

Response to U.S. EPA Wetlands Office Comments on the Application for Clean Water Act Section 404 and 401 Permit, SouthEast Connector

This memorandum presents responses to U.S. Environmental Protection Agency's (U.S. EPA) October 28, 2013 comments on the SouthEast Connector (SEC) roadway project's July 2013 Clean Water Act (CWA) Section 404 Application (Ref: Public Notice [PN] SPK-2010-01058, SouthEast Connector, NV). This application was submitted to the U.S. Army Corps of Engineers (USACE) 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.

Item No. 1:

Thank you for the opportunity to comment on the subject PN dated August 23, 2013, and the complete permit application posted on the SouthEastConnector.com website. Previously we have provided formal comments to the PN dated June 14, 2011 for a modified version of the same project. The current PN proposes a 4.5 mile 6 lane road that with permanent fill of 11.23 acres of jurisdictional wetlands and other waters of the US (waters), 13.51 acres of indirect impacts to waters, and over two miles of modification to Steamboat Creek. Based on the available information, it appears the applicant has not demonstrated compliance with the restrictions on discharges per the Federal Guidelines (Guidelines) promulgated under section 404(b)(1) of the Clean Water Act (CWA) at 40 CFR Part 230. Specifically, the applicant has not: (1) demonstrated that the proposed project is the least environmentally damaging practicable alternative (LEDPA); or (2) provided adequate details regarding avoidance measures and the proposed compensatory mitigation. EPA objects to the project as proposed and recommends denial of the permit unless these issues are resolved.

***Response:** Section 404 of the CWA authorizes USACE to issue permits for the discharge of dredged or fill materials into waters of the U.S. (WOUS), including wetlands (33 United States Code 1344). The U.S. EPA Section 404(b)(1) Guidelines (40 Code of Federal Regulations [C.F.R.] 230 et seq.) are the substantive environmental criteria used by USACE to evaluate permit applications. Under these guidelines, an analysis of practicable alternatives is the primary tool used to determine whether a proposed discharge can be authorized.*

The Section 404(b)(1) Guidelines prohibit discharges of dredged or fill material into a WOUS if a practicable alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem, including wetlands, as long as the alternative does not have other significant adverse environmental impacts [40 C.F.R. Part 230(a)]. The Section 404(b)(1) Guidelines also suggest a sequential approach to project planning that considers mitigation measures only after the project proponent shows no practicable alternatives are available to achieve the overall project purpose with less environmental impacts. Once it is determined that no practicable alternatives are available, the guidelines require 1) that appropriate and practicable steps be taken to minimize potential adverse effects on the aquatic ecosystem [40 C.F.R. Part 230.10(d)]; and 2) USACE to compile findings related to the environmental impacts of discharge of dredged or fill material, and that USACE must make findings concerning the anticipated changes caused by the discharge to the physical and chemical substrate and to the biological and human use characteristics of the discharge site.

The Section 404(b)(1) Guidelines also indicate that the level of effort associated with the preparation of the alternatives analysis be commensurate with the significance of the impact and/or discharge activity

[40 C.F.R. Part 230.6(b)]. The 404(b)(1) alternatives analysis, which was transmitted to USACE under a separate cover, identified impacts and benefits for each of the alternatives, with many of the alternative impacts offset or mitigated to a level that is less than significant. The analysis of project alternatives presents the Least Environmentally Damaging Practicable Alternative (LEDPA) available to meet the Purpose and Need of the project in the most environmentally, socially, and financially appropriate manner and shows that discharges into WOUS associated with all of the alternatives, including the proposed project, are relatively small and when considered in light of the level of ecological impairment present in the Steamboat Creek watershed, and that all of the alternatives would result in a similar and insignificant discharge activity.

Based on the results of the alternatives analysis, the Valley Preferred (Proposed Project) is the LEDPA. This finding is based on evidence that clearly demonstrates the Proposed Project presents the least overall environmental harm when considering all aquatic and other impacts, including those impacts to the human environment. The Proposed Project is a nonwater-dependent project; therefore, the nonwater environmental impacts associated with other alternatives outweigh and overcome the presumption that any other alternative that demonstrates less aquatic impacts that also meets the Purpose and Need and is determined to be practicable is the LEDPA.

Compensatory mitigation, including restoration (e.g., reestablishment of temporal wetland impacts and rehabilitation via intensive noxious weed management programs), establishment (e.g., creation of new wetlands where they did not previously exist), and preservation (e.g., conservation easement and/or perpetual dead restrictions) are included and are further discussed in the response to U.S. EPA Items Nos. 5 and 6.

Item No. 2:

Because the project purpose, linear transportation, is non-water dependent, the regulations presume there are practicable alternatives that will avoid fill in special aquatic sites such as wetlands. An updated AA dated Sept. 18, 2013 was received by EPA on Sept. 23 and reviewed. We also reviewed the previous AA for the project submitted in December 2011, along with a 2009 alternative alignment analysis in the Final Plan Line Study. We recommend that the applicant provide additional information that demonstrates all practicable avoidance and minimization of direct and indirect impacts and gives full justification for why the chosen alternative is the LEDPA. To help guide those revisions, we offer the following comments and recommendations.

- (1) The 2013 AA contains a broad analysis of off-site alternatives and concludes that aside from the current proposed alternative, the Foothill Route Alternative is practicable in cost and meets the project purpose. This alternative would not affect waters of the US and would have other environmental impacts comparable to the current proposal. However this alternative is eliminated because it would require the taking of 26 existing residential properties, and would result in noise and aesthetic impacts. The taking of properties does not necessarily render this alternative impracticable, and the applicant must further demonstrate why the chosen alternative is the LEDPA.
- (2) A mass transit alternative also needs to be included in the AA, with consideration of future growth and projected development, which is stated to increase in Washoe County from about 420,000 residents to 550,000 by the year 2035.

Response: *As indicated in the response to U.S. EPA Item No. 1, additional information demonstrating why the chosen alternative is the LEDPA was transmitted to USACE under a separate cover. As indicated, the Foothill Corridor Alternative has minor impacts on WOUS, with direct impacts to wetland and WOUS environments of 1.5 acres, but does present significant effects on the community, with direct impacts*

1) to 92 homes, 2) on 36 acres of designated parks and open space, and 3) to 68 acres of native upland vegetation. In addition to the social impacts related to noise and air quality, a roadway through the neighborhood bifurcates the community and presents significant visual impacts to the area's viewshed. The northern portion of the Foothill corridor impacts Steamboat Creek and the historic Emigrant Trail, a significant cultural site.

The alternatives evaluated as part of the 404(b)(1) alternatives analysis included 1) No-Action, 2) Valley Corridor (Valley Preferred, Valley 2010, Valley Viaduct), 3) Foothill Corridor, 4) McCarran Widening, 5) Mill Street Extension, 6) Mass Transit (discussed in detail in Appendix D of the Alternatives Analysis), and 7) Sparks Industrial Corridor.

Item No. 3:

The alternative alignment analysis in the 2009 Final Plan Line Study evaluates several alignments within the same corridor encompassing Steamboat Creek. The preferred alignment was a composite of alignments generated by software designed to minimize impacts to waters. The current proposed alignment differs from the alignment chosen in this 2009 Study, and results in an impact to over 5 additional acres of wetlands as compared to the original alignment. The 2013 AA explains that the change was made in order to avoid direct impacts to Steamboat Creek, which would now be left in place. An additional alignment farther west of the creek was also examined but was not considered due to its impacts to a proposed development (Butler Ranch Planned Unit Development). Full justification for why this alignment is the LEDPA is needed. We suggest additional exploration of avoidance and minimization measures for this portion of the alignment, including further studying the far western alignment, and options such as building a causeway above the impacted wetlands or a bridge over the creek.

Response:

As indicated in the response to U.S. EPA Item Nos. 1 and 2, nine alternatives (No-Action, Valley Corridor [Valley Preferred, Valley 2010, Valley Viaduct], Foothill, McCarran Widening, Mill Street Extension, Mass Transit, and Sparks Industrial) were evaluated further to demonstrate why the chosen alternative is the LEDPA.

Item No. 4:

Further details are needed to demonstrate avoidance and impact minimization along the entire corridor, such as:

- Details and diagrams of the proposed spans, culverts and wildlife migration paths, and an ecological analysis of the most suitable locations and sizes of wildlife migration paths.
- Detailed information on both the nature, location, and the impacts of the proposed Steamboat Creek bank stabilization.
- Analysis of any impacts to existing wetlands caused by the proposed volumetric mitigation wetland creation.

Response: Details of the proposed spans and culverts are described in the Grading Plan section of RTC's 90% Design Submittal, portions of which are included as Attachment 2. These spans and culverts were designed and located to span drainages, mitigate flood risk, and to equalize flood flows on either side of the planned roadway. Because the roadway is aligned on the west side of Steamboat Creek and was designed to not isolate wildlife from their habitat nor preclude wildlife from access to water within Steamboat Creek (e.g., keeping both the Virginia Range and Steamboat Creek on the east side of the roadway), impacts are minimized.

The project proposes to place wildlife fencing along the roadway to minimize wildlife-vehicle incursions. The area does not contain any migratory pathways for wildlife, nor did the application solicit comments from the U.S. Fish and Wildlife Service in this regard. The mule deer herd that frequents the University of Nevada, Reno farm agricultural fields resides in the Virginia Range and downstream of the Truckee Meadows along the river (general communication with Nevada Division of Wildlife during CWG meeting). The wildlife fencing is provided to direct deer to the wildlife undercrossing that is located at Yori Drain. In addition to using the 1,440-foot-long Truckee River Bridge, the project proposes four bridges that will provide this same function along the roadway. Areas to the west of the proposed roadway are congested and pose threats to wildlife. The area west of the proposed roadway and south of the Truckee River corridor does not have a resident deer herd that migrates to the Virginia Range.

As indicated in Section 6.1.1 of the Mitigation and Monitoring Plan (Permit Application, Appendix C), stabilization involving grading to lay back creek banks and receive out of bank flows an average of 2 to 4 weeks per year when the creek reaches 30 cubic feet per second (cfs) and placement of salvaged plant material from the North Butler Ranch area, will occur at multiple locations. Additional analysis and grading work completed since the 50% Design has adjusted the design so that overbank flow will occur when the Steamboat Creek exceeds approximately 15 cfs. The actual elevation of the bank full/overbank is dependent on the position along the creek. Typically, the ordinary high water mark is 3 to 8 inches above the base flow surface water elevation and the Proposed Project is designed to lower the top of bank (or finished elevation of the floodplain) at locations adjacent to the creek in the final project configuration. Proposed modification to the Steamboat Creek floodplain west of the creek involves modification of the grading to an elevation just above Steamboat Creek's ordinary high water line. This was done to minimize the direct impact to the creek, while establishing connectivity of the incised creek system with its floodplain. The 90% Design Submittal includes details for modification of the stream channel in several areas as mandated by the roadway design and open channel hydraulics.

Impacts to wetlands caused by the volumetric mitigation have been included in the project details. This occurs only in the North Butler Ranch as temporary impacts. The plan proposes to reestablish these wetlands in the same location at a lower elevation to enhance connectivity with the groundwater. Currently, these wetlands only exist due to over-irrigation of an agricultural pasture and will be lost as the water rights upstream are modified. By connecting these wetland areas with the available groundwater and increasing the frequency of overbank events of Steamboat Creek, the project will establish the hydrology to sustain natural wetlands systems within the Steamboat Creek Floodplain.

Item No. 5:

Indirect impacts are not equivalent to temporary impacts, as currently stated on p. 9, Section 4.1 of the AA. An analysis and measure of indirect impacts is needed, with details on how they were measured, and with corresponding avoidance, minimization, and mitigation of these impacts. A significant and reasonably foreseeable indirect impact that must be considered is an increase in methyl mercury in the mitigation wetlands as well as in downstream waters such as the Truckee River and Pyramid Lake. Although the applicant asserts that this is not expected to occur, measurable criteria for ensuring that it does not occur are needed. This will be further explored below in the context of the Mitigation and Monitoring Plan.

Response: *Indirect wetland impacts are typically disturbances that reduce or eliminate wetland function (e.g., altered hydraulic conditions, shading) without directly impacting the wetland, while temporary impacts typically occur during project construction (e.g., vegetation reduction, road construction, fencing) and are restored after construction has been completed. The Permit Application describes indirect and temporary impacts interchangeably, and the project will incur both temporary and permanent/direct impacts. Direct and temporary impacts are shown in the Mitigation and Monitoring*

Plan (Figures 5-1a through 5-1d), which have been updated to clearly illustrate the location of direct/permanent and temporary wetland impacts, volumetric mitigation areas and compensatory mitigation (restoration and establishment) and are included in Attachment 3. Analyses that were completed for the SEC project did not identify measureable indirect impacts, although 147 acres of enhanced/new wetland function is anticipated to result from changes to floodplain hydrology as a result of floodplain volumetric mitigation activities on surrounding floodplain areas.

*It is unclear how U.S. EPA concludes that an increase in methylmercury formulation represents a significant and reasonably foreseeable impact. Arsenic, boron, iron, and zinc have been detected in Steamboat Creek at concentrations exceeding Nevada's water quality standards, with concentrations of mercury and total phosphorous detected below their respective water quality standards. These conditions are expected to improve post-construction since the source(s) of elevated (e.g., >10 milligrams per kilogram [mg/kg]) mercury between the roadway and Steamboat Creek, which reflect conditions needed to contribute increased methylmercury, are being removed. The project will be **removing**, as indicated in the response to Item No. 8, soil within the project's footprint containing ≥ 10 mg/kg of mercury to 1 foot beneath the finished grade (where present) and will be managed by placing this material beneath the roadway pavement. This work will remove virtually all soil containing ≥ 10 mg/kg mercury between the roadway corridor and Steamboat Creek, as shown on the maps in Attachment 4, thereby limiting the potential for mercury mobilization from changing water levels in the stream channel which have the potential to mobilize sediment from the stream bank. Stream water at these locations are not expected nor designed to pond, or become stagnant, and the stream is expected to remain under aerobic conditions, minimizing the potential for methylmercury to form.*

The proposed wetlands to be established within the floodplain accessible to Steamboat Creek are facultative wetlands with very limited seasonal pooling of surface water. The Yori Drain obligate wetlands, which would produce anaerobic conditions suitable for the conversion of elemental mercury to methylmercury, are sourced from Yori Drain from the west and located in an area that is not impacted by historic mercury contamination. These obligate wetlands are set at an elevation (higher) that will prohibit frequent flooding from Steamboat Creek and are designed with a separate water source (i.e., the Yori Drain) which has been tested and does not contain elemental mercury in its sediment, nor methylmercury in the water body.

Compensatory mitigation strategies, including restoration (e.g., reestablishment of temporal wetland impacts and rehabilitation via intensive noxious weed management programs), establishment (e.g., creation of new wetlands where they did not previously exist), and preservation (e.g., conservation easement and/or perpetual deed restrictions) are included and will be occurring/undertaken pursuant to the 404 permit, once received.

Item No. 6:

EPA has several concerns regarding the Mitigation and Monitoring Plan (Plan). The Plan proposes to construct 19.13 acres of new mitigation wetlands and 2.38 acres of open water to compensate for the permanent loss of 11.23 acres of jurisdictional wetlands and WOUS from the system. There are several impacts that are not mitigated and need to be compensated for appropriately:

- The Plan shows that there will also be 13.51 acres of indirect impacts, which are currently not mitigated. These impacts are shown in Table 5-2, but further explanation of how these impacts were calculated, including maps showing the areas of indirect effects, is needed. As stated above, it appears that the indirect impacts calculated are equivalent to the temporary impacts.

- There will be 13.52 acres of temporary impacts, and although those areas will be restored, the temporal loss of wetland function and habitat should also be included in the calculation of compensatory mitigation.
- The impacts of 6,830 linear feet of bank stabilization to Steamboat Creek are also not included in the compensatory mitigation. This stabilization is categorized as a water quality improvement, however an analysis of all direct and indirect impacts resulting from this work, and how they will be avoided, minimized, and mitigated, is needed.

Response: *As indicated in the response to Item No. 5, the permit application describes indirect and temporary impacts interchangeably, and the project is expected to incur both temporary and permanent/direct impacts. As discussed in the permit application, mitigation ratios ranging from 1.5:1 to 3:1 are occurring for all direct impacts to jurisdictional wetlands and WOUS and will develop mitigation areas at two general locations 1) the south end of North Butler Ranch along Steamboat Creek (agricultural mitigation area); and 2) near the Yori Drain, with a wetlands enhancement area that extends from Pembroke Drive to Mira Loma Drive. Analyses that were completed for the SEC project did not identify measureable indirect impacts, although 147 acres of enhanced/new wetland function is anticipated to result from floodplain volumetric mitigation activities on surrounding wetlands. The majority of the temporary impacts is associated with possible degradation of wetlands areas during construction but will be restored in-place as part of the revegetation plan. There will be no net loss of these wetlands and the impacts are temporary during the construction period. Maps showing direct/permanent and temporary impacts and mitigation areas, updated from Mitigation and Monitoring Plan Figures 5-1a through 5-1d (Appendix C, Permit Application) are included in Attachment 3.*

Stabilization activities along the 6,830 linear feet of stream bank will occur above the ordinary high water mark to restore this unstable segment of the channel, which has become steeply incised and contributing sediment to Steamboat Creek, and will be compliant with all Best Management Plans. Areas of the stream bank stabilization work that are also documented in the Jurisdictional Delineation Map (Gibson and Skordal, December 2010) are accounted for in the direct/permanent and temporary impact numbers provided. Due to the incised nature of the stream, there is a very limited area of jurisdictional wetlands associated with Steamboat Creek. Compensatory mitigation is being provided by the removal of a substantial amount of the invasive whitetop vegetation and replanting using native vegetation throughout the stabilization area. Maps that help to illustrate the location, type and extent of mitigation activities occurring in this area are provided in Attachment 4.

Item No. 7:

The Plan states that in addition to the required 21.51 mitigated acres for jurisdictional waters, an *additional* 146.94 acres of wetlands will be created as a result of flood mitigation volumetric requirements. Table 5-3 of the Plan breaks up types and locations of the proposed mitigation for jurisdictional waters, but the location and types are not shown in the included figures. Only outlines of mitigation "grading" areas are shown on Figures 6-1a through d, with no labeling of acreage or type of mitigation. Because acreage is not shown, it is unclear whether all of the areas shown are mitigation for the jurisdictional water impacts, or whether some of the areas are the additional mitigation set aside for the volumetric mitigation. Figures 2A through D in the Biological Assessment of the application, for example, label the mitigation areas in the North and South Butler ranch only as volumetric mitigation areas. The legends in the Mitigation Plan Figures 6-1a through d are also lacking any explanation of the significance of the pink outlines and green, purple and orange fill. More details about the Butler Ranch mitigation areas and the wetland enhancement area from Pembroke to Mira Loma are especially needed, including clarification of the water source for these wetlands. It would be helpful to see the

proposed mitigation areas for jurisdictional waters in conjunction with the volumetric mitigation areas in order to be able to fully evaluate the functional benefits and potential success of these restored or enhanced wetlands.

Response: *There are multiple types of “mitigation” within the project and the 100% Design Submittal will be clarified to identify those areas that 1) provide for flood volume mitigation (local regulations with no connection to the 404 permit), and 2) provide wetland mitigation areas proposed in the areas of the Yori Drain and North Butler Ranch. The additional acreage of floodplain restoration (146.94 acres) is not associated with any wetland mitigation. This land is currently nonjurisdictional, but will be revegetated with native wetland plants once the volumetric work has been accomplished to provide suitable hydrology for a facultative wetlands floodplain. As indicated in the response to Item No. 6, the Permit Application describes mitigation areas at two general locations 1) the south end of North Butler Ranch along Steamboat Creek (agricultural mitigation area); and 2) near the Yori Drain, with a wetlands enhancement area that extends from Pembroke Drive to Mira Loma Drive. Maps showing mitigation areas in the Mitigation and Monitoring Plan (e.g., Figures 6-1a through 6-1d) do not clearly describe what is presented on these figures; we have included updated maps containing additional detail (e.g., proposed mitigation areas for jurisdictional waters and floodplain volumetric mitigation areas) in Attachment 4. Appendix G of the Permit Application presents the Jurisdictional Delineation Maps provided to the project team by USACE.*

Item No. 8:

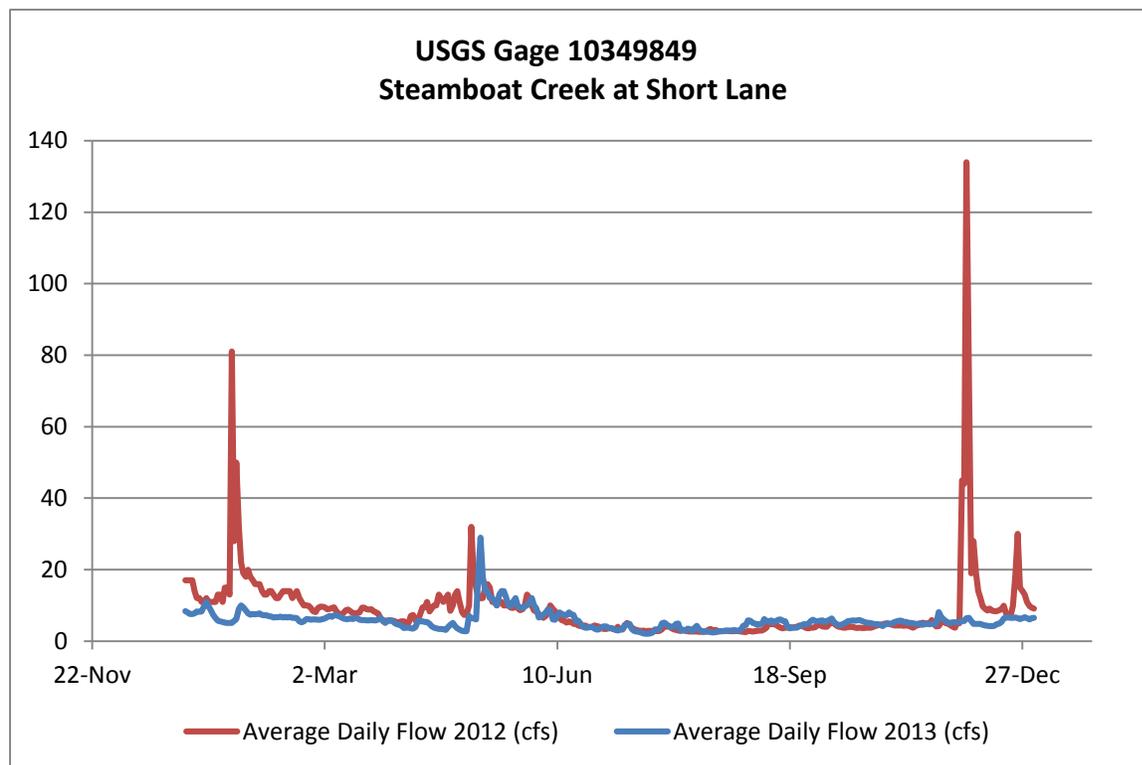
EPA appreciates the many efforts the applicant has taken to contain contaminants through the project design and best management practices. However, we continue to have concerns with regard to the mercury contamination and the risk of increasing mercury exposures. The sediment transport modeling in the Soil Management Plan shows that there will be the increased mobilization of sediment upstream of Mira Loma Road, most likely caused by the restricted creek flow that will result from the proposed roadway. Clarification on how this impact will be mitigated, and how increased mercury mobilization and methylation will be avoided in this area, is needed. It is unclear why the bank stabilization will be done in the downstream reaches of the creek, when the upstream reaches are more highly contaminated. We also recommend that water quality be monitored further downstream of the project where Steamboat Creek meets the Truckee River, both before, during, and after construction. A more robust monitoring plan with specific performance standards related to mercury is needed in order to ensure that water quality and fish are not affected downstream. Because of the complexity of the mercury methylation and demethylation process, seasonal sampling of both the water column and sediment cores is needed in order to evaluate the project's impacts.

Response: *The sediment transport model (Permit Application, Appendix J) summarizes the key observations based on transport calculations at 2-year flows and contradicts what is noted by the comment relating to the potential to mobilize sediment upstream of Mira Loma Drive. Appendix J (page J-6) states “...fine sand is expected to be carried in suspension in the channel and floodplain east of the proposed roadway embankment and, therefore, is not expected to be deposited. Similar to existing conditions, medium sand is expected to be transported as mixed load; however, this mode of transport is confined to the area east of the roadway embankment under proposed conditions...” upstream of Mira Loma Drive.*

The project design considers on-going work and discussions with the Pyramid Lake Paiute Tribe environmental and fishery scientists, who have encouraged the transport of sediment through the project reach at a steady and predictable rate. The existing conditions of accumulation of fine sediments in warm shallow anaerobic portions of the system exacerbate the methylation process and present conditions for a high concentration of this sediment to be flushed into the river during storm events. The

downstream fishery scientists want to minimize the pulses of contaminants entering the Truckee River due to the downstream environment's limited assimilation capacity.

As indicated in the response to Item No. 5, conditions are expected to improve postconstruction since the source(s) of elevated (e.g., >10 mg/kg) mercury between the roadway and Steamboat Creek, which reflect conditions needed to contribute increased methylmercury, are being removed to 1 foot beneath the finished grade (where present) and will be sequestered beneath the roadway pavement. This work will limit the potential for mercury mobilization from changing water levels in the stream channel which have the potential to mobilize sediment from the stream bank. The project design has been revised (subsequent to the 50% Design) so that discharge within Steamboat Creek greater than approximately 15 cfs will flow out-of-bank to flood the excavated floodplain west of the creek. The hydrograph below shows the daily average flows for 2012 and 2013 within Steamboat Creek at Huffaker Narrows. As shown in the hydrograph, it should be expected that during all but the driest years, flow will be out of bank for several weeks during the spring runoff, varying in time from March to June depending on the timing of snowmelt. Additionally, large rain and rain-on-snow events like what occurred in January and December 2012 will cause out-of-bank flow.



During construction, soil within the project's footprint containing ≥ 10 mg/kg mercury to 1 foot beneath the finished grade will be managed by removal and placement within the roadway embankment beneath the pavement surface, thereby limiting the potential for mercury mobilization from changing water levels in the stream channel which have the potential to mobilize sediment from the stream bank. Stream water at these locations is not expected to pond, or become stagnant, and the stream is expected to remain under aerobic conditions, minimizing the potential for methylmercury to form. A water quality monitoring plan during construction will be established to provide a record of water quality conditions in reaches of Steamboat Creek both up- and downstream in accordance with the provisions of the NDEP 401 permits and the project general Stormwater Permit.

Item No. 9:

Similar to the Mitigation Plan's adaptive management plan which focuses on noxious weeds, an adaptive management plan for mercury should be established. The project proposes to construct 86.94 acres of volumetric mitigation wetlands which will receive their water source from Steamboat Creek, which is highly contaminated with mercury. The Ecological Risk Assessment states that the volumetric mitigation areas accepting Steamboat Creek water will infiltrate quickly and will only be flooded in the winter when water temperatures are cold and high in oxygen, therefore limiting mercury methylation. These conditions can be easily influenced by variations in climate and drainage patterns over time; for example, factors such as climate change can lead to warmer water temperatures in the winter, extreme storm events, and increased flooding. The factors influencing mercury methylation are highly complex and still poorly understood, despite a growing body of research on the subject. An adaptive management plan, in conjunction with a monitoring plan for mercury, is needed in order to ensure that any future mercury problems caused by this project are tracked and addressed. The plan should include a requirement for follow up actions if mercury and/or methyl mercury levels rise.

***Response:** At the time of submittal, the wetlands complex was at the 50% design phase and showed the acreage specified in the comment. At the current 90% design phase, acreage remains generally unchanged for the jurisdictional wetland and floodplain volumetric mitigation areas. Of these, water sourced from Thomas Creek (a tributary to Steamboat Creek) does not contain mercury, nor does the water being sourced from the Yori Drain. In conjunction with the water-quality monitoring plan described above, the Adaptive Management Plan will be prepared to guide the planning and implementation of the monitoring plan as the different phases of the SEC project are implemented. The Adaptive Management Plan does not provide a requirement for follow up actions related to mercury because of the continued degraded conditions associated with the upstream reaches of Steamboat Creek (i.e., the source of the mercury in Washoe Lake).*

To help clarify the highly mitigated risk of mercury in this project, a better understanding of the type of facultative wetland environment being proposed is provided as follows:

- The annual precipitation of this area is 8 inches per year*
- Floodplain facultative wetlands in the Great Basin are typified by dry surface soils with deeply rooted bunch grasses and salt grasses*
- To maximize the floodplain stability, the project will seed with rhizomatous native grasses*
- The floodplain wetlands located within the volumetric mitigation areas being proposed within the floodplain are dry at the surface the majority of the time and are designed to drain via vegetated swales and not pool water*
- Mercury-containing soil will continue to be deposited on the floodplain from upstream sources*
- Immediately upstream is the Damonte wetland complex, which has changed the sediment transport through the reach in recent years – this is an obligate wetland complex and will have a greater impact on the overall mercury cycle in this system than the facultative wetlands that are being proposed*

Due to the removal and sequestration of mercury-containing soil, an estimated 22,000 pounds of mercury, and the reduction of obligate wetlands with connection to Steamboat Creek, the project is not expected or predicted to exacerbate the methylation potential in the Steamboat Creek system.

Item No. 10:

EPA appreciates the effort of the applicant to remediate mercury where possible, especially when it is a challenging and emerging science. Because of the uncertainty and magnitude involved, a pilot project assessing whether mercury methylation will be truly limited under these conditions is highly recommended, and close monitoring is needed to assess its effectiveness.

***Response:** The mercury mitigation and monitoring measures proposed (e.g., concentration-based removal of contaminated soil to 1 foot beneath the project's finished grade, incorporation of a monitoring and adaptive management plan), in combination with environmental factors of the project area (e.g., high evaporation rates, aerobic stream and storm water flows) are supported by the literature as conditions that would limit the mobilization of mercury and the formation of methylmercury as a result of the SEC project. Additionally, facultative wetlands accessible to Steamboat Creek will exhibit very limited seasonal pooling of surface water, which mitigate the conditions needed to methylate mercury. The Yori Drain obligate wetlands, which would produce anaerobic conditions suitable for the conversion of elemental mercury to methylmercury, receive water that is not sourced from historic mercury contamination impacts and are set at an elevation that will prohibit frequent flooding from Steamboat Creek. Again, because of the removal and sequestration of mercury-containing soil and the reduction of obligate wetlands with connection to Steamboat Creek as a result of the redesign, the project is not expected or predicted to exacerbate the methylation potential in the Steamboat Creek system.*

Item No. 11:

The 2008 Mitigation Rule requires the applicant's long term management plan to describe long term management and annual cost estimate needs, to identify the funding mechanism to meet these needs, and to identify the party responsible for the ownership and long term management of the site. It is important that long term mercury management be included in this plan. The existing Mitigation Plan recommends that a conservation easement be established for the long term management and conservation of the mitigation wetlands, however as of yet none has been established. The Plan states that if a conservation easement is not created, then the Regional Transportation Commission, City of Reno, Washoe County, would be responsible for the ongoing management of the constructed wetlands and noxious weeds on their properties. Because the Regional Transportation Commission lacks expertise in the long term management and success of constructed wetlands, as well as in monitoring and management of mercury contamination, a conservation easement and an endowment for long term stewardship by an experienced land steward, is highly preferred. Such an endowment and easement should exempt the steward from liability of the mercury contamination.

***Response:** Discussions concerning the conservation easement and/or perpetual deed restrictions and maintenance responsibility, which is to be established for the long term management and conservation of the mitigation wetlands, are ongoing and are expected to be implemented concurrent with the start of project construction. As suggested by the comment, the endowment and easement will include language that exempts the steward from liability associated with the mercury contamination.*

Item No. 12:

If an Environmental Assessment is used to support a Finding of No Significant Impact for NEPA compliance, the EA should clearly indicate what actions are included as a part of the proposed project in order to reduce all impacts to less than significant. This is particularly important in light of the possible mercury methylation issues and extensive direct and indirect impacts to wetlands as disclosed in the application. We encourage the Army Corps of Engineers to identify measures to further avoid and reduce impacts in the environmental review document to be completed for NEPA compliance.

Response: *The response to U.S. EPA Item Nos. 1 through 11, coupled with the LEDPA analysis included with USACE comment responses, clarify what actions are included as part of the proposed project and serve to demonstrate that 1) the Preferred Alternative is the LEDPA, 2) all impacts are less than significant, 3) sequestration of a substantial mass of mercury beneath the roadway removes its availability from the environment and potential to methylate, and 4) direct/permanent and temporary impacts are fully mitigated, and results in a project that meets the RTC's planning objectives and significantly improves the quality of the wetland and riparian environment along its corridor.*

List of Preparers and Distribution

PREPARED FOR: Garth Oksol, PE | RTC
 Jeff Hale, PE | RTC

COPY TO: Cindy Potter, PE | CH2M HILL

PREPARED BY: Ken Greene, CHMM | CH2M HILL
 Matt Setty, CEM | CH2M HILL

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