

Long Form - Storm Water Data Report



Dist-County-Route: 08-SBd-15

Post Mile (Kilometer Post) Limits: PM 160.8/161.5

Project Type: Parking Lot Expansion

EA: 0G810K

RU: 08-226

Program Identification: SHOPP 201.250 (HA26)

Phase: [X]PID [ ]PA/ED [ ]PS&E

Regional Water Quality Control Board(s): Lahontan

Is the project required to consider incorporating Treatment BMPs? [ ]Yes [X]No

If yes, can Treatment BMPs be incorporated into the project? [ ]Yes [ ]No

If No, a Technical Data Report must be submitted to the RWQCB at least 60 days prior to PS&E Submittal. List submittal date:

Total Disturbed Soil Area: Approximately 6.73 acres

Estimated Construction Start Date: 05/2012 Construction Completion Date: 02/2014

Notification of Construction (NOC) Date to be submitted:

Notification of ADL reuse (if Yes, provide date) [ ]Yes Date: [X]No

Separate Dewatering Permit (if Yes, permit number) [ ]Yes Permit #: [X]No

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

NHUAN NGUYEN Registered Project Engineer/Landscape Architect 09/25/07 Date

I have reviewed the storm water quality design issues and find this report to be complete, current, and accurate:

XIAO ZHANG Project Manager 09/25/07 Date

JIM DODD Designated Maintenance Representative 9/24/2007 Date

RAY DESSELE Designated Landscape Architect Representative Sept 26 '07 Date

STAMP [Required for PS&E only] CATHY B. JOCHAI District/Regional SW Coordinator or Designee 9/26/07 Date

AM 9/26/07

## **STORM WATER DATA INFORMATION**

### **1. Project Description**

- Valley Wells Safety Roadside Rest Area (SRRA) is located on Interstate Route 15 at PM 160.8 and approximately 26 miles west of Nevada State Line. The project proposes to provide new, modern, enlarged, and expanded parking for the existing northbound and southbound SRRA's that will meet or exceed demand for service through 2031.
- The total disturbed soil area (DSA) is calculated on the expand area of the northbound and southbound. The total DSA is approximately 6.73 acres (3.34 acres on northbound and 3.39 acres on southbound). DSA was calculated by accounting for new paving areas
- Net impervious surface will be added.
- Project is not within urban MS4 area.

### **2. Define Site Data and Storm Water Quality Design Issues (refer to Checklists SW-1, SW-2, and SW-3)**

- This project is located in the Amargosa Hydrologic Unit, Shadow Hydrologic Sub-Area (609.24) and the receiving water body is Kingston Wash. Caltrans Storm Water Program Regional Work Plans (CTSW-RT-07-182-4.2) dated April 2007 does not include this location as a high-risk area.
- Kingston Wash is not on the 303(d) list.
- 401 certification may be not required for this project.
- There are no Drinking Water Reservoirs and/or Recharge Facilities within project limits
- There are no TMDLs or effluent limits established for the receiving water within the project limits.
- There are no local agency requirements/concerns in this project.
- This project is below 4000 feet in elevation and located in Rainfall Area 7, as defined by Caltrans Construction Site Best Management Practices (BMPs) Manual. Soil stabilization and sediment control measures are not required for this project.
- The rainy seasons in this area is August 1<sup>st</sup> to October 1<sup>st</sup> and November 1<sup>st</sup> to May 1<sup>st</sup>. The annual rainfall for this area is 6.7 inches.
- Soil classification within the project limit is type A. May be there are known slope stabilization concerns due to water wash.
- Aerially Deposited Lead (ADL) is not present within the project limits.
- There is no additional Right-of-way required at this time to facilitate BMP implementation within the project limits.
- Due to the scope of work, the project cannot be relocated or realigned. There are no live streams within the project limits for structures to be built over. Erosion will not be an issue. The project will not be designed to ease the maintenance of BMPs. The project will not be scheduled to minimize soil-disturbing work during the rainy season. No permanent storm water pollution controls will be installed early during the construction to provide additional protection.
- There are no existing Treatment BMPs located within project limits

### **3. Regional Water Quality Control Board Agreements**

- Currently, there are no memorandum of understanding with the Lahontan RWQCB.

### **4. Describe Proposed Design Pollution Prevention BMPs to be used on the Project.**

*Summarize responses to Checklist DPP-1, Parts 1-5 in a short narrative. Use the sub-headings shown below for the type of information that should be described in the narrative. Note, not all of the bulleted information*



*listed is required or available at each phase of a project. Information to be included will depend on the nature of the project and the site conditions.*

*Develop an estimate of quantities and costs for the erosion control/revegetation portion of the Design Pollution Prevention BMPs as part of the for the Storm Water BMP Cost Summary; include right-of-way costs if additional right-of-way is needed for erosion control. Complete for each phase of the project.*

Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

- The project will increase velocity or volume of downstream flow
- Existing vs. Post Construction Conditions will remain unchanged.
- The project will discharge to unlined channels at this time.
- It is not anticipated that the project will increase potential sediment load of downstream flow.
- The project will not cause hydraulic changes to a stream that may effect downstream channel stability.

Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

- The project may not create new slopes or modify existing slope.

Concentrated Flow Conveyance Systems, Checklist DPP-1, Parts 1 and 4

- Existing Concentrated Conveyance System within the project limits are functioning satisfactory.

Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

- Area of clearing and grubbing are to be defined in the contract documents.
- The contractor is responsible for protection of the existing vegetation and liable for any injured or damaged items.
- There are no floodplains, wetlands, problem soils, and steep slopes known at this time.

**5. Describe Proposed Permanent Treatment BMPs to be used on the Project**

- Incorporation of Treatment BMP is not required for this project due to it is not being within a MS4 permitted area.

**6. Describe Proposed Temporary Construction Site BMPs to be used on Project**

The Cost of construction BMPs is estimated at 1.5 percent using the "Percent Total Cost" method described in Appendix F of the Project Planning and Design Guide (PPDG).

- The following Construction Site BMPs will be paid for as separate Bid Line Items:
  - Prepare Storm Water Pollution Prevention Plan (SWPPP)
  - WM-8 (Concrete Waste Management)
  - SC-7 (Street Sweeping)
- The following Construction Site BMPs incorporated as a lump sum:
  - NS-1 (Water Conservation Practices)
  - NS-3 (Paving and Grinding Operatings)
  - NS-8 (Vehicle and Equipment Cleaning)
  - NS-9 (Vehicle and Equipment Fueling)
  - NS-10 (Vehicle and Equipment Fueling)
  - WM-1 (Material Delivery & Storage)
  - WM-2 (Material Use)
  - WM-3 (Stockpile Management)



## *Long Form - Storm Water Data Report*

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- WM-4 (Spill Prevention & Control)
- WM-5 (Soil Waste Management)
- WM-9 (Sanitary/Septic Waste Management)
- Dewatering will not be required during the construction of the project.
- Due to the short preparation time afforded this project, concurrence from the Construction Storm Water Coordinator was unattainable before it was necessary to approve the parent document. Due diligence was, however, utilized in the consideration of construction site BMP implementation by the SWDR Project Engineer. A more thorough approach to their implementation (including Construction SWC concurrence) will be taken at later project phases.

### **Quantities for Temporary Construction Site BMPs**

<b>Bib Item #</b>	<b>Temporary Construction Site BMPs</b>	<b>Unit of Measurement</b>	<b>Quantities</b>
074016	Construction Site Management	LS	1
074019	Prepare Storm Water Pollution Prevention Plan	LS	1
074032	Temporary Concrete Washout	LS	1
074041	Street Sweeping	LS	1

### **7. Maintenance BMPs (Drain Inlet Stenciling)**

Drain Inlet Stenciling is not required within the project limits. No drop inlets are on the project limits.

### **REQUIRED ATTACHMENTS**

- ⇒ Vicinity Map
- ⇒ Evaluation Documentation Form (EDF)

### **SUPPLEMENTAL ATTACHMENTS**

*Note: Supplement Attachments are to be supplied during the SWDR approval process; where noted, some of these items may only be required on a project-specific basis.*

- ⇒ Storm Water BMP Cost Summary
- ⇒ BMP cost information from: Preliminary Project Cost Estimate (PPCE) during PID and PA/ED project phases; Engineer's Cost Estimate for PS&E project phase
- ⇒ Plans showing BMP Deployment (i.e. Layout Sheets, Water Pollution Control Sheets, etc)
- ⇒ Pertinent Correspondence with RWQCB (if requested or recommended by District/Regional NPDES Storm Water Coordinator or Designated Reviewer)
- ⇒ Checklist SW-1, Site Data Sources
- ⇒ Checklist SW-2, Storm Water Quality Issues Summary

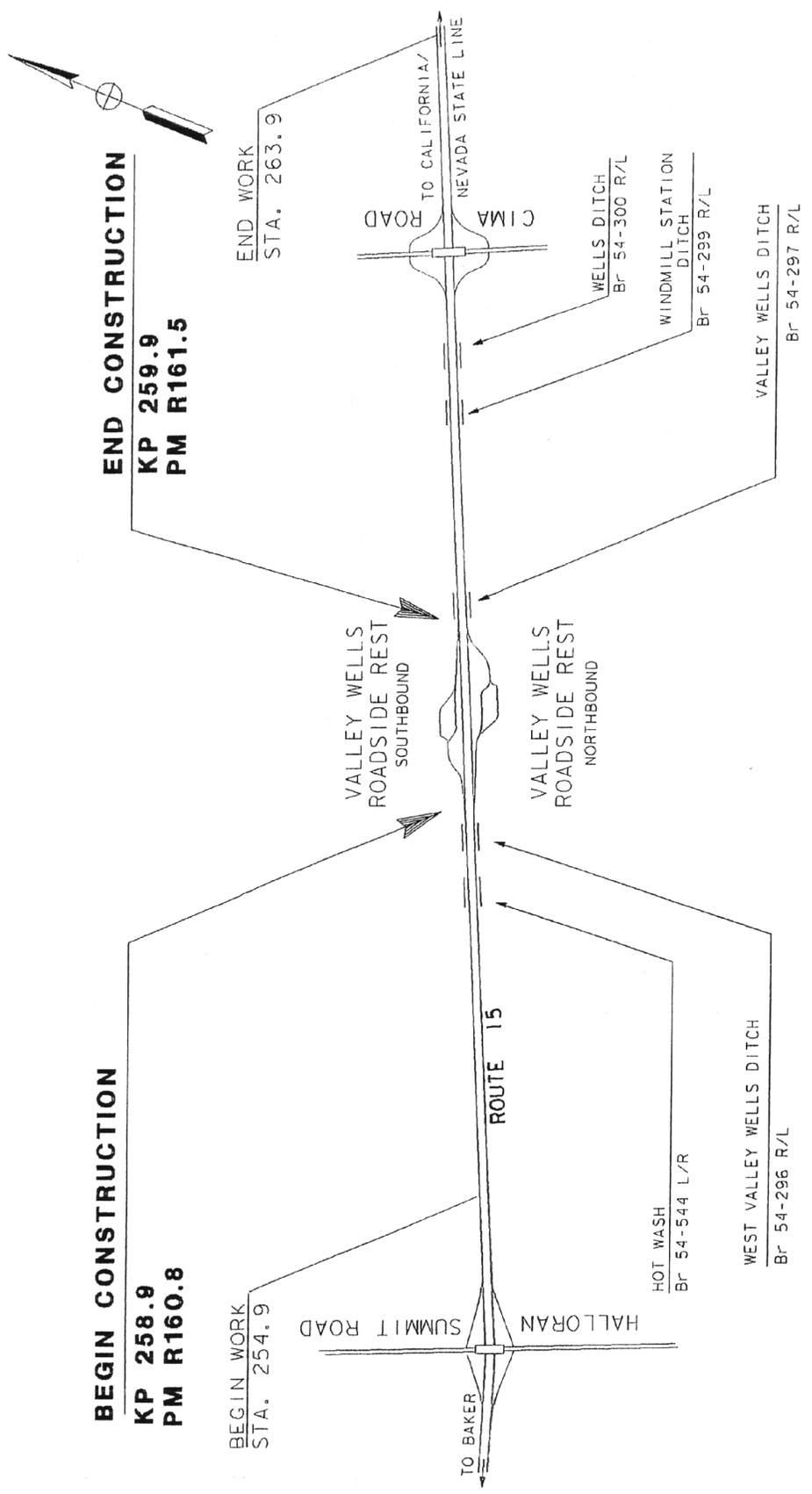


## *Long Form - Storm Water Data Report*

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- ⇒ Checklist SW-3, Measures for Avoiding or Reducing Potential Storm Water BMPs
- ⇒ Checklists DPP-1, Parts 1–5 (Design Pollution Prevention BMPs) [only those parts that are applicable]
- ⇒ Checklists T-1, Parts 1–10 (Treatment BMPs) [only those Parts that are applicable]
- ⇒ Checklists CS-1, Parts 1–6 (Construction Site BMPs) [only those Parts that are applicable]
- ⇒ Calculations and cross sections related to BMPs (if requested by District/Regional Storm Water Coordinator)
- ⇒ 07-340 or 07-345 (if requested or recommended by District/Regional Storm Water Coordinator)
- ⇒ Conceptual Drainage Map or Drainage Plans, if available (if requested by District/Regional Storm Water Coordinator for review)





**BEGIN CONSTRUCTION**  
**KP 258.9**  
**PM R160.8**  
 STA. 254.9

**END CONSTRUCTION**  
**KP 259.9**  
**PM R161.5**  
 STA. 263.9

**A. STRIP MAP**  
 NO SCALE

## Evaluation Documentation Form

DATE: 09/20/07

See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs

EA: 0G0810K

NO.	CRITERIA	YES	NO	SUPPLEMENTAL INFORMATION FOR EVALUATION
1.	Begin Project Evaluation regarding requirement for consideration of Treatment BMPs	<input checked="" type="checkbox"/>		Go to 2
2.	Is this an emergency project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If <b>Yes</b> , go to 11. If <b>No</b> , continue to 3.
3.	Have TMDLs OR OTHER Pollution Control Requirements been established for surface waters within the project limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If <b>Yes</b> , contact the District/Regional NPDES coordinator to discuss the Department's obligations under the TMDL (if Applicable) or Pollution Control Requirements, go to 10 or 4 (as determined by the NPDES Coordinator). _____ (Dist./Reg. SW Coordinator initials) If <b>No</b> , continue to 4.
4.	Is the project within an urban MS4?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If <b>Yes</b> , continue to 5. ( <u>write the MS4 Area here</u> ) If <b>No</b> , go to 11.
5.	Is the project directly or indirectly discharging to surface waters?	<input type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , continue to 6. If <b>No</b> , go to 11.
6.	Is this a new facility or major reconstruction?	<input type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , continue to 8. If <b>No</b> , go to 7.
7.	Will there be a change in line/grade or hydraulic capacity?	<input type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , continue to 8. If <b>No</b> , go to 11.
8.	Is the Disturbed Soil Area (DSA) created by the project <u>greater than or equal to 3.0 acres</u> or does the project result in a <u>net increase of one acre or more of new impervious surface</u> ?	<input type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , continue to 10. If <b>No</b> , go to 9. _____ (Total DSA quantity)
9.	Is the project part of a Common Plan of Development?	<input type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , continue to 10. If <b>No</b> , go to 11.
10.	Project is required to consider approved Treatment BMPs.	<input type="checkbox"/>		See Sections 2.4 and either Section 5.5 or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.
11.	Project is not required to consider Treatment BMPs.  <div style="font-family: cursive; font-size: small;">           CBJ (Dist./Reg. SW Coord. Initials)            MB (Project Engineer Initials)            9-20-07 (Date)         </div>	<input checked="" type="checkbox"/>		Document for Project Files by completing this form, and attaching it to the SWDR.

*See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs*



## Construction Site BMP Consideration Form

DATE: 09/20/07

Project Evaluation Process for the Consideration of Construction Site BMPs

EA: 0G810K

NO.	CRITERIA	YES	NO	SUPPLEMENTAL INFORMATION
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , Construction Site BMPs for Soil Stabilization (SS) will be required. Complete CS-1, Part 1. Continue to 2. If <b>No</b> , Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the right of way, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , Construction Site BMPs for Sediment Control (SC) will be required. Complete CS-1, Part 2.  Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , Construction Site BMPs for Tracking Control (TC) will be required. Complete CS-1, Part 3.  Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , Construction Site BMPs for Wind Erosion Control (WE) will be required. Complete CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If <b>Yes</b> , Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5.  Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5.  Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with precipitation; storm water run-on, or stormwater runoff; be dispersed by wind; be dumped and/or spilled into storm drain systems?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If <b>Yes</b> , Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6.  Continue to 9.
9.	End of checklist.	<input checked="" type="checkbox"/>		Document for Project Files by completing this form, and attaching it to the SWDR.

*PE to initialize after concurrence with Construction (PS&E only)*

*Date*



**Checklist SW-1, Site Data Sources**

Prepared by: Nhuan Nguyen    Date: 09/20/07    District-Co-Route: 08-SBd-15  
 PM (KP): 160.8/161.5    EA: 0G810K  
 RWQCB: Lahontan (Region 6)

Information for the following data categories should be obtained, reviewed and referenced as necessary throughout the project planning phase. Collect any available documents pertaining to the category and list them and reference your data source. For specific examples of documents within these categories, refer to Section 5.5 of this document. Example categories have been listed below; add additional categories, as needed. Summarize pertinent information in Section 2 of the SWDR.

DATA CATEGORY/SOURCES	Date
<b>Topographic</b>	
• Water Boards 609.24 Shadow HSA	1986
• Google USGS map	2007
•	
<b>Hydraulic</b>	
• Not applicable because no drainage design	
•	
•	
<b>Soils</b>	
• <a href="http://t8web.dot.ca.gov/design/nrcs/index.html">http://t8web.dot.ca.gov/design/nrcs/index.html</a>	
• <a href="http://soildatamart.nrcs.usda.gov/Survey.aspx?County=CA071">http://soildatamart.nrcs.usda.gov/Survey.aspx?County=CA071</a>	2003
•	
<b>Climatic</b>	
• <a href="http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3935">http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3935</a>	2000
•	
•	
<b>Water Quality</b>	
• <a href="http://www.waterboards.ca.gov/stormwater/annual_report/2007/index.htm">http://www.waterboards.ca.gov/stormwater/annual_report/2007/index.htm</a>	
•	
•	
<b>Other Data Categories</b>	
•	
•	
•	
•	
•	
•	
•	

### Checklist SW-2, Storm Water Quality Issues Summary

Prepared by: <u>Nhuan Nguyen</u>	Date: <u>09/20/07</u>	District-Co-Route: <u>08-SBd-15</u>
PM (KP): <u>160.8/161.5</u>	EA: <u>0G810K</u>	
RWQCB: <u>Lahontan (Region 6)</u>		

The following questions provide a guide to collecting critical information relevant to project stormwater quality issues. Complete responses to applicable questions, consulting other Caltrans functional units (Environmental, Landscape Architecture, Maintenance, etc.) and the District/Regional Storm Water Coordinator as necessary. Summarize pertinent responses in Section 2 of the SWDR.

- |  |  |  |
|--|--|--|
| 1. Determine the receiving waters that may be affected by the project throughout the project life cycle (i.e., construction, maintenance and operation).   | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 2. For the project limits, list the 303(d) impaired receiving water bodies and their constituents of concern.  | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 3. Determine if there are any municipal or domestic water supply reservoirs or groundwater percolation facilities within the project limits. Consider appropriate spill contamination and spill prevention control measures for these new areas. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 4. Determine the RWQCB special requirements, including TMDLs, effluent limits, etc.  | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 5. Determine regulatory agencies seasonal construction and construction exclusion dates or restrictions required by federal, state, or local agencies.   | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 6. Determine if a 401 certification will be required.  | <input type="checkbox"/> Complete            | <input type="checkbox"/> NA            |
| 7. List rainy season dates.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 8. Determine the general climate of the project area. Identify annual rainfall and rainfall intensity curves.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 9. If considering Treatment BMPs, determine the soil classification, permeability, erodibility, and depth to groundwater.  | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 10. Determine contaminated or hazardous soils within the project area.   | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 11. Determine the total disturbed soil area of the project.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 12. Describe the topography of the project site.   | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 13. List any areas outside of the Caltrans right-of-way that will be included in the project (e.g. contractor's staging yard, work from barges, easements for staging, etc.).  | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 14. Determine if additional right-of-way acquisition or easements and right-of-entry will be required for design, construction and maintenance of BMPs. If so, how much?   | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 15. Determine if a right-of-way certification is required.   | <input type="checkbox"/> Complete            | <input type="checkbox"/> NA            |
| 16. Determine the estimated unit costs for right-of-way should it be needed for Treatment BMPs, stabilized conveyance systems, lay-back slopes, or interception ditches.   | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 17. Determine if project area has any slope stabilization concerns.  | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 18. Describe the local land use within the project area and adjacent areas.  | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 19. Evaluate the presence of dry weather flow.   | <input type="checkbox"/> Complete            | <input type="checkbox"/> NA            |



**Checklist SW-3, Measures for Avoiding or Reducing Potential Storm Water Impacts**

Prepared by: <u>Nhuan Nguyen</u>	Date: <u>09/20/07</u>	District-Co-Route: <u>08-SBd-15</u>
PM (KP): <u>160.8/161.5</u>	EA: <u>0G810K</u>	
RWQCB: <u>Lahontan (Region 6)</u>		

The PE must confer with other functional units, such as Landscape Architecture, Hydraulics, Environmental, Materials, Construction and Maintenance, as needed to assess these issues. Summarize pertinent responses in Section 2 of the SWDR.

Options for avoiding or reducing potential impacts during project planning include the following:

1. Can the project be relocated or realigned to avoid/reduce impacts to receiving waters or to increase the preservation of critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions?  Yes  No  NA
2. Can structures and bridges be designed or located to reduce work in live streams and minimize construction impacts?  Yes  No  NA
3. Can any of the following methods be utilized to minimize erosion from slopes:
  - a. Disturbing existing slopes only when necessary?  Yes  No  NA
  - b. Minimizing cut and fill areas to reduce slope lengths?  Yes  No  NA
  - c. Incorporating retaining walls to reduce steepness of slopes or to shorten slopes?  Yes  No  NA
  - d. Acquiring right-of-way easements (such as grading easements) to reduce steepness of slopes?  Yes  No  NA
  - e. Avoiding soils or formations that will be particularly difficult to re-stabilize?  Yes  No  NA
  - f. Providing cut and fill slopes flat enough to allow re-vegetation and limit erosion to pre-construction rates?  Yes  No  NA
  - g. Providing benches or terraces on high cut and fill slopes to reduce concentration of flows?  Yes  No  NA
  - h. Rounding and shaping slopes to reduce concentrated flow?  Yes  No  NA
  - i. Collecting concentrated flows in stabilized drains and channels?  Yes  No  NA
4. Does the project design allow for the ease of maintaining all BMPs?  Yes  No
5. Can the project be scheduled or phased to minimize soil-disturbing work during the rainy season?  Yes  No
6. Can permanent storm water pollution controls such as paved slopes, vegetated slopes, basins, and conveyance systems be installed early in the construction process to provide additional protection and to possibly utilize them in addressing construction storm water impacts?  Yes  No  NA



<b>Design Pollution Prevention BMPs</b>			
<b>Checklist DPP-1, Part 1</b>			
Prepared by: <u>Nhuan Nguyen</u>	Date: <u>09/20/07</u>	District-Co-Route: <u>08-SBd-15</u>	
PM (KP): <u>160.8/161.5</u>	EA: <u>0G810K</u>		
RWQCB: <u>Lahontan (Region 6)</u>			

**Consideration of Design Pollution Prevention BMPs**

**1. Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]?**

- (a) Will project increase velocity or volume of downstream flow?  Yes  No  NA
- (b) Will the project discharge to unlined channels?  Yes  No  NA
- (c) Will project increase potential sediment load of downstream flow?  Yes  No  NA
- (d) Will project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?  Yes  No  NA

If Yes was answered to any of the above questions, consider **Downstream Effects Related to Potentially Increased Flow**, complete the DPP-1, Part 2 checklist.

**2. Slope/Surface Protection Systems**

- (a) Will project create new slopes or modify existing slopes?  Yes  No  NA

If Yes was answered to the above question, consider **Slope/Surface Protection Systems**, complete the DPP-1, Part 3 checklist.

**3. Concentrated Flow Conveyance Systems**

- (a) Will the project create or modify ditches, dikes, berms, or swales?  Yes  No  NA
- (b) Will project create new slopes or modify existing slopes?  Yes  No  NA
- (c) Will it be necessary to direct or intercept surface runoff?  Yes  No  NA
- (d) Will cross drains be modified?  Yes  No  NA

If Yes was answered to any of the above questions, consider **Concentrated Flow Conveyance Systems**; complete the DPP-1, Part 4 checklist.

**4. Preservation of Existing Vegetation**

- a) It is the goal of the Storm Water Program to maximize the protection of desirable existing vegetation to provide erosion and sediment control benefits on all projects.  Complete

Consider **Preservation of Existing Vegetation**, complete the DPP-1, Part 5 checklist.



**Design Pollution Prevention BMPs**

**Checklist DPP-1, Part 2**

Prepared by: Nhuan Nguyen Date: 09/20/07 District-Co-Route: 08-SBd-15

PM (KP): 160.8/161.5 EA: OG810K

RWQCB: Lahonta (Region 6)

**Downstream Effects Related to Potentially Increased Flow**

1. Review total paved area and reduce to the maximum extent practicable.  Complete
2. Review channel lining materials and design for stream bank erosion control.  Complete
  - (a) See Chapters 860 and 870 of the HDM.  Complete
  - (b) Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity.  Complete
3. Include, where appropriate, energy dissipation devices at culvert outlets.  Complete
4. Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.  Complete
5. Include, if appropriate, peak flow attenuation basins to reduce peak discharges.  Complete



<b>Design Pollution Prevention BMPs</b>			
<b>Checklist DPP-1, Part 3</b>			
Prepared by: <u>Nhuan Nguyen</u>	Date: <u>09/20/07</u>	District-Co-Route: <u>08-SBd-15</u>	
PM (KP): <u>160.8/161.5</u>	EA: <u>0G810K</u>		
RWQCB: <u>Lahontan (Region 6)</u>			

**Slope / Surface Protection Systems**

1. What are the proposed areas of cut and fill? (attach plan or map)  Complete
  
2. Were benches or terraces provided on high cut and fill slopes to reduce concentration of flows?  Yes  No
  
3. Were slopes rounded and/or shaped to reduce concentrated flow?  Yes  No
  
4. Were concentrated flows collected in stabilized drains or channels?  Yes  No
  
5. Are slopes > 1:4 vertical:horizontal (V:H)?  Yes  No  
 If Yes, District Landscape Architecture must prepare or approve an erosion control plan.
  
6. Are slopes > 1:2 (V:H)?  Yes  No  
 If Yes, Geotechnical Services must prepare a Geotechnical Design Report, and the District Landscape Architect should prepare or approve an erosion control plan. Concurrence must be obtained from the District Maintenance Storm Water Coordinator for slopes steeper than 1:2 (V:H).
  
7. Estimate the change to the impervious areas that will result from this project.  Complete  
       acres

**VEGETATED SURFACES**

1. Identify existing vegetation.  Complete
  
2. Evaluate site to determine soil types, appropriate vegetation and planting strategies.  Complete
  
3. How long will it take for permanent vegetation to establish?  Complete
  
4. Minimize overland and concentrated flow depths and velocities.  Complete

**HARD SURFACES**

1. Are hard surfaces required?  Yes  No  
 If Yes, document purpose (safety, maintenance, soil stabilization, etc.), types, and general locations of the installations.  Complete

Review appropriate SSPs for Vegetated Surface and Hard Surface Protection Systems.  Complete



**Design Pollution Prevention BMPs**

**Checklist DPP-1, Part 4**

Prepared by: <u>Nhuan Nguyen</u>	Date: <u>09/20/07</u>	District-Co-Route: <u>08-SBd-15</u>
PM (KP): <u>160.8/161.5</u>	EA: <u>0G810K</u>	
RWQCB: <u>Lahontan (Region 6)</u>		

**Concentrated Flow Conveyance Systems**

**Ditches, Berms, Dikes and Swales**

- 1. Consider Ditches, Berms, Dikes, and Swales as per Chapters 813, 836, and 860 of the HDM.  Complete
- 2. Evaluate risks due to erosion, overtopping, flow backups or washout.  Complete
- 3. Consider outlet protection where localized scour is anticipated.  Complete
- 4. Examine the site for run-on from off-site sources.  Complete
- 5. Consider channel lining when velocities exceed scour velocity for soil.  Complete

**Overside Drains**

- 1. Consider downdrains, as per Index 834.4 of the HDM.  Complete
- 2. Consider paved spillways for side slopes flatter than 1:4 V:H.  Complete

**Flared Culvert End Sections**

- 1. Consider flared end sections on culvert inlets and outlets as per Chapter 827 of the HDM.  Complete

**Outlet Protection/Velocity Dissipation Devices**

- 1. Consider outlet protection/velocity dissipation devices at outlets, including cross drains, as per Chapters 827 and 870 of the HDM.  Complete

Review appropriate SSPs for Concentrated Flow Conveyance Systems.  Complete



**Design Pollution Prevention BMPs**

**Checklist DPP-1, Part 5**

Prepared by: Nhuan Nguyen Date: 09/20/07 District-Co-Route: 08-SBd-15

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RWQCB: Lahontan (Region 6)

**Preservation of Existing Vegetation**

1. Review Preservation of Property, Standard Specifications 16.1.01 and 16-1.02 (Clearing and Grubbing) to reduce clearing and grubbing and maximize preservation of existing vegetation.  Complete
2. Has all vegetation to be retained been coordinated with Environmental, and identified and defined in the contract plans?  Yes  No
3. Have steps been taken to minimize disturbed areas, such as locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling?  Complete
4. Have impacts to preserved vegetation been considered while work is occurring in disturbed areas?  Yes  No
5. Are all areas to be preserved delineated on the plans?  Yes  No



<b>Construction Site BMPs</b>			
<b>Checklist CS-1, Part 1</b>			
Prepared by: <u>Nhuan Nguyen</u>	Date: <u>09/20/07</u>	District-Co-Route: <u>08-SBd-15</u>	
PM (KP): <u>160.8/161.5</u>	EA: <u>0G810K</u>		
RWQCB: <u>Lahontan (Region 6)</u>			

**Soil Stabilization**

General Parameters

- |  |  |
|--|--|
| 1. How many rainy seasons are anticipated between beginning and end of construction?   | 2  |
| 2. What is the total disturbed soil area for the project? (ac)   | 6.73 acres                                   |
| (a) How much of the project DSA consists of slopes 1V:4H or flatter? (ac)  | 6.73 acres                                   |
| (b) How much of the project DSA consists of 1V:4H < slopes < 1V:2H? (ac)   | 0  |
| (c) How much of the project DSA consists of slopes 1V:2H and steeper? (ac)   | 0  |
| (d) How much of the project DSA consists of slopes with slope lengths longer then 20 ft? (ac)  | 0  |
| 3. What rainfall area does the project lie within? (Refer to Table 2-1 of the Construction Site Best Management Practices Manual )   | 7  |
| 4. Review the required combination of temporary soil stabilization and temporary sediment controls and barriers for area, slope inclinations, rainy and non-rainy season, and active and non-active disturbed soil areas. (Refer to Tables 2-2, and 2-3 of the Construction Site Best Management Practices Manual for Rainfall Area requirements.) | <input checked="" type="checkbox"/> Complete |

Scheduling (SS-1)

- |  |   |
|--|---|
| 5. Does the project have a duration of more then one rainy season and have disturbed soil area in excess of 25 acres?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| (a) Include multiple mobilizations (Move-in/Move-out) as a separate contract bid line item to implement permanent erosion control or revegetation work on slopes that are substantially complete. (Estimate at least 6 mobilizations for each additional rainy season. Designated Construction Representative may suggest an alternate number of mobilizations.) | <input type="checkbox"/> Complete                                   |
| (b) Edit Order of Work specifications for permanent erosion control or revegetation work to be implemented on slopes that are substantially complete.  | <input type="checkbox"/> Complete                                   |



## Checklist CS-1, Part 1

- (c) Edit permanent erosion control or revegetation specifications to require seeding and planting work to be performed when optimal.  Complete

### Preservation of Existing Vegetation (SS-2)

6. Do Environmentally Sensitive Areas (ESAs) exist within or adjacent to the project limits? (Verify the completion of DPP-1, Part 5)  Yes  No
- (a) Verify the protection of ESAs through delineation on all project plans.  Complete
- (b) Protect from clearing and grubbing and other construction disturbance by enclosing the ESA perimeter with high visibility plastic fence or other BMP.  Complete
7. Are there areas of existing vegetation (mature trees, native vegetation, landscape planting, etc.) that need not be disturbed by project construction? Will areas designated for proposed treatment BMPs need protection (infiltration characteristics, vegetative cover, etc.)? (Coordinate with District Environmental and Construction to determine limits of work necessary to preserve existing vegetation to the maximum extent practicable.)  Yes  No
- (a) Designate as outside of limits of work (or designate as ESAs) and show on all project plans.  Complete
- (b) Protect with high visibility plastic fence or other BMP.  Complete
8. If yes for 6, 7, or both, then designate ESA fencing as a separate contract bid line item, if not already incorporated as part of design pollution prevention work (See DPP-1, Part 5).  Complete

### Slope Protection

N/A

9. Provide a soil stabilization BMP(s) appropriate for the DSA, slope steepness, slope length, and soil erodibility. (Consult with District/Regional Landscape Architect.)
- (a) **Select SS-3 (Hydraulic Mulch)**, SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-6 (Straw Mulch), SS-7 (Geotextiles, RECPs, Etc.), SS-8 (Wood Mulching), other BMPs or a combination to cover the DSA throughout the project's rainy season.  Complete
- (b) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.)  Complete
- (c) Designate as a separate contract bid line item.  Complete



Slope Interrupter Devices

N/A

10. Provide slope interrupter devices for all slopes with slope lengths equal to or greater than of 20 ft in length. (Consult with District/Regional Landscape Architect and Designated Construction Representative.)
- (a) Select SC-5 (Fiber Rolls) or other BMPs to protect slopes throughout the project's rainy season.  Complete
  - (b) For slope inclination of 1V:4H and flatter, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 20 ft on center.  Complete
  - (c) For slope inclination between 1V:4H and 1V:2H, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 15 ft on center.  Complete
  - (d) For slope inclination of 1V:2H and greater, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 10 ft on center.  Complete
  - (e) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest alternate increase.)  Complete
  - (f) Designate as a separate contract bid line item.  Complete

Channelized Flow

N/A

11. Identify locations within the project site where concentrated flow from stormwater runoff can erode areas of soil disturbance. Identify locations of concentrated flow that enters the site from outside of the right-of-way (off-site run-on).
- (a) Utilize SS-7 (Geotextiles, RECPs, etc.), SS-9 (Earth Dikes/Swales, Ditches), SS-10 (Outlet Protection/Velocity Dissipation), SS-11 (Slope Drains), SC-4 (Check Dams), or other BMPs to convey concentrated flows in a non-erosive manner.  Complete
  - (b) Designate as a separate contract bid line item.  Complete



<b>Construction Site BMPs</b>			
<b>Checklist CS-1, Part 2</b>			
Prepared by:	<u>Nhuan Nguyen</u>	Date:	<u>09/20/07</u>
		District-Co-Route:	<u>08-SBd-15</u>
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RWQCB:	<u>Lahontan (Region 6)</u>		

**Sediment Control**

Perimeter Controls - Run-off Control

1. Is there a potential for sediment laden sheet and concentrated flows to discharge offsite from runoff cleared and grubbed areas, below cut slopes, embankment slopes, etc.?  Yes  No
- (a) Select linear sediment barrier such as SC-1 (Silt Fence), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or a combination to protect wetlands, water courses, roads (paved and unpaved), construction activities, and adjacent properties. (Coordinate with District Construction for selection and preference of linear sediment barrier BMPs.)  Complete
- (b) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.)  Complete
- (c) Designate as a separate contract bid line item.  Complete

Perimeter Controls - Run-on Control

2. Do locations exist where sheet flow upslope of the project site and where concentrated flow upstream of the project site may contact DSA and construction activities?  Yes  No
- (a) Utilize linear sediment barriers such as SS-9 (Earth Dike/Drainage Swales and Lined Ditches), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or other BMPs to convey flows through and/or around the project site. (Coordinate with District Construction for selection and preference of perimeter control BMPs.)  Complete
- (b) Designate as a separate contract bid line item.  Complete



Storm Drain Inlets

3. Do existing or proposed drainage inlets exist within the project limits?  Yes  No
- (a) Select SC-10 (Storm Drain Inlet Protection) to protect municipal storm drain systems or receiving waters wetlands at each drainage inlet. (Coordinate with District Construction for selection and preference of inlet protection BMPs.)  Complete
- (b) Designate as a separate contract bid line item.  Complete
4. Can existing or proposed drainage inlets utilize an excavated sediment trap as described in SC-10 (Storm Drain Inlet Protection- Type 2)?  Yes  No
- (a) Include with other types of SC-10 (Storm Drain Inlet Protection).  Complete

Sediment/Desilting Basin (SC-2)

5. Does the project lie within a Rainfall Area where the required combination of temporary soil stabilization and sediment control BMPs includes desilting basins? (Refer to Tables 2-1, 2-2, and 2-3 of the Construction Site Best Management Practices Manual for Rainfall Area requirements.)  Yes  No
- (a) Consider feasibility for desilting basin allowing for available right-of-way within the project limits, topography, soil type, disturbed soil area within the watershed, and climate conditions. Document if the inclusion of sediment/desilting basins is infeasible.  Complete
- (b) If feasible, design desilting basin(s) per the guidance in SC-2 Sediment/Desilting Basins of the Construction Site BMP Manual to maximize capture of sediment-laden runoff.  Complete
- Designate as a separate contract bid item.  Complete
6. Will the project benefit from the early implementation of proposed permanent Treatment BMPs? (Coordinate with District Construction.)  Yes  No
- (a) Edit Order of Work specifications for permanent treatment BMP work to be implemented in a manner that will allow its use as a construction site BMP.  Complete

Sediment Trap (SC-3)

7. Can sediment traps be located to collect channelized runoff from disturbed soil areas prior to discharge?  Yes  No
- (a) Design sediment traps in accordance with the Construction Site BMP Manual.  Complete
- (b) Designate as a separate contract bid line item.  Complete



<b>Construction Site BMPs</b>			
<b>Checklist CS-1, Part 3</b>			
Prepared by: <u>Nhuan Nguyen</u>	Date: <u>09/20/07</u>	District-Co-Route: <u>08-SBd-15</u>	
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RWQCB: <u>Lahontan (Region 6)</u>			

**Tracking Controls**

Stabilized Construction Entrance/Exit (TC-1)

- 1. Are there points of entrance and exit from the project site to paved roads where mud and dirt could be transported offsite by construction equipment? (Coordinate with District Construction for selection and preference of tracking control BMPs.)  Yes  No
- (a) Identify and designate these entrance/exit points as stabilized construction entrances (TC-1).  Complete
- (b) Designate as a separate contract bid line item.  Complete

Tire/Wheel Wash (TC-3)

- 2. Are site conditions anticipated that would require additional or modified tracking controls such as entrance/outlet tire wash? (Coordinate with District Construction.)  Yes  No
- Designate as a separate contract bid line item.  Complete

Stabilized Construction Roadway (TC-2)

- 3. Are temporary access roads necessary to access remote construction activity locations or to transport materials and equipment? (In addition to controlling dust and sediment tracking, access roads limit impact to sensitive areas by limiting ingress, and provide enhanced bearing capacity.) (Coordinate with District Construction.)  Yes  No
- (a) Designate these temporary access roads as stabilized construction roadways (TC-2).  Complete
- (b) Designate as a separate contract bid line item.  Complete

Street Sweeping and Vacuuming (SC-7)

- 4. Is there a potential for tracked sediment or construction related residues to be transported offsite and deposited on public or private roads? (Coordinate with District Construction for preference of including street sweeping and vacuuming with tracking control BMPs.)  Yes  No
- Designate as a separate contract bid line item.  Complete



**Construction Site BMPs**  
**Checklist CS-1, Part 4**

Prepared by: Nhuan Nguyen Date: 09/20/07 District-Co-Route: 08-SBd-16  
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RWQCB: Lahontan (Region 6)

**Wind Erosion Controls**

Wind Erosion Control (WE-1)

1. Is the project located in an area where standard dust control practices in accordance with Standard Specifications, Section 10: Dust Control, are anticipated to be inadequate during construction to prevent the transport of dust offsite by wind? (Note: Dust control by water truck application is paid for through the various items of work. Dust palliative, if it is included, is paid for as a separate item.)  Yes  No
- (a) Select SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, Plastic Covers, & Erosion Control Blankets/Mats), SS-8 (Wood Mulching) or a combination to cover the DSA subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.)  Complete
- (b) Designate as a separate contract bid line item.  Complete



<b>Construction Site BMPs</b>			
<b>Checklist CS-1, Part 5</b>			
Prepared by: <u>Nhuan Nguyen</u>	Date: <u>09/20/07</u>	District-Co-Route: <u>08-SBd-15</u>	
PM (KP): <u>160.8/161.5</u>	EA: <u>0G810K</u>		
RWQCB: <u>Lahontan (Region 6)</u>			

**Non-Storm Water Management**

Temporary Stream Crossing (NS-4) & Clear Water Diversion (NS-5)

1. Will construction activities occur within a waterbody or watercourse such as a lake, wetland, or stream? (Coordinate with District Construction for selection and preference for stream crossing and clear water diversion BMPs.)  Yes  No
  - (a) Select from types offered in NS-4 (Temporary Stream Crossing) to provide access through watercourses consistent with permits and agreements.<sup>1</sup>  Complete
  - (b) Select from types offered in NS-5 (Clear Water Diversion) to divert watercourse consistent with permits and agreements.<sup>1</sup>  Complete
  - (c) Designate as a separate contract bid line item(s).  Complete

Other Non-Storm Water Management BMPs

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants?  Yes  No
  - (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as **NS-1 (Water Conservation Practices)**, NS-2 (Dewatering Operations), **NS-3 (Paving and Grinding Operations)**, **NS-7 (Potable Water/Irrigation)**, **NS-8 (Vehicle and Equipment Cleaning)**, **NS-9 (Vehicle and Equipment Fueling)**, **NS-10 (Vehicle and Equipment Maintenance)**, NS-11 (Pile Driving Operations), NS-12 (Concrete Curing), NS-13 (Material and Equipment Use Over Water), NS-14 (Concrete Finishing), and NS-15 (Structure Demolition/Removal Over or Adjacent to Water).<sup>1</sup>  Complete
  - (b) Verify that costs for non-storm water management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management (SSP 07-346) are anticipated to be inadequate or if requested by Construction.  Complete

1. Coordinate with District Environmental for consistency with US Army Corps of Engineers 404 permit and Dept. of Fish and Game 1601 Streambed alteration Agreements.



<b>Construction Site BMPs</b>			
<b>Checklist CS-1, Part 6</b>			
Prepared by: <u>Nhuan Nguyen</u>	Date: <u>09/20/07</u>	District-Co-Route: <u>08/SBd-15</u>	
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RWQCB: <u>Lahontan (Region 6)</u>			

**Waste Management & Materials Pollution Control**

Concrete Waste Management (WM-8)

1. Does the project include concrete pours or mortar mixing?  Yes  No
- (a) Select from types offered in WM-8 (Concrete Waste Management) to provide concrete washout facilities. In addition, consider portable concrete washouts and vendor supplied concrete waste management services. (Coordinate with District Construction for selection and preference of waste management and materials pollution control BMPs.)  Complete
- (b) Designate as a separate contract bid line item if the quantity of concrete waste and washout are anticipated to exceed 5.2 yd<sup>3</sup> or if requested by Construction.  Complete

Other Waste Management and Materials Pollution Controls

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants?  Yes  No
- (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as **WM-1 (Material Delivery and Storage)**, **WM-2 (Material Use)**, **WM-4 (Spill Prevention and Control)**, **WM-5 (Solid Waste Management)**, WM-6 (Hazardous Waste Management), WM-7 (Contaminated Soil Management), **WM-9 (Sanitary/Septic Waste Management)** and WM-10 (Liquid Waste Management)  Complete
- (b) Verify that costs for waste management and materials pollution control BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management (SSP 07-346) are anticipated to be inadequate or if requested by Construction.  Complete

Temporary Stockpiles (Soil, Materials, and Wastes)

3. Are stockpiles of soil, etc. anticipated during construction?  Yes  No
- (a) Select WM-3 (Stockpile Management), SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, RECPs etc.), or a combination as appropriate to cover temporary stockpiles of soil, etc.  Complete
- (b) Select linear sediment barrier such as SC-1 (Silt Fence), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or a combination to encircle temporary stockpiles of soil, etc. (Coordinate with District Construction for selection and preference of BMPs related to stockpiles.)  Complete



**Checklist CS-1, Part 6**

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- (c) Designate as a separate contract bid line item if the requirements in Construction Site management (SSP 07-346) are anticipated to be inadequate or if requested by Construction.  Complete
4. Is there a potential for dust and debris from construction material (fill material, etc.) and waste (concrete, contaminated soil, etc.) stockpiles to be transported offsite by wind?  Yes  No
- (a) Select SS-7, temporary cover, plastic sheeting or other BMP to cover stockpiles subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.)  Complete
- (b) Designate as a separate contract bid line item.  Complete

