Santa Clara Pueblo Advance Measures Project

Environmental Assessment

U. S. Army Corps of Engineers

Albuquerque District

FINAL

December 1, 2015

US Army Corps
of Engineers ®
Albuquerque District

Cover photo: Portion of Santa Clara Creek where sediment was removed during Course of Action 2

U.S. ARMY CORPS OF ENGINEERS
ALBUQUERQUE DISTRICT

FINDING OF NO SIGNIFICANT IMPACT
for the
Santa Clara Advance Measures Project

The Albuquerque District Commander made the determination that this project warranted emergency measures. Because this was considered an emergency, then National Environmental Policy Act (NEPA) regulations may be followed and completed after construction implementation. Therefore, this FONSI has been completed after project implementation has begun.

Temporary emergency measures were required to reduce flood risk from the extreme sediment load and flood flows on the Pueblo of Santa Clara. New Mexico's flood season is July-September during which intense rainfall from large thunderstorms causes flash floods. Therefore, to mitigate life safety risk at the Pueblo in advance of the next flood season, a set of emergency measures were implemented by the U.S. Army Corps of Engineers (USACE). USACE has the authority for emergency construction to reduce flood risk via Public Law 84-99 and advance measures. Through these advance measures, USACE implemented sediment removal, bank protection, and construction of three gabion check structures along Santa Clara Creek in 2014 and 2015. The approximate federal cost of these projects was $8.2 million.

Design alternatives and the No Action alternative were evaluated to meet the overall purpose and need of the project, to reduce flood risk to the Village proper, which is located upstream of the confluence of Santa Clara Creek and the Rio Grande.

Section 404 of the Clean Water Act (CWA) requires analysis under the EPA's 404 (b) (1) Guidelines if USACE proposes to discharge fill material into water or wetlands of the United States. Under this analysis, USACE determined that construction must adhere to all of the conditions under Nationwide Permit 33 (Temporary Construction, Access, and Dewatering) and Regional General Permit (RGP) NM-12-01 (Repair and Protection Activities in Emergency Situations). Water quality certification was also obtained from the Pueblo of Santa Clara and adhered to during construction.

Due to the nature of the construction and the engineering requirements for siting the check structures, it was not possible to completely avoid an adverse effect to archaeological site LA 180079. In order to minimize the adverse effect of construction on a portion of LA 180079, several site protection measures were implemented during construction and the USACE, in consultation with the Pueblo of Santa Clara Tribal Historic Preservation Officer, implemented a Plan of Action for managing cultural resources that may have been encountered during construction. Mitigation activities are also being implemented and would be complete prior to project close out in 2015.

USACE determined that there would be no effect on the listed Southwestern Willow Flycatcher, Jemez Mountain salamander, New Mexico meadow jumping mouse, Mexican Spotted Owl, or

meadow jumping mouse, Mexican Spotted Owl, or Yellow-Billed Cuckoo by the project, as no potential habitat for any of these species exists within the project area.

As part of the construction of the project and in order to reduce debris flows, dead Rio Grande cottonwood trees and the sediment around them were removed in the lower portions of the Creek. During construction of the gabion check structures, native trees were avoided where possible but some trees were removed at all check structure locations. A total of 28 live cottonwood trees were removed. Using the appropriate mitigation ratios for dead trees or live trees based upon size, 450 Rio Grande and Narrowleaf cottonwood trees will be planted as mitigation for those trees removed. At the Pond 2 location, 18 ponderosa pine trees were removed for construction while Douglas and white fir were avoided. Therefore, 180 ponderosa pine trees shall be planted as mitigation.

All Best Management Practices described in this document were adhered to during project implementation including: (1) erosion control structures; (2) equipment inspection; (3) compliance with water quality permits; (4) equipment cleaning prior to entering and before leaving project areas to avoid transfer of weed seed; and (5) oversight by a qualified biologist and archaeologist to monitor adherence to these conditions during construction.

The Proposed Action was determined to result in only minor, short-term and temporary adverse impacts to soils; water quality; air quality and noise levels; aesthetics; vegetation; floodplains; fish and wildlife; and recreational resources during construction. Some longer term adverse impacts would also occur to floodplains, vegetation and cultural resources. There are potential long-term benefits to hazardous, toxic and radioactive waste issues, and socioeconomics due to the project. The positive cumulative effects would outweigh short-term and long-term adverse impacts in order to provide flood protection while the watershed heals. The following elements have been analyzed and would not be adversely affected by the project: Hydrology; hydraulics and geomorphology; Indian Trust Assets; land use; and environmental justice.

The Proposed Action has been coordinated with Federal, State, tribal and local governments with jurisdiction over the ecological, cultural, and hydrologic resources of the project area. Based on these factors and others discussed in the Environmental Assessment, the project would not have a significant effect on the human environment. Therefore, it is recommended that an Environmental Impact Statement not be prepared for this project, due to its emergency nature and insignificant impacts.

29 Dec 15
Date

Patrick J. Dagon
Lieutenant Colonel, U.S. Army
District Commander

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1 - Introduction

1.1 Emergency Declaration

The Albuquerque District Commander has the ability to determine if a proposed project is an emergency situation. If the proposed action is considered an emergency, then National Environmental Policy Act (NEPA) regulations may be followed and completed after construction implementation. However, if time allows, NEPA documentation will be accomplished prior to construction. If impacts to the environment are expected to be significant, then U.S. Army Corps of Engineers (USACE) Headquarters, in consultation with the Council on Environmental Quality (CEQ), will determine NEPA arrangements.

This Environmental Assessment (EA) was prepared after implementation of the emergency actions described in this document. No significant environmental impacts were expected during planning and coordination, and none resulted from the implementation of actions. This EA also addresses relatively minor maintenance activities to be performed in the future.

1.2 Authorization, Purpose and Need

The Village of Santa Clara Pueblo is in imminent threat of large damaging floods with extreme life safety risk. Fine sediments mobilized by landslides and debris flows in the upper canyon have reached the Village. In 2011, the Las Conchas Fire burned a large portion of the Santa Clara Creek canyon upstream of the village (Figure 1). Flood potential has increased an estimated four-fold (see Table 1 in Section 3.3) since the wildfire denuded the larger portion of the watershed. The National Oceanic and Atmospheric Administration (NOAA) National Weather Service confirmed that flooding was imminent in 2014 over the Las Conchas burn scar. The Village for the Pueblo of Santa Clara (Village) is located on the alluvial fan at the outlet of the watershed where Santa Clara Creek joins the Rio Grande. Flood fighting and flood damage has occurred in all three years since the fire, with a total of five Presidential Emergency Declarations: one declaration in 2011, two declarations in 2012 and two declarations in 2013. At the time of the fire, four small dams were located along Santa Clara Creek, providing a modest amount of flood risk management in the watershed. Due to post-fire runoff in 2012, three of the dams breached; the last dam (at Pond #1) failed in July 2013. Dam failures were attributed to extreme post-fire peak flows and debris flows causing rapid reservoir filling and overtopping of the facilities. Transport of canyon landslide and debris flow sediment has reached the Village and is now reducing channel capacity within that reach. The channel through the Village aggraded seven feet between July 2013 and January 2014 during base flow conditions less than 20 cfs.

In 2013, as damages and flood risk continued to escalate, the Federal Emergency Management Association (FEMA) recognized that the flood situation was beyond their mission. In November 2013, FEMA activated its National Disaster Recovery Framework (NDRF) consistent with the vision set forth in the Presidential Policy Directive 8, to assist the Pueblo by creating a multi-agency recovery strategy.

USACE has the authority for emergency construction to reduce flood risk in accordance with Public Law 84-99 and advance measures. Temporary emergency measures were required to reduce flood risk from the extreme sediment load and flood flows at the Village. New Mexico's monsoon season is July-September during which intense rainfall from large thunderstorms causes flash floods. Therefore, to mitigate life safety risk at the Village in advance of the next flood season, a set of emergency measures were implemented in 2014 and 2015. USACE has the authority for emergency construction to reduce flood risk in accordance with Public Law 84-99 and advance measures.

1.3 Project Location

The project area (Figure 1) is located on the Santa Clara Pueblo, approximately 22 miles northwest of Santa Fe, in Rio Arriba, Sandoval and Santa Fe Counties, New Mexico. Santa Clara Pueblo lands roughly coincide with the 50-square-mile watershed of Santa Clara Creek. At 10,000 feet, Santa Clara Creek originates on the rim of the caldera of the extinct volcano forming the Jemez Mountains. As the creek flows over 20 miles east to the Rio Grande, it descends 4,400 feet through the steep-sided Santa Clara Canyon.

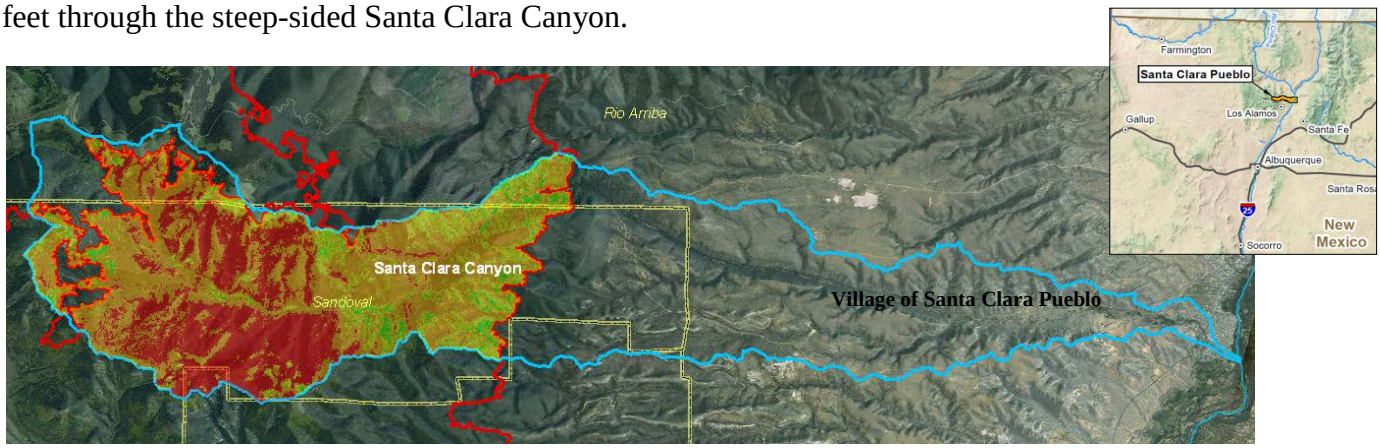

Figure 1. Project Location

1.4 Public Scoping and Collaboration

Numerous agencies have been assisting and coordinating with Santa Clara Pueblo since the Las Conchas Fire. USACE Albuquerque District has been a part of that coordination and has been participating in the monthly post-fire meetings since 2011. Also see Section 3.3 for coordination efforts. USACE also has other projects under other authorities that are being planned with the Pueblo (and are discussed in Section 5.2 Cumulative Effects).

USACE officially requested Cooperating Agencies as part of this collaborative process. According to the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR Part 1501.6), any Federal agency with jurisdiction by law shall be a cooperating agency. USACE requested the following entities to be cooperating agencies and they agreed: Santa Clara Pueblo, U.S. Bureau of Indian Affairs (BIA), FEMA, U.S. Bureau of Reclamation (USBR), and U.S. Department of

Agriculture (USDA). As part of the cooperating agency process, these agencies have agreed to provide input to the Draft Environmental Assessment (DEA) and provided a preliminary review of the DEA prior to public review. USACE has also coordinated with each of these agencies as they perform work to assist the Pueblo after the fire and subsequent flooding.

1.5 Public Review

Public review of the DEA occurred October 22 through November 22, 2015. One comment letter was received from the State of New Mexico Department of Game and Fish (NMDGF) (Appendix C). NMDGF stated that they did 'not anticipate significant impacts to wildlife or sensitive habitats with implementation of the applicable mitigation or avoidance measures included within the project description.'

1.6 Regulatory Compliance

This Environmental Assessment (EA) was prepared by the U.S. Army Corps of Engineers, Albuquerque District, and is in compliance with all applicable Federal statutes, regulations, and Executive Orders as amended, including the following:

- National Historic Preservation Act (54 U.S.C. 300101 *et seq*., formerly 16 U.S.C. 470 *et seq*.)
- Archaeological Resources Protection Act (16 U.S.C. 470aa-mm *et seq*.)
- Clean Water Act (33 U.S.C 1251 *et seq.*)
- Clean Air Act (42 U.S.C. 7401 *et seq.*)
- Endangered Species Act (16 U.S.C. 1531 *et seq*.)
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations
- Executive Order 11988, Floodplain Management
- National Environmental Policy Act (42 U.S.C 4321 *et seq*.)
- CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Part 1500 *et seq*.)
- Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 *et seq*.)
- Executive Order 11593, Protection and Enhancement of the Cultural Environment
- Executive Order 11990, Protection of Wetlands
- U.S. Army Corps of Engineers' Procedures for Implementing NEPA (33 CFR Part 230; ER 200-2-2)
- Farmland Protection Policy Act (7 U.S.C. 4201 *et seq.*)
- Executive Order 13112, Invasive Species
- Federal Noxious Weed Act (7 U.S.C. 2814)
- Energy Independence and Security Act of 2007, P.L. 110-140, Section 438, 121 Stat. 1492, 1620 (2007)
- Migratory Bird Treaty Act, 16 U.S.C. 703, et seq.
- Fish and Wildlife Coordination Act, 48 Stat. 401; 16 USC 661 et. seq.

- Executive Order 13524, Federal Leadership in Environmental, Energy, and Economic Performance

This EA also reflects compliance with all applicable tribal, State of New Mexico and local regulations, statutes, policies, and standards for conserving the environment and environmental resources such as water and air quality, endangered plants and animals, and cultural resources.

A discussion of how the Proposed Action is in compliance with each of these regulations, statutes, and Executive Orders is provided in Section 4.

2 - Description of Proposed Action and Alternatives

2.1 Future Without Project (No-Action Alternative)

The future without project condition would include continued flooding with extreme sediment load and flood flows at the Village. This would provide a continued flood risk to the Village.

2.2 Alternatives Considered but eliminated from further study

The following alternatives were considered during planning and design of features to aid in temporary emergency measures in order to meet the authorization, purpose and need as described in Section 1.2. Planning and design progressed through iterative phases which were termed Courses of Action (COAs) 1 through 3.

- A large sediment detention structure (dam) was proposed using roller compacted concrete (RCC) materials for construction. Multiple locations were proposed for the structure subject to subsurface exploration of foundation conditions. The dam was proposed to be 65-foot high and capable of capturing 62 acre-feet of sediment, several miles upstream of the Village. This alternative was removed from consideration due to unsuitable foundation conditions for an RCC dam.
- A large flood risk reduction facility (a dam) that reduces risk for a 1%-chance (100-year recurrence) flood, as described in detail in the 2011 Technical Assistance Report (USACE 2011), was considered. This facility would significantly reduce flood risk, but was removed from consideration because it was unacceptable to the Pueblo. This structure would affect numerous cultural features, and potentially require an EIS, and therefore also would not meet the time constraint needs.
- A series of moderate sized dams on several major tributaries were described in detail in the 2011 Technical Assistance Report (USACE, 2011). These facilities would also significantly reduce flood risk but would not address flood flows or sediment on the main creek or originating from the medium and smaller tributaries. Given that debris flows and landslides that are occurring throughout the burned landscape, this alternative was considered but removed since its effectiveness for flood reduction was inadequate. It was also not acceptable to the Tribe, as it was estimated to have adverse impacts on cultural features.
- Construction of a series of engineered levees within the village area was initially recommended in the Technical Assistance Report (USACE, 2011); however, due to the excessive supply of sediment that has already started to aggrade the channel within the village, this alternative was eliminated because engineered levees could not be built before the 2014 summer monsoon season.
- Dredging of approximately 11,000 linear feet of stream channel to remove over 100,000 cubic yards of sediment was considered. Placement of four-foot high flood barrier

baskets filled with sediment on 14,600 linear feet of channel banks then armoring emergency berms and channel banks up to the base of the baskets with rip rap was also considered. These measures would reduce flood risk by containing the flood peak within the creek channel for the smaller, more frequent events. Additional channel dredging would likely be required during the monsoon season to maintain the same channel capacity.

- Alternatives were developed from an array of engineered measures being developed as part of a Continuing Authorities Program Flood Risk Management Project (Section 205) at Santa Clara Pueblo, and focused on those that could be put in place in one year. All measures are expected to be temporary in design and sacrificial in capture due to their rapid deployment and lack of a fully functioning flood risk management system.
- Additional measures that include construction of a series of gabion weirs upstream of the village would trap sediment and provide some flood attenuation to augment the measures constructed as part of this project.
- For COA 3, alternative heights for structures were considered between 15 and 12 feet in height, approximately 350 and 450 feet long and which would retain approximately 15 acre feet of sediment storage.

Non-Structural Measures

Several non-structural methods were evaluated for the buildings being damaged in the Village of Santa Clara. Non-structural measures typically include: Relocation, buyouts/acquisitions, dry floodproofing, wet floodproofing floodwalls (or levees) and elevation of structures. Elevation, buyout, and relocation are the most dependable of these floodproofing methods since they remove the structure and contents from the floodplain. Non-structural costs can vary substantially depending on the type of non-structural method being considered and the type, size, age, and location of the structure it is applied to. Wet floodproofing is not appropriate for the types of structures in the study area and small floodwalls and ring levees around individual structures were not appropriate or incomplete. Economic analysis for dry floodproofing, elevation of structures and relocation methods were evaluated using general costs published in *FEMA Homeowner's Guide to Retrofitting*, December 2009. Cost of implementing these measures exceeds the per square foot depreciated replacement cost of most of the improvements in the floodplain, therefore these alternatives were not carried forward for further evaluation.

2.3 Proposed Action/Description of Work Completed

Existing resources were surveyed and potential effects were evaluated prior , and during actual implementation. This occurred in close coordination with Pueblo of Santa Clara staff.

Course of Action 1 (COA 1):

COA 1 work consisted of sediment excavation within the Santa Clara Creek channel floodway to improve flood conveyance capacity through the populated areas along the creek. This activity starts approximately 2,000 ft upstream of Roller Road, extends through the Roller Road low water crossing to the NM State Highway 30 (NM 30) multiple concrete box culvert crossing, and

ends approximately 500 ft downstream of Kee Street (Figure 2). The work was subdivided into three priority areas within this project reach and is described as:

> Priority One Reach: From the NM 30 crossing to approximately 500 ft downstream of the Kee Street crossing, ending adjacent to the existing ball fields.
>
> Priority Two Reach: From approximately 2,000 ft upstream of Roller Road to the Roller Road low water crossing.
>
> Priority Three Reach: From the Roller Road low water crossing downstream to the NM 30 crossing.

COA 1 work was performed from July 7 to July 31, 2014 by the USBR as designed and funded by USACE. Work was completed in the Priority One and Priority Two locations by excavating approximately 39,800 cubic yards of sediment, ranging from 6 feet to 8 feet in depth of accumulated sediment and placing that sediment at the disposal areas shown on Figure 3.

COA 2:

The COA 2 measures were intended to increase conveyance capacity of the channel through the populated areas along Santa Clara Creek. Measures were constructed from the confluence of Santa Clara Creek and the Rio Grande upstream on Santa Clara Creek to the low water crossing (see Figure 2). Measures consisted of dredging the channel to compensate for anticipated sediment loads as well as deploying flood barrier baskets along channel banks to increase the height of banks and, therefore, capacity of the existing channel. Flood barrier basket systems (see Figure 9) are a proprietary product designed to be placed as a flood wall and can be rapidly deployed with minimal labor. The ease of deployment and temporary nature were preferred in this case to implement some minimally engineered solution before the 2015 flood season. Rip rap armoring was placed to protect existing flood berms, as well as protect the flood barrier baskets from undermining.

COA 2 work was performed from September 4, 2014 through February 4, 2015 and was contracted to Victor Corporation. Dredging of the Priority Two and Priority Three reaches (outlined in COA1) was completed. Approximately 42,000 cubic yards of accumulated sediment was removed and placed at the disposal areas used in COA 1 (Figure 3).

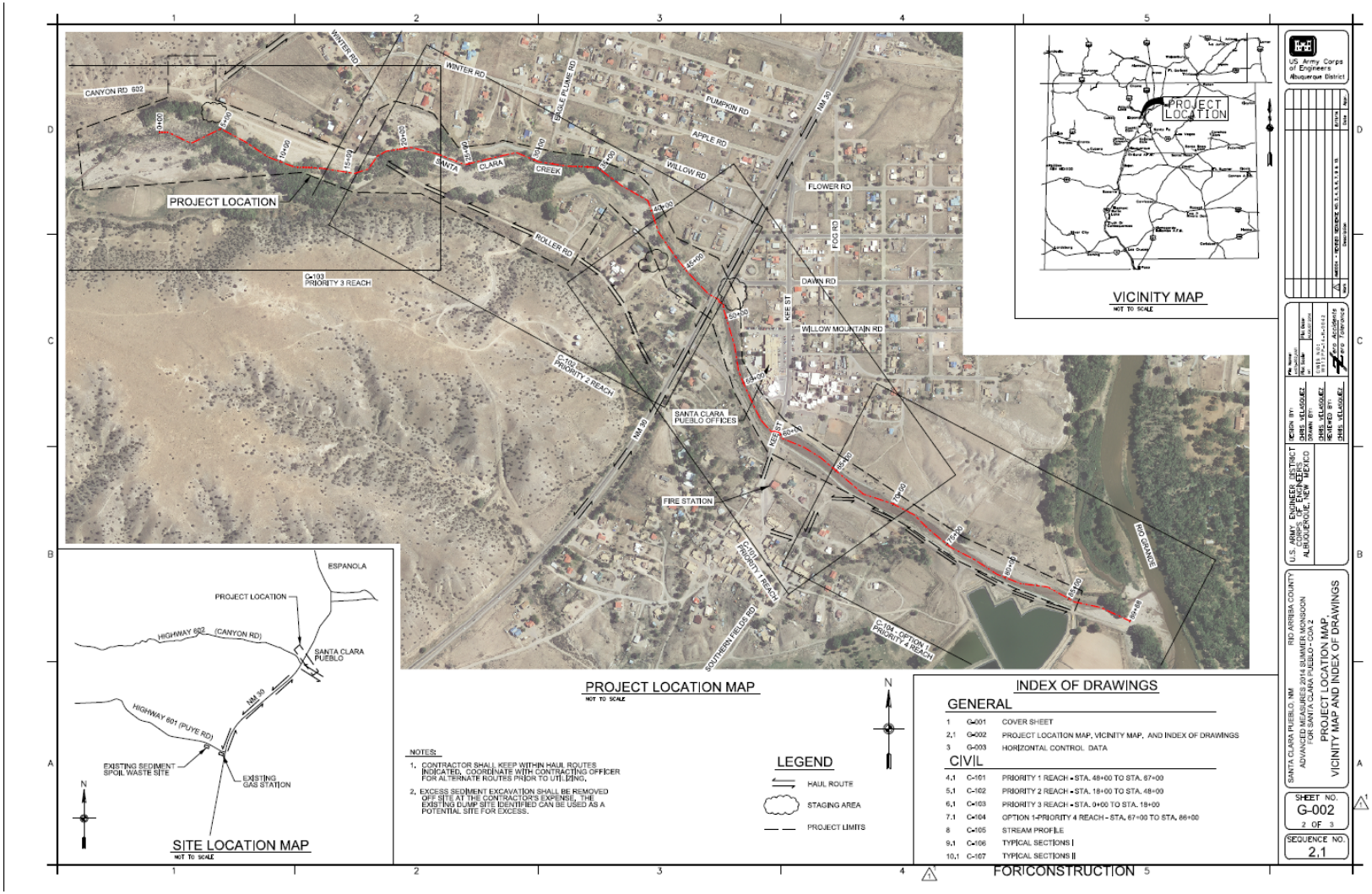

Figure 2. COA1 and COA2 Project Location

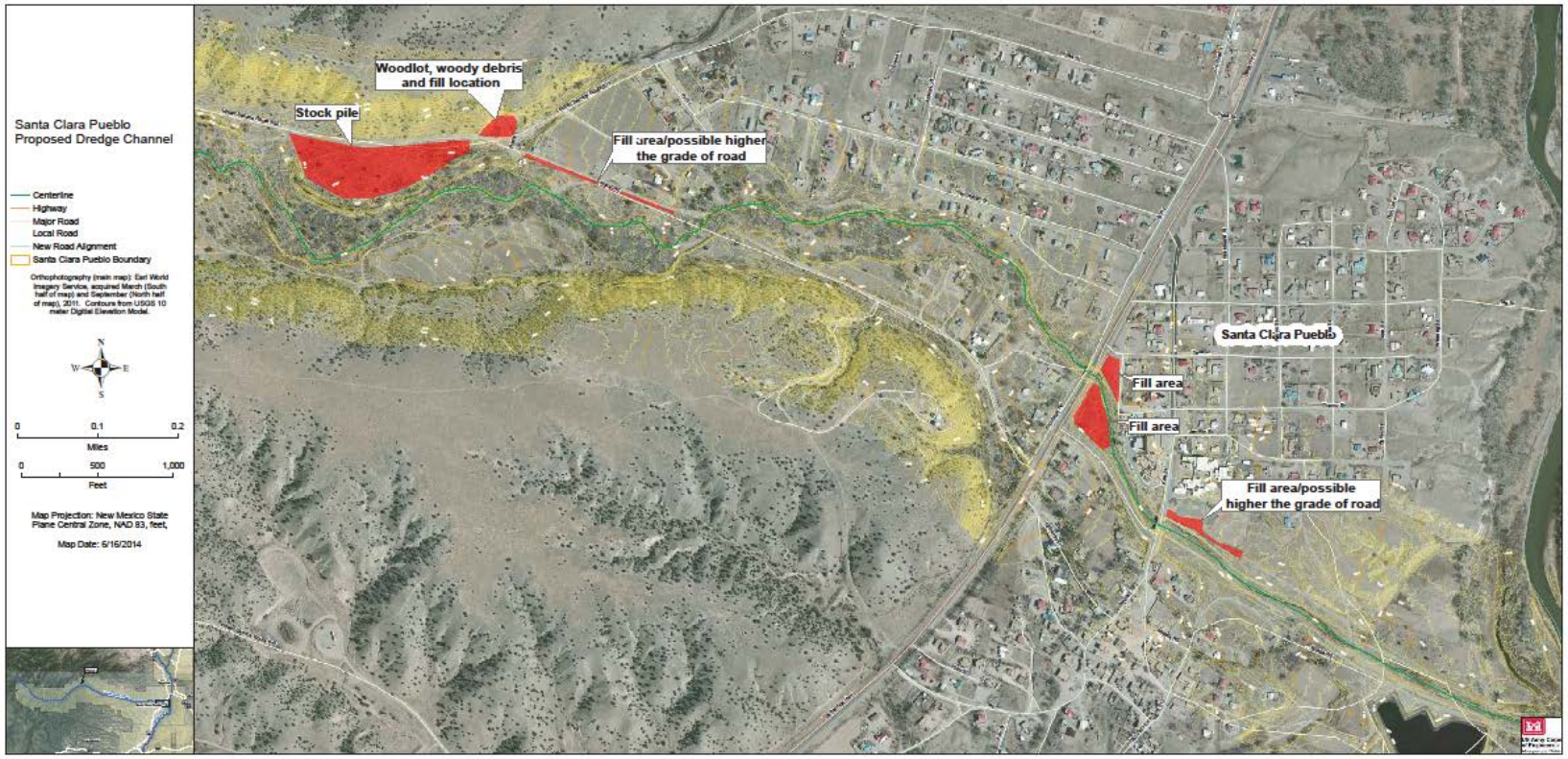

Figure 3. Disposal locations for COA1 and COA2

COA 3:

This project consisted of site preparation, construction and installation of three gabion basket check structures (structures 1, 3 and Pond 2 structure), revetment mattress structures, appurtenances and related mitigation work. Rock to fill gabion baskets and mattresses was obtained from an existing quarry near Santa Fe, NM. Gabion check structures (typical profile and section shown in Figure 5, example shown in Figure 6) were proposed to collect debris and cause floods to spread into overbank areas upstream of the structures thereby attenuating the flood peaks.

Check structures 1, 3 and Pond 2 structure are located along the Santa Clara Creek between 1.5 miles, 4.8 miles and 11.8 miles upstream from NM 30, respectively (Figure 4). Locations were selected to take advantage of natural topography and channel characteristics that provide for sediment storage and flow attenuation. Selected locations were also determined to avoid environmental and cultural resources. The final design sizes were: 19.5 feet maximum in height above the pre-project annual channel invert elevation. Structure 1 is 522 feet long by 19.5' high with a low flow notch 9' high by 51' wide, and an overflow section 291' wide by 15' high. Structure 3 is 450 feet long by 19.5' high, with a low flow notch 9' high by 51' wide and an overflow section 291' wide by 15' high. Each structure was keyed into the channel bed and valley floors as well as the valley walls at each abutment. They are spaced far enough apart to provide the greatest benefit in sediment retention and flood attenuation. The reservoir area behind each check structure is approximately 15 acre-feet and is expected to fill with debris during a significant storm event (50-percent chance exceedance event and higher) and will be cleaned out by Santa Clara Pueblo and the Bureau of Indian Affairs between storms to the extent that is possible and safe. See Figures 7 and 8 for photos of progress during construction of check structures 1 and 3.

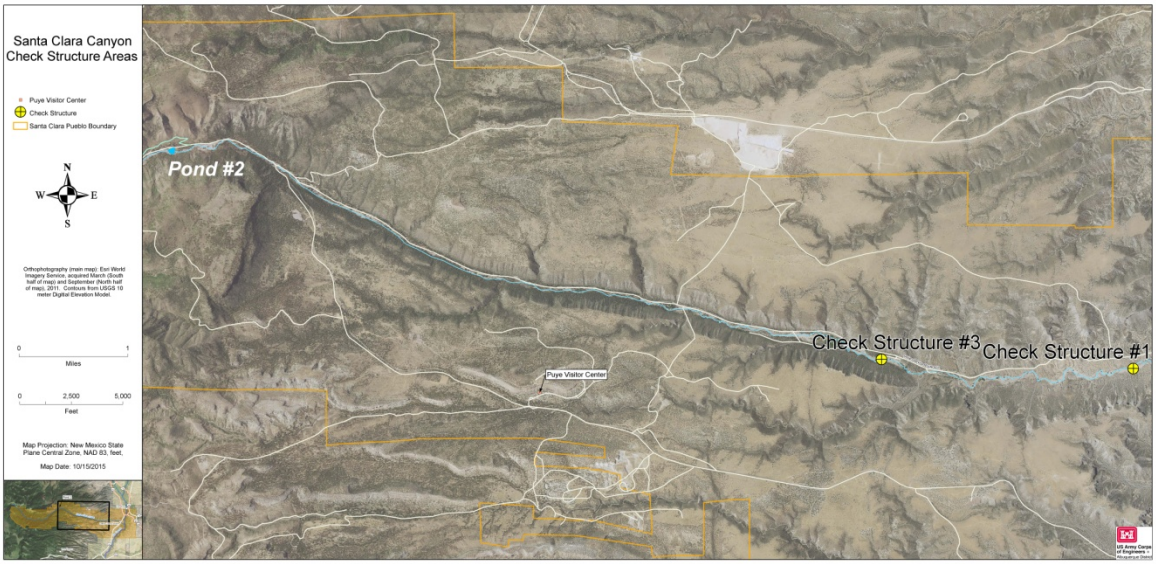

Figure 4. Location of COA 3 structures upstream of the village

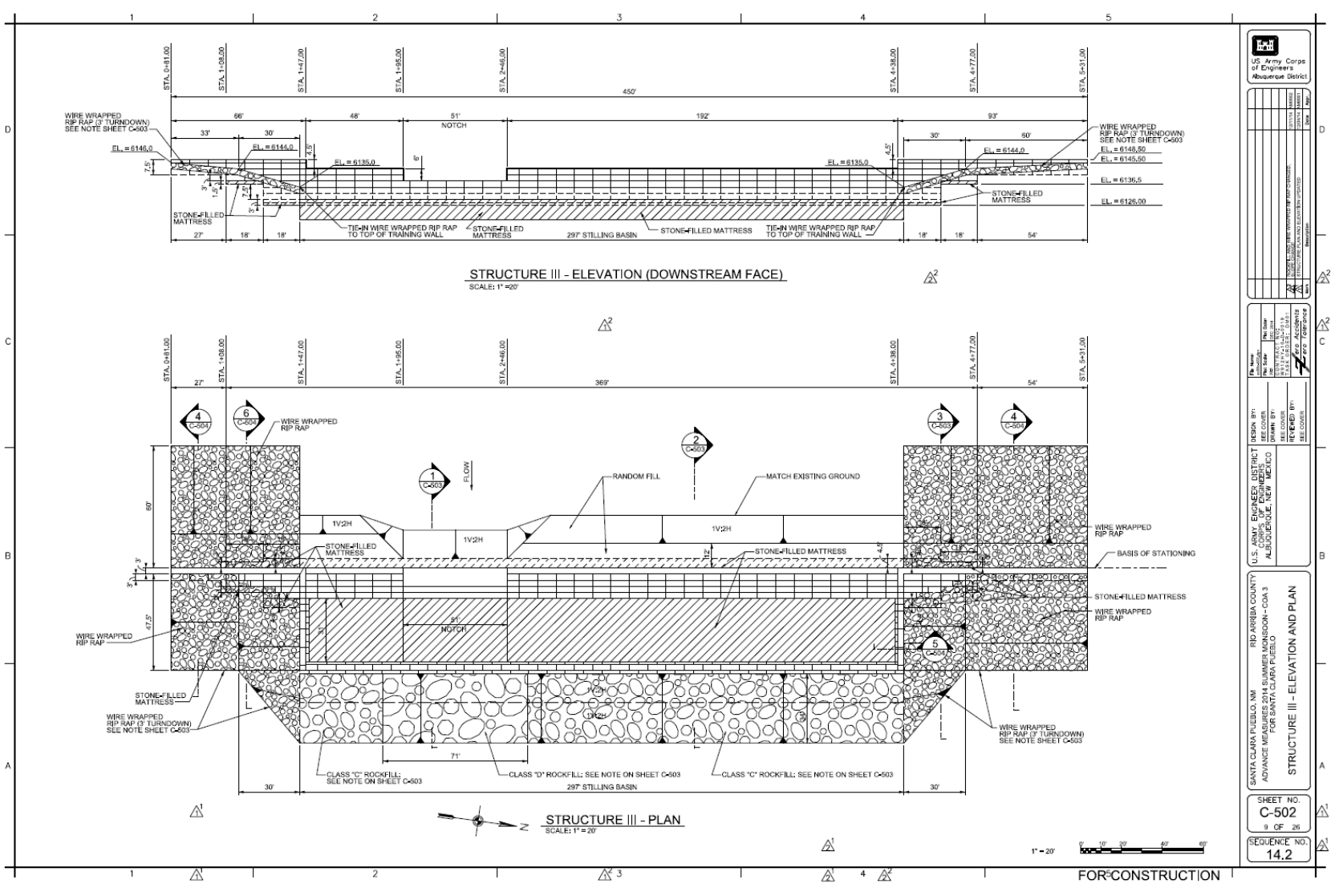

Figure 5. Typical elevation view and plan view of gabion check structure

Figure 6. Example of gabion check structure installed in Los Alamos County in response to the Cerro Grande Fire

Figure 7. Site #1 construction in progress - June 2, 2015

Figure 8. Site #3 construction in progress - June 2, 2015

Figure 9. Earthen berm with flood barrier baskets and revetment stabilization (hidden) on river side – June 2, 2015

Structure function and maintenance:

For the COA 2 features, maintenance would include inspection of the flood barrier baskets and patching where required. Vegetation with deep roots should be prevented from growing in the walls. Riprap that was installed should be inspected after large flows for undermining or unwanted vegetation. Riprap should be replaced when needed.

For the COA 3 features, base stream flow is expected to pass through the porous gabion material; therefore no outlet structure was included in design. The structures are anticipated to be overtopped by most flows at or above the 50%-chance exceedance event (2-year). Although gabion structures have performed well in similar conditions, uncertainty exists relative to the structures ability to withstand large events and the anticipated debris associated with all events in the Santa Clara Canyon. Due to the exigent nature of implementation, design criteria do not account for these uncertainties. Failure of one or more check structures may occur during larger flows or after multiple years of repeated flood events and repeated exposure to large debris. Flood risk does not significantly increase by failure of the structures due to the relatively low height of each structure, distance from the Village and the fact that they do not permanently impound water. Failure of gabion structures are also expected to occur slowly and partially rather than catastrophically so that a failure does not propagate a large flood wave. Even a damaged or partially failed structure will provide some sediment retention and flood attenuation. A projected functional life of 4 years was used to calculate economic benefits for the proposed gabion structures.

Each check structure is expected to fill with debris during a significant storm event (50%-chance exceedance event and higher) and should be cleaned out between storms to the extent that is possible and safe. Evidence of filling is provided by the observation of the existing four ponds located above the check structures filling with sediment during relatively small events. All four ponds were completely filled by a single flow event on several occasions over the past three years.

Maintenance of the COA 3 features includes maintenance and clearing of sediment and debris loads upstream of the structures. Vegetation management will also need to occur in order to keep the main channel pathway clear. The Pueblo of Santa Clara and BIA will perform maintenance on the structures by removing this accumulated material on an annual basis. This sediment and debris shall be deposited in the stockpile utilized in COA1 and COA2 (Figure 3).

3 - The Affected Environment and Foreseeable Effects of the No Action Alternative

3.1 Physiography, Geology, and Soils

The Santa Clara Pueblo lies partially within the Pajarito Plateau, which forms an apron of volcanic and sedimentary rocks around the eastern flanks of the Jemez Mountains. The plateau slopes gently eastward from the mountains toward the Rio Grande where it terminates in steep slopes and cliffs formed by down-cutting of the river (Purtymun and Johansen, 1974). It is also incised by intermittent streams forming numerous east-west trending steep canyons. The plateau is formed by middle Miocene to Pleistocene aged sedimentary rocks of the Santa Fe Group and Pliocene and Pleistocene volcanic rocks.

The main Village site is located on the alluvial fan at the mouth of Santa Clara Creek, on the west bank of the Rio Grande. Pueblo lands extend east of the Rio Grande, including portions of the Rio Grande floodplain and foothills of the Sangre de Cristo Mountains.

Under the Future Without Project condition (also termed the no-action alternative), flood flows would continue to increase sediment input into the system and alluvial fans could continue to increase and grow in size. These flows would continue to travel to the Village and potentially cause damage. Significant sediment accumulation and damage would be expected within the Village.

3.2 Climate

The project area begins at the eastern rim of the Jemez Mountains – known as the Sierra de los Valles – at approximately 10,600 feet above sea level (ft. asl), and then descends steeply to the eastward-sloping Pajarito Plateau at about 7,500 ft. asl, and then descends steeply to the flood plain of the Rio Grande at approximately 5,600 ft. asl. The study area also includes lower-elevation floodplain and bajada areas east of the Rio Grande. This topographic diversity produces strong, primarily west-east temperature and precipitation gradients. In addition, the entire study area is located on the lee side of the Jemez Mountains, resulting in overall lower winter precipitation than adjoining areas on the upwind side of the mountain range.

At the highest elevations, winter precipitation averages approximately 2 inches (5 cm) per month, falling primarily as snow. Winter daytime temperatures average above freezing (33.6 to 37.0°F) while nighttime temperatures are well below freezing (15.2 to 16.5°F). On the Pajarito Plateau, winter daytime temperatures are warmer, at about 40°F high on the Plateau at Los Alamos and 2 to 3°F warmer at White Rock, which lies about 1,000 ft. lower than Los Alamos on the eastern margin of the Pajarito Plateau. Nighttime temperatures average 18.2 and 21.5°F. Winter precipitation at Los Alamos averages about 2 cm / month (slightly less than an inch) and about half a centimeter smaller at White Rock. In the Rio Grande valley at Española and Alcalde,

winter daytime high temperatures average 42 to 47°F in December and January, rising to 50 to 53°F in February, respectively. Nighttime minimum temperatures average 15 to 20°F for these three months. At lower elevations, daytime temperatures are higher and spring warm-up begins sooner than on the Pajarito Plateau and Sierra de los Valles. Conversely, cold air drainage from the Sierra de los Valles and Pajarito Plateau keeps low elevation nighttime temperatures similar to that at higher elevations.

Winter precipitation in the region comes primarily from midlatitude cyclones originating over the Pacific Ocean. Consequently, eastern Pacific sea surface temperatures affect precipitation in the study area. When sea surface temperatures are warm (as in "El Niño" years), winter precipitation in the study area tends to be greater than average. When sea surface temperatures are cool (as in "La Niña" years), precipitation in the study area tends to be less than average. El Niño and La Niña years occur in a 7-10 year cycle (separated by "neutral" years) of changing Pacific Ocean sea surface temperatures and atmospheric pressure known as the El Niño-Southern Oscillation (ENSO). Across the region, spring is a period of warming temperatures and low (at altitude) to essentially no (at low elevation) precipitation. Strong wind occurs in mid-to-late spring.

Summer temperatures are high across the study area. In the Sierra de los Valles, summer daytime high temperatures range from 67.4 to 71.3°F, with overnight lows reaching 41.3 to 46.9°F. Precipitation from the summer monsoon is 3.7 inches in July, 4.9 inches in August, and 2.7 inches in September. Over Los Alamos, summer daytime temperatures are highest in July at 80.9°F, tapering to 72.2°F in September, with temperatures at White Rock approximately 4 to 5°F warmer. Nighttime temperatures grade from the mid-fifties in July to the upper 40s°F in August at Los Alamos, with comparable values at White Rock. Los Alamos receives on average approximately 8 inches of rainfall during the monsoon months of July, August and September, while White Rock averages approximately 5.75 inches.

Summer temperatures are hottest in June, July and August at low elevation, with summer daytime high temperatures peaking at 89.7°F in July at Española and 89.2°F at Alcalde. Nighttime low temperatures at Española are very similar to White Rock and Los Alamos, again reflecting nighttime cold air drainage from higher elevation regions. Precipitation in these low elevation areas in the summer monsoon season averages about 3 inches at Española and 4.5 inches at Alcalde.

Summer precipitation is largely driven by the North American Monsoon, in which heating of the land surface draws in moist air primarily from the Gulf of Mexico, but also from the Pacific. Locally, rising air over the Jemez Mountains and Pajarito Plateau leads to convection and the formation of thunderstorms in higher elevation portions of the study area. Rainfall is less at lower elevations, and often rain evaporates as it falls through the hot, dry atmosphere at lower elevation, a phenomenon known as "virga". About one-half of the local yearly precipitation falls in the months of July, August, and September, locally referred to as the "summer monsoon".

Floods occur from April through October and are usually the result of rain alone, rain-augmented snowmelt runoff, or, in some rare cases, extremely high snowmelt runoff events. Local rain events caused by convective storms create flash floods on the tributaries, which accumulate in the Rio Grande channel. Many of the flood-producing storms on the mainstem Rio Grande occur

during the transitional periods between spring and summer and between summer and fall. During these periods the strong intrusion of cool northern air interacts with the moist tropical air to produce the widespread storms over the watersheds.

3.3 Hydrology, Hydraulics and Geomorphology

Prior to the 2011 fire, USACE had prepared flood magnitude estimates and new floodplain maps for the residential areas of the Pueblo. These models were updated and recalibrated for post-fire conditions in 2011 and again in 2012. Under post-fire conditions, the magnitude of the 100-year flood flow (1% chance event) increased about four fold over previous conditions, from 5,200 cfs pre-fire to 20,408 cfs post-fire (Table 1).

Table 1: Pre- and post-fire flood estimates for The Pueblo of Santa Clara (USACE 2012).

Percent-Chance Flood	Return Interval	Post-Fire Discharge (in cubic feet per second (cfs))	Pre-Fire Discharge (in cfs)
50%	2-yr	1,403	200
10%	10-yr	7,570	1,580
1%	100-yr	20,408	5,200
0.20%	500-yr	31,180	15,900

Under pre-fire conditions, the floodplains were small and concentrated along the existing channel, with very few structures estimated to be flooded during a 1%-chance event. The post-fire floodplain assessment found that nearly the entire alluvial fan through the Village would become inundated during a 10%-chance flood event (Figure 6).

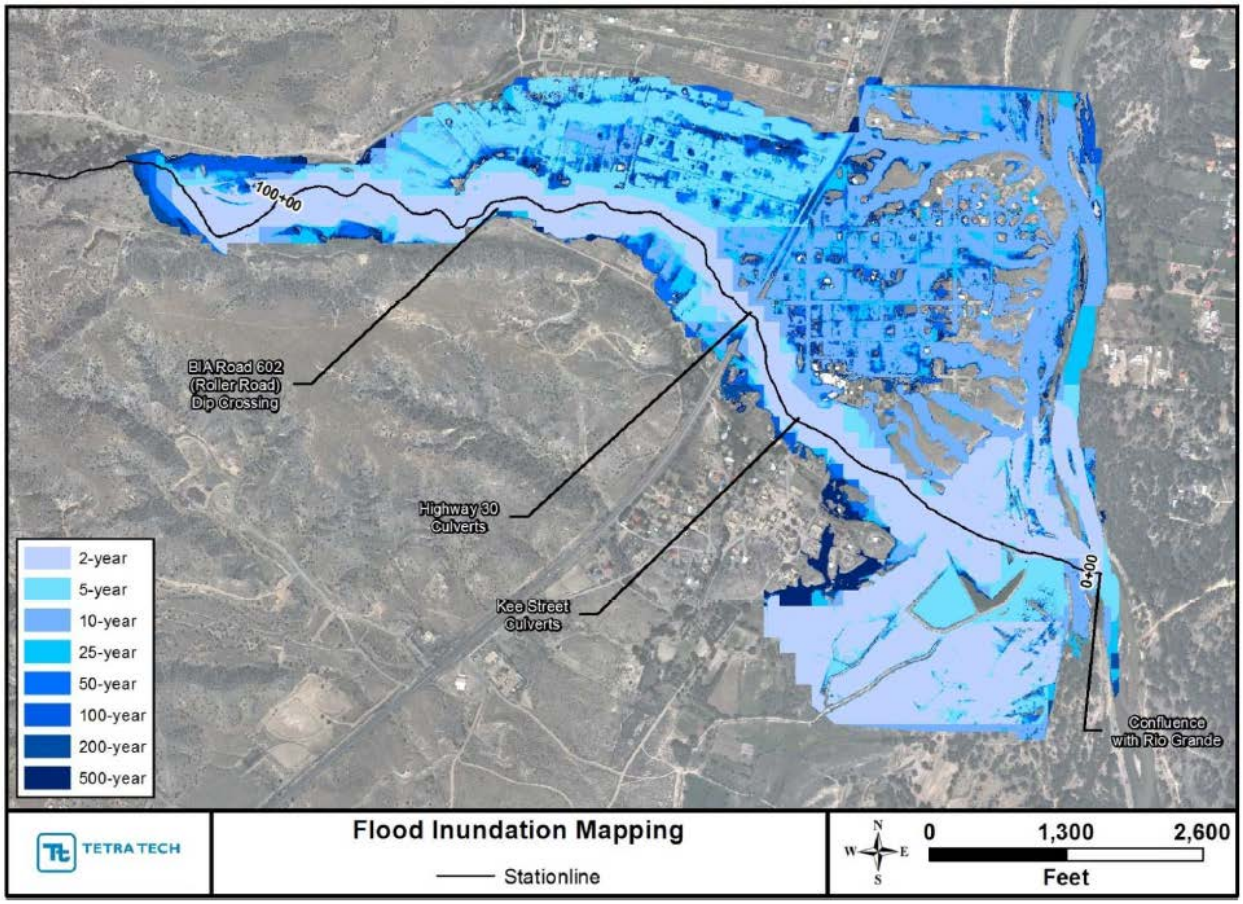

Figure 10. Estimated floodplains for Santa Clara Creek at the Village, 2014. The main channel is the black line; flow is from left to right

After the Las Conchas Fire, geomorphic processes occurring within the watershed have changed towards excessive sediment supply due to the dominance of mass wasting processes. Mass wasting, also known as slope movement or mass movement, is the geomorphic process by which soil, sand, regolith, and rock move down slope typically as a mass, largely under the force of gravity, but frequently affected by water and water content as in mudslides. Loss of vegetative cover has lead to destabilization of soils on canyon hillslopes (Figure 11). Debris flows are now documented in all canyon tributaries, as well as landslides and the formation of large gully systems throughout the burned areas. All of these processes are delivering massive amounts of sediment to the valley bottom, which is clearly being transported downstream to the Rio Grande through the village.

Figure 11. Extensive un-raveling of the flow-paths and soils in all the headwaters; erosion extends almost to the ridge line. Photo date: July 2013

Immediately following the 2011 fire, the Pueblo of Santa Clara began to prepare for their increased flood risk. However, they had little time to prepare; by the time the fire had moved past Santa Clara Creek, the summer thunderstorm season was beginning. The Pueblo removed obvious flow impediments along the creek and placed Jersey barriers reinforced by sandbags along the floodway (top of bank) on the alluvial fan where the Pueblo's population is concentrated. The Pueblo, in collaboration with Federal partners including USACE, USBR, and BIA, also started removing fire debris and dredging the four ponds in the upper canyon. These ponds were created to serve as sediment detention facilities under the moderate pre-fire sediment transport regime and were also stocked as fish ponds.

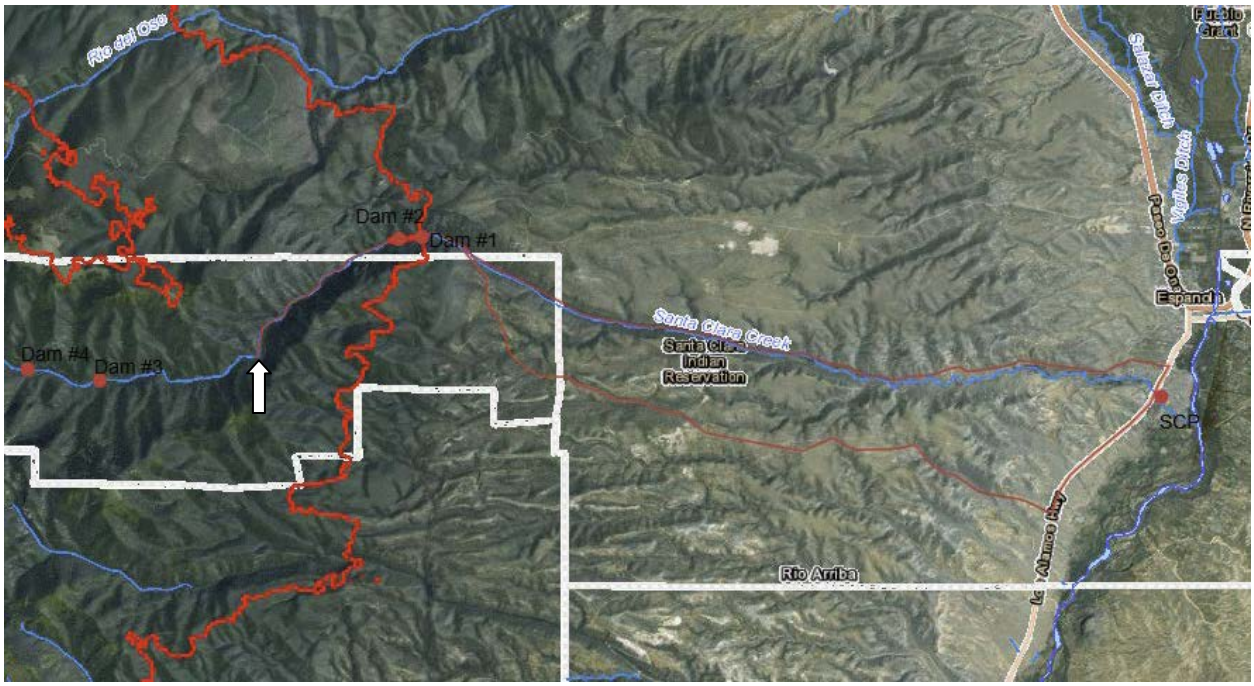

Figure 12. Location of Ponds (dams 1-4) and Santa Clara Pueblo (SCP). White arrow denotes location of Hairpin Tributary

In July 2011, several small (<0.5 inches precipitation) isolated rainfall events occurred in the canyon, triggering debris flows that produced isolated damage to the canyon road and some small buildings, but did not trigger a flood flow down the canyon. The first major rainstorm occurred at the end of August 2011; this event was approximately one inch of rain in eight hours. Numerous debris flows were triggered up-canyon and a relatively large flood flow traveled through the canyon and down to the Village, triggering the first evacuation of the Village. The canyon road and several buildings in the upper canyon were destroyed in this event, and damage occurred to all four of the upper canyon ponds, which filled but did not breach. After the August 2011 event, State and Presidential emergency disaster declarations were made throughout the State of New Mexico, making State and Federal (FEMA) funds available to restore damaged infrastructure and to start planning for the elevated flood risk in collaboration with USACE through a Technical Assistance Report (USACE, 2011).

In October 2011, orthophotography and LiDAR mapping data were collected for the Pueblo. The Pueblo worked with the U.S. Department of Agriculture (USDA) Las Conchas Fire Burned Area Emergency Response (BAER) team to identify re-seeding and mulching options for the burned area. By spring of 2012, some high priority burned lands in the canyon had been mulched and seeded. USACE completed a Technical Assistance Report (USACE-TAR) that outlined a variety of potential flood risk management measures with estimated implementation costs and associated benefits. In spring 2012, the Pueblo started working with USBR to construct emergency berms at the Village, as recommended in the USACE-TAR (USACE, 2011). FEMA funds supported temporary repairs of the canyon road and debris/sediment removal from the four ponds (Figure 12). In early summer 2012, the Pueblo worked with The Nature Conservancy to design sediment/debris catchment barriers on the major tributary mouths in the upper canyon.

Small and large rainstorms caused flooding in the summer of 2012 that damaged the ponds and roads in the canyon and reached the top of channel banks within the village. Again, State and Presidential disasters were declared as portions of the canyon road were destroyed, all four upper canyon ponds filled with sediment and incurred additional damage, with Ponds 2, 3 and 4 fully breaching. By spring of 2013, the canyon road was again repaired and functioning, and Ponds 1 and 2 cleaned of debris and sediment. The breach at Pond 2 remained, but the Pueblo hoped that its former reservoir area would trap some sediment in the 2013 flood season. Additional preparations were made for constructing more flood risk management measures within the Village; however, no new construction occurred.

In July 2013, approximately 1.5 inches (~50%-chance rainfall event) of rain fell on the burned area within Santa Clara Canyon, creating flash flood with an estimated peak flow of 6,500-7,500 cfs in the Village (~20%-chance flood event, based on the calibrated HEC-HMS model prepared for the 2012 Section 203 Watershed Study for Santa Clara Creek). The channel had become incised before this event, and therefore conveyed this flood with minor damage in the Village. Rapid channel aggradation occurred due to sediment during and subsequent to this flood, resulting in a net gain in channel elevation by September 2013, when additional damage to the channel occurred. Although it is estimated that the September 2013 event had a smaller peak flow through the Village than the July 2013 event, channel aggradation enabled the September flood to challenge the existing emergency berms. The observed magnified peak flow for the 1.5 inch thunderstorm event is believed to be a result of sediment bulking of the flood flow (40-50% of the flood was sediment), which is consistent with the rapid sedimentation observations. This normally occurring rainstorm is of an event size that is now actively monitored for life-safety risk by the National Weather Service and led to Village evacuations orders being issued in 2013.

Extreme amounts of sediment are being delivered to the Santa Clara Creek through both fluvial (stream transport) and mass-wasting (debris movement) processes. This sediment is being transported downstream during all stream flows, but most notably during the summer thunderstorm season. Santa Clara Creek channel aggradation within the tribal Village has resulted in approximately 7.5 feet of bed-level rise near the tribal administration buildings between July 2013 and March 2014, significantly decreasing the available flow capacity. The transport of sediment occurred during base flow conditions of less than 20 cfs. Within the Village, the flood risk continues to be high. Floods are reaching the Village faster with each flood; flood waves reach the Village about 45 minutes after a rainfall event in the upper reaches of the canyon. The size of the flood peaks are expected to remain as previously experienced or may be larger as the stream continues to become more efficient at conveying flows due to loss of riparian vegetation and other roughness features. Three sources of information support the assertion that all future floods (100% chance floods and larger) are expected to create flood damage within the Village area in the 2014 flood season: empirical channel and water surface elevation data collected in 2013 show rapidly decreasing channel capacity; USACE hydraulic models estimate significant changes to floodplains and flood water depth; and revisions to the National Weather Service's determination of flood potential. Without the implementation of this project, flood risk would continue to be high.

3.4 Water Quality

A surface water and sediment quality study was performed by USACE (Reale 2014b). The purpose of this sampling event was to: characterize the physical and chemical properties of surface water and sediment within the project boundaries; compare to previous post-wildfire investigations and background sites not impacted by recent wildfires; and conduct a Screening Level Human Health Risk Assessment (SLHHRA) and Screening Level Ecological Risk Assessment (SLERA) from the data collected. This section summarizes and documents field activities performed, analytical results, and results of the SLHHRA and SLERA. A second study deployed a continuous multi-parameter water quality instrument in Santa Clara Creek to assess the water quality in situ (Reale 2014a), and is summarized below.

In May 2013, surface water grab samples were collected on Santa Clara Creek (6), Encino Creek (1) and the Rio Grande (1) and analyzed for semivolatile organic compounds (SVOCs), organochlorine pesticides, total and dissolved metals, total mercury, nitrate, total phosphorus, total and or amenable cyanide, polyaromatic hydrocarbons (PAHs), total organic carbon, gross alpha and gross beta radioactivity, Strontium-90, dioxons and furans, and total hardness. Encino Creek was selected as a background location for both surface water and sediment, because it is similar in size and stream-order as Santa Clara Creek, but was not impacted by the Las Conchas fire. Encino creek has also been sampled by the Pueblo (Chavarria 2012), the New Mexico Environmental Department (NMED), and Department of Energy Oversight bureau (Ford-Schmid 2013). Background data in conjunction with results from post-Cerro Grande fire monitoring and selected background locations (Kraig et al. 2002, Gallaher and Koch 2004, Englert 2007) from Los Alamos National Laboratory (LANL) were used as comparison. Analytical results indicate the presence of various total and dissolved metals, nitrate, phosphorus, organochlorine pesticides (delta lindane), dioxins and furans, radionuclides, SVOCs (acenaphthene and pyrene), PAHs and total or amenable cyanide in surface water. Water quality (pH, temperature, dissolved oxygen, turbidity and specific conductance) and stream discharge data was collected prior to collecting each water quality sample. Analytical results indicate the presence of total and dissolved metals, SVOCs (acenaphthene and pyrene), and one organochlorine pesticide (delta-lindane) in surface water. These detections were then compared to background levels, previously published data, and regulatory criteria (Santa Clara Pueblo, NMED, U.S. Environmental Protection Agency (EPA), and Department of Energy (DOE)).

Five (5) multi-incremental surface sediment/soil samples were collected at Santa Clara Creek ponds 1-4 and stockpile areas within the Pueblo following USACE guidance (2009) for incremental sampling (IS). These stockpiles included sediments removed post-Cerro Grande (2001) and post-Las Conchas (2011) fires, and were considered an independent decision unit (DU). The IS approach was used for sampling sediment at the ponds and stockpiled sediment/soil. The IS method was selected to generally characterize the material within the pond, and assumes homogeneous contamination and material. This method does not detect hot-spots of contamination. This method results in one concentration for each of the analytes, which can be considered the mean, is generated for each DU. The maximum concentration for all ponds and stockpiled material was selected, and compared to regulatory benchmarks. For surface water samples all Santa Clara Creek samples will be considered one DU. The sediment sample at Encino Creek and the Rio Grande may be interpreted to represent background conditions for the purposes of this study. The sediment samples were analyzed for total cyanide, dioxins and

furans, metals, total mercury, pH, total organic carbon, cesium-137 and other gamma emitters, strontium-90, and isotopic plutonium using U.S. Environmental Protection Agency (US EPA) analytical methods. Analytical results indicate the presence of metals, gamma radionuclides, PAHs, organochloride pesticides (4,4'-DDE, a breakdown product of the pesticide DDT), SVOCs, total and amenable cyanide, and one detection of a furan (2,3,7,8-TCDF) in sediment and soil.

The continuous multi-parameter water quality instrument (sonde) consisted of a Yellow Springs Instruments (YSI) model 6920 V2. Dissolved oxygen (DO), dissolved oxygen percent saturation (DO %), pH, temperature (°C), turbidity and specific conductance (SC; corrected to the resistance of the solution at 25°C) were recorded at 10-minute increments. The sonde was deployed between May 13 and May 22 2013 at Santa Clara Creek near mile marker 14.8, below pond 3.

Using the analytical results of the May 2013 sampling event, a SLHHRA and SLERA were completed using various Pueblo, state, and federal guidance to assess whether the levels of inorganics, organics, and/or radionuclides pose potential health risks to humans or environmental resources within the Pueblo. A screening-level risk assessment uses conservative assumptions about scenarios of maximum exposures to the maximum analyte concentrations measured during laboratory analyses. These assumptions are used to ensure that no potential risk is overlooked. During the study, analytical results were compared to risk-based inorganic, organic, and radionuclide concentration benchmarks and guidelines documented in standards developed by the Pueblo of Santa Clara, NMED, and federal agencies (US EPA,US DOE). Only dissolved metals were used in the surface water risk assessment, per Santa Clara Pueblo water quality standards (2002), EPA and NMED guidance.

Four analytes (dissolved aluminum, iron, manganese, and thallium) in surface water were detected that exceed Pueblo of Santa Clara, EPA, or NMED human health screening benchmarks. Three analytes (tetrafuran, arsenic, cobalt) were detected in soil/sediment that exceeded ORNL or EPA screening values for soils and sediment at the ponds and stockpiled material. All sediment and soil samples did not exceed NMED thresholds for residential, industrial worker and construction worker exposure. Four analytes (barium, total phosphorus, manganese, and thallium) exceeded surface water ecological screening level benchmarks. Seventeen analytes (barium, beryllium, cadium, total chromium, copper, iron, lead, manganese, selenium, thallium, vanadium, 4,4'-DDE (DDT breakdown product), and three polycyclic aromatic hydrocarbons) exceeded ecological soil or sediment benchmarks for samples at the Santa Clara ponds and other sediment or soil stockpiles on the Pueblo.

Specific wildfire-induced water-quality effects are numerous. Increased sediment loading from fire negatively affects stream and river channels (Malmon et al. 2007, Smith et al. 2011a, Goode et al. 2012, Moody et al. 2013) by elevating in-stream turbidity levels (Rhoades et al. 2011, Oliver et al. 2012, Sherson et al. 2015). Ash inputs and elevated erosion also increase the transport of major ions and elevates postfire specific conductance (SC) values (Earl and Blinn 2003, Lyon and O'Connor 2008, Dahm et al. 2015) and in-stream nutrients (Spencer and Hauer 1991, Oliver et al. 2012, Miller et al. 2013, Sherson et al. 2015). Decreases in dissolved O_2 (DO) to hypoxia (<2 mg/L) also have been observed (Verkaik et al. 2013, Dahm et al. 2015, Reale et al. 2015, Sherson et al. 2015).The degradation of water quality from post-fire ash can also cause

the presence of metals such as Copper (Cu), Chromium (Cr), Manganese (Mn), and other contaminants (Smith et al. 2011b) at concentrations exceeding water quality criteria. Previous investigation also documented elevated concentrations of radiological and non-radiological chemicals in sediments after the Cerro Grande Fire (Kraig et al. 2002), but was determined to not have health effects for exposed individuals, unless individuals were exposed for long periods of time at some of the potential maximum concentrations.

Many of the contaminants that exceeded human health and ecological screening levels identified in the recent study in Santa Clara Canyon (Reale 2014b) can be attributed to natural occurrence and recent wildfire. All metals detected in sediment were excluded from further risk analysis due to background concentrations at Encino Creek, Rio Grande and previous investigations (Kraig et al. 2002) . A geochemical comparison (Myers and Thorbjornsen 2004) would confirm this assumption. 4, 4' DDE and PAHs (Fluoranthene, Napthalene, Phenanthrene, and Pyrene) exceeded conservative benchmarks, and cannot be attributed to background. Phenathrene was detected above the EPA Region 6 freshwater sediment benchmark at Santa Clara Creek, Encino Creek and the Rio Grande. PAHs, polychlorinated dibenzo-q-dioxins and dibenzofurans (PCDD/Fs) and polychlorinated biphenyls (PCBs) may be produced during combustion in forest fires and released into the atmosphere or deposited in ash and soil/sediments (reviewed by Smith et al. 2011). 4,4'-DDE is an organochlorine pesticide is found in small concentrations of technical-grade DDT ((1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane) and is also a breakdown product of DDT. DDT does not occur naturally in the environment. In 1973 DDT was no longer permitted in the United States except in cases of a public health emergency. It is, however, still used in some other areas of the world, most notably for controlling malaria (Faroon et al. 2002). Today, DDE is only found in the environment as a result of contamination or breakdown of DDT (Faroon et al. 2002). In the United States before 1973, large amounts of DDT were released into the air and on soil or water when it was sprayed on crops and forests to control insects. Today, DDT is still released into the atmosphere when sprayed in the remaining countries where it is still manufactured and used, which include Mexico (Faroon et al. 2002). The chemical has been found worldwide including in Antarctica and Arctic regions where the chemical was never used (Faroon et al. 2002). DDT and DDE are persistent in soil and slow to break down by microbial action and photodegradation. DDT and DDE strongly adhere to soil. It can also volatilize and redistributed during precipitation events. It should be noted that 4,4'DDE was detected at Encino Creek and Santa Clara Creek above the EPA Region VI freshwater sediment benchmark.

During the brief sonde deployment, Santa Clara Pueblo water quality standards (2002) for water temperature and turbidity were exceeded. This deployment occurred during summer baseflow conditions, and did not document the water quality during post-fire flow events. The lack of post-fire and flood riparian vegetation in Santa Clara Creek, which buffers stream temperature, will also likely negatively impact the DO signal. The temperature exceedances will likely grow in severity, frequency and duration, during periods when the average temperature is greater i.e. during the months of June through September (Reale 2014a).

As a result of the Las Conchas fire, the Pueblo has begun an active dredging program from the ponds. Soil and sediment analytical results were used to identify the potential risk to human receptors (residential, industrial/occupational, and construction worker) and to aquatic and terrestrial ecological receptors using federal and state screening values. Recommendations on reuse and or disposal of dredged sediment from ponds and stockpiles will allow the Pueblo to

make informed decisions that are protective of human health and the environment. Additional flood events and sediment deposition after this sampling event warrant additional sampling and analysis for material captured at the ponds. This screening-level risk assessment broadly characterized the sediment quality in Santa Clara Canyon. Overall, these lines-of-evidence suggest that elevated risk to ecological receptors can be attributed to the recent wildfire, with the exception of 4,4'DDE. Additional flood events and sediment deposition after this sampling event warrant additional sampling and analysis for material captured at the ponds.

A monsoon storm event on July 27, 2011 resulted in a front end loader to be buried between Pond 2 and Check Structure 3. The equipment was not removed and remains within the canyon. Oil, fuel, or hydraulic fluid, was likely released into Santa Clara Creek, and migrated into local groundwater, adhered to sediment and or propagated downstream into the Rio Grande during the initial or subsequent storm events. The quantities released are negligible in relation to the post-fire flood river discharge estimates (See Table 1). Therefore, it can be assumed that this release provided a de minimis source of contamination.

Under the No Action Alternative, there would be no potential improvement to water quality or sediment quality by attenuating flood flows and catch flood-borne debris and sediment along Santa Clara Creek. Water quality would continue to be degraded by the Las Conchas fire, until the watershed recovers.

3.5 Air Quality and Noise

There are no documented air quality non-attainment issues in Rio Arriba County, New Mexico . The Santa Fe County Air Quality Control Region is an attainment area for all criteria air pollutants identified in the National Ambient Air Quality Standards (NAAQS). The future air quality without project is expected to remain unchanged.

OSHA noise standard (29 CFR 1910.95) limits noise levels to 90 decibels (environmental sound intensity measured as dBA) averaged over an eight-hour day, although hearing damage can begin at levels as low as 80 dBA over an eight-hour day. No worker may be exposed to noise in excess of 115 dBA without protection which will reduce the exposure below 115 dBA.

The Pueblo is generally a quiet, rural setting, with only limited background noise from major highways, aircraft flyovers, explosions, sirens, or other urban noise. Santa Clara Pueblo may receive a somewhat higher level of urban background noise due to its proximity to the City of Española. Current noise levels include ongoing debris removal efforts. Background noise levels are not expected to change under the without project conditions.

3.6 Aesthetics

The National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations identify aesthetics on one of the elements that must be considered in determining the effects of a project. Aesthetics include the presence and appearance of landforms, water surfaces, vegetation and human created features relative to the surroundings and settings of the area. These features are primary characteristics of an area or project that determine visual character and the

manner in which people view the setting. Aesthetics analysis considers the existing and future appearance, or perception of views, of the project site and areas surround the site, as well as viewer sensitivity.

Currently, the Pueblo has characterized the aesthetics of the bosque and other riparian areas as ranging from poor to high. In areas where fires have occurred and burn restoration has not been implemented, the aesthetics would be considered poor as the bare, burned ground and vegetation dominates the view. The goal is to return the Creek and watershed bosque to pre-fire/flood control conditions.

The existing condition for the aesthetics of the Santa Clara Creek ranges from poor to high. The future without project conditions are expected to remain unchanged in some areas, but with further degradation of high aesthetic areas due to flooding and damage from debris laden flows.

3.7 Vegetation Communities

The project area is located in the populated region of Santa Clara Pueblo. This is the easternmost section of the Pueblo which includes the confluence of Santa Clara Creek with the Rio Grande. The project area contains Great Basin Conifer Woodland on the west end of the project area (where the gabion check structures are located) and transitions to Plains and Great Basin Grasslands around the confluence of Santa Clara Creek and the Rio Grande (Brown 1982).

Most of the descriptions of ecological resources contained in this section are derived from a Terrestrial Ecosystem Investigation study that the Pueblo of Santa Clara contracted TetraTech EMI to perform in 2003 and 2004 (Munk et al. 2004). This report uses the U.S. Forest Service's Terrestrial Ecosystem Survey (TES; U.S. Forest Service 1986) methodology which systematically divides a geographic region into map units based upon dominant vegetation and soils. This concept recognizes that other abiotic factors including climate and elevation will be reflected by differences in vegetation communities and soil types (U.S. Forest Service 1986).

At the lowest elevations along the Rio Grande are the 'bosque' (riparian floodplains or woodlands), wetlands, meadows and associated vegetation. Away from the river, grasslands and shrublands occupy the lowest terraces and alluvial fans. As elevation increases, the vegetation transitions through pinyon-juniper, ponderosa pine, and mixed conifers until at the highest elevations the spruce-fir forests are found. Within these general vegetation types, there is diversity in the mixes of dominant or canopy species as well as understory. Differences in slope, aspect, and soils contribute to these differences.

Vegetation was inventoried at each of the site specific locations where work was completed. At the COA1 and COA 2 locations, the vegetation consisted of Russian thistle (*Salsola* sp.), coyote willow (*Salix exigua),* Rocky Mountain bee plant (*Cleome serrulata*) , Kochia, Siberian elm (*Ulmus pumila*), sunflower (*Helianthus* spp.), cholla (*Cylindropuntia* spp.), yellow aster (*Elegans* spp.) with some Gooding's willow (*Salix goodingii*), Rio Grande cottonwood (*Populus fremontii* var. *wislizenii),* and Narrowleaf cottonwood (*Poplus angustifolia).*

Within the COA 3 project, at the check structure 1 location, species present included cholla, apache plume (*Fallugia paradoxa*), pinyon pine (*Pinus edulis),* one-seed juniper (*Juniperus*

monosperma), bee plant, Ribes spp., bladder pod (*Isomeris arborea)*, New Mexico olive (*Forestiera neomexicana*), sand sage (*Artemisia* spp.), snakeweed (*Gutierrezia* spp.), Rio Grande cottonwood, Narrowleaf cottonwood, Gooding's willow, penstemon spp., sunflower, coyote willow and mullein (*Verbascum* spp.). At the check structure 3 location, species present included snakeweed, Indian ricegrass (*Oryzopsis hymenoides*), scorpion weed (*Phacelia* spp.), prickly pear (*Opuntia* spp.), grama (*Bouteloua* spp.), one-seed juniper, sand sage, cholla, Ribes spp, apache plume, Gooding's willow, Rio Grande cottonwood, Narrowleaf cottonwood, and bee plant.

Vegetation would continue to be washed out during increased high flows under the future without project condition.

3.8 Floodplains and Wetlands

Executive Order 11988 (Floodplain Management) provides Federal guidance for activities within the floodplains of inland and coastal waters. Preservation of the natural values of floodplains is of critical importance to the nation and the State of New Mexico. Federal agencies are required to "ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management." The project is within the floodplain of the Santa Clara Creek. Removal of the non-native vegetation may allow the active floodplain or native species to expand.

Section 404 of the Clean Water Act (CWA) requires analysis under the EPA's 404 (b) (1) Guidelines if USACE proposes to discharge fill material into water or wetlands of the United States. Aerial photo interpretation of the study area within Santa Clara Pueblo from the National Wetlands Inventory (NWI) (USFWS, 1994) mapping indicates 109 acres of freshwater emergent vegetation and 217 acres of freshwater forested/shrub wetlands, prior to the Las Conchas fire. No wetland habitat exists within the direct project area, though wetland habitat exists upstream of the check structure locations. All deposition sites for dredged material are located outside of the waters of the U.S.

Under the future without project condition, wetlands would continue to be washed out by high flows and flooding would continue to occur throughout the floodplain.

3.9 Fish and Wildlife

Based on a query of the Biota Information System of New Mexico for Rio Arriba County (BISON-M, accessed June 2014), birds (249 species) comprise 61 percent of the 407 vertebrate species, with fish (33 species), amphibians (11 species), reptiles (25 species), and mammals (89 species) comprising the remaining 39% of vertebrate species in the project area.

Species noted by Pueblo staff to occur prior to the fire include the black tailed weasel, brown bear, deer, elk and bobcat. The Pueblo has an elk monitoring program which has continued since the fire. In the lower Santa Clara Creek and at the confluence with the Rio Grande, common riparian species still occur.

On February 25, 2015, USACE contractor, Hawks Aloft, performed an avian survey in the locations of check structures 1 and 3. No nests were observed. Species observed included: Canyon Towhee (*Melozone fusca),* American Robin (*Turdus migratorius),* Dark-eyed Junco (*Junco hyemalis),* Song Sparrow (*Melospiza melodia),* Spotted Towhee (*Pipilo maculatus), and* Bluebird sp. (*Sialia spp).*

Under the future without project, wildlife may continue to return to the area, except for aquatic species, until the watershed stabilizes.

3.10 Endangered and Protected Species

Federally Listed, Proposed and Candidate Species in Table 2; only the species with potential to occur in the vicinity of the project area are discussed here. Potential effects to these species are evaluated based on specific projects proposed.

Table 2. Federally listed species in Rio Arriba County.

Common Name	Scientific Name	Status
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	Endangered, Critical Habitat excluded on Santa Clara Pueblo lands
Jemez Mountain Salamander	*Plethodon neomexicanus*	Endangered
New Mexico Meadow Jumping Mouse	*Zapus hudsonius luteus*	Endangered
Mexican Spotted Owl	*Strix occidentalis lucida*	Threatened
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened
Rio Grande cutthroat trout	*Oncorhynchus clarki virginalis*	Removed from Candidate list
Least Tern	*Sterna antillarum*	Endangered
Canada Lynx	*Lynx canadensis*	Proposed Threatened

3.10.1 *Southwestern Willow Flycatcher*

The Southwestern Willow Flycatcher (*Empidonax traillii extimus*) was listed as Federally endangered in 1995 (USFWS 1995). The species currently occurs in southern California, Arizona, New Mexico, southern portions of Nevada and Utah, and possibly southwestern Colorado (USFWS 1995). It is known to occur in all four of the counties where Santa Clara Pueblo is located (Rio Arriba, Sandoval, Santa Fe, and Los Alamos counties). The flycatcher may occur in riparian habitats along the Rio Grande in the project area during spring or fall migration periods or during the breeding season. Birds arrive in New Mexico by early to mid May. Breeding occurs in late May and early June. Young are fledged in late June or early July. The flycatcher departs New Mexico for wintering grounds in late September (USFWS 2002).

Nesting habitat for the flycatcher varies greatly by site and includes plant species such as willow, saltcedar, box elder (*Acer negundo*), and Russian olive (*Elaeagnus angustifolia*). Nests generally occur adjacent to or over water or saturated substrates (Paxton *et al*. 2007). Along the Middle Rio Grande, breeding territories have been found in young and mid-age riparian vegetation dominated by dense growths of willows at least 15 feet high, as well as in mixed native and exotic stands dominated by Russian olive and saltcedar.

Designated critical habitat for the flycatcher is present near, but not on, Santa Clara Pueblo lands. The USFWS revised Critical Habitat publication (USFWS 2013) states that "Due to the our partnership with the Santa Clara, San Juan, and San Ildefonso Pueblos and their conservation efforts on the Rio Grande, we are excluding these pueblos from the final flycatcher critical habitat designation under section 4(b)(2) of the Act." There have been no breeding flycatchers detected at Santa Clara Pueblo (USACE 2009).

3.10.2 *Jemez Mountain Salamander*

The Jemez Mountains salamander (*Plethodon neomexicanus)* is a Federal candidate species that is restricted to the Jemez Mountains in northern New Mexico, in Los Alamos, Rio Arriba, and Sandoval Counties. This salamander is strictly terrestrial and does not use standing surface water for any life stage. Because respiration occurs through the skin, the salamander requires a moist microclimate for gas exchange (USFWS 2010). The Jemez Mountains salamander predominantly inhabits mixed conifer forest, consisting primarily of Douglas fir, blue spruce, Engelman spruce , white fir, limber pine, Ponderosa pine, Rocky Mountain maple, and aspen. Salamanders are generally found in association with decaying coniferous logs, and in areas with abundant white fir, Ponderosa pine, and Douglas fir as the predominant tree species. The salamander spends much of its life underground; it can be found at the surface from July through September, when relative environmental conditions are warm and wet.

Both fire suppression and severe wildland fire are thought to be significant threats to the salamander. Severe fires may cause habitat to become unsuitable by lowering soil pH, burning up decaying logs on the surface, and removing canopy, causing the environment to become too dry (USFWS 2010). Suitable habitat may have occurred in the project area, particularly in the mixed-conifer vegetation types and on moister slopes. Whether any suitable habitat remains following the Las Conchas fire is unknown. Unburned pockets of mixed conifer forest may provide suitable habitat.

3.10.3 *New Mexico Meadow Jumping Mouse*

The New Mexico meadow jumping mouse *(Zapus hudsonius luteus)* was listed as an endangered species under the Endangered Species Act of 1973 on June 10, 2014. Jumping mouse occurs in the counties where Santa Clara Pueblo is located. The jumping mouse is a habitat specialist that nests in dry soils, but uses moist riparian and wetland habitats with, dense vegetation for foraging. The jumping mouse utilizes persistent emergent herbaceous wetlands, especially patches of tall dense sedges on moist soil along the edge of permanent flowing water. The jumping mouse is generally nocturnal, and is active only during the growing season of the grasses and forbs on which it depends. It hibernates about nine months out of the year, longer than most other mammals (USFWS 2012).

The New Mexico meadow jumping mouse has exceptionally specialized habitat requirements to support life history needs and maintain adequate population sizes. The species appears to only utilize two wetland community types: 1) persistent emergent herbaceous wetlands (i.e., a marsh composed of beaked sedge (*Carex rostrata*) and reed canarygrass (*Phalaris arundinacea*) alliances; and 2) scrub-shrub wetlands (riparian areas along perennial streams that are composed of willows (*Salix* spp.) and alders (*Alnus* spp.). Microhabitat requirements are characterized by

tall (averaging at least 61 cm (24 in)), dense herbaceous riparian vegetation. The herbaceous vegetation is composed primarily of sedges (*Carex* spp. or *Schoenoplectus pungens*) and forbs. This suitable habitat is likely only found when wetland vegetation achieves full growth potential associated with perennial flowing water (E. Hein, USFWS, personal communication 4/19/2013).

Habitat for the New Mexico meadow jumping mouse potentially may occur (or may have occurred before the Las Conchas fire) in riparian habitats along upper Santa Clara Creek. Vegetation Map Unit 7 is the most likely unit to have suitable habitat. Less that 10% of this unit burned in the Las Conchas fire. However, it has been affected by debris flows leaving some of the herbaceous vegetation buried. On the site visit in March 2013, no habitat that matched the description above was seen.

3.10.4 *Mexican Spotted Owl*

The Mexican Spotted Owl (*Strix occidentalis lucida*) is one of three subspecies of spotted owl recognized by the American Ornithologist's Union (AOU). The other two subspecies are the northern (*S. o. caurina*) and the California spotted owl *(S. o. occidenta*).

The Mexican subspecies is geographically isolated from both the California and northern subspecies. Through allozyme variation, Barrowclough and Gutierrez (1990) showed major allelic differences between the Mexican Spotted Owl (MSOW) and the two coastal subspecies suggesting that the MSOW has been genetically isolated from the other subspecies for considerable time. As such, the MSOW has followed a divergent evolutionary history and can therefore be considered a separate species.

The MSOW currently occupies a broad geographic area, but does not occur uniformly throughout the range. Rather, it discontinuously occurs in isolated localities that correspond to secluded mountain systems and canyons. In the United States, 91% of the owls known to exist between 1990 and 1993 occur on lands administered by the USDA Forest Service (USFWS 1995).

The MSOW is mottled in appearance with irregular white and brown spots on the abdomen, back, and head with a distinct darker facial ring. The spots of the MSOW are larger and more numerous than the other two subspecies, giving it an overall lighter appearance; clear morphological evidence of its separate evolutionary history and speciation in the different habitat types used the MSOW's range. *Strix occidentalis* translates as "owl of the west" and *lucida* means "light" or "bright". Unlike most owls, spotted owls have dark eyes, but are characteristically large and owl-like. This provides the owl with extraordinary eyesight. Several thin, uniformly spaced white bands mark an otherwise brown tail.

Adult male and female spotted owls are generally indistinguishable by plumage color and characteristics, but the sexes can be readily distinguished by voice. Juveniles, sub-adults, and adults can, however, be distinguished by plumage characteristics (Forsman 1981, Moen et al. 1991). Juvenile spotted owls (hatchling to approximately five months) have a progressively decreasing downy appearance as they mature. Sub-adults (5 to 26 months) closely resemble adults, but have pointed retrices with a pure white terminal band (Forsman 1981, Moen et al. 1991). The retrices of adults (>27 months) have rounded tips, and the terminal band is mottled

brown and white as seen in the photo above. Like most owls, spotted owls exhibit reversed sexual dimorphism (*i.e.* females are larger than males) to accommodate reproductive metabolic demands.

MSOWs nest, roost, and forage, in a diverse collection of vegetative assemblages and communities that can vary widely throughout its range. Mature, mixed-conifer forests (Douglas fir, white fir, limber pine, ponderosa pine, etc.) are commonly used throughout most of the range. The understory is often consists of the above conifer species but can also include Gamble oak, maple, boxelder, and New Mexico locust. In the northern portions of New Mexico and southern Colorado, however, MSOWs occur mostly in steep-walled, rocky canyons (USFWS 1995). Along the Mogollon Rim in Arizona and New Mexico, habitat use can be less constrained and include mixed ponderosa pine-Gamble oak forests and their associated deciduous riparian forests (USFWS 1995).

MSOWs consume a variety of prey throughout their range but commonly eat small- and medium-sized rodents such as woodrats, mice, and voles. Spotted owls also consume bats, birds, reptiles, and arthropods. The diet varies by geographic location (*i.e.* more voles than birds or mice, etc.) that likely reflects the distribution of both prey and owl itself.

Habitat of the type described above exists on the Pueblo but further upstream from the project area. It is unknown if MSOW occurs on the Pueblo. Surveys have not been conducted at this time.

3.10.5 *Yellow-Billed Cuckoo*

The Yellow-billed Cuckoo (*Coccyzus americanus*) was listed as federally threatened on October 3, 2014 (USFWS, 2014). Critical Habitat has been proposed with a final ruling expected in 2015. Work on COA 1 and COA 2 began before listing but the remaining work has and will be completed since listing.

In New Mexico, the species is found in riparian zones with dense understory vegetation (USFWS 2011). In New Mexico, the species was historically rare Statewide, but common in riparian areas along the Pecos and Rio Grande, as well as uncommon to common locally along portions of the Gila, San Francisco and San Juan rivers (Bailey 1928; Hubbard 1978). Current information is inadequate to judge trends, but the species was fairly common in the mid-1980s along the Rio Grande between Albuquerque and Elephant Butte Reservoir, and along the Pecos River in southeastern New Mexico. Numbers may have increased there in response to tamarisk (*Tamarix* spp.) colonization of riparian areas formerly devoid of riparian vegetation (Howe 1986). A review on the status of the species in New Mexico concluded that the species would likely decline in the future due to loss of riparian woodlands (Howe 1986). In the eastern third of the state, nonnative salt cedar has provided habitat for approximately 1000 pairs of yellow-billed cuckoos in historically unforested areas. Efforts are underway to remove the salt cedar, through spraying and subsequent removal (Howe 2004), resulting in a substantial loss of cuckoo habitat. In the western portion of the state, damage to native riparian habitat is occurring. Along the Rio Grande, understory is being removed to reduce fire risk, and land is being converted to agriculture. Throughout New Mexico, grazing is impacting the quality of riparian habitat available to yellow-billed cuckoos (Howe 2004).

Yellow-Billed Cuckoo nests in dense riparian shrub habitat in stands typically at least 25 acres in size (Elphick et al., 2001). They arrive in New Mexico beginning in late April and early May and nest from late May through August (Howe, 1986). Mature cottonwood forest with well-developed willow understory appear to be important characteristics of habitat for Yellow-Billed Cuckoo (Buffington et al., 1997; Gaines and Laymon, 1984). While willows appear to be a preferred nest tree, the species will also nest in dense salt cedar stands (Howe, 1986). Nests are constructed of sticks and are located in dense foliage. Yellow-Billed Cuckoo may nest up to three times a year, with a clutch size of two to six eggs. They may occasionally parasitize nests of other birds, particularly when food is abundant. Yellow-Billed Cuckoos feeds primarily on caterpillars but will also consume bird eggs, frogs, lizards, berries, and other fruits (Erlich et al., 1988). Cuckoo forages primarily in the foliage layer of shrubby and woody vegetation. Populations fluctuate markedly in response to variation in caterpillar abundance. Population declines resulting from loss or disturbance of riparian habitat have been consistently reported in the West (Finch, 1992).

Yellow-Billed Cuckoo surveys have not been conducted on the Pueblo. There is little to no potential habitat as described above in the project area. Critical Habitat is not proposed within the project area.

3.10.6 *Rio Grande cutthroat trout*

A spotted trout, the Rio Grande cutthroat differs from the greenback and Colorado River cutthroat trout by having fewer scales (typically 150-180 in the lateral series and 35-45 above the lateral line) and by the irregular shape of the spots on the caudal peduncle – the narrow part of the fish's body to which the caudal or tail fin is attached (Behnke 1992). It spawns from March through July, depending on water temperature (Sublette et al. 1990) and mainly May-June in New Mexico (USFWS 2002). In colder waters, growth is typically slow, and age at maturity may be four (4) years (Rinne 1995). The Rio Grande cutthroat feeds opportunistically on terrestrial insects and aquatic macroinvertebrates. Young-of-year and juvenile fishes such as Rio Grande chub, longnose dace, Rio Grande sucker, white sucker, creek dace, and southern redbelly dace may also serve as prey for adult fish (Rinne 1995). Riverine (creek) habitat is typically high-gradient pools and structured riffles with suitable benthic habitat areas (wintering habitat).

The historical range is not clearly known but is likely to have been all trout waters in the Rio Grande drainage, including the Chama, Jemez, and Rio San Jose drainages along with those of the Pecos and Canadian drainages (Sublette et al. 1990, Behnke 1992). It is uncertain whether this subspecies was naturally present historically in the Canadian River basin (USFWS 2002). Present range includes New Mexico and Colorado and the southernmost occurrence is in Indian Creek in the Lincoln National Forest and Animas Creek in the Gila National Forest (Rinne 1995). The species ranges north to the headwater tributaries in the Rio Grande and San Juan National Forests in southwestern Colorado. There are few lake and introduced populations and possibly may have occurred historically in Texas and Mexico (Behnke 1992). Currently most populations are restricted to small headwater streams (Behnke 1992) where allochthonous materials are the primary energy input (Sublette et al. 1990). Spawns occurs in clean gravel and nursery habitat is often along stream margins in slower water. Winter habitat includes deep pools, which may be limiting in headwaters (USFWS 2002). Stream lengths of about 5 miles (8 km) or more provide the most favorable habitat (USFWS (2002). Management techniques

typically involve the removal of non-native salmonids and installing barriers to prevent upstream movement of non-native trout are vital to maintaining and increasing range and abundance (Rinne 1995).

The Rio Grande cutthroat trout was under candidate review, with a recent finding that the species is not warranted to be listed at this time (USFWS, 2014). After the fire, all of the ponds filled in with sediment and the habitat was lost. Currently, water conditions and potential habitat are not available due to continued debris and sediment inputs. However, since the Pueblo had begun a reintroduction program prior to the fires, in the ponds along Santa Clara Creek, and they are still interested in pursuing this once the watershed recovers.

While no surveys have been conducted for any of the listed species discussed above, it is unlikely that they are present since the Las Conchas wildfire (and unknown if they were present prior to the fires). No potential habitat exists in the project area. They are most likely not present in the project area and bird surveys were conducted prior to construction that occurred during the nesting season.

3.11 Cultural Resources

Due to the emergency nature of this project, the USACE attempted to minimize the amount of new cultural resources investigation in favor of utilizing existing cultural resources survey data where present, and also by conducting project work in previously disturbed areas where cultural resources were unlikely to be present. In those areas where previous survey and previous disturbance were absent, the USACE conducted cultural resources surveys. At the outset of project activities, USACE archaeologists conducted a review of the New Mexico Cultural Resources Information System (NMCRIS) for the entire Santa Clara Pueblo Reservation to gain a general understanding of the potential for cultural resources in the project area. The results of this records search showed that little formal archaeological investigation has been conducted on the reservation. According to NMCRIS, approximately 3,500 acres have been surveyed on Pueblo lands. This represents six percent (6%) of the total acreage of the reservation. During these surveys, 71 sites were located. Site density in the area is generally high, with approximately 2.03 sites present per 100 surveyed acres, and the likelihood of encountering archaeological sites near Santa Clara Creek is high.

The vast majority of previous archaeological work in the region has focused on the location and recording of prehistoric and historic archaeological sites, buildings, and structures. Archaeological sites are defined as discrete areas containing direct, physical evidence of past human activity. This may be in the form of structures, scatters of artifacts, features such as hearths, or other evidence of past human activity such as petroglyphs. The “site-based” approach to archaeology currently dominates cultural resource management, with “sites” as the base unit of analysis for making management decisions related to cultural resources. Unfortunately, however, focusing on sites paints an incomplete picture of the breadth of significant cultural resources in a given area. Increasingly, archaeologists are beginning to shift to a focus on cultural landscapes as opposed to a site-based model of characterizing past human behavior. Looking at entire landscapes and focusing not only on sites, but also on the spaces “between” sites, provides a much more holistic interpretation of the range of cultural resources that need to

be considered. This is an important distinction to make as Native Americans, Santa Clara Pueblo included, have long recognized the significance of cultural landscapes, and consider many places to be culturally significant that would not be considered in standard archaeological inventories. For most tribes, the landscape is an integral part of constructing social identity and in the transmission and retention of historical knowledge (Ferguson and Colwell-Chanthaphonh 2006:27). People define themselves by the landscape, and the landscape serves as a dynamic interface between the past and the present whereby past events are recalled and give meaning and context to those that inhabit the landscape in the present. For this reason, it is important to take into consideration not only the physical remains of the past documented as "sites" by archaeologists, but also the broader context of the cultural landscape, of which sites are only a small part. This is particularly true in places such as Santa Clara Canyon, which is the traditional home of the Santa Clara people. Because their relationship with the landscape is rooted in a deep history, they possess an understanding of the landscape that cannot be understated or adequately quantified simply through archaeological analysis. This intimate knowledge of the landscape, in turn, means that many places, materials and features on the landscape have cultural significance that might not be considered as "sites" in most cultural resources inventories conducted by archaeologists.

The issue of identifying areas of concern that do not fall into traditional archaeological site categories has been addressed in current cultural resources practice by defining a category of protected cultural resources called Traditional Cultural Properties (TCPs). TCPs are recognized and protected by the National Historic Preservation Act, and are defined and described in National Register Bulletin 38 (Parker and King 1990). A TCP is defined as a property "that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1990:1). During project planning for all three phases of this project, the USACE was informed of the presence or absence of TCPs through consultation with the Rights Protection Office at Santa Clara Pueblo. As TCPs are rarely recognized during archaeological survey, Tribes are the best source of knowledge on their TCPs. The locations of specific TCPs were never disclosed by the Pueblo, rather, representatives from Santa Clara Pueblo would inform the USACE that certain areas were "off limits" and these areas were avoided by project activities. Using this strategy of consultation and avoidance, the USACE was able to ensure that no TCPs were located within the project areas for COA 1, 2 or 3.

For COA 1 and COA 2, the project area included the Santa Clara Creek drainage and the adjacent banks running from just upstream of Santa Clara Pueblo down to the confluence with the Rio Grande. Due to the extremely disturbed nature of the project area and the condensed time frame for project planning, no new archaeological survey was conducted in advance of COA 1 and COA 2. USACE did, however, take steps to determine if any significant cultural resources were present in the project area. This included consultation with the Rights Protection Office at Santa Clara Pueblo, a record search of the NMCRIS database, and a site visit to the project area on June 10, 2014. Consultation with Santa Clara Pueblo Tribal Historic Preservation Officer (THPO), Mr. Ben Chavarria, indicated that he had visited the project area and noted that the Pueblo had no cultural resources concerns other than a desire to avoid all live cottonwoods; a request that USACE incorporated into project planning. The NMCRIS database search indicated that several significant historic properties were present near the project area, but that these sites

are located outside of the active floodplain. Prehistoric archaeological sites LA 262 and LA 794 as well as the historic, National Register of Historic Places (NRHP)-listed Pueblo of Santa Clara (LA 925, NR# 74001199 listed 11/5/1974), are all located adjacent to the project area, but outside of the existing flood protection features and outside of the active floodway where work occurred. USACE archaeologist Jeremy Decker attended a site visit to the project area on June 10 and walked the entire length of the proposed project area. No cultural resources were observed within the stream or any of the banks adjacent to the stream during this reconnaissance level site visit.

For COA 3, no previous survey had been conducted in the areas proposed for check structure construction, and no areas of previous disturbance were present in the canyon above the village. Therefore, USACE conducted cultural resources survey to determine suitable construction sites. USACE did not, however, conduct a 100 percent cultural resources survey of all areas considered for check structure construction. Rather, cultural resources inventory was conducted using three methods. First, USACE consulted with Santa Clara Pueblo to determine potential locations for check structures that would avoid TCPs and other cultural resources significant to the Pueblo. Based on this consultation, several potential locations were discarded and three locations were identified as possible areas to site the check structures. Once these locations were identified, USACE archaeologists performed a reconnaissance-level assessment to determine if construction was possible in those locations without impacting archaeological sites. Reconnaissance included walking an area to look for gaps between archaeological sites to determine if construction was possible with minimal disturbance to cultural resources. In many areas archaeological sites were so dense on both banks that construction could not occur without significant impact and those areas were removed from consideration. Sites located within these reconnaissance areas were not recorded and no documentation occurred in these areas except to document what areas were considered but not taken forward for construction planning. For those locations that were identified to have a sufficiently low density of archaeological materials to be considered for construction, USACE performed a 100-percent coverage archaeological survey and fully documented all cultural materials. Using these methods, USACE archaeologists identified two locations in the lower canyon that would be suitable for construction of check structures.

Survey of the upstream of the two locations, known as structure 3, resulted in documentation of 16 isolated occurrences (IOs) and no historic properties. Survey of the downstream location, known as structure 1, documented a single historic property, LA 180079 which is a prehistoric site containing a small roomblock and associated artifact scatter. Seventeen (17) IOs were also documented. The findings of the survey are documented in a report by Jeremy Decker titled, "*A Cultural Resources Investigation of Proposed Emergency Check Structure Locations within Santa Clara Canyon, Rio Arriba County, New Mexico*" (Appendix A). USACE consulted with the Santa Clara Pueblo THPO on the eligibility of LA 180079 and the 33 IOs for inclusion in the NRHP. Due to the diverse artifact assemblage and high potential for buried deposits at LA 180079, USACE considered the site to be eligible for listing in the NRHP under criterion "d". The information potential of all 33 IOs is considered exhausted by recording and documentation, in the field, and all IOs were therefore determined ineligible for listing in the NRHP. The Santa Clara THPO concurred with these determinations of eligibility on February 18, 2015 (Appendix A). Following discovery of LA 180079, it was determined in consultation with the Pueblo that

construction could occur at this location provided that the structure and densest artifact concentration were avoided during construction.

Disposal and staging areas for COA 1, COA 2 and COA 3 were chosen in areas that previously had been disturbed. In many cases, disposal sites from the 2000 Cerro Grande Fire post-fire clean up were selected. In other cases, parking lots, old quarries, landfills and bladed areas were chosen. Only one of these areas had potential cultural resources concerns. The disposal site known as the "Big Easy" is located to the northwest of the Puye Cliff Dwellings (Puye). Puye is an ancestral Tewa Village and is listed on the NRHP (#66000481, listed 10/15/1966) as the Puye Ruins National Historic Landmark. In order to avoid impacts to the site, the Pueblo has put special rules in place for the Big Easy, which has been in use since the Cerro Grande Fire in 2000. The disposal area is limited to a set boundary, and piles of debris cannot be piled higher than the adjacent trees in order to avoid visual impacts to Puye. USACE followed this protocol while using the Big Easy disposal area.

Impacts to significant cultural resources could be severe if USACE selected the "No Action" alternative and no flood protection measures were constructed in Santa Clara Canyon. In particular, NRHP-listed Santa Clara Pueblo, which previously sat outside of the floodplain of Santa Clara Creek, is now in danger of flood damage due to increased flood flows following the Las Conchas Fire. Without channel dredging and installation of flood protection features such as HESCO baskets and gabion check structures to provide flood protection for the village, it is possible that the historic Santa Clara Pueblo could be damaged, or even destroyed by flooding, resulting in major impacts to physical and spiritual center of Santa Clara culture. In addition to Santa Clara Pueblo, numerous archaeological sites are located immediately adjacent to the historical floodplain of Santa Clara Creek. Like Santa Clara Pueblo, these sites were once outside of the floodplain, but now are in danger of being inundated by floodwaters. If no flood protection features were installed in Santa Clara Canyon, then numerous archaeological sites would be at risk for flood damage.

Site LA 180079 would not be impacted by construction as part of COA 3 if USACE selected the "No Action" alternative. However, the site would still be located within the revised, post-fire floodplain of Santa Clara Creek and would be at an increased risk of flood damage. In the No Action scenario, LA 180079 could be damaged irreparably or totally destroyed without any mitigation or additional consideration. Conversely, the construction of COA 3 structure 1 was carefully planned to minimize the damage to the site, and any damage that was incurred as a result of construction was mitigated.

3.12 Socioeconomic Considerations and Environmental Justice

The majority of the project area and affected populations is in Rio Arriba County, New Mexico. The population of Rio Arriba County has decreased slightly from 41,190 in 2000 (U.S. Census Bureau 2014). The majority of the surrounding project population is Hispanic/Latino followed by White (not Hispanic), Native American, Black and Asian (Table 3). The poverty level for Santa Clara Pueblo is below the state average (Table 4).

The leading employment sectors in Rio Arriba County are education, health care, and social services (20.9 percent) and public administration (16.4 percent). Agriculture employs about four percent of the county's workers, while hospitality services and construction, each employs more than 10 percent of the workforce.

Table 3. Española Valley 2015 population statistics.

Española Valley	Total Population (individuals)	Race and Ethnicity				
		White, not Hispanic	Hispanic / Latino	Native American	Black	Asian
New Mexico	2,065,826	39.4%	47.3%	10.4%	2.5%	1.6%
Rio Arriba County	40,371	13.2%	71.4%	18.0%	0.9%	0.8%
Santa Fe County	144,532	43.5%	51.1%	4.0%	1.1%	1.4%
Santa Clara CDP	1,018	2.8%	23.6%	71.9%	0.3%	0.3%

** Respondents may have multiple answers to census survey resulting in numbers greater than the total population.*

Table 4. Española Valley 2015 population and poverty statistics.

Española Valley	Total Number	Age			Below Poverty Level	
		0-17 years	18-64 years	65 and older	Under 18 years	All ages
New Mexico	2,065,826	265,580	145,523	93,680	7.3%	21.2%
Rio Arriba County	40,371	6,466	573	1,697	7.8%	24.5%
Santa Fe County	144,532	12,412	775	6,025	5.4%	18.2%
Santa Clara CDP	1,018	251	631	136		15.3%

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (11 February 1994) was designed to focus the attention of Federal agencies on the human health and environmental conditions of minority and low-income communities. It requires Federal agencies to adopt strategies to address environmental justice concerns within the context of agency operations and proposed actions. The 1995 Environmental Protection Agency (EPA) guidance document, Environmental Justice Strategy: Executive Order 12898, defines the approaches by which the EPA will ensure that disproportionately high environmental and/or socioeconomic effects on minority and low-income communities are identified and addressed. Further, it establishes agency wide goals for all Native Americans with regard to environmental justice issues and concerns.

The goals expressed by the Pueblo of Santa Clara have included local Native American environmental justice issues and concerns.

3.13 Land Use

Land use within the Pueblo is mainly agricultural with some homes and Pueblo office buildings adjacent to the Creek at lower elevations. Farmland on Santa Clara Pueblo has decreased about 33% since 1935 but grazing has remained nearly steady.

Many native bosque plants are used intensively by pueblo members for food, fuel, fiber, pigment, medicine, and ceremonial uses. Shrubs like willow or Apache plume are pruned and harvested for baskets and other uses. Yerba mansa (*Anemopsis californica*) and other plants were valued and propagated. Ancestral Pueblo agriculture cultivated food plants (corn, beans, and squash) in small plots along with propagating and harvesting native plants in the bosque.

Recreation within the bosque has generally focused on hunting, fishing, and trapping as culturally important activities for many Pueblo members. Pueblo members also walk along Below Obsidian Road which is used as the access road for construction work.

The future without project land use is expected to change as riparian vegetation declines due to continued flooding. Cultural use of native plants would likely to decrease as a function of availability.

3.14 Indian Trust Assets

Indian Trust Assets (ITAs) are a legal interest in assets held in trust by the United States Government for Indian tribes or individuals. The United States has an Indian Trust Responsibility to protect and maintain rights reserved by or granted to Indian tribes or individuals by treaties, statues, Executive orders, and rights further interpreted by the courts. The Secretary of the DOI, acting as the trustee, holds many assets in trust. Some examples of ITAs are lands, minerals, water rights, hunting and fishing rights, titles and money. ITAs cannot be sold, leased, or alienated without the express approval of the United States Government. The Indian Trust Responsibility requires that all Federal agencies take all actions reasonably necessary to protect such trust assets. The Department of Defense's American Indian and Alaska Native Policy, signed by Secretary of Defense William S. Cohen on October 20, 1998, and DOI's Secretarial Order 3175 and the Bureau of Indian Affairs (BIA) ITA Policy require that USACE, as the project's Lead Federal Agency, and BIA, as the Federal Land Managing Agency, consult with tribes and assess the impacts of its projects on ITAs. If any ITAs are identified and are to be impacted, further consultation on measures to avoid or minimize potential adverse effects will take place. If the project results in adverse impacts, consultation regarding mitigation and/or compensation will take place. During consultation with the Pueblo of Santa Clara, the water flowing in Santa Clara Creek was identified as an ITA related to the water rights of the Pueblo. During construction the USACE implemented measures to protect stream flows and preserve these water rights.

3.15 Hazardous, Toxic and Radioactive Waste (HTRW)

A review of the 2012 Environmental Data Report (EDR) (USACE, 2012), dated May 10, 2012, was completed along with recent site visits to several of the project areas along the corridor by personnel from the USACE Albuquerque District Environmental Engineering Section who are trained in identifying the presence of and impacts from hazardous wastes and petroleum products.

Observations by USACE personnel included surficial solid waste in small concentrations typically restricted to the banks and upland areas. This waste was typically household waste (plastic bottles, bags, cups, glass, etc.) and construction debris (concrete rubble, rebar, scrap metal etc.) that were washed downstream. No major residential, commercial, and industrial land uses are located upstream of the project area. Prior to the Las Conchas Fire floods recreation occurred upstream of the project area. Post-flood, the canyon has been closed, except to those who are working for Santa Clara Pueblo on fire and flood mitigation and restoration projects.

Satellite imagery and field reconnaissance were also used to determine Areas of Concern (AOC) that may impact the Santa Clara Watershed. The area of coverage for this is the total area within the boundaries of the Santa Clara Indian Reservation, New Mexico. This area is approximately 89 square miles. Twenty-two Areas of Concern (AOC) were identified using satellite imagery (Table 5). A majority of the AOCs were ground-truthed by USACE and Pueblo DNR staff. The remaining AOCs were not ground-truthed because the land was a private inholding, identified and described by Pueblo DNR staff, or further remote sensing determined it was not an environmental concern.

Table 5. Areas of Concern (AOCs) Summary.

Area of Concern	Reason Identified as AOC from Aerial Imagery	Field Reconnaissance?	Identity of Area
AOC-01	Disturbed area of bare soil (about 100,000 ft^2) shaped as two adjoining squares.	No, identified by Pueblo.	Old agricultural plots.
AOC-02	Possible debris pile	Yes	New landfill with dredged material from ponds piled on top.
AOC-03	Bare soil area (about 83,000 ft^2) with possible debris pile and excavation activities	Yes	Old landfill with dredged material from ponds after the Cerro Grande and Conchas wildfires piled on top.
AOC-04	Disturbed area (about 3,000,000 ft^2) suspected to have had mining activities	Yes	Old pumus stone mine.
AOC-05	Disturbed soil area (about 600,000 ft^2)	No, identified by Pueblo.	Gravel piles from Sawyer Dam. Same as AOC-06.
AOC-06	Horse-shoe shaped soil berm with disturbed soil area (about 25,000 ft^2)	Yes	Gravel piles from Sawyer Dam.
AOC-07	Three bare soil areas (about 1,000,000 ft^2 combined)	No, identified by Pueblo.	Gravel mining operation.

AOC-08	Possible debris pile	Yes	Cleared gravel area next to Puye Welcome Center with a small pile of concrete and a pile of untreated wood (branches and logs).
AOC-09	Two disturbed soil areas (about 150,000 ft^2 combined)	No, identified by Pueblo.	Santa Clara clay pit mine, which is still in operation.
AOC-10	Debris piles and possible earth moving activities	No, identified by Pueblo.	Yard waste dump, which is still in operation.
AOC-11	Possible debris pile	No, identified by Pueblo.	Sediment dumped along an arroyo from when the State cleared the road after post-Conchas fire flooding.
AOC-12	Disturbed soil and debris pile	Yes	Private property with stacks of wooden pallets. Most of property not viewable from road.
AOC-13	Debris piles	Yes	Private property with several drums and small debris piles of wood, metal, tires, buckets, and concrete blocks.
AOC-14	Disturbed area of unknown use with unidentified objects	No, identified on Google Maps.	Santa Cruz Cemetery.
AOC-15	Possible debris piles and large number of motor vehicles	Not performed out of respect for tribal privacy.	Private property on Santa Clara Indian Reservation.
Area of Concern	**Reason Identified as AOC from Aerial Imagery**	**Field Reconnaissance?**	**Identity of Area**
AOC-16	Disturbed soil and possible debris piles, may be construction yard	Yes	Private property with debris piles composed mostly of wood, pipes, and scrap metal. Also observed various motor vehicles including a bus and disturbed earth in piles.
AOC-17	Possible debris including motor vehicles	Not performed out of respect for tribal privacy.	Private property on Santa Clara Indian Reservation.
AOC-18	Possible debris piles including motor vehicles	Not performed out of respect for tribal privacy.	Private property on Santa Clara Indian Reservation.
AOC-19	Possible debris piles	Not performed out of respect for tribal privacy.	Private property on Santa Clara Indian Reservation.
AOC-20	Debris piles including motor vehicles	Not performed out of respect for tribal privacy.	Private property on Santa Clara Indian Reservation.
AOC-21	Debris piles	Not performed out of respect for tribal privacy.	Private property on Santa Clara Indian Reservation.
AOC-22	Debris piles	Not performed out	Private property on Santa Clara

		of respect for tribal privacy.	Indian Reservation.

Environmental Hazards Assessment

The USACE Albuquerque District's Environmental Engineering Section purchased an environmental database review preformed by Environmental Data Resources Inc. (EDR, 2012). The area of coverage for these services is the total area within the boundaries of the Santa Clara Indian Reservation, New Mexico. This area is approximately 89 square miles. The database review uses a variety of state, federal and proprietary databases, the complete list can be found in the Government Record Section of the EDR report. The following information highlights the findings of the EDR report.

CERCLA Sites

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment. The *National Priorities List* (NPL) is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. Six Superfund sites were identified during the EDR search. Below are the six superfund sites identified, with EPA Identification number in parenthesis: the North Railroad Avenue Plume (NMD986670156) ; The Old Santa Fe County Landfill at Santa Clara (NM0001035385); Santa Clara Wetlands (NM0001035377); Bridges Radiator Shop (NM0000605365); Espanola Transformer Disposal Sites (NMN000607017); and Arroyo Seco Salvage Yard (NM0001035369). Of these six sites, the North Railroad Avenue Plume is the only NPL site.

The North Railroad Avenue Plume is located in Española, within the exterior boundary of Santa Clara Pueblo. The site consists of a contaminated ground water plume extending approximately 58 acres (U.S. EPA 2011) originating at the Norge Town Laundromat and Dry Cleaning operation. The contaminants of concern (COCs) in the ground water are tetrachloroethylene (PCE) , trichloroethylene (TCE), cis-1,2-dichloroethylene, and trans-1,2,-dichloroethylene (U.S. EPA 2011). PCE is the contaminant most widespread and found in the highest concentration (U.S. EPA 2011). The New Mexico Environmental Department (NMED), in coordination with EPA, Santa Clara Pueblo, and the City of Espanola are actively monitoring the plume. Two ground water treatment systems are in operation to reduce COCs. The Source Area/Hotspot (SA/HS) system was able to successfully halt remediation after achieving site remedial goals for all COCs except for vinyl chloride. A biocurtain treatment system (i.e. in-situ microbial electron donor process to de-chlorinate chlorinated organic COCs) is actively being used to treat shallow ground water. While active injection wells are used to remediate deep groundwater COCs. The last CERCLA 5-year review was performed in June 2010 (U.S. EPA 2010).

Leaking Underground Storage Tanks

The Solid Waste Disposal Act, (42 U.S.C. § 6901 et seq.) addresses leaking underground storage tanks, or LUSTs. These regulations define an UST as a tank, or combination of tanks, together with any underground piping connected to the tank(s), that has at least 10 percent of its combined volume underground. Legislation passed by Congress allows state UST programs approved by EPA (known as state program approval or SPA) to operate in lieu of the federal program. Individual states may have more stringent regulations than the federal requirements. On Indian Lands, EPA directly implements the UST program by providing financial and technical assistance and by working with tribes to build their capacity to develop and manage UST programs. NMED's list of past and current leak sites and EPA Region VI's was used in this query. A total of 21 LUSTs were identified within the study area. Two sites were on tribal lands, and all others were on non-tribal lands.

In the absence of the project, the current hazardous toxic and radiological waste is unlikely to change significantly within the project area. There may be potential HTRW releases during a flood event that inundates Santa Clara Pueblo infrastructure that contain potential sources of HTRW.

4 - Foreseeable Effects, Environmental Compliance, Environmental Commitments and Recommendations of the Proposed Action

4.1 Physiography, Geology, Soils

There will be an effect on soils during the construction of all COA projects since sediment and debris removal are the main goal of the project. There will also be sediment removal and disturbance during construction of the check structures. These effects will be temporary during construction only, though the Pueblo will need to continue sediment removal and clean out the check structures after each rain event, as needed. Absence of sediment after removal would be temporary, but would still have a potential affect on geomorphology until the volume has accumulated new sediment.

During construction, the contractor adhered to Best Management Practices by installing silt fences adjacent to the Creek. Revegetation and seeding would occur after project construction to aid in stabilization. Therefore, there would be a temporary short-term adverse effected to soils by the Proposed Action.

4.2 Climate

The structural features have been designed to aid in sediment retention under future flood flows based on current and near future climate.

4.3 Hydrology, Hydraulics and Geomorphology

Work completed under this project includes temporary earthen berm bank raising along with revetment stabilization provided through the Village upstream and downstream of both NM 30 and Kee Street Bridges on both banks to mitigate flood potential and contain high channel flow. Approximately 10,700 feet of channel bank raising and revetment has been provided by building earthen berms of varied height with 3H:1V side slopes and/or temporary bank raising and rock revetment stabilization. Additionally, sediment removal operations were performed in the channel through the Village from the Kee Street upstream to above the roller road low flow crossing, a distance of approximately one mile. The NM Department of Transportation has added an additional box culvert to the Kee Street Bridge and plans to add an additional box culvert to the NM Highway 30 Bridge. These combined improvements to Santa Clara Creek will allow a flow of approximately 7,760 cfs (10-percent exceedance (10-year frequency) event) to safely pass through the Pueblo of Santa Clara.

4.4 Water Quality

Mechanical equipment could potentially leak oil, fuel, or hydraulic fluid, which could reach the Rio Grande and affect surface water quality. Spills of such materials could similarly contaminate surface water in the Creek. Per contract specifications, all equipment was inspected daily to ensure that oil, fuel, hydraulic fluid, or other potential contaminants are not leaking. All petroleum products were stored outside of the 100-year floodplain and maintained to ensure that leaks or spills are contained and remediated at the storage site.

During construction the contractors complied with Santa Clara Pueblo water quality standards (and anti-degradation provisions in the Clean Water Act Section 404, Nationwide (NW) Permit 33 (Temporary Construction, Access, and Dewatering) and Regional General Permit (RGP) NM-12-01 (Repair and Protection Activities in Emergency Situations) due to the need cross the Creek during COA 1 and COA2 and the need to divert the Creek during construction of COA 3. A water quality certification was also obtained from the Pueblo, and adhered to during construction of each portion of work (see Appendix B) .

Section 402(p) of the CWA regulates point source discharges of pollutants into waters of the United States and specifies that storm water discharges associated with construction activity be conducted under National Pollutant Discharge Elimination System (NPDES) guidance. A Storm Water Pollution Prevention Plan (SWPPP) was developed and adhered to during construction. The contractors and Pueblo filed a Notice of Intent (NOI) with the Environmental Protection Agency. Through this NOI the contractors are required to perform all work in accordance with the Nationwide NPDES permit prior to commencement of construction activities. The SWPPP would also included a Spill Control Plan. Compliance with these requirements ensured that the project would have no significant effect on the water quality of the Santa Clara Creek. Wattles were installed prior to construction in all areas and other standard BMPs were implemented.

There may be a short-term adverse effect on water quality during construction along the banks of the Creek. The check structures would help retain sediment in that location and reduce sediment loads downstream. Therefore, there would be a minor short-term adverse effect on water quality during construction only. There would be no long term potential improvement to water quality or sediment quality by attenuating flood flows and catching flood-borne debris and sediment along Santa Clara Creek.

4.5 Air Quality and Noise

All vehicles involved in construction at the project site were required to have passed a current New Mexico emissions test and have required emission control equipment (if required). Best Management Practices (BMPs) to minimize air quality disturbance were employed. These BMPs included covering trucks to avoid fugitive dust violations and wetting down work areas. Speed limits on access roads were limited to 15 mph, which would also minimize dust.

Therefore, short-term impacts to air quality were anticipated during construction but were abated to the extent possible using BMPs as described above. There would be no long-term adverse effects to air quality by construction of the project.

Equipment to be used during construction included pieces generating a fair amount of noise. This noise was somewhat abated by the distance from construction sites to nearby housing. Travel on the access roads to and from work locations would also create noise during the project. The project took place during normal work hours between 7:00am and 5:00pm in order to minimize disturbance. All OSHA and local municipality requirements (as described in Section 3.5) were adhered to. Therefore, there would be minor, short-term noise impacts by the project during construction, which would occur only during normal working hours. There would be no long-term adverse effects to noise by the project.

4.6 Aesthetics

In order to accomplish the project, construction included machinery of varying sizes. This would cause short-term negative affects to aesthetics during construction. Post-construction, some visual effects would be noticed, especially at the check structure locations where the structures would be visible. In all areas where soil disturbance occurred, native cottonwood (Rio Grande and Narrowleaf) would be planted. All access and staging areas would also be reseeded. Therefore, there would be negative, short-term impacts by the Proposed Action to aesthetics during construction at all locations. There would also be a change to aesthetics at the check structure locations for the short to long term. Revegetation with native species would restore the aesthetics of the site after a few years of maturation.

4.7 Vegetation Communities

Numerous site visits were completed by the USACE ecologist during the planning phases of the project and to perform environmental oversight during construction. All trees removed due to debris removal or construction of the check structures were inventoried. Dead Rio Grande cottonwood trees (132) were removed in the COA 1 and COA 2 areas in order to remove the accumulated sediment around them. No live trees were removed from these areas.

Under COA 3, native trees were avoided where possible but some trees were removed at both check structure locations in order to construct them. At the check structure 1 location, 25 trees less than 6 inches diameter breast height (dbh) were removed and 18 trees greater than 6 inches dbh were removed. At the check structure 3 location, 10 trees greater than 6 inches dbh were removed.

Mitigation for tree removal was calculated by replacing dead trees and live trees less than 6 inches dbh at a 1:1 ratio. Live trees greater than 6 inches dbh (totaling 28) were replaced at a 10:1 ratio. This totaled 437 trees which was rounded up to 450 replacement trees. These replacement trees would be installed in the winter of 2015-2016 as follows: 200 Rio Grande cottonwood along the lower Santa Clara Creek and Pueblo restoration locations along the Rio Grande; 250 Narrowleaf cottonwood along the upper Santa Clara Creek concentrated around and near the check structure locations. These trees would replace those lost as well as assist in erosion protection around the structures and adjacent to the existing roads that continue to downcut during high flows.

As noted in Section 3.7, Rocky mountain bee plant was also present at the check structure locations. This plant is important to the Pueblo and Pueblo members harvested some of these plants and their seed prior to construction.

Also, the contractors were required to clean all equipment before entering the Pueblo and when traveling between locations in order to prevent the spread of noxious weed seed.

Therefore, there would be an effect on vegetation during construction as well as in the near term. These effects would be mitigated through the replacement of trees as described above.

4.8 Floodplains and Wetlands

The goal of the project was to reduce debris and sediment downstream during high flow events in order to protect the Pueblo. Sediment was removed from the floodplain and structures were placed in the floodplain in order to complete this. Removal of sediment allowed better floodplain connectivity. Check structures located in the floodplain have a life of five to ten years, depending on the level of flows that come down the canyon. Therefore, the floodplain would be affected by the project in order to protect the Pueblo downstream.

Since no wetlands were present in the immediate project area, there would be no effect on wetland habitat.

4.9 Fish and Wildlife

Wildlife has begun to return to the Creek area since the fires. No nesting birds were detected prior to the onset of construction of the check structures. Wildlife present would be displaced temporarily during construction but would return afterwards. As mentioned in Section 4.7 above, trees would be planted to replace habitat lost. Therefore, there would be a minor short term effect on wildlife during construction only.

4.10 Endangered and Protected Species

None of the species discussed in Section 3.10 are known to be present in the project areas, likely because there is little to no potential habitat present, and there is no listed Critical Habitat present. Therefore, there would be no effect on the Southwestern Willow Flycatcher, Jemez Mountain Salamander, New Mexico Meadow Jumping Mouse, Mexican Spotted Owl, or Yellow-Billed Cuckoo by the project.

4.11 Cultural Resources

Pursuant to 36 CFR 800, the implementing regulations of the National Historic Preservation Act of 1966, as amended, USACE conducted consultation on all project activities with the New Mexico State Historic Preservation Officer (SHPO) for COA 1 and COA 2, and with the Santa

Clara Tribal Historic Preservation Officer (THPO) for COA 3 prior to the commencement of construction activities.

For COA 1 and COA 2, USACE determined that the project would result in "no historic properties affected" given that the Pueblo had no cultural resources concerns with the project, that nearly all of the project area had already been altered by previous flood protection projects, and that the level of disturbance within the stream channel and its adjacent banks was so severe, it was extremely unlikely that any significant cultural resources remained within the project area. The SHPO concurred with this determination on June 24, 2014 (HPD Consultation # 99407; Appendix A).

For COA 3, check structure 1 will be constructed within LA 180079 and will cause significant ground disturbance within the prehistoric site. The project has the potential to adversely affect LA 180079 through physical destruction of approximately 20 percent of the site which may adversely affect its information potential, and introduction of new physical elements that will negatively affect the integrity of setting and feeling for the site. Based on this assessment, USACE determined that the project will result in an adverse effect to LA 180079.

The regulations in 36 CFR 800.6(b)(1)(i) state that, "The agency official shall consult with the SHPO/THPO and other consulting parties to seek ways to avoid, minimize or mitigate the adverse effects." In the case of LA 180079, USACE has consulted with the Santa Clara THPO regarding measures to minimize and mitigate the adverse effect to the site. Due to the nature of the construction and the engineering requirements for siting the check structure, it is not possible to completely avoid an adverse effect to the site. In order to minimize the adverse effect of construction on a portion of LA 180079 however, several stipulations will be implemented during construction:

1) A line of sandbags will be erected along the northwestern edge of LA 180079 on the upstream side of the check structure. These sandbags will provide extra flood protection for the site in the event that flood waters rise above the level of the structure.

2) An avoidance area will be fenced surrounding the prehistoric structure and area of heaviest artifact scatter within LA 180079 with a 20 meter buffer. This area is the most likely to contain intact buried deposits, and damage to the prehistoric structure would result in the greatest adverse effect to the data potential of the site. Fencing this area and strictly enforcing avoidance of the area will minimize the impact of the project.

3) The construction footprint within LA 180079 will be limited to the minimum amount of space necessary to excavate the tie in trench and place the gabion baskets. Because all of the work on the tie in trench on the south bank will be within LA 180079, minimizing the construction footprint will reduce impacts to the site.

4) An archaeological monitor will be present during all excavation activities occurring at LA 180079. The monitor will be a qualified archaeologist and will be provided by USACE.

5) A NAGPRA burial plan of action has been developed by USACE in consultation with the Santa Clara THPO. This plan was developed pursuant to 43 CFR 10.5 and stipulates the

process for dealing with any human remains and/or associated and unassociated funerary objects that may be discovered during construction. This plan was enacted following signature by the Santa Clara THPO on January 28, 2015 (Appendix A).

The Santa Clara THPO concurred with USACE determination of an adverse effect to LA 180079 and with the implementation of these stipulations on February 18, 2015 (Appendix A).

While adherence to these stipulations during construction will minimize the impact of construction on LA 180079, the overall impact on the site will still be adverse, and therefore, mitigation of adverse effects will be required. The Pueblo has requested that USACE not conduct any excavations or other archaeological investigations as mitigation for the project. Therefore, USACE, in consultation with the Santa Clara THPO and Bureau of Indian Affairs, will develop a Memorandum of Agreement (MOA) defining an alternative mitigation strategy to be implemented in 2015. Because this project is being constructed as an emergency measure under 36 CFR 800.12, USACE will not complete mitigation prior to the start of construction in order to ensure construction is completed prior to the monsoon season. Mitigation activities will be complete, however, prior to close out of the project in 2015.

4.12 Socioeconomic Considerations and Environmental Justice

The project has potential beneficial socioeconomic impacts due to work occurring in the project area. Pueblo members have been hired to work on the project and the contractor is utilizing business resources in the area.

The population of the State of New Mexico is projected to increase by approximately 37% between the last official U.S. Census in 2010 and the year 2040. The population of Rio Arriba County is expected to remain fairly constant while the population of Santa Fe County may increase by approximately 28%.

Table 4 Population Projection Statistics for 2010 through 2040.

Location	Total Population (individuals)	Projections			
		2020	2030	2035	2040
New Mexico	2,059,179	2,351,724	2,613,332	2,727,118	2,827,692
Rio Arriba County	40,246	41,026	40,872	40,509	40,008
Santa Fe County	144,170	164,006	178,124	182,410	184,832

* Respondents may have multiple answers to census survey resulting in numbers greater than the total population.

The project is not expected to have any influence on future demographics.

4.13 Land Use

There would be no adverse effect to land use within or outside of the project area.

4.14 Indian Trust Assets

The only Indian Trust Assets of potential concern in the project area was impacts to the Pueblo's water rights. To ensure that USACE construction projects did not adversely impact Pueblo water rights, the USACE instructed the contractors for COA 1, COA 2 and COA 3 to make arrangements to keep Santa Clara Creek flowing through the village at all times during construction. Natural stream flows were maintained during construction and flow to the Pueblo was not interrupted.

4.15 Hazardous, Toxic and Radioactive Waste (HTRW)

After implementation of the project, there is a potential short-term minimal improvement to potential HTRW releases. The check structures would attenuate flood flows and catch flood-borne debris and sediment along Santa Clara Creek. This will reduce downstream flooding to Santa Clara Pueblo infrastructure, which provides potential sources of HTRW, if mobilized during a flood event.

5 - Conclusions

The project completed sediment removal and the installation of two check structures in order to reduce debris and flooding flows within the Pueblo. All applicable laws and regulations noted in Section 1.4 were considered during analysis of potential effects. A summary of the effects discussed in Section 4 are shown in Table 5 Summary of Effects below.

5.1 Summary of Effects

Table 5 Summary of Effects

Existing Environment	**Foreseeable Effects**
Physiography, Geology, Soils	Short-term adverse effect on soils
Hydrology, Hydraulics (H&H) and Geomorphology	No negative effects on river H&H, potential positive effects
Water Quality	Short-term adverse effect
Air Quality and Noise	Short-term adverse effects during construction only
Aesthetics	Short-term negative effects; near to long-term negative effects
Vegetation Communities	Adverse effect but mitigated
Floodplains and wetlands	Long-term effect to floodplains; No effect on wetlands
Fish and Wildlife	Short-term negative effects during construction only
Endangered and Protected Species	No effect on Southwestern Willow Flycatcher, Jemez Mountain Salamander, New Mexico Meadow Jumping Mouse, Mexican Spotted Owl, or Yellow-Billed cuckoo
Cultural Resources	Adverse effect but mitigated
Hazardous, Toxic and Radioactive Waste	Potential short-term minimal improvement
Socioeconomic Considerations	Potential positive benefit
Environmental Justice	No effect
Land Use	No effect
Recreational Resources	Short-term negative effect during construction only
Indian Trust Assets	No effect

5.2 Cumulative Effects

Cumulative effects are "*the impact on the environment which 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* " (40 CFR §1508.7). The geographic extents for which cumulative effects are considered vary for each of the resources analyzed. Similarly, actions taken in the past, present, and reasonably foreseeable future within the project area, when combined with the actions of the project, could contribute to cumulative effects and may vary with the resource being considered.

Environmental impacts associated within Santa Clara Creek been evaluated relative to the project.

Other projects in the area

Other agencies have been performing work within the Pueblo since the Las Conchas fires. All of the cooperating agencies listed in Section 1.4 have completed projects in the area as follows:

Santa Clara Pueblo has completed ongoing sediment removal, debris removal, tree felling, road restoration and ongoing restoration efforts throughout the canyon. Many of these efforts have been funded through various emergency funding resources.

USBR raised, widened, and compacted flood control berms in 2012 at Locations 1, 2, and 4 shown on Figures 13. Material was taken from the floodplain of the channel or from the channel itself to help dredge the channel and provide increased channel capacity. Dredging and berm raising was repeated in 2014 at Location 4. A sheet pile wall at Location 3 to protect the Pueblo office complex is scheduled for installation in late 2015. Some USBR funds have also been used for surveying the Rio Santa Clara and the purchase of culvert flap gates. USBR funding was not enough to provide riprap to line the berms.

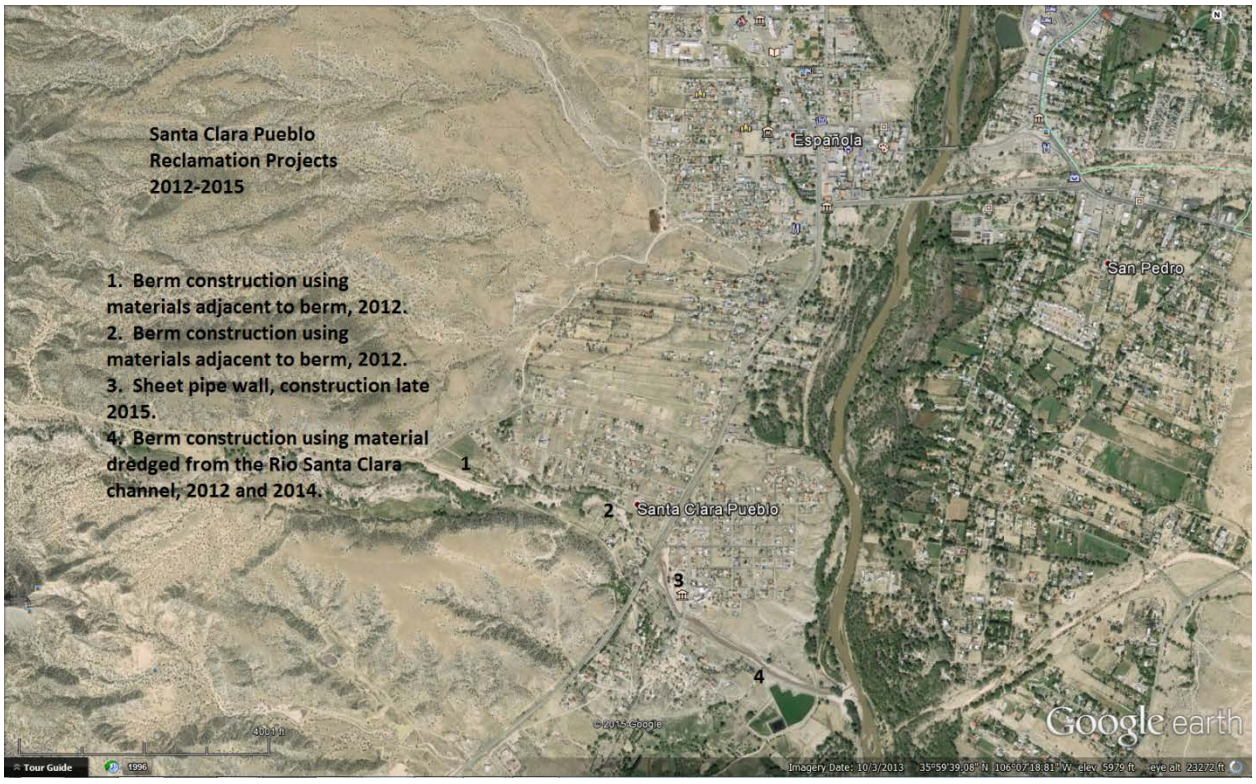

Figure 13. USBR Project Locations

FEMA has participated in short term and long term planning solutions for the Pueblo with the completion of the Recovery Support Strategy for Santa Clara Pueblo (FEMA, 2014). FEMA has also provided emergency funding following declarations post-fire and post-flooding.

FEMA has also provided funding to the Pueblo for further removal of sediment along arroyos adjacent to the Creek and at the four pond locations upstream of the check structure locations. USACE is providing design and implementation of these projects. Funding has also been designated to rehabilitate the dams at the four pond locations in the future. USACE is also involved in the design of these facilities.

Operations and Maintenance

Since the project area is still in flux with impending higher flows coming down the Creek, maintenance in terms of sediment management would still be required. This would mainly take place at the check structures by removing sediment (one to two times a year) from upstream of the structure after it has accumulated. Since these structures are meant to reduce the amount of sediment and debris downstream, sediment removal downstream should be reduced but would still be warranted. Inputs to the Creek below the structures will still put extra sediment and debris into the system. Therefore, ongoing maintenance in terms of sediment removal would be required at and below the structures. As sediment may still accumulate near the roadways and bridges, sediment removal at these locations would be ongoing as well until the watershed has settled down and restoration work can occur. Therefore, operations and maintenance of these projects has been considered as part of this project as well as the cumulative effects.

Hydrology, Hydraulics and Geomorphology

These combined projects, COA 1, 2, and 3 will provide a somewhat temporary measure for mitigating flood risk and sediment transport for relatively frequent storm events. The magnitude of storm events that these projects can be expected to affect range from the average annual event up to and including the (10-percent exceedance (10-year frequency) event). However, under current conditions, higher magnitude storm events ranging from the (4-percent exceedance (25-year frequency) event) up to the (1-percent exceedance (100-year frequency) event) and greater will likely overwhelm these projects. Ongoing maintenance will be critical for these projects in order to extend their beneficial life. Primary efforts should include routine sediment removal and repairs on at least an annual basis. Since these are advance measures projects and considered temporary they can only be expected to remain significantly functional for five to ten years. It is hoped that the watershed can begin to "heal" through revegetation so that rainfall can be captured and/or detained to allow for higher infiltration rates and thereby reduce the rate of runoff and sediment transport through the canyon. If storm events are not too severe over the next five to ten years and these projects can buy enough time for the watershed to begin to heal itself in the manner described above, then they will have been successful.

Water Quality

As stated in Section 4.4 above, water quality would not improve at this time. Until flood flows carrying sediment and debris have attenuated, the Creek cannot regain its natural equilibrium. This would occur at some point in the future after emergency projects have occurred, source

material has been eliminated, and restoration takes place. Therefore, there will continue to be water quality issues due to these factors, but not those related to just this project.

Air Quality and Noise

There would be minor cumulative effects to air quality and noise levels during the project construction and other agency construction periods. However, the additive effects on noise and air quality would not extend beyond the period of construction equipment operation. During the period of construction, effects on air quality or noise wouldn't be likely to exceed any critical environmental thresholds due to the project. There would be no long-term effect on air quality and noise due to implementation of the project.

Ecological Resources

This project and others would affect vegetation by removing dead material (that has washed down from the upper canyon or that has been impacted by debris flows). Where possible, ongoing planting and restoration projects are occurring. The majority of these cannot take place until the emergency projects have been implemented and the source material for debris flows abates. Therefore, there would be a short term cumulative effect to vegetation, mainly caused by the debris flows themselves. Once restoration can occur, tree plantings would begin to reverse this negative cumulative effect.

The same holds true for wildlife. While there are areas unaffected directly by the fire or flooding, much of the riparian area is in flux due to debris flow impacts. Wildlife can continue to return above the channel bed areas but since the channel area is in flux, wildlife in those areas would be in flux. Once restoration projects can increase and debris flows are reduced, wildlife can further increase and thrive. This can begin with the reduction of sediment throughout the system from the implementation of this project and others.

In summary, it is proposed that this project would have a short-term negative on ecological resources resulting from the potential cumulative effects of other Federal and non-Federal agencies. There would, however, be a long-term equilibrium to the system resulting in a return of native vegetation and wildlife.

Aesthetics

The aesthetics of the watershed are in flux due to ongoing emergency work actions as well as the debris flows that occur after each storm event. These events change the landscape of the Creek each time they occur. Again, there will be near term cumulative effects on aesthetics due to this project in combination with other efforts, with the goal of returning to natural system aesthetics over the long term once restoration efforts can occur throughout the canyon.

6 - Preparation, Consultation, and Coordination

6.1 Notification/Public Review

Notice of Availability
Draft Environmental Assessment for the
Santa Clara Pueblo Advance Measures Project
Pueblo of Santa Clara, New Mexico

The U.S. Army Corps of Engineers (Corps), Albuquerque District, has completed the **Draft Environmental Assessment for the Santa Clara Pueblo Advance Measures Project, Pueblo of Santa Clara, New Mexico (DEA)**. The Albuquerque District Commander made the determination that this project warranted emergency measures. Because this was considered an emergency, then National Environmental Policy Act (NEPA) regulations may be followed and completed after construction implementation. Therefore, this FONSI has been completed after project implementation has begun.

Temporary emergency measures were required to reduce flood risk from the extreme sediment load and flood flows on the Pueblo of Santa Clara. New Mexico's flood season is July-September during which intense rainfall from large thunderstorms causes flash floods. Therefore, to mitigate life safety risk at the Pueblo in advance of the next flood season, a set of emergency measures were implemented by the U.S. Army Corps of Engineers (USACE). USACE has the authority for emergency construction to reduce flood risk via Public Law 84-99 and advance measures. Through these advance measures, USACE implemented sediment removal, bank protection, and the construction of three gabion check structures along Santa Clara Creek in 2014 and 2015. The approximate federal cost of these projects was $8.2 million.

Public review of the DEA shall occur from October 22 – November 22, 2015. The DEA is electronically available for viewing and copying at the Albuquerque District website (under "Environmental Assessments/FONSI") at:
http://www.spa.usace.army.mil/Missions/Environmental/EnvironmentalComplianceDocuments/EnvironmentalAssessmentsFONSI.aspx

or a hard copy will be sent upon written request to the following address:

U.S. Army Corps of Engineers
Albuquerque District
Environmental Resources Section
Attn: CESPA-PM-LE (Mrs. Ondrea Hummel)
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109-3435
or
ondrea.c.hummel@usace.army.mil.

6.2 Preparers

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Michael Guerin – Chief, Technical Support Branch
Mark Doles – Planner
Brad Green – Project Manager

6.3 Quality Control Reviewers

Brad Green – Project Manager
Greg Everhart - Archaeologist
William DeRagon - Biologist
Michael Porter – Fishery Biologist
Cecilia Horner – Civil Engineer

6.4 Cooperating Agencies and Quality Control Review

Pueblo of Santa Clara; Paula Gutierrez, Ben Chavarria
Federal Emergency Management Agency, Kevin Jaynes
U.S. Bureau of Reclamation; Scott Hebner, Viola Sanchez
Bureau of Indian Affairs, Priscilla Avila
Natural Resource Conservation Service, Thomas Gonzales

6.5 DEA Distribution List

Pueblo of Santa Clara
Federal Emergency Management Agency
U.S. Bureau of Indian Affairs
U.S. Bureau of Reclamation
U.S.D.A Natural Resource Conservation Service
U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency
U.S Department of Transportation
New Mexico Department of Transportation
New Mexico Department of Game and Fish
New Mexico Environment Department
New Mexico Interstate Stream Commission
Rio Arriba County
Santa Fe County
Valles Caldera

U.S. Forest Service

Interested Pueblos and Tribes:
Comanche Nation of Oklahoma
Jicarilla Apache Nation
Kiowa Tribe of Oklahoma
Navajo Nation
Ohkay Owingeh
Pueblo of Picuris
Pueblo of Pojoaque
Pueblo of San Ildefonso
Pueblo of Taos
Pueblo of Tesuque
Pueblo of Zia
Ramah Navajo Chapter
The Hopi Tribe

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APPENDIX A

CULTURAL INFORMATION

NOTE: Cultural Report available for review upon request to the Santa Clara Tribal Historic Preservation Officer

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA NE
ALBUQUERQUE NM 87109-3435

June 13, 2014

99407

Planning, Project and Program Management Division
Planning Branch
Environmental Resources Section

Dr. Jeff Pappas
State Historic Preservation Officer
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Dr. Pappas:

Pursuant to 36 CFR Part 800, the U.S. Army Corps of Engineers, Albuquerque District, (Corps) is planning to implement temporary flood protection measures in advance of an imminent flood and debris flow, representing a significant threat to life and property within Santa Clara Pueblo (Pueblo) in Rio Arriba County, New Mexico. All work for this project will occur within the active floodplain and along the banks of Santa Clara Creek in areas where existing flood protection features are already present, or the landscape has been previously altered by severe flooding and debris flows. The Corps is seeking your concurrence in our determination of "No Historic Properties Affected" for the project. Due to the need to implement flood protection measures prior to the monsoonal rains (July-September), the Corps would like to begin work prior to the Fourth of July holiday.

The Pueblo of Santa Clara Pueblo is in imminent threat of large damaging floods with extreme life safety risk. In 2011, the Las Conchas Fire burned the headwaters of Santa Clara Creek. Flood potential has increased by an estimated five times since the wildfire denuded the larger portion of the watershed. The Pueblo of Santa Clara is located on the alluvial fan at the outlet of the watershed immediately upstream of the confluence of Santa Clara Creek with the Rio Grande. Flood fighting and flood damage has occurred in all years since the fire (three years), with a total of five Presidential Emergency Declarations: one declaration in 2011, two declarations in 2012 and two declarations in 2013. At the time of the fire, four small dams were located in the burn area, providing a modest amount of flood risk management in the watershed. In 2012, three of the dams were breached; the last dam failed in July 2013. Dam failure is attributed to extreme post-fire peak flows and debris flows causing rapid reservoir filling and overtopping of the facilities. Sediment transport of the canyon landslide and debris flow sediment has reached the Pueblo and is now reducing channel capacity within that reach. The channel through the Pueblo aggraded seven feet between July 2013 and January 2014 during base flow conditions less than 20 cfs. This reduced channel capacity is problematic in that it limits the amount of water and sediment that can be transported through the Pueblo, and as a result, existing flood protection could be overtopped even during a relatively small rainfall event.

In 2013, as damages and flood risk continued to escalate, FEMA recognized that the flood situation was beyond its mission. In November 2013, FEMA activated its National Disaster Recovery Framework consistent with the vision set forth in the Presidential Policy Directive 8, to assist the Pueblo by creating a multi-agency recovery strategy. USACE has the authority for emergency construction to reduce flood risk.

Temporary emergency measures are required to reduce flood risk from the extreme sediment load and flood flows at the Pueblo. New Mexico's flood season is July-September, during which intense rainfall from large thunderstorms causes flash floods. Therefore, to mitigate life safety risk at the Pueblo in advance of the next flood season, a set of emergency measures must be implemented by mid-July, 2014. These are developed from an array of measures to focus on those that can be implemented before or during the 2014 flood season. The measures are designed for expediency and are considered temporary or sacrificial. Proposed measures include channel dredging to increase channel capacity, armoring of existing flood protection berms and along exposed channel banks to reduce the risk of catastrophic failure during high flows, and placement of HESCO baskets to serve as temporary levees to provide a higher level of flood protection. These measures would reduce flood risk by retaining the flood peak for the smaller, more frequent events. Additional measures are being considered for long term protection from larger events, but will not be implemented prior to the upcoming flood season, and thus, are not included as part of this consultation.

Dredging will consist of sediment removal from approximately 11,000 linear feet of stream channel to remove over 100,000 cubic yards (~60 acre feet) of sediment. Channel dredging would occur from just above the upstream most point on the upper flood control berm, downstream to the irrigation crossing near the Rio Grande confluence below the Pueblo (Enclosure 1). At the request of the Pueblo, all live cottonwood trees will be avoided during dredging, as these trees have cultural significance. The dredging would provide additional channel capacity for flood flows up to approximately the 20% chance exceedance event (previously termed the "5-year event"). The dredging would accommodate sediment loads anticipated in large and small flood events. Additional dredging would be anticipated during the monsoon season to maintain this channel capacity. Dredged material will be used to fill the HESCO baskets (described below), and the additional material will be wasted in disturbed areas such as existing borrow pits, approved waste areas already being used for spoil from the upper canyon, and on the existing flood control berms to strengthen and enlarge them.

In addition to dredging, the Corps proposes to place four foot HESCO baskets filled with sediment on 14,600 linear feet of channel banks, and then armor the banks at the toe of the baskets with rock rip rap and/or articulated concrete mats. HESCO baskets consist of a wire frame with an interior lining that is filled with sediment; in this case, sediment dredged from the channel. HESCO baskets placed at the top of bank and on top of flood berms are intended to increase the height of the bank to contain some flood flows. Armoring of the bank up to the base of the baskets will prevent scour and erosion of the bank, and thereby prevent the baskets from being undermined. Existing rock armoring as well as several flood protection berms are present along the majority of the bank throughout the project area from both the post-Cerro Grande and post-Las Conchas fire flood fighting efforts (Enclosure 2), and the entire waterway has been extensively reworked from both human and natural causes over the 14 years since the Cerro Grande fire first caused heavy flooding within the Pueblo. The addition of new armoring and HESCO baskets will augment and enhance these existing features, and will serve to stabilize the stream channel in the few areas where there are no existing flood control features. Existing rock armoring will be utilized wherever it is in sufficiently good condition.

Due to the extremely disturbed nature of the project area and the condensed time frame for project planning, no new archaeological survey was conducted in advance of the project. The Corps has, however, taken steps to determine if any significant cultural resources may be present in the

project area. This included consultation with the cultural resources staff at Santa Clara Pueblo, a record search of the New Mexico Cultural Resources Information System (NMCRIS) database (Enclosure 3), and a site visit to the project area on June 10, 2014. Consultation with Santa Clara Pueblo Director of Rights Protection Division, Mr. Ben Chavarria, indicated that he had visited the project area and noted that the Pueblo has no cultural resources concerns other than a desire to avoid all live cottonwoods; a request the Corps has incorporated into project planning. The NMCRIS database search indicated that several significant known historic properties are present near the project area, but that these sites are located outside of the active floodplain. Sites LA 262, LA 794 and LA 965 are located adjacent to the project area, but outside of the existing flood protection features and outside of the active floodway where work will occur. Corps archaeologist Jeremy Decker attended a site visit to the project area on June 10 and walked the entire length of the proposed project area. No cultural resources were observed within the stream or any of the banks adjacent to the stream during this reconnaissance level site visit.

Given that the Pueblo has no cultural resources concerns with the project; that nearly all of the project area has already been altered by previous flood protection projects; and that the level of disturbance within the stream channel and its adjacent banks is so severe, it is extremely unlikely that any significant cultural resources remain within the project area. The Corps, therefore, believes that the project will result in no historic properties affected. The Pueblo supports this project and has requested that the Corps move forward expeditiously to ensure that the project is constructed prior to the first monsoon rains.

Pursuant to 36 C.F.R. 800.13, should previously unknown artifacts or cultural resource manifestations be encountered during construction, work would cease in the immediate vicinity of the resource. A determination of significance would be made, and further consultation with your office and with Santa Clara Pueblo would be conducted to determine the best course of action.

Due to the urgent need to complete this work prior to the monsoon season in July, the Corps respectfully requests that your office expedite your review of this project. If at all possible, the Corps would like to receive your comment on the project before June 27, 2014 to ensure that work can begin in early July. Please feel free to contact Jeremy Decker, Archaeologist at (505) 342-3671 or jeremy.t.decker@usace.army.mil or myself, at (505) 342-3281 if you have any questions or require any additional information.

Sincerely:

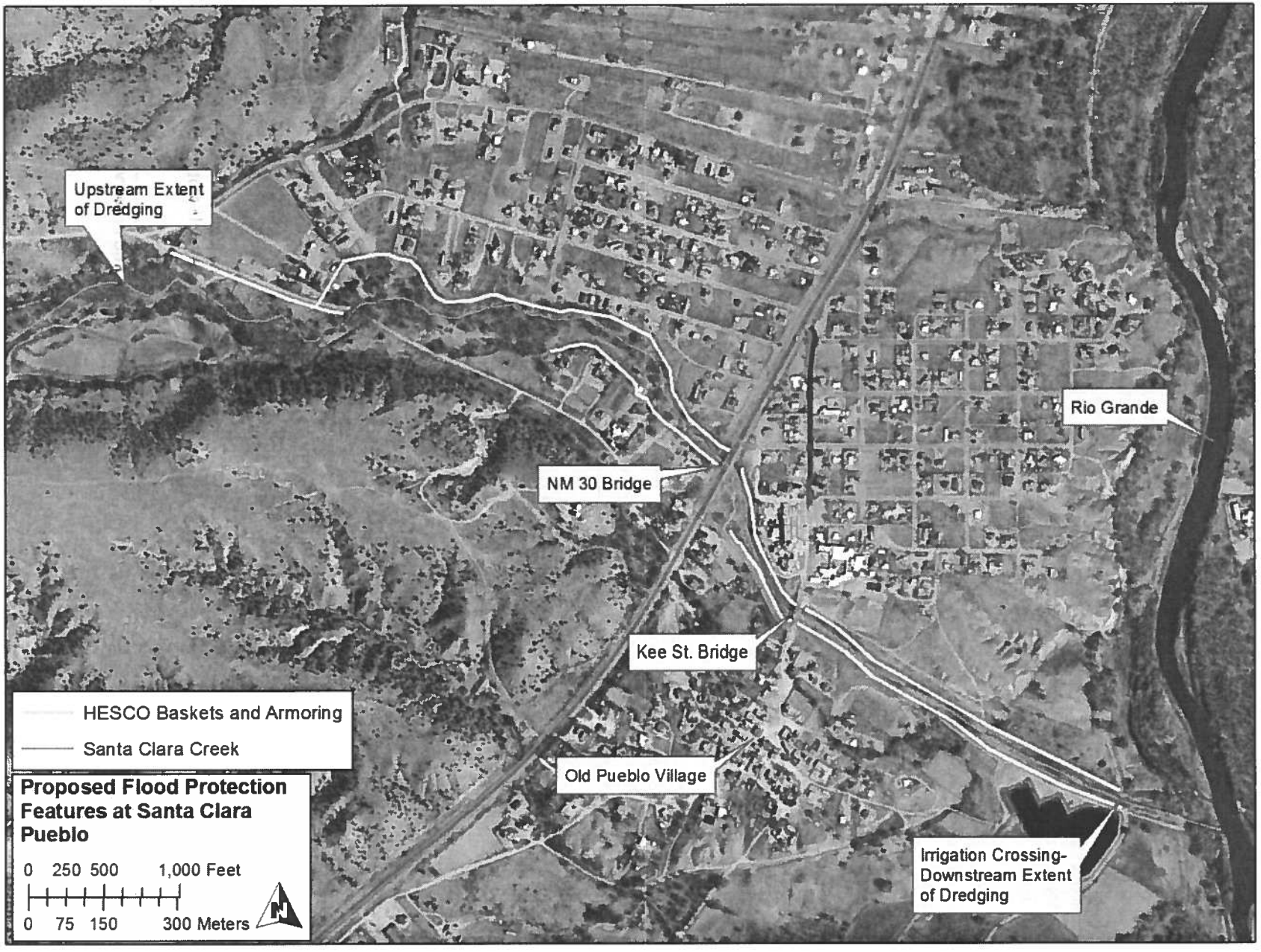
Julie Alcon
Chief, Environmental Resources
Section

Enclosures

nis undertaking will not have an adverse effect or registered or eligible properties.

June 24, 2014
for NM State Historic Preservation Officer

Enclosure 1: Proposed Flood Protection Features in the Project Area



PLAN OF ACTION
FOR
THE CONSTRUCTION OF EMERGENCY FLOOD PROTECTION PROJECTS
WITHIN THE PUEBLO OF SANTA CLARA INDIAN RESERVATION
BY THE
ALBUQUERQUE DISTRICT, U.S. ARMY CORPS OF ENGINEERS

Proposed Project

The U.S. Army Corps of Engineers, Albuquerque District (Corps) is implementing a series of flood protection measures on Pueblo of Santa Clara (Pueblo) reservation land primarily within Santa Clara Canyon running downstream through the Santa Clara Village and to the confluence of Santa Clara Creek and the Rio Grande. These measures are necessary to protect the village from heavy flood and debris flows resulting from the burning of major portions of the Santa Clara Creek watershed during the Las Conchas Fire in 2011. This plan of action applies to all Corps undertakings on Pueblo lands related to construction of emergency flood protection measures. Examples of proposed flood protection measures include but are not limited to gabion check structures, channel improvements within Santa Clara Creek and associated tributaries, levees, floodwalls and other barriers and reconstruction of existing flood protection infrastructure. This plan of action will remain in place for a period of two (2) years from the date of its execution, and will be reevaluated at that time if necessary.

Objects to be Considered as Cultural Items

For purposes of this plan of action, and as set forth in 43 C.F.R. 10.5(e)(1), the term "cultural items" specifically refers to associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony [43 C.F.R. 10.2(d)].

Associated funerary objects, as defined in 43 C.F.R. 10.2(d)(2)(i), include items found with a burial and apparently placed there during the interment, as evidenced by having been found associated with any discovered human remains.

Unassociated funerary objects, as defined in 43 C.F.R. 10.2(d)(2)(ii), would include funerary objects for which the human remains with which they were placed intentionally are not in the possession or control of the Corps. However, human remains are usually necessary to identify burials, and while possible, it is unlikely that unassociated funerary objects will be found.

No objects that might be considered to be sacred objects or objects of cultural patrimony, as defined in 43 C.F.R. 10.2(d)(3) and (4), have been identified at any of the proposed work locations. Based on the available evidence, it is unlikely that sacred objects or objects of cultural patrimony will be found. However, if encountered during construction, Santa Clara Pueblo may present for consideration

information not presently available concerning examples of sacred objects and/or objects of cultural patrimony, as defined in 43 C.F.R. 10.2(d)(3) and (4).

Specific Information Used to Determine Custody

Custody has been determined in accordance with 43 C.F.R. 10.5(e)(2) and in consultation with Santa Clara Pueblo. The project area is located on Santa Clara Pueblo tribal lands and thus no other tribes were consulted.

Priority of Custody

Any Indian Tribe that wishes to make a claim on ownership of human remains or cultural items must be able to demonstrate an affiliation by a preponderance of evidence according to the criteria for the priority of custody specified in 23 U.S.C. 3002 3(a) and 43 C.F.R 10.5 and 10.6.

The highest priority of custody would be to a lineal descendent of the deceased (43 C.F.R. 10.6(a)(1). 43 C.F.R. 10.14(b) further specifies that a lineal descendent must be an individual who can trace, through a traditional kinship system, his/her direct, uninterrupted descent from a known Native American individual. Existing information suggests that any burials discovered in the project area are ancestral to members of Santa Clara Pueblo, although it is unlikely that a relationship to an individual member of the tribe could be established without performing DNA analyses on any discovered remains.

The other priorities of custody are to an Indian tribe, rather than an individual as described in 43 C.F.R. 10.6(a)(2). The Pueblo of Santa Clara satisfies the first priority of custody found in 43 C.F.R. 10.6(2)(i) which states that when a lineal descendant cannot be ascertained, the first priority of custody will be, “in the Indian tribe on whose tribal land the human remains, funerary objects, sacred objects, or objects of cultural patrimony were excavated intentionally or discovered inadvertently.

Treatment, Care, and Handling of Any Human Remains

Prior to the commencement of each construction project, an archaeological assessment will be made by the Corps and a cultural assessment will be made by the Pueblo. These assessments will be used in planning efforts to attempt to avoid or minimize potential impacts to human remains to the extent possible. However, given the nature of the work and the location in and immediately adjacent to the floodplain where the probability of encountering archaeological deposits is moderate to high, the possibility of encountering human remains cannot be completely eliminated. Therefore, if an inadvertent discovery of human remains occurs they will either be left in place with all associated soil and associated funerary objects (if present), or removal of the remains will follow the procedures outlined below.

Excavation and Exhumation of the Human Remains

In the event that human remains are inadvertently discovered, the Corps, the Pueblo and the discovering party (if different form the aforementioned), will implement the following procedure:

1) At the time of discovery all work will stop in the vicinity of the find and the discovering party will secure the area. Securing the area will include removing all equipment and personnel from the discovery site and ensuring that no one tampers with the discovery. Once the site is secured, the discovering party will contact the Tribal Sheriff immediately at 505-753-7326. If the Tribal Sheriff determines that the remains are not recently deposited, and thus, without medico-legal significance, the discovering party will contact representatives from the Pueblo of Santa Clara Rights Protection Office by telephone at 505-692-6285. If the Rights Protection Office is unavailable, the discovering party will contact the following individual Rights Protection Office representatives in this order:

1. Ben Chavarria 505-423-5507
2. Danny Naranjo 505-929-0802
3. Jesse Gutierrez 505-901-3235

The discovering party will also notify the Corps archaeologist at the time of discovery, and if possible the Corps archaeologist will accompany the representatives from the Rights Protection Office. Contact information for Corps archaeologists is as follows:

1. Jeremy Decker 505-342-3671
2. Gregory Everhart 505-342-3352
3. Jonathan Van Hoose 505-342-3687

If the discovering party is a Corps contractor, then they will also contact the Corps Contracting Officer. No further action will be taken by the discovering party until representatives of the Tribal Sheriff's Office and Rights Protection Office have arrived and investigated the discovery. In the event that none of the above can be reached, the discovering party will carefully place a small amount of soil over the exposed remains and will make efforts to protect the remains from further disturbance until such time that the Rights Protection Office can be contacted.

2) Prior to any removal of human remains from the discovery site, an attempt will be made by the Rights Protection Office and the Corps archaeologist to locate the exact location from which the remains were disturbed. A GPS point will be captured for the location, and if requested by representatives from the Rights Protection Office, photographs will be taken of the discovery location to document the position of the remains. Once a GPS point and any photographs have been collected, treatment of remains will proceed as follows:

- If the undertaking that disturbed the remains can be altered and/or realigned to avoid the location of discovery, then any displaced remains and associated funerary objects will simply be collected, placed back in the original location from which they were disturbed, and reburied. The undertaking will then be altered to avoid the location of the burial.

- If the undertaking cannot avoid the area of discovery (e.g. the discovery is within the footprint of a dam) then the remains and associated funerary objects will be gathered from the discovery site by hand. No formal archaeological excavation of human remains will occur unless requested by representatives from the Rights Protection Office.
    - If possible, the entire burial with all associated funerary objects should be collected and kept together as a single entity for reburial.
    - If only a portion of the burial was disturbed by project activities, and the remaining intact portion of the burial is no longer imperiled (e.g. still within the wall of a trench that requires no further excavation) then the intact portion should be left in place and the displaced remains reburied as close as possible to the remaining intact portion.

For all of the above scenarios, if remains need to be temporarily removed from the immediate area of the discovery site, the human remains and associated funerary objects (if present) will be stored on site until they have been documented and reburial occurs. Hand removal of human remains and associated objects may involve the use of hand tools, if necessary, and may require the use of containers such as buckets, trays, screens or other such containers to temporarily hold remains as they are being removed from the discovery site. Following removal, remains will be documented and stored temporarily on site before finally being reburied following the procedures below.

Archaeological Recording of the Human Remains

Recording of human remains shall be minimal and include only the recording of a GPS point for the discovery, recording of approximate depth of the deposit that was disturbed, limited photography as directed by representatives from the Rights Protection Office, and a basic inventory of the items encountered. Recording of the remains will be undertaken by members of the Rights Protection Office, and if present, assisted by a Corps archaeologist.

Physical Inventory

Physical inventory of any human remains and associated funerary objects will include:

1) Count of items by material type
2) Written description of any significant artifacts, items, remains or assemblages
3) Measurements of any significant artifacts

4) Photographs of any significant artifacts as directed by representatives of the Rights Protection Office

At the request of the Pueblo of Santa Clara, no formal analysis of human remains will be undertaken beyond the simple inventory described above.

Temporary Storage and Packing

The remains and objects will be stored on site and will not be stored in any sort of packaging unless directed by representatives from the Rights Protection Office. If the remains must remain exposed following investigation by representatives from the Rights Protection Office then a thin layer of soil will be placed over the remains to cover them until such time that they can be reinterred. Temporary on-site storage will not exceed 24 hours. An effort will be made to document and rebury the remains and associated objects within the same day as the discovery; however, if the discovery is made in the late afternoon or evening it is acceptable to make the reburial the following day. Regardless of how long it takes to reinter the remains, they will be kept covered until all issues are resolved.

Human Remains

All human remains will be treated respectfully. Human remains will be removed carefully and every effort will be made to keep each individual skeletal element intact. It is likely, however, that some remains will be fragile or fragmented and some breakage may occur either at the time of discovery or during exhumation. An attempt will be made to keep fragmentary remains together so that they may be placed together during reburial.

Objects

All associated and unassociated funerary objects will be removed in the same manner as human remains and each item will be stored with the remains with which it was found. All associated objects will be reinterred with the burial, and the objects will at no time be separated from the individual with which they are associated.

Consultation with Indian Tribal Officials

All project activities are taking place on Pueblo of Santa Clara lands; therefore all tribal consultation for this project was conducted with the Pueblo of Santa Clara as the Indian Tribe with priority of custody pursuant to 43 C.F.R. 10.6(2)(i). The Santa Clara Pueblo Rights Protection Office will be the point of contact in the event that any discoveries are made during Corps construction projects.

Proposed Traditional Treatments

All human remains will be treated with the utmost respect and dignity. Except for immediately after discovery and during exhumation and documentation, all human

remains will be covered with sediment. The remains should not be left unnecessarily exposed or where they are clearly visible to the public. The area of the discovery should be secured to keep unauthorized personnel from viewing the remains.

Once exposed, every effort should be made to reinter the remains and any associated funerary objects within the same day as discovery. However, if the discovery is made in the late afternoon or evening it is acceptable to make the reburial the following day. Reinterment should occur no later than the day following the initial discovery unless with consent from Rights Protection Office representatives.

Reporting

Each time an inadvertent discovery is made an Albuquerque District archaeologist will prepare a report of the discovery, exhumation, and disposition of the human remains and any associated funerary objects (if present) and deliver this report to the Santa Clara Pueblo Tribal Historic Preservation Officer (THPO) for review. The report will be in a memorandum format and will include photographs (if taken), written description of the excavation and reburial process, an inventory of what was discovered and a map of the location of the discovery. All photographs, sensitive descriptions and location information will be provided in a confidential appendix to the memorandum report. Following review and approval the Corps will provide the report with confidential appendix and all associated data to the THPO. The Corps will not retain any of the raw data or the confidential appendix, but will retain a copy of the memorandum report for their records. The Corps will delete all data and documents other than the memorandum report once confirmation has been received from the Santa Clara Rights Protection Office that they have received all necessary documentation and that the documentation is sufficient.

Planned Disposition of Human Remains, Funerary Objects, Sacred Objects, or Objects of Cultural Patrimony

If possible, any displaced remains and associated funerary objects will simply be documented, placed back in the original location from which they were disturbed and reburied. This will only occur if the undertaking that disturbed the remains can be altered and/or realigned to avoid the location of discovery. If the undertaking cannot be relocated or realigned then the remains will be exhumed using the procedures described above. Once the remains have been safely removed from the discovery site, a hole will be excavated for reburial as close as possible to the original burial location. While the final location will be determined in the field with representatives from the Rights Protection Office, in general, the location of reburial should be chosen in the following order: 1) in place (if possible), 2) in the same location, but at sufficient depth to be avoided by further project activities, 3) in a nearby location outside the project footprint and safe from foreseeable future disturbance.

Discovery of sacred objects and/or objects of cultural patrimony is unlikely; however, the disposition of any such objects that are discovered will be determined by representatives of the Rights Protection Office.

Duration

This plan of action will expire after a period of two (2) years from the date of its execution, which will be the date on which the final signature is received. Prior to the expiration of the agreement, the Corps may consult with the Pueblo of Santa Clara to reconsider the terms of the plan of action and amend it in accordance with the Amendments section below.

Amendments

Either the Corps or the Pueblo of Santa Clara may request that this plan of action be amended at any time during its execution, whereupon the parties will consult to consider the amendment.

Termination of the Agreement

Either the Corps or the Pueblo of Santa Clara may terminate this plan of action by providing thirty (30) days written notice to the other party, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. Termination of this plan of action, or failure to abide by its terms shall require the Corps to comply with 43 CFR 10.4 with respect to undertakings that otherwise would be reviewed under this plan of action.

Implementation

This plan of action becomes effective on the date of the last signature below and will be implemented immediately.

Patrick J. Dagon
Lieutenant Colonel, U.S. Army
District Commander

12Jan15
Date

Mr. Ben Chavarria
Tribal Historic Preservation Officer
Santa Clara Pueblo

1/28/15
Date

PUEBLO OF SANTA CLARA

P.O. Box 580, Española, New Mexico 87532
Office - 505-753-7326 Fax - 505-753-8988

February 18, 2015

Jeremy Decker
Planning Project and Program Management Division
Planning Branch
Environmental Resource Division
U.S. Army Corps of Engineers, Albuquerque District
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435

Dear Mr. Decker,

I have completed a review of U.S. Army Corps of Engineers (Corps) report entitled *"A Cultural Resources Investigation of Proposed Emergency Check Structure Locations within Santa Clara Canyon, Rio Arriba County, New Mexico"*, and the determinations of eligibility and effect made in your letter dated January 19, 2015 in regard to the proposed construction of two emergency check structures on Santa Clara Pueblo lands for the purpose of flood control. After review, I concur with your determination that archaeological site "Site 1" is eligible for listing in the National Register of Historic Places (NRHP), and also concur with your assessment that the project will result in an *adverse effect* to Site 1.

I have reviewed the stipulations recommended in your letter and agree that these measures will help to reduce adverse effects to Site 1, and believe that the following measures should be implemented during construction:

1) A line of sand bags will be erected along the northwestern edge of Site 1 on the upstream side of the check structure. These sand bags will provide extra flood protection for the site in the event that flood waters rise above the level of the structure.
2) An avoidance area will be fenced surrounding the prehistoric structure and area of heaviest artifact scatter within Site 1 with a 20 meter buffer. This area is the most likely to contain intact buried deposits, and damage to the prehistoric structure would result in the greatest adverse effect to the data potential of the site. Fencing this area and strictly enforcing avoidance of the area will minimize the impact of the project.
3) The construction footprint within the site will be limited to the minimum amount of space necessary to excavate the tie in trench and place the gabion baskets. Because all of the work on the tie in trench on the south bank will be within Site 1, minimizing the construction footprint will reduce impacts to the site.

4) An archaeological monitor from the agency involved will be present during all excavation activities occurring at archaeological Site 1. The monitor will be a qualified archaeologist and will be provided by the Corps.

In addition to the implementation of the above stipulations, I have reviewed and approved the NAGPRA Burial Plan of Action developed by your office pursuant to 43 CFR 10.5 which will be implemented during all emergency flood control projects undertaken by the Corps on Santa Clara Pueblo lands.

While adherence to these stipulations during construction will minimize the overall impact of construction on Site 1, the overall impact of the site will still be adverse, and therefore, mitigation of adverse effects will be required. Therefore, the Corps needs to enter into a Memorandum of Agreement (MOA) with the Santa Clara Pueblo Tribal Historic Preservation Officer in order to mitigate the adverse effect to the site.

I look forward to continuing consultation on this project, and to receiving a draft copy of the MOA from your office at your earliest convenience. If you have any questions or comments, please feel free to call me directly at (505) 753 7326 ext. 1306 or (505) 423 5507 cell or by email at bchavarria@santaclarapueblo.org

Respectfully,

Ben Chavarria
Director Rights Protection Office / THPO
Santa Clara Pueblo, New Mexico

APPENDIX B

WATER QUALITY INFORMATION

ALBUQUERQUE DISTRICT
U.S. ARMY CORPS OF ENGINEERS

DEPARTMENT OF THE ARMY REGIONAL GENERAL PERMIT NUMBER NM-12-01 FOR REPAIR AND PROTECTION ACTIVITIES IN EMERGENCY SITUATIONS

SPONSOR AND ISSUING OFFICE: U.S. Army Corps of Engineers, Albuquerque District

PERMIT NUMBER: Regional General Permit (RGP) No. NM-12-01 (Corps File No. SPA-2012-00347-ABQ)

ISSUANCE DATE: January 24, 2013

PERMITTEE: Public agencies, businesses, or private parties (i.e., the public in general)

Note: The term "you" and its derivatives, as used in this permit, means the permittee. The term "this office" refers to the Albuquerque District office of the Corps of Engineers, which has jurisdiction over the permitted activity, or the appropriate official of this office acting under the authority of the commanding officer.

After you receive written approval that your project complies with the terms and conditions of this RGP NM-12-01 from this office, you are authorized to perform work in accordance with the General Conditions and any project-specific conditions.

PROJECT DESCRIPTION: This permit authorizes discharges of dredged or fill material into Waters of the United States, including wetlands, and/or work or structures in Navigable Waters of the United States for necessary repair and protection measures associated with an emergency situation. An “emergency situation” is present where there is a clear, sudden, unexpected, and imminent threat to life or property demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property or essential public services (i.e., a situation that could potentially result in an unacceptable hazard to life or a significant loss of property if corrective action requiring a permit is not undertaken immediately). Examples of work that maybe undertaken under this permit, upon authorization by the District Engineer (DE), include but are not limited to:

- Levee construction, rebuilding or maintenance.
- Removal of accumulated sediment, debris or vegetation to prevent or mitigate the emergency situation.
- Bank stabilization to prevent or minimize erosion or the loss of structures such as bridges.
- Debris containment structures.
- Construction of diversion channels and flow deflection structures.

PROJECT LOCATION: Within the State of New Mexico.

GENERAL CONDITIONS OF THIS RGP:

1. **Time Period Covered**: This general permit will be effective through January 24, 2017; however eligible projects authorized under this general permit must be completed by the time specified in the approval

notification. The reauthorization of this RGP in 2017 will be based on the permit's usefulness and an evaluation of the impacts of projects that were authorized.

2. **Notification/Communication**:
   a. **Timing**: The applicant must notify the DE as early as possible and shall not begin the activity until the DE provides written authorization that the activity may proceed under this RGP with any site-specific special conditions imposed by the District or DE. The Corps recognizes there may be situations where imminent threats to life or property occur and the applicant has not received authorization to proceed from the DE. It is not the intention of this permit to require threats to life or property to remain unaddressed. If an applicant chooses to proceed without authorization from the DE, the applicant must ensure that prior notice of such a unilateral decision to proceed is made to this office by telephone, facsimile, e-mail, delivered written notice or other alternative means.
      i. Notification should be sent to:
      Attn: NM/TX Branch Chief via fax at 505-342-3678 or mail/electronic mail at:
      U.S. Army Corps of Engineers
      Albuquerque District
      Regulatory Division, CESPA-RD
      4101 Jefferson Plaza NE
      Albuquerque, NM 87109
      SPA-RD-NM@usace.army.mil

   b. **Contents of Notification**: The notification should be in writing and include the following information:

      (1) Applicant's name, address, and telephone number, and contact information for the owner of the affected land.
      (2) A written description of the proposed work including:
         (a) The purpose and need- describe nature of emergency that makes use of this RGP necessary and why such actions were not anticipated earlier.
         (b) A description of waters of the United States that may be affected by the activities
         (c) Type, composition, and quantity of material to be excavated or placed (including temporary material used for cofferdams, etc)
         (d) Length, width, and depth of fill area and/or excavation area
         (e) A discussion of the direct and indirect adverse environmental effects of the activity
         (f) Location of disposal site for excavated material
         (g) Type of equipment to be used
         (h) Identification/delineation of wetlands
         (i) The receiving site for excess water (drainage projects)
         (j) Any other pertinent, supporting data
      (3) A location map indicating the location of the proposed work and a legal description (section, township, range, and county, NAD 83 UTM coordinates or latitude and longitude).
      (4) A set of 8.5 by 11-inch drawings showing the details of the proposed work (plan and cross-sectional views showing elevations and dimensions). In situations where detailed plans are not available, conceptual/as-built plans may be submitted with project notification. Detailed plans however, may be required after-the-fact with the post-activity report.
      (5) If applicable, a compensatory mitigation plan for proposed wetland and/or stream fill or drainage activities.
      (6) A written statement that the permittee agrees to abide by the terms and conditions of this permit.

c. **Form of Notification**: Nationwide Permit Pre-Construction Notification (PCN) Form, available from the District's website at: http://www.spa.usace.army.mil/Portals/16/docs/civilworks/regulatory/NWP%20PCN%20Fillable%20Checklist-%20FINAL%20(2).pdf may be used as the notification and must include all of the information required in General Condition 2.b. Items (1)-(6) above. A letter or facsimile transmission may also be used. In certain situations where there is an imminent threat to life or property and the applicant is unable to make direct contact with this office, a message shall be left on voice mail or an e-mail message shall be sent. Again, those messages should include the information identified in General Condition 2.b. Items (1)-(6) above. Formal written notification must be sent to this office as soon as possible.

d. **Notification to NMED:** For projects in which the New Mexico Environment Department (NMED) is the water quality certifying agency, the applicant must also provide a copy of the Pre-Construction Notification directly to the NMED Surface Water Quality Bureau, and obtain confirmation for the use of the Section 401 Water Quality Certification prior to commencing work in intermittent and perennial streams, Special Aquatic Sites, and Outstanding National Resource Waters (ONRWs). A copy of NMED's confirmation must be provided to the Corps.

e. **Critical Resource Waters:** The DE may authorize activities under this RGP only after it is determined that the impacts to the critical resource waters will be no more than minimal. If the Corps identifies a critical resource water at the project site, the DE will notify all appropriate agencies.

f. **Agency Coordination**: Upon receipt of a PCN the DE will immediately provide (i.e., by electronic mail, facsimile transmission, overnight mail or other expeditious manner) a copy to the offices of the Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS), the appropriate tribal entity, the New Mexico Environment Department (NMED), the New Mexico Department of Game and Fish (NMGF), and the New Mexico State Historic Preservation Office (SHPO). These agencies and tribes will be requested to telephone, electronic mail or facsimile transmit to the Corps Regulatory Branch Project Manager, as expeditiously as possible, a response indicating whether or not they intend to provide substantive, site-specific comments regarding the proposed project. If notified that comments will be provided by an agency or tribal representative, the DE will provide an opportunity for comments. Due to the emergency nature of the projects being reviewed, comments are requested within a 3 day review timeframe, which may be extended by request to 5 days if circumstances warrant such extension. If the Corps does not receive a response from agencies within the specified timeframe, the DE will proceed with its authorization. If there are substantive changes after the Corps authorizes work, or a need to conduct a site visit, the DE will provide additional opportunity for agency comment and for coordinating agencies to participate.

The DE will fully consider any agency comments received within the specified timeframe concerning the proposed activity's impacts and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. The DE will indicate the results of that consideration in the administrative record and will provide an informal response to the commenting agency by electronic mail, facsimile transmission or other means.

g. **Mitigation**: Discharges of dredged or fill material into Waters of the United States must be avoided or minimized to the maximum extent practicable at the project site. Compensation for unavoidable discharge of fill materials will require at the discretion of the DE, appropriate mitigation measures. Factors that the DE will consider when determining the suitability of appropriate and practicable mitigation will include, but are not limited to:

(1) The approximate functions and values of the aquatic resource being impacted, such as habitat value, aquifer recharge, sediment conveyance or retention, flood storage, etc.

(2) The permanence of the project's impacts on the resource; and
(3) The potential long-term effects of the action on remaining functions and values of the impacted aquatic resource.

To be practicable, the mitigation must be available and capable of being done considering costs, existing technology, and logistics in light of the overall project purpose. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing wetland or upland buffer zones to protect aquatic resource values; replacing the loss of aquatic resource values by creating, restoring, or enhancing similar functions and values; or using other methods to offset project impacts.

h. **District Engineer's Decision**: In reviewing the notification for the proposed activity, the DE will determine whether the activity would likely result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public's interest. The applicant may, submit a proposed mitigation plan with the notification to expedite the process and the DE will consider any mitigation (See General Condition 2.b. above.) the applicant has included.

If the applicant elects to submit a mitigation plan as part of the proposed project, the DE will expeditiously review the proposed plan.

If the DE determines the activity complies with the terms and conditions of this RGP and the adverse effects are minimal, this office will notify the applicant and include any situation-specific conditions deemed necessary.

If the DE determines the adverse effects of the proposed work are more than minimal, the DE will notify the applicant that the project does not qualify for authorization under this RGP and instruct the applicant on the procedures to seek authorization under an individual permit or other general permit.

3. **Authorized Work**: Any work authorized by this RGP must be the minimum necessary to alleviate the immediate emergency. In certain limited circumstances complete reconstruction may be authorized if the project results in only very minor additional impact to aquatic resources, and logistical concerns indicate such reconstruction is as expedient considering the condition of the project site and is limited to in-kind replacement or refurbishment. The RGP may NOT be used to upgrade an existing structure when that activity would result in additional adverse effects on aquatic resources. Such upgrade projects are considered separate activities for which other forms of authorization will be required.

Work not described in permit application documentation but deemed necessary after a field assessment is not authorized unless coordinated with the Regulatory project manager and acknowledged by appropriate means in writing (i.e., electronic mail or facsimile transmission, memo to the record, etc.). These coordinated permit modifications must also be described in sufficient detail in the post-activity report (see General Condition 28). This RGP also does not authorize work required by property owners as *quid pro quo* for access through private or public property where such access is contingent upon work conducted by the permittee in waters of the U.S. for the benefit of the property owner. This is absolutely inappropriate and such additional activities are violations of Section 404 of the Clean Water Act unless previously authorized. If a local agency needs to acquire such access from an otherwise uncooperative property owner, existing condemnation procedures should be utilized to acquire the temporary access or permanent easement.

4. **Start Work Date**: Any projects authorized under this RGP must be initiated within seven (7) days of receiving authorization to proceed. Projects that cannot be initiated within this immediate timeframe generally would not meet the definition of an “emergency.” If the project start time can be delayed for more than a week, the imminent threat of impending loss may have diminished in magnitude as well as immediacy. However, there may be limited circumstances where, after notice to and input by the agencies, logistical considerations necessitate an extension of between 1 and 7 days. Further, this RGP cannot be used to authorize long-planned-for projects, nor shall it be used for projects that are likely to have been known to the applicant but for which an application was not submitted in a timely manner.

That is, the applicant's failure to act in a timely manner prior to the emergency event will not obligate the Corps or other agencies to authorize work because of a self-described emergency situation unless the agencies agree that the situation qualifies as an emergency as defined in this RGP .

5. **Access to Site**: You must allow representatives from this office and other agencies to inspect the authorized activity at any time deemed necessary to ensure the project is being or has been accomplished in accordance with the terms and conditions of this RGP.

6. **Tribal Rights**: No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights, and tribal water quality.

7. **Water Quality Certification**:

For Permittees on Non-tribal Land: The New Mexico Environment Department, Surface Water Quality Bureau issued conditional certification for the RGP dated on January, 7, 2013. Specifically, the New Mexico SWQB noted that, New Mexico water quality certification, subject to limitations and conditions (described below), for activities under RGP NM-12-01is subject to the following conditions:

1. Activities in intermittent and perennial surface waters of the state require notification to the NMED Surface Water Quality Bureau (SWQB). Emergency RGP applicants are encouraged to provide to SWQB the same Pre-Construction Notification that they submit to the Corps, as described in the Emergency RGP General Condition 2. The notification must include: 1) construction plans (including proposed in-channel excavations and temporary diversions); 2) a description of potential adverse water quality impacts (including turbidity, which is a measurement of the amount of suspended material in water, as well as oil, grease, or hydraulic fluid, and all other potential contaminants); 3) a description of methods to be used to prevent water quality impacts (including detailed Best Management Practices, which must be designed to minimize sediment, oil, grease, and other pollutants from entering the water); 4) any surface water monitoring procedures; and 5) for any unavoidable surface water impacts, conceptual mitigation plans. Notifications for emergency projects may be Faxed to 505-827-0160, Attn: Neal Schaeffer.

2. Notification of emergency channel and bank stabilization projects that do not implement bioengineering techniques must include a written discussion of the alternative techniques that were considered and why they were found not to be practicable. Bioengineering techniques incorporate primary materials found in the natural riparian environment, such as tree or boulder revetments.

3. Fuel, oil, hydraulic fluid, lubricants, and other petrochemicals must not be stored within the 100-year floodplain and must have a secondary containment system capable of containing twice the volume of the product. Appropriate spill clean-up materials such as booms and absorbent pads must be available on-site at all times during construction.

4. All heavy equipment used in the project area must be pressure washed and/or steam cleaned before the start of the project and inspected daily for leaks. A written log of inspections and maintenance must be completed and maintained throughout the project period. Leaking equipment must not be used in or near surface water. Refuel equipment at least 100 feet from surface water.

5. Work in the stream channel should be limited to periods of no flow. Work in flowing water must have prior approval by the SWQB. Requests for such approval must describe planned methods to minimize turbidity and to avoid spills.

6. Temporary crossings should be restricted to a single location and perpendicular to and at a narrow point of the channel to minimize disturbance. Heavy equipment must be operated from the bank or work platforms and not enter surface water, unless otherwise approved in writing by SWQB. Heavy equipment must not be parked within the stream channel. Requests for such

approval of deviations must include a description of planned methods to minimize turbidity and avoid spills.

7. Unless otherwise approved by SWQB, flowing water must be temporarily diverted around the work area but remain within the existing channel to minimize erosion and turbidity and to provide for aquatic life movement. Diversion structures must be non-erodible, such as sand bags, concrete barriers, or channel lined with geotextile or plastic sheeting (dirt cofferdams generally are not acceptable diversion structures). Requests for such approval of deviations must include descriptions of planned methods to minimize turbidity, to avoid spills, and to provide a continuous zone of passage for aquatic life through or around the project area in which the water quality meets all applicable criteria including turbidity.

8. Work or the use of heavy equipment in wetlands must be avoided or minimized unless the impacts are to be mitigated. Unless otherwise approved by SWQB, wetland crossings must be restricted to a single location and constructed perpendicular to and at a narrow point of the wetland. Requests for such approval of deviations must include descriptions of planned methods to minimize turbidity and avoid spills. Wetland vegetation and excavated material (top soil) must be retained and reused to improve seeding success. Permeable fills should be designed and installed when practicable, and flows to wetlands must not be permanently disrupted. Fill materials must be clean and consist of coarse material with minimal fines. Ditches or culverts in wetlands must have properly designed, installed and maintained siltation or sedimentation structures at the outfall.

9. During demolition of structures within Waters of the State, materials must be kept out of the channel. To the extent practicable, impermeable containment material (e.g., plastic sheet, canvas, tarpaulins or other catchment devices) must be secured under the structure and on the banks to capture any debris that may fall into the stream channel. Any debris that falls onto the containment area or channel must be properly disposed in accordance with the New Mexico Solid Waste Regulations (20.9.1 NMAC).

10. Bridges, culverts and structures at stream crossings must be properly designed, installed and maintained to allow passage of sediment, bedload, and woody debris, and to prevent erosion problems or diversion of the stream from its natural channel. Unless otherwise approved by SWQB, projects must not alter the natural stream channel size or shape (width, depth, gradient, direction or meander pattern), streamflow velocity (sediment transport rates), or water flow capacity. Requests for such approval of deviations must include descriptions of planned methods to minimize turbidity and avoid spills, as well as to stabilize modified hydraulic geometry.

11. Culverts at stream crossings must be designed and installed to prevent upstream headcutting, downstream channel incision, and erosion of the streambanks or the crossing. Culverts should be designed to pass 100-year flow events. Culvert design must allow for the passage of fish and other aquatic organisms. The road grade at culvert stream crossings must prevent the diversion of the stream from its channel in the event of culvert failure due to plugging or the exceedence of capacity. If the flow overtops the road, it must return to its natural channel instead of running down the road into a new channel.

12. Excavated trenches must be backfilled and compacted to match the bulk density and elevation of the adjacent undisturbed soil. Construction excavation dewatering discharges are to be uncontaminated and include all practicable erosion control measures and turbidity control techniques.

13. Unless otherwise approved by SWQB, the slope steepness for emergency riprap installation should not exceed one foot vertical for two feet horizontal. The use of a filter between the bank revetment and soil is generally necessary.

14. Unless otherwise approved by SWQB, all areas adjacent to the watercourse that are disturbed because of the project, including temporary access roads, stockpiles and staging areas, must be restored to pre-project elevations. Destruction of riparian or riverine vegetation, especially mature cottonwoods, shall be avoided to the maximum extent practicable.

15. A copy of this Certification must be kept at the project site during all phases of construction. All contractors involved in the project must be provided a copy of this certification and made aware of the conditions prior to starting construction.

16. The Post-Activity Reports described in the Emergency RGP General Condition 28 of the Emergency RGP must also be submitted to SWQB.

The SWQB also included the following additional comment:

1. Activities that disturb one acre or may more require a permit from EPA under CWA §402 (NPDES). Applicants should submit the appropriate application to EPA 14 days prior to initiating construction. In the case of emergency operations, you must apply no later than 30 days after the start of construction and are considered provisionally covered under the terms and conditions of the EPA-issued general permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your application (Notice of Intent, or NOI), unless EPA notifies you that you authorization has been delayed or denied. For additional information, contact:

EPA Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202
Ph: 800-887-6063 or 214-665-2760 if calling outside Region 6

For Permittees on Tribal Lands: Water Quality Certification was requested from the 12 Native American tribes that have been granted Water Quality Certification authority by EPA .

The following are a list of tribes that have certified RGP NM-12-01 with special conditions.

- Santa Clara Pueblo
- Ohkay Owingeh
- Pueblo of Acoma

Santa Clara Pueblo certified RGP NM-12-01 with the following conditions:

1. A Notice Of Intent (NOI) and Notice Of Termination (NOT) shall be provided to the Santa Clara Pueblo Governor's Office at the same time it is provided to the U.S. Army Corps of Engineer's District Engineer.
2. Access to Pueblo lands under the jurisdiction of the Pueblo must be approved in advance by the Pueblo's Governor's Office.
3. A preliminary review by the Environmental and Cultural Preservation Office must occur before work is initiated. A staff member from these offices shall be permitted to escort personnel and remain on site during all permitted work.
4. All permitted work will comply with applicable provisions of United States Clean Water Act and the Santa Clara Water Quality Code, adopted as amended by Santa Clara Tribal Council Resolution No. 2003-27 (July 15, 2003), and approved by the Secretary of the Interior effective August 5, 2003.

Ohkay Owingeh certified RGP NM-12-01 with the following conditions:

1. The Ohkay Owingeh Water Quality Standards shall not be exceeded.
2. The Permittee shall comply with all U.S. Army Corps of Engineers §404 permit conditions and Section 10 of the Rivers and Harbors Act of 1899 (RHA).
3. Prior to commencement of each project on Ohkay Owingeh Lands, the permittee shall provide a "Notice Of Intent" and a "Notice Of Termination" to Ohkay Owingeh Office of

Environmental Affairs and the Environmental Protection Agency, and the copy of the proposed action (project plan) shall be provided to the tribe upon the tribes request.
4. Work in the stream channel should be limited to periods of no flow when practicable, and must be limited to periods of low flow. Avoid working within the channel during spring runoff or summer thunderstorm season.
5. When working in a stream channel, flowing water must be temporarily diverted around the work area to minimize sedimentation and turbidity problems. Acceptable diversion structures are non-erosive and include (but are not limited to) sand bags, water bladders, concrete barriers lined with plastic, and flumes.
6. The permittee shall restore all areas disturbed by construction activities to pre-project conditions. This shall include restoration of surface contours, stabilization of the soil and restoration of appropriate native vegetation to establish permanent cover.
7. All fuels, oil, hydraulic fluid, or other substances of this nature must note be stored, temporarily of otherwise, within the normal floodplain or the wetland. A secondary containment system for these items shall be used in the event the primary containment system leaks. Refueling or servicing of equipment must not take place within 100 feet of any watercourse or within the wetland area.
8. The construction area shall be protected such that a runoff event will not move soil or contaminants to surface water or away from the construction site. These measures shall be in place prior to the commencement of activities and inspected daily.
9. Temporary mats must be placed on stream banks, riparian areas, and wetlands, to minimize impacts to soil and vegetation from heavy equipment.
10. Temporary access roads must be restored to pre-project conditions.
11. Do to known and unknown endangered species that may reside on Ohkay Owingeh's river corridor, the permittee shall contact Ohkay Owingeh prior to project.

The Pueblo of Acoma certified RGP NM-12-01 with the following condition:

1. For projects in which the Pueblo of Acoma is the water quality certifying agency, the applicant must also provide a copy of the Pre-Construction Notification directly to the Pueblo of Acoma Environmental Office, and obtain confirmation for the use of the Section 401 Water Quality Certification prior to commencing work in intermittent and perennial streams, Special Aquatic Sites, and Outstanding National Resource Waters (ONRWs). A copy of the Pueblo of Acoma's confirmation must be provided to the Corps.

The following are a list of tribes that have denied Section 401 Water Quality Certification for RGP NM-12-01:

- Taos Pueblo.
- Pueblo of Isleta
- Pueblo of Sandia

For projects on tribal lands where water quality certification was denied, the prospective permittee must receive individual Section 401 certification to ensure proposed actions do not exceed tribal water quality standards.

Tribes that did not respond to request for certification:

The following tribes did not respond to the Corps' request for certification and are therefore presumed to have waived certification. However, the applicant should contact the tribe prior to commencing work on tribal lands where certification was not provided.

- Pueblo of Nambe
- Picuris Pueblo
- Pueblo of Pojoaque
- Tesuque Pueblo
- Navajo Nation
- Ute Mountain Ute Tribe

Tribes without water quality certification authority:

The U.S. Environmental Protection Agency has not issued Section 401 certification for tribal lands in New Mexico where the tribe does not have water quality certification authority, therefore certification has been waived. The Corps recommends that project proponents contact the tribe directly prior to conducting work on tribal lands. The 11 tribes that DO NOT have water quality certifying authority are:

- Santa Ana Pueblo
- Pueblo of Cochiti
- Jemez Pueblo
- Pueblo of San Felipe
- Pueblo of San Ildefonso
- Zia Pueblo
- Santa Domingo/Kewa Pueblo
- Zuni Pueblo
- Mescalero Apache Pueblo
- Laguna Pueblo
- Jicarilla Apache Pueblo

8. **Endangered Species:** No activity is authorized under this RGP which is likely to jeopardize the continued existence of a threatened or endangered species or destroy or adversely modify designated critical habitat as identified under the Federal Endangered Species Act (ESA). Authorization of an activity by the RGP does NOT authorize the "take" of a listed threatened or endangered species, as defined under the Federal ESA. The U.S. Fish and Wildlife Service may provide project-specific recommendations to avoid or minimize potential take of listed species or adverse modification of designated critical habitat. The Corps will determine the degree to which the recommendations would be incorporated into the emergency authorization. .

   Information on the location of listed or proposed threatened or endangered species and their designated or proposed critical habitat can be obtained directly from the FWS or from their website at http://www.fws.gov/endangered/

9. **Historic Properties**: Impacts to historic properties listed, proposed for listing, or potentially eligible for listing in the National Register of Historic Places will be avoided to the maximum extent practicable. If such resources are impacted because of actions authorized under this RGP, the permittee shall provide a full report of the action and the impacts incurred by the resource to this office within 45 days after completion of the action. The Corps, the SHPO and/or the Advisory Council for Historic Preservation will then jointly make a determination as to appropriate procedures and/or mitigation to be addressed.

   If the permittee discovers any previously unknown historic or archeological remains while accomplishing the activity authorized by this RGP, the permittee must immediately notify the Corps Regulatory Branch who will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

10. **Regional and Case-by-Case Conditions**: The activity must comply with any case-specific conditions added by the District Engineer.

11. **Erosion and Siltation Controls**: Every effort must be made to ensure any material dredged or excavated from Waters of the United States is not likely to be washed back into any Waters of the United States. When feasible, erosion and siltation controls, such as siltation or turbidity curtains, sedimentation basins, and/or straw bales or other means designed to minimize turbidity in the watercourse above background levels existing at the time of construction, shall be used and maintained in effective operating condition during construction unless conditions preclude their use, or if conditions are such that the proposed work would not increase turbidity levels above the background level existing at the time of the work. All exposed soil and other fills, as well as any work below the ordinary high

water mark, must be stabilized at the earliest practicable date to preclude additional damage to the project area through erosion or siltation.

12. **Equipment**: When feasible, and if personnel would not be put into any additional potential hazard, heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance, such as use of wide-treaded equipment or floatation devices.

13. **Suitable Material**: No discharge of dredged or fill material may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material discharged must be free from toxic pollutants in toxic amounts. During repair, demolition, treatments, or cleaning activities of bridges or associated structures, materials must be kept out of the channel. All asphalt, concrete, drilling fluids and other construction materials must be properly handled and contained to prevent releases into waters of the U.S. (See Section 307 of the Clean Water Act)

14. **Wild and Scenic Rivers**: No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while that river is in an official study status, unless the appropriate Federal agency with direct management responsibility for that river has determined in writing that the proposed activity would not adversely effect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., U.S. Fish and Wildlife Service, National Park Service, USDA Forest Service, Bureau of Land Management). As of the date this permit is issued, the only designated Wild and Scenic River systems in the Albuquerque District are the Rio Grande segment extending from the Colorado state line downstream approximately 68 miles to the west section line of Section 15, T23N, R10E and the lower four miles of the Red River; The East Fork of the Jemez River from the Santa Fe National Forest boundary to its confluence with the Rio San Antonio; The Pecos River from its headwaters to the town site of Tererro; and the Rio Chama from El Vado Ranch launch site (immediately south of El Vado Dam) downstream 24.6 miles. Updated information is available at http://www.rivers.gov/wildriverslist.html

15. **Aquatic Life Movements**: No activity may substantially disrupt the movement of those species of aquatic life indigenous to the water body, including those species that normally migrate through the area. Culverts placed in streams must be installed to maintain low flow conditions.

16. **Spawning Areas**: Discharges in spawning areas during spawning seasons must be avoided to the maximum extent practicable.

17. **Waterfowl Breeding Areas**: Discharges into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.

18. **Navigation**: No activity may cause more than a minimal adverse effect on the course or capacity of a navigable water. The permittee shall agree that, if future operations by the United States require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expenses to the United States. No claim shall be made against the United States on account of any such removal or alteration.

19. **Water Supply Intakes**: No discharge of dredged or fill material may occur in the proximity of a public water supply intake except where the discharge is for repair of the public water supply intake structures or adjacent bank stabilization.

20. **Stream Channelization**: The Corps will not authorize blockage or filling of an existing stream meander in this RGP. The Corps will prohibit channelization, except for minor channelization or alignments in the vicinity of stream crossings.

21. **Obstruction of High Flows**: To the maximum extent practicable, discharges must not permanently restrict or impede the passage of normal or expected high flows or cause the relocation of the water except within the existing river plain (unless the primary purpose of the fill is to impound waters).

22. **Adverse Effects from Impoundments**: If the discharge creates an impoundment of water, adverse effects on the aquatic system caused by the accelerated passage of water and/or the restriction of its flow shall be minimized to the maximum extent practicable.

23. **Proper Maintenance**: Any structure or fill authorized by this RGP shall be maintained; including maintenance to ensure public safety, unless it is later determined that the structure is further contributing to other adverse conditions to private or public property. In such situations, corrective measures will be taken to rectify these adverse conditions, including removal and/or redesign of the original emergency corrective action, or appropriate mitigation as determined through coordination with the permittee and the appropriate Federal and State agencies. Temporary levees constructed to control flows shall not be maintained beyond the current storm season (i.e., maintenance of temporary levees is not authorized after the storm season in which the need arose).

24. **Maintenance Projects:** (a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project or within the boundaries of the structure or fill. This RGP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within 7 days of the date of their destruction or damage. In cases of catastrophic events, such as tornadoes, this 7-day limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays. (b) This RGP also authorizes the removal of accumulated sediments and debris in the vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) and/or the placement of new or additional riprap to protect the structure. The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend farther than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization. The placement of new or additional riprap must be the minimum necessary to protect the structure or to ensure the safety of the structure. Any bank stabilization measures not directly associated with the structure will require a separate authorization from the district engineer. (c) This RGP also authorizes temporary structures, fills, and work necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary

fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows.

25. **Bank Stabilization: Ba**nk stabilization activities that are necessary for erosion protection must meet the following criteria: (a) No material is placed in excess of the minimum needed for erosion protection; (b) The activity is no more than 500 feet in length along the bank, unless the district engineer waives this criterion by making a written determination concluding that the discharge will result in minimal adverse effects; (c) The activity will not exceed an average of once cubic yard per running foot placed along the bank below the plane of the ordinary high water mark, unless the district engineer waives this criterion by making a written determination concluding that the discharge will result in minimal adverse effects.

26. **Removal of Temporary Fills**: Temporary fills shall be removed in their entirety and the affected areas returned to pre-existing elevations and revegetated with appropriate native riparian or wetland vegetation common to the area. If an area impacted by such a temporary fill is considered likely to naturally re-establish native riparian or wetland vegetation to a level similar to pre-project or pre-event conditions within two years, removal will not be required.

27. **Removal of Vegetation**: Vegetation removal shall be limited to that which is necessary to allow passage of expected high flows through a structure's inlet.

28. **Post-Activity Reports**: The permittee shall provide a concise written report to this office as soon as practicable (within 45 days of completing the project) after completion of any action conducted under this RGP. **PROVIDING THIS REPORT IS MANDATORY.** This office has additional responsibilities pursuant to consultation with the FWS under Section 7 of the ESA. Further, these reports enable the Corps to track the use of this RGP to verify that the minimal effects determination is being met as required by Section 404(e) of the CWA. Failure to provide timely reports following responses to emergencies is non-compliance with the General Conditions of this RGP and would be considered a violation (33 CFR Part 326.4(d)). In situations where there multiple projects being implemented in an area by a permittee, the permittee may consolidate reporting into a single comprehensive report.

    At a minimum the Report shall include any changes to the information provided in the original PCN and the following:

    I. Photos
      (a) Pre and post-construction (date and location)
    II. Detailed plans or As-built drawings (if required and if not submitted with PCN)
    III. Statement confirming that all general and special conditions were followed
    IV. Mitigation Plan (if deferred due to urgency of the proposed project)

29. The permittee must comply with all Federal, State and local applicable regulations and ordinances.

FURTHER INFORMATION:

1. **Congressional Authorities**: Activities conducted under this RGP are authorized pursuant to:
    (X) Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403).
    (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

2. **Limits of authorization under RGP #**
    a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.
    b. This permit does not grant any property rights or exclusive privileges.
    c. This permit does not authorize any injury to the property or rights of others.
    d. This permit does not authorize interference with any existing or proposed Federal project.

3. **Limits of Federal Liability**: In issuing this permit, the Federal Government does not assume any liability for the following:
   a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
   b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
   c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
   d. Design or construction deficiencies associated with the permitted work.
   e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. **Reliance on Applicant's Data**: The determination of this office that provision of permit verification under this RGP is not contrary to the public interest is made in reliance on the information provided by the permittee.

5. **Reevaluation of Permit Decision**: This office may reevaluate its decision to issue this RGP, or on the verification that any particular activity qualifies for this RGP, at any time circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
   a. Failure to comply with the terms and conditions of this permit.
   b. The information provided in support of the permit verification request or after-action report proves to be false, incomplete, or inaccurate. See Item 4 above.
   c. Significant new information becomes available which this office did not consider in reaching the original public interest decision.
   d. The activity is determined to result in more than minimal impacts.

   Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring compliance with the terms and conditions of this permit and for the initiation of legal action where appropriate. The permittee will be required to pay for any corrective measures ordered by this office. If the permittee fails to comply with such directive, this office may, in certain situations (such as those specified in 33 CFR 209.170), accomplish the corrective measures by contract or otherwise and bill the permittee for the cost.

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

_____ _____

ALLAN E. STEINLE DATE
Chief, Regulatory Division

Nationwide Permit Summary

US Army Corps of Engineers®
Albuquerque District

NATIONWIDE PERMIT 33
Temporary Construction, Access, and Dewatering
Effective Date: March 19, 2012
Expiration Date: March 18, 2017
(NWP Final Notice, 77 FR 10278, para. 33)

Temporary Construction, Access, and Dewatering. Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites, provided that the associated primary activity is authorized by the Corps of Engineers or the U.S. Coast Guard. This NWP also authorizes temporary structures, work, and discharges, including cofferdams, necessary for construction activities not otherwise subject to the Corps or U.S. Coast Guard permit requirements. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. The use of dredged material may be allowed if the district engineer determines that it will not cause more than minimal adverse effects on aquatic resources. Following completion of construction, temporary fill must be entirely removed to an area that has no waters of the United States, dredged material must be returned to its original location, and the affected areas must be restored to pre-construction elevations. The affected areas must also be revegetated, as appropriate. This permit does not authorize the use of cofferdams to dewater wetlands or other aquatic areas to change their use. Structures left in place after construction is completed require a separate section 10 permit if located in navigable waters of the United States. (See 33 CFR part 322.)

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 31). The pre-construction notification must include a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions. (Sections 10 and 404)

NATIONWIDE PERMIT GENERAL CONDITIONS

General Conditions: The following general conditions must be followed in order for any authorization by a NWP to be valid:

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate

through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects from Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100–Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. **Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. **Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. **Endangered Species.** (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at *http://www.fws.gov/*, or *http://www.fws.gov/ipac* and *http://www.noaa.gov/fisheries.html*, respectively.

19. **Migratory Birds and Bald and Golden Eagles.** The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the

Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such “take” permits are required for a particular activity.

20. **Historic Properties.** (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h–2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. **Discovery of Previously Unknown Remains and Artifacts.** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum

extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. **Designated Critical Resource Waters.** Critical resource waters include NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. **Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2)–(14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. **Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. **Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. **Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. **Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific

conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. **Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. **Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. **Compliance Certification.** Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. **Pre-Construction Notification.** (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the

permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee’s right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project’s purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1⁄10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs(b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed federal project.

F. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Reestablishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: reestablishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete

project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States. If a jurisdictional wetland is adjacent—meaning bordering, contiguous, or neighboring—to a waterbody determined to be a water of the United States under 33 CFR 328.3(a)(1)–(6), that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

ADDITIONAL INFORMATION

For additional information concerning the nationwide permits or for a written determination regarding a specific project, please contact the office below:

In New Mexico:

Chief, Regulatory Division
Albuquerque District, US Army Corps of Engineers
4101 Jefferson Plaza, NE
Albuquerque, NM 87109-3435
Telephone: (505) 342-3282

In Southeastern Colorado:

Southern Colorado Regulatory Office
200 S. Santa Fe Avenue, Suite 301
Pueblo, CO 81003
Telephone: (719) 543-9459

In Southern New Mexico and Western Texas:

Las Cruses Regulatory Office
505 S. Main St., Suite 142
Las Cruces, NM 88001
Telephone: (575) 556-9939

In Northwestern New Mexico and within the San Luis Valley of Colorado:

Durango Regulatory Office
1970 E. 3rd Avenue, Suite 109
Durango, CO 81301
Telephone: (970) 259-1582

Information about the U.S. Army Corps of Engineers regulatory program, including nationwide permits, may also be accessed on our Internet page: http://www.spa.usace.army.mil/reg/

This nationwide permit is effective March 19, 2012, and expires on March 18, 2017.

Summary Version: March 19, 2012

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February 10, 2015

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Milcon Construction LLC
419 W. Cevallos Street
San Antonio, TX 78204

Re: 401 Water Quality Certification for Advanced Measures 2014 Summer Monsoons- COA 3 for Santa Clara Pueblo in Rio Arriba County, New Mexico

Dear Mr. Ledesma:

The United States Army Corps of Engineers has authorized work for the for the Advanced Measures 2014 Summer Monsoons- COA 3 for Santa Clara Pueblo awarded by the United States Army Corps of Engineers under the authority of Department of the Army Regional General Permit number NM-12-01 for Repair and Protection Activities in Emergency Situations and Nationwide Permit 33 Temporary Construction, Access, and Dewatering, effective date: March 19, 2012, expiration date: March 18, 2017 (NWP Final Notice, 77 FR 10278, para. 33). The project is within the limits of the Santa Clara Creek, in Santa Clara Pueblo approximately 1.8 floodplain miles upstream from the village, while the second site is approximately 4.3 floodplain miles upstream from the village.

The project consists of site preparation, construction and installation of two gabion basket check structures, revetment mattress structures, appurtenances and related mitigation work at Santa Clara Pueblo, NM. Work includes excavation, placing rock-filled gabions and revetment mattresses, and all other work described in the contract drawings and specifications. The structures are located perpendicular to the floodway to function as debris, sediment, and flow retention and/or storage structures at two separate locations described above. Each of the two structures will have subsurface mattresses to function as a foundation for the vertical gabion structure and stilling basin floor and a downstream counter weir to contain hydraulic jumps, dissipate energy, and minimize potential head cutting that may form within the basin downstream of the structure.

Having reviewed the work to be conducted in the area referenced above, the Office of Environmental Affairs certifies there is reasonable assurance the activity is in compliance with the requirements of Section 401 of the Clean Water Act and the Water Quality Code of the Pueblo of Santa Clara, and in accordance with the conditions listed below, would not result in a long term violation of water quality standards, any applicable effluent limits, other limitations, monitoring requirements or other appropriate requirements of Pueblo law related to water quality, provided that the terms and conditions of the final certification are adhered to.

The following conditions are hereby included in this certification:

1. A map of the excavated material disposal area will be provided to the Water Quality Coordinator to determine that excavated material shall be placed outside of the watercourse.
2. Any heavy equipment used in the project area should be steam cleaned before start of the project and inspected daily for leaks. No leaking equipment may be used in or near surface water. The equipment shall be parked outside the watercourse when not in use.
3. Fuel, oil, hydraulic fluid, or like substances of this nature shall not be stored within the normal floodplain and must have a secondary containment system to prevent spills if the primary storage container leaks. Refueling of equipment should not take place within 100 feet of any watercourse and should have a 3mil plastic lining under the fueling exchange in case of spillage.
4. The construction area must be protected such that a run off event will not move any additional soil or other contaminant to surface water. These measures must be in place prior to commencement of activities and inspected daily.
5. Report all spills immediately to this office so proper procedures can be followed for removal and clean of spill. Clean up and disposal of materials is the responsibility of the contractor.
6. The Pueblo of Santa Clara Office of Environmental Affairs shall be notified by written or electronic correspondence at least five (5) days prior to start of project in order that they may be given sufficient time to schedule and prepare for monitoring activities, if they so choose.

This 401 Certification shall expire September 1, 2015.

Should you have any questions relating to this letter please do not hesitate to contact Dino Chavarria in the Office of Environmental Affairs at 505 753- 7326 ext. 1239.

Sincerely,

J. Michael Chavarria

J. Michael Chavarria, Governor
Santa Clara Pueblo

Cc: Shawn Chato, Santa Clara Environmental

SECTION 01 10 10

SCOPE OF WORK

PART 1 - GENERAL

1.1 PROJECT DESCRIPTION

This paragraph provides general description of the project. Specific requirements are provided in the drawings and other sections of these specifications. This project consists of site preparation, construction and installation of two gabion basket check structures, revetment mattress structures, appurtenances and related mitigation work at Santa Clara Pueblo, NM. The work includes excavation, placing rock-filled gabions and revetment mattresses, and all other work described in the Contract drawings and specifications. The structures are located perpendicular to the floodway to function as debris, sediment, and flow retention and/or storage structures at two separate locations as shown in the drawings. Each of the two structures will have subsurface mattresses to function as a foundation for the vertical gabion structure and stilling basin floor and a downstream counter weir to contain hydraulic jumps, dissipate energy, and minimize potential head cutting that may form within the basin downstream of the structure.

1.2 LOCATION

The project site is located on the Santa Clara Creek in Santa Clara Pueblo, approximately 1.5 miles south of Espanola, NM. The first site is located approximately 1.8 floodplain miles upstream of the village, while the second site is approximately 4.3 floodplain miles upstream of the village. Refer to the attached drawings for project location map.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

-- End of Section --

APPENDIX C

PUBLIC COMMENTS

GOVERNOR
Susana Martinez

DIRECTOR AND SECRETARY
TO THE COMMISSION
Alexandra Sandoval

DEPUTY DIRECTOR
Donald L. Jaramillo

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way, Santa Fe, NM 87507

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For information call: (888) 248-6866

www.wildlife.state.nm.us

November 20, 2015

Ondrea Hummel
Ecologist
U.S. Army Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, NM, 87109-3435

RE: Santa Clara Pueblo Advance Measures Project; NMDGF No. 16805

Dear Ms. Hummel:

In response to your letter dated 21 October 2015 regarding the above referenced project, the Department of Game and Fish (Department) does not anticipate significant impacts to wildlife or sensitive habitats, with implementation of the applicable mitigation or avoidance measures included within the project description.

Included below are sources of additional information:

1. For Biota Information System of New Mexico (BISON-M) species accounts, searches, and county lists go to bison-m.org.
2. For the Department's Habitat Handbook Project guidelines go to http://www.wildlife.state.nm.us/conservation/habitat-information/habitat-handbook/.
3. For custom, site-specific database searches on plants and wildlife go to nhnm.unm.edu, then go to Data, Free On-Line Data, and follow the directions.
4. For state-listed plants contact the New Mexico State Forestry Division at (505) 476-3334 or nmrareplants.unm.edu/index.html.
5. For the most current listing of federally listed species **always** check the U.S. Fish and Wildlife Service's Information, Planning, and Conservation website at http://ecos.fws.gov/ipac/.

Thank you for the opportunity to review and comment on your project. If you have any questions, please contact Chuck Schultz, Northwest Regional Habitat Biologist at (505) 222-4708 or charles.schultz@state.nm.us.

Sincerely,

Malia Volke

Malia Volke, Ph.D., Aquatic Habitat Specialist
Ecological and Environmental Planning Division