Response to NDEP Bureau of Water Quality Planning Comments on the Application for Clean Water Act Section 404 and 401 Permit, SouthEast Connector

This memorandum presents responses to the Nevada Division of Environmental Protection (NDEP) Bureau of Water Quality Planning's September 19, 2013, comments on the SouthEast Connector (SEC) roadway project's July 2013 Clean Water Act Section 404 and Section 401 Permit Application (Ref: Public Notice SPK-2010-01058, SouthEast Connector, NV). These applications were submitted to the U.S. Army Corps of Engineers (USACE) and NDEP, respectively, 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:

The 2010 Washoe County Consensus Forecast estimated the population in the county to be approximately 590,000 by 2030. RTC estimates 550,000 people by the year 2035 (page 1-1, 404 Supplement). Estimates from the 2012 Census have indicated that by 2030 the population in Washoe County will be approximately 518,000 people. It is unclear from the information provided or that is currently available online whether the population growth will actually require an additional N-S connector in the area by 2030-2035 because the level of service on the existing roads will fail. *The red lines shown in Figure 3 on page 1-5 are not meaningful – what numbers do they present?*

a. Please provide a table that starts with the number of vehicles using the existing N-S roads today and show the increase in the level of service (# vehicles) through 2035. Also list the corresponding population numbers.

Response: *As indicated in the 404 Permit Application, the Regional Transportation Plan (RTP), which was approved by the Regional Transportation Commission (RTC) in 2013, includes standards for traffic congestion on the regional road network and affirms the need for the SEC as key to improving connectivity and livability. The regional travel demand model uses the 2012 Consensus Forecasts, and predicts that the level of traffic congestion will increase significantly as Washoe County adds jobs (increasing from about 230,000 to 360,000) and new residents (increasing from about 420,000 to 550,000) over the next 20 years. Although the rate of population growth projected in the 2012 Consensus Forecasts is lower than the projected rate of growth made in previous forecasts, the approximately 130,000 new residents will generate substantial increases in traffic congestion if the SEC project is not constructed.*

The red lines shown in the 404 Permit Application (Page 1-5, Figure 3) illustrate projected excessive congestion on the roadway network and McCarran Boulevard failure under the Build and No-Build scenarios. The RTC of Washoe County is the designated Metropolitan Planning Organization for the Reno-Sparks urbanized area pursuant to 23 United States Code §§ 134–135. In this capacity, RTC is responsible under the 23 Code of Federal Regulations Part 450 for carrying out the 3-C (Continuing, Cooperative, Comprehensive) transportation planning process consistent with the planned development of the urbanized area and serves as the lead agency for all regional transportation planning actions. The RTP and regional travel demand model represent the most current adopted estimate of regional travel demands. The demographic data used in the regional traffic demand models are generated by the Truckee Meadows Regional Planning Agency and are common to all regional planning efforts.

	Pre-interim Consensus Forecast		*Interim Consensus Forecast*		*2012 Consensus Forecast*	
	Population	***Employees***	***Population***	***Employees***	***Population***	***Employees***
Projected 2030	*685,292*	*400,641*	*606,423*	*277,102*	*525,739*	*328,126*
Projected 2035					*556,344*	*356,591*

Item No. 2:

An example cross section was not found in the applications for the 6,830 linear feet of incised bank that will be laid back and recontoured within the Pembroke to CWW reach (bottom p. 5-4 Mitigation and Monitoring Plan). Please select representative locations and provide cross section schematics of what the recontouring will look like.

Identify the original ground surface elevations, final contour elevations, slopes and the different flow surface elevations. Is it a correct assumption that ≥30 cfs flow (p. 3-12, Program Description-Stormwater) will "overbank" at an elevation of 4380 (elevation from VMG plans).

a. Even if excavating and grading from the bank, there is the potential for sediment discharge. Strongly recommend use of turbidity curtain.

Response: *Typical cross sections are included in Attachment 2. As indicated in the October 31, 2013, response to NDEP's initial review comments dated August 13, 2013, additional analysis and grading work completed since the 50% Design has adjusted the overbank flow to be greater than 15 cubic feet per second (cfs). The actual elevation of the bank full/overbank is dependent upon 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. The use of a turbidity curtain during excavating and grading from the bank has been initiated with the Construction Manager at Risk (CMAR) contractor and water quality protection best management practices will be incorporated into the Stormwater Pollution Prevention Plan (SWPPP).*

It should be understood that with a CMAR-executed project, many of the design details and fine tuning of the grading are addressed through the use of digital terrain files of the 100% design set to coordinate the global positional system-controlled equipment for grading. Using this process, the project achieves a greater efficiency in plan development and construction survey. The topography presented in the design drawings (90% and 100%) will also be used in the construction process as reflected in the project digital terrain models. This method provides less detail in the design set due to the ability of the CMAR to also utilize three-dimensional design files for grading control.

Item No. 3:

Table 7 on pages 3-18, Supplement to 404 – See revisions below. Table 2-1 in Appendix K (Soil Management Plan also needs to revised. The Modern STORET ID is for data from 1999 forward and the Legacy ID is for data from 1998 backwards.

Station Id	Station Name	Modern STORET ID	Legacy STORET ID
SB6	Steamboat Ditch @ Rhodes Road	NV06-102-C-002	310204
SB8	Whites Creek @ North Timberline Drive	NV06-102-T-030	310206
SB10	Thomas Creek @ North Timberline Drive	NV06-102-T-038	310207
SB11	Steamboat Creek @ Short Lane	NV06-102-T-018	310208
SB12	Thomas Creek @ Short Lane (Misnamed as Alexander Ditch)	NV06-102-T-066	310209
SB16	Boynton Slough @ East McCarran	NV06-102-C-005	310211
SB17	Steamboat Creek @ Pembroke	NV06-102-T-022	310212

SB18	Yori Drain @ Steamboat Creek	NV06-102-C-007	310213
SB19	Steamboat Creek @ Cleanwater Way	NV06-102-T-023	310214

Response: *While the 404 Permit Application and its attachments are not planned to be revised/resubmitted in response to the public comments received, unless requested by the USACE, memoranda issued subsequent to receipt of comments and these responses will become part of the public record and agreed upon revisions are being incorporated into the final design specifications for the project. In response to NDEP Item No. 3, 404 Permit Application Table 7 (page 3-18) and Appendix K, Table 2-1 (page 2-1) are superseded by the Steamboat Creek and Tributary Station/STORET numbers and information summarized from Desert Research Institute's report information, as follows:*

Surface Water System	***Station Number***	***STORET****	***Summary***
Steamboat Creek at Rhodes Road	*SB5*	*310203*	*Steamboat Creek originates as outflow from Washoe Lake. It is the largest tributary to the Truckee River within the Truckee Meadows. It has significant irrigation diversion return contribution along its course and has the tributaries listed below.*
Steamboat Creek at Geiger Grade	*SB7*	*310205*	
Steamboat Creek at Short Lane	*SB11*	*NV06-102-T-018*	
Steamboat Creek near Pembroke Lane	*SB17*	*NV06-102-T-022*	
Steamboat Creek at Clean Water Way	*SB19*	*NV06-102-T-023*	
Steamboat Ditch	*SB6*	*NV06-102-C-002*	*The Steamboat Ditch was constructed in 1856 to convey water for agricultural and domestic use across the Truckee Meadows. Steamboat Ditch originates and water flows southeast from the California border nearly 32 miles to discharge into Steamboat Creek proximal to Steamboat Hot Springs. The Steamboat ditch is a conveyance feature that carries needed water for agriculture within the Truckee Meadows. Based on NDWR data, the ditch conveys an average of 50 cfs and diverts nearly 17,500 afy.*
Whites Creek	*SB8*	*NV06-102-T-030*	*Whites Creek originates in the Carson Range north of the Mount Rose Highway and west of I-580. At Shadowridge Park, Whites Creek is distributed into four independent channels to disperse flows throughout the lower Whites Creek watershed, ultimately delivering water to Steamboat Creek and Thomas Creek near the Huffaker Narrows. A portion of Whites Creek flows to the Whites Creek Detention Basin that is located west of Butler Ranch South.*
Thomas Creek	*SB10*	*NV06-102-T-038*	*Thomas Creek flows from the Carson Range of the Sierra Nevada, drains through rural, residential, and commercial zones, and discharges into Steamboat Creek above Huffaker Narrows.*
Alexander Ditch	*SB12*	*NV06-102-T-066*	*The Alexander Ditch originates at Alexander Lake in the Huffaker Hills. It confluences with Thomas Creek upstream of Thomas Creek's confluence with Steamboat Creek.*

Surface Water System	*Station Number*	*STORET**	*Summary*
Rio Poco Drain	*SB14*	*310210*	*The Rio Poco Drain originates near the intersection of Longley Lane and South McCarran Boulevard and flows through the Donner Springs neighborhood south of McCarran Boulevard. It conveys overflow from Dry Creek, neighborhood drainage and irrigation return flow. It is conveyed beneath Mira Loma Drive through the overflow culvert just west of Steamboat Creek, flows through Rosewood Lake Golf Course, and confluences with Steamboat Creek south of Boynton Slough.*
Boynton Slough	*SB16*	*NV06-102-C-005*	*Boyton Slough originates as Dry Creek and is located in Washoe County in southern Reno. The headwaters of Dry Creek originate in the Carson Range of the Sierra Nevada. Dry Creek is formed by the convergence of four small streams at the range front. It has significant contribution from irrigation return flow and confluences with Steamboat Creek just south of Pembroke Drive.*
Yori Drain	*SB18*	*NV06-102-C-007*	*Yori Drain originates as a screened submerged concrete drain in the northeast corner of Virginia Lake in central Reno. The drain traverses west through culverts below the Reno Tahoe International Airport to an open channel at Rock Boulevard and discharges into Steamboat Creek north of Pembroke Drive. The waters of the Yori Drain are high in fecal coliform; primarily attributable to water fowl populations and pollutants introduced from urban runoff.*

**STORET (STOrage and RETrieval) is the U.S. Environmental Protection Agency's repository for water quality, biological, and physical data. It is used by state environmental agencies (including NDEP) as identifies for specific areas in a given region. Modern STORET IDs (e.g., NV06-) for data from 1999 forward used where available.*

afy = acre-feet per year
cfs = cubic feet per second
NDWR = Nevada Department of Water Resources

Item No. 4:

Bottom of page 5-10, Supplement to 404 – When will the Flood Memo that describes the results of the analysis of the SEC impacts on flood conditions within the project area be available for review? Please provide documentation that shows the City of Reno, City of Sparks and Washoe County agree the modeling demonstrates no-rise in the regulatory floodplain (as it currently exists) after construction of the SEC.

Response: *The Flood Analysis Memorandum was finalized October 2, 2013, and transmitted to NDEP as an attachment to the October 31, 2013 response to NDEP's initial review comments dated August 13, 2013. This memo presents the hydraulic design process used to design the SouthEast Connector roadway and floodplain compliant with local agency flood management ordinances and appropriate design criteria, and concludes that the roadway design will have a net beneficial impact resulting in a reduction of the existing flood storage pool(s) elevation from no change to -0.73 foot, with an average reduction of the flood pools of approximately 0.06 foot. A copy of the memo is included as Attachment 3. The hydrologic modeling is acceptable to all community flood plain managers and has been used as model inputs to additional SEC hydraulic modeling efforts associated with scour analysis and hydraulic optimization of structures. Additionally, the compliance and acceptance of the Floodplain Managers, primarily City of Reno, was the main subject of the City of Reno Special Use Permit that was approved by the City of Reno Planning Commission, appealed to the City Council, and the approval was upheld by the Reno City Council. Documentation of the City of Reno's acceptance is the approval of the Special Use Permit.*

Item No. 5:

The Alternatives Analysis (Section 6) does not compare or contrast the potential environmental impacts of any selected project alternatives to the potential environmental impacts of the proposed placement of the Southeast Connector. The text only describes the history of site selection. A more detailed alternatives analysis is needed to fully support a Cumulative Impact Analysis.

Response: *Additional information demonstrating why the chosen alternative is the Least Environmentally Damaging Practicable Alternative (LEDPA) to meet the Purpose and Need of the project in the most environmentally, socially, and financially appropriate manner was transmitted to the USACE under a separate cover. The 404(b)(1) alternatives analysis shows that (1) discharges into Waters of the U.S. are associated with all of the alternatives, (2) all of the alternatives would result in a similar and insignificant discharge activity, and (3) the Valley Preferred Alternative (Proposed Project) is the LEDPA. The alternatives evaluated as part of the 404(b)(1) alternatives analysis included (1) No-Action, (2) Valley Corridor Alternatives (Valley Preferred Alignment, Valley 2010 Alignment, Valley Viaduct Alignment), (3) Foothill Corridor/Alignment, (4) McCarran Widening, (5) Mill Street Extension Alternative, (6) Mass Transit Alternative, and (7) Sparks Industrial Corridor/Alignment.*

Item No. 6:

Appendix I WQ Analysis

a. NAC citations on page I 1 are incorrect. Class waters have been eliminated and the NAC numbers have changed.
   i. Steamboat Creek (from gauge to Truckee R.): Change NAC 445A.127 to NAC 445A.1726 https://www.leg.state.nv.us/NAC/NAC-445A.html#NAC445ASec1726
   ii. The old regulation did not have TP or T standards. DO is ≥3.0 mg/L.
   iii. Change NAC 445A.121 citation to NAC 445A.1236
   Standards for toxic materials applicable to designated waters
   https://www.leg.state.nv.us/NAC/NAC-445A.html#NAC445ASec1236
   iv. Need to remove reference to 2006 303(d) and cite the 2008-2010 Integrated Report http://ndep.nv.gov/bwqp/303dlist2010.htm
      - See Attachment 4 – Category 5 Waters (303(d) List) – page 12 of 24 for Steamboat Creek. Lower reach still impaired for As, B. Zn and Fe.
   v. **Change NAC 445A.144 citations to NAC 445A.1236**. A couple sentences on p. I-1 also required some revision (italics): "The chemicals of concern (COCs) during the Southeast Connector construction~~/Steamboat Creek realignment~~ project consist of arsenic, boron, iron, zinc, mercury and total phosphorus. The water quality standards for the metals (toxics) are provided *in NAC 445A.1236, but there is no standard for TP from the USGS gage (10349300) to the Truckee River.*"
   vi. **Sentences at the bottom of page I-2 need correction**. The old regulation, NAC 445A.127, did not include a TP or bacteria standard. The new regulation (NAC 445A.1726) also does not include a TP or coliform standard and the lower creek is currently impaired (2010 303(d) List) for only As, B, Fe and Zn. The lower creek is currently not impaired for E. coli.

Response: *Water quality references in subsequent memoranda have been updated to reflect current NAC references and state "…Section 445A.1726, Steamboat Creek from gauging station #10-349300 to its confluence with the Truckee River is a water body designated for beneficial uses, including noncontact recreation, aquatic life, propagation of wildlife, irrigation, watering of*

livestock, and industrial supply. Steamboat Creek includes an additional beneficial use of contact recreation…", "Arsenic, boron, iron and zinc have been detected in Steamboat Creek at concentrations exceeding Nevada's water quality standards (NAC445A.1236) and resulted in the Creek being included on Nevada's 2008-2010 303(d) Impaired Waters List. Steamboat Creek was previously on the 303(d) Impaired Waters List for mercury and total phosphorous; however, concentrations of these chemicals were below the water quality standards when the 2006 Impaired Waters List was developed. Water quality standards for COCs are provided in NAC445A.1236, but there is no standard for total phosphorous from gauging station #10-10-349300 to the Truckee River" and "…samples will assess temperature, dissolved oxygen (DO), pH, total dissolved solids (TDS), turbidity and total suspended solids (TSS). Additionally, metals to be tested during construction include arsenic, boron, iron, zinc and mercury to ensure compliance with the water quality standards pursuant to NAC 445A.1236."

b. **1st bullet on page I-3 states** – "Stream Restoration: Bank stabilization is proposed for a length of approximately 20,000 linear feet of Steamboat Creek." Pembroke to CWW is about 6830 feet and the section in the Butler Ranch area is about 700 feet. Where will the remaining stabilization occur? There was no other reference found regarding the 20,000 feet of bank stabilization anywhere else in the application documents. Are you referring to flood mitigation grading and reseeding of other areas along the creek?

Response: *As indicated in the October 31, 2013 response to NDEP's initial review comments dated August 13, 2013, the 20,000-foot linear distance included the length of stream that had flood and wetland mitigation areas adjacent to it. The 401 Permit Application and supporting documents will be revised to describe the ±7,000 linear feet of bank stabilization and the ±13,000 linear feet of stream bank that will include work directly adjacent to Steamboat Creek but above the ordinary high water line.*

c. **Page I-3, first bullet** – Flow data: This section should state that the instantaneous flow data used in your analysis and collected by NDEP while sampling Yori Drain was only 8 measurements during a 14 month period from October 1987 to December 1988.

Response: *As indicated in the October 31, 2013, response to NDEP's initial review comments dated August 13, 2013, it is assumed that this item refers to page I-5 and the water quality modeling flows in Yori Drain are based on observed data collected by NDEP on the modeled dates (October 5 and June 6, 1989). CH2M HILL evaluated the data found in the NDEP records and also made flow and water quality observations during the design phase of the project. The design team recognizes the limited data and therefore has provided a large range of flow capacity in the Yori diversion structure and available freeboard of the wetland. Water quality input to the simplified WET model reflects data collected by grab sampling during the spring of 2013. The hydraulic residence time available as a function of inflow rate and wetland storage volume reflects the ability of the system to allow the first 7 cfs (first flush) to enter the wetlands. Stormwater flows greater than 7 cfs will be proportioned out to enter the wetland and the main channel of Yori Drain.*

d. **Table 3 Removal Efficiency** – According to the analysis, the YD wetlands will potentially not treat TP (RE of 0.28% after HRE 8.76 days). As long as it doesn't export greater concentrations of P over time. NDEP might be interested in actual seasonal/storm event monitoring of the inflow and outflow of wetlands after project completed to evaluate WQ treatment effectiveness of the wetland.

Response: *As indicated in the October 31, 2013, response to NDEP's initial review comments dated August 13, 2013, the Yori Wetlands P removal efficiency has been estimated using the PreWET model as a mature (steady-state) system. This means that the system will result in a near balanced sequestration and release of phosphorus. P in the inflow water will be incorporated into biota and then as the biota dies the P in the cellular tissue is deposited in the sediments. When sediments become anaerobic, the P present in the decayed material will form Orthophosphate (PO_4) where it will cycle back into the water, from this point it is available for plant/biota uptake or exported in outflow water. No net contribution from the wetlands to water exiting the wetlands will occur; however, as a result of normal nutrient cycling no significant reduction in P will occur over the long term. Removal mechanisms for P in wetlands exist (e.g., conversion to phosphine gas and release by plant materials [cattails]), but the amount of this removal is minimal compared to the concentration in the wetland waters.*

The RTC is not attempting to create treatment wetlands for the purpose of a specific water treatment objective, nor requesting any water quality credits. The wetland complex is intended to serve a primary purpose of mitigation and wetland habitat. As such, there is no regulatory requirement for providing this information and the additional costs associated with this possible permit condition compared to its minimal benefit would need to be discussed with NDEP. The development of the conservation easement and/or perpetual deed restrictions will allow access for the purpose of future monitoring, if required.

e. Please clarify what is being shown on Table 4 (WQ modeling results for Steamboat Creek downstream of wetlands). The last paragraph before Table 4 states there was a "larger reduction downstream of the input of Yori Drain" Reduction of what? Algae concentration? The algae concentrations in the table don't look significantly different when comparing the existing and proposed modeled events. Are there any additional parameter results (e.g. N, P, coliform)?

Response: *As indicated in the October 31, 2013, response to NDEP's initial review comments dated August 13, 2013, the results of the water quality modeling show a somewhat larger decrease in algae concentrations downstream of the Yori Drain input than the overall study reach but they are very slight decreases in general. The resulting concentrations of additional constituents are shown in the table below. The proposed model runs do not indicate a significant decrease in any constituent.*

	Temperature Fluctuation	Dissolved Oxygen Fluctuation	Max. Algal Concentration	Max. Ammonia Concentration	Max. Nitrite Concentration	Max. Nitrate Concentration	Max. Organic Nitrogen Concentration	Orthophosphate Concentration	Maximum Biochemical Oxygen Demand	Maximum Organic Phosphorus Concentration
June 4-6 Existing	(degrees C)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
June 4-6 Proposed	21.2–30.7	7.1–9.4	0.82	0.104	0.026	0.309	0.450	0.112	2.130	0.080
October 4-6 Existing	20.9–30.3	7.2–9.4	0.78	0.103	0.026	0.301	0.440	0.118	1.970	0.080
October 4-6 Proposed	10.5–19.8	7.0–9.8	0.744	0.103	0.012	0.191	0.540	0.113	2.530	0.160
June 4-6 Existing	11.0–18.9	7.9–9.7	0.742	0.102	0.012	0.157	0.540	0.113	2.500	0.160

Item No. 7:

Appendix K, Section 2.3 – NAC citations and 303(d) list references need to be updated as outlined in Item 3a above.

Response: *As indicated in the response to Item No. 3, the 404 Permit Application and its attachments are not planned to be revised/resubmitted in response to the public comments received (unless requested by the USACE). However, memoranda issued subsequent to receipt of comments and responses to the comment received will become part of the public record and agreed upon revisions are being incorporated into the final design specifications for the project. Water quality references in subsequent memoranda have been updated to reflect current NAC references, as noted in the response to Item No. 6.*

Item No. 8:

The SWPPP in Appendix B of the 401 application also needs to be revised to reflect the 2008/2010 303(d) list and the new regulations.

Response: *As indicated in the October 31, 2013, response to NDEP's initial review comments dated August 13, 2013, the SWPPP will be finalized and the 303(d) list updated by the CMAR contractor upon completion of 100% design and prior to submittal of the General Permit Notice of Intent.*

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