

Status: Submitted to
recipient

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Subapplicant information

Name of federal agencyFEMA

Type of submissionApplication

TRUCKEE RIVER FLOOD MANAGEMENT AUTHORITY

9635 GATEWAY DR STE A
RENO, NV 89521 United States

State	UEI-EFT	DUNS #	EIN #
NV	ZDCUVK687CL3	078542518	900670749

Subapplicant typeLocal Government

Is the subapplicant subject to review by Executive Order 12372 Process?Yes-This Pre-application/application was made available to the Executive Order 12372 Process for review on.

Enter date2026-05-11

Is the subapplicant delinquent on any federal debt?No

Continue

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Contact information

Subrecipient Authorized Representative (SAR)

George Robison	Primary phone	Mailing address
grobison@washoecounty.gov		

Point(s) of contact

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dhenderson@washoecou	Fax		

Continue

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Community

Please provide the following information. If the Congressional district number for your community does not display correctly, please contact your State NFIP coordinator.

Add Communities

Please find the community(ies) that will benefit from this mitigation activity by clicking on the Find communities button. If needed, modify the Congressional District number for each community by entering the updated number under the U.S. Congressional District column for that community. When finished, click the Continue button. NOTE: You should also notify your State NFIP coordinator so that the updated U.S. Congressional District number can be updated in the Community Information System (CIS) database.

Community name	County code	CID number	CRS community	CRS rating	U.S. Congressional District
RENO, CITY OF	031	320020	N		2
SPARKS, CITY OF	031	320021	N		2
WASHOE COUNTY*	031	320019	Y	6	2

Please provide any additional comments below (optional).

The Truckee River Flood Management Authority (TRFMA) is organized under an Interlocal Cooperative Agreement between Washoe County and the cities of Reno and Sparks (the member jurisdictions). TRFMA works collaboratively with the Reno-Sparks Indian Colony and the Pyramid Lake Paiute Tribe on aspects of the Vista Narrows Project and larger Truckee Meadows Flood Project (which includes additional project elements to create a cohesive system of flood control infrastructure). TRFMA also works with the downstream communities of Rainbow Bend (in Storey County, NV) and Wadsworth on related flood hazard mitigation projects.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
TRFMA-ICA-3-6-12.pdf	07/05/2026	dhenderson@washoecounty.gov	Community Attachments	Original ICA that formed the agency in 2011	
TRFMA_1st-Amendment-to-ICA-recorded.pdf	07/05/2026	dhenderson@washoecounty.gov	Community Attachments	Amendment to the ICA (2021)	

[Continue](#)

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Mitigation plan

Please provide your plan information below.

Is the Subapplicant entity that will benefit from the proposed activity covered by the current FEMA approved multi-hazard mitigation plan in compliance with 44 CFR Part 201? **Yes**

Please provide plan detail

Plan name	Plan type	Plan approval date
Washoe County Regional Hazard Mitigation Plan 2025 & TRFMA Hazard Mitigation Program Annex	Local Multijurisdictional Multi-Hazard Mitigation Plan	09/24/2025

Proposed activity description

The Truckee River Flood Management Authority (TRFMA) participated in the 2025 update to the Washoe County Regional Hazard Mitigation Plan (WC RHMP), which was approved by FEMA Region IX on September 24, 2025. TRFMA formally adopted the 2025 update of the WC RHMP on July 11, 2025 (a copy of the board resolution is attached for reference). Specific details regarding proposed Truckee River flood hazard mitigation activities are included in TRFMA's Hazard Mitigation Program Annex. The goals and objectives of the proposed Vista Narrows Floodplain Terracing Project (VN Project) are taken directly from the regional hazard mitigation plan. The VN Project is a high-priority regional mitigation activity that addresses the following natural hazards: Flood and Extreme Weather (Winter Storm). From the TRFMA Hazard Mitigation Program Annex: 1. FL-46, Vista Narrows Widening: Expanded benching of the Narrows extending to the first railroad bridge (TRFMA). Table 300: Status of Previous Mitigation Actions by the TRFMA, page 789 of the report Annex (PDF page 791). 2. FL-46, Vista Narrows Widening: Expanded benching of the Narrows extending to the first railroad bridge (TRFMA). Table 301: Changes to Previous Plans by the TRFMA, page 801 of the report Annex (PDF page 803). 3. FL-46, Vista Narrows Floodplain Terracing (East Sparks to Truckee River canyon downstream location near the first railroad bridge). Table 302: 2025-2029 Mitigation Action Plan of the TRFMA, page 816-817 of the report Annex (PDF page 818-819). 4. With a total STAPLEE score of 27, FL-46 is a High Priority mitigation action for TRFMA.

Table 303: Priorities of Mitigation Actions for TRFMA, page 823 of the report Annex (PDF page 825). 5. The priorities of TRFMA are described under certain Goals & Objectives listed in the 2025 Hazard Mitigation Plan. Detailed list provided on page 794 of the report Annex (PDF page 796). Community Lifeline Information: Per Washoe County Emergency Management (WCEM), Flood Control fits best under Safety and Security Lifeline (community safety). Large floods can impact a variety of other Community Lifelines, including: 1. Food, Water, Shelter (e.g., damage to homes, businesses, schools) 2. Transportation (e.g., road closures, airport closures, impacts to bridges) 3. Hazardous Materials (e.g., pollutants & contaminants – waste barrels from industrial areas, fuel, trash – carried by floodwaters to the Truckee River and ultimately, Pyramid Lake)

Please provide any additional comments below (optional).

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
WC 2025 Regional Hazard Mitigation Plan_Base Plan.pdf	07/06/2026	dhenderson@washoecounty.gov	Mitigation Plan Attachments	Washoe County Regional Hazard Mitigation Plan 2025	
WC 2025 Regional Hazard Mitigation Plan_Annexes.pdf	07/06/2026	dhenderson@washoecounty.gov	Mitigation Plan Attachments	Washoe County Regional Hazard Mitigation Plan Annexes 2025 -- TRFMA's Annex is on pages 722-824 of the report (PDF pages 724-826)	
WC 2025 Regional Hazard Mitigation Plan_FEMA Approval_September 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Mitigation Plan Attachments	Washoe County Regional Hazard Mitigation Plan 2025	

Filename	Date uploaded	Uploaded by	Label	Description	Action
				FEMA Approval Notice	
TRFMA Board RHMP Initial Adoption Resolution 2025-16.pdf	07/06/2026	dhenderson@washoecounty.gov	Mitigation Plan Attachments	Resolution 2025-16 by the TRFMA Board of Directors initially adopting the plan on May 9, 2025 (unanimous approval)	
TRFMA Board RHMP Adoption Amended Resolution 2025-16a.pdf	07/06/2026	dhenderson@washoecounty.gov	Mitigation Plan Attachments	Amended Resolution 2025-16a by the TRFMA Board of Directors re-adopting the plan on July 11, 2025 (unanimous approval)	

Continue

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Scope of work

The project Scope of Work (SOW) identifies the eligible activity, describes what will be accomplished and explains how the mitigation activity will be implemented. The mitigation activity must be described in sufficient detail to verify the cost estimate. All activities for which funding is requested must be identified in the SOW prior to the close of the application period. FEMA has different requirements for project, planning and management cost SOWs.

Subapplication title (include type of activity and location)

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Do any of the following apply for this project?

None

Activities

Primary activity type

Flood control

Primary sub-activity type

Floodwater storage and diversion

Secondary activity type (Optional)

Flood control

Secondary sub-activity type

Low impact development/nature based solutions

Tertiary activity type (Optional)

Stabilization and restoration

Tertiary sub-activity type

Floodplain and stream restoration

Geographic areas description

The VN Project is located in Washoe and Storey Counties, Nevada on the Truckee River immediately downstream of the City of Sparks, lying approximately between 39° 31' 09" N, 119° 41' 55" W to 39° 30' 44" N, 119° 40' 265" W. The VN Project is within Sections 11, 12, 13, and 14; Township (T) 19 North (N), Range (R) 20 East (E); and Section 18, T 19 N, R 20 E, Mount Diablo Base and Meridian (MDBM), Nevada. The VN Project is located within the Truckee River watershed, an ecologically significant closed basin system that supports a variety of fish and wildlife species (including several federally listed species). The Truckee River flows from its headwaters above

Lake Tahoe to its terminus at Pyramid Lake, within the Pyramid Lake Paiute Tribe Reservation. The watershed covers approximately 3,100 square miles across California and Nevada. Approximately 75% of the drainage area occurs in Nevada. The watershed area of the Truckee River at the VN Project is approximately 1,429 square miles. The river is an integral part of life in the Truckee Meadows. It supports the region's \$20-billion economy; provides clean drinking water to about 400,000 people and 7,000 businesses; and offers incredible outdoor recreational opportunities for residents and visitors to the area.

Community lifelines

Primary community lifeline

Safety and security

Primary sub-community lifeline

Community safety

Secondary community lifeline (optional)

Food, water, shelter

Secondary sub-community lifeline

Shelter

Tertiary community lifeline (optional)

Hazardous material

Tertiary sub-community lifeline

HAZMAT, pollutants, contaminants

Hazard sources

Primary hazard source

Flooding

Secondary hazard source (optional)

Winter storm

Tertiary hazard source (optional)

Severe storm

Is this a phased project?

No

Are you doing construction in this project?

Yes

Percentage of population impacted

20

Provide detailed description of population impacted

The population impacted are the people that live and work in the flooded area. Maps of the flooded

Provide a clear and detailed description of your proposed activity

area and buildings taken out of the flooded area are given in Cost effectiveness section.

The activity is to provide terracing in the affected reach at three locations known as terrace 2,3, and 6. This will include removing approximately 450,000 cubic yards of material. The creation of low terraces at terraces 2,3, and 6 will create low floodplains that will receive and convey water during floods that will lower the water level upstream. Detailed mapping of the areas to be excavated are given in various attachments in this and other sections. Based on 2D modeling studies (attached) these terrace excavations will reduce water level rise to a no rise condition for the other project elements upstream that reduce flood storage in industrial, home and Reno Tahoe International Airport. Terraces will be configured and revegetated using techniques learned from channel restoration activities downstream. Detailed plans and design documents are attached.

How will the mitigation activity be implemented?

TRFMA will lead implementation of the VN Project, provide oversight, secure permits and real estate, manage contracts, and coordinate with agencies and stakeholders. The VN Project is currently in 100% Design and on schedule to start construction in Fall 2027 or Spring 2028, depending on regulatory permitting outcomes and contractor schedules. TRFMA has the expertise and capacity to successfully implement VN Project construction by hiring qualified consultants and contractors to complete technical tasks, major earthwork, and revegetation onsite. TRFMA has prioritized the VN Project for implementation (construction) starting next year; and has included the VN Project in its 5-year Capital Improvement Plan (CIP) and Strategic Plan (attached) as a high-priority action. TRFMA has set aside funding in its capital projects budget to implement the VN Project.

Describe how the project is technically feasible and will be effective in reducing the risk by reducing or eliminating damage to property and/or loss of life in the project area. Please include engineering design parameters and references to the following: preliminary schematic or engineering drawings/design; applicable building codes; engineering practices and/or best practices; level of protection (e.g., life

This project has been evaluated using advanced 2D hydraulics modeling, so the immediate and downstream impacts have been thoroughly studied. The project cost is low compared with other alternatives including a no action alternative and in the cost effectiveness section creates a minimum 10 million per year cost benefit as per economic studies by the USACE as attached in

safety, 100-yr flood protection with freeboard, 100-yr wind design, etc.):

Who will manage and complete the mitigation activity?

economics section and the attached Strategic Plan of that section.

TRFMA is currently overseeing implementation of the VN Project and will continue this work to ensure the project is completed as planned. TRFMA is managing contracts with engineering and environmental consulting firms to prepare final designs for the VN Project (Plans & Specifications). This final design phase of the VN Project is on-schedule for completion in the next 6 months (Jan-Feb 2027). TRFMA will solicit construction bids and select a qualified contractor to build the VN Project. During construction, TRFMA will oversee construction management contracts to monitor progress and ensure that (1) the VN Project is built according to the approved Plans & Specifications, and (2) applicable regulatory permit requirements are met. TRFMA is a local government agency organized under an Interlocal Cooperative Agreement between Washoe County and the cities of Reno and Sparks (the member jurisdictions). The agency is comprised of a relatively small staff of technical experts, a chief financial officer, legal counsel, and executive director. TRFMA hires consultants and contractors when needed to help plan, design, and build projects.

Will the project address the hazards identified and what risks will remain from all hazards after project implementation (residual risk)?

There is a residual risk from floods larger than the 117-year flood event with freeboard. This would constitute a flooding risk for flood larger than approximately 27,000 cfs which according to frequency analysis charts is about a 150-year flood.

When will the mitigation activity take place?

The VN Project is currently in the 100% Design phase; Final Design submittal is expected in January 2027. Construction would begin in Fall 2027 – Spring 2028. The timeframe for construction and revegetation is 1-2 years. Required permit applications have been submitted and are being reviewed by the regulatory agencies. An EA has been prepared as part of TRFMA's request for a Section 408 permission from USACE.

Explain why this project is the best alternative. What alternatives were considered to address the risk and why was the proposed activity considered the best alternative?

The VN project is the best alternative because it takes away other project effects from flat areas of the Truckee Meadows which are extremely expensive to mitigate. Please see Rationale document attached to project effectiveness.

Please identify the entity that will perform any long-term maintenance and provide a maintenance, schedule and cost information. The subapplicant or owner of the area to be mitigated is responsible for maintenance (including costs of long-term care) after the project is completed?

The floodplain terraces are flood control facilities, and as such, TRFMA would be responsible for maintaining their design capacity (flows and surface elevations). As the VN Project advances towards the construction phase, a full Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual (O&M Manual) will be developed to address operation, emergency operations, maintenance and inspection, surveillance, repair, replacement, and rehabilitation. TRFMA has budgeted funds for long-term O&M of the VN Project (included in TRFMA's 5-year Capital Improvement Plan for Fiscal Year 2025-2031, attached). A letter (attached) from TRFMA to the Nevada Division of Water Resources commits TRFMA to pay for and perform long-term maintenance of the VN Project. Inspections would take place annually, as well as after flood events and seismic events. Vegetation would also be monitored annually to assess vegetation density, vegetation limits, erosion, slope condition, etc. Vegetation monitoring would be critically important to ensure that: (1) vegetation is established and exposed soils are protected from erosion; and (2) natural recruitment of vegetation does not reduce the ability of the terraces to convey flood flows. Specifically, on terraces, the natural recruitment of woody vegetation should not exceed more than planned densities. Within the vegetated riprap, basal area of willow growth should not increase to more than 10% outside the planted riprap areas. The inspections would be documented with photographs and be filed and retained with a document control system to be developed by TRFMA. Potential actions that TRFMA may take when facility inspections show diminished flood protection ability include removal of sediment and debris deposits on terrace surfaces and trimming woody vegetation. Any debris removal would take place outside of high water and at seasonal periods to avoid sedimentation and turbidity. All flood debris and trimmings would be disposed of outside the floodplain and floodway.

Additional comments (optional)

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
VN Project_Final 65% DDR_Appendix A10_Notes to Specs_Atkins_March 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix A10, Notes to Specifications (Atkins, updated March 2025)	
VN Project_Final 65% DDR_Appendix B_Quantity and Cost Info_Atkins_March 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix B, Quantity and Cost Information (Atkins, updated March 2025)	
VN Project_Final 65% DDR_Appendix D_Project Docs_Atkins_March 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix D, Project Documents (Atkins, updated March 2025)	

Filename	Date uploaded	Uploaded by	Label	Description	Action
VN Project_Final 65% DDR_Appendix A03_Geotech BOD_Kleinfelder_August 2019.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix A3, Geotechnical Basis of Design Report (Kleinfelder, August 2019)	
VN Project_Final 65% DDR_Appendix A06_Hydraulic Modeling Report_HDR_November 2019.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix A6, Hydraulic Modeling Documentation Report (HDR, November 2019)	
VN Project_Final 65% DDR_Appendix C_Schedule_Atkins_March 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix C, Schedule (Atkins, updated March 2025)	
VN Project_Final 65% Design_Stamped Plans_Atkins_May 2020.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Stamped Plans (Atkins, May 2020)	
VN Project_Final 65% DDR_Appendix A07_Erosion Potential Eval_Atkins_March 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix A7,	

Filename	Date uploaded	Uploaded by	Label	Description	Action
				Evaluation of Project Area Erosion Potential (Atkins, updated March 2025)	
Washoe County Consensus Forecast_TMRPA_2024.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	Washoe County Consensus Forecast (Prepared by the Truckee Meadows Regional Planning Agency, 2024)	
Washoe County Public Infrastructure Plan_TMRPA_December 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	Washoe County Public Infrastructure Plan (Prepared by the Truckee Meadows Regional Planning Agency, 2025)	
VN Project_Final 65% DDR_Main Report_Atkins_March 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Main Body (Prepared by Atkins, March 2025)	
VN Project_Final 65% DDR_Appendix A01_Geomorph and Geology_Kleinfelder_June 2019.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix A1, Geomorphology and Geology Summary Letter Report (Kleinfelder, June 2019)	

Filename	Date uploaded	Uploaded by	Label	Description	Action
VN Project_Final 65% DDR_Appendix A02_Geotech Data Report_Kleinfelder_July 2019.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix A2, Geotechnical Data Report, Terracing Alignment (Kleinfelder, July 2019)	
VN Project_Final 65% DDR_Appendix A04_Field Surveys and Drone_Atkins_August 2019.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix A4, Field Surveys and Drone Flight (Atkins, August 2019)	
VN Project_Final 65% DDR_Appendix A05_Utility Info_Atkins_March 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix A5, Utility Information (Atkins, March 2025)	
VN Project_Administrative Draft EA_TRFMA Submittal to USACE 408_June 2026.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Administrative Draft Environmental Assessment (Prepared by TRFMA and submitted to USACE for review on June 11, 2026)	
VN Project_Materials Management	07/06/2026	dhenderson@washoecounty.gov	Scope of Work	VN Project Materials	

Filename	Date uploaded	Uploaded by	Label	Description	Action
Plan_Redhorse and Jacobs_July 2021.pdf			Attachments	Management Plan (Prepared by Redhorse and JACOBS for TRFMA, July 2021)	
VN Project_Draft Dewatering Plan_TriSage_March 2022.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Draft Dewatering Plan (Prepared by Tri Sage for TRFMA, March 2022)	
VN Project_Revegetation Plan_Redhorse_May 2025.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Revegetation Plan (Prepared by Redhorse for TRFMA, May 2025)	
VN Project_O&M Costs_TRFMA Letter to NDWR_Feb 2022.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Letter from TRFMA to Nevada Division of Water Resources regarding O&M Costs Commitment (February 2022)	
VN Project_Final 65% DDR_Appendix A08_DNST Impacts Analysis_Dyer_November 2019.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Final 65% Design Documentation Report Appendix A8, Downstream Impacts Analysis and Sedimentation Study (Dyer, November 2019)	

Filename	Date uploaded	Uploaded by	Label	Description	Action
VN Project Weed Management Plan_Redhorse_July 2021.pdf	07/06/2026	dhenderson@washoecounty.gov	Scope of Work Attachments	VN Project Integrated Weed Management Plan (Prepared by Redhorse for TRFMA, July 2021)	

[Continue](#)

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Schedule

Specify the work schedule for the mitigation activities.

Add tasks to the schedule

Please include all tasks necessary to implement this mitigation activity; include descriptions and estimated time frames.

Task Name 90% Design Package	Start Month 1	Task Duration (in Months) 2 months
Task Description Consultant team (AtkinsRealis) will develop 90% Design Plans, 90% Design Documentation Report (DDR), and 90% Specifications for the VN Project and submit the deliverables to TRFMA for review. Target date for 90% Design Package submittal is August 31, 2026.		
Task Name 100% Design Package	Start Month 3	Task Duration (in Months) 5 months
Task Description Consultant team (AtkinsRealis) will incorporate comments on the 90% Design Package and develop the 100% Design Package for the VN Project, including 100% Design Plans, 100% DDR, 100% Specifications, and 90% Cost Estimates. Deliverables will be submitted to TRFMA for review. Target date for 100% Design Package submittal is January 11, 2027.		
Task Name Final Design & 100% Cost Estimates	Start Month 8	Task Duration (in Months) 1 months
Task Description Consultant team (AtkinsRealis) will incorporate comments on the 100% Design Package and finalize the VN Project Design		

Package. 100% Cost Estimates for the VN Project will be prepared. Target date for Final Design Package submittal is February 2, 2027.

Task Name USACE Section 408 Permission	<table> <tr> <td>Start Month</td><td>Task Duration</td></tr> <tr> <td>1</td><td>(in Months) 6 months</td></tr> </table> Task Description USACE will complete its review of TRFMA's request and will issue a Section 408 Permission for the VN Project. ***Note: Completion of this task is required for construction, which makes this a Go/No-Go Milestone for the VN Project. If USACE does not approve TRFMA's Section 408 Permission request, the VN Project will be a "No-Go" and TRFMA will have to examine what other options, if any, might be available to address flood hazard mitigation in the Truckee Meadows region.***	Start Month	Task Duration	1	(in Months) 6 months
Start Month	Task Duration				
1	(in Months) 6 months				
Task Name Environmental and Historic Preservation (EHP) Review	<table> <tr> <td>Start Month</td><td>Task Duration</td></tr> <tr> <td>3</td><td>(in Months) 2 months</td></tr> </table> Task Description Per FEMA requirements, TRFMA will conduct an EHP Review of the VN Project to ensure the project complies with applicable rules and regulations. Anticipated start date shortly after FEMA BRIC grant subaward.	Start Month	Task Duration	3	(in Months) 2 months
Start Month	Task Duration				
3	(in Months) 2 months				
Task Name Construction Bid Procurement	<table> <tr> <td>Start Month</td><td>Task Duration</td></tr> <tr> <td>8</td><td>(in Months) 2 months</td></tr> </table> Task Description Using the Final Design Package, Plans & Specifications, TRFMA will solicit bids from qualified contractors to construct the VN Project. This process is planned immediately following the VN Project design finalization, and may take 1-2 months to select the winning bid and negotiate contract terms for TRFMA Board approval.	Start Month	Task Duration	8	(in Months) 2 months
Start Month	Task Duration				
8	(in Months) 2 months				
Task Name	<table> <tr> <td>Start Month</td><td>Task Duration</td></tr> <tr> <td>15</td><td>(in Months) 15 months</td></tr> </table>	Start Month	Task Duration	15	(in Months) 15 months
Start Month	Task Duration				
15	(in Months) 15 months				

VN Project Floodplain
Terrace Construction &
Revegetation

Task Description

Three floodplain terraces would be constructed over 1-2 seasons. The general sequence of terrace construction is clearing and grubbing; excavation and grading; moving material (including hauling & disposal); and revegetation. Construction start is anticipated in Fall 2027 - Spring 2028 (pending permitting and contractor schedules). Terrace 6 will be constructed with a wetland low bench and an upland high bench (Exhibit 1). The low bench will be nearly flat (100:1 slope) and up to 100 feet wide. Revegetation activities planned for the low bench include installation of boulders and topographic sculpting; drill seeding with the Floodplain Seed Mixes; installation of live-harvested coyote willows for a Willow Armoring Band; and construction of two sections (438 and 349 linear feet) of Vegetated Riprap. A 10:1 slope will transition the low bench to the high bench. The transition slope will be 90 feet-wide (perpendicular to the river flowline) with a vertical rise of approximately 9 feet between the low and high benches. Revegetation activities will consist of drill seeding with the Dry Riparian Seed Mixes and planting containerized shrubs within Dry Riparian Shrub Pods (Section 2.3.3). The high bench will be up to 200 feet-wide (perpendicular to the river flowline) with a 100:1 slope. The upper bench will be inundated when flows exceed 6,097 cfs (5-year return interval). The upland bench will be drill seeded with mixed salt desert and sagebrush shrub species. Terrace 6 will also include riprap on its leading edge and downstream tip. Lengths are approximately 438 linear feet and 349 linear feet. Terrace 3 would be constructed as a single bench up to 40 feet-wide that would be completely inundated at the 2-year flow (2,917 cfs). The bench would be nearly flat, with a 100:1 slope. The frequent flooding makes the surface suitable for revegetation with the wetland community. Here, revegetation will be limited to drill-seeding with the Floodplain Seed Mixes. Terrace 2 is relatively narrow, constrained by Interstate-80 embankment. The floodplain terrace will be constructed as a nearly flat (100:1 slope) bench, up to 100 feet wide. The downstream end of Terrace 2 would experience the most frequent inundation and will be able to support wetland communities. This area will be drill-seeded with the Floodplain Seed Mixes. Additional details are available in the VN Project 65% Plans and Specs (attached) and the VN Project Revegetation Plan (also attached).

Task Name

VN Project Vegetated
Riprap Construction

Start Month

15

Task Duration

(in Months)
15 months

Task Description

Dewatering using a cofferdam will occur prior to construction of the vegetated riprap sections. Banks will be laid back and shaped to a 2:1 slope. Riprap will consist of clean angular rock, 2 to 3 foot diameter rock, underlain by 6-inch bedding stone over geotextile. Riprap will be installed from the bank and at no time will equipment enter flowing water. Key features from the Engineering Design Plans include: a toe trench so that riprap can be keyed into the channel bottom to protect the toe and prevent scour from undermining of the revetment; live willow bundles planted at 20-foot intervals (exposed top ends on the bank face will be placed at OHWM and butt ends will extend into the summer water table); and sand or gravel packed around the willow bundles to protect the willow bundles from being crushed or pinched by riprap. The upstream site has 438 linear feet of revetment below OHWM and the downstream site has 349 linear feet below OHWM, with an additional 750 linear feet placed above OHWM. Construction would take place between September 1 to October 31 and may take up to two years to complete (4 months total). The 2-month construction window captures the period when flow is low, and conditions are favorable for willow survival. Additional construction information is available in the VN Project 65% Plans & Specs (attached) and the VN Project Revegetation Plan (also attached).

Estimate the total duration of your proposed activities (in months). **30**

Proposed project start and end dates

Start Date **2026-07-01**

End Date **2028-12-01**

[Continue](#)

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Location

Introduction

Project location

Provide a detailed description of the proposed project's location.

The VN Project is located in Washoe and Storey Counties, Nevada on the Truckee River immediately downstream of the City of Sparks, lying approximately between 39° 31' 09" N, 119° 41' 55" W to 39° 30' 44" N, 119° 40' 265" W. The VN Project is within Sections 11, 12, 13, and 14; Township (T) 19 North (N), Range (R) 20 East (E); and Section 18, T 19 N, R 20 E, Mount Diablo Base and Meridian (MDBM), Nevada. The VN Project is located within the Truckee River watershed, an ecologically significant closed basin system that supports a variety of fish and wildlife species (including several federally listed species). The Truckee River flows from its headwaters above Lake Tahoe to its terminus at Pyramid Lake, within the Pyramid Lake Paiute Tribe Reservation. The watershed covers approximately 3,100 square miles across California and Nevada. Approximately 75% of the drainage area occurs in Nevada. The watershed area of the Truckee River at the VN Project is approximately 1,429 square miles. The river is an integral part of life in the Truckee Meadows. It supports the region's \$20-billion economy; provides clean drinking water to about 400,000 people and 7,000 businesses; and offers incredible outdoor recreational opportunities for residents and visitors to the area. The Truckee River flows eastward out of the Truckee Meadows and through the Virginia Range via the Truckee River Canyon. The term "Truckee Meadows" refers to the broad basin containing the Reno and Sparks area, bounded by the Virginia Range on the east, the Carson Range on the west, Steamboat Hills on

the south and the slopes of Peavine Mountain on the north. The Truckee River Canyon is a narrow bedrock-controlled canyon through the Virginia Range which extends from Vista, just east of Sparks, to Wadsworth, approximately 29 miles downstream. The Vista Narrows is the constriction at the mouth of the Truckee River Canyon characterized by exposed outcrops of Virginia Range bedrock on the channel bed and banks over several miles. During the late 1950s and early 1960s, USACE implemented a number of flood control projects, including channel clearing and debris removal along the middle and lower Truckee River. East of Sparks, a large section of the Vista Narrows was removed for the purpose of increasing flow conveyance during flood peaks and reducing the flooding hazard in the Truckee Meadows. However, an unintended consequence was significant downcutting and incision of the Truckee River, which is the current condition through the VN Project reach. The VN Project reach is approximately 1.7 miles long, beginning just east of the Truckee Meadows Wastewater Reclamation Facility, approximately 0.3 mile (~1,415 feet) downstream from Steamboat Creek's confluence with the Truckee River, and approximately 0.4 mile (~2,160 feet) downstream from the former (i.e., original) North Truckee Drain outfall to the Truckee River. The VN Project reach ends approximately 0.3 mile (~1,720 feet) upstream of the second Union Pacific Railroad (UPRR) bridge and Washoe County Regional Parks' Lockwood Trailhead. Through the VN Project reach, the Truckee River low flow channel is approximately 124 feet wide. The river is incised with high, vertical banks that are too steep to support riparian and wetland vegetation. Additional information, maps, and photos are presented in Section 3.2 of the EA (attached).

Latitude

39.519167

Longitude

-119.698611

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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Project benefiting area

Provide a detailed description of the proposed project's benefiting area.

Direct flood hazard mitigation benefits from the VN Project would be realized upstream in downtown Reno and in the Truckee Meadows reach, which extends east from the I-580 bridge to Vista Narrows (east of Sparks, NV). Approximately 80% of the area of potential damage caused by a large flood event similar to the 1997 Flood (117-year event) would occur along the Truckee Meadows reach. Flood inundation in the 100-year event is most extensive in the eastern portions of the Truckee Meadows, particularly in developed commercial and industrial areas (high economic value). More than 2,500 properties were impacted by the 1997 Flood, including almost 1,000 single-family homes. Property damage from the 1997 Flood was initially estimated at \$700 million by the National Weather Service. A subsequent 2018 study by researchers at the University of Nevada, Reno (attached) estimated the total economic impact of the 1997 Flood Event at over \$2.5 billion in 2018 dollars. The purpose of the VN Project is to alleviate the backwater flooding in the Truckee Meadows area of Reno, Sparks, and Washoe County, Nevada. Flood flows are constrained by the narrow entrance to the Truckee River Canyon at the Vista Narrows, causing backwater flooding upstream in the Truckee Meadows. There is a critical need for flood protection in the Truckee Meadows because approximately every 10 years, the Truckee River overflows its banks, causing damage to residences, businesses, and infrastructure. Flooding occurred in 1986, 1997, and 2005. In 2017, high flow almost overtopped the riverbanks. Construction of floodplain terraces at Vista Narrows would remove the constriction, allowing flow to move rapidly through the VN Project Reach during flood events. Specifically, during a 100-year event, the VN Project would reduce the maximum water surface elevation in the Truckee Meadows region by approximately 0.6 feet. The benefit area

includes critical infrastructure like the Reno-Tahoe International Airport and Truckee Meadows Water Reclamation Facility and Interstate 80, as well as schools, hospitals, fire and police stations. It also includes the Reno and Sparks Industrial Areas, which have a significant number of regional distribution warehouses with very high content values. Residential communities and neighborhoods in downtown Reno and Hidden Valley are also included in the benefit area. A secondary purpose is to create a functioning floodplain within the VN Project reach. The Truckee River in this reach is incised with high, nearly vertical banks. Benefits of restoring a functioning floodplain at the Vista Narrows include managing flood flows without structures, improving water quality, improving aesthetics, and creating self-sustaining native plant communities that increase biological productivity and diversity.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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Project impact area

Provide a detailed description of the proposed project's impact area.

The VN Project was designed to provide flood hazard mitigation benefits to the Truckee Meadows while avoiding the transfer of flood risk to downstream communities. TRMA’s downstream hydraulic impacts study (HDR, 2026, attached) focused on effects to the flood-prone residential communities at Rainbow Bend in Lockwood (3 miles downstream) and at Wadsworth on the Pyramid Lake Paiute Tribe (PLPT) Reservation (30 miles downstream). According to census data, Rainbow Bend has up to 500 homes and Wadsworth has 318 homes. The downstream impacts study report (HDR, 2026) show 17 homes in Rainbow Bend and 9 homes in Wadsworth are within the 100-year FEMA floodplain. In order to reduce the maximum water surface elevation (WSE) elevation in the Truckee Meadows by 0.6 feet (7 inches) during a 100-year event, the VN

Project unavoidably increases the average maximum WSE at Rainbow Bend and Wadsworth by approximately 0.2 feet (2 inches). The increase generally occurs on land that is already flooded during a 100-year event. There are a few areas where the VN Project increases the extent of inundation for a brief period creating new areas of flooding. These areas are limited to vacant land; agricultural fields without structures; and in Wadsworth, some roads, yards, and driveways. At both communities, no homes would be newly inundated. Described in the EA Downstream Effects Sections 3.7.3.3., during a 100-year event, the degree of impact to downstream communities would be negligible to minor. The VN Project does not increase flood risk to homeowners because no homes would be newly inundated. The VN Project would not alter the Truckee River's channel geomorphology because the increase in stream velocity is insignificant. The EA also concludes that the incremental contribution to WSE rise on land that is already flooded at the 100-year flow is not expected to increase flood damage cost to homeowners.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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Project site inventory

Does this project subapplication propose to mitigate a property/structure(s)? (Examples: residential home, commercial building, bridge, fire station, levee, pumping station, wastewater treatment plant, telephone pole, electric line, etc.) **No**

Please [download the excel template](#), and then fill out the template with building or infrastructure data.

[Continue](#)

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Budget

Budget cost estimate should directly link to your scope of work and work schedule. You must add at least one item(s) greater than 0 for your cost estimate. As necessary, please adjust your federal/non-federal cost shares, and add the non-federal funding source(s) you are planning to use this project. Once you have completed this section, please click the Continue button at the bottom of this page to navigate to the next section.

Add budget cost types and item(s)

First, click the Add cost type button below to add cost type cost estimate and then click the Add item(s) button to add the item(s) for the cost estimate.

Grand total: \$26,666,666.67

Budget type: Construction

►	Cost type: Cost estimate	\$26,666,666.67
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Program income (optional) 0

Cost share

Cost share or matching means the portion of project costs not paid by federal funds.

Proposed federal vs. non-federal funding shares

Hazard Mitigation Assistance (HMA) funds may be used to pay up to 75% federal share of the eligible activity costs. For Building Resilient Infrastructure and communities (BRIC), small impoverished communities may be eligible for up to 90% federal share. For Flood Mitigation Assistance (FMA), and severe repetitive loss (SRL) properties may be eligible for up to 100% federal share. Repetitive loss (RL) properties may be eligible for up to 90% federal share.

Cost estimate

Is this a small impoverished community?  This determines your federal/non-federal share ratio. No		% Percentage	\$ Dollar amount
	Proposed federal share	75.00	20000000.00
	Proposed non-federal share	25.00	6666666.67
			Based on total budget cost: \$26,666,666.67

Non-federal funding sources here

That portion of the total costs of the program provided by the non-federal entity in the form of in-kind donations or cash match received from third parties or contributed by the agency. In-kind contributions must be provided and cash expended during the project period along with federal funds to satisfy the matching requirements.

Funding source	% Non-federal share by source	Funding amount
► Funding source: TRFMA Property Tax Revenue: 1/8-cent infrastructure sales tax authorized by NRS Chapter 377B	100.00%	\$6,666,666.67

Additional comments.

The total cost to complete the VN Project (which is the 65%-90% phase of the project), is estimated to be \$45,011,651. TRFMA is requesting a portion of the costs for the VN Project be funded by this grant as follows: 75% Federal Match = \$20,000,000 and 25% Non-Federal Match = \$6,666.666.67. The VN Project construction cost breakdown is attached. TRFMA is a sub applicant that has never been selected in the BRIC National Competition. If selected, TRFMA has sufficient non-federal funds available to meet the match and over match requirements for the BRIC funding request. (see Attachment: Budget Narrative for the Vista Narrows Terracing Project)

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Vista Narrows 65% Estimate Summary Final.pdf	06/29/2026	dcrowley@washoecounty.us	Budget Attachments	Atkins Construction Costs Breakdown for the VN Project (Prepared by Atkins for TRFMA, 2026)	
Budget Vista Narrows Terracing Project 070626 with 20 M 75% Federal Match.xlsx	07/06/2026	dcrowley@washoecounty.us	Budget Attachments	Budget breakdown for federal and non-federal costs (Prepared by TRFMA, 2026)	
Revised Budget Narrative for the Vista Narrows Terracing Project2.pdf	07/07/2026	grobison@washoecounty.gov	Budget Attachments	Budget Narrative for Vista Narrows Grant	

Filename	Date uploaded	Uploaded by	Label	Description	Action
				(TRFMA 2026)	
TRFMA_Final Budget_FY 2026-2027.pdf	07/06/2026	dhenderson@washoecounty.gov	Budget Attachments	TRFMA agency approved operating budget for Fiscal Year 2026-2027 (Prepared by TRFMA, 2026)	

Continue

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Cost-effectiveness

How was cost-effectiveness determined for this project?

- ☐ BCA completed in FEMA's BCA toolkit
- ☐ Pre-calculated benefits
- ☒ Substantial damage in special flood hazard area
- ☐ Other BCA methodology approved by FEMA in writing
- ☐ Not applicable

- ☐ Not applicable

What are the total project benefits? (\$)

1875000000

What are the total project cost? (\$)

299300000

What is the benefit-cost ratio (BCR) for the entire project?

6.26

Please provide any additional comments below (optional).

The Vista Narrows Project (VN) is part of a greater project that includes levee, terracing, floodwall, revetment and other flood related works. This is known as the Truckee Meadows Flood Project (TMFP) that stretches from the I-580 Bridge to downstream of Sparks Nevada. The project is designed to mitigate damages of floods up to the size of the January 1997 flood that was estimated to be a 117-year event by the USACE. In determining damages and cost we are using the total project as the different sub projects add up to a whole and Vista Narrows is foundational to the rest of the project because it lowers flood levels in Sparks and Southeast Reno areas and reduces mitigation needed in those areas by over 90%. Information on the role of the different projects to the whole is provided in an attached Strategic Plan (Robison, 2026). Areas taken out of floodplain are referenced in attached Rationale Document prepared for the grant. The area protected by VN and the TMFP is subject to substantial damage in a Special Flood Hazard Area. Therefore, we are working thru the B/C ratio using that method based on studies done by USACE (attached), FCS

Consulting (attached), and the UNR study referenced above (attached). To give the scale of damage possible during the 1997 flood, more than 2,500 properties were impacted, including almost 1,000 single-family homes. Critical infrastructure was affected such as the Reno Tahoe International Airport (which was closed) and NV Energy's field operations center. Property damage from the 1997 flood was initially estimated at \$700 million by the USGS (USGS, 1997) in 1997 dollars. A subsequent study by researchers at the University of Nevada, Reno (2018) estimated the total economic impact of the 1997 Flood Event at over \$2.5 billion in 2018 dollars. We believe based on criteria this qualifies as substantial damage. Note that there were areas outside the TMFP protected area that were damaged that will not be taken out of the flood zone. Therefore, the benefits were lowered to 75% of the total damage (\$1.875 billion) in the 2018 study (see rationale for using 75% of full 2.5 billion in rationale document attached also covered in Strategic Plan). Costs and impacts are higher now than in 2018. These impacts were calculated by estimating the replacement cost of structures, structure content values, and business disruption. The Sacramento District USACE completed a more detailed economic study to evaluate regional Truckee River flooding impacts and potential benefits of proposed flood protection projects that were similar to TMFP (USACE GRR 2013, attached). Based on results from this study applied to the TMFP by comparison of similar flood project effects from the USACE study, estimates the TMFP would provide \$10,229,000 in net annual benefits to the region. Investing in the VN Project and subsequent TMFP will deliver cost-effective flood protection to the community at a benefit-cost ratio of at least 1.57 (TRFMA 2026) from first costs. Please note the B/C, is considerably higher because the new configuration is more protective than the plan used in their analysis (117-year with freeboard vs. 50- year) and cost is considerably less for cost forward vs. first costs. Refer to TRFMA's 2026 CIP and Strategic Plan talk and Strategic Plan Report (attached) for comparison calculations. We believe the range of an accurate B/C is somewhere between 2.5 and the near 6 which was calculated by the chosen method above.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
University-of-Nevada-Reno-Economic-Impact-Study-of-1997-Flood-Event.pdf	07/05/2026	dhenderson@washoecounty.gov	Cost Effectiveness Attachments	2018 Impact of a 1997 Truckee River Flood Event (Prepared by University of Nevada, Reno researchers)	
FMA-3-20-26-CIP-and-TMFP-Strat-Plan-final.pdf	07/05/2026	dhenderson@washoecounty.gov	Cost Effectiveness Attachments	Slide Presentation on TRFMA's Capital Improvement Plan and Strategic Plan for the Truckee Meadows Flood Project, Including the VN Project (Presented to the TRFMA Board in March 2026)	
Rationale for The Vista Narrows Project and critical nature of Vista Narrows.pdf	07/07/2026	grobison@washoecounty.gov	Cost Effectiveness Attachments	Rationale for the Vista Narrows and overall Truckee Meadows Flood Project.	
Strategic Plan for the Truckee Meadows Flood Project_TRFMA_March 2026.pdf	07/06/2026	dhenderson@washoecounty.gov	Cost Effectiveness Attachments	TRFMA's Strategic Plan for the Truckee Meadows	

Filename	Date uploaded	Uploaded by	Label	Description	Action
				Flood Project, Including the VN Project (Presented to the TRFMA Board in March 2026)	
USACE GRR Appendix C_Economic Appendix_December 2013.pdf	07/06/2026	dhenderson@washoecounty.gov	Cost Effectiveness Attachments	Truckee Meadows General Re-Evaluation Report (GRR) Appendix C, Economics (Prepared by USACE Sacramento District, December 2013)	
Truckee River Flood Funding Rate Study_FCS Group_Final Draft Report_April 2009.pdf	07/06/2026	dhenderson@washoecounty.gov	Cost Effectiveness Attachments	Truckee River Flood Funding Area Boundaries and Rate Study (Prepared for TRFMA by FCS, April 2009)	
Truckee River Meadows Flood Project Hydraulic Modeling Report_HDR_April 2024.pdf	07/06/2026	dhenderson@washoecounty.gov	Cost Effectiveness Attachments	Truckee River Meadows Flood Project Hydraulic Modeling Report (Prepared for TRFMA by HDR, April 2024)	

Continue

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Environmental/Historic Preservation (EHP) Review Information

Introduction

An environmental/historic preservation review is required for all activities for which FEMA funds are being requested. FEMA will complete this review with the assistance of both the state or tribal government and the local applicant. It is important that you provide accurate information. If you are having problems completing this section, please contact your application point of contact.

A. National Historic Preservation Act - Historic Buildings and Structures

1. Does your project affect or is it in close proximity to any buildings or structures 50 years or more in age? **Yes**

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- ☒ The property address and original date of construction for each property affected (unless this information is already noted in the Properties section).
- ☒ A minimum of two color photographs showing at least three sides of each structure (Please label the photos accordingly).
- ☒ A diagram or USGS 1:24,000 scale quadrangle map displaying the relationship of the property (s) to the project area.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- ☒ Information gathered about potential historic properties in the project area, including any evidence indicating the age of the building or structure and presence of buildings or structures that are listed or eligible for listing on the National Register of Historic Places or within or near a National Register listed or eligible historic district. Sources for this information may include the State Historic Preservation Officer, and/or the Tribal Historic Preservation Officer (SHPO/THPO), your local planning office, historic preservation organization, or historical society.
- ☒ Consideration of how the project design will minimize adverse effects on known or potential historic buildings or structures, and any alternatives considered or implemented to avoid or minimize effects on historic buildings or structures. Please address and note associated costs in your project budget.
- ☐ For acquisition/demolition projects affecting historic buildings or structures, any data regarding the consideration and feasibility of elevation, relocation, or flood proofing as alternatives to demolition.
- ☒ Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

No historic buildings or structures are present. However, two sites were recorded that are recommended eligible for the National Register of Historic Places. A Class III cultural resources inventory was completed in 2018. The inventory report was submitted to the US Army Corps of Engineers (USACE) as part of TRFMA's Section 408/404 permit application package. The report is attached (locations and maps redacted to maintain required confidentiality). The VN Project would cause unavoidable, adverse effects to potentially eligible site 26Wa10741 (structural ruins of domicile and privy). A treatment plan has been prepared for 26Wa10741 and a Memorandum of Agreement between USACE and SHPO is being developed. No adverse effects to potentially eligible site 26Wa2 (prehistoric Native American petroglyph site) or the unevaluated Truckee River Traditional Cultural Place (TCP) are anticipated. Section 3.13 of the VN Project Environmental Assessment (attached) provides additional information.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
VN Project Site 26Wa10741 Historic Properties Treatment Plan Kautz June 2020.pdf	07/06/2026	dhenderson@washoecounty.gov	closeProximityTo50YearOldBuilding.attachmentIds	Historic Properties Treatment Plan for site 26Wa10741 by Kautz Environmental Consultants, June 2020. Specific locations and maps redacted for confidentiality.	
VN Project Cultural Baseline Report Redacted Kautz July 2026.pdf	07/06/2026	dhenderson@washoecounty.gov	closeProximityTo50YearOldBuilding.attachmentIds	Full Vista Narrows cultural resources inventory and report by Kautz Environmental Consultants, June 2026. Specific locations and maps redacted for confidentiality.	
VN Project Cultural Resource Survey and Monitoring Map Appendix A Fig 6-2 Kautz.pdf	07/06/2026	dhenderson@washoecounty.gov	closeProximityTo50YearOldBuilding.attachmentIds	Overview map of Vista Narrows Project cultural resources survey area and monitoring area (excerpted from Appendix A of the full report)	

B. National Historic Preservation Act - Archeological Resources

Does your project involve disturbance of ground?

Yes

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- ☒ A description of the ground disturbance by giving the dimensions (area, volume, depth, etc.) and location.
- ☒ The past use of the area to be disturbed, noting the extent of previously disturbed ground.
- ☒ A USGS 1:24,000 scale or other site map showing the location and extent of ground disturbance.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- ☒ Any information about potential historic properties, including archeological sites, in the project area. Sources of this information may include SHPO/THPO, and/or the Tribe's cultural resources contact if no THPO is designated. Include, if possible, a map showing the relation of any identified historic properties to the project area.
- ☒ Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

All mechanical proposed ground disturbance would be limited to the three floodplain terraces (37 acres) constructed within the VN Project reach. Consulting archaeologists completed a Class III cultural resources inventory of the VN Project Area of Potential Effect (APE). The APE was developed in coordination with the USACE, the lead federal agency responsible for compliance with National Historic Preservation Act. The APE is 39 acres and includes the extent of the three floodplain terraces and the extent of Etza'a Tubano/Hunga ma Heshii (potentially eligible historic site 26Wa2). Section 1.3 of the cultural resources report (attached, redacted) provides additional details on the APE. The USACE initiated NHPA Section 106 Consultation with SHPO on September 29, 2022. Consultation is ongoing.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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C. Endangered Species Act and Fish and Wildlife Coordination Act

1. Are federally listed threatened or endangered species or their critical habitat present in the area affected by the project? Yes

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please provide the required documents either through attachment and/or comment box below.)

- ☒ Information you obtained to identify species in or near the project area. Provide the source and date of the information cited.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- ☒ Any request for information and associated response from the USFWS, the National Marine Fisheries Service (NMFS) (for affected ocean-going fish), or your State Wildlife Agency, regarding potential listed species present and potential of the project to impact those species.
- ☒ Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

The VN Project may affect federally listed species: threatened Lahontan cutthroat trout (LCT) and endangered cui-ui. Critical Habitat is not present. TRFMA requested information on special status species from Nevada Department of Wildlife, Nevada Division of Natural Heritage, and USFWS. For the species identified by the agencies, TRFMA prepared a habitat assessment to determine the actual potential for occurrence based on availability of suitable habitat (EA Table 3-13). Formal ESA consultation with USFWS concluded in 2024 (Biological Opinion attached). USFWS determined that the VN Project was not likely to jeopardize the continued existence of LCT and cui-ui. VN Project in-stream construction activities will occur outside of the LCT spawning period and will not occur in a river reach where cui-ui have access to spawn. Minor impacts to habitat of listed fish would be offset by the stabilization of eroding banks, creation of shaded riverine habitat, and other long-term project benefits.

2. Does your project remove or affect vegetation? Yes

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please provide the required documents either through attachment and/or comment box below.)

- ☒ Description of the amount (area) and type of vegetation to be removed or affected.
- ☒ A site map showing the project area and the extent of vegetation affected.
- ☒ Photographs or digital images that show both the vegetation affected and the vegetation in context of its surroundings.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- ☒ Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

VN Project floodplain terrace construction would remove 37 acres of existing vegetation, including Upland Shrub (27 acres) and Invasive Weeds (10 acres). The VN Project would create Wetland (~13 acres), Dry Riparian Shrub (~5 acres), and Upland Shrub (~19 acres) vegetation communities on the new terrace surfaces. Invasive weeds would be reduced to no more than 6% of total ground cover. Revegetation efforts on each terrace would begin once the final grade is established. Loss of existing vegetation would be temporary to short-term until ground cover is reestablished. The revegetation communities are intended to be self-sustaining and composed of native species adapted to the inundation regime of the floodplain terrace surfaces. Minor impacts to vegetation would be offset by increased habitat that supports fish and wildlife. Effective planting methods, weed control strategies, and revegetation species details are in the Revegetation Plan and Integrated Weed Management Plan (attached).

3. Is your project in, near (within 200 feet), or likely to affect any type of waterway or body of water? **Yes**

If Yes, and project is not within an existing building, you must confirm that you have provided the following: (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- ☒ A USGS 1:24,000 scale quadrangle map showing the project activities in relation to all nearby water bodies (within 200 feet).
- ☒ Any information about the type of water body nearby including: its dimensions, the proximity of the project activity to the water body, and the expected and possible changes to the water body, if any. Identify all water bodies regardless whether you think there may be an effect.
- ☒ A photograph or digital image of the site showing both the body of water and the project area.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- ☒ Evidence of any discussions with the US Fish and Wildlife Service (USFWS), and/or your State Wildlife Agency concerning any potential impacts if there is the potential for the project to affect any water body.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

The VN Project involves a reach of the Truckee River ~1.7 miles long and ~124 feet wide at low flow conditions. The river is incised with high, vertical banks that are too steep to support riparian and wetland vegetation. Detailed waterbody description is in Section 3.2 of the EA (attached). Downstream impacts have been studied in detail (technical reports attached) and are addressed in the EA. During construction, effective implementation of the VN Project Dewatering Plan (attached) and the VN Project's SWPPP and Environmental Protection Measures (described in EA Water Quality Sections 3.8.3 and 3.8.4) would avoid and minimize point source discharges of sediment and the potential for transfer of fines into the water column. Construction of vegetated riprap would be timed when flow is low and when habitat utilization is also considered low. Minor impacts would be offset by the stabilization of eroding banks, creation of shaded riverine habitat, and other long-term VN Project benefits.

D. Clean Water Act, Rivers and Harbors Act, and Executive Order 11990 (Protection of Wetlands)

1. Will the project involve dredging or disposal of dredged material, excavation, adding fill material or result in any modification to water bodies or wetlands designated as 'waters of the U.S' as identified by the US Army Corps of Engineers or on the National Wetland Inventory? **Yes**

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- ☒ Documentation of the project location on a USGS 1:24,000 scale topographic map or image.
- ☒ A copy of a National Wetlands Inventory map or other available wetlands mapping information.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- ☐ Request for information and response letter from the US Army Corps of Engineers and/or state resource agencies regarding the potential for wetlands, and applicability of permitting requirements.
- ☒ Evidence of alternatives considered to eliminate or minimize impacts to wetland.
- ☒ Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

The VN Project reach contains ~1.7 miles of the Truckee River. No wetlands are present within the VN Project area because bank slopes are steep, seasonal overbank flooding is rare, and the summer water table is beyond typical rooting depths. The VN Project would create up to 13 acres of wetlands on the floodplain terraces and include an additional 710 linear feet of coyote willow planted with the vegetated riprap. Construction of floodplain terraces would take place above the OHWM of the Truckee River. Construction of two vegetated riprap sections (Site 4, Site 5) would have minor impacts to waters of the U.S. (0.370 acre of open water). USACE confirmed the VN Project qualifies for Nationwide Permit 13 and Nationwide Permit 33, and the State of Nevada has issued a Section 401 Water Quality Certification. Minor to negligible construction and O&M impacts to waters of the U.S. would be offset by the creation of wetlands and other long-term benefits of the VN Project.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
VN Project_CWA Section 401 WQ Certification_NDEP_March 2022.pdf	07/06/2026	dhenderson@washoecounty.gov	waterBodyOrWetlandModification.attachmentIds	CWA Section 401 WQ Certification (Issued by NDEP for the VN Project, March 2022)	
VN Project_CWA Section 401 WQ Certification_NDEP Cover Letter_March 2022.pdf	07/06/2026	dhenderson@washoecounty.gov	waterBodyOrWetlandModification.attachmentIds	CWA Section 401 WQ Certification Cover Letter sent by Nevada Division of Environmental Protection to USACE on March 7, 2022	
VN Project_Aquatic Resources Delineation Report_Redhorse_April 2019.pdf	07/06/2026	dhenderson@washoecounty.gov	waterBodyOrWetlandModification.attachmentIds	VN Project Aquatic Resource Delineation Report	

Filename	Date uploaded	Uploaded by	Label	Description	Action
				(Prepared by Redhorse Corporation for TRFMA, April 2019)	
VN Project_USACE Aquatic Resources Verification Letter to TRFMA_June 2019.pdf	07/06/2026	dhenderson@washoecounty.gov	waterBodyOrWetlandModification.attachmentIds	USACE Aquatic Resources Verification for VN Project (Sent to TRFMA on June 25, 2019)	

E. Executive Order 11988 (Floodplain Management)

1. Does a Flood Insurance Rate Map (FIRM), Flood Hazard Boundary Map (FHBM), hydrologic study, or some other source indicate that the project is located in or will affect a 1% annual chance floodplain, a 0.2% annual chance floodplain, a regulatory floodway, or an area prone to flooding? **Yes**

Please explain in the text box below and/or provide any documentation to identify the means or the alternatives considered to eliminate or minimize impacts to floodplains (See the 8 step process found in 44 CFR Part 9.6.) to help FEMA evaluate the impact of the project:

During a 100-year flow, surface water would be allowed to spread across 31.5 acres of newly constructed floodplain terrace, reducing the WSE of the flood pool upstream of the VN Project reach. The maximum WSE in the flood pool in the Truckee Meadows would drop by ~0.6 feet. To reduce the WSE in the upstream flood pool, the VN Project unavoidably increases peak outflows from the VN Project reach. The evaluation of the resulting changes to peak flow, WSE, and inundation extent at Rainbow Bend and Wadsworth found that flood control benefits gained in the Truckee Meadows do not transfer flood risk to downstream communities. The VN Project does not increase flood risk to homeowners because no homes would be newly inundated. At the 100-year flow, downstream hydraulic effects from the VN Project would be negligible to minor. The duration would be brief. The VN Project would have no impact on the regulatory requirement to maintain the Truckee River's channel conveyance capacity (6,000 cfs).

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

TRFMA completed a study of downstream hydraulic impacts (HDR 2026, attached) to evaluate how the increase in peak discharge leaving the VN Project Reach would affect the Lower Truckee River. The study focused on effects to the residential communities at Rainbow Bend in Lockwood (3 miles downstream) and at Wadsworth on the Pyramid Lake Paiute Tribe (PLPT) Reservation (30 miles downstream). Detailed discussion on floodplains and flood risk is in Section 3.7 of the EA (attached). Another hydraulic study quantified the downstream effects of the entire proposed Flood Project (including the VN Project, a key element). Results are contained in Vista Narrows 65% Design Preliminary Downstream Impacts Analysis (Dyer 2019, attached). TRFMA is working with FEMA on a Physical Map Revision (PMR) request for the Greater Truckee Meadows Region and Truckee River Lower Reach (in progress). Info at: <https://trfma.org/trfma-submits-truckee-river-physical-map-revision-package-to-fema-for-review/>

2. Does the project alter a watercourse, water flow patterns, or a drainage way, regardless of its floodplain designation? **Yes**

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- ☒ Hydrologic/hydraulic information from a qualified engineer to demonstrate how drainage and flood flow patterns will be changed and to identify down and upstream effects.
- ☒ Request for information and response letter from the state water resource agency, if applicable, with jurisdiction over modification of waterways.
- ☒ Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

A nature-based solution to mitigate flood hazards, the VN Project would reestablish seasonal overbank flooding and natural floodplain functions, resulting in the following long-term floodplain benefits: flood risk reduction, natural flood and erosion control, surface water quality maintenance, groundwater recharge, biological productivity, and habitat support for fish and wildlife. The VN Project would cause no change during the channel forming discharges (2,000 to 3,000 cfs range), confirming there is no potential for long-term geomorphological change due to the VN Project. VN Project designs and model documentation reports are attached for reference. Hydraulic model files are available upon request.

F. Coastal Zone Management Act

1. Is the project located in the state's designated coastal zone? **No**

G. Farmland Protection Policy Act

1. Will the project convert more than 5 acres of prime or unique farmland outside city limits to a non-agricultural use? **No**

H. Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (Hazardous and Toxic Materials)

1. Is there a reason to suspect there are contaminants from a current or past use on the property associated with the proposed project? **No**

2. Are there any studies, investigations, or enforcement actions related to the property associated with the proposed project? **Yes**

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project: (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- ☒ Comments and any relevant documentation.
- ☒ Results of any consultations with state or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.
- ☒ Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

The VN Project draft Environmental Assessment (attached) prepared for USACE as part of TRFMA's Section 408/404 permit application includes baseline studies to characterize the site and potential VN Project impacts. Floodplain terrace soils were tested by an analytical laboratory for heavy metals: arsenic, barium, cadmium, chromium, cobalt, lead, mercury, selenium, and silver (Redhorse & Jacobs, 2025b, attached). Samples were taken from the surface, near surface, and depths up to 8 feet below the surface. The sampling locations and depths focused on assessing the geochemical distribution of

metals from past activities and overbank flooding. The concentration of metals reported were compared against reporting limits and action level thresholds in U.S. Environmental Protection Agency (USEPA) Region 9 Residential Regional Screening Level for Residential Soil. None of the samples contained elevated concentrations of metals that approached reporting limits (Redhorse & Jacobs, 2025b).

3. Does any project construction or operation activities involve the use of hazardous or toxic materials? **Yes**

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project: (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- ☒ Comments and any relevant documentation.
- ☒ Results of any consultations with state or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.
- ☒ Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

Use of fuel and lubricants are expected for the construction of the VN Project. To ensure the use of such materials would have negligible impacts, TRFMA and its contractors would implement a Spill Prevention, Control, and Countermeasure Plan that describes the safe handling, storage, and clean-up of contaminants and hazardous materials. A spill kit will be kept onsite at all times. Equipment fueling would take place at least 50 feet away from the river inside a bermed area. All equipment will be steam cleaned prior to site delivery. Equipment would be inspected daily for leaks to prevent discharge of debris, oil, grease, scum, and other floating debris. Herbicides would be used during the revegetation phase of the VN Project. To ensure herbicide use would have negligible impacts, application of herbicides would comply with the VN Project Integrated Weed Management Plan (attached). The plan includes detailed herbicide safety guidelines and BMPs for safe herbicide application.

4. Do you know if any of the current or past land-uses of the property affected by the proposed project or of the adjacent properties are associated with hazardous or toxic materials? **Yes**

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project: (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- ☒ Comments and any relevant documentation.
- ☒ Results of any consultations with state or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.
- ☒ Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

Mercury from historic mining operations is a source of potential water quality impairment in the Truckee River. For over 130 years, Steamboat Creek (a Truckee River tributary) has been a non-point source of mercury pollution contributing 30% of total mercury and 70% of methylmercury loads to the Truckee River (Pizarro, 2011). Although the Truckee River is not listed under CWA Section 303(d) for mercury impairment, concentrations of mercury have been found in water, sediment, and biota downstream of Steamboat Creek's confluence with the Truckee River. Currently, the Truckee River through the VN Project reach does not have a functioning floodplain with riparian habitat and is not a known source of methylmercury. Metals testing of the terraces confirmed that surface, near-surface, and deeper soils do not have elevated levels of mercury (Redhorse & Jacobs, 2025b, attached). The State of Nevada has issued a CWA Section 401 Water Quality Certification for the VN Project (2022, attached).

I. Other Environmental/Historic Preservation Laws or Issues

1. Are there other environmental/historic preservation requirements associated with this project that you are aware of?

No
2. Are there controversial issues associated with this project?

No
3. Have you conducted any public meeting or solicited public input or comments on your specific proposed mitigation project?

Yes

If Yes, please indicate in the text box below a description of the requirements, issues or public involvement effort.

In May 2022, USACE posted a public notice regarding the Proposed Action (VN Project) and opened a 30-day public comment period. Members of the public were notified and invited to comment. No public comments were received. TRFMA has conducted extensive public outreach on the VN Project, including public meetings, technical presentations, press interviews, social media posts, and stakeholder meetings. There is no local public opposition to the VN Project. Key downstream stakeholders, including Storey County and Wadsworth, have expressed no major opposition to the VN Project. Tribal coordination was initiated by USACE in February 2025 and remains ongoing. The Pyramid Lake Paiute Tribe is not opposed to the VN Project and raises no objections to TRFMA's Section 408 permission request based on parameters defined in its September 23, 2024 letter (attached).

J. Summary and Cost of Potential Impacts

Having answered the questions in parts A. through I., have you identified any aspects of your proposed project that have the potential to impact environmental resources or historic properties?

Yes

- If Yes, you must confirm that you have provided the following: (If you have not provided these documents in any other section of the application, please attach the required documents below.)
- ☒

Evaluated these potential effects and provided the materials required in Parts A through J that identify the nature and extent of potential impacts to environmental resources and/or historic properties.
- ☒

Consulted with appropriate parties to identify any measures needed to avoid or minimize these impacts.
- ☒

Considered alternatives that could minimize both the impacts and the cost of the project.
- ☒

Made certain that the costs of any measures to treat adverse effects are realistically reflected in the project budget estimate.

Please enter your comments below. (optional) : (Please indicate why in the text box below and any information about this project that could assist FEMA in its review).

The Administrative Draft Environmental Assessment for the VN Project (attached) provides a detailed evaluation of alternatives and potential impacts to environmental resources, cultural resources, and historic properties. TRFMA prepared the EA to assist USACE in its evaluation of the Proposed Action (the VN Project) in order to make an informed decision regarding TRFMA's Section 408 Permission request.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
VN Project Administrative Draft EA TRFMA Submittal to USACE	07/06/2026	dhenderson@washoecounty.gov	summaryCostOfImpacts.attachmentIds	VN Project Administrative	

Filename	Date uploaded	Uploaded by	Label	Description	Action
408_June 2026.pdf				Draft Environmental Assessment (Prepared by TRFMA and submitted to USACE for review on June 11, 2026)	

Continue

Vista Narrows Floodplain Terracing Project for Truckee River Flood Hazard Mitigation, Nevada

Evaluation

Is the applicant participating in the Community Rating System (CRS) ?	Yes
Select rating.	7
Is the applicant a Cooperating Technical Partner (CTP) ?	No
Was this application generated from a previous FEMA HMA Advance Assistance or Project Scoping award or any other federal grant award, or the subapplicant is a past recipient of Building Resilient Infrastructure and Communities (BRIC) non-financial Direct Technical Assistance?	No
Has the applicant adopted building codes consistent with the international codes ?	Yes
Year of building code	2024
Please provide the building code.	2024 International Building Code
Have the applicant's building codes been assessed on the Building Code Effectiveness Grading Schedule (BCEGS) ?	Yes
Select rating.	5
Describe involvement of partners to enhance the mitigation activity outcome.	The proposed grant recipient is TRFMA who is managed by a Board consisting of elected City and County leaders. TRFMA works closely with stakeholders from Storey County, the Pyramid Lake Piaute Tribe and other nearby tribes, and also flood related partners in State and Federal Government. This project was formerly an authorized Corps project and there have been decades of interaction. Each of these partners have been given access to plans designs etc. and have inputted on them often times improving them.
Additional comments (optional)	Please note we work with City of Reno, City of Sparks and Washoe County. Each have building codes and each have been evaluated by Community Rating system. Currently Washoe County is CRS Class 7. Supporting documents for this rating can be found at: https://www.washoecounty.gov/csd/engineering_capitalproject/engineering-capital-projects/BCC%2001-08-19%20-%20CC-230%20Verification%20Form%20-%20FEMA.pdf Also note Washoe County is BCEGS rated but not available so I put 5 to be able to continue. Washoe County has been evaluated by BCEGS but the ratings

are not publicly available. I put a 5 to get thru this section but rating is unavailable, but it has been rated.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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