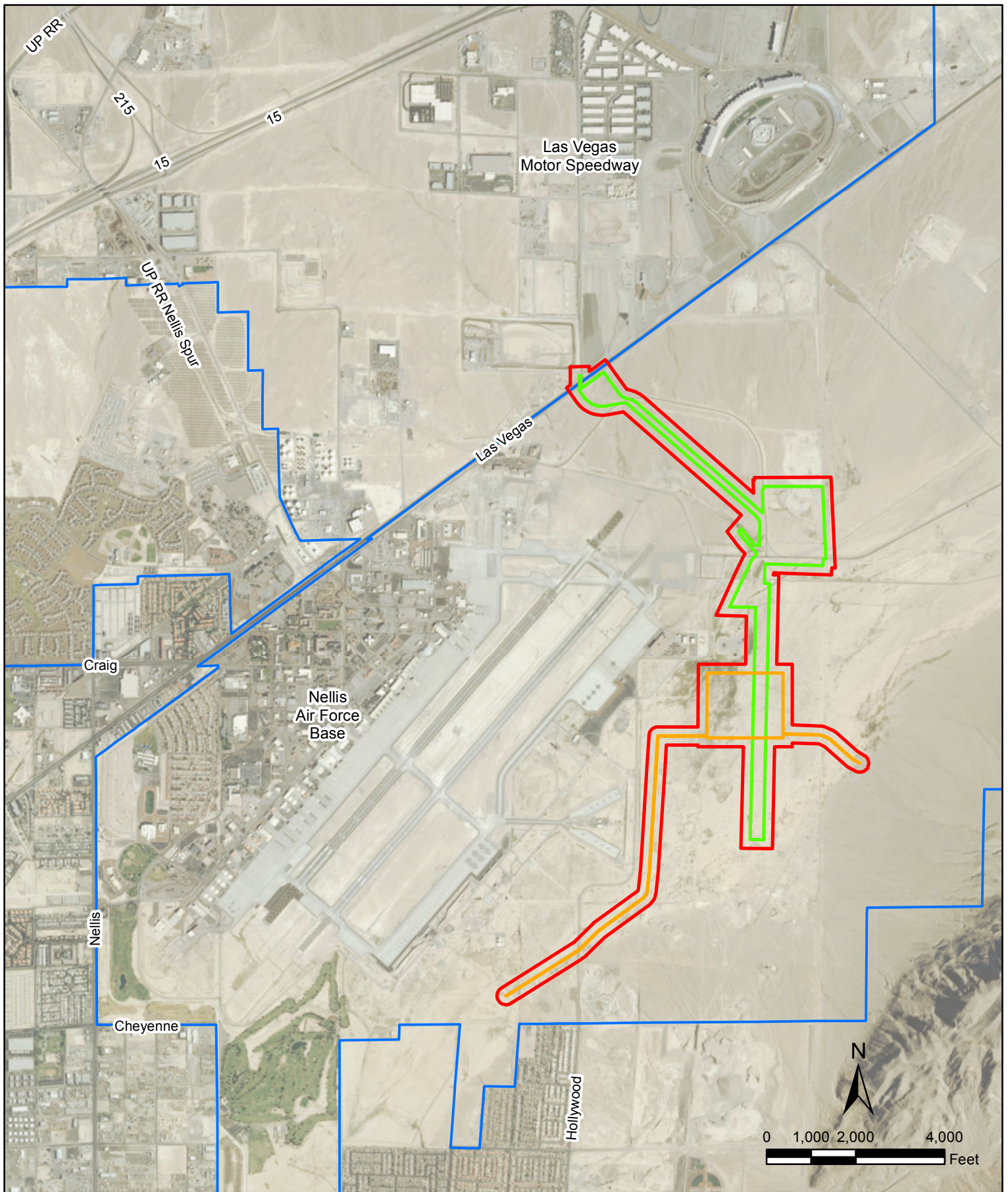
Sincerely,

CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

1. Site Location Map
2. Study Area Map





Study Area

Legend

- Alternative 1
- Alternative 2
- Study Area
- NellisAFB Boundary





**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**



99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Mr. Skip Canfield
Nevada State Clearinghouse
Department of Administration
Division of Budget and Planning
209 East Muster Street, Room 200
Carson City, NV 89701

Subject: Introduction of the Environmental Assessment for Range Wash from Las Vega Boulevard to Confluence Detention Basin, at Nellis Air Force Base, Nevada

Mr. Canfield,

The purpose of this letter is twofold: to give you an opportunity to review the proposed action in which the Nevada State Clearinghouse may have an interest; and for your organization to provide comments and any potential concerns to Nellis Air Force Base (AFB).

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with the flood control facilities for Range Wash from Las Vegas Boulevard to Confluence Detention Basin on Nellis AFB. The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities. The USAF, in conjunction with the City of North Las Vegas, selected two alternatives for consideration to meet the purpose of this project.

The EA will evaluate the Proposed Action (constructing flood control facilities) and the No Action alternatives. The EA will assess the potential impacts associated with the Proposed Action options, including water resources, air quality, natural resources, and socioeconomic impacts. The EA will also examine the cumulative effects when combined with past, present, and any foreseeable future proposals.

Please reach out to my point of contact, provided below on any issues or concerns for the Nevada State Clearinghouse in the development of this EA. We ask for your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal.

The USAF point of contact for Environmental Planning is Mr. Tod Oppenborn. Please send him your comments and concerns at 6020 Beale Ave, Nellis AFB, NV, 89191, or by e-mail or phone at tod.oppenborn@us.af.mil or (702) 652-9366. I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

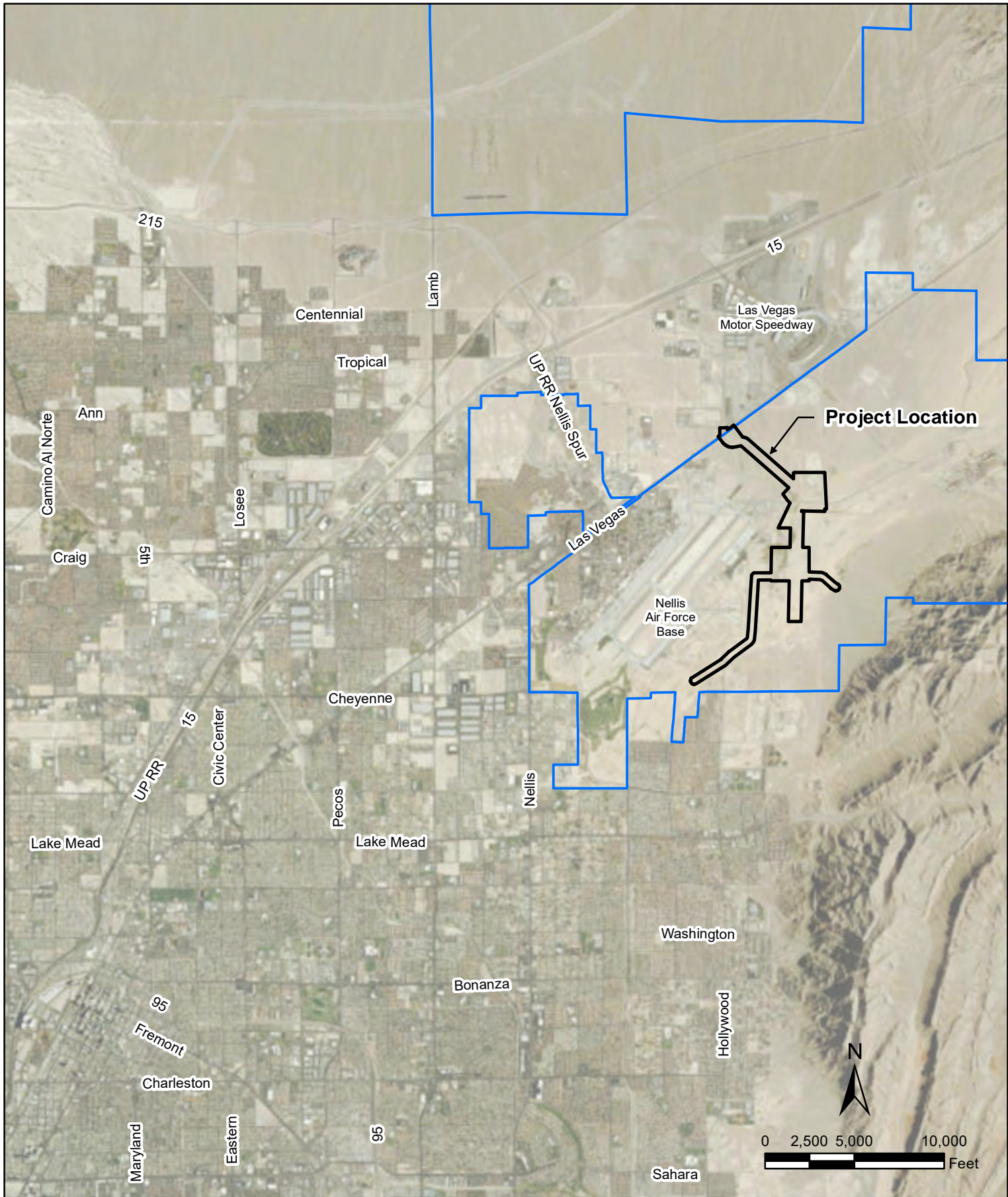
Sincerely,

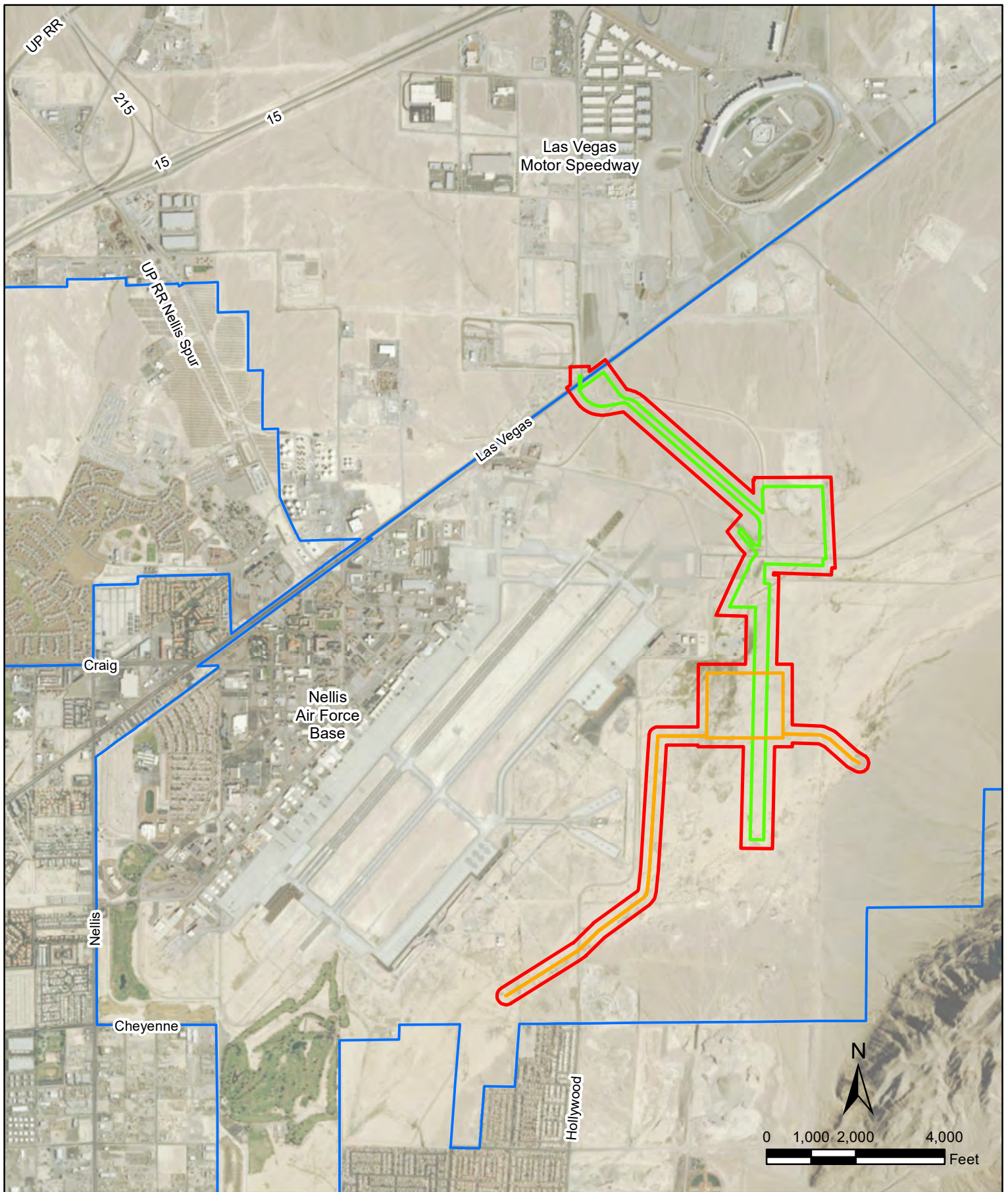
CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachments:

1. Figures
2. Description of the Proposed Action and Alternatives

Attachment 1: Figures





Study Area

Legend

- Alternative 1
- Alternative 2
- Study Area
- NellisAFB Boundary



Attachment 2: Description of the Proposed Action and Alternatives

**DRAFT DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES
ENVIRONMENTAL ASSESSMENT FOR RANGE WASH FROM LAS VEGAS
BOULEVARD TO CONFLUENCE DETENTION BASIN, AT NELLIS AIR FORCE BASE,
NEVADA**

**Prepared for:
Department of the Air Force**

May 1, 2017

1.0 PURPOSE AND NEED FOR ACTION

This Description of Proposed Action and Alternatives (DOPAA) was prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [U.S.C.] 4321 et seq.), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), as well as 32 CFR Part 989, Environmental Impact Analysis Process (EIAP) for the USAF, and other pertinent environmental statutes, regulations, and compliance requirements. The authorities described will be addressed in various sections throughout this DOPAA when relevant to particular environmental resources and conditions.

1.1 INTRODUCTION

This DOPAA addresses the potential effects from all reasonable alternatives, beneficial and adverse, resulting from the construction, operation, and maintenance of flood control facilities proposed to be constructed for the Range Wash – Hollywood Branch and East Tributary (herein referred to as the Range Wash) within Nellis Air Force Base (AFB) by the City of North Las Vegas. The proposed action would allow the City of North Las Vegas Department of Public Works to construct a permanent conveyance channel and a detention basin on Air Force property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Chapter 2 discusses in greater detail the proposed action as well as the reasonable alternatives identified for consideration and the No Action Alternative.

1.2 BACKGROUND

Range Wash watershed includes lands within the jurisdictions of the City of North Las Vegas, unincorporated Clark County, and the Bureau of Land Management. Two main branches of the Range Wash, Hollywood Branch and East Tributary, enter Nellis AFB and flow from north to south through the Base, east of the runways, and ultimately discharge into Confluence Detention Basin (see Figure 1). Flows in the Range Wash are ephemeral, occurring only during rainfall events. Flood flows are generally unconfined and widespread following the natural terrain through the Nellis AFB toward the Confluence Detention Basin.

The information presented in this DOPAA will serve as the basis for deciding whether the proposed action would result in a significant impact to the human environment, thus requiring the preparation of an Environmental Impact Statement (EIS), or whether no significant impacts would occur, in which case a

finding of no significant impact (FONSI) would be appropriate. It is recommended that the proposed action proceed forward and be granted a Categorical Exclusion (CATEX) under 32 CFR Part 989 EIAP A2.3.11 condition “Actions similar to other actions which have been determined to have an insignificant impact in a similar setting as established in an EIS or an EA resulting in a FONSI”. The MPU flood control facilities, including the Range Wash, were addressed in the Final Programmatic Supplemental Environmental Impact Statement, Flood Control Master Plan, Clark County Regional Flood Control District, prepared for the US Department of the Interior Bureau of Land Management, in cooperation with the US Army Corps of Engineers. The proposed action is not anticipated to involve construction in a wetland as defined in Executive Order (EO) 11990, Protection of Wetlands, or “action” in a floodplain as defined under EO 11988, Floodplain Management (amended by EO 13690).

1.3 PURPOSE OF THE ACTION

The purpose of the proposed action is to confine and control flood flows. The proposed action will reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road to reduce flooding on Nellis AFB by directing flood flows through established flood control facilities.

1.4 NEED FOR THE ACTION

Currently, flood flows from the Range Wash - Hollywood Branch overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road. The Hollywood Branch combines with the East Tributary forming a wide natural wash that crosses the Base south of Munitions Road (see Figure 1). Range Wash drains an area of 59 square miles which converges from the north, east, and south at Nellis AFB (see Figure 1). The Clark County Regional Flood Control District’s (CCRFCDD) 2013 Las Vegas Valley Flood Control Master Plan Update (MPU) identifies facilities that may be constructed to collect, convey and detain flood flows for Range Wash and its tributaries (see Figures 2 and 3). In accordance with the MPU, the proposed action intends to construct CCRFCDD MPU facilities identified as Range Wash – Hollywood Branch (green on Figure 2), RWHW 0000 that RWHW 0136, and Range Wash – East Tributary (red on Figures 2 and 3), RWEA 000 through RWEA 0192. These facilities would intercept and convey flood flows safely through Nellis AFB from Las Vegas Boulevard to the existing Confluence Detention Basin (blue on Figure 2). The Dunes South Detention Basin, RWEA 0165, would attenuate flood flows so that downstream flood control facilities may be reduced in size and cost. These facilities would be constructed as an extension of the City of North Las Vegas’ proposed Range Wash - Hollywood Branch storm drain facilities in Hollywood Boulevard north of Las Vegas Boulevard (RWHW 0174, see Figure 2).

The City of North Las Vegas is planning to construct a storm drain under Hollywood Boulevard north of Las Vegas Boulevard, Range Wash – Hollywood Branch (RWHW 0174, see Figure 2). In conjunction with the storm drain project, the City has evaluated options to mitigate flooding downstream of Las Vegas Boulevard on Nellis AFB property. The proposed action would construct Range Wash flood control facilities on the Nellis AFB from Las Vegas Boulevard to the existing Confluence Detention Basin in accordance with the CCRFCDD 2013 MPU (Range Wash – Hollywood Branch, RWHW 0000 that RWHW 0136, and Range Wash – East Tributary, RWEA 0000 through RWEA 0192). The facilities will convey flood flows in a controlled manner through Nellis AFB providing safe passage for vehicles to cross the Hollywood Branch at Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road, and flood security for the Base occupants, runways, and associated infrastructure.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The proposed action will provide flood control facilities to collect, convey and detain runoff on Nellis AFB property for the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin.

2.2 SELECTION STANDARDS

The selection standards used to screen the alternatives evaluates the alternative's estimated cost, project footprint, MPU conformity, maintenance requirements, and ability to satisfy the proposed action's purpose and need. The City of North Las Vegas developed and identified the alternatives for the flood flows from the Hollywood Branch watershed, and are discussed below.

2.3 ALTERNATIVES

Two alternatives were selected for consideration and analyzed as part of this USAF Form 813. These alternatives are noted below and compared in Table 1 for flood flow control for the Range Wash through Nellis AFB:

Alternative 1 Range Wash – Hollywood Branch Only. Construct the Range Wash - Hollywood Branch (RWHW 0000 that RWHW 0136) from Las Vegas Boulevard to Munitions Road, a lateral reinforced concrete box (RCB) storm drain between Las Vegas Boulevard and Ellsworth Avenue, and an earthen or rock-lined channel/berm that extends south of Munitions Road to discharge 100-year runoff into the broad natural wash of the East Tributary. Excavated soil will be used to fill an existing gravel pit located at the north east corner of Ellsworth Avenue and O'Bannon Road (black on Figure 2). This area is also proposed as a temporary construction staging area.

Alternative 2 Range Wash – Hollywood Branch and East Tributary. Construct the Range Wash – Hollywood Branch (RWHW 0000 that RWHW 0136) and Range Wash – East Tributary (RWEA 0000 through RWEA 0192). This option would convey 100-year flows from Las Vegas Boulevard to the Confluence Detention Basin without discharging any flows onto open land and would retain peak flows to reduce the size of downstream facilities.

This Alternative would construct a channel and a detention basin on Nellis AFB property to convey 100-year storm flows from the 59-square-mile Range Wash watershed. However, the full capacity of the facilities will not be utilized until the upstream watershed is fully developed and all Master Planned flood control facilities in Range Wash watershed are constructed. The Hollywood Branch (RWHW) channel facilities will be located at least 3,000 feet north of the Nellis AFB runways to be outside of the runway clear zone (see Figure 2).

No Action Alternative. This alternative would involve no change to the current drainage system. Excess runoff would continue to overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road, and inundate portions of Nellis AFB during large storm events.

**TABLE 1
SCREENING OF THE ALTERNATIVES**

	Meets Purpose and Need	Estimated Cost	Project Footprint	Provides Permanent Facilities	Conforms to Flood Control District Master Plan	Eliminates Flooding on Air Force Property	Level of Maintenance
No Action Alternative	No	\$0M	0 acres	No	No	No	High
Alternative 1 Range Wash – Hollywood Branch only	Yes	\$12.80M	47 acres*	Partially	Partially	Partially	High
Alternative 2 Range Wash – Hollywood Branch and East Tributary	Yes	\$22.98M	100 acres	Yes	Yes	Yes	Low

*excluding soil disposal area and temporary construction staging area

Alternative 2, the preferred alternative, is the most expensive, but it is the only proposed action that provides permanent flood control facilities to eliminate flooding from the East Tributary east of the runways. Alternative 2 includes all of the facilities proposed under Alternative 1 in addition to the East Tributary improvements. If Alternative 2 is constructed, the City of North Las Vegas proposes to construct the Hollywood Branch (RWHW) first followed by the East Tributary (RWEA) when funding becomes available.

2.4 DETAILED DESCRIPTION OF THE ALTERNATIVES

The NEPA and EIAP processes are intended to support flexible, informed decision-making; the analysis provided by this DOPAA and feedback from the public and other agencies will inform decisions made about whether, when and how to execute the proposed action. Among the alternatives evaluated is a No-Action Alternative. The No-Action Alternative will substantively analyze the consequences of not undertaking the proposed action, not simply conclude no impact, and will serve to establish a comparative baseline for analysis.

2.4.2 Alternative 1 – Range Wash – Hollywood Branch Only

This alternative will provide facilities to collect, confine, and convey flood flows from the Range Wash – Hollywood Branch on Nellis AFB property from Las Vegas Boulevard to the East Tributary. Alternative 1 would construct a concrete-lined channel on Nellis AFB from Las Vegas Boulevard to Munitions Road, a concrete channel or RCB storm drain lateral between Las Vegas Boulevard and Ellsworth Avenue, and an earthen or rock-lined channel/berm to the East Tributary. Excess dirt from the channel construction will be used to fill an existing gravel pit on Nellis AFB property. Gravel maintenance roads are on each side of the concrete channels. RCB culverts will be constructed where the channel crosses Ellsworth Avenue, O'Bannon Road, and Munitions Road.

The facilities would be designed to convey the 100-year storm flow in the Hollywood Branch of the Range Wash (see Table 2); however, the entire capacity of the channel will not be fully utilized until all of the MPU facilities in the Hollywood Branch watershed are constructed. The proposed channel will be located at least 3,000 feet north of the Nellis AFB runways to be outside the runway clearance zone. Table 2 provides a summary of the design parameters of the proposed conveyance facilities.

The flood control facilities proposed in Alternative 1 will confine storm runoff in a narrow channel from Las Vegas Boulevard to Munitions Road and protect the area north of the runways from flooding during a 100-year storm event. The channel will discharge runoff to the existing natural wash of the East Tributary southeast of the runways. Jurisdictional wetlands or endangered species are not anticipated to be present in the pathway of the proposed channel, and the property on which the facility will be constructed is not anticipated to have historic significance. Construction best management practices will limit any impact on the environment during construction and will improve conditions during flood events. The proposed system would not individually or cumulatively have a significant effect on the human environment.

There will be temporary impacts to Nellis AFB during channel construction and subsequent periodic maintenance and inspection. However, Alternative 1 does not address the uncontrolled East Tributary, which will continue to inundate the area east of the runways. Although not a part of this analysis, the combined runoff reaching the existing Confluence Detention Basin may exceed basin capacity, potentially flooding areas in the vicinity of the basin on Air Force and Clark County properties.

TABLE 2
SUMMARY OF Alternative 1 PROPOSED FACILITIES

Section Number		Facility Type	100-year Flow (cfs)
RWHW	0000	Earthen channel/berm	3,564/3,000
RWHW	0038	concrete channel	3,003
RWHW	0080	concrete channel	3,003
RWHW	0136	concrete channel	1,965
Lateral		concrete channel or storm drain	

2.4.3 Alternative 2 Range Wash – Hollywood Branch and East Tributary

This alternative will provide facilities to collect, convey, and detain flood runoff on Nellis AFB property for the Range Wash - Hollywood Branch and East Tributary watersheds. Alternative 2 would construct all of Alternative 1 Hollywood Branch (RWHW) facilities in addition to the East Tributary facilities. East Tributary (RWEA) facilities include a concrete channel between Munitions Road and the Dunes South Detention Basin, Dunes South Detention Basin, a berm across the natural wash of the East Tributary directing flow into the Dunes South Detention Basin, and a concrete-lined outfall channel connecting the Dunes South Detention Basin to the Confluence Detention Basin in accordance with the MPU. The location, size and type of East Tributary facilities are tentative and subject to future Master Plan Updates, with Nellis AFB's input, as well as the actual future facility design.

Alternative 2 is proposed to be constructed in two phases. The first phase would consist of the Alternative 1 Range Wash - Hollywood Branch facilities. Phase 2 would remove the earthen channel/berm and construct the East Tributary facilities.

Excess dirt from the channel and detention basin excavation may be stockpiled on the Nellis AFB property or hauled offsite. The Hollywood Branch channel will be located outside the runway clearance zone. Gravel maintenance roads are proposed on each side of the concrete channels and RCB culverts will be constructed where the channel crosses Ellsworth Avenue, O'Bannon Road, and Munitions Road. The Dunes South Detention Basin will provide flood protection for the southeast area of the Base, intercept the widespread flow from the East Tributary natural wash, and reduce the size of downstream facilities.

Table 3 provides a summary of the design parameters of the proposed conveyance and detention facilities. The facilities would be designed to convey the 100-year storm flow in the Hollywood Branch and East Tributary of the Range Wash; however, the entire capacity of Alternative 2 facilities will not be fully utilized until the all of the MPU facilities in the Hollywood Branch and East Tributary watersheds are constructed.

TABLE 3
SUMMARY OF Alternative 2 PROPOSED FACILITIES
CONVEYANCE FACILITIES

Section Number	Facility Type	Flow (cfs)
RWHW 0000	concrete channel	3,564
RWHW 0038	concrete channel	3,003
RWHW 0080	concrete channel	3,003
RWHW 0136	concrete channel	1,965
RWEA 0000	concrete channel	4,033
RWEA 0043	RCB	4,033
RWEA 0044	concrete channel	3,230
RWEA 0070	concrete channel	2,473
RWEA 0144	RCB	732
RWEA 0164	RCB outlet	732
RWEA 0166	soil cement berm	3,323
RWEA 0192	concrete channel	4,784

DETENTION FACILITY

Section Number	Number	Facility Type	Flow (cfs)
RWEA	0163	PMF spillway	58,670
RWEA	0165	detention basin	5,867

Constructing engineered flood control facilities to confine storm runoff in a narrow channel from Las Vegas Boulevard to Munitions Road will protect the area north of the runways from flooding during a 100-year storm event. The channel and East Tributary berm will direct runoff to the Dunes South Detention Basin providing protection for the southeast portion of Nellis AFB. An outfall channel will safely convey the attenuated flow from the new basin to the existing Confluence Detention Basin. There will be temporary impacts to Nellis AFB during project construction and subsequent periodic maintenance and inspection.

Jurisdictional wetlands, endangered species, and historic property are not anticipated to be present in the footprint of the proposed flood control system. Construction best management practices will limit any impact on the environment during construction and will improve conditions during flood events. The proposed system would not individually or cumulatively have a significant effect on the human environment.

Alternative 2 will alleviate current issues associated with flooding resulting in a net positive effect on the environment and produce positive socio-economic effects. Socio-economic benefits of the project include:

1. Reduce the potential of economic losses to existing businesses in Clark County due to flooding.
2. Reduce the potential for economic losses to existing Base facilities due to flooding.

3. Improve the safety of civilian and military personnel by controlling flood flows and reducing areas that are subject to flooding.
4. Allow for the development of industrially zoned lands in Clark County by reducing areas that are subject to flooding.
5. Allow for improved use of lands by the Air Force by reducing areas within the Base that are subject to flooding.
6. Reduce civilian and Air Force maintenance costs by avoiding clean-up following flood events.

2.4.1 No-Action Alternative

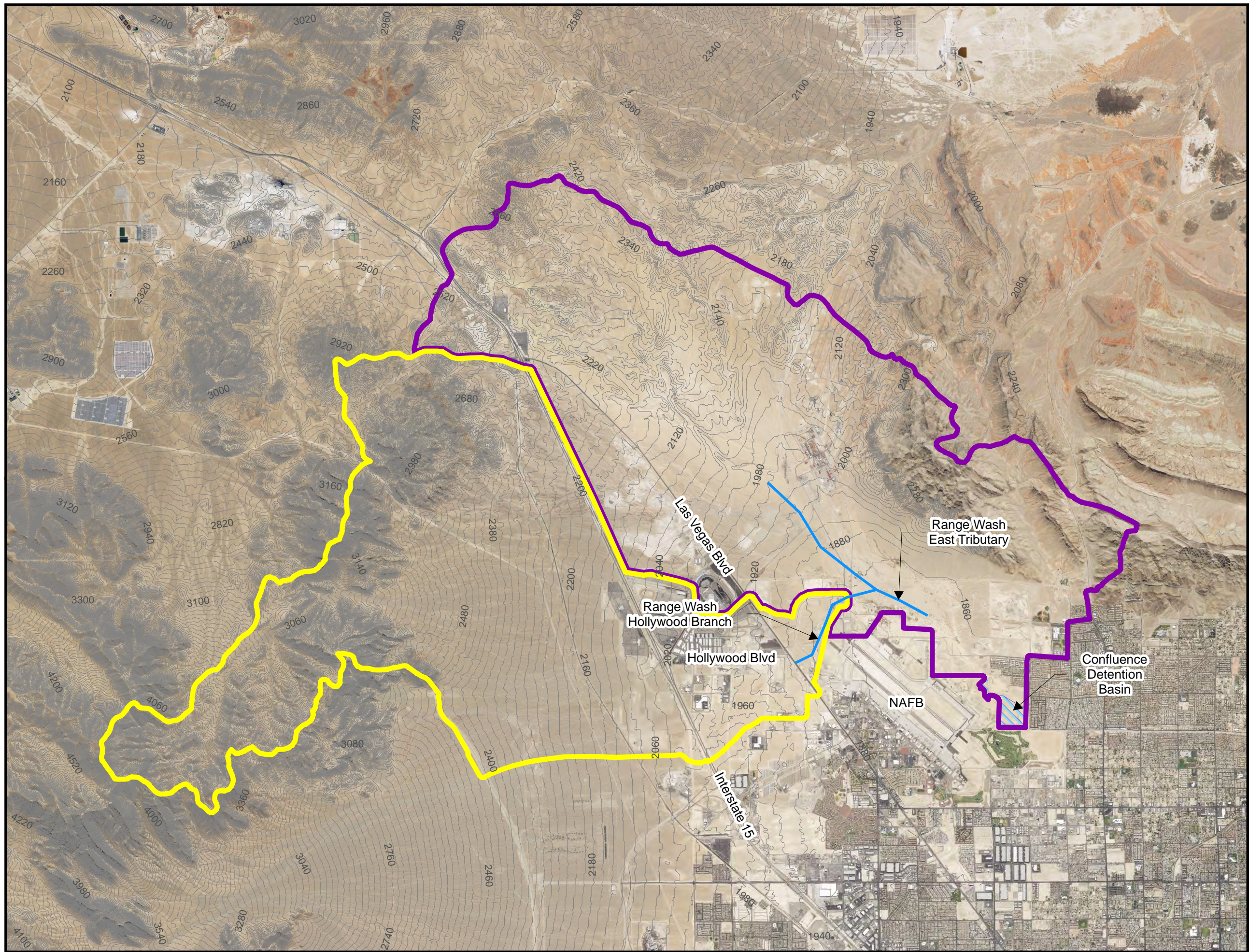
Under the No-Action Alternative, storm drainage facilities will not be constructed for the Range Wash on Nellis AFB property. Excess runoff will continue to overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road and contribute to flooding on Air Force property. Under the No Action Alternative, areas immediately southeast of the Nellis AFB runways will continue to be impacted by unconfined flows conveyed within the East Tributary.

3. CONCLUSION

This DOPAA addresses the potential effects from all reasonable alternatives, beneficial and adverse, resulting from the construction, operation, and maintenance of flood control facilities proposed to be constructed for the Range Wash within Nellis AFB. The preferred alternative (Alternative 2) will allow the City of North Las Vegas Department of Public Works to construct permanent conveyance facilities on Air Force property to confine and control flood flows.



Jurisdictional wetlands, endangered species, and historic property are not anticipated to be present in the footprint of the proposed flood control system. Construction best management practices will limit any impact on the environment during construction and will improve conditions during flood events. The proposed project would not individually or cumulatively have a significant effect on the human environment. The Proposed Action will alleviate current issues associated with flooding resulting in a net positive effect on the environment and produce positive socioeconomic effects.

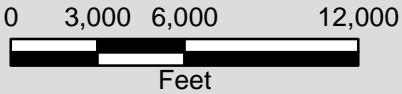
Constructing engineered flood control facilities to confine storm runoff in a narrow channel from Las Vegas Boulevard to Munitions Road will protect the area north of the runways from flooding during a 100-year storm event. The channel and East Tributary berm will direct runoff to the Dunes South Detention Basin providing protection for the southeast portion of Nellis AFB. An outfall channel will safely convey the attenuated flow from the new basin to the existing Confluence Detention Basin. The proposed facilities will convey flood flows in a controlled manner through Nellis AFB providing safe passage for vehicles to cross the Hollywood Branch at Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road, and flood security for the Base occupants, runways, and associated infrastructure.



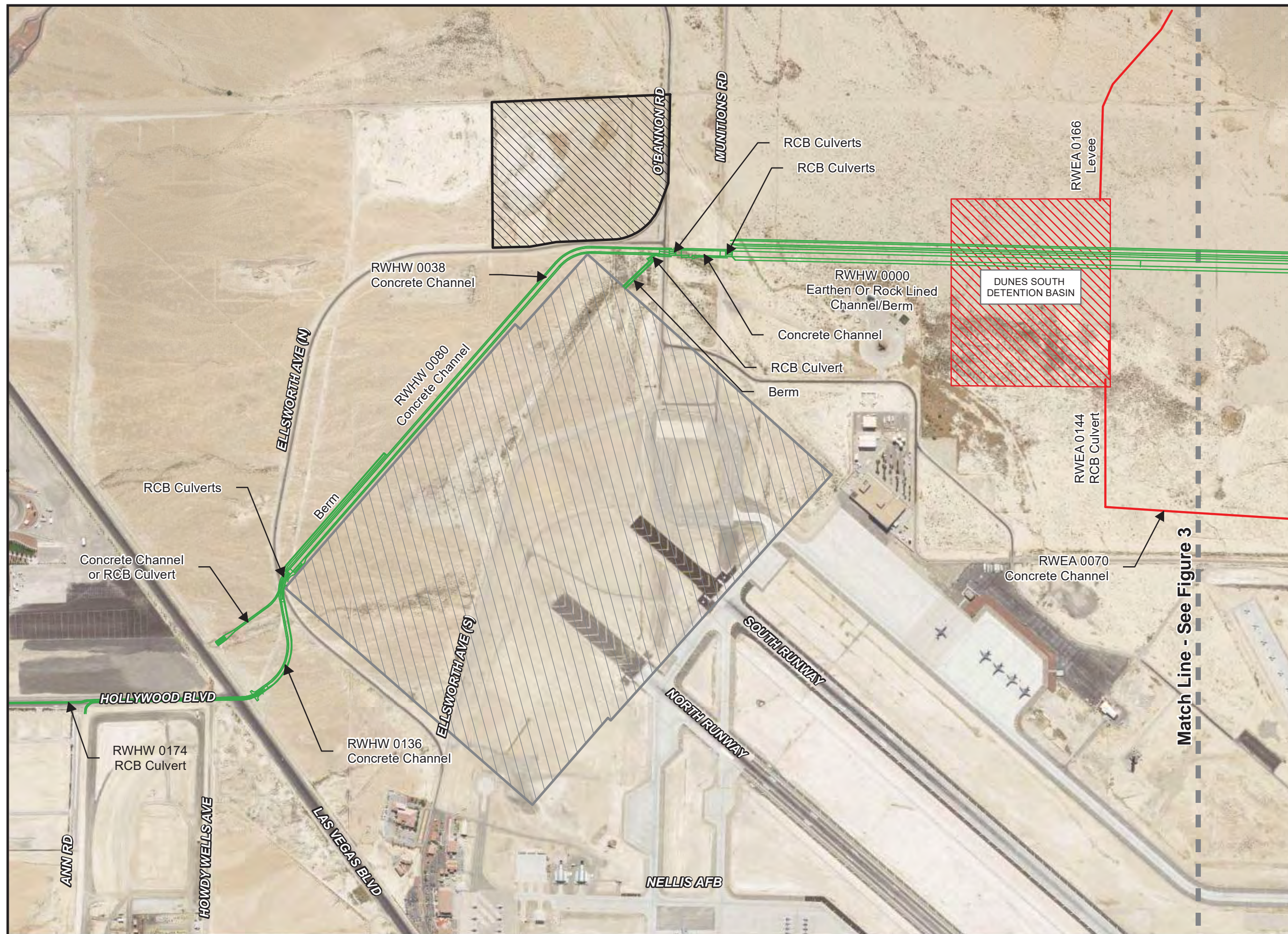
Range Wash

Legend

-  East Tributary Watershed (33.4 sq mi)
-  Hollywood Branch Watershed (25.7 sq mi)



**Figure 1
Watershed Map**



Range Wash

Legend

- Clear_Zone
- Soil Disposal Area/
Construction
Staging Area
- Range Wash
- Hollywood
Branch (RWHW)
- Range Wash
- East Tributary
(RWEA)

- Option 2 - Construct RWHW
- Option 3 - Construct RWHW
and RWEA

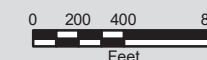


Figure 2
Proposed Flood
Control Facilities



Range Wash

Legend

- Range Wash
- East Tributary (RWEA)
- Existing Detention Basin
- Option 2 - Construct RWHW
- Option 3 - Construct RWHW and RWEA



0 200 400 800
Feet



Figure 3
Proposed Flood
Control Facilities



BRIAN SANDOVAL
Governor

STATE OF NEVADA
DEPARTMENT OF WILDLIFE

1100 Valley Road
Reno, Nevada 89512
(775) 688-1500 • Fax (775) 688-1595

TONY WASLEY
Director

LIZ O'BRIEN
Deputy Director

JACK ROBB
Deputy Director

November 28, 2017

NDOW-SR#: 18-040

Tod Oppenborn
Environmental Planning
99CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-6520

Re: Nellis Air Force Base Range Wash Flood Control Project, Las Vegas Boulevard to
Confluence Detention Basin

Dear Mr. Oppenborn:

The Nevada Department of Wildlife (NDOW) is in receipt of the letter from Charles W. Rowland, Jr., dated October 19, 2017, noticing intent of the United States Air Force (USAF) to prepare an environmental assessment (EA) concerning Nellis Air Force Base (AFB) property. The EA is to fulfill NEPA requirements regarding the proposed flood control project for confining and controlling flood flows overtop AFB property in the Range Wash watershed from Las Vegas Boulevard to the Confluence Detention Basin. In the absence of additional information, preliminary considerations of interest to NDOW include USAF actions taken to avoid or minimize potential impacts to wildlife during construction, and facility design features precluding the possibility of protected wildlife becoming entrapped post-construction.

The Mojave desert tortoise (*Gopherus agassizii*) and Gila monster (*Heloderma suspectum*) are State of Nevada protected reptiles (NAC 503.080). Both species have a history of occurring in vicinity of the project area and should construction be performed during these species' active periods there is potential for either to wander into the project area. It is anticipated that pre-construction surveys for these species regardless of season would be performed.

- Relative to the desert tortoise, should the U.S. Fish and Wildlife Service's biological opinion allow for removal of tortoises out of harm's way, authorization must also be obtained from the NDOW (NAC 503.093, NAC 503.0935).
- Regarding the Gila monster, observance of NDOW's Gila monster reporting protocols is requested (http://www.ndow.org/Nevada_Wildlife/Conservation/).
- A Special Purpose Permit for removing Gila monsters out of harm's way can be applied for concurrently with application for desert tortoise authorization. NDOW Biologist Jason L. Jones can be contacted for additional assistance at 702-486-5127 x3718, or by e-mail at jljones@ndow.org. Application information can be found online at: http://www.ndow.org/Forms_and_Resources/Special_Permits/.

Birds protected under the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act are also State of Nevada protected wildlife (Nevada Administrative Code 503.050). Mindful of project site location, the bird nesting generally occurs from mid-February through August. Avoidance of construction during the nesting season if practicable is recommended. An impact minimization measure in lieu of avoiding construction activities during the nesting season is performance of a pre-construction survey by a qualified biologist for determining the presence of active nests (containing eggs or young), especially those of cryptic and difficult to detect ground-nesting species like the lesser nighthawk. In the event an active nest is discovered or frequently attended by adult birds, a buffer area around the nest appropriate for the species involved would be identified and avoided until young birds have fledged. This measure would be consistent with preventive actions advocated by the U.S. Fish & Wildlife Service concerning MBTA-protected birds.

Without additional information, the need for facility design features of the flood control facilities allowing escape by wildlife would be speculative. To that end, the NDOW looks forward to reviewing the draft EA when it becomes available.

Should there be any other questions or concerns regarding this correspondence, please contact me.

Sincerely,



D. Bradford Hardenbrook
Supervisory Habitat Biologist
Nevada Department of Wildlife, Southern Region
4747 Vegas Drive, Las Vegas, Nevada 89108
702.486.5127 x3600; 702.486.5133 FAX
bhrdnbrk@ndow.org

cc: NDOW, Files



CLARK COUNTY • DEPARTMENT OF AIR QUALITY
4701 W. Russell Road Suite 200 • Las Vegas, NV 89118-2231
(702) 455-5942 • Fax (702) 383-9994
Marci Henson Director

November 2, 2017

Mr. Tod Oppenborn
Nellis Air Force Base
6020 Beale Avenue
Nellis AFB, NV 89191-6520

E-mail: tod.oppenborn@us.af.mil

Re: Providing Flood Control Facilities to Collect, Convey, and Detain Runoff on NAFB Property for the Range Wash Watershed from LV Blvd. to the Confluence Detention Basin, Proposed Environmental Assessment

Dear Mr. Tod Oppenborn:

Thank you for the opportunity to review and comment on the Environmental Assessment (EA) letter for the proposed flood control facilities to confine and control flood waters. The Department of Air Quality has reviewed the proposed EA letter and provides the following comments for your consideration.

Since the proposed construction project is located within the Las Vegas Valley—which is currently a maintenance area for the carbon monoxide, ozone, and PM₁₀ pollutants—there are several Clark County Air Quality Regulations (AQRs) that may be applicable. In particular, the following regulatory requirements may apply depending upon the type of activities taking place at the construction site.

Section 94 of the AQRs requires that a dust control permit be obtained prior to soil disturbance or construction activities that impact 0.25 acres or more of land. A dust control permit is also required if there is 100 feet or more of mechanized trenching or mechanical demolition of any structure occupying at least 1,000 square feet. Construction activities include, but are not limited to the following practices: land clearing; soil and rock excavation, removal, hauling, crushing or screening; initial landscaping; or establishing and/or using staging, parking, material storage areas, or access routes to and/or from a construction site.

http://www.clarkcountynv.gov/Depts/AirQuality/Documents/DustControl/DustForms/DUST_CONTROL_HANDBOOK.pdf

In addition, a detailed supplemental to a Dust Mitigation Plan (DMP) is required if there is a construction project of ten (10) acres or more, trenching activities of one mile or more, or structure demolition using implosive or explosive blasting techniques. If applicable, the supplement must be in the form of a written report and must, at a minimum, detail the project description, the area and schedule of the phases of land disturbance, the control measures and the contingency measures to be used for all construction activities.

BOARD OF COUNTY COMMISSIONERS

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YOLANDA T. KING, County Manager



CLARK COUNTY • DEPARTMENT OF AIR QUALITY
4701 W. Russell Road Suite 200 • Las Vegas, NV 89118-2231
(702) 455-5942 • Fax (702) 383-9994
Marci Henson Director

The supplemental will become part of the dust control permit as an enforceable permit condition.

If you have any further questions, please contact Brenda Whitfield, Air Quality Specialist, at (702) 455-1665. Thank you.

Sincerely,

Brenda Whitfield
Department of Air Quality
Planning Division
4701 W. Russell Road, Suite 200
Las Vegas, NV 89118
702-455-1665

BOARD OF COUNTY COMMISSIONERS

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YOLANDA T. KING, County Manager

DATE: 10/24/2017

TO: Nevada State Clearinghouse, DCNR

FROM: Nevada Division of Environmental Protection, Bureau of Water Pollution Control

SUBJECT: State Clearinghouse Comments for E2018-058 (EA – Range Wash Flood Control Project – Nellis AFB)

Disclaimer: The Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control (BWPC) does not have authority for projects occurring on Tribal Lands.

The NDEP, BWPC has received the aforementioned State Clearinghouse item and offers the following comments:

The project may be subject to BWPC permitting. Permits are required for discharges to surface waters and groundwaters of the State (Nevada Administrative Code NAC 445A.228). BWPC permits include, but are not limited to, the following:

- Stormwater Industrial General Permit
- De Minimis Discharge General Permit
- Pesticide General Permit
- Drainage Well General Permit
- Temporary Permit for Discharges to Groundwater's of the State
- Working in Waters Permit
- Wastewater Discharge Permits
- Underground Injection Control Permits
- Onsite Sewage Disposal System Permits
- Holding Tank Permits

Please note that discharge permits must be issued from this Division before construction of any treatment works (Nevada Revised Statute 445A.585).

For more information on BWPC Permitting, please visit our website at:
<https://ndep.nv.gov/water/water-pollution-control/permitting> .

Additionally, the applicant is responsible for all other permits that may be required, which may include, but may not be limited to:

- | | |
|-----------------------------------|---|
| • Dam Safety Permits | - Division of Water Resources |
| • Well Permits | - NDEP |
| • 401 Water Quality Certification | - U.S. Army Corps of Engineers |
| • 404 Permits | - Local Health or State Health Division |
| • Air Permits | - Local Government |
| • Health Permits | |
| • Local Permits | |

Thank you for the information and the opportunity to comment.

E2018-058 (EA Range Wash Flood Control Project - Nellis AFB)

DATE: October 31, 2017

Division of Water Resources – Sue Gilbert

Nevada SAI # E2018-058

Project: EA Range Wash Flood Control Project - Nellis AFB

_____ No comment on this project X Proposal supported as written

AGENCY COMMENTS:

Water for Construction Projects

Ensure that any water used on a project for any use shall be provided by an established utility or under permit or temporary change application or waiver issued by the State Engineer's Office with a manner of use acceptable for suggested projects water needs.

Dams

Ponds, dams, or diversion structures must comply with the permitting provisions of NRS 535. Any person proposing to construct a dam, reconstruction or alteration of old structures in this state shall, before beginning construction, obtain from the State Engineer a permit to appropriate, store and use the water to be impounded by or diverted by the dam. If the proposed dam is or will be 20 feet or more in height, measured from the downstream toe to the crest of the dam, or is less than 20 feet in height and will impound more than 20 acre-feet of water, must submit to the State Engineer in triplicate plans and specifications thereof for his approval in accordance with Nevada Revised Statute Chapter 535 and Nevada Administrative Code Chapter 535 prior to construction is to begin.

Hoffman, Sarah

From: OPPENBORN, TOD GS-11 USAF ACC 99 CES/CENPP <tod.oppenborn@us.af.mil>
Sent: Wednesday, November 08, 2017 3:06 PM
To: Hoffman, Sarah
Subject: FW: comment on range wash EA

From the Army Corp.

-----Original Message-----

From: Brown, Craig J CIV USARMY CESPCK (US) [mailto:Craig.J.Brown@usace.army.mil]
Sent: Wednesday, November 8, 2017 12:36 PM
To: OPPENBORN, TOD GS-11 USAF ACC 99 CES/CENPP <tod.oppenborn@us.af.mil>
Subject: [Non-DoD Source] comment on range wash EA

Tod,

This project may or may not impacts waters of the U.S. If it does, then a permit from USACE is required. I suggest that you get a delineation done for the project area. You may want to talk with the environmental department. I believe they intend to hire a consultant to delineate waters on Nellis AFB.

Craig J. Brown
Senior Project Manager, St. George Regulatory Office U.S. Army Corps of Engineers
196 E. Tabernacle St., Suite 30
St. George, Utah 84770-3474
Ph: 435-986-3979

See concurrence on email communication 12 June 2017

Hoffman, Sarah

From: John Tennert <JTennert@regionalflood.org>
Sent: Monday, June 12, 2017 2:29 PM
To: Dudley, Syndi; Tom Brady (bradyt@cityofnorthlasvegas.com); Debra Yamachika; Reilly, Jill; Dennis, Rachael; Hoffman, Sarah
Cc: Steve Parrish; Andrew Trelease
Subject: FW: Hollywood System WOUS (UNCLASSIFIED)

External

FYI. Let me know if you need anything else.

John

-----Original Message-----

From: Brown, Craig J CIV CESPCK CESP (US) [mailto:Craig.J.Brown@usace.army.mil]
Sent: Monday, June 12, 2017 2:26 PM
To: John Tennert <JTennert@regionalflood.org>
Subject: RE: Hollywood System WOUS (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Hi John,

I agree. Water flows into a dry playa and has no connection to a TNW. I talked with a consultant a while back about for this project and told him/her (forgot) the same thing.

Craig

Craig J. Brown

Senior Project Manager, St. George Regulatory Office U.S. Army Corps of Engineers
196 E Tabernacle St. Suite 30
St. George, Utah 84770-3474
Ph: 435-986-3979

* Our customer service hours are 9am to 3pm Monday through Friday.

* Information on the Regulatory Program can be found at; <http://www.spk.usace.army.mil/Missions/Regulatory.aspx>

Let us know how we're doing. Please complete the survey at:
http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

-----Original Message-----

From: John Tennert [mailto:JTennert@regionalflood.org]
Sent: Monday, June 12, 2017 2:03 PM

To: Brown, Craig J CIV CESPCK CESP (US) <Craig.J.Brown@usace.army.mil>
Cc: Dudley, Syndi <sdudley@louisberger.com>; Tom Brady (bradyt@cityofnorthlasvegas.com)
<bradyt@cityofnorthlasvegas.com>; Debra Yamachika <DYamachika@regionalflood.org>; Dennis, Rachael
<RDennis@louisberger.com>; jreilly@louisberger.com
Subject: [Non-DoD Source] Hollywood System WOUS

Good afternoon Craig,

We are working on a project near Nellis Air Force Base and wanted to get your concurrence of our assessment of waters of the United States (WOUS) and Corps jurisdiction. The City of North Las Vegas, Department of Public Works is proposing to construct the Hollywood System flood control facilities depicted in the attached KMZ file. The system is approximately 3.75 miles long starting at Centennial Parkway and ending southeast of the Nellis Air Force Base (AFB) runways. The Hollywood System will collect flood flows that are conveyed within Hollywood Boulevard (north of Las Vegas Boulevard) and discharge them in an ephemeral wash southeast of the Nellis AFB runways.

On May 18, 2017, project personnel including an engineer, biologist, and environmental scientist performed a field investigation to determine the extent of WOUS occurring within the proposed project area on Nellis AFB. No acres of relatively permanent waters constituting Wetland WOUS were observed within the project boundaries. Although there are ephemeral washes located within the project boundary, all washes either die out or drain to an isolated terminus within Nellis AFB as depicted on Google Earth and the attached U.S. Geological Survey (USGS) 7.5-minute quadrangle map and photographs. Therefore, the washes do not appear to meet the federal guidelines to be considered jurisdictional. Based on our observations, no permit or action would be warranted or required by the Corps for the proposed project because of the absence of navigable waters or wetlands, isolation of the site resulting from absence of hydrological connection to the nearest tributary to navigable water (Colorado River), and lack of other indicators of jurisdiction under other statutory authority such as use for interstate or foreign commerce.

Please review the attached documents and let me know if you agree with our assessment. Feel free to call me at any time should you wish to discuss this project in more detail or if you have any questions.

Hope all is well.

John

John R. Tennert, Ph.D.

Environmental Mitigation Manager

Clark County Regional Flood Control District

600 S. Grand Central Parkway, Suite 300

Las Vegas, NV 89106

(702) 685-0023

JTennert@regionalflood.org <mailto:JTennert@regionalflood.org>

Visit

<https://linkprotect.cudasvc.com/url?a=https://Blockedwww.ccrfcd.org&c=E,1,dfE6ib8vfOFIcsSIv10hHIT11A8VlcsObK0BjX9yUSBLUaiSg4W-Fym2JO-zpeHPBv6sas92selMMQCTBKsjDe6vafB11EkN1vn2Fw,,&typo=1>
<Blockedhttp://https://linkprotect.cudasvc.com/url?a=https://www.ccrfcd.org/&c=E,1,UUZdzMLF3Se7hGzHuGWNDmYG3Yw4TUEkJveUATg6Ek0bAMiBzUU9dN_Sddyq0tsAHolcdxq2f_ZZ0SVXuAGqu5eHb7LaWrpjQYZy6jLXGw,,&typo=1>

CLASSIFICATION: UNCLASSIFIED



DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA



Lt Col Michael A. Freeman
Commander
99 CES
6020 Beale Ave.
Nellis AFB NV 89191

14 April 2017

Ms. Rebecca Palmer
State Historic Preservation Officer
State Historic Preservation Office
Department of Conservation and Natural Resources
901 South Stewart Street, Ste. 5004
Carson City NV 89701-5248

Subject: *Proposed Range Wash-Hollywood Branch and East Tributary Improvements from Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base, Clark County, Nevada*

Dear Ms. Palmer

Nellis Air Force Base (NAFB) is forwarding this in compliance with 36 CFR §800.4(a)(1). Nellis seeks your office's concurrence on the adequacy on a proposed Area of Potential Effect (APE) for the City of Las Vegas' *Proposed Range Wash-Hollywood Branch and East Tributary Improvements from Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base, Clark County, Nevada*.

The City of Las Vegas is proposing a project which involves construction of flood improvements to the Range Wash-Hollywood Branch (RWHB) from Centennial Parkway to Munitions Road and to the Range Wash – East Tributary Watershed (RWEA) between Munitions Road and the Confluence Detention Basin (Map 1).

The RWHW will include a storm drain under Hollywood Boulevard between Centennial Parkway and Las Vegas Boulevard and a concrete-lined channel on NAFB from Las Vegas Boulevard to Munitions Road, a concrete channel or reinforced concrete box (RCB) storm drain lateral between Las Vegas Boulevard and Ellsworth Avenue, and an earthen or rock-lined channel/berm to the East Tributary. Excess dirt from the channel construction will be used to fill an existing gravel pit on Air Force property. Gravel maintenance roads are proposed on each side of the concrete channels. Reinforced concrete box (RCB) culverts will be constructed where the channel crosses Ellsworth Avenue, O'Bannon, and Munitions Roads. An existing sewer at O'Bannon Road will be lowered where it is in conflict with the new channel.

Enable Success Through Innovative Base Support

The RWEA will have a concrete channel between Munitions Road and the Dunes South Detention Basin, a berm across the natural wash of the East Tributary directing flow into the Dunes South Detention Basin, and a concrete-lined outfall channel connecting the Dunes South Detention Basin to the Confluence Detention Basin in accordance with the MPU. The location, size, and type of East Tributary facilities are tentative and subject to future Master Plan Updates, with NAFB's input, as well as the actual future facility design. The RWHW facilities under Hollywood Boulevard north of Las Vegas Boulevard are referred to herein as the Hollywood Storm Drain (SD) and consists of underground RCB and reinforced concrete pipe (RCP) of various sizes, drop inlets, pavement reconstruction, and utility relocations. The Hollywood SD will be constructed entirely within existing public right-of-way except upstream of Las Vegas Boulevard where the storm drain falls on private land and NAFB property. Connections to existing lateral storm drains will be made and new drop inlets will be constructed where necessary along the new storm drain.

Area of Potential Effect (APE)

The proposed project location includes a proposed construction of RCBs on the west side of Las Vegas Boulevard. The east side of the project area encompasses a Las Vegas Boulevard City Right-of-Way and lands on NAFB. This east half of the project includes a concrete channel and RCB culvert in part of the Right-of-Way, with the remainder occurring on NAFB. The project items occurring on NAFB include the aforementioned RCBs, as well as a berm, concrete channel, associated gravel maintenance road, and additional RCB culverts. This letters seeks concurrence on the portion of the project on NAFB land which will cause soil disturbance (18 m wide with a total length of 6,000 m and 6 m deep), totaling approximately 2,754 acres.

An archaeological survey with Louis Berger Inc. will take place in areas not previously surveyed, a six meter buffer is included around the project area to define the APE. NAFB identified approximately six previous archaeological surveys as being directly associated with the proposed APE. There are no known archaeological sites within the proposed APE (Map 1).

Tribal notification will consist of forwarding copies of this letter to affiliated tribal offices. Additional consultation with the tribes will take place at the next semi-annual government to government meeting scheduled for May 10-11, 2017.

Should you or your staff have any questions about the project, please contact our tribal liaison/archaeologist, Ms. Kish La Pierre, 99 CES/CEIEA, at (702) 682-5813 or at kish.lapierre@us.af.mil.

Sincerely



MICHAEL A. FREEMAN, Lt Col, USAF
Commander

Attachments (1 hardcopy):

Map

cc (w/o attachments):

Affiliated Tribal Offices

Tom Brady, City of Las Vegas



CEEA
4/28/2017
Brian Sandoval, Governor
Bradley Crowell, Director
Rebecca L. Palmer, SHPO

May 18, 2017

Lt. Col. Michael A. Freeman
Commander
99 Civil Engineer Squadron
Department of the Air Force
6020 Beale Ave
Nellis Air Force Base, Nevada 89191

Re: Proposed Range Wash-Hollywood Branch and East Tributary Improvements from Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base, Clark County, Nevada.
Undertaking #2017-4873

Dear Lt. Col. Freeman:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received April 19, 2017 in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

Project Description

The SHPO understands this undertaking to be the construction of flood improvements to (1) the Range Wash – Hollywood Branch and (2) the Range Wash – East Tributary Watershed.

It is not clear if the proposed flood management facilities are new construction, an upgrade to existing facilities, the removal and replacement of existing flood management facilities, and/or some combination new construction and work on existing facilities. Please clarify.

Area of Potential Effect (APE)

The Department of the Air Force (Air Force) has determined that the area of potential effect (APE) for this undertaking will be contained within a 2,754-acre area.

The indirect effects of this undertaking are unclear at this time. Were visual, audible, and atmospheric effects considered in keeping with 36 CFR §800.4(a)(1) and 36 CFR §800.16(d)? If so, please provide a justification summary for the APE as it relates to possible indirect effects for this undertaking.

Identification Effort for Historic Properties

The Air Force is proposing to conduct an intensive pedestrian survey to identify archaeological resources for all parts of the 2,754-acre APE that have not been previously surveyed. What efforts will be made to identify other types of historic properties (e.g., architectural, engineered, etc.) that might be located within the direct and indirect APE? Please clarify.

Native American Consultation

The SHPO notes that consultation with the affected Native American tribes has been initiated per 36 CFR §800.3(f)(2). If this consultation results in the identification of properties of religious and/or cultural significance that could be affected by the undertaking, the SHPO looks forward to consulting with the Air

901 S. Stewart Street, Suite 5004 ✦ Carson City, Nevada 89701 ✦ Phone: 775.684.3448 Fax: 775.684.3442

www.shpo.nv.gov

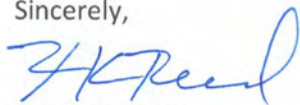
Force on the National Register eligibility and possible effects of the undertaking per 36 CFR §800.4(c) and 36 CFR §800.4(d). In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

Consulting Parties and Public Consultation

The SHPO reminds the Air Force that the agency must consult with the public and representatives of organizations that have a demonstrated interest in historic properties per 36 CFR §800.2(c)(5). What efforts have been made to provide the public and interested parties with an opportunity to comment on this undertaking? In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

Should you have any questions concerning this correspondence, please contact Jessica Axsom at (775)684-3445 or by e-mail at jaxsom@shpo.nv.gov.

Sincerely,



Robin K. Reed
Deputy State Historic Preservation Officer

Mayor
John J. Lee

Council Members
Isaac E. Barron
Pamela A. Goynes-Brown
Scott Black
Richard J. Cherchio



City Manager
Dr. Qiong X. Liu, P.E., PTOE

Public Works Department

Engineering & Construction Services Division

2250 Las Vegas Boulevard North, Suite 610 · North Las Vegas, Nevada 89030
Telephone: (702) 633-1206 · Fax: (702) 633-1158 · TDD: (800) 326-6868
www.cityofnorthlasvegas.com

September 28, 2017

Ms. Robin K. Reed
Deputy State Historic Preservation Officer
901 S. Stewart Street, Suite 5004
Carson City Nevada 89701

RE: Proposed Range Wash – Hollywood Branch and East Tributary Improvements From Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base, Nevada.

Dear Ms. Reed,

The City of North Las Vegas (City) received a copy of the consultation letter from you to Lt. Col. Michael A. Freeman, Commander at Nellis Air Force Base. As the City is the project proponent, we have formulated the following reply to your questions.

Louis Berger completed a Class III Cultural Resource Survey for the Proposed Range Wash – Hollywood Branch and East Tributary Improvements from Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base (AFB), Nevada (Figure 1). The proposed project involves construction of a storm drain under Hollywood Boulevard north of Las Vegas Boulevard, and the Range Wash – Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA). All of the proposed construction north of Las Vegas Boulevard will be done within existing rights-of-way (ROW). South of Las Vegas Boulevard, the proposed improvements to Range Wash are located on Nellis AFB. This letter presents our findings and recommendations for the proposed project.

Project Description

The proposed project involves construction of flood improvements to the Range Wash – Hollywood Branch (RWHW) from Centennial Parkway to Munitions Road, and to the Range Wash - East Tributary Watershed (RWEA) between Munitions Road and the Confluence Detention Basin.

The RWHW will include the following new construction:

- A storm drain under Hollywood Boulevard between Centennial Parkway and Las Vegas Boulevard,
- A concrete-lined channel on Nellis AFB from Las Vegas Boulevard to Munitions Road,
- A concrete channel or reinforced concrete box (RCB) storm drain lateral between Las Vegas Boulevard and Ellsworth Avenue,
- An earthen or rock-lined channel/berm to the East Tributary,
- Gravel maintenance roads on each side of the concrete channels, and

- Reinforced concrete box (RCB) culverts will be constructed where the channel crosses Ellsworth Avenue, and O'Bannon and Munitions Roads.

An existing sewer at O'Bannon Road will be lowered where it is in conflict with the new channel. Excess dirt from the channel construction will be used to fill an existing gravel pit on AFB property.

The RWEA will have the following new facilities:

- A concrete channel between Munitions Road and the Dunes South Detention Basin,
- A berm across the natural wash of the East Tributary directing flow into the Dunes South Detention Basin, and
- A concrete-lined outfall channel connecting the Dunes South Detention Basin to the Confluence Detention Basin in accordance with the MPU.

The location, size and type of East Tributary facilities are tentative and subject to future Master Plan Updates, with Nellis AFB's input, as well as the actual future facility design.

The new RWHHW facilities under Hollywood Boulevard north of Las Vegas Boulevard are referred to herein as the Hollywood Storm Drain (SD) and consists of:

- a 6-foot x 6-foot RCB between Centennial Parkway and Azure Avenue;
- a 10-foot x 6-foot RCB between Azure Avenue and Tropical Parkway;
- a 10-foot x 6-foot RCB between Tropical Parkway and Ann Road;
- a double 12-foot x 5-foot RCB between Ann Road and Las Vegas Boulevard; and
- a 10-foot x 6-foot RCB between Shatz Street and Hollywood Boulevard within the Azure Avenue ROW.

The Hollywood SD will be constructed entirely within existing public right-of-way except upstream of Las Vegas Boulevard where the storm drain falls on private land and Nellis AFB property. Connections to existing lateral storm drains will be made and new drop inlets will be constructed where necessary along the new storm drain.

Area of Potential Effects

The area of potential effect (APE) encompasses all lands within the proposed project area including proposed detention basins and staging areas. Other than temporary indirect effects from noise and vibration, the proposed project has little potential to have audible or atmospheric indirect effects on historic resources. There will be no lighting or elevation changes as a result of the project. The new structures will be flush with the ground surface and will not significantly change the landscape. The APE also includes a 5-meter buffer on either side of the project area to account for direct effects from machinery during construction (see Figure 1).

Scope of Work and Project Personnel

The scope of work included background research, an archaeological survey of all areas of permanent and temporary ground disturbance, and reconnaissance of historic structures within the APE. Andrew Wilkins, an RPA-certified archaeologist, served as the principal investigator for the project; Delland Gould, RPA served as the project manager; and Erin Hudson, RPA, provided QA/QC. The pedestrian survey was conducted October 15, 2016, by Mr. Wilkins and architectural historian Camilla Deiber.

Background Research

Prehistoric Resources

Nellis AFB has conducted numerous archaeological and historic architectural surveys since the late 1970s. A total of 22,341 acres at Nellis AFB, including all of Area I, have been surveyed for archaeological

resources (see Figure 1). These surveys have identified a total of 85 sites, only one of which, a quarry site, is eligible for listing in the National Register of Historic Places (NRHP). All other sites were determined to be ineligible for listing through consultation with the Nevada SHPO in 2001 (Rowe and Myhrer 2001). Key surveys that have been conducted that extend over a majority of the project area include:

- *Archaeology of the Main Cantonment: Nellis Air Force Base, Clark County, Nevada.* Kathleen Ann Bergin, 1993 (SHPO Report No. 1361)
- *Clark County Regional Flood Control District Final Master Plan: 10 Year Plan Facility Cultural Resource Survey Report.* Dames and Moore. BLM report 5-2127, 1991 (SHPO Report No. 13255)
- *Nellis Air Force Withdrawal Lands, Clark County, Nevada, 1999* (SHPO Report No. 13137)
- *Cultural Resource Survey of the Las Vegas Motor Speedway.* Knight & Leavitt Associates, 1994 (SHPO Report No. 13301).

Review of the Nevada Cultural Resource Information System (NV-CRIS) was conducted to ascertain whether any previous archaeological sites were located in the project area. A total of 24 archaeological sites are located within a mile of the project area (Table 1). Four sites are recommended as eligible: the remnants of the Arrowhead Trail Highway (CK4369), a campsite (CK4865) and two refuse scatters associated with the highway (CK4978 and CK4990). The remaining sites are either unevaluated or ineligible.

Table 1. Previously Recorded Sites Within One Mile of the Project Area

Site Number	Site Type	National Register Status
CK4369	Arrowhead Trail Highway	Eligible
CK4857	Lithic scatter, FAR,	Ineligible
CK4858	Lithic scatter, FAR	Ineligible
CK4859	FAR feature	Ineligible
CK4860	Lithic scatter	Ineligible
CK4861	Lithic and ceramic scatter	Ineligible
CK4862	Lithic scatter	Ineligible
CK4865	Campsite	Eligible
CK4866	Diffuse Lithic scatter	Not Significant
CK4967	Trash scatter	Unevaluated
CK4968	Campsite/trash scatter	Unevaluated
CK4950	Resource procurement locus	Ineligible
CK4970	Trash scatter	Not Significant
CK4977	Road	Not Significant
CK4978	Refuse scatter	Eligible
CK4979	Well and rest stop area	Ineligible
CK4980	Lithic scatter	Ineligible
CK4990	Trash scatter	Significant
CK5717	Artifact scatter	Ineligible
CK5718	Artifact scatter	Ineligible
CK5719	Artifact scatter associated	Ineligible
CK5720	FAR scatter	Ineligible
CK5721	Campsite, lithic scatter	Ineligible
CK5722	Campsite, lithic scatter	Ineligible

None of the sites are within the project area; however, two sites (CK5719 and CK5718) are within close proximity to the east end of the proposed Range Wash -East Tributary and may be within the limits of ground disturbance for the project. Both sites have been determined ineligible for listing in the National Register.

Historic Structures and Resources

Three historic building inventories have been completed at Nellis AFB evaluating World War II structures (Page and Turnbull, 1988), Cold War facilities (Mariah Associates 1995), and Capehart-Wherry housing (Dobson-Brown, 2004). No buildings were determined eligible for the NRHP.

Field Methodology

Louis Berger conducted a pedestrian survey of sections of the APE that had not been previously surveyed, located in Township 19 South, Range 62 East, Section 35 and Township 20 South, Range 62 West, Sections 2 and 11 (see Figure 1). The pedestrian survey included walking parallel transects spaced at 15-meter intervals. The survey covered all areas with greater than 25 percent ground surface visibility, which included all of the APE. A handheld global positioning system (GPS) unit capable of sub-meter accuracy was used to navigate within the boundary of the APE.

The APE for the Hollywood Storm Drain was not surveyed as the area is entirely within the existing right of way. The proposal construction staging area at the northeast corner of Ellsworth Avenue N and O'Bannon Road was previously used as a borrow pit. No archaeological survey was conducted in this area due to the extensive ground disturbance.

Archaeological Survey Results

No cultural resources were encountered during the survey. A Bureau of Land Management Cultural Resources Inventory Negative Report is attached to this letter.

Consultation

Native American Consultation

Nellis AFB provided 17 tribes with a copy of the cultural resource letter report completed by Louis Berger in November 2016 and the Section 106 consultation letter sent to the Nevada SHPO. The project was further discussed between Nellis AFB and the tribes at the Semi-annual Tribal Meeting held on May 11, 2017.

Consulting Parties and Public Consultation

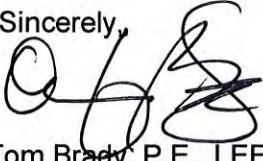
The Public Affairs Office at Nellis AFB has been notified of the project. The City of North Las Vegas is planning to conduct a NEPA environmental assessment for the project. The City will provide a number of opportunities during the NEPA process for the public to provide comments on the project and its effects on historic resources.

Summary and Recommendations

Louis Berger completed a Class III Cultural Resource Survey for the Proposed Range Wash – Hollywood Branch and East Tributary Improvements from Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base, Nevada in October 2016. A majority of the APE had been previously surveyed. Two previously documented archaeological sites are located within close proximity to the APE (CK5719 and CK5718). However, both sites have been determined ineligible for listing in the National Register. Louis Berger surveyed for archaeological resources within the portion of the APE that had not been surveyed. No cultural resources were identified during the survey. The construction staging area, which had been previously used as a borrow pit, and the right of way for the Hollywood Storm Drain were not surveyed as there was low probability of finding intact archaeological deposits due to previous ground disturbance.

If you have questions or need additional information regarding the results of the Class III Cultural Resources Survey, please contact Andrew Wilkins at 816.559.3816 or awilkins@louisberger.com or Camilla Deiber at cdeiber@louisberger.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Brady', with a stylized flourish at the end.

Tom Brady, P.E., LEED AP
Senior Engineer

cc: Dr. John Tennert, Clark County Regional Flood Control District
Jessica Axsom, Nevada State Historic Preservation Office
Andrew Wilkins, Louis Berger
Camilla Deiber, Louis Berger



NEVADA
**STATE HISTORIC
PRESERVATION OFFICE**

Department of Conservation and Natural Resources

**Brian Sandoval, Governor
Bradley Crowell, Director
Rebecca L. Palmer, SHPO**

November 30, 2017

Lt. Col. Michael A. Freeman
Commander
99 Civil Engineer Squadron
Department of the Air Force
6020 Beale Ave.
Nellis Air Force Base, NV 89191

Re: Section 106 consultation with the Department of the Air Force, 99 CES, for the Range Wash-Hollywood Branch and East Tributary Improvement Nellis Air Force Base, Clark County, Nevada (UT 2017-4873)

Dear Lt. Col. Freeman:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received November 2, 2017, from the City of North Las Vegas, in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The Department of the Air Force, 99 CES (USAF), is the lead federal agency for this undertaking. The City of North Las Vegas (the City) is the project proponent. What is not clear is if the City has been provided by USAF:

- 1) the authorization "to act as the agency official [USFS] for the purposes of section 106" in keeping with 36 CFR §800.2(c)(3), or
- 2) if the agency official [USAF] authorized the "applicant [the City] ... to initiate consultation with the SHPO" per 36 CFR §800.2(c)(4)?

If either of these two options is being used for this undertaking this office needs something in writing (e.g., email) confirming this authorization from USAF. Otherwise we will await formal consultation directly from USAF on the undertaking. In the meantime, the SHPO offers these informal comments on the subject documents.

Thank you for providing clarification regarding the scope of work, APE, consultation process, and identification efforts for this undertaking.

Project Description

The undertaking includes the lowering of one sewer and the construction of several storm drains, channels, gravel roads, and culverts at various locations along the Range Wash-Hollywood Branch from Centennial Parkway to Munitions Road and along the Range Wash-East Tributary Watershed between Munitions Road and the Confluence Detention Basin in Nellis Air Force Base (AFB).

The submitted map does not specify which activities will occur at which locations. Furthermore, the submitted materials state that "the location, size, and type of East Tributary facilities are tentative." In order to fully review the effects of this undertaking, the SHPO recommends that Section 106 consultation occur after the scope of work has been finalized.

Area of Potential Effect (APE)

The subject document defined the APE as the area where work will occur, plus a 5-meter buffer. The submitted materials state that indirect effects are not anticipated since the new structures will be flush with ground level. Since the undertaking's scope of work is not yet fully known, the SHPO is unable to comment on the APE at this time. Once the scope of work is finalized, USAF, or the City on behalf of USAF, should submit a detailed scope of work along with maps indicating where each new structure will be constructed.

Identification and Evaluation of Historic Properties

Archaeology:

This correspondence indicates that an intensive archaeological survey of the APE has occurred. The SHPO is not in receipt of this survey report from USAF. The SHPO will promptly review the results and associated USAF determination upon receipt.

Architecture:

The submitted materials state that past surveys have been conducted at Nellis AFB and no resources were determined eligible for listing in the National Register. It is not clear if those past surveys covered the area in the present APE, or if SHPO concurrence was ever received for the National Register eligibility determinations. It is also unclear which built resources, if any, are present within the APE for this undertaking. Once the scope of work and APE are finalized, please submit a list of built resources located in the APE (i.e., roads, runways, fences, structures, culverts, and other resources) and state whether they have received formal National Register evaluation or if USAF wishes to leave the resources unevaluated and treat them as eligible for the purposes of this undertaking.

Consultation with Interested Parties

The SHPO acknowledges receipt of additional information about the consultation efforts with affected Native American tribes. The SHPO also acknowledges that USAF will be conducting public consultation for this undertaking during the NEPA process. Please ensure that the public is invited to comment on cultural resources during the consultation process and that the distinction between NEPA and NHPA/Section 106 is made clear.

Should you have questions concerning this correspondence, please contact SHPO staff architectural historian Kristen Brown at (775) 684-3439 or by email at knbrown@shpo.nv.gov or SHPO staff archaeologist Jessica Axsom at (775) 684-3445 or by e-mail at jaxsom@shpo.nv.gov

Sincerely,



Robin K. Reed
Deputy State Historic Preservation Officer

cc: Tom Brady, P.E., LEED AP, Senior Engineer, City of North Las Vegas

Hoffman, Sarah

From: LAPIERRE, KISH D GS-12 USAF ACC 99 CES/CEIEA <kish.lapierre@us.af.mil>
Sent: Wednesday, December 6, 2017 11:27 AM
To: Jessica Axsom; 'Tom Brady'
Cc: Hoffman, Sarah; Kristen Brown; Robin K. Reed; COLLINS, RUSSELL S GS-12 USAF ACC 99 CES/CEIEC
Subject: RE: Proposed Range Wash-Hollywood Branch Improvements, Nellis Air Force Base

Thanks Jessica,

The Air Force is deferring consultation to the City of North Las Vegas per 36 CFR800.2(c)(4).

VR
Kish

Kish LaPierre
Cultural Resource Manager
Nellis Air Force Base, Nevada
702-652-5813

-----Original Message-----

From: Jessica Axsom [mailto:jaxsom@shpo.nv.gov]
Sent: Thursday, November 30, 2017 4:37 PM
To: 'Tom Brady' <bradyt@cityofnorthlasvegas.com>; LAPIERRE, KISH D GS-12 USAF ACC 99 CES/CEIEA <kish.lapierre@us.af.mil>
Cc: 'Hoffman, Sarah' <SHoffman@louisberger.com>; Kristen Brown <knbrown@shpo.nv.gov>; Robin K. Reed <rreed@shpo.nv.gov>
Subject: [Non-DoD Source] RE: Proposed Range Wash-Hollywood Branch Improvements, Nellis Air Force Base

Hi Tom and Kish,

A hard copy of this SHPO letter is in the mail.

Jessica Axsom

Review and Compliance Archaeologist

Nevada State Historic Preservation Office

901 S. Stewart Street, Suite 5004

Carson City, NV 89701-5248

775.684.3445

jaxsom@shpo.nv.gov <mailto:jaxsom@shpo.nv.gov>

From: Tom Brady [mailto:bradyt@cityofnorthlasvegas.com]
Sent: Friday, November 3, 2017 12:33 PM
To: Jessica Axsom <jaxsom@shpo.nv.gov>; Robin K. Reed <rreed@shpo.nv.gov>
Cc: Hoffman, Sarah <SHoffman@louisberger.com>
Subject: Re: Proposed Range Wash-Hollywood Branch Improvements, Nellis Air Force Base

Jennifer,

It's no problem at all. The hard copy should have been sent by USPS, but as you did not receive it, we greatly appreciate your consideration.

Please let me know if you have any questions.

Best Regards,

Tom

On Fri, Nov 3, 2017 at 12:15 PM Jessica Axsom <jaxsom@shpo.nv.gov <mailto:jaxsom@shpo.nv.gov> > wrote:

Good Afternoon Tom,

I apologize for the delay – there was confusion on our end of things as we were awaiting a hard copy submission (with a wet signature), as this is the more typical and legally accepted format for formal review. Our office did not realize that the email was the submission to be reviewed – in order to get this review quickly back on track I will print the email out and associated attachments so that I can promptly complete our review. Again I am sorry for the confusion
<https://linkprotect.cudasvc.com/url?a=https://maps.google.com/%3fq%3d901+S.+Stewart+Street,+Suite+5004%250D+Carson+City,+NV+89701%26entry%3dgmail%26source%3dg&c=E,1,fPdaew12xOUfrtdUJgMHfuct8WP-1gSiDDYua5sllm6ilPwABYExitHzc-GX911Kesg_eEjUW_-yMme4qVplvELfs3qp7-iz3dODqg7VcSJfoK535Wqig,,&typo=1> on our end.

Jessica Axsom

Review and Compliance Archaeologist

Nevada State Historic Preservation Office

901 S. Stewart Street, Suite 5004

<https://linkprotect.cudasvc.com/url?a=https://maps.google.com/%3fq%3d901+S.+Stewart+Street,+Suite+5004%250D+Carson+City,+NV+89701%26entry%3dgmail%26source%3dg&c=E,1,rikf-EpcyviewYbLw_GS7ChCEJcKL9KY2duLRcu6HYLmzMK-3yZTGjtcTWpl8uLiLy69u3IFrkobn_Rik85ANCApfsvFJBeKUHKmEIRMd25h2MA,,&typo=1>

Carson City, NV 89701

<https://linkprotect.cudasvc.com/url?a=https://maps.google.com/%3fq%3d901+S.+Stewart+Street,+Suite+5004%250D+Carson+City,+NV+89701%26entry%3dgmail%26source%3dg&c=E,1,tnKLkmBeimLUNLoX25f1__sg-rXszSOhAUP5nPSmn10qIT8bwAxNv8yAkSIRU6PI8j5TVR-NQHGDMvMryg5E1XX8fP6WdIYxX0JMQyde&typo=1> -5248

775.684.3445

jaxsom@shpo.nv.gov <<mailto:jaxsom@shpo.nv.gov>>

From: Tom Brady [<mailto:bradyt@cityofnorthlasvegas.com> <<mailto:bradyt@cityofnorthlasvegas.com>>]

Sent: Thursday, November 2, 2017 5:15 PM

To: Jessica Axsom <jaxsom@shpo.nv.gov <<mailto:jaxsom@shpo.nv.gov>> >; Robin K. Reed <rreed@shpo.nv.gov <<mailto:rreed@shpo.nv.gov>> >

Subject: Proposed Range Wash-Hollywood Branch Improvements, Nellis Air Force Base

Good afternoon,

This email was to confirm your receipt of our September 28, 2017 letter for the above-mentioned project, regarding proposed action on the Nellis Air Force Base. I have attached a copy of the previous letter and wanted to check to see if you had any comments. Please let me know at your earliest convenience.

Tom Brady, P.E., LEED AP

Senior Engineer

City of North Las Vegas

702.633.1227

702.633.1158 fax
bradyt@cityofnorthlasvegas.com <mailto:bradyt@cityofnorthlasvegas.com>

--

Tom Brady, P.E., LEED AP

City of North Las Vegas

702.633.1227 (w)

702.633.1158 (fx)

bradyt@cityofnorthlasvegas.com <mailto:bradyt@cityofnorthlasvegas.com>

Mayor
John J. Lee

Council Members
Isaac E. Barron
Pamela A. Goynes-Brown
Scott Black
Richard J. Cherchio



Acting City Manager
Ryann Juden

Your Community of Choice

Public Works Department

Engineering & Construction Services Division

2250 Las Vegas Boulevard North, Suite 610 · North Las Vegas, Nevada 89030
Telephone: (702) 633-1206 · Fax: (702) 633-1158 · TDD: (800) 326-6868

www.cityofnorthlasvegas.com

February 7, 2018

Robin K. Reed
Deputy State Historic Preservation Officer
901 S. Stewart Street, Suite 5004
Carson City Nevada 89701

RE: Additional Information for the Proposed Range Wash – Hollywood Branch and East Tributary Improvements From Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base, Nevada.

Dear Ms. Reed,

The City of North Las Vegas (City) received a copy of the follow-up consultation letter from you to Lt. Col. Michael A. Freeman, Commander at Nellis Air Force Base dated November 30, 2017. In an e-mail dated December 8, 2017, Nellis Air Force Base gave authorization to the City to act as the applicant per 36 CFR800.2(c)(4). This letter is to provide you with the additional information on the project.

Project Description

The City, in cooperation with the United States Air Force (USAF), is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with the proposed range wash project. The project description provided in the letter to your office dated September 28, 2017 presented both Alternative 1 (the preferred alternative): Range Wash –Hollywood Branch (RWHW); and Alternative 2, which combines Alternative 1 with the Range Wash – East Tributary (RWEA) as an expansion to the south (Figure 1). Cultural resource screening was completed for both alternatives; while a more in-depth analysis and cultural resource survey was completed for the preferred alternative.

The construction of Alternative 2 is not anticipated in the near future. If Alternative 2 is considered for design and construction, the City will provide additional details to your office to complete Section 106 consultation for that project.

Figure 2 provides the location of each of the structures included in Alternatives 1 and 2. Table 1 below lists the structures included in Alternative 1 with section numbers and the length of each section. The gravel maintenance roads that are adjacent to the concrete channels on each side are within the area of potential effect (APE). Table 2 provides the same information for structures associated with Alternative 2.

Table 1. Summary of Alternative 1 Proposed Facilities

Section Number		Facility Description	Length (feet)	100-year flow (cfs)
RWHW	0000	Earthen channel/berm 50 feet x 10 feet	2,000	3,564/3,000
Channel		Rectangular channel	50	3,564
RWHW	0038	Concrete channel 36 feet x 7 feet	2,200	3,003
RWHW	0080	Concrete channel 36 feet x 7 feet	1,800	3,003
RWHW	0136	Concrete channel 25 feet x 7 feet	1,860	1,965
Lateral		Concrete channel or storm drain		
RWHW	0173	RCB (2)12 feet x 6 feet	100	2,195
RWHW	0174	RCB (2)12 feet x 5 feet	~500	2,195

Table 2. Summary of Alternative 2 Proposed Facilities*

Section Number		Facility Description	Length (feet)	Flow (cfs)
Conveyance Facilities				
RWEA	0000	Concrete channel 25 feet x 7 feet	1,925	4,033
RWEA	0043	RCB 10 feet x 8 feet	80	4,033
RWEA	0044	Concrete channel 25 feet x 6.5 feet	1,930	3,230
RWEA	0070	Concrete channel 25 feet x 7 feet	3,565	2,473
RWEA	0144	RCB 8 feet x 6 feet	1,100	732
RWEA	0164	RCB outlet 6 feet x 6 feet	100	732
RWEA	0166	Soil cement berm 13.5 feet	2,000	3,323
RWEA	0192	Concrete channel 75 feet x 9.5 feet	1,500	4,784
Detention Facilities				
RWEA	0163	Probable maximum flood spillway		58,670
RWEA	0165	1,112 acre-feet detention basin		5,867

*Only Facilities Associated with RWEA are included in this table.

Area of Potential Effects

The project activities outlined above in Tables 1 and 2 as well as depicted in Figure 1 are not likely to significantly change the landscape. The proposed berm will only be 10' high, which will not significantly change the overall view of the landscape. Given this information, the City believes that the current APE is appropriate and encompasses all lands within the proposed project area that may experience effects from project activities (see Figure 1).

Identification and Evaluation of Historic Properties

Archaeology:

The Bureau of Land Management Cultural Resources Inventory Negative Report was inadvertently omitted from the previous submission. This report is attached to this letter (Attachment 1).

Architecture:

The cultural resource survey conducted by Louis Berger did not identify any buildings within the APE. There are a number of roads and fences within the APE. The security fences to the north and east of the runway as well as Munitions Road, the section of O'Bannon Road that runs along the southeast side of the runway and Ellsworth Avenue to the north of the runway were not present in 1969 (Plate 1). Munitions Road was constructed around 2003. O'Bannon and Ellsworth were constructed after 2012. However, the section of O'Bannon Road that extends east from the northern end of the runway was present in 1969, likely constructed around 1954 connecting the main base to Area II, which was commissioned in 1954 as Lake Mead Base, a

weapons storage facility commanded by the U.S. Navy. No structures beyond O'Bannon Road that are 50 years of age or older are within the APE for Alternative 1. Nellis AFB conducted a Cultural Resources Survey associated with the Beddown of Tactical Support Squadron (Project No. 02-2016-NAFB) that included the O'Bannon Road area (Attachment 2). The report, which has been recently submitted to your office for review, concluded that no historic properties are present.

Two of the three previous historic structure surveys mentioned in the previous consultation letter have been reviewed by SHPO. Page and Turnbull (1988) completed an inventory and evaluation of World War II structures at NAFB and CAFB. In a letter dated 14 June 1991, the SHPO reviewed the evaluation and concurred with its recommendations. In 2004, 336 Wherry houses constructed from 1950 to 1957 and 113 Capehart structures built on NAFB in 1960 were proposed for destruction. Deborah Dobson-Brown (2004) conducted the field research and argued the buildings lacked physical integrity for further eligibility consideration. The SHPO concurred with the recommendation. In 1995, Mariah Associates, Inc., completed a preliminary evaluation, interpretation, and prioritization of Cold War facilities for 27 ACC bases throughout the U.S. This report was not subject to SHPO review; however, no facilities were recommended for further review. None of previously surveyed resources are within the APE.

Consultation

The City will ensure that the public is invited to comments on cultural resources during the consultation process and that the difference between NEPA and NHPA/Section 106 is made clear.

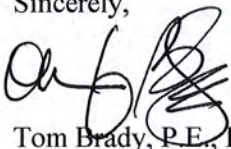
Finding of Effect

Previous and recent identification efforts have failed to identify archaeological resources within or adjacent to the APE. Given these results, coupled with the extensive disturbance of the gravel pit area, there is little to no potential for archaeological sites to be present in the APE. This project will have no effect on historic properties.

Architectural survey of the APE did not identify any resources that are eligible for listing in the NRHP. Therefore, the City, on behalf of Nellis AFB and as project proponent, recommends a **No Historic Properties Affected** finding for this undertaking.

If you have questions or need additional information on the project, please contact Sarah Hoffman at 702.789.1909 or SHoffman@louisberger.com or Camilla Deiber at cdeiber@louisberger.com.

Sincerely,



Tom Brady, P.E., LEED AP
Senior Engineer

cc: Dr. John Tennert, Clark County Regional Flood Control District
Jessica Axsom, Nevada State Historic Preservation Office

Attachments:

Figure 1: Project Area

Figure 2: Flood Control Facilities

Plate 1: 1969 Aerial Photograph

Attachment 1: BLM Negative Report

Attachment 2: TASS Cultural Resources Survey

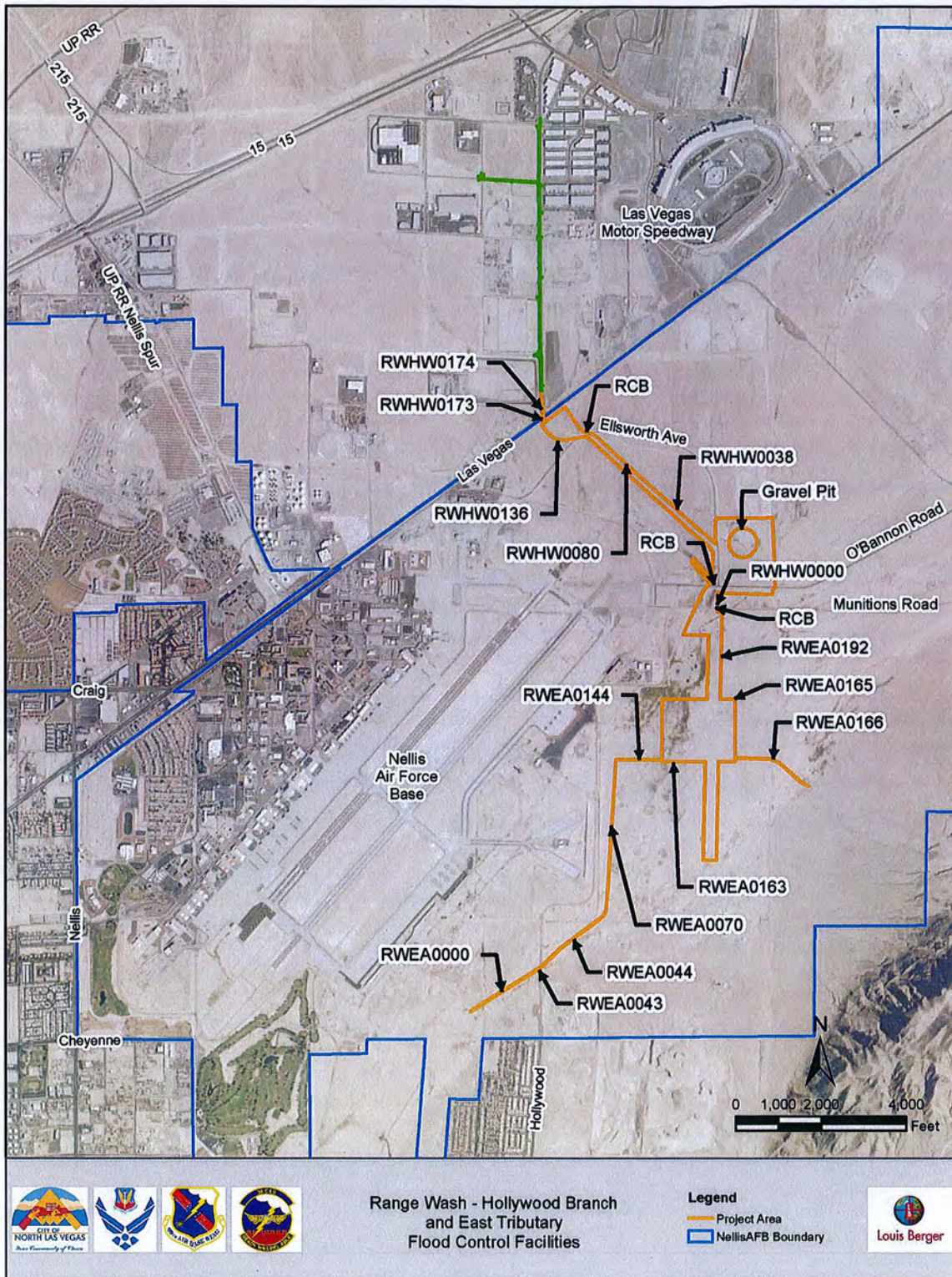


Figure 2: Flood Control Facilities

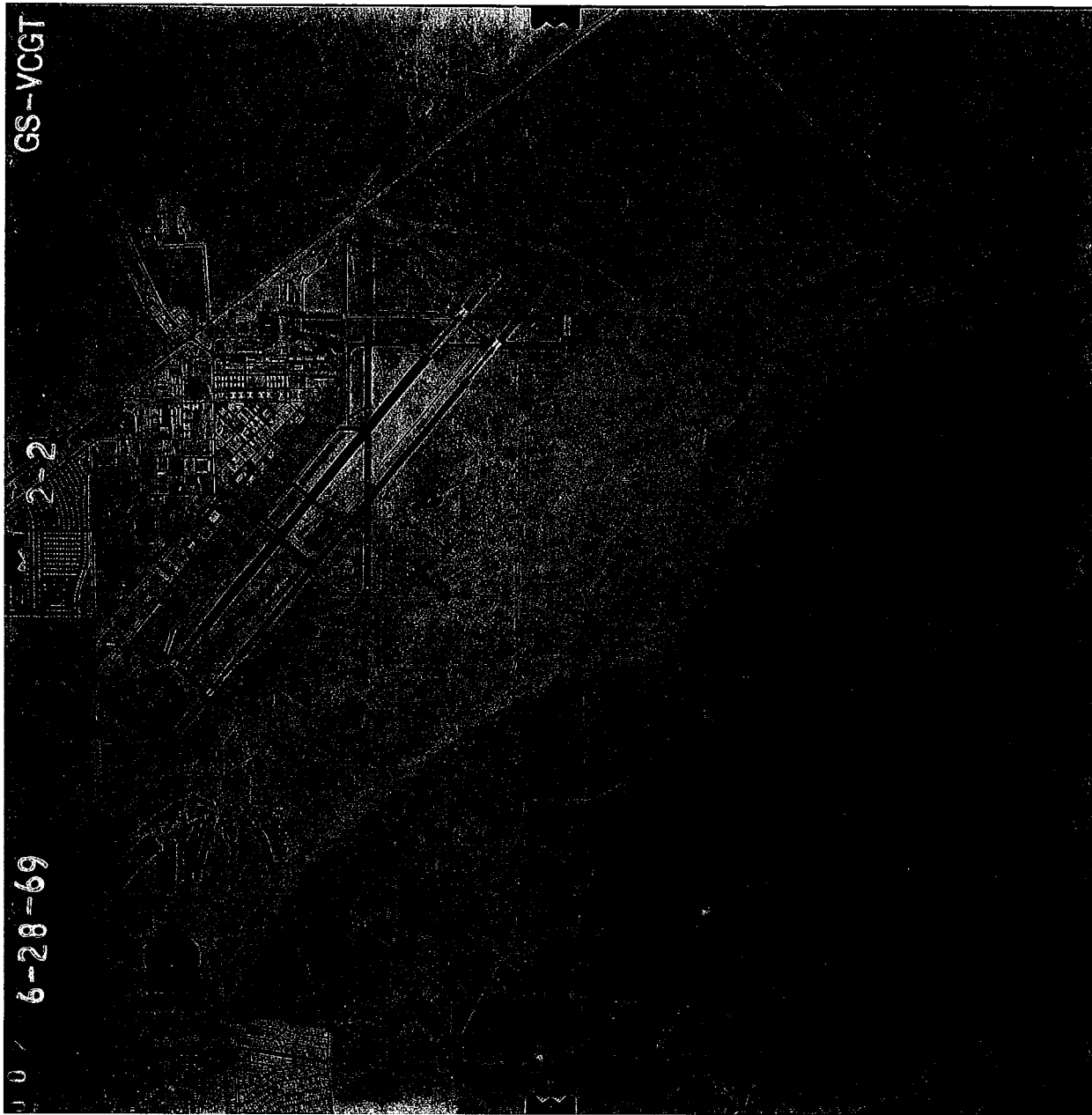


Plate 1. Aerial Photograph of Nellis Air Force Base, 1969

(USGS Earth Explorer)

Appendix E

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CULTURAL RESOURCES INVENTORY NEGATIVE REPORT

BLM Office: N/A

BLM Report Number: N/A

Organization/Field Crew: Louis Berger/ Andrew Wilkins, RPA and Camilla Deiber

Project Name and Description: Hollywood SD Project. Environmental baseline survey in for proposed flood control improvements to be constructed within the Nellis AFB.

Project Area: 63 acres

Legal Description: Section 35, T19S R62E and Sections 2 and 11, T20S R62W

County: Clark Map Reference: USGS 7.5' maps Las Vegas NE 2014 and Valley, NV 2015

UTM Reference: 11S E678455m, N4013695m

Records Check: ☐ BLM Records; ☒ NVCRIS; ☐ NR List; ☐ State Archive; ☐ Other

Results of Previous Inventories: 1987 Fiber optics cable survey, 1992 Nellis AFB main cantonment survey, and 1999 NAFB withdrawal lands survey cover nearly all of APE

Recorded and Unrecorded Sites: none recorded within APE, 16 sites within 1 mile including 2 eligible historic sites (CK4978 and CK4369) associated with Arrowhead Trail

Expectation: moderate potential due to numerous sites in proximity

Inventory Date(s): 10/25/2016

Inventory Type: Class I/II

Findings: No cultural resources were encountered during the inventory.

**ATTACH CLEAN REPRODUCIBLE 7.5' MAP(S) SHOWING
AREA OF POTENTIAL EFFECT AND AREA INVENTORIED**

Prepared By: Andrew Wilkins, RPA

Date: 1/11/2017

Approved By: _____

Date: _____



NEVADA
**STATE HISTORIC
PRESERVATION OFFICE**

Department of Conservation and Natural Resources

**Brian Sandoval, Governor
Bradley Crowell, Director
Rebecca L. Palmer, SHPO**

March 14, 2018

Tom Brady, P.E., LEED AP
Senior Engineer, Public Works Dept.
City of North Las Vegas
2250 Las Vegas Blvd. North, Ste. 610
North Las Vegas, NV 89030

Re: Section 106 consultation with the City of North Las Vegas, for the Range Wash-Hollywood Branch and East Tributary Improvements, Nellis Air Force Base, Clark County, Nevada (UT 2017-4873)

Dear Mr. Brady:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received February 13, 2018, from the City of North Las Vegas, in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. In an email dated December 6, 2017, the Department of the Air Force, 99 CES (USAF), delegated Section 106 consultation responsibilities to the City of North Las Vegas (City).

Thank you for providing clarification regarding the scope of work, APE, consultation process, and identification efforts for this undertaking.

Project Description

The undertaking includes the lowering of one sewer and the construction of several storm drains, channels, gravel roads, and culverts at various locations along the Range Wash-Hollywood Branch from Centennial Parkway to Munitions Road and along the Range Wash-East Tributary Watershed between Munitions Road and the Confluence Detention Basin in Nellis Air Force Base (AFB). One earthen channel will include construction of a 10-foot-tall earthen berm.

The SHPO acknowledges that Project Alternative 1 is being considered at this time and that the City will submit additional details to our office in the future if Alternative 2 is pursued.

Area of Potential Effect (APE)

The City has defined the APE as the area where work will occur plus a 5-meter buffer. The SHPO concurs with the adequacy of the APE as defined for this undertaking.

Consultation with Interested Parties

The SHPO previously commented on the City's consultation efforts for this undertaking.

Identification and Evaluation of Historic Properties

Archaeology:

The APE, approximately 63 acres, was intensively surveyed for archaeological resources. This inventory (Attachment 1) did not result in the identification of archaeological properties within the established APE.

The SHPO acknowledges receipt of Attachment 2: *Cultural Resources Survey Associated with the Beddown of Tactical Air Support Squadron, Nellis Air Force Base, Clark County, Nevada (Project Number 02-2016-NAFB)*. The SHPO assumes that this document was sent in error as the area surveyed in this document differs greatly from the APE established for this current undertaking (i.e., Range Wash-Hollywood Branch and East Tributary Improvements).

Architecture:

The City has confirmed that the APE contains only one historic built resource, a section of O'Bannon Road that was constructed in c. 1954. Since the submitted materials do not contain an NRHP evaluation for the road, the SHPO assumes that the City is leaving the road unevaluated and treating it as NRHP-eligible for the purposes of this undertaking. If this is not the case, please notify our office.

Finding of Effect

The SHPO concurs with the City's finding, on behalf of the Air Force, of **No Adverse Effect** to Historic Properties for Alternative 1 of this undertaking.

Unanticipated Discoveries

If any buried and/or previously unidentified resources are located during the project activities, the SHPO recommends that all work in the vicinity of the find cease and this office be contacted for additional consultation per 36 CFR §800.13(b)(3) or NRS 383.150-383.190.

Should you have questions concerning this correspondence, please contact SHPO staff architectural historian Kristen Brown at (775) 684-3439 or by email at knbrown@shpo.nv.gov or SHPO staff archaeologist Jessica Axsom at (775)684-3445 or by e-mail at jaxsom@shpo.nv.gov

Sincerely,



Karyn de Dufour
Deputy State Historic Preservation Officer

cc: Lt. Col. Michael A. Freeman, Commander, 99 Civil Engineer Squadron, USAF



**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA**

MAY 11 2018

Lt Col Patrick J. Kolesiak
Commander
99 CES
6020 Beale Ave.
Nellis AFB NV 89191

Big Pine Paiute Tribe
Ms. Shannon Romero, Chairperson
P.O. Box 700
Big Pine, CA 93513

Subject: *Proposed Range Wash-Hollywood Branch and East Tributary Improvements from Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base, Clark County, Nevada*

Dear Ms. Romero

Nellis Air Force Base (NAFB) is forwarding this in compliance with 36 CFR §800.4(a) (1). Nellis seeks your office's concurrence on the adequacy on a proposed Area of Potential Effect (APE) for the City of Las Vegas' *Proposed Range Wash-Hollywood Branch and East Tributary Improvements from Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base, Clark County, Nevada*.

The City of Las Vegas is proposing a project which involves construction of flood improvements to the Range Wash-Hollywood Branch (RWHB) from Centennial Parkway to Munitions Road and to the Range Wash – East Tributary Watershed (RWEA) between Munitions Road and the Confluence Detention Basin (Attachment).

The RWHB will include a storm drain under Hollywood Boulevard between Centennial Parkway and Las Vegas Boulevard and a concrete-lined channel on NAFB from Las Vegas Boulevard to Munitions Road, a concrete channel or reinforced concrete box (RCB) storm drain lateral between Las Vegas Boulevard and Ellsworth Avenue, and an earthen or rock-lined channel/berm to the East Tributary. Excess dirt from the channel construction will be used to fill an existing gravel pit on Air Force property. Gravel maintenance roads are proposed on each side of the concrete channels. RCB culverts will be constructed where the channel crosses Ellsworth Avenue, O'Bannon, and Munitions Roads. An existing sewer at O'Bannon Road will be lowered where it is in conflict with the new channel.

The RWEA will have a concrete channel between Munitions Road and the Dunes South Detention Basin, a berm across the natural wash of the East Tributary directing flow into the

Enable Success Through Innovative Base Support

Dunes South Detention Basin, and a concrete-lined outfall channel connecting the Dunes South Detention Basin to the Confluence Detention Basin in accordance with the MPU. The location, size, and type of East Tributary facilities are tentative and subject to future Master Plan Updates, with NAFB's input, as well as the actual future facility design. The RWHW facilities under Hollywood Boulevard north of Las Vegas Boulevard are referred to herein as the Hollywood Storm Drain (SD) and consists of underground RCB and reinforced concrete pipe (RCP) of various sizes, drop inlets, pavement reconstruction, and utility relocations. The Hollywood SD will be constructed entirely within existing public right-of-way except upstream of Las Vegas Boulevard where the storm drain falls on private land and NAFB property. Connections to existing lateral storm drains will be made and new drop inlets will be constructed where necessary along the new storm drain.

Area of Potential Effect (APE)

The project location includes proposed construction of RCBs on the west side of Las Vegas Boulevard. The east side of the project area encompasses a Las Vegas Boulevard City Right-of-Way and lands on NAFB. This east half of the project includes a concrete channel and RCB culvert in part of the Right-of-Way and on NAFB. The project items occurring on NAFB include the aforementioned RCBs, a berm, concrete channel, associated gravel maintenance road, and additional RCB culverts. This letters seeks concurrence on the portion of the project on NAFB land, which will cause ground disturbance to approximately 2,754 acres (6,000 m by 18 meter area, excavated to a depth of 6 meters).

An archaeological survey with Louis Berger Inc. was completed in locations not previously surveyed, and a six meter buffer was included around the project area as part of the APE. NAFB identified six previous archaeological surveys associated with the APE. There are no known prehistoric archaeological sites within the APE, but one historic road was identified within the project area. This resource is unevaluated for listing in the National Register of Historic Places (NRHP) but will not be affected by project activities (Map 1). Therefore, NAFB has determined the proposed undertaking will have No Adverse Effects on Historic Properties, as defined in CFR 800.5(b).

Should you or your staff have any questions about the project, please contact our tribal liaison/archaeologist, Ms. Kish La Pierre, 99 CES/CEIEA, at (702) 682-5813 or at kish.lapierre@us.af.mil.

Sincerely



PATRICK J. KOLESIAK, Lt Col, USAF
Commander

Attachments (1 hardcopy):

1. Cultural Report

2. APE Map

cc (w/ attachments):

Affiliated Tribal Offices

Tom Brady, City of Las Vegas

Louis Berger Group, Inc.



COLORADO RIVER INDIAN TRIBES

Tribal Historic Preservation Office

26600 Mohave Road

Parker, Arizona 85344

Telephone: (928)-669-5822 Fax: (928) 669-5843

April 27, 2017

Department of the Air Force
99th Civil Engineer Squadron
6020 Beale Ave.
Nellis Air Force Base, Nevada 89191

RE: Range Wash-Hollywood Branch Flood Improvements

Dear Ms. Kish LaPierre:

The Colorado River Indian Tribes' Tribal Historic Preservation Office ("CRIT THPO") has received your letter dated April 2017, regarding the *proposed flood improvements to Range Wash-Hollywood Branch and East Tributary Improvements from Las Vegas Boulevard to Confluence Detention Basin, Nellis Air Force Base, Clark County, Nevada.*

As a preliminary matter, the Colorado River Indian Tribes are a federally recognized Indian tribe comprised of over 4,200 members belonging to the Mohave, Chemehuevi, Hopi and Navajo Tribes. The almost 300,000 acre Colorado River Indian Reservation sits astride the Colorado River between Blythe, California and Parker, Arizona. The ancestral homelands of the Tribe's members, however, extend far beyond the Reservation boundaries. Significant portions of public and private lands in California, Arizona and Nevada were occupied by the ancestors of the Colorado River Indian Tribes' Mohave and Chemehuevi members since time immemorial. These landscapes remain imbued with substantial cultural, spiritual and religious significance for the Tribes' current members and future generations. For this reason, we have a strong interest in ensuring that potential cultural resource impacts are adequately considered and mitigated.

In particular, the Colorado River Indian Tribes are concerned about the removal of artifacts from this area and corresponding destruction of the Tribes' footprint on this landscape. As such, the Tribes request that all prehistoric cultural resources, including both known and yet-to-be-discovered sites, be avoided if feasible. If avoidance of the site is infeasible, then the Tribes request that the resources be left in-situ or reburied in a nearby area, after consultation. This language should be incorporated into enforceable mitigation measures.

In addition, we respond as follows:

_____ Given the potential impact of the project on important cultural resources, the Colorado River Indian Tribes request in-person government-to-government consultation. Please contact the CRIT THPO to discuss our concerns and schedule a meeting with Tribal Council.

CRIT THPO

Project Name: Range Wash-Hollywood Branch Project

Date: April 27, 2017

Page 2

 ✓ In the event any human remains or objects subject to provision of the Native American Graves Protection and Repatriation Act, or cultural resources such as sites, trails, artifacts are identified during ground disturbance, please contact the CRIT THPO within 48 hours.

 The Colorado River Indian Tribes request tribal monitoring of any ground disturbing activity as a condition of project approval. The Tribes request notification of any opportunities to provide tribal monitoring for the project.

 ✓ The Colorado River Indian Tribes do not have any specific comment on the proposed project and instead defer to the comments of other affiliated tribes.

Thank you for your consideration. Please contact the undersigned if you have any questions or concerns.

Sincerely,

**COLORADO RIVER INDIAN TRIBES
TRIBAL HISTORIC PRESERVATION OFFICE**

/s/David Harper, Director

26600 Mohave Road

Parker, AZ 85344

Phone: (928) 669-5822

E-mail: david.harper@crit-nsn.gov

critthpo@crit-nsn.gov



DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

U.S. Army Corps of Engineers
Arizona-Nevada Area Office
3636 N. Central Avenue, Suite 900
Phoenix, AZ 85012

Dear Sir/Madam,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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Sincerely,

CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachment:

Draft Environmental Assessment For The Range Wash From Las Vegas Boulevard
To The Confluence Detention Basin Project, Nellis Air Force Base and FONSI

Enable Success Through Innovative Base Support



DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Commissioner Chris Giuchigliani
Southern Nevada Regional Planning Coalition
500 South Grand Central Parkway, First Floor
Las Vegas, Nevada 89155

Dear Commissioner Giuchigliani,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Raymond Hess, Director of Planning Services
Regional Transportation Commission of Southern Nevada
600 South Grand Central Parkway, Suite 350
Las Vegas, NV 89106

Dear Mr. Hess,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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Chief, Portfolio Optimization

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DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Tina Quigley, General Manager
Regional Transportation Commission of Southern Nevada
600 South Grand Central Parkway, Suite 350
Las Vegas, NV 89106

Dear Ms. Quigley,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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Chief, Portfolio Optimization

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DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

D. Bradford Hardenbrook
Supervisory Habitat Biologist
Nevada Department of Wildlife – Southern Region
4747 Vegas Drive
Las Vegas, NV 89108

Dear Mr. Hardenbrook,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Tony Wasley
Director
Nevada Department of Wildlife – Headquarters
6980 Sierra Center Parkway, #120
Reno, NV 89511

Dear Mr. Wasley,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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Chief, Portfolio Optimization

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99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Lisa Ortega
Urban & Comm. Forestry
Nevada Department of Forestry – Las Vegas Office
4747 Vegas Drive
Las Vegas, NV 891 08

Dear Ms. Ortega,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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Sincerely,

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

JUL 03 2018

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

Cayenne Engel, Resources Management Officer
Nevada Division of Forestry - Las Vegas Office
4747 Vegas Drive
Las Vegas, NV 89108

Dear Ms. Engel,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (R WHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Carolyn Edwards
Trustee, District F
Clark County School District
5100 W.Sahara Avenue
Las Vegas, NV 89146

Dear Ms. Edwards,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Mario Bermudez
Planning Manager
Clark County Department of Comprehensive Planning
500 S. Grand Central Parkway, First Floor
Las Vegas, NV 89155

Dear Mr. Bermudez,

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99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Mike Sword, Planning Manager
Clark County Department of Air Quality
4701 West Russell Road, Suite 200
Las Vegas, Nevada 89118

Dear Mr. Sword,

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99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Commissioner Steve Sisolak
Chairperson
Clark County Commission
500 South Grand Central Parkway, 6th Floor
Las Vegas, NV 89109

Dear Chairperson,

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Sincerely,

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

JUL 13 2018

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

Marc Jordan, Acting Director
City of North Las Vegas, Planning & Zoning
2250 Las Vegas Boulevard North, Suite 114
North Las Vegas, Nevada 89030

Dear Mr. Jordan,

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DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

USGS Henderson Field Office
160 North Stephanie Street
Henderson, NV 89074

Dear Sir/Madam,

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CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

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DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

JUL 08 2013

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

Dan Balduini
U.S. Fish and Wildlife Service
1340 Financial Boulevard, Suite 234
Reno, NV 89502

Dear Mr. Balduini,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

In accordance with 32 CFR Part 989, the Air Force Environmental Impact Analysis Process (EIAP), and 40 CFR §§ 1500-1508, the Council on Environmental Quality guidelines, pursuant to the National Environmental Policy Act, as amended, Nellis AFB requests that your agency review the environmental assessment. Please send any comments no later than August 6, 2018, to Mr. Tod Oppenborn at the above address or e-mail him at Tod.Oppenborn@us.af.mil. Thank you for your participation.

Sincerely,

CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachment:

Draft Environmental Assessment For The Range Wash From Las Vegas Boulevard
To The Confluence Detention Basin Project, Nellis Air Force Base and FONSI

Enable Success Through Innovative Base Support



DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

Teri Knight, District Conservationist
USDA Natural Resource Conservation Service
7080 La Cienega Street, Suite 110
Las Vegas, NV 89119

Dear Ms. Knight,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

In accordance with 32 CFR Part 989, the Air Force Environmental Impact Analysis Process (EIAP), and 40 CFR §§ 1500-1508, the Council on Environmental Quality guidelines, pursuant to the National Environmental Policy Act, as amended, Nellis AFB requests that your agency review the environmental assessment. Please send any comments no later than August 6, 2018, to Mr. Tod Oppenborn at the above address or e-mail him at Tod.Oppenborn@us.af.mil. Thank you for your participation.

Sincerely,

A handwritten signature in black ink, appearing to read "CWR", is positioned above the typed name of Charles W. Rowland Jr.

CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachment:

Draft Environmental Assessment For The Range Wash From Las Vegas Boulevard
To The Confluence Detention Basin Project, Nellis Air Force Base and FONSI

Enable Success Through Innovative Base Support



DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

JUL 03 2018

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

Nicolee Gaddis, Planning & Environmental Coordinator
Bureau of Land Management
4701 Torrey Pines Drive
Las Vegas, Nevada 89130

Dear Ms. Gaddis,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RHHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

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Sincerely,

A handwritten signature in black ink, appearing to read "C. Rowland", is positioned above the printed name.

CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachment:

Draft Environmental Assessment For The Range Wash From Las Vegas Boulevard
To The Confluence Detention Basin Project, Nellis Air Force Base and FONSI

Enable Success Through Innovative Base Support

AFFIDAVIT OF PUBLICATION

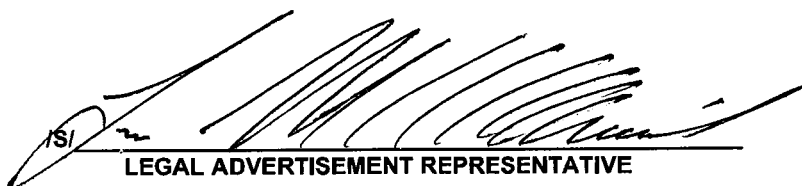
STATE OF NEVADA)
COUNTY OF CLARK) SS:

**NLV PUBLIC WORKS ENG
STE 610
2250 LAS VEGAS BLVD N
NORTH LAS VEGAS NV 89030**

**Account # 22493
Ad Number 0000994185**

Leslie McCormick, being 1st duly sworn, deposes and says: That she is the Legal Clerk for the Las Vegas Review-Journal and the Las Vegas Sun, daily newspapers regularly issued, published and circulated in the City of Las Vegas, County of Clark, State of Nevada, and that the advertisement, a true copy attached for, was continuously published in said Las Vegas Review-Journal and / or Las Vegas Sun in 2 edition(s) of said newspaper issued from 07/08/2018 to 07/15/2018, on the following days:

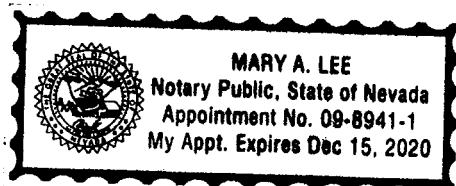
07 / 08 / 18
07 / 15 / 18



LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 6th day of August, 2018

Notary 



NOTICE OF AVAILABILITY

The U.S. Air Force invites the public to provide comments on the draft Environmental Assessment for the Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Project, Nellis Air Force Base, Clark County, Nevada.

The U.S. Air Force announces the availability of a draft Environmental Assessment for the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash - Hollywood Branch and East Tributary in Nellis Air Force Base. The Proposed Action would allow the City of North Las Vegas Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. The proposed facilities would convey flood flows in a controlled manner through Nellis AFB, providing safe passage for vehicles to cross the Hollywood Branch at Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road, and flood security for the Nellis AFB occupants, runways, and associated infrastructure.

You may view the draft Environmental Assessment beginning July 8, 2018, at <http://www.nellis.af.mil/About/Environment.aspx> or http://www.cityofnorthlasvegas.com/departments/public_works/engineering_and_construction_services.php. A copy will also be available for review at the Clark County Library, Reference Department, located at 1401 East Flamingo Road, Las Vegas, NV. In addition, you may request a copy from the address below. Please provide any comments by August 6, 2018 to:

Nellis Air Force Base
99th Air Base Wing Public Affairs
4430 Grissom Ave, Suite 107
Nellis AFB, NV 89191

For general information, contact
99 ABW/PA at: (702) 652-2750,
option 4 or
99ABW.PAOutreach@us.af.mil

AVISO DE DISPONIBILIDAD

Los E.E.U.U. fuerza aérea invita al público a proporcionar comentarios sobre el borrador de la Evaluación Ambiental para el lavado de rangos desde Las Vegas Boulevard hasta la Cuenca de Detención de Confluence Proyecto, Nellis Air Force Base, Condado de Clark, Nevada.

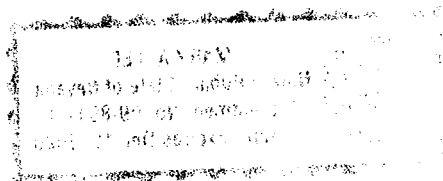
La fuerza aérea de los Estados Unidos anuncia la disponibilidad de un borrador de Evaluación Ambiental para la construcción, operación y mantenimiento de las instalaciones de control de inundaciones que la Ciudad de North Las Vegas propone construir para Range Wash - Hollywood Branch y East Tributary en Nellis Air Force Base (AFB). La Acción Propuesta permitiría al Departamento de Obras Públicas de la Ciudad de North Las Vegas construir un canal de transporte permanente y una cuenca de retención en la propiedad Nellis AFB para confinar y controlar los flujos de inundación en el Range Wash desde Las Vegas Boulevard hasta la Cuenca de Detención de Confluence existente. Las instalaciones propuestas transmitirían los flujos de inundación de forma controlada a través de Nellis AFB, proporcionando un paso seguro para que los vehículos crucen la sucursal de Hollywood en Las Vegas Boulevard, Ellsworth Avenue y Munitions Road, y seguridad contra inundaciones para los ocupantes de la Base Aérea Nellis, pistas y vías infraestructura.

Puede ver el proyecto de evaluación ambiental partir de 08 de julio de 2018, www.nellis.af.mil/library/Environmental.aspx o www.cityofnorthlasvegas.com/departments/public_works/engineering_and_construction_services.php. Copias también estarán disponibles para su revisión en la biblioteca de Clark County, Departamento de referencia, 1401 East Flamingo Road, Las Vegas, NV. Además, puede solicitar una copia de la dirección a continuación. Proporcione por favor cualquier comentario por 06 de agosto de 2018 para:

Nellis Air Force Base
99 ABW Public Affairs
4430 Grissom Ave, Suite 107
Nellis AFB, NV 89191

Para obtener más información,
póngase en contacto con 99
ABW/PA a: (702) 652-2750

PUB: July 8, 15, 2018
LV Review-Journal



HOW TO SUBMIT COMMENTS

Paper and electronic copies of these documents may be requested from the Nellis AFB Public Affairs Office (702 652-2750) or by downloading them via the links on this page. Please provide any comments on draft environmental documents by the public comment period closing dates. Comments should be mailed to:

99th Air Base Wing Public Affairs
5870 Devlin Drive, Ste. 137,
Nellis AFB, NV 89191.

ENVIRONMENTAL DOCUMENTS

[Final Draft Environmental Assessment for the Range Wash from Las Vegas Boulevard to the Confluence Detention Basin Project](#)

June 2018 (11.0 MB, PDF file)

[Nellis AFB City of North Las Vegas Reclaimed Waterline Project Final Environment Assessment](#)

Dec 2017 (PDF file)

[Nellis AFB Beddown of Tactical Air Support Squadron Final Environmental Assessment](#)

June 2017 (PDF file)

[Fire Management for the Cedar Peak Area on the Nevada Test and Training Range Final Environmental Assessment](#)

July 2015 (15.8 MB, PDF file)

[Nellis Air Force Base School Initiative Final Environmental Assessment](#)

April 2015 (14.7 MB, PDF file)

[Range 71 Desert Operations Area Expansion Environmental Assessment](#)

January 2014 (4.2 MB, PDF file)

[Nellis AFB Capital Improvements Program Environmental Assessment](#)

August 2013 (5.2 MB, PDF file)

[Creech AFB Capital Improvements Program Environmental Assessment](#)

November 2013 (5.3 MB, PDF file)

[Nellis Nevada Test and Training Range Wildland Fire Management Plan Final Report](#)

September 2012 (17.4 MB, PDF file)

[Mike O'Callaghan Federal Medical Center Campus Final Environmental Assessment](#)

March 2012 (8.4 MB, PDF file)

F-35 Force Development Evaluation and Weapons School Beddown, Nellis Air Force Base, Nev.

[Record of Decision](#) - June 2011 (353 KB PDF file)

[Final Environmental Impact Statement](#) - May 2011 (23.3 MB PDF file)

[Outgrant for Construction and Operation of a Solar Photovoltaic System in Area I Final Environmental Assessment](#)

March 2011 (2.9 MB PDF file)

[Acquisition of Resort Property Located in Indian Springs, Nevada Final Environmental Assessment](#)

December 2011 (4.43 MB, PDF file)

[Base Realignment and Closure \(BRAC\) Environmental Assessment for Realignment of Nellis Air Force Base](#)

March 2007 (15.7 MB, PDF file)

Site Map

IG

AF Sites

AF Executive Fleet

Questions

FOIA

Contact Us

SAPR

USA.gov

No FEAR Act

RSS

Accessibility

EEO

Link Disclaimer

Strategic APR

Suicide Prevention



ENGINEERING, CONSTRUCTION SERVICES AND SURVEY

2250 Las Vegas Boulevard North, Suite 610
 North Las Vegas, NV 89030
 Phone: (702) 633-1206
 Fax: (702) 633-1158

Manager: Dale Daffern, P.E.
 Assistant: Christine Schaefer

Engineering, Construction Services, and Survey is comprised of the following 3 Sections:

Construction Services include oversight of all private development, off-site construction inspection activities, quality control testing and sampling of all material used in off-site construction, and construction project surety bonds.

Engineering Services provides professional planning, project programming, preliminary engineering, final design, public bidding, and financial and administrative services associated with publicly-funded, capital improvement infrastructure projects and public works programs. These projects include: roadways, street improvements, traffic signals, bridges, flood control channels and detention basins, new and renovated parks, landscaping, new and remodeled municipal buildings, facility maintenance, and various other projects. Engineering Services also compiles the City's Capital Improvement Plan which serves as a Citywide planning tool to address capital needs and prioritize funding for future projects.

Consultant / Contractor Information
<u>Construction Bid Advertisements</u>
City Project Information
<u>Capital Improvement Plans</u>
<u>Permit Matrix</u>

Standards and Details *
<u>Uniform Standard Drawings and Specifications</u>
* RTC (Regional Transportation Commission of Southern Nevada)

Final Draft Environmental Assessment for the Range Wash from Las Vegas Boulevard to the Confluence Detention Basin Project
Nellis Air Force Base, Nevada

Statement of Qualifications (SOQ)

July 1, 2018 - June 30, 2020



DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE NEVADA

99 CES/CENP
6020 Beale Ave.
Nellis AFB, NV 89191

JUL 03 2018

U.S. Army Corps of Engineers
Arizona-Nevada Area Office
3636 N. Central Avenue, Suite 900
Phoenix, AZ 85012

Dear Sir/Madam,

Please find the enclosed copy of the draft Environmental Assessment (EA) to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada. Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch (RHW) and Range Wash – East Tributary (RWEA) in Nellis Air Force Base (AFB). The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

In accordance with 32 CFR Part 989, the Air Force Environmental Impact Analysis Process (EIAP), and 40 CFR §§ 1500-1508, the Council on Environmental Quality guidelines, pursuant to the National Environmental Policy Act, as amended, Nellis AFB requests that your agency review the environmental assessment. Please send any comments no later than August 6, 2018, to Mr. Tod Oppenborn at the above address or e-mail him at Tod.Oppenborn@us.af.mil. Thank you for your participation.

Sincerely,

CHARLES W. ROWLAND JR.
Chief, Portfolio Optimization

Attachment:

Draft Environmental Assessment For The Range Wash From Las Vegas Boulevard
To The Confluence Detention Basin Project, Nellis Air Force Base and FONSI

Enable Success Through Innovative Base Support



CLARK COUNTY • DEPARTMENT OF AIR QUALITY
4701 W. Russell Road Suite 200 • Las Vegas, NV 89118-2231
(702) 455-5942 • Fax (702) 383-9994
Marci Henson Director

July 13, 2018

Mr. Tod Oppenborn
Nellis Air Force Base
6020 Beale Avenue
Nellis AFB, NV 89191-6520

E-mail: tod.oppenborn@us.af.mil

Re: Environmental Assessment (EA) of the Range Wash- Hollywood Branch (RWHW) and Range Wash – East Tributary (RWEA); permanent conveyance channels to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin.

Dear Mr. Oppenborn:

Thank you for the opportunity to review and comment on the Environmental Assessment (EA) letter for the proposed flood control facilities to confine and control flood waters. The proposed facilities would convey flood flows in a controlled manner through Nellis AFB, and provide safe passage for vehicles to cross the Hollywood Branch at Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road. The approximate area of the (RWHW) portion of the project will be 47 acres and the approximate area of the RWEA portion of the project will be 100 acres. The Department of Air Quality (DAQ) has reviewed the proposed EA letter and provides the following comments for your consideration.

Page 3-7, paragraph 2 of the EA states “...there are 16 ambient air quality monitoring stations located in Clark County (CCDAQ, 2017). The Las Vegas Valley Hydrographic Area 212 portion of Clark County-which includes the study area is – designated a maintenance area (former nonattainment area) for CO and PM₁₀. Clark County is in attainment or unclassifiable area for the remaining criteria pollutants. Therefore, the general conformity guidelines describes above are applicable to this proposed project for CO and PM₁₀. A general conformity applicability analysis will be conducted for the study area to compare CO and PM₁₀ to the de minimus levels discussed above.”

Currently there are 15 ambient air quality monitoring stations located in Clark County (as of 07/11/2018, CCDAQ). The Las Vegas Hydrographic Area 212 portion of Clark County –which includes the study area- is designated marginal non-attainment for the 2015 O₃ NAAQS (effective August 3, 2018). Hydrographic area 212 is in attainment, subject to the provisions of maintenance plans, for O₃ (1997 NAAQS), CO, and PM₁₀. Clark County is an attainment or unclassifiable area for the remaining criteria pollutants. Therefore, the general conformity guidelines described above are applicable to this proposed project for O₃, CO, and PM₁₀. A general conformity applicability

analysis will be conducted for the study area to compare O₃, CO, and PM₁₀ to the de minimus levels discussed above.

Since the proposed construction project is located within the Las Vegas Valley—which is currently a maintenance area for the carbon monoxide, ozone, and PM₁₀ pollutants—there are several Clark County Air Quality Regulations (AQRs) that may be applicable. In particular, the following regulatory requirements may apply depending upon the type of activities taking place at the construction site.

Section 94 of the AQRs requires that a dust control permit be obtained prior to: (i) soil disturbance or construction activities that impact 0.25 acres or greater, (ii) mechanized trenching 100 feet or greater in length, or (iii) mechanical demolition of any structure 1,000 square feet or greater. Construction activities include, but are not limited to, land clearing; soil and rock excavation, removal, hauling, crushing, or screening; initial landscaping; staging and material storage areas; parking; and access roads. Additionally, Best Available Control Measures must be employed during construction activities at all times. These measures are described in the Construction Activities Dust Control Handbook, which is available online at:

http://www.clarkcountynv.gov/airquality/compliance/Pages/Compliance_DustForms.aspx

In addition, a detailed supplemental to a Dust Mitigation Plan (DMP) is required if there is a construction project of ten (10) acres or more, trenching activities of one mile or more, or structure demolition using implosive or explosive blasting techniques. If applicable, the supplement must be in the form of a written report and must, at a minimum, detail the project description, the area and schedule of the phases of land disturbance, the control measures and the contingency measures to be used for all construction activities. The supplemental will become part of the dust control permit as an enforceable permit condition.

Any construction project having more than 50 acres of actively disturbed soil at any given time is required to have a Dust Control Monitor as described in Section 94.7.5 of the AQRs. In addition, an application for a Dust Control Permit for a project of 50 acres or more shall contain an actual soils analysis of the entire project.

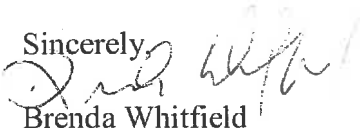
The following provisions of AQRs (90, 91, 92) shall apply to areas located in a PM₁₀ nonattainment area, an area subject of a PM₁₀ maintenance plan as defined under 42 U.S. Code 7505a, or in the Apex Valley (hydrographic areas 216 and 217), and areas which are not regulated by section 94:

- Section 90 limits the emission of particulate matter into the ambient air from open areas and parking lots.
- Section 91 of the AQRs restricts the emission of particulate matter into the ambient air from unpaved roads, unpaved alleys, unpaved road easements and unpaved access roads for utilities and railroads.
- Section 92 limits fugitive dust from parking lots and storage areas.

Section 12 of the AQRs requires issuance of a stationary source permit for any applicable source located in Clark County that has a potential to emit a regulated air pollutant that is equal to or greater than the thresholds listed in that section. However, a definitive determination cannot be made until a complete application is submitted to DAQ and reviewed for applicability.

If you have questions, please contact Brenda Whitfield at (702) 455-1665, Russell Merle at (702) 455-1662, or Small Business at (702) 455-1524.

Sincerely,



Brenda Whitfield
Department of Air Quality
Planning Division
4701 W. Russell Road, Suite 200
Las Vegas, NV 89118
702-455-1665

BOARD OF COUNTY COMMISSIONERS

STEVE SISOLAK, Chairman • CHRIS GIUNCHIGLIANI, Vice Chair
SUSAN BRAGER • LARRY BROWN • JAMES B. GIBSON • MARILYN KIRKPATRICK • LAWRENCE WEEKLY
YOLANDA T. KING, County Manager



**DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA**

JUL 10 2018

Lt Col Patrick J. Kolesiak
Commander
99 Civil Engineer Squadron
6020 Beale Avenue.
Nellis AFB NV 89191

Ms. Rebecca Palmer
Nevada State Historic Preservation Office
901 S. Stewart Street, Suite 5004
Carson City, NV 89701

Dear Ms. Palmer

Please find the enclosed copy of the draft Environmental Assessment to evaluate the potential impacts, beneficial and adverse, resulting from the Proposed Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Flood Control Project at Nellis Air Force Base (AFB), Nevada (SHPO#-UT2017-4873). Proposed Action is the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch and Range Wash – East Tributary in Nellis AFB. The Proposed Action would allow the City of North Las Vegas, Department of Public Works to construct a permanent conveyance channel and a detention basin on Nellis AFB property to confine and control flood flows in the Range Wash from Las Vegas Boulevard to the existing Confluence Detention Basin. Section 2 discusses the Proposed Action, the reasonable alternatives identified for consideration, and the No Action Alternative in detail.

In accordance with 32 CFR Part 989, the Air Force Environmental Impact Analysis Process (EIAP), and 40 CFR §§ 1500-1508, the Council on Environmental Quality guidelines, pursuant to the National Environmental Policy Act, as amended, Nellis AFB requests that your agency review the environmental assessment. Please send any comments to Ms. Kish LaPierre at the above address or e-mail her at kish.lapierre@us.af.mil. Thank you for your participation.

Sincerely

PATRICK J. KOLESIAK, Lt Col, USAF
Commander

Attachment:

Draft Environmental Assessment For The Range Wash From Las Vegas Boulevard To The Confluence Detention Basin Project, Nellis Air Force Base and FONSI

cc: (w/attachments)
NAFB Affiliated Tribes

Enable Mission Success by Delivering Innovative Support

Hoffman, Sarah

From: LAPIERRE, KISH D GS-12 USAF ACC 99 CES/CEIEA <kish.lapierre@us.af.mil>
Sent: Wednesday, August 8, 2018 11:46 AM
To: Hoffman, Sarah
Cc: OPPENBORN, TOD GS-11 USAF ACC 99 CES/CENPP; COLLINS, RUSSELL S GS-12 USAF ACC 99 CES/CEIEC
Subject: FW: [Non-DoD Source] Range Wash Project

I spoke to soon. See below.

Kish LaPierre
Cultural Resource Manager
Nellis Air Force Base, Nevada
702-652-5813

-----Original Message-----

From: Anita Flores [mailto:anita.flores@crit-nsn.gov]
Sent: Tuesday, August 7, 2018 2:48 PM
To: LAPIERRE, KISH D GS-12 USAF ACC 99 CES/CEIEA <kish.lapierre@us.af.mil>
Subject: [Non-DoD Source] Range Wash Project

Ms. LaPierre,

In response to your letter of July 10, 2018, regarding the proposed Range Wash - Confluence Detention Basin Flood Control Project, Acting Director Bryan Etsitty is suggesting to have monitors present during the ground disturbance, even if there are no cultural resources identified within the APE.

This may be one topic to discuss during your scheduled meeting of August 15, 2018.

Respectfully,

Anita L. Flores

Tribal Historic Preservation Office

13390 1st Avenue (location)

(928) 669-5822

anita.flores@crit-nsn.gov <mailto:anita.flores@crit-nsn.gov>

(mail) 26600 Mohave Road

APPENDIX B: AIR QUALITY

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DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: NELLIS AFB

County(s): Clark

Regulatory Area(s): Clark Co, NV; Las Vegas, NV

- Action Title: Range Wash - Hollywood Branch and East Tributary

- Project Number/s (if applicable):

- Projected Action Start Date: 11 / 2018

- Action Purpose and Need:

The purpose of the Proposed Action is to confine and control flood flows. The Proposed Action would reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road and reduce flooding on Nellis AFB by directing flood flows through established flood control facilities.

The proposed flood control facilities would alleviate current issues associated with flooding, resulting in a net positive effect on the environment. The flood control facilities are needed to:

1. Reduce the potential of economic losses to existing businesses in Clark County from flooding.
2. Reduce the potential for economic losses to existing Nellis AFB facilities from flooding.
3. Improve the safety of civilian and military personnel by controlling flood flows and reducing areas that are subject to flooding.
4. Allow for the development of industrial zoned lands in Clark County by reducing areas that are subject to flooding.
5. Allow for improved use of open lands by the USAF by reducing areas in the Nellis AFB that are subject to flooding.
6. Reduce City and USAF maintenance costs by avoiding cleanup following flood events.

- Action Description:

Under Alternative 1, the City of North Las Vegas would construct a concrete channel from Las Vegas Boulevard to Munitions Road, a lateral reinforced concrete box (RCB) storm drain between Las Vegas Boulevard and Ellsworth Avenue, and an earthen or rock-lined channel/berm with intermittent cutoff walls that extends south of Munitions Road to discharge 100-year runoff into the broad natural wash of the East Tributary (RWHW 0000 through RWHW 0174). Excavated soil would be used to fill an existing gravel pit located at the northeast corner of Ellsworth Avenue and O'Bannon Road and to construct berms. This area is also proposed as a temporary construction staging area.

Under Alternative 2, the City of North Las Vegas would construct the Hollywood Branch facilities identified under Alternative 1 plus the East Tributary flood control facilities (RWEA 0000 through RWEA 0192). This option would convey 100-year flows from Las Vegas Boulevard to the Confluence Detention Basin without discharging any flows onto open land and would retain peak flows to reduce the size of downstream facilities.

Under Alternative 2, the City of North Las Vegas would construct a channel and detention basin on Nellis AFB property to convey 100-year storm flows from the 59-square-mile Range Wash Watershed. However, the full capacity of the facilities would not be used until the upstream watershed is fully developed and all MPU flood control facilities in Range Wash Watershed are constructed.

The No Action Alternative would involve no change to the current drainage system. Excess runoff would continue to overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road, and inundate portions of Nellis AFB during large storms.

- Point of Contact

Name: Sarah Hoffman

Title: Senior Environmental Planner

Organization: Louis Berger

Email: shoffman@louisberger.com

Phone Number: 7027891909

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Construction of Flood Control Facilities

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location

County: Clark

Regulatory Area(s): Clark Co, NV; Las Vegas, NV; Las Vegas, NV

- Activity Title: Construction of Flood Control Facilities

- Activity Description:

Construction includes clearing and grading for installation of permanent flood control facilities.

- Activity Start Date

Start Month: 11

Start Month: 2018

- Activity End Date

Indefinite: False

End Month: 1

End Month: 2019

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.466484
SO _x	0.005722
NO _x	3.404582
CO	2.103087
PM 10	61.234534

Pollutant	Total Emissions (TONs)
PM 2.5	0.144062
Pb	0.000000
NH ₃	0.000560
CO ₂ e	574.5

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 11

Start Quarter: 1

Start Year: 2018

- Phase Duration

Number of Month: 3

Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 2047000

Amount of Material to be Hauled On-Site (yd³): 27

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Amount of Material to be Hauled Off-Site (yd³): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	2	8
Other Construction Equipment Composite	2	8
Rubber Tired Dozers Composite	2	8
Scrapers Composite	4	8
Tractors/Loaders/Backhoes Composite	2	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1049	0.0014	0.7217	0.5812	0.0354	0.0354	0.0094	132.97
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0633	0.0012	0.4477	0.3542	0.0181	0.0181	0.0057	122.66
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2343	0.0024	1.8193	0.8818	0.0737	0.0737	0.0211	239.61
Scrapers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2135	0.0026	1.6041	0.8417	0.0653	0.0653	0.0192	262.96
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0512	0.0007	0.3330	0.3646	0.0189	0.0189	0.0046	66.912

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.347	000.002	000.298	003.513	000.008	000.007		000.025	00352.061
LDGT	000.444	000.003	000.525	005.150	000.010	000.009		000.027	00454.877
HDGV	000.943	000.005	001.449	018.879	000.023	000.020		000.045	00797.765

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LDDV	000.115	000.003	000.156	002.578	000.004	000.004		000.008	00344.974
LDDT	000.319	000.004	000.513	005.136	000.007	000.007		000.008	00501.756
HDDV	000.576	000.014	006.275	002.043	000.232	000.213		000.029	01554.144
MC	003.044	000.003	000.833	013.597	000.027	000.024		000.052	00395.604

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)

HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

V_{POL} : Vehicle Emissions (TONs)

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL} : Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: NELLIS AFB

County(s): Clark

Regulatory Area(s): Clark Co, NV; Las Vegas, NV

- Action Title: Range Wash - Hollywood Branch and East Tributary

- Project Number/s (if applicable):

- Projected Action Start Date: 11 / 2018

- Action Purpose and Need:

The purpose of the Proposed Action is to confine and control flood flows. The Proposed Action would reduce flood flows overtop of Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road and reduce flooding on Nellis AFB by directing flood flows through established flood control facilities.

The proposed flood control facilities would alleviate current issues associated with flooding, resulting in a net positive effect on the environment. The flood control facilities are needed to:

1. Reduce the potential of economic losses to existing businesses in Clark County from flooding.
2. Reduce the potential for economic losses to existing Nellis AFB facilities from flooding.
3. Improve the safety of civilian and military personnel by controlling flood flows and reducing areas that are subject to flooding.
4. Allow for the development of industrial zoned lands in Clark County by reducing areas that are subject to flooding.
5. Allow for improved use of open lands by the USAF by reducing areas in the Nellis AFB that are subject to flooding.
6. Reduce City and USAF maintenance costs by avoiding cleanup following flood events.

- Action Description:

Under Alternative 1, the City of North Las Vegas would construct a concrete channel from Las Vegas Boulevard to Munitions Road, a lateral reinforced concrete box (RCB) storm drain between Las Vegas Boulevard and Ellsworth Avenue, and an earthen or rock-lined channel/berm with intermittent cutoff walls that extends south of Munitions Road to discharge 100-year runoff into the broad natural wash of the East Tributary (RWHW 0000 through RWHW 0174). Excavated soil would be used to fill an existing gravel pit located at the northeast corner of Ellsworth Avenue and O'Bannon Road and to construct berms. This area is also proposed as a temporary construction staging area.

Under Alternative 2, the City of North Las Vegas would construct the Hollywood Branch facilities identified under Alternative 1 plus the East Tributary flood control facilities (RWEA 0000 through RWEA 0192). This option would convey 100-year flows from Las Vegas Boulevard to the Confluence Detention Basin without discharging any flows onto open land and would retain peak flows to reduce the size of downstream facilities.

Under Alternative 2, the City of North Las Vegas would construct a channel and detention basin on Nellis AFB property to convey 100-year storm flows from the 59-square-mile Range Wash Watershed. However, the full capacity of the facilities would not be used until the upstream watershed is fully developed and all MPU flood control facilities in Range Wash Watershed are constructed.

The No Action Alternative would involve no change to the current drainage system. Excess runoff would continue to overtop Las Vegas Boulevard, Ellsworth Avenue, and Munitions Road, and inundate portions of Nellis AFB during large storms.

- Point of Contact

Name: Sarah Hoffman

Title: Senior Environmental Planner

Organization: Louis Berger

Email: shoffman@louisberger.com

Phone Number: 7027891909

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Construction of Flood Control Facilities

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location

County: Clark

Regulatory Area(s): Clark Co, NV; Las Vegas, NV; Las Vegas, NV

- Activity Title: Construction of Flood Control Facilities

- Activity Description:

Clearing and grading activities to install permanent flood control facilities.

- Activity Start Date

Start Month: 11

Start Month: 2018

- Activity End Date

Indefinite: False

End Month: 3

End Month: 2019

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.098320
SO _x	0.013164
NO _x	8.052177
CO	4.836795
PM 10	217.008014

Pollutant	Total Emissions (TONs)
PM 2.5	0.341298
Pb	0.000000
NH ₃	0.001244
CO ₂ e	1323.2

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 11

Start Quarter: 1

Start Year: 2018

- Phase Duration

Number of Month: 5

Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 4356000

Amount of Material to be Hauled On-Site (yd³): 55

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Amount of Material to be Hauled Off-Site (yd³): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	2	8
Other Construction Equipment Composite	2	8
Rollers Composite	1	8
Rubber Tired Dozers Composite	3	8
Scrapers Composite	6	8
Tractors/Loaders/Backhoes Composite	2	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1049	0.0014	0.7217	0.5812	0.0354	0.0354	0.0094	132.97
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0633	0.0012	0.4477	0.3542	0.0181	0.0181	0.0057	122.66
Rollers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0682	0.0007	0.4484	0.3884	0.0290	0.0290	0.0061	67.198
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2343	0.0024	1.8193	0.8818	0.0737	0.0737	0.0211	239.61
Scrapers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2135	0.0026	1.6041	0.8417	0.0653	0.0653	0.0192	262.96
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0512	0.0007	0.3330	0.3646	0.0189	0.0189	0.0046	66.912

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

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	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂ e
LDGV	000.347	000.002	000.298	003.513	000.008	000.007		000.025	00352.061
LDGT	000.444	000.003	000.525	005.150	000.010	000.009		000.027	00454.877
HDGV	000.943	000.005	001.449	018.879	000.023	000.020		000.045	00797.765
LDDV	000.115	000.003	000.156	002.578	000.004	000.004		000.008	00344.974
LDDT	000.319	000.004	000.513	005.136	000.007	000.007		000.008	00501.756
HDDV	000.576	000.014	006.275	002.043	000.232	000.213		000.029	01554.144
MC	003.044	000.003	000.833	013.597	000.027	000.024		000.052	00395.604

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)

HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL} : Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons