

Responses to Comments on the Application for Clean Water Act Section 404 and 401 Permit **SOUTHEAST CONNECTOR**

SPK-2010-01058

Prepared for

Department of the Army

United States Army Corps of Engineers



Regional Transportation Commission of Washoe County, Nevada



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SOUTHEAST CONNECTOR

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Acronyms and Abbreviations

afy	acre-feet per year
BBCS	Bird and Bat Conservation Strategy
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
C.F.R.	Code of Federal Regulations
cfs	cubic feet per second
CLOMR	Conditional Letter of Map Revision
CMAR	Construction Manager At Risk
COCs	constituents of concern
CWA	Clean Water Act
CWG	Community Working Group
DO	dissolved oxygen
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
HEC-RAS	Hydrologic Engineering Center River Analysis System
HPMP	Historic Properties Management Plan
LEDPA	Least Environmentally Damaging Practicable Alternative
LID	Low Impact Development
MBTA	Migratory Bird Treaty Act
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDWR	Nevada Department of Water Resources
NV	Nevada
Permit Application	Application for Clean Water Act Section 404 and 401 Permit, SouthEast Connector
PGT	Pre-Grading Treatment and Salvage Plan
PN	Public Notice
PO4	Orthophosphate
Proposed Project	Valley Preferred

RTC	Regional Transportation Commission of Washoe County, Nevada
RTP	Regional Transportation Plan
SEC	SouthEast Connector
SWPPP	Storm Water Pollution Prevention Plan
TSS	total suspended solids
U.S. EPA	U.S. Environmental Protection Agency
UNR	University of Reno, Nevada
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VMG	Volumetric Mitigation Grading Plan
WOUS	Waters of the U.S.

Response to U.S. Army Corps of Engineers Comments on the Application for Clean Water Act Section 404 and 401 Permit, SouthEast Connector

This memorandum presents responses to U.S. Army Corps of Engineers (USACE) January 9, 2014 comments on the SouthEast Connector (SEC) roadway project's July 2013 Clean Water Act Section 404 Permit Application (Ref: Public Notice SPK-2010-01058, SEC, NV). This application was submitted to USACE on July 19, 2013. Additionally, the 401 Permit Application was submitted to the Nevada Division of Environmental Protection (NDEP) on July 19, 2013. The original comment is reiterated below, along with the associated response in italicized format. A copy of the comments received is included in Attachment 1.

Concurrent with USACE comment review and response preparation, public/community and agency comments were organized under 12 broad categories and reviewed against USACE comments to ensure that all applicable public/community and agency comments have been addressed. Based on the review of public/community and agency comments, all categories are responded to, with visual and noise/traffic and air quality concerns considered as part of the alternatives analysis attached to this submittal, and comments regarding the conservation easement and/or perpetual deed restrictions were received from the U.S. Environmental Protection Agency (U.S. EPA) and are addressed in this response. A summary table of the 12 broad categories and public/community and agency comments received against these 12 categories is included in Attachment 1.

Additionally, agency-specific responses to individual comments and discussion items received from the U.S. EPA, Nevada Division of Environmental Protection (NDEP), U.S. Fish and Wildlife Service (USFWS), and Washoe County Health District have been prepared and are transmitted to USACE concurrent with this submittal.

Item No. 1:

The delineation of waters of the U.S. is missing a previously identified wetland within the project corridor on the UNR Farm. The data forms provided in the delineation submitted to the Corps on January 28, 2011, show that vegetation but no soils or hydrology are present within this area. Please explain why this area was previously identified as a wetland?

Response: *The area shown on the December 2010 Gibson and Skordal wetland delineation maps obtained from USACE at the outset of this application process did not contain the area of potential wetlands. Upon review of the Preliminary Wetland Delineation Maps provided with the public comments, the maps clearly state "Preliminary." CH2M HILL conferred with RTC and was told that the wetland delineation was initiated using aerial photographs and all "green areas" were preliminarily marked to guide the team for further analysis. Then, upon further investigation by the Gibson and Skordal team, the areas within the UNR Farm were excluded because they did not meet the criteria for inclusion in the wetland delineation. This refined understanding is reflected in the withdrawn May 2011 application, as evidenced on Figure 2.0 (Existing Waters of the U.S.), and Figures 3.4 and 3.5.*

The areas of potential wetland shown on the preliminary maps were never designated as Jurisdictional wetlands by USACE and were not contained on the approved Jurisdictional Delineation Maps. These Jurisdictional Delineation Maps, provided as Appendix G of the July 2013 Permit Application, and dated December 2010 and revised March 2011, were discussed with USACE at the outset of the permit development and it was deemed at that time to be the appropriate maps of Jurisdictional Waters of the U.S. for the total project area. Sheet 4: South UNR Farms Reach presents data points 9, 10, 11 that correspond to the area in question and indicate no jurisdictional wetlands in this area.

Item No. 2:

Please provide an enlarged figure of the Alexander Lake Road crossing.

Response: *An enlarged figure of the Alexander Lake Road crossing is included as Attachment 2.*

Item No. 3:

Please provide one figure (not separated by a page break) of the Mira Loma crossing.

Response: *An enlarged figure (not separated by match lines) of the Mira Loma crossing is included as Attachment 2.*

Item No. 4:

Where will the excavated material from the streambank be disposed of?

Response: *Materials excavated from the stream bank are not being disposed, but rather reused during construction. Topsoil that is determined to be suitable for direct reuse will be used as topsoil throughout the project area. Subsurface soil that is determined to be suitable for direct reuse will be used in the roadway sections or elsewhere based on its geophysical properties and proximity to the areas excavated.*

Mercury-containing soil excavated from the stream bank and elsewhere, as determined by the soil sampling, laboratory analysis, and Surfer™ modeling results, has been categorized as Category 1 (mercury levels from 10 milligrams per kilogram [mg/kg] to <50 mg/kg) and Category 2 (mercury levels >50 mg/kg). Category 1 soil will be placed within the roadway embankment beneath the pavement surface between South Meadows Parkway and Pembroke Drive. For Category 2 soil, placement will occur within the roadway embankment beneath the pavement surface between South Meadows Parkway and Mira Loma Drive and at elevations above the 117-year flood elevation level.

Item No. 5:

Please provide clarification of whether there will be rip rap or armoring associated with the streambank stabilization.

Response: *Yes, riprap will be used to armor the outfalls of bioswales, protect culvert inlets, and provide scour protection for bridge piers and abutments along Steamboat Creek, Boynton Slough, and Yori Drain per the project’s hydraulic modeling and scour analysis. The location and specifications for riprap size and placement are detailed in the 90% Design Submittal, with typical cross sections assembled in response to this item and included in Attachment 2.*

Item No. 6:

To assist the Corps in assessing the indirect impacts to wetlands associated with the proposed project, please identify the acreage of waters of the U.S. within a 300-foot buffer on both sides of the roadway.

Response: *Waters of the U.S. were calculated within the requested roadway buffer at two offsets: 300 feet from the roadway centerline and 300 feet from the roadway toe of slope. Wetland and open water within the 300-foot buffer were calculated as follows:*

Roadway Offset	Wetland	Open Water	Total
<i>300 feet Offset from Centerline</i>	<i>31.5 acres</i>	<i>10.3 acres</i>	<i>41.8 acres</i>
<i>300 feet Offset from Toe of Slope</i>	<i>44.3 acres</i>	<i>15.2 acres</i>	<i>59.6 acres</i>

Item No. 7:

To assist the Corps in assessing the indirect impacts to the downstream environment associated with the proposed project, please provide a discussion of secondary down river impacts from movement of contaminated sediments from within the project area on fish species and habitat along the Truckee River corridor.

Response: *Storm water flows from the SEC roadway will be intercepted by bioswales, designed in accordance with the Truckee Meadows Low Impact Development (LID) Handbook (City of Reno, 2007), to retain 100 percent of the roadway runoff to preproject run-off conditions, and promote sedimentation and water quality improvements prior to discharging to the Steamboat Creek floodplain where additional water quality improvements will occur through sedimentation, biological activity, and infiltration. Thus, there should be no secondary down river impacts from the roadway portion of the project area on fish species or habitat along the Truckee River corridor once construction is complete.*

By laying back the stream bank and removing impacted soil from the floodplain of Steamboat Creek, the SEC project would restore, to the extent practicable, a "natural" floodplain within the project boundary limits. This configuration will include localized depressions to collect water during high precipitation events and overbank conditions, which are expected to behave similar to Great Basin-style riparian corridors.

The floodplain/riparian corridor design maximizes the seasonally dry (facultative) wetland environments, while isolating much of the permanently wet (obligate) wetland environments from future loading of mercury from Steamboat Creek sediments via design elevation and surface water sourced from the Yori Drain.

Thus, the project is expected to improve down river water quality by enhancing wetlands function along Steamboat Creek, generating a net decrease in particulate mercury load that will act to decrease future mercury methylation at downstream locations once construction is complete.

As indicated in the 404 Permit Application Appendix F (Ecological Exposure Assessment), Steamboat Creek water does not exceed U.S. EPA water quality guidelines or criteria for mercury, although soil and sediment exceed ecological risk soil screening levels in some locations. Some of the fish tissue mercury values currently show evidence of concentrations in exceedance of fish consumption guidelines, indicating the potential for long-term bioaccumulation and risk from mercury in Steamboat Creek and/or adjoining waters.

Any potential for generating construction-related and operational impacts related to ecological exposure from mercury and other constituents of concern will be avoided through standard best management practices (BMPs) and the implementation of the Storm Water Pollution Prevention Plan (SWPPP).

Long-term, operational impacts are expected to be neutral or positive with respect to mercury exposure and risk to resident biota. In addition to the removal of up to 22,000 pounds of mercury from the environment and likely future erosion into Steamboat Creek or exposure to terrestrial receptors, the new wetlands and riparian habitat within the enhanced floodplain will reduce in-channel erosion and improve sediment transport conditions. The project will monitor and enforce BMPs and is thus not expected to generate secondary down river impacts during construction.

As discussed previously, the potential for mercury loading to Steamboat Creek from in-channel and upstream sources remain and are outside of the SEC project boundary. Although episodes of overbank flooding during storm events may continue to mobilize mercury to Steamboat Creek from upstream (out of project area) sources, overall concentrations of mercury in Steamboat Creek and in the floodplain areas are expected to be substantially less than what is currently observed because the primary source of mercury within the project reach will be removed and isolated beneath the roadway surface.

The remediation of the mercury impacted soil from the corridor eliminates the potential for mercury inputs to the system from the project reach of the Steamboat Creek corridor. Appendix K, Soil Management Plan of the Permit Application presents a discussion of the cementation of the mercury soils into a low permeability layer encapsulated within the roadbed.

Item No. 8:

To assist the corps in consultation with the U.S. Fish and Wildlife Service (USFWS), please revise Section 5.3, Effects from Interrelated and Interdependent Actions, of your Biological Assessment, to provide an evaluation of the cumulative effects of Truckee River Flood Project and Phase 1 of the SE Connector in combination with Phase 2 of the SE Connector on listed species.

Response:

The only residual potentially significant cumulative impact of the SEC (inclusive of Phase 1) on state or federally listed threatened or endangered species is associated with temporal spikes in turbidity resulting from project construction activities. Current management plans to address sediment discharge risks associated with the SEC project construction are developed and indicate the effect is unlikely to impact the aquatic ecosystem, listed species, and downriver environments and that the potential can be mitigated through appropriate environmental management actions.

The Truckee Meadows Flood Project has assessed the potential cumulative impacts of the USACE proposed flood control project. The environmental effects discussed in the Draft Environmental Impact Statement (EIS) states that "fish and aquatic invertebrate assemblages could be indirectly affected by increased erosion, sedimentation, and water turbidity during construction within the channel. Excessive sediment quantities deposited in stream channels can degrade aquatic habitat. Increased turbidity could result in increased fish mortality, reduced feeding opportunities, and could cause fish to avoid biologically important habitat. To reduce these construction-related effects to a less than significant level, erosion control and spill prevention plans would be developed and BMPs implemented, as discussed in section 5.4 Water Quality." The cumulative effects of the project are likely to be minimal due to the fact that the primary risk for environmental impacts is during construction and those impacts can be avoided with properly employed mitigation plans.

The SEC construction project will be completed prior to the start of the USACE flood control project. Therefore, the highest risk of adverse impacts occurs during construction. The construction periods for the two projects do not overlap therefore the individual potential adverse risk do not coincide. The cumulative impact is therefore minimal and not likely to pose a significant risk to the aquatic ecosystem of the Truckee River or the threatened and endangered species residing within the system.

Item No. 9:

Please provide a copy of the plan developed at the advisement of USFWS to assist in our coordination regarding the Migratory Bird Treaty Act and the Bald Eagle and Golden Eagle Protection Act.

Response: *In response to the item and request of the USFWS, a draft Avian and Bat Protection Plan is being prepared as an attachment to the USFWS in response to their comment. A copy of the USFWS comment responses and the draft Avian and Bat Protection Plan is included with these responses as Attachment 3.*

Item No. 10:

Please provide a Historic Properties Management Plan (HPMP) to assist in the development of a Programmatic Agreement.

Response: *A draft HPMP will be completed and submitted no later than March 14, 2014.*

Item No. 11:

With the location of mitigation next to roadway within the right of way, is there a potential for road expansion into this area? If so, locating the mitigation site in this location would not be desirable. How will the adjacent wetland mitigation site(s) be protected from future impacts in the long term?

Response: *All areas shown as mitigation for impacts associated with the construction of the SEC are located east of the SEC roadway, between the roadway and Steamboat Creek and the Virginia Range to the east. This land will be protected in-perpetuity as open space through a dedicated conservation easement and/or perpetual deed restrictions, and will also remain as open space in conformance with the flood control approvals received from the City of Reno through their Special Use Permit process.*

Should future development occur along the SEC, which is not envisioned as part of this project, the only lands available for development fall west of the SEC right-of-way. Future development of these lands will not encroach into areas designed as mitigation wetlands.

Item No. 12:

For the mitigation figures, please provide a grading and planting plan.

Response: *Included with this memorandum as Attachment 4, please find parts of RTC's 90% Design Submittal Volume 2 of 2 containing the requested (e.g., grading and planting) plans and details. Included in this attachment are the design plans for the Volumetric Mitigation Grading Plan (#VMG-1 to #VMG-28), Pre-Grading Treatment and Salvage Plan (#PGT-1 to #PGT-6), Revegetation Plan (#REV-1 to #REV-12), and Planting Plan (#L-66 to #L-76).*

Also contained within Volume 2 of 2, but not included in Attachment 4, are Soil Management (mercury isoconcentration maps), Landscape Layout Plan, Irrigation Plan, Landscape Bridge Plans, Landscape Structure Elevations, Lighting Plans, Utility Plans, Bridge Plans, Retaining Wall Plans and Sound Wall Plans.

Item No. 13:

To assist in the Corps' review of cumulative effects, please provide an analysis of cumulative effects of the entire project, including Phase 1, on flooding. The modeling provided to the Corps did not include Phase 1 of the SouthEast Connector.

Response: *CH2M HILL forwarded the preliminary proposed HEC-RAS model that included the design features of the SEC Phase 1 and the 50% design of Phase 2 to USACE on July 16, 2013. All flood management analyses conducted have included the geometry for both the Phase 1 and Phase 2 SEC projects. Scott Stonestreet, USACE, incorporated the edited cross sections and storage area volume rating curves that represent the SEC design features into the USACE with-project (Floodplain Terrace Plan) Truckee Meadows HEC-RAS model in order to examine the cumulative impacts of both the USACE preferred Truckee Meadows Flood Project and the SEC roadway. Scott distributed a Memorandum for Record describing the methods and results of the cumulative impact analysis on October 9, 2013.*

The impacts of both projects to the maximum water surface resulting from the statistical 100-year event on the Truckee River used in the USACE analysis is close to the results of the USACE Floodplain Terrace Plan project by itself. According to the analysis, the construction of the SEC project would raise the maximum 100-year water surface elevation slightly in the UNR Farm region above the USACE flood project alone, and lower the maximum water surface elevation east of the SEC embankment and in portions of the Rosewood Lakes subdivision. In summary, the water level is decreased near homes and businesses. The results of the analysis as presented in the October Memorandum were not incorporated into the final draft of the EIS for the Truckee Meadows Flood Control Project Nevada General Reevaluation Report due to timing and funding constraints within USACE. However, as explained in an email from Scott Stonestreet to CH2M HILL on December 17, 2013, the Memorandum for Record will be a

reference to the final EIS. The USACE Cumulative Impact Memorandum from Scott Stonestreet and associated emails communications are included as Attachment 5.

Item No. 14:

Please provide modeling of Steamboat Creek and/or Boynton Slough flood events without a Truckee River out of bank flood event.

Response: *The hydraulic analysis for the FEMA CLOMR for the SEC project is being completed using a 100-year flow on the Steamboat Creek with a low tailwater elevation in the Truckee River (in-channel) to ensure that the project does not negatively impact the flood risk along the Steamboat Creek with high flows in the Steamboat Creek and in-channel flows in the Truckee River. Preliminary results from the FEMA CLOMR modeling show no flood impact from the SEC project during this condition.*

The analysis used in the design of the scour protection up and downstream of the bridges examined the worst-case scenario in the design flood event used for the hydraulic analysis. In the 117-year design event HEC-RAS model used for the flooding analysis, the hydrograph input on the Steamboat Creek has a peak prior to the maximum water surface elevation of the backwater from the Truckee River. The velocities along the Steamboat Creek are highest during the peak on the Steamboat Creek with a lower backwater condition. However, scour potential is also proportional to depth of flow, which is highest along Steamboat Creek from the confluence of the Truckee River to upstream of Mira Loma during the peak on the Truckee River. Therefore, the worst case conditions of velocity and depth were used to design the scour protection. For the Yori Drain and Rosewood Lakes bridges, scour analysis was done assuming high flow in the up and downstream channel sections since there is very little flow velocity beneath the bridges during flood events on either the Truckee River or Steamboat Creek. Scour analysis was completed with using Federal Highway Administration Hydraulic Engineering Circular 18 (Evaluation Scour at Bridges, Fifth Edition) per direction by the Truckee Meadows Drainage Manual of April 30, 2009.

Item No. 15:

Please provide a discussion of how it is appropriate to dispose of contaminated fill within a raised roadbed in a floodway and how erosion of the roadbed to the contaminated material will be prevented.

Response: *The approach to sequester mercury-containing materials beneath the roadway is more protective than U.S. EPA's clean-up activities at the Carson River Mercury Site, which is part of the Comstock Mining District and the source of mercury-containing soil throughout the Steamboat Creek system. At U.S. EPA's Carson River Mercury Site, residential properties containing >80 mg/kg total mercury in surface soil were 1) excavated to a depth of 2 feet and capped/covered with clean, imported soil; or 2) 2 feet of clean, imported soil was placed over mercury-containing soil. Both approaches were determined to reduce the risk to residential receptors to acceptable levels. A similar approach was taken for U.S. EPA's Sulfur Bank Mercury Mine Site near Clear Lake in Lake County, California.*

At the project site, an appropriate standard of care is being taken and soil containing 10 mg/kg or more total mercury that requires excavation will be placed within the embankment beneath and inside the edge of the pavement surface. Soil containing relatively higher mercury (e.g., 50 mg/kg or more) will be placed above the 117-year flood elevation between South Meadows Parkway and Mira Loma Drive. Median drains will be placed throughout the roadway corridor to prevent storm water infiltration. An 18-inch-thick cement-lime-treated lens will be placed immediately beneath the roadway's aggregate base where the relatively higher mercury-containing soil is placed to prevent erosion and leachability of these materials to the environment. The project will result in the permanent removal of >8,500 kg (>18,000 pounds) of mercury from the environment of the Steamboat Creek system, to be sequestered in the embankment. Simplified diagrams that illustrate the geometry of soil placement beneath and inside the edge of the pavement surface above and below the 117-year flood elevations are shown in Figure 1.

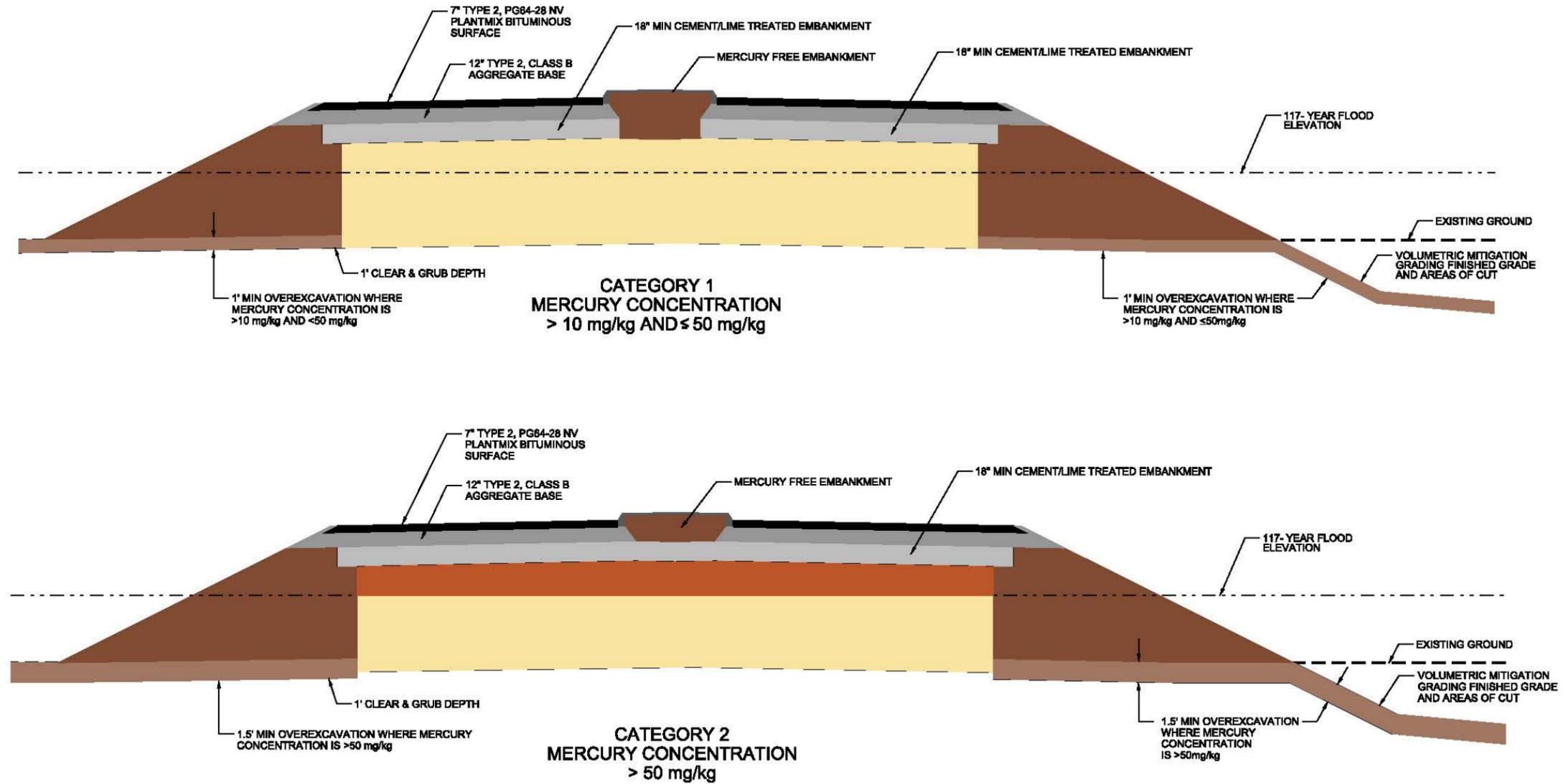


FIGURE 1
Geometry of Soil Placement

The stability of the roadbed has been analyzed by the geotechnical and hydraulic design teams. In areas of high velocity, appropriate riprap placement is provided to armor against erosion as mandated in the civil design standards of the project. The cement-lime encapsulation of material has been engineered to reduce the permeability of the material to eliminate the potential for saturation and transport of material from the soil-cement-lime matrix. In addition, the roadway embankment is capped with 2 feet of clean fill material that is vegetated to further reduce the likelihood for erosion. The standard for roadway maintenance within the city of Reno and Sparks is to address areas of erosion for the protection of the roadway integrity. This same practice will also identify and address areas of erosion should they occur before the erosion would ever penetrate the portion of the embankment that contains mercury soils.

Item No. 16:

The Alternatives Analysis needs more detail to include a discussion of the following alternatives: Foothill corridor, Mass transit alternative, Mill Street Extension alternative, McCarran Street widening, Sparks Industrial Corridor where land has been donated, the previously proposed project alignment and a bridge or causeway through the areas of proposed waters impacts rather than fill. The Alternatives Analysis is required to evaluate "practicable alternatives" that would have less impact on the aquatic ecosystem. Practicable means "available and capable of being done when considering cost, logistics and existing technology in light of the overall project purpose". More information follows (not included here for brevity).

Response: *A detailed discussion and analysis, using a Decision Support Model of the alternatives described by USACE Item No. 16, including presenting the Foothill, Mass Transit, Mill Street Extension, McCarran Widening, Sparks Industrial, and Valley Corridor alternatives (Valley 2010, current corridor, and Valley Viaduct [e.g., bridge/causeway] corridor) was conducted, the results of which were assembled as a stand-alone document and transmitted to USACE under separate cover. The analysis concludes that the Valley Preferred Alternative (Proposed Project) is the LEDPA because it achieves the project's Purpose and Need in a practicable manner that can be demonstrated to be the least environmentally damaging when evaluated against the impacts to the natural and human environment. This assessment is based on the cumulative evidence that clearly demonstrates this alternative presents the least overall environmental harm when considering all aquatics sites and other impacts including those impacts to the human environment.*

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