STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
1263 S. Stewart Street
Carson City, Nevada 89712

BRIAN SANDOVAL
Governor

RUDY MALFABON, P.E., *Director*

In Reply, Refer to:

September 29, 2017

ANDREW DIXON
NDEP
BUREAU OF WATER POLLUTION CONTROL
901 S. STEWART ST. SUITE 4001
CARSON CITY, NV 89701

MS4 Permit NV0023329
Stormwater Management Program
FY 2017 Annual Report

Dear Mr. Dixon:

The Nevada Department of Transportation (NDOT) is submitting the Stormwater Management Program (SWMP) Annual Report per the requirements of Municipal Separate Storm Sewer Systems Permit No. NV0023329 issued to NDOT on July 7, 2010. Contents describe NDOT's SWMP compliance activities performed during the time period July 1, 2016 through June 30, 2017 (i.e. State fiscal year 2017).

As always, we appreciate your continued assistance. If you have any questions regarding this information, please contact James Murphy at (775) 888-7889 or jmurphy@dot.state.nv.us.

Sincerely,

Alan Tinney, P.E, Chief
Stormwater Division

AT/JDM/tsk

Enclosures

C: Bruce Holmgren, NDEP, Bureau of Water Pollution Control
David Wampler, U.S. EPA, Enforcement Division, Region 9
Conner Adams, U.S. EPA, Enforcement Division, Region 9
Ellen Blake, U.S. EPA, Office of Regional Counsel, Region 9

NEVADA DEPARTMENT OF TRANSPORTATION

STORMWATER MANAGEMENT PROGRAM

MS4 PERMIT NV0023329
ANNUAL REPORT FOR FISCAL YEAR 2017
JULY 1, 2016 – JUNE 30, 2017

Nevada Department of Transportation
Stormwater Division
1263 South Stewart Street
Carson City, NV 89712

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. [40CFR§122.22(d)]

Date: 9/29/17

Alan Tinney, P.E.
Chief, Stormwater Division

Contents

Introduction

In response to the Nevada Department of Transportation's (NDOT's) request for a single National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4) Permit for stormwater discharges from NDOT properties, facilities, and activities, the Nevada Division of Environmental Protection (NDEP) issued NDOT a statewide NPDES MS4 Permit (NV0023329) on February 23, 2004, which was subsequently reissued on July 7, 2010 (Permit). NDOT has developed a Stormwater Management Plan (SWMP) comprised of several programs to address stormwater pollution control as it relates to the planning, design, construction, and maintenance of NDOT's highway infrastructure statewide with the goal of minimizing stormwater pollutant discharges to the maximum extent practicable, and satisfying Clean Water Act requirements. The SWMP's implementation schedule covers activities from State fiscal year (FY) 2013 through FY 2017.

The objective of this Annual Report is to report on SWMP related activities as they pertain to the requirements of the Permit conducted during FY 2017 (Reporting Period). The format of this Annual Report coincides with Parts II-IV of the Permit. Included is an assessment of measurable goals with Reporting Period implementation schedules/benchmarks, as well as an evaluation of the major SWMP programs.

Part II. Discharges to Water Quality Impaired Waters

II.A. Impaired Waters Listing on 303(d) List

II.B. Total Maximum Daily Load

Evaluations continued to determine if stormwater discharges from NDOT's MS4 area contribute directly or indirectly to the listing of a waterway on the State's current 303(d) list, and whether stormwater from NDOT's MS4 areas discharges to a waterbody for which an EPA approved total maximum daily load (TMDL) has been developed.

NDEP updated the State's 303(d) list as part of the Nevada 2014 Water Quality Integrated Report (2014 IR) released in October of 2015. During the Reporting Period, Stormwater Division staff developed and implemented a revised process for evaluating stormwater discharges from NDOT's MS4 areas into *all* 303(d) and TMDL listed waterways listed in the 2014 IR. A description of this modified process, including a summary of current 303(d) and TMDL listed waterways

impaired by transportation-related pollutants, will be included in NDOT's SWMP as a FY 2018 update.

II.C. Discharges to Lake Tahoe and Tributaries to Lake Tahoe

The development of a TMDL addressing nutrient and fine sediment particle loading into Lake Tahoe from stormwater runoff was completed and subsequently approved by the EPA in August, 2011. The Permit requires that NDOT enter into a Memorandum of Agreement (MOA) with NDEP to implement strategies to control stormwater runoff and improve the clarity and water quality of Lake Tahoe within 1 year of NDEP's approval of the TMDL.

Washoe and Douglas Counties, NDOT, and NDEP concluded that an MOA would not be an adequate means to uphold the goals and objectives of the TMDL, and therefore it was agreed upon by all parties that an interlocal agreement (ILA) would be more appropriate. Consequently, NDOT entered the ILA with NDEP in August of 2013, with an updated ILA signed November of 2016 to implement the Lake Tahoe TMDL. The current ILA is set to expire in August of 2021.

The ILA states what roles, commitments, and actions are expected of NDOT to help restore and protect Lake Tahoe's clarity. The overarching goal of the TMDL is to return Lake Tahoe to its historic annual average depth of clarity of 97.4 ft. (i.e. Numeric Target). A key commitment is the preparation of a Stormwater Load Reduction Plan (SLRP) that identifies actions that NDOT will undertake to meet the 5-year fine sediment particle milestone in meeting the Clarity Challenge[1]. The SLRP includes a baseline pollutant load analysis, existing pollutant load analysis, future load reduction analysis, budget, finance plan, and barriers/constraints to implementing pollutant controls. NDOT, with the assistance of the Nevada Tahoe Conservation District (NTCD), completed the SLRP, which identifies a 5-year and 15-year plan to achieve TMDL pollutant reductions in the Lake Tahoe Basin. The report identifies capital improvements, equipment, personnel, and maintenance practices that are needed to achieve the proposed pollutant reductions. A copy of the current SLRP is available upon request.

In compliance with Section IV.4 of the ILA, NDOT submitted its Lake Tahoe TMDL annual report to NDEP on March 15, 2017, summarizing NDOT's pollutant load reduction activities during water

[1] The "Clarity Challenge" represents the goal to reverse the historic declining clarity trend. It is anticipated that achieving the 15-year pollutant load reduction milestone in 2026 will result in an annual average clarity of 78 ft. as measured over the period from 2026 to 2031.

year 2016 (October 1, 2015 through September 30, 2016). NDEP accepted the annual report in May of 2017. A copy of the report is provided in Appendix A.

NDEP released the 2017 TMDL Annual Strategy (establishes the TMDL Management Agencies' annual objectives and actions, and provides TMDL program priorities for FY 2017), the 2016 Findings & Recommendations Memo (provides an overview of new, important and relevant scientific and technical information and findings that may support adjustments to the TMDL Program or related policies), and the 2016 Decision Record Memo (documents outcomes from the annual Program Review Meeting held by the TMDL Management Agencies). Copies of these documents can be viewed or downloaded from the following website: https://www.enviroaccounting.com/TahoeTMDL/Program/Display/TMDLManagementSystemResources.

NDOT continued participating in a Stormwater Tools Improvement Project to update and improve the tools and methods used to evaluate pollutant load reduction in the Lake Tahoe Basin. Other participants included Washoe and Douglas Counties, CalTrans, City of South Lake Tahoe, and El Dorado and Placer Counties.

NDOT has implemented an overall Road Operations Plan throughout the Lake Tahoe Basin to reduce concentrations of fine sediment particles in stormwater runoff. This includes staff training, increased use of best available technology, an effort to reduce abrasive application on roadways through more direct application, and a consistent effort to sweep up abrasives immediately following application.

NDOT continues to design and construct projects in support of the Lake Tahoe Environmental Improvement Program (a public-private partnership with the focus of achieving environmental goals for the Lake Tahoe Basin). A summary of project related activities during the Reporting Period is provided below.

- NDOT finalized construction of Contract 3627, a water quality improvement project along US-50 from the Lake Tahoe Nevada State Park (Cave Rock) to Spooner Summit.
- NDOT commenced construction of a water quality improvement project along SR-28 from Lake Shore Blvd. to the Carson City county line. Improvements are associated with the overarching SR-28 Shared Use Path project. Construction is anticipated to be completed in spring of 2019.

- NDOT is finalizing a water quality project at Zephyr Cover adjacent to US-50. NTCD is the project lead, with NDOT and other agencies serving as project participants. NDOT is providing design assistance and contributing financially to the project. Construction is anticipated to be complete in summer of 2017.

- Construction of a water quality project at Burke Creek adjacent to US-50 was completed during the spring of 2017. The NTCD was the project lead, with NDOT and other agencies serving as project participants. NDOT provided design assistance and contributed financially to the project.

Water quality monitoring activities conducted within the Lake Tahoe Basin are summarized in ***IV.A. Stormwater Monitoring*** of this report.

Part III. Stormwater Management Program

III.A. SWMP Revision

NDOT did not perform any revisions to the SWMP during the Reporting Period.

NDOT's current SWMP is available for viewing on NDOT's Stormwater Program website at https://www.nevadadot.com/doing-business/about-ndot/ndot-divisions/stormwater/resources-documents

III.B. Legal Authority

Senate Bill 324 was passed by the Nevada State Legislature during the State of Nevada 2015 Legislature Session. During the Reporting Period, Senate Bill 324 was formally codified into the *Nevada Revised Statutes (NRS) 408 – Highways, Roads, and Transportation Facilities*. An executive summary of the bill is provided below:

> *An act relating to the Department of Transportation; authorizing the Director of the Department to issue an encroachment permit for certain discharges onto a state highway, within a right-of-way or into, onto or by way of a conveyance system; providing civil penalties for an unauthorized discharge onto a state highway, within a right-of-way or into, onto or by way of a conveyance system or for a violation of an encroachment permit issued by the Director; creating and setting forth the duties of the Advisory Committee on*

Transportational Storm Water Management; revising the qualification of the Director; and providing other matters properly relating thereto.

Highlights of the revisions are summarized below:

- General Provisions
  - *NRS 408.042 - Conveyance system defined.*
  - *NRS 408.0465 - Discharge defined.*

- Department of Transportation
  - *NRS 408.175 – Employment of Deputy Directors and other personnel; restrictions on other employment of Deputy Directors. [Effective through June 30, 2021]*

- Water Pollution Control
  - *NRS 408.439 - Advisory Committee on Transportational Storm Water Management: Creation; members and appointing authority; chair; terms; vacancies; meetings; duties; required reports. [Effective through June 30, 2021)].*
  - *NRS 408.441 - Discharge of pollutant upon highway or right-of-way prohibited in certain circumstances; abatement, removal or remediation required upon receipt of compliance order; remedies available to the Department.*
  - *NRS 408.442 - Entry and inspection of premises.*
  - *NRS 408.444 - Violations: Remedies; exception.*
  - *NRS 408.446 - Violations: Director authorized to issue order for compliance; exception.*
  - *NRS 408.448 - Violations: Injunctive relief; exception.*
  - *NRS 408.449 – Violations: Civil penalty; exceptions.*
  - *NRS 408.451 – Director to conduct independent investigation before determining whether to take certain corrective actions; exception.*

The changes to NRS 408 ensure that NDOT is provided with the necessary upper management authority to oversee the continued development and implementation of NDOT's Stormwater Management Program. Changes to NRS 408 also provide NDOT with the legal framework for regulating discharges within the right-of-way (including enforcement). NRS Chapter 408 can be viewed in its entirety at http://www.leg.state.nv.us/Nrs/NRS-408.html.

Revisions to *Section 637 – Temporary Pollution Control* of NDOT's *Standard Specifications for Road and Bridge Construction, 2014*, were adopted during the Reporting Period. In addition, NDOT's Stormwater and Right-of-Way Divisions began revising the terms and conditions for encroachment permits. Details regarding these revisions are described in ***III.G. Construction Site BMP Program*** of this report.

III.C. MS4 Maps and Outfalls

Initial efforts to inventory and subsequently map NDOT's stormwater facilities (statewide) were completed during the FY 2016 Reporting Period. Efforts entailed identifying stormwater hydraulic facilities and permanent BMP facilities (i.e. stormwater detention facilities, manufactured stormwater treatment devices, etc.) within NDOT's right-of-way utilizing field survey, as-built contracts, right-of-way permits, and aerial imagery. Information is housed within a GIS database and displayed on the NDOT Stormwater Asset Map available for viewing online on NDOT's Stormwater Program website at the following web address:

https://ndot.maps.arcgis.com/apps/webappviewer/index.html?id=6e8d31884af744788d2b9025546d144f

NDOT has inventoried approximately 64,000 hydraulic facilities (drop inlets, corrugated metal pipes, reinforced concrete boxes, etc.) statewide, of which an estimated 523 are considered a "Major"[2] outfall[3].

Future mapping and inventory efforts will focus on maintaining and updating the information as needed.

III.D. Discharges to Clear Creek Watershed

NDOT developed a Clear Creek Stormwater Management Program (CCSWMP) as part of its statewide SWMP (Section 3.12), which was accepted by NDEP in February of 2013. A description of NDOT's Clear Creek SWMP is included in NDOT's statewide SWMP, which is available for viewing on NDOT's Stormwater Program website at https://www.nevadadot.com/doing-business/about-ndot/ndot-divisions/stormwater/resources-documents

[2] Major outfall is defined at 40CFR§122.26.
[3] Assessments to determine whether an outfall meets the criteria of 40CFR§122.26 are ongoing. It is expected that this number will continue to be refined over time.

The following summarizes CCSWMP related activities during the Reporting Period.

Discharges to Water Quality Impaired Waters/Total Maximum Daily Load

Evaluations continued to be performed to determine if stormwater discharges from NDOT's MS4 area contribute directly or indirectly to the listing of a waterway on the State's current 303(d) list, and whether stormwater from NDOT's MS4 area discharges to a waterbody for which an EPA approved total TMDL has been developed (refer to ***Part II. Discharges to Water Quality Impaired Waters*** of this report). The Clear Creek watershed does not contain any waterways listed on the 2014 IR, nor contain any waterways with an EPA approved TMDL.

Legal Authority

NDOT's Legal Authority is applicable to the CCSWMP as well. Refer to ***III.B. Legal Authority*** of this report.

Discharges from New Development and Redevelopment

NDOT's Hydraulics Section continued designing and funding small scale erosion control improvement projects at select drainage and outfall locations within the Clear Creek Watershed to reduce the impacts of stormwater discharge into Clear Creek from NDOT's roadways. NDOT works directly with the Carson River Conservation District to fund and implement these projects. Erosion control improvements typically include culvert work, riprap channel lining and aprons, slope stabilization, re-grading, sediment removal, applying wood chipped material to disturbed areas, and making general improvements to stormwater conveyances. A summary of the small-scale projects that were constructed along US-50 (by drainage number[4] and milepost) during the Reporting Period is provided below[5].

- Drainages 9-11 (DO 13.8): A riprap channel was constructed to stabilize the drainage system.

[4] As referenced from NDOT's "Clear Creek Erosion Assessment Final Report, January 29, 2003."
[5] Temporary pollution control measures as specified in NDOT's Construction Site BMPs Manual were implemented as appropriate for all projects.

- Drainage 10 (DO 13.8): A cross culvert was slip-lined and the associated drop inlet was repaired. In addition, a riprap apron was constructed to stabilize the culvert outlet.

- Drainage 11 (DO 13.8): A failing down drain culvert was replaced, and a riprap apron was constructed to stabilize the culvert outlet.

- Near Drainage 30 (CC 0.02): A new manhole, down drain, and riprap channel were installed to accommodate future work associated with the Clear Creek Stormdrain Project (referenced below).

- Drainage 39 (CC 0.9): A cross culvert was slip-lined, and a riprap apron was constructed to stabilize the culvert outlet.

- Drainage 40 (CC 1.0): A cross culvert was slip-lined, and a riprap apron was constructed to stabilize the culvert outlet.

- Drainage 41 (CC 1.0): A failing down drain culvert was replaced, and a riprap apron was constructed to stabilize the culvert outlet. In addition, a berm was constructed above the culvert along the top of the adjacent slope to stabilize the hillside.

- Drainages 78-80 (CC 3.3 to 3.4): Existing riprap channel was reconstructed with larger sized riprap to accommodate larger stormwater flows.

- Drainage 82 (CC 3.5): A riprap channel was constructed at the outlet of the existing down drain for drainage stabilization.

NDOT's Hydraulics Section continued working on the Clear Creek Stormdrain Project. Contract 3586 (US-50 CC 3.0 to 7.6), the first of a series of construction contracts to be issued as part of the large watershed-scale project, was completed in the fall of 2015. Construction focused primarily on hydraulic facility replacement and upgrades as well as channel stabilization. The scheduling of subsequent projects (i.e. Spooner Summit (US-50 DO 13.0 to 14.0) and Upper Clear Creek Watershed (US-50 DO 14.0 to CC 3.0)) has been delayed to accommodate needs for updating roadway and watershed mapping information; consequently, construction will not begin until FY 2018 at the earliest.

Water Quality Monitoring

NDOT continued its partnership with the United States Geological Survey (USGS)-Water Resources Discipline (WRD) to monitor the sediment transport characteristics of Clear Creek and determine the efficacies of watershed-wide erosion control efforts implemented by NDOT on sediment loading and water quality. In addition, NDOT partnered with the Desert Research Institute (DRI) to install continuous real-time monitoring in the Clear Creek Watershed. This monitoring site is co-located with one of the USGS monitoring sites. Water quality parameters are monitored and provided in real-time to the public via the following data management website: https://ndot-stormwater.dri.edu/. The DRI data paired with the USGS data will allow for additional analysis and insight into sediment loading and water quality in Clear Creek.

The USGS published the final Clear Creek monitoring report[6] summarizing results from data collection efforts during the 2010-2012 water years. A copy of the report is available for download from the USGS website at https://pubs.er.usgs.gov/publication/sir20155124. The USGS has not published reports summarizing the results of monitoring efforts for subsequent water years.

Illicit Discharge Detection and Elimination

No illicit discharge incidences within the Clear Creek Watershed were reported to NDOT's Stormwater Division during the Reporting Period.

Public Outreach and Education

- Social Media

  NDOT continued to utilize social media platforms for stormwater related outreach. Notably, YouTube continued to be utilized as a means for broadcasting stormwater related videos developed by NDOT. A dedicated Stormwater News playlist has been created in the Nevada DOT YouTube channel. NDOT posted one video on YouTube pertaining specifically to stormwater management within the Clear Creek watershed during the Reporting Period. The video received 475 views on YouTube and 139 views on Facebook. The video received 331 views on YouTube during FY 2016.

[6] Huntington, J.M., and Savard, C.S., 2015. Discharge, suspended sediment, bedload, and water quality in Clear Creek, western Nevada, water years 2010–12: U.S. Geological Survey Scientific Investigations Report 2015-5124, 39 p.

- Stormwater Program Website

  Although NDOT does not maintain a separate website dedicated solely to stormwater management activities within the Clear Creek watershed, many of the updates to the Stormwater Program's website are applicable to the CCSWMP.

- Education and Outreach Events

  NDOT's Stormwater Division participated in the "Get on the Bus" Carson River Watershed Tour organized by the Carson River Subconservancy. This 2-day event consisted of a bus tour throughout the Carson River watershed, with stops at select locations to educate the public on projects and issues currently impacting the Carson River. Stormwater Division staff gave a presentation discussing current water quality monitoring efforts, and recent stormwater improvement projects associated with NDOT's Clear Creek Erosion Control Program.

Inventory of Maintenance and Industrial Facilities

The Spooner East Yard (US-50 milepost DO 13.20) is currently the only NDOT Maintenance facility located within the Clear Creek Watershed. The Oasis Pit off-site yard (FR-406 milepost CC 0.80), previously located within the Clear Creek Watershed, completed abandonment during the Reporting Period.

Pollution Prevention/Good Housekeeping

The Spooner East Yard is included in NDOT's Facility Pollution Prevention Plan (FPPP) under the category of Minor Maintenance Stations and Yards. Table 1 provides a summary of FPPP compliance activities performed during the Reporting Period. Table 2 summarizes the number of non-compliance issues noted during the annual stormwater inspection performed by Stormwater Division staff. The lone discrepancy noted during the inspection of the Spooner East Yard was corrected.

Table 1. FPPP Administrator compliance summary at the Spooner East Yard.[7]

Spooner East Yard			
	FY 2015	FY 2016	FY 2017
Task	Compliance %	Compliance %	Compliance %
Stormwater Inspections (FPPP Administrator)	100	100	100
Stormwater Inspections (Stormwater Division)	100	100	100
Drop Inlet Inspections	N/A	N/A	N/A
Sweeping	100	100	0

Table 2. FPPP non-compliance issues observed during annual stormwater inspections of Maintenance facilities located within the Clear Creek watershed.

Reporting Period	Spooner East Yard	Oasis Pit[8]
FY 2015	0	0
FY 2016	0	N/A
FY 2017	1	N/A

III.E. Discharges into Sanitary Sewer Systems

During the Reporting Period, NDOT received written authorizations from Clark County, Carson City, and the Truckee Meadows Water Reclamation Facility to discharge vactor truck decant water into their respective sanitary sewer systems for disposal. The waste water in question is a product of servicing stormwater facilities, e.g. drop inlets, treatment vaults, etc.

NDOT continues to be authorized to discharge vactor truck decant water into the Incline Village General Improvement District (IVGID) sanitary sewer system from the servicing of stormwater facilities in the Lake Tahoe Basin. Additionally, NDOT continues to be authorized to discharge stormwater runoff into the Virginia City Wastewater Treatment Facility.

Copies of new written authorizations will be included in the SWMP as part of future updates.

[7] This Maintenance facility does not have drop inlets.
[8] This facility commenced abandonment during the FY 2016 reporting period.

III.F. Stormwater Education Program

Public Education and Outreach

- Stormwater Public Outreach Campaign

  NDOT officially launched its "Love NV Waters" stormwater outreach campaign in July of 2016, the focus of which is to educate, bring awareness, and encourage behavioral change to the public and NDOT staff regarding stormwater pollution and protecting water quality of Nevada's waterways. Throughout the Reporting Period, Stormwater Division staff implemented the outreach campaign by attending/participating in public and industry events (50), continuing to develop and publish outreach videos (30), and hosting a fifth-grader stormwater drawing contest.[9]

- Social Media

  Efforts with stormwater outreach continue with the @loveNVwaters social media pages on Facebook, Twitter, and on the @NevadaDOT YouTube channel Stormwater News playlist (Table 3). Additionally, an Instagram account was created during the Reporting Period to enhance social media communication.

  NDOT's dedicated Stormwater Program playlist on YouTube continued to be utilized for broadcasting stormwater related videos. NDOT posted 22 new videos during the Reporting Period. Older videos (8) developed during previous reporting periods continued to be broadcasted as well. Additionally, an estimated 50 new stormwater videos were posted on Facebook.

[9] Drawings are featured in a 2017 calendar that is distributed at various stormwater outreach events.

Table 3. Stormwater outreach-related social media platforms and associated analytics during the Reporting Period.[10]

Platform	Analytics
YouTube	10,770 Views
Facebook (Videos)	66,790 Views
Facebook	132,431 Reaches 230,543 Impressions
Twitter	386,800 Reaches

- Stormwater Program Website

NDOT's Stormwater Program website is a dynamic avenue for conveying stormwater related outreach and information to both employees and the public. Table 4 summarizes the website analytics (i.e. pageviews and unique pageviews[11]) for the Reporting Period.[12] Included is information for previous webpages/webpage versions that were operational during the Reporting Period. Figure 1 depicts website analytics for the previous 3 reporting periods. The Stormwater Program website can be accessed at the following web address: https://www.nevadadot.com/doing-business/about-ndot/ndot-divisions/stormwater

Table 4. Stormwater Program website views broken down by view type and webpage.

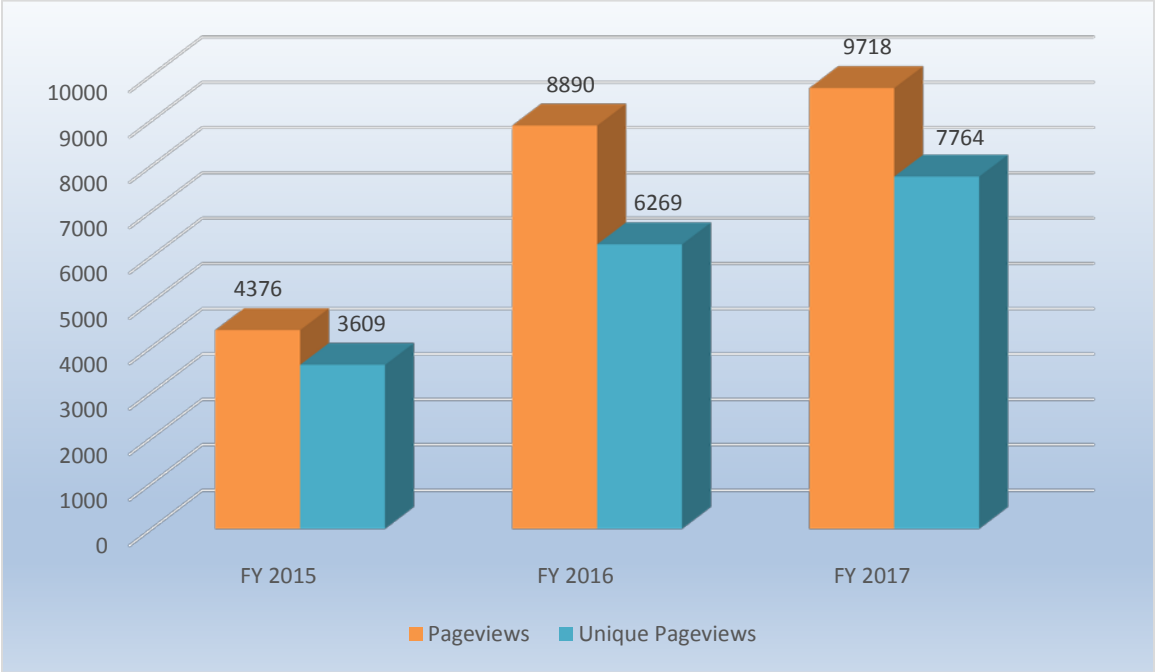
Webpage	Pageviews	Unique Pageviews
NDOT Stormwater Program (Main Page)	1,616	1,286
Report an Illicit Discharge	-----	-----
Questions or Comments	-----	-----
Frequently Asked Questions	-----	-----
Contacts and Helpful Information	-----	-----
Public Education	-----	-----
Public Participation Opportunities	-----	-----

[10] These numbers include outreach specific to the Clear Creek watershed.
[11] A "Pageview" is recorded every time a webpage is viewed, i.e. every time a webpage is opened in the web browser. A "Unique Pageview" is recorded every time a webpage is viewed in an individual session as a single event, i.e. whether the webpage was viewed once or multiple times during an individual session, the number is recorded as just one viewing.
[12] Google analytics was non-functional during a short period; consequently, data for that timeframe was not captured.

Table 4. (Cont'd)

Media and News	-----	-----
Resources/Documents	574	435
MS4 Permit	-----	-----
Mapping	386	327
Lake Tahoe Environmental Improvement	284	242
Training	-----	-----
Love NV Waters Drawing Contest	-----	-----
Stormwater Management Program (Previous Web page)	2,803	2,128
Resources (Previous Webpage)	1,339	1,072
Mapping/Inventory (Previous Webpage)	418	343
Helpful Information (Previous Webpage)	336	276
Training (Previous Webpage)	325	261
MS4 Permit (Previous Webpage)	316	277
Public Education (Previous Webpage)	315	261
Illicit Discharge Form (Previous Webpage)	220	191
Media (Previous Webpage)	200	159
Frequently Asked Questions (Previous Webpage)	179	149
Questions or Comments (Previous Webpage)	131	114
Public Participation (Previous Webpage)	119	110
Love NV Waters Drawing Contest (Previous Webpage)	101	82
Illicit Discharge Reporting	56	51
Total	**9,718**	**7,764**

Figure 1. Analytics of NDOT's Stormwater Program website for FY 2015-2017.



In addition to the Stormwater Program website, NDOT's Stormwater Division SharePoint site continues to serve as a clearing house for stormwater related information that can be readily accessed by internal employees.

- Education and Outreach Events

  NDOT participated in numerous community outreach events as a means of disseminating stormwater related information to the general public, local stakeholders, and industry partners. Highlights of these efforts are described below with a complete listing of events provided in Table B1 in Appendix B.

  - STEAM Night at Sparks High School: This event and showcase offered middle school students aspiring to be professionals in science, technology, engineering arts, and math an opportunity to meet and converse with industry professionals. Stormwater Division staff disseminated stormwater outreach materials, discussed current issues involving stormwater pollution and associated control efforts, discussed stormwater related career paths, and demonstrated ways the public can improve the quality of stormwater runoff in their communities.

- Truckee River Snapshot Day: This volunteer-based event takes a "water quality picture" of one moment in time of the Truckee River and its major tributaries. NDOT Stormwater Division personnel participated in the 17th annual event serving as team leaders for Galena High School students at the Thomas Creek sampling site. NDOT assisted students with conducting visual assessments of the sampling site (riverine and surrounding upland areas), and collecting field data and water quality grab samples. NDOT discussed with students the potential impacts of urbanized and highway stormwater runoff to receiving waterways, and measures to reduce/mitigate those impacts.

- Lamoille Canyon Environmental Education: Partnering with the City of Elko, NDOT's Stormwater Division participated in this environmental education event targeting 5th grade students from elementary schools within the Elko and Spring Creek areas. Outreach focused on the potential impacts of stormwater runoff to receiving waterways (specifically the Humboldt River) and measures to reduce/mitigate those impacts. Students were able to participate with an interactive watershed display, and were given a variety of stormwater outreach materials to take home and share with family members.

- Elko Take Pride-Clean Up Green Up: NDOT partnered with the City of Elko to assist with a community-wide garbage cleanup effort. NDOT Stormwater Division Staff provided stormwater outreach, including participation with community members with an interactive watershed display.

- Keep Truckee Meadows Beautiful Annual Truckee River Cleanup Day: An annual event focusing on trash cleanup, invasive weed removal, and storm drain stenciling within the Truckee River watershed. Partnering with the Truckee Meadows Storm Water Permit Coordinating Committee and Keep Truckee Meadows Beautiful[13], NDOT's Stormwater Division participated in the Truckee River Cleanup Day serving as group leaders for volunteers assisting with storm drain stenciling activities in residential neighborhoods. NDOT helped convey stormwater pollution prevention information to the volunteers. NDOT provided logistical, leadership, and

[13]Nevada non-profit group supported by individual and community donations providing an alternative to litter and illegal dumping through community education and cleanup/beautification projects in the Truckee Meadows.

man-power assistance as volunteers were divided into separate groups to perform storm drain stenciling in the southern Truckee Meadows region. As part of this effort, 375 storm drains were stenciled in various regions of the Truckee Meadows with the message "Dump No Waste-Drains to River." As stenciling was being performed, door hangers with stormwater educational material were distributed to nearby residences, and trash was cleaned up around storm drain inlets.

NDOT's Stormwater Division participated in numerous stormwater industry related meetings and events as an avenue for information sharing and enhancement, and for creating new/strengthening existing business relationships where stormwater and water quality is a focal point.

Partners for these efforts include the following:

- University of Nevada Reno
- Associated General Contractors of America/Nevada Contractors Association
- American Association of State Highway and Transportation Officials
- Environmental Protection Agency
- Nevada Local Technical Assistance Program
- Advisory Committee on Transportational Stormwater Management
- Transportation Board
- Las Vegas Valley NPDES Stormwater Discharge Permit Stormwater Quality Management Committee
- Truckee Meadows Storm Water Permit Coordinating Committee

NDOT utilized local media and internal communication outlets as a means for disseminating stormwater outreach, including 109 printed news releases/news stories, 113 television news stories, and 8 inter-Department newsletters (i.e. NDOT Safe and Connected Newsletter).

Adopt-a-Highway and Sponsor-a-Highway

NDOT continued to utilize the Adopt-a-Highway (AAH) and Sponsor-a-Highway (SAH) litter removal programs to assist with trash cleanup efforts along State maintained roadways (Table 5). The AAH program allows non-political organizations, volunteer groups, and individuals to

participate in maintaining and enhancing Nevada's highways through community service at no cost to the group. The SAH program focuses on trash cleanup efforts along urban freeway corridors in the Las Vegas and Reno areas. Firms and organizations seeking recognition for community service for litter cleanup efforts through this program may do so through pre-qualified contractors approved by NDOT.

Table 5. Results of the Adopt-a-Highway and Sponsor-a-Highway litter removal programs for each District during the Reporting Period.

Program	District	Participants	Accomplishment	Bags of Litter
Adopt-A-Highway	1	83	249 miles	18
	2	7	1 mile	2
	3	38	135 miles	28
Sponsor-A-Highway	1	18	926 miles 43,982 lbs.	4,511
	2	4	45 miles 56 lbs.	182
	3	0	0	0

Employee Stormwater Training Program

NDOT continued to train its employees in all 3 Districts through its 8-hour Stormwater General Awareness training course. Course content includes an overview of pertinent stormwater regulations, construction site and Maintenance facility stormwater pollution control, NDOT's Stormwater Management Program, illicit discharge detection and elimination, etc. Summaries of these efforts are provided in Table 6 and Figure 2. At the end of the Reporting Period, it was estimated that 93% of those employees (statewide) requiring the 8-hour course were current with their training requirements (Table 7).

Table 6. The number of NDOT 8-hour Stormwater General Awareness training courses offered in each District (FY 2015 - FY 2017).

	District 1	District 2	District 3	NDOT Total
FY 2015	17	7	6	30
FY 2016	9	7	5	21
FY 2017	5	3	2	10

Figure 2. The number of NDOT staff that completed the 8-hour Stormwater General Awareness training course (FY 2015 – FY 2017).

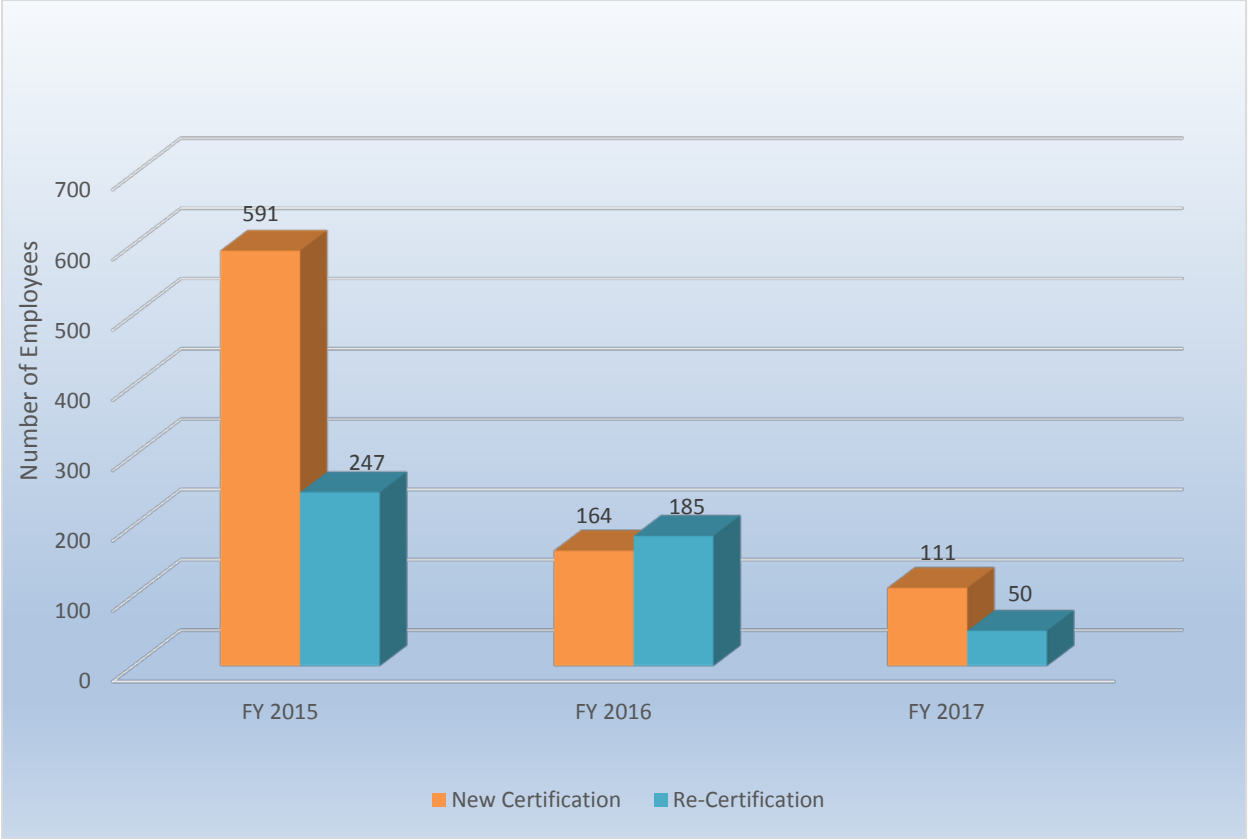


Table 7. Percentage of NDOT employees current with their 8-hour Stormwater General Awareness training requirements (FY 2015 – 2017).

	District 1	District 2	District 3	NDOT Total
FY 2015	96	95	71	89
FY 2016	93	91	97	93
FY 2017	98	87	93	93

NDOT continued to train select Construction Crew personnel through the Water Pollution Control Manager training course facilitated by the Associated General Contractors/Nevada Contractors Association (AGC)-Las Vegas chapter. This stormwater training class is a 2-day, 16-hour training course focusing on construction site stormwater compliance, specifically tailored to NDOT construction projects. Course content includes an overview of state and federal stormwater regulations, NDOT's contract specifications pertaining to water pollution control, BMP implementation, NDOT's Construction Site Best Management Practices (BMPs) Manual, and BMP inspection, installation, and maintenance. This course is a requirement for NDOT Resident Engineers, Asst. Resident Engineers, and Construction Crew stormwater inspectors. Summaries of these training efforts are provided in Figures 3-4 and Table 8. At the end of the Reporting Period, 85% of those NDOT employees (statewide) requiring the Water Pollution Control Manager training course were current with their training requirements.

Figure 3. The number of NDOT and non-NDOT personnel who completed the AGC facilitated Water Pollution Control Manager training course (FY 2015 - FY 2017).

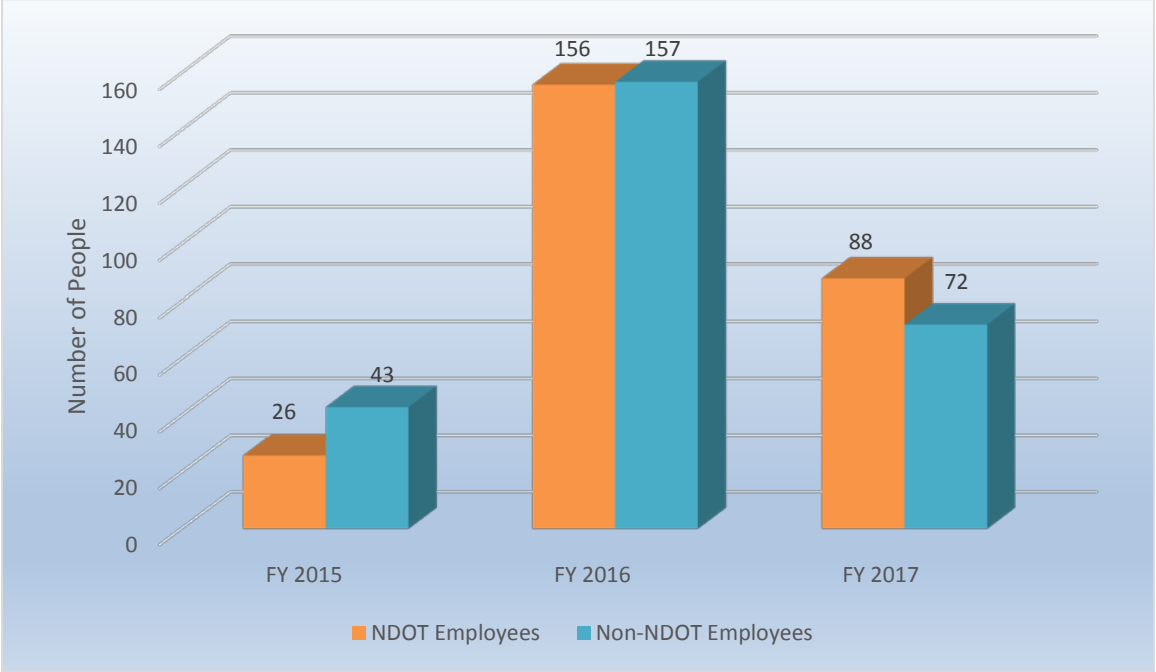


Figure 4. Percentage of NDOT employees current with their Water Pollution Control Manager training requirements at the end of the Reporting Period.

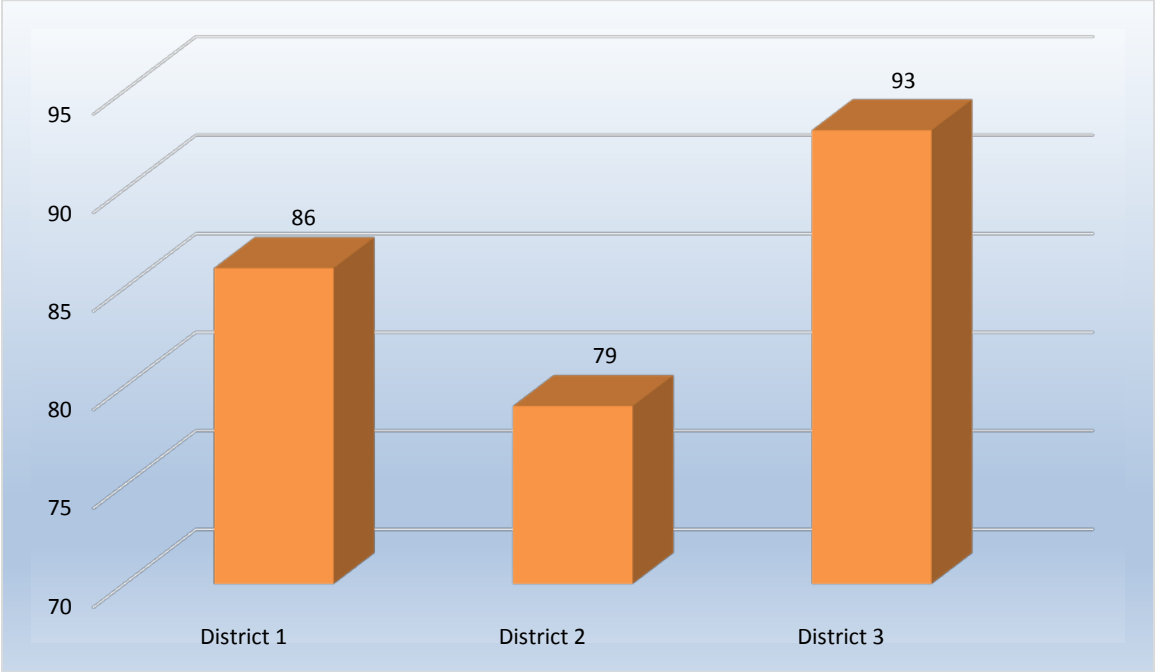


Table 8. The number of Water Pollution Control Manager stormwater training courses offered in each District (FY 2015 – FY 2017).

	District 1	District 2	District 3	NDOT Total
FY 2015	3	1	-----	4
FY 2016	6	3	3	12
FY 2017	4	6	1	11

Construction Contractor Stormwater Training Program

NDOT's construction contractors, i.e. the designated Water Pollution Control Manager, are required to complete the 16-hour Water Pollution Control Manager stormwater training course. During the reporting period, 11 training courses were offered statewide (Table 8) with 72 non-NDOT personnel[14] completing the course (Figure 3). Contractor requirements for completing the

[14] Registration to attend the 16-hour Water Pollution Control Manager training course is open to contractors and the public for a registration fee; consequently, contractor and non-contractor personnel are included with the total number of non-NDOT attendees.

Water Pollution Control Manager training course went into effect for contracts advertised after June 1, 2015.

NDOT continued formal partnering efforts with its contractors to maintain cooperative communication and mutually resolve conflicts regarding all aspects of a construction contract, including construction site stormwater pollution control compliance.

NDOT's Stormwater Division continued pre-construction communication efforts with NDOT's contractors and Resident Engineers, addressing stormwater related concerns and water quality related requirements prior to the start of construction.

Various Stormwater Training

Summarized below are highlights of the supplemental stormwater training events that NDOT staff[15] attended during the Reporting Period:

- StormCon 2016 – Indianapolis, IN (3 participants): One of the nation's largest stormwater conferences providing classes and technical sessions for a variety of stormwater topics.

- United States Geological Survey's Stochastic Empirical Loading Dilution Model (SELDM) Workshop – Carson City, NV (23 participants): An introductory course exploring the use of SELDM, a model that assists with predicting stormwater constituent loading for a given receiving waterway for a given set of hydrologic parameters and stormwater BMP considerations.

- National Highway Institute's Design and Implementation of Erosion and Sediment Control – Carson City, NV (26 participants): Course content focused on design considerations for post-construction BMPs for highway/roadway projects.

- National Highway Institute's Water Quality Management of Highway Runoff – Las Vegas, NV (19 participants): Course content focused on general water quality management considerations for highway/roadway environments.

[15] The number of participants may include staff from other NDOT divisions and outside agencies.

- IECA Post-Construction Stormwater Workshop – Carson City, NV (19 participants): Course content focused on post-construction BMP practices, including LID and Green Infrastructure.

Revised Stormwater Training Program

NDOT's Stormwater Division neared completion of its new Introduction to Stormwater training course. This online course provides a basic overview of stormwater, including what stormwater runoff is, implications of stormwater pollution, illicit discharge detection and elimination, and common best management practices. The target audience is all NDOT staff who are not required to complete a discipline specific stormwater training module (described below), or who have not completed any previously offered NDOT stormwater training course. A "soft" release was held for NDOT employees in January of 2017, but the formal "hard" release of the training course is scheduled for early FY 2018.[16]

The Stormwater Division neared completion of its new Construction Stormwater Training module. This course is specifically tailored towards NDOT District Construction Crew personnel not tasked with performing stormwater inspections at NDOT construction sites, District Permits personnel tasked with overseeing encroachment permit compliance in the field, District Stormwater Division staff, and Stormwater Division Enforcement and Compliance Section staff. The course will provide a general introduction into construction site BMP implementation, illicit discharge detection and elimination, and key aspects of NDOT's Construction Site Runoff Control Program. The class is intended to be a precursor to the Water Pollution Control Manager Training course. Implementation of this course will begin in FY 2018.

The Stormwater Division neared completion of its new Maintenance Stormwater Training module. This training course is specifically tailored towards NDOT Maintenance Crew and Equipment personnel. Subject matter includes BMP implementation associated with routine maintenance activities, illicit discharge detection and elimination, and FPPP administration and implementation. Implementation of the course will begin in FY 2018.

With the implementation of the 3 new stormwater training courses, the current 8-hour Stormwater General Awareness training course will be phased out beginning in FY 2018.

[16] The training course was officially implemented in August of 2017, i.e. the FY 2018 reporting period.

III.G. Construction Site BMP Program

Construction Site Stormwater Inspection Form

Revisions to the Weekly Site Discharge Inspection Checklist were completed and subsequently implemented during the Reporting Period. The revised form is now referred to as the Construction Site Stormwater Inspection Form (Form 018-001), which serves as the means for the Contractor's Water Pollution Control Manager and NDOT's Certified Stormwater Inspector to document construction site stormwater inspections performed on NDOT's construction contracts.

Construction Site Stormwater Inspections

Contractors continued to perform inspections at the frequency specified in the contract documentation with NDOT's Construction Crew inspectors performing oversight inspections to ensure compliance with the NDEP and/or EPA issued Construction General Permit (CGP) and NDOT's contract specifications. Inspection documentation is housed with the appropriate Resident Engineer and NDOT's Headquarters.

During the Reporting Period, NDOT's Stormwater Division developed a standard operating procedure for conducting quality assurance (Q/A) stormwater inspections on NDOT's construction and encroachment permittee construction sites. The Q/A inspections will be performed by Stormwater Division staff to ensure construction site stormwater inspections are being performed correctly and in conformance with internal policies and procedures. These inspections will also provide an opportunity to further educate NDOT and contractor personnel regarding proper construction site stormwater BMP implementation and inspection procedures. Construction sites designated to undergo Q/A inspections are prioritized in accordance with NDOT's *Stormwater Inspection Prioritization Plan for Construction and Encroachment Construction Projects* (described below). Inspection documentation will be housed within the Stormwater Division. Q/A inspections are scheduled to commence in FY 2018.

Stormwater Inspection Prioritization Plan for Construction and Encroachment Construction Projects

Developed and implemented during the Reporting Period, this plan provides procedural guidance for conducting stormwater inspections on both NDOT construction contract and encroachment permit projects. The following highlights information included in the document:

- Prioritization of construction and encroachment construction projects for Q/A stormwater inspections performed by Stormwater Division staff.
- Procedures for routine and oversight construction site stormwater inspections performed by contractor and NDOT Construction Crew personnel, respectively.
- Procedures for routine construction site stormwater inspections performed by NDOT Maintenance Crew personnel on projects where contractor CGP responsibility is transferred to NDOT.
- Water quality sampling protocol.

Stormwater Pollution Prevention Plan (SWPPP) Template for Construction Activities

During the Reporting Period, NDOT developed and released a SWPPP template. Requirements for contractors working on NDOT construction contracts to utilize the new template were incorporated into the revisions to *Section 637 – Temporary Pollution Control* of NDOT's *Standard Specifications for Road and Bridge Construction, 2014* (refer to ***III.B. Legal Authority*** of this report). The comprehensive template incorporates required SWPPP elements from both the EPA and NDEP issued CGPs. The SWPPP template also provides NDOT Resident Engineers and the Stormwater Division with a consistent format for reviewing SWPPP submittals.

Construction Site Best Management Practices (BMPs) Manual

Revisions to NDOT's *Construction Site Best Management Practices (BMPs) Manual* were ongoing during the Reporting Period. The revised guidance document was scheduled for completion in FY 2015; however various setbacks continue to delay the release of this document. NDOT is hoping for a FY 2018 release following review and comment from the AGC and the contracting community.

Stormwater Guidance Manual for Construction Projects

During the Reporting Period, NDOT's Stormwater Division began developing this manual with the intent of providing NDOT's Resident Engineers with guidance for administrating construction site stormwater management on NDOT's construction sites throughout the duration of the contract. Information will include standard operating procedures for conducting quality assurance inspections, temporary pollution control enforcement and non-compliance escalation, and CGP ownership transfer. A draft version of this guidance document was released for review in May of 2017. A final document is scheduled for release in FY 2018.

Stormwater Working Group

The Stormwater Working Group, consisting of representatives from NDOT's Stormwater Division, the Associated General Contractors of America (AGC), and the contracting community, was formally established during the Reporting Period. NDOT and the AGC recognize the need for a cooperative relationship to ensure that construction site stormwater management is a successful endeavor for NDOT and NDOT's contractors. The working group will serve as a platform to discuss issues, inconsistencies, and successes on NDOT's construction sites, as well as identify opportunities for growth and improvement from a programmatic standpoint.

The Stormwater Working Group met one time during the Reporting Period and initiated the review of NDOT's *Construction Site Best Management Practices (BMPs) Manual* to determine necessary revisions prior to its official release in FY 2018.

Contract Specifications

NDOT's Stormwater and Construction Divisions made and subsequently implemented the following changes within *Section 637 – Temporary Pollution Control* of NDOT's *Standard Specifications for Road and Bridge Construction, 2014*:

- 637.01.01 General
    - Regardless of the NDEP Stormwater General Permit NVR100000 or EPA Construction General Permit (CGP) procurement requirements, a SWPPP shall be developed and implemented. Develop the SWPPP using the Department

furnished “Stormwater Pollution Prevention Plan (SWPPP) Template for Construction Activities.”

- Furnish a copy of the initial SWPPP at the pre-construction conference. The Engineer will review the initial SWPPP for completeness. The completed SWPPP document in its entirety, including diagrams, maps, and calculations, shall be provided as evidence of SWPPP preparation. Incomplete SWPPP documents will be returned for correction and/or completion. Earth disturbing activities may not begin until the corrected SWPPP document has been reviewed and determined to be complete.

- 637.01.02 Water Pollution Control Manager

  - The Water Pollution Control Manager (WPCM) shall be responsible for developing, implementing, and updating the SWPPP. The WPCM shall update the SWPPP according to applicable stormwater permit requirements. If permit coverage is not required, the WPCM shall update the SWPPP as necessary to reflect current conditions and to maintain accuracy within 7 days whenever:

    1. There is a change in design, construction, operations, or maintenance at the construction site that may have a significant effect on the discharge of pollutants.

    2. During inspections, monitoring, or investigations by the WPCM or Engineer it is determined that the BMPs are ineffective in eliminating or significantly minimizing pollutants in stormwater discharges.

    3. There is a change in the stormwater team.

  - The WPCM shall document and record an independent record of each stormwater inspection using the Department furnished “Construction Site Stormwater Inspection Form.”

  - The WPCM shall be responsible for reporting all illicit discharges or illicit connections to the storm sewer system found within the project limits immediately upon discovery.

- 637.01.03 Permits

    - Submit a copy of executed permits procured prior to the commencement of applicable construction activities requiring permitting.

    - Regardless of the permitting authority requirements, submit photo documentation of existing vegetation and pre-construction site conditions of the entire project before commencing earth disturbing activities. Prior to requesting relief of maintenance, photo-document the post construction site conditions for all lands disturbed by construction activities. Submit electronic or digital color photos for post-construction stabilization documentation with the relief of maintenance request. All photo documentation shall be date/time stamped.

- 637.03.01 General

    - Furnish, install, and maintain in proper working condition a minimum of one rain gauge for every 10 miles or portion thereof within the project limits to determine the precipitation total for storm events.

    - Perform an inspection of the construction site prior to the commencement of earth disturbing activities to ensure construction site BMPs are installed in accordance with the current SWPPP and adhere to the Manual's minimum requirements for the selection and implementation of construction site BMPs.

    - Regardless of NDEP Stormwater Permit NVR100000 or the EPA CGP procurement requirements, perform and document stormwater inspections once every 7 days and within 24 hours of storm events 0.25 inch or greater. A reduced inspection schedule can be requested for approval. Submit this request in writing by the WPCM using the Department furnished "Request to Reduce Frequency of Construction Site Stormwater Inspections."

    - If deficiencies are noted during an inspection, a re-inspection will be required for said deficiencies. Perform the re-inspection using the Department furnished Form #018-001WPCM upon completion of remedial work and specifically document remedial actions implemented. Date/time stamped photo documentation of the initial deficiency and the corrective action are required. Required re-inspections

shall not supersede or replace regularly scheduled inspections. Re-inspections shall be performed simultaneously by Contractor and Department assigned personnel.

- Conduct a simultaneous inspection of the sediment and erosion control measures prior to submitting the Notice of Termination.
- Submit a copy of the final SWPPP documenting current field conditions with the request for relief of maintenance.

Encroachment Permit Terms and Conditions

NDOT's Stormwater and Right-of-Way Divisions began revising standard permit terms and conditions language. Although it is anticipated that the language will be finalized sometime in FY 2018, highlights of the proposed revisions are summarized below:

- Incorporate language establishing encroachment permit project prioritization categories which determines the level of construction site stormwater management required.
- Incorporate language requiring the encroachment permittee to designate a qualified stormwater contact.
- Incorporate language requiring the encroachment permittee to submit photo documentation for pre- and post-construction site conditions.

III.H. NDOT Contractors Performing Construction Activities

Construction Projects Awarded

NDOT awarded 39 4-digit construction contracts during the Reporting Period, of which 24 obtained coverage under the CGP (Table 9).

Table 9. NDOT construction contracts awarded during FY 2017 and their corresponding CGP site (CSW) number. [17]

Contract No.	Award Date	CSW No.
3619-READV	9/12/16	42546
3639-READV	10/17/19	42724
3641	7/19/16	42424
3642	7/11/16	42440
3643	7/13/16	42430
3644	7/27/16	N/A
3645	7/29/16	42526
3646	7/12/16	N/A
3647	2/17/17	N/A
3648	8/9/16	N/A
3649-READV	8/8/16	42373
3650	12/1/16	42894
3651	11/14/16	42932
3652	2/13/17	42920
3653	2/14/17	43140
3654	3/30/17	N/A
3655	2/13/17	N/A
3656	1/12/17	N/A
3657	12/27/16	N/A
3658	12/27/16	42921
3659	2/24/17	43336
3660	4/10/17	43196
3661	4/10/17	N/A
3662	3/15/17	43193
3663	3/6/17	N/A
3664	3/23/17	43398
3665	4/10/17	N/A
3666	4/7/17	N/A
3667	4/10/17	N/A
3668	4/19/17	43356
3669	5/9/17	43452
3670	4/21/17	N/A
3671	4/10/17	43161
3672	5/4/17	43358
3673	5/4/17	43388
3674	5/4/17	43484
3676	6/12/17	N/A
3679	6/19/17	43695
3680	6/1/17	43386

[17] Contracts that did not warrant CGP coverage are designated with a “N/A” for their respective CSW No.

As an NDOT standard practice, all contracts, regardless of CGP coverage, are required to implement temporary pollution control measures as specified in NDOT's *Construction Site Best Management Practices (BMPs) Manual* (as appropriate).

NDOT is not aware of any Notice of Violation issued by NDEP or the EPA on any NDOT construction project during the Reporting Period.

Construction Projects Closed Out

NDOT closed out 16 construction contracts during the Reporting Period, of which 10 obtained CGP coverage. Of those 10 permits, 8 permits were closed out, i.e. "Terminated", upon project completion. Two of the permits were transferred over to NDOT due to post-construction disturbance areas not meeting CGP final stabilization requirements and remained open at the end of the Reporting Period (Table 10). Table 11 summarizes those permits transferred during a previous fiscal year, with the construction sites achieving final stabilization during the Reporting Period, resulting in termination of CGP coverage.

Table 10. NDOT contracts closed out during FY 2017, their corresponding CGP site (CSW) number, and associated closeout status.[18]

Contract No.	CSW No.	CGP Status
3550	39269	Open (Transferred to NDOT)
3557	39496	Open (Transferred to NDOT)
3597	N/A	N/A
3600[19]	41274 41327	Pending Terminated
3601	41536	Terminated
3603	N/A	N/A
3611	41398	Terminated
3617	41762	Terminated
3620	42094	Terminated
3621	41912	Terminated
3626	N/A	N/A
3635	42271	Terminated
3640	N/A	N/A
3641	42424	Terminated
3644	N/A	N/A
3646	N/A	N/A

[18] Contracts that did not warrant CGP coverage are designated with a "N/A" for their respective CSW No. and CGP Status.
[19] Submittal of a Notice of Intent for coverage under two CGPs was unintentional, consequently only one permit was issued with the other remaining in "Pending" status.

Table 11: Construction contracts completed during a previous fiscal year with CGP coverage terminated during the Reporting Period.

Contract No.	CSW No.	CGP Status
3378	11717	Terminated
3446	22074	Terminated
3447DB	21952	Terminated
3534	35762	Terminated
3556	39984	Terminated

Active Construction Contracts Map

NDOT's Stormwater Division created a real-time, online GIS based map that displays all active 4-digit construction contracts. The map is available for viewing from NDOT's Stormwater Program website at the following web address: https://ndot.maps.arcgis.com/apps/webappviewer/index.html?id=a0007d43f61e40f68ec938cee71a7996.

III.I. Discharges from New Development and Redevelopment

NDOT closed out 5 construction contracts during the Reporting Period that incorporated permanent BMPs and stormwater improvements into the design (Table 12).

The Stormwater Division documented the review of approximately 117 District and Design projects. As part of the plan review process, the need for water quality permit procurement and post-construction permanent erosion control measures were assessed and documented. Low Impact Development (LID) measures and other post-construction BMPs were recommended as appropriate. The information was conveyed to the appropriate project designer for incorporation into the design and/or specifications (as appropriate).

The Stormwater Division continued to review encroachment permits to assess stormwater related impacts within NDOT's right-of-way. Impacts to the Department's right-of-way were assessed during the review. The need for stormwater mitigation measures and coverage under various water quality permits (as appropriate) for each project was subsequently documented. Information was then conveyed to the appropriate right-of-way personnel for inclusion in the permit documentation.

Table 12. Construction contracts closed out during FY 2017 that incorporated permanent BMPs.

Contract	Project Limits[20]	Permanent BMP Installed[21]
3557	FR-02 (EU 2.87 to EU 3.84)	General Stormwater Improvements, Riprap, & Channel Armor
3600	FR-405 (CC 0.13) Carson City Maintenance Station	General Stormwater Improvements, Epic System, Hydrodynamic Separators, & Equipment Wash Pad Improvements
3601	Lyon County (Off-System)	General Stormwater Improvements & Riprap
3611	SR-667 (WA 26.3) Reno Maintenance Station	General Stormwater Improvements, Media Filtration Devices, Sand-Oil Interceptor, & New Equipment Wash Pad
3635	I-80 (EU 4.21 to EU 4.38)	General Stormwater Improvements, Revegetation, & Riprap

Revisions to NDOT's *Planning and Design Guide* were ongoing throughout the Reporting Period. Updated content includes planning procedures incorporating permanent (post-construction) BMPs (including LID measures) into new development and redevelopment projects, guidance for permanent BMP selection, and developing operation and maintenance plans for permanent BMPs. The revised document is scheduled for release in early FY 2018.

III.J. Illicit Discharge Detection and Elimination System

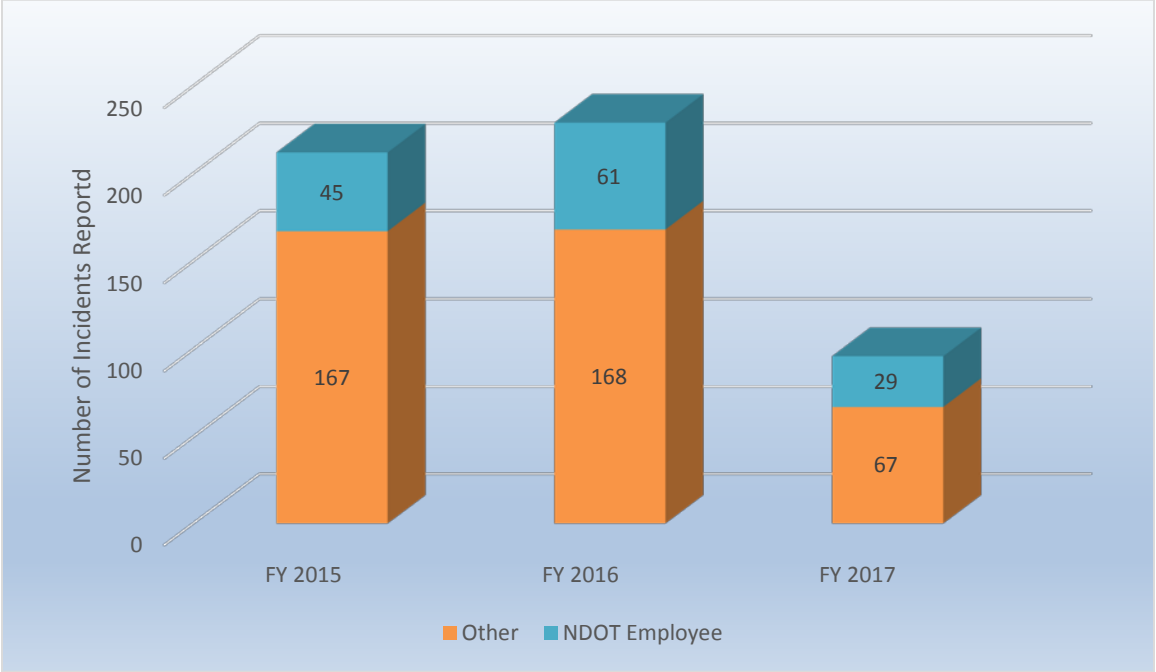
IDDE Program

A total of 96 potential illicit discharge incidents were reported to NDOT's Stormwater Division during the Reporting Period. The Stormwater Division was notified of these incidents through several avenues, notably NDEP Spill Reports, NDOT employees, and the public. Figure 5

[20] Route number followed by mile posting (letters indicate county abbreviations).
[21] Permanent BMPs located at one or multiple locations within the project limits. Riprap utilized as drainage protection, slope protection, erosion control, etc. Miscellaneous stormwater facility improvements can include curb and gutter, island paving, trench drains, drop inlet modifications, embankment protectors, paved ditches, ditch grading, ac swales and dikes, etc. Retaining walls can include MSE walls, soil nail and/or cantilever walls. Landscaping can include containerized plantings, native plant transplanting, decorative rock, mulching, water harvesting, etc. Revegetation can include hydroseeding, drill seeding, etc.

compares the number of illicit discharge incidents reported by NDOT employees versus those reported through other avenues. All reports are reviewed by the Stormwater Division's Compliance and Enforcement Section to determine if the reported incidents affect, or has the potential to affect, NDOT's right-of-way, prior to assigning the case to Stormwater Division field staff for investigation. Reports that do not affect NDOT's right-of-way are forwarded to the appropriate local or state entity.

Figure 5. The number of potential illicit discharge incidents reported to the Stormwater Division during the past 3 reporting periods.[22]



Of the 96 reported incidents, Stormwater Division staff opened 79 case files to confirm or negate an illicit discharge event. The remaining 17 incidents were determined not to affect, or have the potential to effect, NDOT's right-of-way and consequently, case files were not opened. Table 13 breaks down the incidents by District and notes their respective case status.[23] All investigations are tracked in the IDDE Database housed and maintained within the Stormwater Division. Incident case files are classified as "active" during the investigation and, if necessary, through mitigation and enforcement procedures. Incident case files are considered "closed" if the illicit

[22] The group "Other" refers to other agency personnel, the public, etc.
[23] Status at the time information for the Annual Report was being compiled.

discharge in question has ceased and all follow-up activities (e.g. cleanup, enforcement action, etc.) have been adequately addressed.

Table 13. Illicit discharge investigation summary broken down by District.

	District 1		District 2		District 3		Total Statewide	
Total Incidents Investigated	34		34		11		79	
Incidents Confirmed Illicit	25		17		7		49	
Confirmed Illicit Status	4 Active	30 Closed	13 Active	21 Closed	3 Active	8 Closed	25 Active	54 Closed

Major Outfall IDDE Inspections and Investigations

The Stormwater Division's Compliance and Enforcement Section and Planning and Design Section completed development of the *Dry Weather Outfall Inspection Plan*. This document provides guidance for mapping, prioritization, and inspection procedures for outfalls located within NDOT's right-of-way, including Major Outfalls. Major Outfalls are now designated as either "High Priority" or "Low Priority" Outfalls. Criteria is based on factors such as previous dry weather visual inspection data; location of the outfall based on proximity to an industrial area; discharge to an impaired or unique water; and has otherwise been identified as having an increased likelihood that illicit discharges could be present. In addition, the plan provides an overview of the compliance and enforcement process associated with illicit discharges observed during the inspections. District Stormwater Division staff perform the routine outfall monitoring inspections within their respective Districts. Field inspection data is gathered using the ArcGIS Collector App and subsequently housed in the Stormwater Asset Management Database maintained by the Stormwater Division.

NDOT conducted 3,837 outfall inspections during the Reporting Period. Of these inspections, 101 were conducted at "High Priority" Major Outfalls during dry weather conditions. No signs of illicit discharges were noted at any of the outfalls inspected.

NDOT's Spill Response

NDOT continues to work towards improving its processes and procedures for responding to hazardous material spill incidents within NDOT's right-of-way. NDOT's on-call hazardous

materials response service provider responded to 12 incidents during the Reporting Period. This compares with 16 incidences responded to in FY 2016 and 16 incidences during FY 2015.[24]

III.K. Industrial Facility Monitoring and Control

NDOT does not own or operate industrial facilities as described in III.K.1 of the Permit. However, NDOT continued implementing the Industrial Facility Monitoring and Control Program by performing 153 assessments of non-NDOT industrial facilities that potentially discharge stormwater runoff directly onto NDOT's right-of-way (Table 14). NDOT focused efforts on facilities that are covered under the Industrial or Mining Stormwater General Permits issued by NDEP. If it is determined that a facility potentially discharges stormwater runoff directly onto NDOT's right-of-way, a field inspection is performed to gage the potential for pollutant and illicit discharges. Inspection findings dictate whether the facility in question is a candidate for potential future monitoring, i.e. re-assessments.

Table 14. Summary of industrial facility assessments broken down by District.

	Misc. Sites New Assessments	Misc. Sites Re-Assessments[25]	SARA 313 Site New Assessments[26]	SARA 313 Site Re-Assessments	Total
District 1	21	25	-----	4	50
District 2	22	23	5	3	53
District 3	30	2	5	13	50

III.L. Stormwater Discharges from NDOT Maintenance Facilities

NDOT has developed and subsequently issued an FPPP for its designated Major and Minor maintenance facilities statewide (FPPP compliance is summarized in subsequent sections of this Annual Report). The FPPP is the basis for implementing BMPs that will prevent and/or reduce stormwater pollutant discharges from NDOT's maintenance facilities. NDOT's *Maintenance Facility Best Management Practices (BMPs) Manual* is referenced in the FPPP as the primary guidance for general housekeeping BMP implementation. A copy of the manual can be accessed

[24] The FY 2016 Annual Report reported 14 incidents in FY 2016 and 11 incidents in FY 2015. Those numbers were updated during the Reporting Period.
[25] Facilities that were identified during previous reporting periods as requiring future monitoring.
[26] These are not included in the Re-Assessed or New Assessments numbers, but rather are stand-alone numbers.

from NDOT's Stormwater Program website at the following web address: https://www.nevadadot.com/doing-business/about-ndot/ndot-divisions/stormwater/resources-documents.

All Major and Minor Maintenance facilities underwent a comprehensive, annual stormwater inspection performed by the Stormwater Division's Compliance and Enforcement Section (refer to ***III.M. Comprehensive Maintenance Facility Inspection*** below).

NDOT's Stormwater Division is unaware of any spills to the storm sewer system at any NDOT Maintenance facility during the Reporting Period.

NDOT continued to construct new permanent and general housekeeping stormwater pollution control measures at various Maintenance facilities. Highlights of these efforts are summarized below and depicted in Appendix C.

- NDOT completed construction of new renovations to the NDOT Carson City Maintenance facility as part of Contract 3600. Various improvements to the facility included repaving, constructing a new equipment wash pad, constructing stormwater flow modifications, installing new stormwater treatment vaults, and constructing the Environmental Passive Integrated Chamber (EPIC) stormwater treatment system.

- NDOT completed construction of new renovations to the North Fork Maintenance facility as part of Contract 3631. Various stormwater improvements to the facility included repaving, constructing stormwater flow modifications, and constructing a stormwater quality basin.

- NDOT also completed construction of new renovations to the Reno Maintenance facility as part of Contract 3611. Various stormwater improvements included constructing a new equipment wash pad and stormwater flow modifications.

Designs for stormwater quality improvements at the Virginia City, Ely, Wells, and Las Vegas-North Maintenance facilities have been initiated.

III.M. Comprehensive Maintenance Facility Inspection

Comprehensive annual stormwater inspections were performed by NDOT's Stormwater Division at all[27] (277) designated Major and Minor Maintenance facilities (Table D1 in Appendix D). Following the inspections, formal inter-Departmental memos were submitted to the designated FPPP administrators documenting stormwater related concerns and subsequent recommendations for corrective action to maintain FPPP compliance. All inspection reports were signed and certified in accordance with ***V.G. Signatory Requirements*** of the Permit. Inspection documentation is housed within the Stormwater Division. Copies of the inspection reports are available upon request.

III.N. Scope of Inspections

Comprehensive annual stormwater inspections performed at designated Major and Minor Maintenance facilities focused on all areas that could be a potential source of pollutants in stormwater runoff.

Stormwater Division personnel noted a total of 102 stormwater deficiencies/FPPP non-compliance issues[28] statewide during their annual inspections, with 99 of those having documentation supporting appropriate remedial action (Figure 6). A summary of the ratios of the number of FPPP compliance issues per inspection for the 3 Districts over the previous 3 reporting periods is presented below in Table 15. The lower the ratio, the lower the number of compliance issues noted per inspection.

Table D2 in Appendix D summarizes the top 3 FPPP issues noted during the annual stormwater inspections conducted over the previous 3 reporting periods. Maintaining/installing sediment control BMPs, miscellaneous facility general housekeeping measures, and lack of appropriate control measures (containment and/or cleanup) for minor equipment fluid leaks continue to be the most prevalent issues noted during the inspections.

[27] The total number can change annually due to the addition and discontinued use of Maintenance facilities.

[28] These do not include suggestions for BMP enhancement, i.e. recommendations for possible BMP improvement.

Figure 6. Summary of comprehensive annual stormwater inspections conducted at NDOT's Major and Minor Maintenance Facilities statewide over the previous 3 reporting periods.

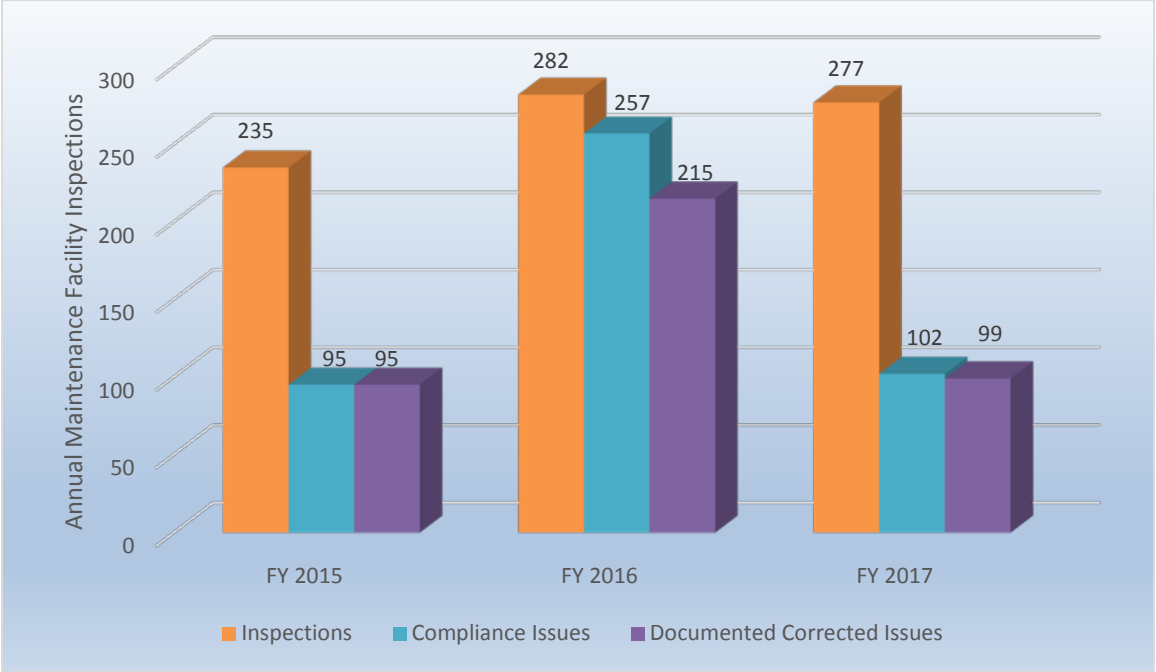


Table 15. Ratio of FPPP non-compliance issues to stormwater inspections conducted for all each District over the previous 3 reporting periods.

	District 1	District 2	District 3	Average
FY 2015	0.55	0.46	0.27	0.43
FY 2016	0.39	2.1	0.73	1.1
FY 2017	0.37	0.45	0.31	0.38

Maintenance Facility Stormwater Inspection Form

NDOT's Stormwater Division modified the 2 inspection forms utilized for documenting Major and Minor Maintenance facility stormwater inspections. NDOT will continue to review the forms annually and make modifications/improvements as necessary.

III.O. Public Street Maintenance Program in Urbanized Areas

NDOT continues to implement its Public Street Maintenance Program. Stormwater related maintenance activities are tracked via NDOT's Maintenance Management System (MMS), a software tracking program maintained by NDOT's Maintenance and Asset Management Division. Summaries of Maintenance activities performed statewide and in select MS4 areas are provided

in Tables E1 thru E7 in Appendix E. Information regarding a Maintenance activity performed along a specific roadway segment is available upon request.

NDOT applies abrasives, anti-icing, and de-icing agents on highways across the state where near freezing or freezing winter temperatures occur to maintain a level of safety for the traveling public. NDOT continues to refine the rates of abrasive, anti-icing, and de-icing agent application rates for maximum efficiency while minimizing adverse impacts to receiving waterways without compromising public safety. To assist with this endeavor, NDOT Maintenance personnel continue to utilize the Road Weather Information Systems (RWIS) to assist with determining optimal application rates. Eight new RWIS stations became operational during the Reporting Period, bringing the total number to 95 sites statewide utilized by NDOT Maintenance personnel to assist with snow and ice control operations.

NDOT continues to utilize the Sponsor-A-Highway and Adopt-A-Highway programs to assist with litter and debris cleanup efforts along NDOT's highways (refer to ***Section III.F. Stormwater Education Program***).

NDOT continued to perform street sweeping activities in urbanized areas, often exceeding Permit requirements of 2 times per year[29]. Summaries of sweeping activities performed during the previous 3 reporting periods are provided in Tables E1 thru E7 in Appendix E. Statewide, there was an increase in the volume of material recovered from sweeping efforts compared to the previous reporting period, which coincided with the increase in material, i.e. sand/salt, applied during winter conditions.

III.P. Measures to Control Discharges from Roadways

Highway Maintenance Activities

NDOT continues to implement its statewide Public Street Maintenance Program in an ongoing effort to reduce stormwater pollutant discharges from the right-of-way. The larger urbanized regions of the state, as well as the Lake Tahoe Basin and Clear Creek Watershed areas, continue to be priority areas for NDOT to focus stormwater pollutant reduction measures. Summaries of

[29] NDOT is required to adhere to local air quality requirements in some urbanized areas such as Washoe and Clark Counties; consequently, sweeping activities are conducted at higher frequencies in these areas.

Maintenance activities are provided in Tables E1 thru E7 in Appendix E. Information regarding a Maintenance activity performed along a specific roadway segment is available upon request.

NDOT's Stormwater Division continued to evaluate projects (i.e. slope assessments) during the design phase to determine if areas within the project limits, specifically slopes that are 3:1 or greater, are experiencing significant erosion control issues. Parameters that are typically evaluated include severity of erosion, the extent of sediment migration, and whether or not the inclusion of additional post-construction stabilization measures (i.e. above and beyond current design measures) are warranted. Considering pre-construction conditions as well as forecasted post-construction conditions, recommendations for mitigation measures (as appropriate) for erosion control are submitted to NDOT's Design Division for consideration.

During the Reporting Period, a field collector application was created specifically for conducting slope analysis using ArcGIS capabilities. 97, 13, and 42 slope assessments were performed in Districts 1, 2, and 3, respectively. High priority areas were identified and will undergo further evaluation beginning in FY 2018. Design was completed for project number SPI-080-4(029) along I-80 near Carlin to treat multiple 2:1 eroded slopes with a riprap, topsoil, and hydroseed treatment.

NDOT Maintenance Crews continue to perform slope stabilization improvements as needed throughout their respective service areas. Tables E1 thru E6 in Appendix E summarizes the volume of soil material utilized for these efforts under the MMS task "Repair Fill and Cut Slopes."

Snow and Ice Control

Information pertaining to material source and chemistry of abrasives, anti-icing, and de-icing agents continue to be maintained by NDOT's Maintenance and Asset Management Division. During the Reporting Period, NDOT's Maintenance and Asset Management Division completed revisions to NDOT's *Maintenance Manual*, an internal guidance document providing Maintenance personnel statewide with information relevant to maintenance tasks and responsibilities. Included with the revisions is the inclusion of testing requirements for anti-icing and de-icing agents as required by the Permit.

Information pertaining to the volume of abrasive and de-icing agents applied on NDOT's roadways is summarized in Tables E1 thru E7 in Appendix E. NDOT continues to "fine tune" application rates to meet the needs of the traveling public, while striving to reduce potential impacts to

receiving waterways. Information pertaining to the type and volume of anti/de-icing materials applied along a specific roadway segment is available upon request.

Storm Sewer System and Highway Maintenance

Tables E1 thru E6 in Appendix E summarize hydraulic facility servicing efforts within specific MS4 areas and statewide. Information pertaining to the maintenance of hydraulic facilities along a specific roadway segment is available upon request. Information tracking capabilities of NDOT's MMS is limited and currently not configured to collect material volume data associated with the servicing of specific storm sewer facilities, e.g. drop inlets. NDOT has commenced development of a new enterprise asset management system which will have the capabilities of tracking this volume data.

III.Q. Storm Sewer System and Highway Maintenance

Inventory Post-Construction Stormwater Pollution Control BMPs

The inventory and mapping of post-construction stormwater pollution control BMPs is a component of the hydraulic facility inventory and mapping efforts (***III.C. MS4 Maps and Outfalls***). NDOT is focusing efforts on post-construction BMPs such as stormwater retention/detention basins, constructed wetland areas/water quality basins, and manufactured stormwater treatment devices. NDOT has completed inventory efforts and will focus efforts on maintaining and updating the data as appropriate.

Inspect Storm Sewer System and Develop Maintenance Schedules and Priorities; Perform Repair, Maintenance, and Cleaning

NDOT's inspection and subsequent maintenance of its storm sewer system is performed by Maintenance Crews. The 3 NDOT Districts develop schedules for their respective service areas with maintenance activities occurring as needed. Schedules reside within the appropriate District office with all Maintenance activities summarized in the MMS. Tables E1 thru E6 Appendix E provide summaries of maintenance related tasks involving the cleaning of stormwater facilities.

Upon completion of NDOT's *Stormwater Operations and Maintenance Plan* (scheduled for release in FY 2018), Maintenance personnel will have documented guidance for performing routine maintenance on storm sewer system facilities. In addition, the Stormwater Division will

assist the Districts with establishing priority areas for conducting inspections and performing cleanout of storm sewer system facilities.

Roadside Management Program

NDOT Maintenance personnel continued to utilize NDOT's *Construction Site Best Management Practices (BMPs) Manual* (as appropriate) and AASHTO's *Maintenance Stormwater Field Guide* when performing maintenance activities.

Maintenance personnel are required to complete NDOT's Stormwater General Awareness training course. In addition, select Maintenance personnel have completed the Water Pollution Control Manager training course. Both classes provide education regarding stormwater pollution control when performing routine maintenance activities.

III.R. Herbicide, Pesticide and Fertilizer Program

Implement Pesticide and Fertilizer Application Procedures

NDOT continued to implement its Vegetative Control Program (refer to various sections of the Annual Report) to prevent and/or reduce the discharge of pollutants in stormwater from the MS4 Permit area while maintaining a level of safety for the traveling public, e.g. line of site, and reducing wildfire potential. Methods implemented include chemical treatment (i.e. herbicide application) and physical treatment (i.e. mowing). NDOT continues to utilize site-appropriate vegetation, i.e. native and climate adapted, to assist with post-construction revegetation efforts statewide.

NDOT continued herbicide application activities to control state listed noxious weed species and improve sight conditions along shoulder areas for motorist safety. Tables E1 thru E6 in Appendix E summarize herbicide quantities applied within the specified MS4 areas during the previous 3 reporting periods. NDOT Maintenance personnel continued to be compliant with Nevada Department of Agriculture pest control applicator requirements; certification records are maintained at the appropriate District offices. Contractor herbicide applicators are also required by State law to have the appropriate certification. Certification signifies that the applicators are knowledgeable in appropriate herbicide use and application practices. In addition to the application of herbicides for statewide weed control efforts, NDOT applies small amounts of pesticides at Maintenance facilities for onsite pest control, e.g. insect, rodent, and weed control.

NDOT's use of fertilizers in the right-of-way is minimal and limited to assisting with post-construction revegetation establishment (contract specific), and with maintaining existing landscaped areas. NDOT closed out 19 construction contracts during the Reporting Period that incorporated various soil amendments to assist with post-construction vegetation establishment (Table 16). Soil amendments are typically organic based substances including liquid humus and mycorrhizae inoculants.

Tables E1 thru E6 in Appendix E summarize fertilizer application by Maintenance Crews during the Reporting Period. Most of the total liquid fertilizer (78%) and nearly a third of the pelletized fertilizer (30%) applied statewide was limited to landscaped areas along the I-80 corridor within the Washoe MS4 area.

Current stormwater training curriculum as well as NDOT's revised *Maintenance Manual* and AASHTO's *Maintenance Stormwater Field Guide* provide BMP guidance to Maintenance Crews for the proper application and storage of pesticides and fertilizers.

Table 16. Summary of construction contracts closed out during the Reporting Period that incorporated fertilizers or soil amendments to assist revegetation efforts.

Contract	Treatment
3585	Soil Amendments
3586	Soil Amendments
3590	Soil Amendments
3596	Soil Amendments
3598	Soil Amendments
3607	Soil Amendments
3609	Soil Amendments
3615	Soil Amendments
3618	Soil Amendments
3623	Soil Amendments
3627	Soil Amendments
3630	Soil Amendments
3635	Soil Amendments
3639	Soil Amendments

Table 16 (cont'd).

3645	Soil Amendments
3649	Soil Amendments
3652	Soil Amendments
3655	Soil Amendments
3671	Soil Amendments

III.S. NDOT Maintenance Yards Management Program

NDOT's Major and Minor Maintenance facilities continue to be covered under a Facility Pollution Prevention Plan (FPPP). Hard copies of the updated FPPP have been distributed to each Maintenance station. In addition, a copy of the document is available for viewing/download on NDOT's Stormwater Program website at https://www.nevadadot.com/doing-business/about-ndot/ndot-divisions/stormwater/resources-documents, and internally on NDOT's Stormwater Division SharePoint site.

The FPPP provides guidance pertaining to BMP implementation to maintain Permit compliance, as well as specific responsibilities to be performed by (or under the direction of) FPPP Administrators and Stormwater Division staff. Table 17 provides a summary of FPPP compliance activities performed during the Reporting Period.

NDOT was 100% compliant with conducting stormwater inspections at all designated Major and Minor facilities. Routine Maintenance facility sweeping fell short of FPPP requirements for many of the Major Maintenance facilities, averaging 50% of their specified annual sweeping frequencies. However, sweeping did occur at least one time at all Major facilities during the Reporting Period with some facilities performing sweeping at a frequency greater than FPPP requirements. Sweeping at the Major facilities resulted in an annual average total of 31 yd^3 of material recovered per facility. Sweeping did occur at some Minor facilities, but gaging compliance was difficult due to some facilities having little to no pavement. NDOT's Stormwater Division will work towards identifying Minor Maintenance facilities where sweeping is practical.

Table 17. FPPP compliance summary for Major and Minor Maintenance facilities for the previous 3 reporting periods.

District 1			
	FY 2015	FY 2016	FY 2017
Task	Compliance %	Compliance %	Compliance %
Stormwater Inspections (FPPP Administrator)	100	100	100
Stormwater Inspections (Stormwater Division)	100	100	100
Drop Inlet Inspections	100	100	100
District 2			
	FY 2015	FY 2016	FY 2017
Task	Compliance %	Compliance %	Compliance %
Stormwater Inspections (FPPP Administrator)	92	100	100
Stormwater Inspections (Stormwater Division)	100	100	100
Drop Inlet Inspections	100	100	100
District 3			
	FY 2015	FY 2016	FY 2017
Task	Compliance %	Compliance %	Compliance %
Stormwater Inspections (FPPP Administrator)	100	100	100
Stormwater Inspections (Stormwater Division)	100	100	100
Drop Inlet Inspections	100	100	100

All Maintenance facility drop inlets were inspected as part of the annual stormwater inspections performed by the Stormwater Division's Compliance and Enforcement Section. However, the need to clean out drop inlets and other stormwater facilities, is typically performed on an as-needed basis; consequently, not every Maintenance facility performs cleanout of their stormwater facilities annually. Those Maintenance facilities that reported cleanout of hydraulic facilities, i.e. sand/oil interceptors, drop inlets, culverts, etc., are listed below in Table 18. Also included in Table 18 are those Maintenance facilities that performed various stormwater pollution control measures, e.g. slope repair.

Table 18. Maintenance facilities that reported stormwater facility servicing and activities associated with implementing new stormwater pollution control measures.

District	Name	Designation
1	Las Vegas-North Station	Major
1	Las Vegas-South Station	Major
1	Mt. Charleston Station	Minor
1	Tonopah Station	Major
1	Beatty Station	Minor
1	Searchlight Station	Minor
2	Carson City Station	Major
2	Fallon Station	Major
2	Gardnerville Station	Minor
2	Wellington Station	Minor
2	Incline Station	Minor
2	Silver Springs Station	Unknown[30]
2	5th Street Yard	Minor
2	Fairview Yard	Minor
2	Smart Yard	Minor
2	Trento Yard	Minor
2	Log Cabin Yard	Minor
2	Clear Acre Yard	Minor
2	Boomtown Yard	Minor
3	Elko	Major
3	Ely	Major
3	Lund	Minor
3	Old Baker Station	Minor
3	Independence Valley Station	Minor
3	Eureka Station	Minor
3	Orovada Station	Minor
3	I-80 LA 4.0 Yard	Minor

[30] This new Maintenance Facility is in the early phases of construction and has not been provided with a Major/Minor designation.

III.U. Annual Review and Updating the SWMP

NDOT did not perform any revisions or updates to its SWMP during the Reporting Period.

III.V. Updating NDOT's Manuals

No revisions or updates to NDOT's *Maintenance Facilities Best Management Practices (BMPs) Manual* and *Field Guide for Illicit Discharge Detection and Elimination* occurred during the Reporting Period.

Efforts with revising NDOT's *Construction Site Best Management Practices (BMPs) Manual* were ongoing during the Reporting Period. Prior to its anticipated release, it was determined that several areas of the document warranted revision. Additionally, the AGC requested an opportunity to review the document and provide comments prior to its official release.[31] NDOT is hopeful that a final, revised document will be completed and subsequently disseminated for use in FY 2018.

Efforts with revising NDOT's *Planning and Design Guide* were ongoing during the Reporting Period. A final, revised document will be completed and subsequently disseminated for use in FY 2018.

NDOT's Stormwater Division began developing the *Stormwater Guidance Manual for Construction Projects* during the Reporting Period. The intent of this document is to provide guidance to NDOT's Resident Engineers for stormwater administration and compliance requirements on construction projects from contract award through relief of maintenance. This document, which is currently in draft form and undergoing internal review, will be housed and maintained within the Stormwater Division. NDOT is anticipating the release of the final document in FY 2018.

NDOT's Stormwater Division developed, and subsequently implemented, the *Illicit Discharge Field Investigation Procedures Manual* during the Reporting Period. This manual provides standard operating procedures to Stormwater Division and District personnel for the investigation

[31] The AGC began review of the document in July of 2017, i.e. FY 2018.

and source determination associated with the discovery of potential illicit discharges. This document is housed and maintained within the Stormwater Division and is currently available for internal viewing/downloading from the Stormwater Division's internal SharePoint site.

III.W. Characterization Data

The Stormwater Division assessed program needs in FY 2017 and hired staff to further expand the stormwater monitoring program, including the development of a Quality Assurance Program Plan and Standard Operating Procedures, procurement of monitoring equipment and supplies, and creation of Sampling and Analysis Plans for planned monitoring locations. The Stormwater Division will begin efforts to enhance the stormwater quality monitoring program in FY 2018, with a greater emphasis on stormwater runoff characterization.

A summary of NDOT's water quality monitoring efforts during the Reporting Period is provided in the following section.

IV.A. Stormwater Monitoring

Below is a summary of NDOT's stormwater quality monitoring activities conducted during the Reporting Period. Laboratory analysis and reports are not included with this Annual Report; however they are available upon request.

Stormwater Monitoring Plan

NDOT submitted its annual Stormwater Monitoring Plan for FY 2017 to NDEP on September 30th, 2016. A copy of the plan is provided in Appendix G.

Stormwater Monitoring Projects

- Implementers Monitoring Program (IMP) was developed jointly by California and Nevada TMDL implementing jurisdictions to collectively fulfill California NPDES requirements or Nevada Interlocal Agreement commitments. The IMP represents a historic first step toward implementing a comprehensive Regional Stormwater Monitoring Program (RSWMP) for the Lake Tahoe Basin. As part of the IMP, NDOT (with assistance from the Desert Research Institute (DRI) and the Tahoe Resource Conservation District (TRCD)) spearheaded a side-by-side study of filter vault performance on SR-431. There are 5 monitoring locations at this

site: the inflow and outflow of two manufactured stormwater treatment devices (Contech Media Filtration System (MFS) and Jellyfish) as well as stormwater flow that bypasses both treatment systems. TRCD performs stormwater monitoring at this site as well as 7[32] other monitoring sites within the Lake Tahoe Basin for the TMDL implementing jurisdictions.

The TRCD released a report on March 15, 2017 summarizing stormwater quality monitoring efforts at the 8 monitoring sites. Regarding the SR-431 site specifically, results indicate that the two vaults performed similarly in water year 2014, but the MFS performed better in pollutant removal than the Jellyfish in water years 2015 and 2016. Results of the study suggest that regular maintenance of the vaults is necessary for optimum pollutant removal. At best, the two filter vaults will reduce sediment and nutrients by approximately one third. Additionally, results of the study also suggest that reducing stormwater volumes may be more effective in treating pollutant loading than utilizing stormwater treatment devices designed to reduce pollutant concentrations. A copy of the report is available upon request.

- Lake Tahoe stormwater jurisdictions (NDOT, Cal Trans, Kingsbury General Improvement District, City of South Lake Tahoe, as well as Placer, Washoe, and Eldorado Counties) initiated a Road Operations and Maintenance Practices Effectiveness Testing Project in FY 2013. The objective of the study is to provide cost-effectiveness information and operational guidance to the jurisdictions to efficiently and effectively operate their respective stormwater management programs within the Lake Tahoe Basin. A report was released previously in FY 2016. An agreement to extend this project through FY 2019 has been executed.

- NDOT partnered with the Truckee Meadows Storm Water Permit Coordinating Committee (Committee) to characterize stormwater quality from 4 urban stormwater outfalls that discharge to the Truckee River. In addition, 6 tributaries to the Truckee River were monitored to characterize stormwater quality, and 3 near-continuous streamflow gauges were maintained on 3 Truckee River tributaries. As part of a special study in water year 2016, non-storm baseflow samples were collected from Steamboat Creek and North Truckee Drain over a 24-hour period. A final monitoring report was issued in December of 2016. Results of the report indicated elevated concentrations of various water quality constituents (notably total nitrogen), in select tributaries and urban outfalls discharging to the Truckee River. A copy of the report is available upon request.

[32] The SR-431 monitoring site is the only one that receives stormwater runoff from NDOT's roadways.

- NDOT partnered with the Committee to perform assessments of select major tributaries to the Truckee River to evaluate impacts from development, and track trends in stream condition and overall stream health. Stormwater runoff from NDOT's roadway system directly discharges into several of the tributaries assessed. A final report was issued in January of 2017. A copy of the report is available upon request.

- NDOT partnered with DRI to conduct continuous real-time monitoring at 4 sites distributed within the Clear Creek, Lake Tahoe, and Las Vegas Wash watersheds. Meteorological and water quality parameters are continuously monitored and can be viewed in real time via the following data management website: https://ndot-stormwater.dri.edu. Goals of this project include effectively monitoring pollutant loading from stormwater discharges, improving stormwater monitoring capabilities, and exploring the methods and benefits of making continuous real-time water quality data available to agency personnel and the public.

- NDOT partnered with Michael Baker International to conduct inspections of 5 stormwater treatment basins using unmanned aerial vehicles (UAVs). The condition of inlet and outlet structures, side slopes, and basin floors was documented by the UAVs to assist with evaluating erosion and sediment deposition within the basins. The UAV data allows the generation of 3-D terrain modeling data to a 1 cm resolution, which will assist NDOT with monitoring erosion and sediment deposition with the basins over time. As part of this effort, NDOT installed pressure transducers in the 5 basins to record the stage of water in and below (~ 3 ft.) the basin. The data collected from the pressure transducers will help monitor the volume of water captured by the basins during storm events, infiltration rates, and draw-down time. NDOT will also monitor representative precipitation gauges to collect precipitation data. Comparing precipitation volumes to runoff volumes will help NDOT further understand the hydrology of the detention basins (notably the relationships between sediment deposition and precipitation totals).

IV.B. Record Keeping

NDOT retains all records per section IV.B.1 of the Permit. Copies of records are available upon request.

IV.C. Annual Reports

Annual Report Submittal

NDOT submitted its Annual Report summarizing SWMP related activities for FY 2016 to NDEP on September 29th, 2016. The Annual Report, as well as reports from the previous two reporting periods, are currently posted on NDOT's Stormwater Program website at https://www.nevadadot.com/doing-business/about-ndot/ndot-divisions/stormwater/resources-documents.

SWMP Programmatic BMP Measurable Goal Accomplishment

As noted in the FY 2015 Annual Report, the following IDDE programmatic BMPs were incorporated into various sections of NDOT's revised IDDE Program.

- IDDE-01 (Illicit Discharge Reporting Hotline)
- IDDE-02 (Illicit Discharge Reporting and Response Database)
- IDDE-03 (Spill Control and Prevention)
- IDDE-04 (IDDE Response, Corrective Action, and Follow-Up)
- IDDE-05 (Sanitary Sewer Exfiltration)
- ENVR-03 (Special Investigations)
- MAINT-04 (Outfall Screening and Investigations)

Consequently, evaluation of these BMPs is included appropriately with the evaluation of the IDDE Program in the SWMP Program Assessment subsection of this report.

CONST-01 (Construction Site Inspections)

1. *Regularly inspect all construction sites within the MS4 Permit area.*

   Status: NDOT performs construction site stormwater inspections at all NDOT construction sites. NDOT's contractors are tasked with performing routine construction site stormwater inspections per NDOT's contract specifications. NDOT's Certified Stormwater Inspectors perform oversight inspections as a quality control measure. Copies of inspection forms completed by NDOT's Certified Stormwater Inspectors are archived within the Construction Division at NDOT's Headquarters.

CONST-02 (Construction Site SWPPPs)

1. *Verify Stormwater General Permit NVR100000 coverage and SWPPP development and implementation (as appropriate).*

   Status: Recent updates to *Section 637 Temporary Pollution Control* of the *Standard Specifications for Road and Bridge Construction, 2014*, require NDOT's contractors to submit a SWPPP for review using NDOT's *Stormwater Pollution Prevention Plan (SWPPP) Template for Construction Activities*. NDOT's Resident Engineer and Stormwater Division review the SWPPP for completeness using NDOT's *Stormwater Pollution Prevention Plan (SWPPP) Checklist*. Copies of the completed initial SWPPP are archived within the Construction Division.

   NDOT's Resident Engineer verifies project stormwater documentation, e.g. stormwater permits, are in order as part of completing NDOT's *Project Stormwater Checklist* prior to the initiation of earth disturbing activities.

2. *Upon project completion, ensure the Notice of Termination (NOT) and Notice of Change[33] (NOC) is filed (as appropriate).*

   Status: NDOT works closely with construction contractors to ensure the proper documentation to either close out the CGP (i.e. Terminate) or transfer complete ownership, i.e. NDOT becomes both the "Owner" and "Operator", is submitted to NDEP or EPA (as appropriate) upon project completion.

CONST-03 (Nevada Contractors Guide for Construction Site BMPs)

1. *Provide access to the current version of the document on NDOT's website.*

   Status: A current version of this document is available on NDOT's Stormwater Program website at the following web address:
   https://www.nevadadot.com/doing-business/about-ndot/ndot-divisions/stormwater/resources-documents

[33] It should be noted that when NDEP's new Stormwater General Permit NVR100000 went into effect January 5, 2015, the Notice of Change form was eliminated.

2. *Assist with future document revisions as necessary.*

   Status: NDOT was not asked to participate in any revisions to the document during the Reporting Period.

DEPT-03 (Plan Review Process)

1. *Review project plans to ensure that stormwater runoff from new and re-development projects is adequately addressed and treated to the MEP.*

   Status: The Stormwater Division reviews NDOT project designs and encroachment permit project designs to ensure that post-construction stormwater runoff is adequately addressed. The Stormwater Division's Program Development Section is tasked with developing and/or reviewing stormwater treatment designs for new and re-development projects.

DEPT-04 (Legal Authority and Enforcement)

1. *Exercise current legal authority to enforce the provisions of NDOT's MS4 permit.*

   Status: The Nevada State Legislature formally codified the provisions of Senate Bill 324 into the *Nevada Revised Statutes (NRS) 408 – Highways, Roads, and Transportation Facilities* during the Reporting Period. With this, NDOT has been given the necessary legal authority to regulate discharges entering NDOT's right-of-way. NDOT has exercised its legal authority to the extent possible while continuing to refine enforcement response procedures. The Stormwater Division's Compliance and Enforcement Section has initiated efforts to develop standards, policies, and procedures with the goal of developing a stronger and more robust IDDE program.

2. *Provide written notice to NDEP of any proposal to modify the regulation or ordinances for stormwater discharges into the MS4.*

   Status: NDOT did not formally propose changes to regulations or ordinances for stormwater discharges into the MS4.

DEPT-05 (Departmental Stormwater Coordination)

1. *Continue to facilitate, develop, and promote inner Department and inter-agency relationships.*

   Status: NDOT's Stormwater Division routinely works with other NDOT Divisions, notably the Construction, Design, and Maintenance and Asset Management Divisions, to assist with implementing the SWMP. NDOT developed new, and continued existing working relationships with various outside agencies and stakeholder groups, notably NDEP, the AGC, UNR, and MS4 permittees within the State.

DEPT-06 (Annual Review of the SWMP)

1. *Assess the overall effectiveness of the Department's SWMP by conducting an annual evaluation of the individual and collective programs.*

   Status: Refer to appropriate sub-sections under section ***IV.C. Annual Reports*** of this report.

2. *Prepare an Annual Report summarizing SWMP related activities for the previous state fiscal year for submittal to NDEP by October 1st annually.*

   Status: NDOT submitted the FY 2016 Annual Report to NDEP on September 29, 2016.

3. *Incorporate and implement NDEP approved changes to the SWMP.*

   Status: NDOT did not modify the SWMP during the Reporting Period; consequently, NDOT did not formally submit proposed SWMP changes to NDEP for approval during the Reporting Period.

DEPT-07 (Impaired Waters)

1. *Identify locations where NDOT roads and rights-of-way intersect or parallel water bodies that are on the 2008-2010 303(d) list within the Black Rock and Colorado Hydrographic Regions.*

   Status: NDOT is no longer assessing waterways listed on the 2008-2010 303(d) list due to the 2012 303(d) list going into effect in December of 2014, and most recently the 2014

303(d) list going into effect in October of 2015. Utilizing GIS capabilities, NDOT has identified locations where its roadway system intersects or parallels all impaired waterways statewide, including within the Black Rock and Colorado Hydrographic Regions.

2. *Determine if the impaired constituents are commonly found in stormwater discharge from NDOT's MS4.*

Status: NDOT has identified primary constituents of concern that could potentially be associated with stormwater runoff from its MS4 areas in concentrations that could have potential negative impacts to receiving waterbodies. This information was then used to identify 303(d) listed waterbodies with impairments for those same constituents of concern. Summaries of these evaluations will be included with future updates to NDOT's SWMP.

NDOT continued to evaluate impaired waterways during the Reporting Period. It was determined that NDOT's MS4 does not intersect or parallel any waterbodies in the Black Rock Hydrographic Region that are impaired by transportation-related pollutants. In the Colorado River Hydrographic Region, 13 waterbody reaches impaired by transportation-related pollutants receive stormwater discharge from NDOT's MS4; however, only 7 potentially have more than *de minimis* impacts (Table 19). NDOT will continue conducting evaluations of impaired waterways listed in the most current Water Quality Integrated Report issued by NDEP.

Table 19. Waterbodies in the Colorado River Hydrographic Region Impaired by Transportation Related Pollutants.

Waterbody Name	Waterbody ID	Transportation-Related Impairment(s)	NDOT Road
Virgin River	NV13-CL-09_00	Temperature, Total P	SR-170, IR-15
Muddy River	NV13-CL-12_01	Iron	IR-15
Muddy River	NV13-CL-12_02	*E. Coli,* Fecal Coliform, Iron	SR-169
Meadow Valley Wash	NV13-CL-32_00	Temperature	US-93, SR-317
Duck Creek	NV13-CL-42_00	TDS	IR-15, IR-215, IR-515, SR-582
Las Vegas Wash above Treatment Plants	NV13-CL-45_00	TDS	IR-15, SR-604, SR-612
Pittman Wash	NV13-CL-49_00	TDS	IR-515, CC-215, SR-146

3. *Initiate a process to identify BMPs for implementation as appropriate.*

   Status: During a project's design phase, the potential water quality impacts of NDOT's stormwater discharge into 303(d) listed waterways is evaluated. BMPs are included in the design as appropriate. For additional information, refer to NDOT's *Planning and Design Guide*.

DEPT-08 (TMDL Listed Waters)

1. *Identify locations where NDOT owned roadways and rights-of-way intersect or parallel waterbodies that have NDEP approved TMDLs.*

   Status: Utilizing GIS capabilities, NDOT has identified locations where its roadway system intersects or parallels TMDL listed waterbodies.

2. *Determine if the TMDL constituents are commonly found in stormwater discharge from NDOT's MS4.*

   Status: NDOT has identified primary constituents of concern that could potentially be associated with stormwater runoff from its MS4 areas in concentrations that could have potential negative impacts to receiving waterbodies. This information was then used to identify TMDL listed waterbodies with impairments for those same constituents of concern. Summaries of these evaluations will be included with future updates to NDOT's SWMP. NDOT will continue conducting evaluations of TMDL waterways listed in the most current Water Quality Integrated Report issued by NDEP.

3. *Initiate a process to identify BMPs for implementation as appropriate.*

   Status: During a project's design phase, the potential water quality impacts of NDOT's stormwater discharge into TMDL listed waterways is evaluated. BMPs are included in the design as appropriate. For additional information, refer to NDOT's *Planning and Design Guide*.

DEPT-10 (Mapping and Inventory of Structural BMPs and Major Outfalls)

1. *Continue stormwater mapping and infrastructure inventory efforts.*

Status: Hydraulic facility mapping and inventory efforts are complete. Storm sewer infrastructure, including select permanent post-construction BMPs, are digitally mapped with information stored within a GIS platform. Moving forward, NDOT will focus efforts on maintaining and updating the hydraulic facility inventory information as necessary.

DEPT-11 (Discharges into Sanitary Sewer Systems)

1. *Contact District personnel annually to identify instances of stormwater disposal into the sanitary sewer system.*

   Status: NDOT Maintenance personnel began disposing of storm sewer vactor truck waste into sanitary sewer systems owned and operated by Clark County, Truckee Meadows Water Reclamation Facility, and Carson City.

2. *In the event a new connection is found, immediately solicit an approval letter from the appropriate wastewater utility.*

   Status: NDOT received written authorization from Clark County, Truckee Meadows Water Reclamation Facility, and Carson City. Copies of these authorizations will be included in NDOT's updated SWMP.

DEPT-12 (Industrial Facility Monitoring and Control Program)

1. *Perform annual review of NDOT owned facilities and determine if any are considered industrial facilities based on Permit criteria for industrial categories.*

   Status: NDOT's facilities remain classified as non-industrial.

2. *Should an NDOT facility be classified as industrial, develop an Industrial Facility Monitoring and Control Program.*

   Status: NDOT does not own or operate industrial facilities per III.K.1 of the Permit; consequently, NDOT has not developed an Industrial Facility Monitoring and Control Program for NDOT's facilities.

DEPT-13 (Low Impact Development (LID) Techniques)

1. *Begin developing a preliminary list of potential LID techniques suitable for use along NDOT's highway environments.*

   Status: Several LID techniques are potentially viable for use on NDOT projects, most notably revegetation, construction of drainage basins, grading to lengthen stormwater flow paths and to encourage sheet flow, preserve naturally vegetated areas and soil types (i.e. minimize or prevent land disturbance), water harvesting, etc. The updated Planning and Design Guide will have an increased emphasis on LID practices and include guidance for a suite of LID measures.

2. *From the list, identify the most viable LID techniques for use on highway projects in Nevada.*

   Status: Currently, the most viable LID techniques for NDOT to utilize on highway projects are vegetation preservation, revegetation, slope flattening, and the construction of drainage basins. NDOT will continue to evaluate and research LID strategies to determine appropriateness for treating stormwater runoff from NDOT's MS4 Permit areas.

3. *Incorporate the viable LID practices into future projects as appropriate.*

   Status: The inclusion of LID practices into a project is evaluated during the project's design phase. The Design and Planning section within the Stormwater Division will assist with designing LID practices for NDOT projects (as appropriate).

EDU-01 (Public Outreach and Education Events)

1. *Participate in at least one public stormwater related outreach and education event annually.*

   Status: NDOT participated in numerous stormwater related public outreach and education events.

2. *Assess the need to further develop or build upon public outreach and education efforts.*

Status: NDOT will continually evaluate opportunities to further expand public outreach and educations efforts.

EDU-02 (Public Litter Removal Programs)

1. *Continue the Adopt-A-Highway and Sponsor-A-Highway programs.*

   Status: NDOT continued its participation in both programs.

EDU-03 (Partnerships and Affiliations)

1. *Continue partnering efforts and affiliations.*

   Status: NDOT continued partnering efforts and affiliations to assist with SWMP implementation. Refer to DEPT-05 (Departmental Stormwater Coordination) and various sections of this Annual Report.

2. *Seek opportunities for new partnerships and affiliations.*

   Status: NDOT actively seeks opportunities to develop new partnerships and affiliations. It is anticipated that opportunities will inherently increase as NDOT's stormwater program continues to grow. NDOT developed new working relationships with Clark County, Truckee Meadows Water Reclamation Facility, and Carson City to help address NDOT's need for stormwater vactor truck waste disposal. Additionally, NDOT developed a new working relationship with UNR and other "founding agencies" associated with the Nevada Water Innovation Campus.

EDU-04 (Demonstration Projects)

1. *Continue evaluating new technologies and practices for improving stormwater runoff quality.*

   Status: NDOT continued implementing its stormwater monitoring program which provides opportunities to evaluate new technologies and practices that could potentially improve the quality of stormwater runoff. Additionally, the Design and Planning Section within the Stormwater Division will assist with the evaluation of vendor submittals of stormwater treatment products.

2. *Explore options to disseminate information and/or knowledge gained to the public from stormwater related projects.*

   Status: NDOT continues to explore options and ideas for effectively disseminating stormwater related information, including relevant knowledge gained from evaluating stormwater technologies and practices.

3. *Begin disseminating this information.*

   Status: NDOT utilizes various avenues to disseminate stormwater related information, notably its Stormwater Program website, social media platforms, and attendance at public outreach and education events. As information pertaining to new technologies and practices for improving the quality of stormwater runoff become available, NDOT will disseminate the information as appropriate. As an example, the data management system for NDOT's continuous real-time monitoring project is available for public viewing on NDOT's Stormwater Program website.

EDU-05 (Stormwater Management Program Website)

1. *Maintain and provide current information on NDOT's SWMP webpage.*

   Status: NDOT's Stormwater Management Program website was updated regularly during the Reporting Period.

2. *Provide webpage links to relevant NDOT SWMP documents.*

   Status: NDOT's Stormwater Program webpage currently provides links to relevant NDOT SWMP documents, notably manuals and other guidance documents.

3. *Evaluate the need for webpage improvements annually.*

   Status: NDOT's Stormwater Program webpage was evaluated routinely during the Reporting Period, and consequently underwent several updates.

ENVR-01 (Stormwater Monitoring Plan)

1. *Submit a stormwater monitoring plan to NDEP by October 1st annually.*

Status: NDOT submitted the FY 2017 Stormwater Monitoring Plan to NDEP on September 30th, 2016.

2. *Evaluate the data collected to assist with stormwater related decision making.*

   Status: This is an ongoing process. NDOT will continue to evaluate the results of water quality monitoring efforts and utilize the information to assist with the decision making process as it relates to mitigating stormwater pollutant discharges from its roadway system. The Stormwater Division's Design and Planning Section will be tasked with evaluating data collected from stormwater quality monitoring efforts, and subsequently utilizing the information to assist with the decision-making process for designing appropriate stormwater treatment measures.

3. *Conduct a yearly assessment of the adequacy of the stormwater monitoring program.*

   Status: NDOT recognizes the need to expand its monitoring efforts to other watershed areas of the state, and to increase efforts with characterizing runoff from NDOT's roadways. The Stormwater Division's Design and Planning Section will assess the current stormwater monitoring program and determine needs and implement modifications as appropriate.

ENVR-02 (Record Keeping)

1. *Implement the record keeping plan.*

   Status: Records associated with implementing all program elements of NDOT's SWMP are retained within the appropriate NDOT Division.

ENVR-05 (Vegetative Control Program)

1. *Conduct internal project review meetings to facilitate ongoing collaboration between appropriate Divisions and Sections.*

   Status: NDOT's Stormwater Division works closely with the Design Division to ensure water quality needs are addressed during project development.

2. *Assess current vegetation control practices; provide recommendations for improvement as necessary.*

Status: This is an ongoing process. The Stormwater Division works with the 3 Districts to ensure that vegetation control practices meet District needs, while considering water quality and other environmental factors.

MAINT-01 (Hazardous Materials Management)

1. *Continue the implementation of the Department's existing Hazardous Waste Management Program.*

   Status: NDOT continued implementing all aspects of this program.

2. *Identify any deficiencies in the existing program with respect to the requirements outlined in the Permit.*

   Status: NDOT continued to work with internal as well as NDEP personnel to improve communication with incident reporting and response. The Compliance and Enforcement Section within the Stormwater Division is coordinating with the appropriate NDOT Divisions to develop appropriate policies and procedures for the receipt and subsequent distribution of incident related documentation to ensure all spill incidents within the right-of-way are appropriately addressed.

3. *Develop BMPs as needed to address any deficiencies in the program.*

   Status: Deficiencies were not identified during the Reporting Period, consequently, no new BMPs were developed. NDOT will continue to assess the program and address deficiencies as appropriate.

MAINT-02 (Snow and Ice Control Program)

1. *Continue implementing the Department's current Snow and Ice Control Program.*

   Status: NDOT continued to implement its Snow and Ice Control Program. This program will continue to evolve and undergo refinement to maximize effectiveness for attaining a standard for public safety, while minimizing potential impacts to receiving waterbodies.

2. *Collect and analyze composite samples of sand and salt as specified in the Permit.*

Status: Analysis of anti/de-icing agents utilized for winter maintenance operations will continue as new products are procured.

3. *Identify any deficiencies in the existing program with respect to the requirements outlined in the Permit.*

   Status: Deficiencies in the existing program were not identified during the Reporting Period.

4. *Develop BMPs as needed to address any deficiencies in the program.*

   Status: Deficiencies in the existing program were not identified during the Reporting Period, consequently, new BMPs were not developed.

MAINT-03 (Street Sweeping Program)

1. *Continue implementing the Department's Street Sweeping Program.*

   Status: NDOT continued implementing its street sweeping program as it is widely considered to be one of the more effective means of removing potential stormwater pollutants.

2. *Continue sweeping urban streets at least twice a year (once in the spring and once in the fall).*

   Status: Sweeping is conducted at least twice annually in the urban areas.

3. *Continue sweeping sanded streets as soon as practicable after application, but no later than 4 days after the last snowfall.*

   Status: NDOT continues to meet this requirement.

MAINT-05 (Inspection and Maintenance of Structural BMPs)

1. *Continue inspecting and maintaining post-construction BMPs, storm sewer facilities, and highway slopes as part of NDOT's routine activities.*

Status: NDOT Maintenance personnel continued maintaining post-construction BMPs, storm sewer facilities, and highway slopes per their respective maintenance schedules. Records are documented in NDOT's MMS.

2. *In conjunction with DEPT-10, develop an inventory listing of post-construction BMPs.*

   Status: The mapping and inventory of permanent BMPs occurred simultaneously with the mapping and inventory of the stormwater hydraulic facilities; consequently, both efforts were completed during FY 2016. Permanent BMPs were digitally mapped utilizing a GIS platform with asset related information housed within a GIS database. Moving forward, NDOT's Stormwater Division will focus efforts on maintaining and updating the permanent BMP inventory information as necessary.

MAINT-06 (Maintenance Facility FPPPs)

1. *Develop FPPPs, or incorporate into existing Minor Facility FPPPs (as appropriate), for new Department Maintenance facilities within 6 months of being designated a Major or Minor facility.*

   Status: The Stormwater Division updated the FPPP(s) during the Reporting Period, which included updating the listing of Major and Minor Maintenance facilities as appropriate.

MAINT-07 (Maintenance Facility Inspections)

1. *Perform annual inspections at designated Major and Minor facilities. Modify or add BMPs as necessary within 30 calendar days of the inspection.*

   Status: Annual stormwater inspections were conducted at all NDOT Major and Minor facilities by the Stormwater Division's Compliance and Enforcement Section. Site specific recommendations for corrective action, i.e. appropriate BMP implementation, were made with 97% documented corrections.

2. *Perform routine inspections at designated Major and Minor facilities according to frequencies specified in the FPPPs. Modify or add BMPs as necessary within 30 calendar days of the inspection.*

Status: FPPP administrators and/or their staff are tasked with performing routine visual inspections at their respective Maintenance facilities as part of their ongoing pollution prevention/control efforts. Administrators are also tasked with performing documented self-inspections as specified in the FPPP. FPPP Administrators modify or add BMPs at their respective Maintenance facilities as necessary.

3. *Maintain BMPs listed in the FPPP in effective operating condition. Perform maintenance on the ineffective BMPs within 7 calendar days of discovery and before the next anticipated storm event.*

   Status: This is an ongoing effort for all FPPP administrators. Additionally, as part of annual stormwater inspections conducted at Major and Minor Maintenance facilities, recommendations to replace ineffective BMPs are made by Stormwater Division staff to FPPP administrators as necessary.

4. *Review Maintenance facility inspection forms annually and revise as necessary.*

   Status: Stormwater inspection forms for both Major and Minor Maintenance facilities were reviewed during the Reporting Period; changes were deemed unnecessary.

MAINT-08 (Maintenance Facility BMP Manual)

1. *Develop and implement a protocol for conducting annual reviews and incorporating subsequent changes (as needed).*

   Status: NDOT's *Maintenance Facility Stormwater Best Management Practices (BMPs) Manual* was completed and subsequently disseminated for use in FY 2016. An official protocol for conducting annual reviews and incorporating subsequent changes has yet to be developed. NDOT is hopeful that a documented procedure for reviewing and revising the document as necessary will be developed in FY 2018.

MAINT-09 (Maintenance Facility Updates)

1. *Request an updated list of Maintenance facilities from the Asset Management and Maintenance Division, including information pertaining to facility operational changes, on an annual basis.*

Status: Notification regarding changes to Maintenance facilities, i.e. operational status, is communicated directly to Stormwater Division personnel on an annual basis.

2. *Apply the appropriate modifications to FPPP designations.*

   Status: Changes to the operations status of Maintenance facilities, i.e. changes to Major and Minor facility designations, are included with annual FPPP updates as appropriate.

3. *Modify, create, or annul Minor and Major FPPPs as appropriate.*

   Status: FPPPs are updated as appropriate on an annual basis.

TRAIN-01 (Stormwater Certification Training-Internal)

1. *Continue implementing NDOT's Stormwater Certification Training Program.*

   Status: NDOT's Stormwater Division held 10 Stormwater General Awareness training classes with 161 class attendees statewide. At the end of the Reporting Period, it was estimated that 93% of NDOT employees requiring this training were current with their training requirements.

2. *Ensure stormwater education is current and relevant.*

   Status: Course material for the 8-hour Stormwater General Awareness training course was updated and maintained as necessary.

TRAIN-02 (Contractor Stormwater Education and Training-External)

1. *Continue with contractor partnering efforts with regards to construction site stormwater management.*

   Status: Formal partnering efforts are a contractual requirement per *Section 105.05 Partnering* in NDOT's *Standard Specifications for Road and Bridge Construction, 2014.*

   The AGC and NDOT are committee members of the Advisory Committee on Transportational Storm Water Management, whose responsibility is to monitor the status and efficacy of NDOT's stormwater program.

The Stormwater Working Group, consisting of representatives from NDOT's Stormwater Division, the AGC, and the contracting community, was formally established during the Reporting Period. The working group will serve as a platform to discuss issues, inconsistencies, and successes on NDOT's construction sites, as well as identify opportunities for growth and improvement from an education standpoint.

2. *Continue support of third party contractor stormwater education and training sessions as a means of meeting the Department's contractor stormwater education requirements.*

   Status: NDOT is supportive of any stormwater training completed by its construction contractors; however, those trainings continue to be supplemental to the contractor required Water Pollution Control Manger stormwater training course.

Train-03 (NDOT Herbicide Applicator Training)

1. *Ensure NDOT staff and service providers are properly certified for herbicide applications.*

   Status: NDOT herbicide applicators (Maintenance personnel and contractors) obtain the necessary certification(s) issued by the Nevada Department of Agriculture.

2. *Continue to track and monitor the certification status of NDOT applicators.*

   Status: Records are maintained at the District level.

<u>SWMP Program Assessment</u>

1. Legal Authority:

   NDOT views this program as greatly improved, but in need of further development.

   NDOT's authority to legally control unauthorized discharges within the right-of-way continued to strengthen with the codification of *NRS Chapter 408 – Highways, Roads, and Transportation Facilities* during the Reporting Period. With the legal framework in place, NDOT is now focusing on developing and refining internal policies and procedures as needed for the control, response, and elimination of unauthorized discharges within the right-of-way.

2. Stormwater Education, Outreach and Training Program:[34]

NDOT views this program as acceptable and continuing to grow.

It is estimated that 93% of NDOT employees required to complete the internal 8-hour Stormwater General Awareness training course are current with their training requirements. This marks the second year in a row with a 93%, with District 1 exhibiting a modest increase and Districts 2 and 3 exhibiting modest decreases in compliance percentages, respectively. District 1's 98% compliance percentage is the highest of any District during the past 3 reporting periods.

It is estimated that 85% of NDOT employees required to complete the Water Pollution Control Manager training course are current with their training requirements. District 3 exhibited the highest compliance percentage with 93%.

NDOT's Program Development Section made significant strides with developing enhancements to the existing stormwater training program. The new construction and maintenance stormwater training modules were nearly completed at the end of the Reporting Period. Both are scheduled to be implemented early to mid-FY 2018. The online Introduction to Stormwater training course underwent a "soft" release mid-way through the Reporting Period with an official release scheduled early on in FY 2018. The Stormwater Division's Design and Planning Section will have the flexibility to complete stormwater training courses as they see fit to meet their individual needs (provided a minimum number of class instruction hours are met annually). Upon implementation of NDOT's enhanced stormwater training program, the 8-hour Stormwater General Awareness training course will no longer be offered.

NDOT will continue to offer stormwater training courses throughout the year with the goal of increasing employee stormwater training compliance percentages.

Public outreach and education efforts continue to be a strong component of NDOT's SWMP. NDOT's Stormwater Program website is a functional and informative online resource for employees and the public interested in NDOT's stormwater management program. Interest in website viewing continues to grow as website analytics demonstrated an increase in pageviews and unique pageviews for the third consecutive reporting period.

[34] Compliance percentages were calculated near the end of the Reporting Period.

NDOT continues to use social media as an avenue for disseminating stormwater related messaging and information, utilizing current outlets such as Facebook and Twitter. Recognized as a popular means for social networking, NDOT will continue to utilize social media to create and share stormwater related information to virtual communities and networks. NDOT will continue to develop stormwater videos for posting on NDOT's website and social media platforms. NDOT will continue to participate in stormwater related community outreach events, which serve as ideal opportunities to communicate and interact face-to-face with community and industry members.

3. Hydraulic Facility Inventory and Mapping Program:

   NDOT views this program as acceptable.

   NDOT has completed the statewide inventory and mapping of NDOT owned stormwater hydraulic and permanent BMP facilities. The stormwater assets are mapped on a GIS platform with associated information housed in a GIS database. Future efforts will focus on maintaining and updating the information as needed.

   The Stormwater Division's Data Management Section completed the development of mobile applications as a business solution for viewing and editing stormwater hydraulic facility information in the field using a GIS platform. The use of this new technology will greatly increase efficiencies with locating stormwater assets and updating/modifying asset information in the field.

4. Discharges to Impaired Waters, Lake Tahoe, and Sanitary Sewers:

   NDOT views this program as acceptable and improving.

   The Stormwater Division's Design and Planning Section continued assessing stormwater quality impacts to 303(d) and TMDL listed waterways. Moving forward, NDOT's Stormwater Division will focus its evaluation efforts on those waterbodies listed in the 2014 IR. The combination of in-depth evaluations and future field assessments will assist NDOT with identifying locations to focus future stormwater quality monitoring efforts. Expanded stormwater quality monitoring will be the next step in determining if stormwater discharges from NDOT's MS4 areas contribute directly or indirectly to the listing of a

waterway on the state's current 303(d) list, and whether stormwater from NDOT's MS4 directly discharges to a waterbody for which an NDEP approved TMDL has been developed.

NDOT's Lake Tahoe TMDL Annual Report for Water Year 2016 was submitted and subsequently accepted by NDEP. As indicated in the report, NDOT met its TMDL requirements. Meeting the goals and objectives associated with the Lake Tahoe TMDL Program continues to be attainable.

The University of California Davis issued its annual State of the Lake Report in July of 2017, which presents TMDL data collected in 2016. The report indicates that clarity levels increased during winter months and decreased during summer months. The average annual water clarity decreased by 3.9 ft. compared to the previous year (2015), but remained 5 ft. greater than the lowest recorded clarity of 64.1 ft. in 1997. Winter clarity improved by 11.7 ft. to 83.3 ft. over the previous year; however, summer values (driven by large concentrations of the algae *Cyclotella*), were 56.4 ft., a 16.7 ft. decline over 2015, consequently outweighing the improved clarity during winter. With the nearly 12 ft. of clarity improvement during the winter months (in what was considered an above average precipitation year), it can be inferred that many of the stormwater improvement projects implemented collectively by NDOT and other jurisdictions within the Lake Tahoe Basin are having a positive impact on lake clarity.

NDOT continues to meet Permit requirements pertaining to stormwater discharges into sanitary sewer systems as 3 new authorizations to discharge were obtained during the Reporting Period (Clark County, Truckee Meadows Water Reclamation Facility, and Carson City).

5. Construction Site BMP Program:

   NDOT views this program as acceptable and continuing to improve.

   Revisions to NDOT's contract specifications clarified and added language regarding contractor requirements on NDOT's construction sites, further strengthening NDOT's program.

NDOT continued to implement various contractor requirements for proper construction site stormwater management. NDOT's construction field crews continued to perform oversight inspections to ensure contractor compliance with CGP permit requirements and NDOT's policies. The Stormwater Division's Compliance and Enforcement Section is unaware of any notice of violation issued by NDEP or EPA for construction site stormwater non-compliance at any NDOT construction site during the Reporting Period.

The Stormwater Division's Compliance and Enforcement Section made minor modifications to the construction stormwater inspection form, providing more clarification and enhancing the flow of the document. Additionally, NDOT's construction contractors are now required to utilize NDOT's form when performing construction site stormwater inspections. This new requirement will improve consistency between the contractor's inspections and NDOT's oversight inspections.

The Stormwater Division's Compliance and Enforcement Section developed and subsequently released an electronic SWPPP template. NDOT's construction contractors are now required to utilize the new template on all projects requiring the development of a SWPPP. This new requirement will provide consistency with SWPPP development from NDOT's contractors, and help facilitate SWPPP review performed by NDOT Construction Crew field staff. The SWPPP template is posted on NDOT's Stormwater Program website.

The Stormwater Division's Compliance and Enforcement Section completed a draft of the *Stormwater Guidance Manual for Construction Projects*. This document will provide guidance to District Construction Crew and Stormwater Division staff for implementing policies and procedures associated with construction site stormwater management on NDOT's construction sites. A final document is scheduled for release in FY 2018.

The development of the *Stormwater Inspection Prioritization Plan for Construction and Encroachment Construction Projects* provides the necessary guidance for Stormwater Division personnel to perform Q/A inspections at construction sites. It is expected that the Q/A inspections will serve as an effective tool for evaluating how construction site stormwater inspections are being performed. NDOT will utilize the information to identify strengths and areas for improvement and modify training efforts accordingly. Q/A inspections are scheduled to begin in FY 2018.

Revisions to NDOT's *Construction Site Best Management Practices (BMPs) Manual* were ongoing during the Reporting Period. NDOT provided a copy of the manual to the AGC for review and comment. NDOT received valuable comments from the contracting community and will revise the document accordingly. A final document is scheduled for release in FY 2018.

6. New Development and Redevelopment Program:

   NDOT views this program as progressing and continuing to grow.

   During the Reporting Period, NDOT transitioned responsibility for this program to the Stormwater Division's Design and Planning Section, which consists of a Planning Team and an Engineering Team. Together, these teams assess the potential water quality impact of new development and redevelopment projects.

   The Stormwater Division's Design and Planning Section completed a draft of NDOT's *Planning and Design Guide*. This guidance document will assist stormwater designers with the selection of post-construction BMPs, including LID measures. The manual will provide a flowchart that identifies how stormwater improvements are incorporated into the project design process, and a flowchart that assists with selecting appropriate post-construction BMPs. The manual is scheduled for release in FY 2018.

   A prioritization map was developed and subsequently published on NDOT's Stormwater Program website that depicts areas with a high potential to impact the quality of receiving waterways. It is anticipated that the new map will assist NDOT with allocating resources more effectively when evaluating appropriate stormwater quality mitigation measures.

   Moving forward, the Design and Planning Section anticipates the following:

   - NDOT's Stormwater Capital Improvement Program will be further developed to identify opportunities for implementing water quality improvement projects in areas with the highest potential to negatively impact water quality.
   - Updating the water quality design storm event in the *Planning and Design Guide.*
   - Collaborating with NDEP and other MS4 permittees for opportunities to participate in watershed-wide stormwater improvement projects.

- Modifying permanent BMP designs to improve maintenance efficiency while decreasing maintenance costs.

7. Illicit Discharge Detection and Elimination Program:

NDOT views this program as greatly improved and still improving.

NDOT removed individual, programmatic BMPs associated with the IDDE Program when the IDDE Program underwent revision during the FY 2015 reporting period. Consequently, aspects of the IDDE Program are summarized in subsections of section 3.7 of the SWMP, and are thus discussed below as part of the IDDE Program assessment.

There is nothing to report with Sections 3.7.1 and 3.7.2 of the IDDE Program; these sections provide an overview of Permit requirements and definitions of illicit and authorized discharges, respectively.

3.7.3 Maintenance Facility Pollution Prevention Plans:

NDOT's FPPP, which covers all designated Major and Minor Maintenance facilities, continues to serve as the foundation for stormwater compliance at NDOT's Maintenance facilities. District Stormwater Division staff continue to serve as a local resource to Maintenance personnel for FPPP guidance and implementation. NDOT will continue to review and evaluate FPPP(s) annually and perform revisions as necessary.

Stormwater Division staff were not aware of any illicit discharge incidents occurring at an NDOT Maintenance facility during the Reporting Period.

3.7.4 Maintenance Facility Best Management Practices (BMPs) Manual

NDOT completed and subsequently issued this document in July of 2015. This manual serves as the primary guidance document for implementing stormwater pollution control and general housekeeping measures at NDOT Maintenance facilities. Information pertaining to spill prevention and response is included in this manual. No revisions were made to this document during the Reporting Period.

3.7.5 Field Guide for Illicit Discharge Detection and Elimination

This manual, which serves as guidance to assist with identifying and subsequently reporting illicit discharges, was released in 2016. No revisions were made to this document during the Reporting Period.

During the Reporting Period, NDOT's Stormwater Division released the *Illicit Discharge Field Investigation Procedures Manual*, a companion to the *Field Guide for Illicit Discharge Detection and Elimination* which provides standard operating procedures to Stormwater Division and District personnel for the investigation and source determination associated with the discovery of potential illicit discharges.

3.7.6 Major Outfall Inventory

NDOT has completed stormwater hydraulic facility inventory and mapping efforts, which included the inventory of "Major Outfalls." NDOT's Stormwater Division continues to focus efforts on maintaining and updating the information as appropriate. The hydraulic facility inventory serves as the basis for implementing NDOT's IDDE Program.

3.7.7 Storm Sewer System Map

NDOT's hydraulic facilities are digitally mapped with information housed within a GIS based platform. NDOT's Stormwater Division will focus efforts on maintaining and updating the mapping information as appropriate.

The Stormwater Division's Data Management Section has developed, but continues to refine, mobile applications as a business solution to help meet the needs of field personnel requiring access to hydraulic facility mapping information.

3.7.8 Routine Outfall Screening

The Stormwater Division's Program Development Section continued performing slope assessments within the right-of-way (with a focus on slopes 3:1 or greater) to identify areas experiencing significant erosion, with the intent of addressing the

problem areas as part of a project's design. Records of these assessments are housed within the Stormwater Division.

A formalized procedure for conducting routine outfall screening/monitoring was completed with the development of the *Dry Weather Outfall Inspection Plan* during the Reporting Period.

3.7.9 Training

IDDE related subject matter is, and will continue to be, incorporated in NDOT's stormwater training course curriculums. Course material is updated as appropriate.

3.7.10 Sanitary Sewer Exfiltration

Sanitary sewer exfiltration related incidents were not reported to the Stormwater Division during the Reporting Period.

3.7.11 Internal and External (Public) Reporting of Illicit Discharges

NDOT's training and public outreach efforts continue to be an effective component of the Illicit Discharge Detection and Elimination Program. When compared to the previous two reporting periods, the number of reported incidents has decreased, but the percentage of the incidents reported by NDOT employees increased. These number continue to reaffirm NDOT's belief that illicit discharge related training and public outreach efforts continue to be beneficial for publicizing the importance of improving the quality of stormwater runoff.

NDEP continues to assist NDOT with implementing the IDDE program by routing copies of Spill Reports to the Stormwater Division's Compliance and Enforcement Section, providing a valuable avenue for receiving information pertaining to spills and illicit discharges impacting NDOT's right-of-way. NDOT and NDEP continue to improve processes to ensure proper documentation and routing of appropriate spill response documentation, most notably documented cleanup efforts and incident closure, to ensure all reported incidents occurring within NDOT's right-of-way are appropriately addressed.

3.7.12 IDDE Database

Reported illicit discharge incidents continue to be logged in an IDDE Database maintained by the Stormwater Division's Compliance and Enforcement Section. Confirmed illicit discharge information is also maintained on a GIS platform to assist with identifying trends, "hot spots", or other areas of potential concern.

3.7.13 Compilation and Assessment

An annual review of the database did not indicate any "hot spots" or areas repeatedly subject to illicit discharges or connections. NDOT will continue to review illicit discharge incidents on a regular basis to determine if any trends or "hot spots" emerge. Locations of repeated incidents will be evaluated for increased monitoring/surveillance.

The Stormwater Division's Compliance and Enforcement Section continues to develop an Enforcement Response Plan with hopes of releasing the plan during FY 2018. The process for reporting, investigating, and eliminating potential illicit discharges into NDOT's right-of-way will continue to be assessed and refined as appropriate.

8. Industrial Facility Monitoring and Control Program:

NDOT deems this program as adequate, but will continue to assess the need for expansion.

NDOT continued assessing industrial sites in all 3 Districts. Sites were evaluated for the potential to directly discharge stormwater into NDOT's right-of-way, and evaluated for any signs of illicit discharges into NDOT's right-of-way.

During the next fiscal year, the Stormwater Division's Compliance and Enforcement Section plans to make minor revisions to the inspection form currently utilized by field personnel for documenting industrial facility assessments.

9. Maintenance Facility Discharge Control Program:

   NDOT deems this program as acceptable, but in need of improvement.

   During annual Maintenance facility stormwater inspections, inspectors noted 102 compliance issues. This equates to a 60% reduction in compliance issues compared to FY 2016. Additionally, post-inspection follow-up documentation submitted by the FPPP Administrators demonstrating appropriate remedial action was 97%, a notable increase from 83.7% from FY 2016. The ratio of non-compliance issues to number of inspections decreased in all 3 Districts compared with FY 2016, with the average ratio for all 3 Districts the lowest number in 3 years, demonstrating improved general housekeeping at Maintenance facilities statewide. The primary non-compliance related issues noted for all Districts involved fluid leaks and spills. NDOT will continue to emphasize the importance of implementing appropriate spill prevention, control, and cleanup measures through ongoing training efforts.

   FPPP Administrators of Major facilities were 50% compliant with meeting their respective facility sweeping requirements. Sweeping proved to be an effective pollution prevention measure as an average of 31 yd^3 of material was removed annually per facility. The Compliance and Enforcement Section will evaluate current FPPP sweeping requirements to determine if modifications to sweeping frequencies are warranted. Additionally, evaluations will be conducted at all Minor Maintenance facilities to determine which facilities would benefit more from routine sweeping frequencies to better distribute resources and maximize potential pollutant reduction opportunities. As reported in the FY 2016 Annual Report, sweepers experience long durations of downtime annually related to equipment repairs. Consequently, the availability of equipment may be the most limiting factor with Maintenance facilities meeting FPPP sweeping frequencies.

   FPPP Administrators and Compliance and Enforcement Section staff were 100% compliant with meeting documented annual FPPP inspection requirements.

10. Public Street Maintenance Program:

NDOT deems this program as acceptable.

NDOT completed a draft of the *Stormwater Operations and Maintenance Plan*, a guidance document developed specifically to assist Maintenance personnel with the inspection and routine maintenance of NDOT's storm sewer facilities. The final document is scheduled for release in FY 2018.

Accomplishments associated with the routine maintenance of NDOT's storm sewer system were relatively consistent (overall) with FY 2016. There was a 13% increase in the material recovered from sweeping efforts statewide despite the modest increase (3%) in the amount of abrasives applied statewide during what was considered a record setting winter in many areas of the state. Additionally, sweeping efficiency has steadily increased over the previous 3 reporting periods as indicated by the ratio of the volume of material recovered to sweeping man-hours.

NDOT has commenced developing a new maintenance asset tracking system (i.e. Enterprise Asset Management System). It is anticipated that this new system will greatly enhance the tracking of tasks associated with NDOT assets, notably storm sewer infrastructure. The software supporting the system will exhibit a higher level of flexibility, allowing users to create or modify asset attributes more readily than the current MMS, thus creating new avenues for Stormwater Management Program evaluation. The Enterprise Asset Management System won't be fully operational for another few years. Until then, Maintenance activities will continue to be tracked via the MMS.

11. Herbicide, Pesticide, and Fertilizer Application Program:

NDOT deems this program as acceptable. Herbicide applicators are required to obtain training and subsequent certification from the Nevada Department of Agriculture. Currently, there are no certification requirements for fertilizer applicators. BMPs associated with pesticide and fertilizer management are discussed in NDOT's current stormwater training curriculum.

12. Clear Creek Master Stormwater Management Program:

    NDOT deems this program as acceptable.

    Except for watershed-specific programs, e.g. the Lake Tahoe TMDL, all elements of NDOT's statewide Stormwater Management Program are applicable to the Clear Creek watershed.

    NDOT continued developing and implementing erosion control projects in support of the Clear Creek Erosion Control Program. NDOT continued with water quality monitoring efforts to help evaluate the effectiveness of the small-scale erosion control projects on the water quality of Clear Creek.

    NDOT's Stormwater Division was not informed of any illicit discharge incidents occurring within the Clear Creek watershed.

13. Stormwater Monitoring Program:

    NDOT deems this program as greatly improved and growing.

    Monitoring efforts performed during the Reporting Period provided insight into urbanized and highway stormwater runoff characterization, the effectiveness of manufactured stormwater treatment devices with regards to stormwater pollutant reduction, and the potential impacts of stormwater discharge on the proper functioning condition of receiving waterways.

    The Stormwater Division's Design and Planning Section has expanded and enhanced stormwater monitoring efforts with the use of UAVs and continuous real-time monitoring to assist with data collection efforts.

SWMP Administration

NDOT entered into a Consent Decree (CD) with the United States of America (on behalf of the Environmental Protection Agency (EPA)) and the State of Nevada-Department of Conservation and Natural Resources, NDEP, on September 14th, 2016, for allegedly discharging pollutants in stormwater in violation of the terms of its Permit. The CD requires NDOT to develop and implement specific aspects of its SWMP within specified timeframes. NDOT is required to submit

quarterly reports to EPA and NDEP documenting progress with meeting those CD requirements. All CD tasks and requirements with deadlines within the Reporting Period were completed on time.

NDOT continued filling vacant positions within the Stormwater Division. Most sections within the Stormwater Division were well staffed throughout the Reporting Period. Vacant positions will continue to be filled as quickly as possible.

FY 2016 SWMP Expenditures[35]

NDOT was allocated approximately $6,400,000 for Stormwater Management Program administration during the Reporting Period. However, NDOT allocated an estimated $33,807,800[36] to stormwater related tasks, activities, and projects in support of Stormwater Management Program implementation during the Reporting Period. NDOT has developed project and activity numbers to track employee time dedicated to specific aspects of the stormwater program. Tables H1 thru H2 in Appendix H provides a breakdown of Stormwater Management Program related expenditures during the Reporting Period. Please note there may be other stormwater related expenditures that are captured under various project costs that cannot be readily extrapolated.

NDOT has been allocated approximately $6,425,100 for Stormwater Management Program administration for FY 2018. This figure, however, does not consider funds dedicated to various maintenance activities, water quality projects, and other elements of the stormwater program that are funded through different budget accounts.

IV.D. Annual Fee

NDOT remitted a MS4 Permit annual fee of $957.00.

[35] Numbers are rounded to the nearest hundred dollar.
[36] Total expenditure number is an estimate based on the best available information and may not take into account missing invoices, stale claims, unknown invoice adjustments, etc.

IV.E. Continued Permit Coverage

NDOT's Permit expired July 6, 2015; consequently, NDOT submitted a formal, written request to NDEP for continued permit coverage within the 180-day time frame prior to permit expiration. A copy of the letter was provided in the FY 2015 Annual Report.

NDEP has not issued NDOT a new MS4 Permit; consequently, coverage under the expired permit remains administratively continued.

IV.F. Changes by NDEP

NDOT did not formally submit any proposed revisions to the SWMP for NDEP's review during the Reporting Period.

IV.G. Responsibility for Stormwater Management Program Implementation

NDOT's *State Maintained Highways of Nevada, Descriptions and Maps* is published by NDOT's Planning Division on an annual basis. This document is a single source reference for the current State System, i.e. a list of State maintained Interstate, United States, and State Routes. Modifications to the State System are overseen by the NDOT's Roadway Systems Division.

Appendices

APPENDIX A

Lake Tahoe TMDL Annual Report (Water Year 2016)

NEVADA DIVISION OF
ENVIRONMENTAL PROTECTION

STATE OF NEVADA
Department of Conservation & Natural Resources
Brian Sandoval, Governor
Bradley Crowell, Director
Greg Lovato, Administrator

May 2, 2017

Colette R. Easter. PE
Nevada Department of Transportation
Hydraulics Division
1263 S. Stewart St.

Dear Ms. Easter,

This letter is to acknowledge receipt and acceptance of the Nevada Department of Transportation's Water Year 2016 Annual Report. Thank you for your continued efforts to protect and restore Lake clarity.

Sincerely,

Jason Kuchnicki

Jason Kuchnicki

CC: Paul Comba, NDEP
Matt Nussbaumer, NDOT Hydraulics

NEVADA DEPARTMENT OF TRANSPORTATION

LAKE TAHOE TMDL

ANNUAL REPORT FOR WATER YEAR 2016
OCTOBER 1, 2015- SEPTEMBER 30, 2016

Nevada Department of Transportation
Design Division—Hydraulics Section
1263 South Stewart Street
Carson City, NV 89712

Contents

LIST OF ACRONYMS

BMP	Best Management Practices
BMP RAM	Best Management Practices Rapid Assessment Methodology
CICU	Commercial, Institutional, Communications, Utilities
CHP	Constant Head Permeameter
ECP	Erosion Control Project
EIP	Environmental Improvement Program
EMC	Event Mean Concentration
FSP	Fine Sediment Particles
GIS	Geographic Information System
IMP	Implementers Monitoring Program
ILA	Interlocal Agreement
LCCP	Lake Clarity Crediting Program
MFR	Multi-family residential
NDEP	Nevada Division of Environmental Protection
O&M	Operations and Maintenance
PLRM	Pollutant Load Reduction Model
PLRP	Pollutant Load Reduction Plan
RAM	Rapid Assessment Methodology
Road RAM	Road Rapid Assessment Methodology
SFR	Single-family residential
SLRP	Stormwater Load Reduction Plan
SNPLMA	Southern Nevada Public Lands Management Act
RSWMP	Regional Stormwater Monitoring Program
SWT	Stormwater Treatment BMP
TIST	Tahoe Integrated Stormwater Tool
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TRPA	Tahoe Regional Planning Agency
TSS	Total Suspended Solids
UPC	Urban Planning Catchment
WQIP	Water Quality Improvement Project
WY	Water Year (October 1 – September 30)

1.0 BACKGROUND

The purpose of this report is to comply with Section 4 of the Interlocal Agreement (ILA) to Implement the Lake Tahoe Total Maximum Daily Load (TMDL), dated November 2016, between the Nevada Department of Transportation (NDOT) and the Nevada Department of Environmental Protection (NDEP). This report summarizes NDOT's load reduction activities undertaken during water year 2016 (October 1, 2015 through September 30, 2016) in an effort to meet the credit target established in the ILA.

2.0 ACCOMPLISHMENTS SUMMARY

NDOT is continuously striving to meet the agreed upon goals and objectives outlined in the Lake Tahoe TMDL ILA through Road Operations, Capital Improvement Projects, BMP Installation and overall maintenance of stormwater facilities throughout the basin. For WY2016 significant time has been dedicated to registering three segments of road way for Road Operations, continued maintenance of existing BMPs, training of staff and design and construction of new Water Quality Improvement Projects (WQIP).

The updated Crediting Program Tools and the termination of the first ILA in August 2016, made it necessary to update the baseline pollutant load estimates and the ILA during WY2016. NDOT partnered with Washoe County, NTCD and NDEP to develop new PLRM v2.1 baseline pollutant loads (NTCD, 2016) and collaborated with NDEP on updated ILA language. The new baseline pollutant load estimates were used in the updated ILA which will guide NDOT's TMDL implementation through September 2021.

2.1 Credit Declaration and Award

WY2016 marks the first Lake Tahoe TMDL five-year pollutant load reduction milestone of 79 credits (10% reduction in FSP) as outlined the ILA dated August 2013. During the WY15 reporting year NDOT submitted to register State Route 28 and 431 as summarized in Table 1. The first road registration was submitted to NDEP in December 2015 to fulfil the December 31, 2015 due date that followed the timeframe established in the LCCP. However, NDEP rejected that registration in January of 2016 due to issues with the format and content of the registration submittal along with the realization that two distinct road classes may be more appropriate due to differences in annual Road RAM scores. The road registration was not during WY2016 but rather spent updating the baseline pollutant load estimates. However, NDOT has performed a full year of Road Operations and Maintenance including the collection of ROAD RAM scores in preparation for declaration. Therefore, NDEP agreed there would be no deductions in credits due to these delays for the first registration. The State Route 28 and 431 road operations registration is currently in the process of being approved by NDEP. Once approved NDOT will declare for the appropriate credit value. At this time however, no credits have been declared or awarded.

Table 1. NDOT credits expected, declared and awarded

	Annual Credit Target	Lake Clarity Credits Expected	Lake Clarity Credits Declared	Lake Clarity Credits Awarded
Sep 2015 – Oct 2016	79	79	0	0

2.2 Progress Towards 2016 Milestones

Progress toward the WY16 crediting goal has included implementing the NDOT Road Operations Plan and several BMPs throughout NDOT's jurisdiction. NDOT has completed a number of WQIPs along Nevada State Routes 28, 431, 207, 760 and US-50 in the Lake Tahoe Basin (Basin) during the first five-year milestone. However, none of these projects have been registered due to a focus on the initial registration of the Road Operations and Maintenance for SR 28 and SR431 outlined in Table 2. This particular registration has had inherent challenges due to the iterative process associated with initial registration and adjusting the baseline load model. With both the jurisdictions and regulators working to overcome these challenges it is anticipated that moving forward, these projects will start to be submitted for review to register in WY17. A full anticipated schedule for registration of BMPs and Roads is summarized in Section 3.2 below.

Despite NDOT not having a finalized registration, as discussed above NDOT has collected condition scores throughout WY16 in preparation for declaration of SR 28 WA MP 5.12 to 11.0 (Crystal Bay to Lakeshore Blvd) and SR 431 WA MP 0.0 to 3.1. NDOT will continue to collect road condition data throughout WY17 as if the registration has been accepted anticipating these roads with be declared and awarded within the WY17. Initial ROAD and BMP RAM condition assessments have been conducted throughout WY16 and will continue through WY17. A determination of maintenance needs, responsibility and cost will be assessed within all catchments proposed for registration. Due to the delays in the crediting process BMPs have not been registered to date, it has been agreed that they will not be subject to a deduction is credits. However, is likely that maintenance of will be necessary on most infrastructure prior to registration. After maintenance is performed, BMP RAM will be performed to determine benchmark and threshold values. Assessments will initially be performed annually to verify functionality of treatment and then to inspect for maintenance.

2.2.1 Road Operations Implementation Summary

NDOT continues to implement their Road Operations Plan throughout the basin. This includes training of staff, increase the use of best available technology available and implementing an overall approach to reduce abrasives application on roadways with more direct application and a consistent effort to sweep up sand as soon as possible to prevent the pulverization of abrasives and to reduce runoff of FSP into the lake. NDOT is working with NDEP to finalize the registration of SR 431 from WA MP 0.0 to 3.0 and SR 28 from WA MP 5.12 to 11.0 as summarized in Table 2. It is anticipated that full credits will be awarded at declaration due to Road Operations throughout the basin that have already been performed and already in place.

Table 2. Revised Draft Catchment Registration Schedule showing approximate 12% FSP load reduction by the WY17 milestone.

Urban Planning Catchment (UPC)	Catchment Description	Pollutant Controls	Year Implemented	Projected FSP Load Reduction (lbs)	Lake Clarity Credits (PLRM v2.1)	Planned Registration Timeline
431_WA_0.0-3.0	State Route 431 Road Operations	Improved road operations through advanced abrasive applications, sweeping	2016	14,702	74	April 2017
28_WA_8.15-11.0	State Route 28 Crystal Bay to Mt. Rose Road Operations	Improved road operations through advanced abrasive applications, sweeping	2016	11,173	56	April 2017
28_WA_5.12-8.15	State Route 28 Lakeshore Blvd. to Mt. Rose Road Operations	Improved road operations through advanced abrasive applications, sweeping	2016	12453	62	April 2017
TOTAL FSP LOAD REDUCTION				**38,328**	**192**	

**Due to changes with the water quality tools a revised Road Operations & Maintenance Plan was submitted for review October 2016 and is currently under review. It is anticipated that credits will be declared by February 2018.*

2.2.2 BMP Implementation Summary

NDOT has completed several WQIP's throughout the basin since 2004. To date no BMPs have been registered due to the focus on registering Road Operation and Maintenance which fulfills the WY16 and WY17 crediting goals. With the successful registration of SR 28 and 431 Road Operations and Maintenance NDOT intends to register water quality improvement projects on SR-28 during WY17. Table 3 details the expected credits for registration of the initial BMP catchment according to Table 1. It is anticipated that these new goals are achievable and will fulfill crediting milestones for WY17.

Table 3. NDOT credits expected, declared and awarded due to BMP implementation.

Catchment ID	Primary Water Quality Improvement Actions	Declaration Date	Lake Clarity Credits		
			Expected	Declared	Awarded
28_WA_8.15-11.0	Water Quality Improvement Project	February 2018	20	0	0

3.0 STORMWATER LOAD REDUCTION PLAN

3.1 Description and Timeline of Controls to be Implemented

The original suite of Lake Tahoe TMDL Stormwater Tools (TMDL Tools) and the Lake Clarity Crediting Program (LCCP) Handbook was updated by NDEP in late August 2015. Consequently, these updates required recalculation of NDOT's baseline load. While the updated baseline model and new registration process has taken longer than expected, NDOT has implemented practices and constructed projects to date that will meet and exceed the current and future milestones when the actual registration process is completed. The water quality improvements that NDOT has implemented also exceed the 12% load

reduction goal for WY2017. NDOT will make every effort to register catchments and obtain credits needed to meet the WY2017 load reduction goal as outlined in the current ILA dated October of 2016.

The updated baseline load estimate was approved in September 2016. The 2017 intermediate credit target was agreed upon by all parties in the ILA; that 12% of the initial baseline of FSP equal to 24,600 lbs/yr, for a reduction of 123 Credits. This will be completed and accounted for by September 2017. To meet the cumulative credit targets of 123 for WY2017 Pollutant Load Reduction Milestone for fine sediment particles (FSP), NDOT plans to finalize registration of credits for the road registration submitted to NDEP originally in 2015 that has been expanded in 2016 listed in Table 1. While some delays have occurred due to iterative process of ensuring the crediting programs tools best fit the needs of goals set out in the LCCP, it is anticipated that the Road Operations Registration will be completed by summer of 2017 and the BMP Registration should begin by July 2017.

3.2 Progress Toward 2021 Milestones

As stated previously NDOT has completed several WQIPs along Nevada State Routes 28, 431, 207, 760 and US-50 in the Lake Tahoe Basin (Basin) that will be used for WQIP registrations. While NDOT has not completed any registrations to date, there is a continued effort to implement WQIP throughout NDOTs jurisdiction in a continued effort to reduce fine sediment runoff to Lake Tahoe. Once approved, NDOT intends to move forward with the declaration process with anticipated credit awarding by February of 2018. NDOT also plans to register BMPs for SR 28 MP 8.5 to 11.0 from Mount Rose Highway to Crystal Bay for a total of 20 credits. NDOT has several projects that have been recently constructed, are currently being designed and preparing for construction that are both collaborative projects as well as self-funded projects. These projects are summarized in Table 4. It is anticipated with projects that have completed and projects that are currently being implemented NDOT will several candidates for credits that will meet and/or exceed the 2021 milestone of a 34% fine sediment load reduction for 69,702 lbs/yr of FSP for a total credit need of 215 credits.

Table 4: Capital Improvement Projects Available or Anticipated to be available for Registration to Achieve 2021 Milestone

Project Description	***Project Implementation Year***
Burke Creek Stream Restoration and Erosion Control	2016
SR 431 WQ and EC Project	2013/2016
US 50 Zephyr Cove Water Quality Improvement Project	2017
SR 28 Bike Path, WQ and EC Project	2016 - 2018
SR 207 WQ and EC Project	2015
US 50 Pittman Terrace WQ and EC Project	2019
US 50 WQ and EC Project (Glenbrook Canyon)	2016
US 50 WQ and EC Project (Cave Rock to Glenbrook)	2006
SR 28 WQ and EC Project @ Marlette Creek	2019
SR 28 WQ and EC Project in Conjunction with Pavement Rehabilitation	2018

3.2.1 Assessment and Planning

NDOT continues to implement water quality improvements in the Basin. As mentioned above, NDOT will utilize state gas tax funds to complete a water quality and erosion control project on SR-28 between the Carson City/Washoe County line and the south end of Incline Village. This project will include adding curb and gutter, shoulder paving and slope stabilization, drainage system upgrades and outlet stabilization and a couple of water quality basins. NDOT has finalized the design of a water quality project in cooperation with the Zephyr Cove General Improvement District, NTCD, NDSL, and US Forest Service (USFS) at Zephyr Cove. The general plan here is to work with other Basin stakeholders and install shallow infiltration basins that will treat stormwater runoff before it is discharged to Lake Tahoe. NDOT's Divisions of Stormwater, Hydraulic Design, and Maintenance & Asset Management will continue to work together in meeting the Lake Tahoe TMDL with efforts in designing water quality improvements and maintaining their efficacy.

NDOT intends to continue on its current course, as identified in this report, to meet the 2021 milestone. NDOT plans to register and declare the required number of urban catchments from Table 4 in order to meet the cumulative credit targets of 215 for the 2021 Pollutant Load Reduction Milestone for FSP. This includes registering catchments in categories of road operations and water quality improvement projects as described in Table 2,3 and 4.

4.0 FISCAL ANALYSIS

4.1 Budget

NDOTs primary source of funds will continue to be the state gas tax to cover program and administrative costs, road operations, monitoring, and capital improvement projects. Table 5 summarizes NDOTs 2016 expenditures as well as the 2017 budget areas of interest.

Table 5: NDOT Budget and Expenditures for 2017 and 2016 respectively.

Program Area and/or Project Description	Funding Source	2016 NDOT Expenditures	2017 Budget
Program Support and Administration (1)	Nevada State Gas Tax NDPE Funding	$135,500	$500,000
Stormwater Operations and Maintenance (2)	Nevada State Gas Tax	$210,000	$650,000
Road Operations and Maintenance (3)	Nevada State Gas Tax	$970,000	$1,300,000
Capital Improvement Projects for WY16 only			
US 50 Water Quality Improvement Project	Nevada State Gas Tax NDLS Funding	$3,900,000(4) $3,000,000	N/A
Burke Creek Restoration Project	Nevada State Gas Tax	$525,000	N/A

(1) – Includes planning, coordination and reporting. NDEP has supported the TMDL registration project by funding a 50% match.
(2) – This includes monitoring of BMPs, BMP maintenance and the overall sweeping program.
(3) – This includes pothole repairs, shoulder repair, sand and salt operations.
(4) – This project included constructed slope stability, water quality and erosion control components. It is anticipated that not all of this project will be considered for credit. However, this project is an extremely effective water quality improvement project for the basin.

4.2 Finance Plan

NDOT will continue to pursue outside funding options available for the implementation of future water quality improvements. NDOT originally applied for $2.0M and ultimately received a $3.0M grant from Nevada Division of State Land's (NDLS) Fund to Protect Lake Tahoe. This essentially funded the water quality and erosion control improvements on US-50 between Logan Shoals and Spooner Summit Maintenance Station in WY2016. NDOT also applied for and received a grant from NDSL's Lake Tahoe License Plate fund which has been used to supplement NDOT's current Road RAM/Highway RAM research. NDOT will continue the agreement with the Tahoe Resource Conservation District (TRCD) and other jurisdictions in the Basin to monitor water quality improvements in which Southern Nevada Public Land Management Act (SNPLMA) grant money continues to be used.

5.0 BARRIERS

There are five major barriers NDOT feels are contributing to challenges for being successful with the Lake Clarity Program;

1) The process to receive credits for NDOTs successfully implemented water quality projects has been an iterative process between NDOT and NDEP staff. This process has been mostly driven by the need to better represent the conditions for the sediment load within the Tahoe Basin that is generated from NDOT right of way. However, changes to the modeling and reporting tools have contributed to the delays associated with NDOT's initial registration of Road Operations. It should be understood that these changes have improved the overall confidence in the tools for both the jurisdictions and the regulators. This in turn has allowed for a better representation of fine sediment load reduction in the basin. It is understood both by NDOT and NDEP that the delays in registration are justifiable due to the ongoing improvement to the overall program process. It is anticipated that this will not be a barrier in the future.
2) It is recognized that due to the infancy of this program, the review process takes longer for both NDOT staff as well and NDEP staff during these first registrations and review periods. It has taken some time for both NDOT staff as well as NDEP staff to become familiar with the tools themselves which has contributed to instances where longer review time have been needed. It is anticipated that these review timeframes and learning periods will become substantially less of a barrier in the future. However, review timeframes are recognized as being a contributing factor to why credits have not yet been awarded for NDOT. It is the hope of NDOT that as the first few registrations are completed and awarded these review periods for both NDOT and NDEP will be drastically reduced.
3) It is not anticipated that funding will become a major barrier for NDOT in the future. However, with new political environments on the horizon and emergency work being performed throughout the State of Nevada, funding should be always recognized as a potential barrier. WY2017 has been one of the wettest of record. Therefore, NDOT has had to initiate several emergency repair contracts not only in the Tahoe Basin but throughout the State. While the funding for water quality projects maybe available, some of these projects may be postponed during WY2017 due to the magnitude of repair work that is anticipated. For NDOT the barrier maybe more in the form of internal contracting capacity, available contracting resources, the Tahoe public's appetite for construction/traffic control and the possibility of an even shorter Tahoe construction window due to a wet and cold Spring.

4) NDOT has invested a considerable amount of time and resources into utilizing and working on improving the ROAD RAM procedures during WY16. NDOT has contracted with NTCD and 2ND Nature to develop procedures that are more efficient and safe for personal to perform on roadways that have traffic that travel in an excess of 45 miles per hour. It is anticipated that these procedures will be submitted to NDEP for approval during the WY17. However, there will again be some challenges when initially implementing these new procedures and may cause some delays or overlapping data collection for NDOT and NDEP as we become familiar with the new procedures if accepted as proposed.
5) Short term, weather and considerable above average snowpack are already affecting the ability to complete the necessary ROAD RAM inspections. This may also apply to conducting BMP RAM inspections as well.

6.0 Baseline Discrepancies

The baseline load estimate developed in the 2016 Baseline Report could potentially be refined with each credit registration. Although the Road Operations registration for SR 28 and 431 is not complete as submitted, there were no changes between the estimated baseline load and the refined baseline load for registration of the Road Operations for SR 28 and SR 431. However, if changes do occur in the future, the annual report will maintain a running tally of all baseline discrepancies for registered credits. This will be used to update future annual credit targets and five-year milestones.

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APPENDIX B

Public Outreach Event Summary

Table B1. Summary of stormwater public education and outreach events.

Date	Event	Location	Action	Target Audience
Jul-16	Stormwater Tour	Carson City	Conduct Outreach	Legislative Committee Bureau
Jul-16	Clark County Public Works Event	Las Vegas	Conduct Outreach	Industry
Jul-16	American Association of State Highway and Transportation Officials	Las Vegas	Conduct Outreach	Industry
Aug-16	Transportation Board Meeting	Carson City (NDOT Headquarters)	Conduct Outreach	Transportation Board and NDOT Employees
Aug-16	Las Vegas Valley NPDES Stormwater Discharge Permit Stormwater Quality Management Committee	Las Vegas	Conduct Outreach	Industry
Aug-16	Las Vegas Valley NPDES Stormwater Discharge Permit Stormwater Quality Management Committee	Las Vegas	Conduct Outreach	Industry
Aug-16	SR-28 Ground Breaking	Lake Tahoe	Conduct Outreach & Distribute Outreach Material	General Public
Aug-16	Reno Duck Races	Reno (Truckee River)	Distribute Outreach Material	General Public
Aug-16	Internal Finance Committee	Carson City	Conduct Outreach	Internal Finance Committee
Aug-16	Nevada Bureau of Mines and Geology Board Meeting	Reno	Conduct Outreach	Industry
Aug-16	2016 Lake Tahoe Summit	Lake Tahoe	Staff Information Booth & Distribute Outreach Material	General Public & Industry
Sep-16	Associated General Contractors of America	Reno	Conduct Outreach	Industry
Sep-16	Reno Air Races	Stead	Staff Information Booth & Distribute Outreach Material	General Public
Sep-16	Governor's STEM Initiative	Sparks (Sparks High School)	Conduct Outreach & Distribute Outreach Material	General Public and High School Students
Sep-16	Tri-State Seminar	Las Vegas	Conduct Outreach, Staff Information Booth, & Distribute Outreach Material	Industry
Sep-16	Keep Truckee Meadows Beautiful	Reno	Conduct Outreach & Distribute Outreach Material	General Public
Oct-16	School Event	Elko (Flagview Intermediate School)	Conduct Outreach & Distribute Outreach Material	Students
Nov-16	School Event	Reno (University of Nevada Reno)	Conduct Outreach	College Students
Nov-16	Transportation Board Meeting	Carson City (NDOT Headquarters)	Conduct Outreach	Transportation Board & NDOT Employees
Nov-16	Leading at NDOT Event	Carson City (NDOT Headquarters)	Conduct Outreach	NDOT Employees
Nov-16	Flood Awareness	Reno	Staff Information Booth & Distribute Outreach Material	General Public
Jan-17	Transportation Board	Carson City (NDOT Headquarters)	Conduct Outreach	Transportation Board & NDOT Employees
Jan-17	Stormwater Division Open House	Carson City (NDOT Headquarters)	Conduct Training & Outreach & Distribute Outreach Material	NDOT Employees
Feb-17	Nevada Water Resources Association Conference	Reno	Staff Information Booth & Distribute Outreach Material	Industry
Feb-17	Las Vegas Valley NPDES Stormwater Discharge Permit Stormwater Quality Management Committee	Las Vegas	Conduct Outreach	Industry
Feb-17	Truckee Meadows Community College Intern Recruiting	Reno	Staff Information Booth & Distribute Outreach Material	College Students
Feb-17	Resident Engineer Meeting	Reno	Conduct Outreach	NDOT Employees
Mar-17	Las Vegas Valley NPDES Stormwater Discharge Permit Stormwater Quality Management Committee	Las Vegas	Conduct Outreach	Industry
Mar-17	Resident Engineer Conference	Reno	Conduct Outreach	NDOT Employees
Mar-17	Transportation Board Meeting	Statewide	Conduct Outreach & Present Awards to Drawing Contest Winners	Transportation Board, NDOT Employees, & Elementary School Students
Mar-17	Transportation Innovation Day	Carson City	Staff Information Booth & Distribute Outreach Material	General Public
Mar-17	SR-28 Public Meeting	Incline Village	Conduct Outreach	General Public
Apr-17	Nevada Water Environment Association	Las Vegas	Conduct Outreach	Industry
Apr-17	Reno Spaghetti Bowl Public Meeting	Reno	Distribute Outreach Material	General Public
Apr-17	Elko Take Pride-Clean Up Green Up	Elko	Conduct Outreach	General Public
Apr-17	GreenFest	Las Vegas	Staff Information Booth & Distribute Outreach Material	General Public
Apr-17	Take Your Child to Work Day	Carson City (NDOT Headquarters)	Conduct Outreach	Children
May-17	Reno River Festival	Reno (Truckee River)	Staff Information Booth & Distribute Outreach Material	General Public
May-17	Truckee River Snapshot Day	Reno (Thomas Creek)	Conduct Outreach & Distribute Outreach Material	High School Students
May-17	Field Day	Lamoille (Lamoille Canyon)	Conduct Outreach & Distribute Outreach Material	5th Grade Students
May-17	US-50 Public Meeting	Zephyr Cover	Distribute Outreach Material	General Public
Jun-17	Get on the Bus Tour	Clear Creek Watershed	Conduct Outreach	Industry & General Public

APPENDIX C

Maintenance Facility Permanent Stormwater BMP Improvements

New Permanent Stormwater Pollution Control Measures Implemented at NDOT Maintenance Facilities during FY 2017

Brine tank secondary containment structure (Wellington Station)

Self-contained equipment cleaning facility (Trento Yard)

Stormwater treatment vault (North Fork Station)

Stormwater sediment basin and various drainage improvements (North Fork Station)

Outdoor materials storage area overhead cover and secondary containment (Tonopah Station)

Self-contained equipment cleaning facility (Tonopah Station)

APPENDIX D

Annual Maintenance Facility Inspections

Table D1. List of Major and Minor Maintenance facilities that underwent an annual stormwater inspection.

Major Facility	Designation	District	Address/Route	County	Milepost	Latitude	Longitude
Las Vegas-North Station	Major	1	123 E. Washington Ave., Las Vegas, NV 89101	Clark	-----	36°10' 53.772"	-115°8' 11.602"
Las Vegas-South Station	Major	1	6610 Ullom Dr., Las Vegas, NV 89188	Clark	-----	36°4' 10.532"	-115°12' 10.924"
Tonopah Station	Major	1	US-6	Nye	1.8	38°3' 44.161"	-117°13' 25.026"
Carson City Station	Major	2	1250 Oregon St., Carson City, NV 89712	Carson City	-----	39°9' 17.786"	-119°45' 44.207"
Fallon Station	Major	2	888 Harrigan Rd., Fallon, NV 89406	Churchill	-----	39°27' 59.168"	-118°45' 47.714"
Reno Sparks Station	Major	2	310 Galletti Wy., Sparks, NV 89431	Washoe	-----	39°31' 58.260"	-119°46' 57.728"
Sparks Station	Major	2	310 Galletti Wy., Sparks, NV 89431	Washoe	-----	39°31' 58.260"	-119°46' 57.728"
Elko Station	Major	3	1951 Idaho St., Elko, NV 89801	Elko	-----	40°50' 46.557"	-115°45' 1.012"
Ely Station	Major	3	1401 E. Aultman, Ely, NV 89301	White Pine	-----	39°15' 30.213"	-114°51' 42.514"
Wells Station	Major	3	SR-223	Elko	74.9	41°6' 6.752"	-114°54' 20.461"
Winnemucca Station	Major	3	725 W. 4th St., Winnemucca, NV 89445	Humboldt	-----	40°58' 1.425"	-117°44' 25.533"
Alamo Station	Minor A	1	US-93	Lincoln	39.0	37° 22' 11.210"	-115° 9' 33.533"
Beatty Station	Minor A	1	US-95	Nye	59.9	36° 54' 36.833"	-116 °45' 23.175"
Big Smokey Station	Minor A	1	SR-376	Nye	53.4	38° 47' 0.240"	-117° 10' 26.286"
Blue Jay Station	Minor A	1	US-6	Nye	65.8	38° 22' 20.339"	-116° 13' 29.472"
Flamingo Yard	Minor A	1	I-515	Clark	12.8	36° 6' 49.520"	-115° 4' 57.589"
Glendale Station	Minor A	1	SR-169	Clark	24.2	36° 40' 23.003"	-114° 31' 23.452"
Goldfield Station	Minor A	1	US-95	Esmeralda	19.5	37° 42' 18.329"	-117° 14' 32.179"
Mina Station	Minor A	1	US-95	Mineral	15.7	38° 23 '8.738"	-118° 6' 23.865"
Montgomery Pass Station	Minor A	1	US-6	Mineral	8.4	37° 58' 37.645"	-118° 19' 11.181"
Mountain Springs Station	Minor A	1	SR-160	Clark	21.3	36° 1' 22.498"	-115° 30' 24.493"
Mt. Charleston Station	Minor A	1	SR-157	Clark	5.1	36° 16' 19.160"	-115° 34' 29.222"
Old Indian Springs Station	Minor A	1	US-95	Clark	123.3	36° 34' 14.438"	-115° 40' 15.093"
Panaca Station	Minor A	1	SR-319	Lincoln	52.0	37° 47' 26.229"	-114° 22' 33.906"
Searchlight Station	Minor A	1	SR-164	Clark	18.6	35° 27' 57.160"	-114° 55' 18.401"
Boomtown Yard	Minor A	2	I-80	Washoe	4.0	39° 30' 49.191"	-119° 58' 45.234"
Carson City 5th St. Yard	Minor A	2	None	Carson City	N/A	39° 44' 25.085"	-119° 44' 25.085"
Clear Acre Yard	Minor A	2	I-580	Washoe	27.2	39° 33' 11.835"	-119° 47' 20.928"
Cold Springs Station	Minor A	2	ARCH-01	Churchill	0.0	39 °24' 42.061"	-117° 50' 22.108"
Comanche Yard	Minor A	2	SR-429	Washoe	7.4	39° 18' 49.638"	-119° 49'29.609"
Dayton/Lafond Yard	Minor A	2	US-50	Lyon	12.0	39° 18' 467"	-119° 30' 48.843"
Fairview Yard	Minor A	2	US-50	Carson City	10.7	39° 9' 3.326"	-119° 44' 35.620"
Fernley Station	Minor A	2	SR-427	Lyon	1.0	39° 36' 31.393"	-119° 15' 53.655"
Galena Creek Station	Minor A	2	SR-431	Washoe	17.3	39° 21' 14.211"	-119° 51' 21.130"
Gardnerville Station	Minor A	2	US-395	Douglas	18.8	38° 54' 37.760"	-119° 41' 31.014"
Hawthorne Station	Minor A	2	US-95	Mineral	49.4	38° 31' 45.680"	-118° 36' 59.754"
Incline Village Station	Minor A	2	SR-431	Washoe	0.1	39° 15' 9.225"	-119° 58' 16.026"
Log Cabin Yard	Minor A	2	SR-339	Lyon	11.2	38° 10' 56.283"	-119° 10' 56.286"
Logging Road Lane Yard	Minor A	2	Logging Road Lane	Douglas	N/A	38° 58' 38.497"	-119° 54' 16.033"
Lovelock North (KOA) Yard	Minor A	2	SR-396	Pershing	1.6	40° 11' 22.582"	-118° 28' 0.979"
Lovelock South-Yard	Minor A	2	FRPE01	Pershing	16.5	40° 9' 52.729"	-118° 29' 6.343"
Lovelock Station	Minor A	2	690 Grinnel Ave., Lovelock, 89419	Pershing	N/A	40° 10' 37.574"	-118° 28' 48.002"
Mt. Rose Station	Minor A	2	SR-431	Washoe	13.0	39° 20' 23.152"	-119° 52' 33.774"
Smart Yard	Minor A	2	US-95	Churchill	23.7	39° 26' 5.578"	-118° 46' 55.602"
Spooner East Yard	Minor A	2	US-50	Douglas	13.2	39° 6' 20.670"	-119° 53' 27.429"
Spooner Station	Minor A	2	US-50	Douglas	12.0	39° 5' 45.108"	-119° 54' 37.694"

Table D1 (cont'd)

Major Facility	Designation	District	Address/Route	County	Milepost	Latitude	Longitude
Stead Yard	Minor A	2	US-395	Washoe	34.8	39° 37' 13.427"	-119° 53' 12.950"
SR-431 WA 23.9 Yard	Minor A	2	SR-431	WA	23.9	39° 23' 49.478"	-119° 45' 31.917"
Trento Yard	Minor A	2	US-50	Churchill	12.9	39° 30' 19.504"	-118° 54' 39.196"
Virginia City Station	Minor A	2	SR-341	Storey	2.5	39° 17' 55.609"	-119° 39' 19.272"
Wellington Station	Minor A	2	SR-829	Lyon	3.0	38° 45' 3.459"	-119° 22' 9.058"
Yerington Station	Minor A	2	SR-208	Lyon	29.0	38° 59' 32.356"	-119° 9' 45.978"
Austin Station	Minor A	3	US-50	Lander	24.1	39° 30' 11.162"	-117° 5' 0.037"
Battle Mountain Station	Minor A	3	SR-304	Lander	6.6	40° 38' 13.660"	-116° 56' 3.459"
Contact Station	Minor A	3	US-93	Elko	125.5	41° 46' 9.149"	-114° 45' 8.599"
Currie Station	Minor A	3	US-93	Elko	11.8	40°15' 59.550"	-114° 44' 44.450"
East of Wells Yard	Minor A	3	I-80	Elko	76.7	41° 6' 6.752"	-114° 54' 20.461"
Ely Bone Yard	Minor A	3	US-6	White Pine	40.7	39° 13' 30.866"	-114° 51' 41.762"
Emigrant Pass Station	Minor A	3	I-80	Eureka	16.8	40° 39' 0.192"	-116° 18' 9.969"
Eureka Station	Minor A	3	US-50	Eureka	36.8	39° 31' 4.613"	-115° 57' 45.964"
I-80 LA 4.0 Yard	Minor A	3	I-80	Lander	4.0	40° 39' 47.464"	-116° 57' 46.034"
Independence Valley Station	Minor A	3	SR-226	Elko	19.6	41° 18' 6.655"	-116° 6' 53.597"
Lund Station	Minor A	3	SR-318	White Pine	11.8	38° 52' 14.455"	-115° 0' 32.262"
North Fork Station	Minor A	3	SR-225	Elko	77.9	41° 29' 0.504"	-115° 48' 55.124"
Old Baker Station	Minor A	3	US-6	White Pine	91.5	39° 5' 12.749"	-114° 14' 15.569"
Old Currant Station	Minor A	3	US-6	Nye	127.1	38° 49' 3.337"	-115° 20' 51.957"
Old Pequop Station	Minor A	3	FREL43	Elko	97.6	41° 3' 42.135"	-114° 31' 54.275"
Orovada Station	Minor A	3	US-95	Humboldt	43.5	41° 34' 6.469"	-117° 47' 4.137"
Quinn River Station	Minor A	3	SR-140	Humboldt	51.8	41° 45' 58.879"	-118° 33' 7.376"
Ruby Valley Station	Minor A	3	SR-229	Elko	35.5	40° 37' 50.928"	-115° 15' 59.722"
Salvage Yard	Minor A	3	FRHU15	Humboldt	6.3	40° 55' 39.710"	-117° 47' 58.214"
Susie Creek Yard	Minor A	3	I-80	Elko	4.2	40° 43' 41.875"	-116° 4' 54.823"
Wendover Station	Minor A	3	FREL459	Elko	0.5	40° 44' 35.594"	-114° 3' 53.394"
Material Pit LN02-07	Minor B	1	US-93	Lincoln	48.2	37° 29' 48.31"	-115° 12' 22.55"
Material Pit LN03-03	Minor B	1	US-93	Lincoln	52.0	37° 32' 21.99"	-115° 12' 14.01"
Material Pit CC023306	Minor B	1	SR-318	Lincoln	4.0	37° 35' 14.599"	-115° 14' 4.146"
Material Pit CC022680	Minor B	1	SR-322	Lincoln	13.0	37° 57' 41.19"	-114° 14' 41.24"
Material Pit NEV057851	Minor B	1	US-93	Lincoln	171.0	38° 39' 1.44"	-114° 38' 10.92"
Material Pit NEV064619	Minor B	1	US-93	Lincoln	6.0	36° 56' 21.15"	-114° 58' 16.09"
Material Pit NEV043432	Minor B	1	SR-375	Lincoln	35.0	37° 24' 48.84"	-115° 24' 0"
Material Pit NEV048515	Minor B	1	SR-266	Esmeralda	7.8	37° 27' 18.16"	-117° 42' 45.82"
Material Pit LN01-02	Minor B	1	US-93	Lincoln	19.2	37° 7' 44.66"	-115° 0' 6.17"
Material Pit LN03-01	Minor B	1	US-93	Lincoln	77.1	37° 37' 17.34"	-114° 46' 38.35"
Material Pit LN05-02	Minor B	1	US-93	Lincoln	99.8	37° 41' 5.76"	-114° 28' 19.96"
Material Pit LN05-01	Minor B	1	US-93	Lincoln	108.4	37° 47' 40.95"	-114° 24' 45.4"
Material Pit LN07-03	Minor B	1	US-93	Lincoln	124.4	37° 59' 42.34"	-114° 30' 32.88"
Material Pit LN07-02	Minor B	1	US-93	Lincoln	130.6	38° 4' 22.85"	-114° 34' 6.68"
Material Pit LN08-01	Minor B	1	US-93	Lincoln	148.2	38° 19' 8.23"	-114° 36' 25.65"
Material Pit LN08-03	Minor B	1	US-93	Lincoln	158.2	38° 28' 0.48"	-114° 38' 44.55"
Material Pit LN08-02	Minor B	1	US-93	Lincoln	163.2	38° 32' 20.67"	-114° 39' 4.47"
Material Pit LN09-01	Minor B	1	US-93	Lincoln	36.7	37° 20' 21.51"	-114° 31' 57.95"
Material Pit LN10-02	Minor B	1	SR-319	Lincoln	9.3	37° 47' 1.38"	-114° 14' 6.62"

Table D1 (cont'd)

Major Facility	Designation	District	Address/Route	County	Milepost	Latitude	Longitude
Material Pit LN12-01	Minor B	1	SR-375	Lincoln	22.0	37° 37' 52.45"	-115° 42' 47.31"
Material Pit LN12-03	Minor B	1	SR-375	Lincoln	35.0	37° 31' 46.84"	-115° 35' 32.93"
Material Pit LN24-02	Minor B	1	SR-317	Lincoln	48.8	37° 29' 41.27"	-114° 35' 0.31"
Material Storage Area	Minor B	1	SR-317	Lincoln	47.6	37° 28' 48.72"	-114° 34' 27.04"
Material Pit CL09-01	Minor B	1	US-95	Clark	18.0	35° 26' 4.271"	-114° 54' 13.766"
Material Pit CL09-03	Minor B	1	US-95	Clark	15.8	35° 24' 5.437"	-114° 53' 55.390"
Material Pit CL09-04	Minor B	1	US-95	Clark	1.0	35° 11' 18.55"	-114° 51' 8.51"
Material Pit CL11-06	Minor B	1	US-95	Clark	52.0	35° 55' 22.292"	-114° 55' 48.705"
Material Pit CL10-04	Minor B	1	US-95	Clark	44.0	35° 47' 34.8"	-114° 56' 41.19"
Material Pit CL18-02	Minor B	1	US-95	Clark	98.8	36° 23' 55.383"	-115° 23' 15.660"
Material Pit CL18-03	Minor B	1	US-95	Clark	117.8	36° 34' 34.35"	-115° 38' 39.84"
Material Pit CL19-01	Minor B	1	US-95	Clark	123.4	36° 34' 33.64"	-115° 44' 24.14"
Material Pit CL25-01	Minor B	1	SR-168	Clark	11.0	36° 44' 26.849"	-114° 44' 29.652"
Material Pit NEV064469	Minor B	1	US-93	Clark	82.0	36° 47' 8.36"	-114° 56' 39.36"
Material Pit CL81-01	Minor B	1	IR-15	Clark	5.2	35° 40' 52.92"	-115° 22' 35.1"
Material Pit CL86-05/CL86-01	Minor B	1	IR-15	Clark	81.8	36° 33' 44.6"	-114° 41' 0.27"
Material Pit CL86-02	Minor B	1	IR-15	Clark	84.3	36° 35' 23.38"	-114° 38' 47.02"
Material Pit CL88-03	Minor B	1	IR-15	Clark	115.0	36° 45' 56.53"	-114° 11' 29.51"
Material Pit CL32-02	Minor B	1	SR-164	Clark	15.4	35° 28' 30.037"	-114° 57' 55.637"
Material Pit CL09-01	Minor B	1	US-95	Clark	18.0	35° 26' 4.271"	-114° 54' 13.766"
Material Pit CL47-03	Minor B	1	SR-160	Clark	26.9	36° 0' 17.633"	-115° 36' 11.970"
Material Pit CL47-04	Minor B	1	SR-160	Clark	37.8	36° 4' 28.617"	-115° 46' 25.037"
Material Pit CL69-01	Minor B	1	SR-159	Clark	1.3	36° 2' 38.533"	-115° 22' 30.133"
Material Pit ES01-01	Minor B	1	US-6	Esmeralda	3.3	38° 0' 10.449"	-118° 9' 42.288"
Material Pit ES03-08	Minor B	1	US-95	Esmeralda	9.0	37° 34' 12.28"	-117° 12' 4.1"
Material Pit ES08-04	Minor B	1	SR-266	Esmeralda	2.6	37° 27' 17.07"	-117° 47' 46.2"
Material Pit ES04-01	Minor B	1	US-95	Esmeralda	24.5	37° 47 '6.823"	-117° 13' 53.496"
Material Pit LA07-02	Minor B	1	SR-376	Lander	2.6	39° 12' 6.388"	-117° 3' 8.122"
Material Pit MI01-04	Minor B	1	US-95	Mineral	15.5	38° 22' 48.770"	-118° 6' 27.142"
Material Pit MI06-02	Minor B	1	US-6	Mineral	6.2	37° 57' 48.752"	-118° 21' 9.436"
Material Pit MI01-06	Minor B	1	US-95	Mineral	17.4	38° 24' 36.91"	-118° 7' 17.05"
Material Pit NY02-01/NY02-07	Minor B	1	US-6	Nye	5.0	38° 4' 7.65"	-117° 10' 54.84"
Material Pit NY02-2/NY02-05	Minor B	1	US-6	Nye	12.5	38° 4' 40.5"	-117° 1' 48.28"
Material Pit NY02-03	Minor B	1	US-6	Nye	36.7	38° 8' 20.427"	-116° 36' 47.092"
Material Pit NY02-04	Minor B	1	US-6	Nye	8.7	38 °4' 26.926"	-117° 6' 4.719"
Material Pit NY03-04	Minor B	1	US-6	Nye	52.0	38° 12' 6.955"	-116° 21' 37.314"
Material Pit NY03-05	Minor B	1	US-6	Nye	64.4	38° 21' 11.675"	-116° 14' 36.128"
Material Pit NY07-04	Minor B	1	SR-160	Nye	36.3	36° 33' 18.605"	-116° 7' 22.984"
Material Pit NY07-06	Minor B	1	US-95	Nye	24.5	36° 37' 13.85"	-116° 17' 36.62"
Material Pit NY08-06	Minor B	1	US-95	Nye	58.4	36°53'29.962"	-116°44'47.871"
Material Pit NY09-03	Minor B	1	US-95	Nye	87.5	37° 12' 38.15"	-116° 57' 49.94"
Material Pit NY13-03	Minor B	1	SR-376	Nye	61.5	38° 53' 51.759"	-117° 11' 59.194
Material Pit NY13-05	Minor B	1	SR-376	Nye	44.9	38° 41' 13.452"	-117° 9' 43.007"
Material Pit NY30-02	Minor B	1	SR-267	Nye	4.3	37° 12' 44.73"	-117° 7' 54.12"
Material Pit NY31-01	Minor B	1	SR-361	Nye	5.5	38° 49' 48.05"	-117° 57' 10.98"
Material Pit NY32-02	Minor B	1	SR-361	Nye	21.5	39° 1' 34.604"	-118° 1' 18.487"
Material Pit NY32-03	Minor B	1	SR-361	Nye	12.8	38° 55' 13.512"	-117° 56' 23.055"

Table D1 (cont'd)

Major Facility	Designation	District	Address/Route	County	Milepost	Latitude	Longitude
Material Storage Area	Minor B	1	SR-361	Nye	10.9	38° 53' 45.62"	-117° 55' 26.2"
Materials Storage Area	Minor B	1	US-6	Nye	25.3	38° 7' 30.49"	-116° 48' 59.91"
Material Storage Area	Minor B	1	SR-157	Clark	12.0	36° 16' 47.856"	-115° 27' 20.704"
Material Stockpile	Minor B	1	SR-266	Esmeralda	40.0	37° 30' 3.215"	-117° 11' 9.655"
Material Pit ES05-02	Minor B	1	US-95	Esmeralda	85.9	38° 2' 26.59"	-117° 53' 34.04"
Material Stockpile ES01-03	Minor B	1	US-6	Esmeralda	11.0	38° 0' 56.325"	-118° 1' 43.393"
Material Storage Area	Minor B	1	US-6	Esmeralda	14.2	38° 1' 6.912"	-117° 58' 10.706"
Material Storage Area	Minor B	1	US-6	Esmeralda	15.2	38° 1' 10.503"	-117° 57' 0.982"
Material Stockpile	Minor B	1	US-6	Esmeralda	19.0	38° 1' 38.876"	-117° 52' 57.056"
Asphalt Mixing Pad	Minor B	1	US-6	Esmeralda	55.7	38° 5' 10.8"	-117° 17' 7.23"
Material Stockpile LA07-01	Minor B	1	SR-376	Lander	17.3	39° 24' 4.981"	-116° 56' 39.171"
Material Storage Area	Minor B	1	SR-317	Lincoln	43.7	37° 25' 44.54"	-114° 37' 31.84"
Material Stockpile	Minor B	1	SR-318	Lincoln	43.7	38° 4' 40.829"	-114° 58' 51.6"
Material Stockpile	Minor B	1	SR-319	Lincoln	53.0	37° 47' 16.226"	-114° 21' 3.45"
Material Stockpile LN06-01	Minor B	1	US-93	Lincoln	111.7	37° 50' 42.382"	-114° 24' 47.85"
Material Stockpile	Minor B	1	SR-361	Mineral	20.2	38° 44' 37.858"	-118° 2' 28.868"
Material Stockpile	Minor B	1	US-6	Mineral	12.0	38° 0' 24.109"	-118° 16' 21.025"
Material Stockpile NY30-01	Minor B	1	SR-267	Nye	9.9	37° 16' 44.157"	-117° 5' 3.754"
Material Stockpile NY10-04	Minor B	1	US-95	Nye	100.5	37° 21' 21.36"	-117° 6' 46.534"
Material Stockpile	Minor B	1	SR-267	Nye	12.0	37° 17' 54.173"	-117° 3' 16.23"
Material Stockpile NY13-07	Minor B	1	SR-376	Nye	53.5	38° 46' 57.926"	-117° 10' 41.291"
Material Stockpile NY14-01	Minor B	1	SR-376	Nye	68.5	38° 59' 54.81"	-117° 11' 32.398"
Material Stockpile	Minor B	1	SR-377	Nye	0.3	38° 34' 10.539"	-117° 10' 27.439"
Material Stockpile	Minor B	1	US-6	Nye	46.5	38° 10' 4.304"	-116° 26' 13.69"
Material Pit LY13-01	Minor B	2	SR-824	Lyon	3.6	38° 50' 11.442"	-119° 20' 59.712"
Material Pit LY14-05	Minor B	2	SR-208	Lyon	0.8	38° 46' 5.514"	-119° 23' 54.437"
Material Pit LY21-01	Minor B	2	US-95A	Lyon	27.8	39° 11' 30.411"	-119° 13' 3.743"
Material Pit Mason	Minor B	2	SR 339	Lyon	8.1	38° 56' 50.620"	-119° 11' 52.640"
Material Pit MI02-03	Minor B	2	US-95	Mineral	29.2	38° 31' 37.55"	-118° 15' 45.222"
Material Pit MI02-04	Minor B	2	US-96	Mineral	33.0	38° 31' 41.990"	-118° 15' 23.010"
Material Pit Plumber	Minor B	2	SR -208	Lyon	18.0	38° 50' 13.120"	-119° 08' 28.340"
Materila Pit WA 71-01	Minor B	2	Short Lane	N/A	N/A	39° 28' 3.830"	-119° 43' 27.870"
Material Pit WA37-03	Minor B	2	SR-447	WA	44.0	40° 13' 10.731"	-119° 22' 33.939"
Material Stockpile	Minor B	2	US-50	Churchill	60.5	39° 17' 15.734"	-118° 9' 43.294"
Material Stockpile	Minor B	2	US-95	Churchill	58.9	39° 56' 26.344"	-118° 44' 54.378"
Material Stockpile	Minor B	2	US-395	Douglas	8.8	38° 48' 13.146"	-119° 36' 24.349"
Materila Storage Dayton	Minor B	2	SR-341	Lyon	0.6	39° 13' 41.780"	-119° 38' 44.840"
Kingsbury Yard	Minor B	2	SR-207	Douglas	9.2	38° 57' 13.500"	-119° 50' 56.700"
Material Stockpile	Minor B	2	SR-208	Lyon	0.8	38° 45' 58.519"	-119° 23' 38.571"
Material Stockpile	Minor B	2	SR-208	Lyon	10.0	38° 48' 11.443"	-119° 16' 11.499"
Material Stockpile	Minor B	2	SR-338	Lyon	9.5	38° 30' 56.603	-119° 12' 48.928"
Material Stockpile	Minor B	2	US-50	Lyon	29.5	39° 24' 53.651"	-119° 13' 34.243"
Material Stockpile	Minor B	2	SR-359	Mineral	3.8	38° 10' 51.930"	-118° 44'14.340"
Material Stockpile	Minor B	2	SR-359	Mineral	7.0	38° 12' 0.522"	-118° 41' 9.199"
Material Stockpile	Minor B	2	SR-359	Mineral	13.1	38° 15' 33.730"	-118° 36' 35.850"
Material Stockpile	Minor B	2	SR-359	Mineral	20.4	38° 21' 44.480"	-118° 34' 38.360"
Material Stockpile	Minor B	2	SR-359	Mineral	26.0	38° 25' 50.220"	-118° 37'13.970"

Table D1 (cont'd)

Major Facility	Designation	District	Address/Route	County	Milepost	Latitude	Longitude
Material Stockpile	Minor B	2	SR-359	Mineral	32.5	38° 30' 30.094"	-118° 37' 49.958"
Material Stockpile Tracy Clark	Minor B	2	FRWA15	Washoe	0.15	39° 34' 1.360"	-119° 30' 6.830"
Material Stockpile Nightingale	Minor B	2	I-80	Churchill	4.1	39° 47' 28.400"	-119° 01' 10.500"
Material Stockpile	Minor B	2	US-95A	Mineral	83.2	38° 56' 27.215"	-118° 48' 39.894"
Material Stockpile	Minor B	2	I-80	Pershing	31.1	40° 20' 3.601"	-118° 19' 16.497"
Material Stockpile	Minor B	2	I-80	Pershing	49.9	40° 35' 54.496"	-118° 15' 5.046"
Material Stockpile	Minor B	2	SR-341	Storey	9.2	39° 22' 13.816"	-119° 40' 1.704"
Material Stockpile	Minor B	2	SR-445	Washoe	22.1	39° 50' 12.03"	-119° 39' 30.105
Material Stockpile	Minor B	2	SR-447	Washoe	8.0	39° 43' 35.168"	-119° 19' 59.138
Material Stockpile	Minor B	2	Fir St., Gerlach	Washoe	N/A	40° 38' 58.476"	-119° 21' 34.764"
Material Pit EL14-02	Minor B	3	US-93	Elko	68.4	41° 1' 23.843"	-114° 57' 10.265"
Material Pit CC020120	Minor B	3	US-93	White Pine	2.0	38° 42' 18.948"	-114° 37' 22.788
Material Pit CC025129	Minor B	3	US-93	White Pine	59.0	39° 18' 57.344"	-114° 49' 18.344"
Material Pit EL09-01	Minor B	3	US-93A	Elko	15.6	40° 15' 14.872"	-114° 19' 35.216"
Material Pit EL10-01	Minor B	3	US-93A	Elko	34.0	40° 28' 56.592"	-114° 8' 24.529"
Material Pit EL13-05	Minor B	3	US-93	Elko	6.0	40° 11' 51.705	-114° 41' 7.799"
Material Pit EL16-03	Minor B	3	US-93	Elko	116.6	41° 39' 35.50"	-114° 49' 53.83"
Material Pit EL35-01	Minor B	3	SR-233	Elko	18.5	41° 12' 41.029"	-114° 14' 14.126"
Material Pit EL-36-02	Minor B	3	SR-233	Elko	25.6	41° 17' 33.304"	-114° 9' 38.47"
Material Pit EL37-01	Minor B	3	SR-229	Elko	43.3	40° 38' 43.04"	-115° 8' 18.623"
Material Pit EL81-01	Minor B	3	I-80	Elko	4.1	40° 44' 52.943"	-116° 4' 46.404"
Material Pit EL83-01	Minor B	3	I-80	Elko	59.0	41° 4' 9.052"	-115° 17' 11.903"
Material Pit EL87-01	Minor B	3	I-80	Elko	103.0	41° 1' 16.94"	-114° 29' 19.497"
Material Pit EU02-06	Minor B	3	US-50	Eureka	31.6	39° 33' 48.053"	-116° 1' 43.5"
Material Pit EU02-09	Minor B	3	US-50	Eureka	26.2	39° 34' 33.089"	-116° 6' 30.495"
Material Pit HU06-03	Minor B	3	US-95	Humboldt	46.1	41° 36' 28.247"	-117° 47' 16.829"
Material Pit HU28-01	Minor B	3	SR-140	Humboldt	100.6	41° 54' 28.378"	-119° 12' 27.782"
Material Pit LA06-02	Minor B	3	US-50	Lander	54.2	39° 28' 25.052"	-116° 38' 2.815"
Material Pit LA08-04	Minor B	3	SR-305	Lander	45.5	39° 41' 52.023"	-117° 10' 5.964"
Material Pit LA10-11	Minor B	3	SR-305	Lander	109.2	40° 32' 34.775"	-117° 3' 0.261"
Material Pit LA14-01	Minor B	3	SR-722	Lander	39.0	39° 27' 27.569"	-117° 8' 17.307"
Material Pit LA19-03	Minor B	3	US-50	Lander	1.9	39° 31' 24.221"	-117° 28' 10.321"
Material Pit NEV004750	Minor B	3	SR-893	White Pine	29.0	39° 26' 53.355"	-114° 30' 32.449"
Material Pit NY20-01	Minor B	3	SR-379	Nye	5.4	38° 48' 1.493"	-115° 32' 28.483"
Material Pit NY33-20	Minor B	3	SR-318	Nye	12.0	38° 19' 50.372"	-115° 3' 8.935"
Material Pit WP01-06	Minor B	3	US-50	White Pine	44.5	39° 25' 52.273"	-115° 10' 49.884"
Material Pit WP05-01	Minor B	3	US-93	White Pine	71.0	39° 29' 16.909"	-114° 45' 46.46"
Material Pit WP05-04	Minor B	3	US-93	White Pine	85.5	39° 41' 24.641"	-114° 45' 54.857"
Material Pit WP06-02	Minor B	3	US-93	White Pine	108.0	40° 0' 33.244"	-114° 39' 30.765"
Material Pit WP06-03	Minor B	3	US-93	White Pine	108.0	40° 0' 47.39"	-114° 39' 39.346"
Material Pit WP08-03	Minor B	3	US-6	White Pine	3.8	38° 52' 11.813"	-115° 13' 2.315"
Material Pit WP21-02	Minor B	3	SR-487	White Pine	9.0	39° 2' 47.796"	-114° 9' 3.291"
Material Pit WP24-02	Minor B	3	SR-318	White Pine	7.9	38° 48' 55.485	-115° 0' 44.588"
Material Pit WP29-01	Minor B	3	SR-892	White Pine	4.0	39° 25' 51.226"	-115° 48' 37.306"
Material Pit WP33-01	Minor B	3	SR-893	White Pine	3.0	39° 4' 33.303"	-114° 31' 58.512"
Material Stockpile	Minor B	3	None	Elko	N/A	40° 43' 43.803"	-116° 4' 55.155"
Material Stockpile	Minor B	3	FREL28	Elko	3.8	41° 5' 47.357"	-115° 7' 34.747"

Table D1 (cont'd)

Major Facility	Designation	District	Address/Route	County	Milepost	Latitude	Longitude
Material Stockpile	Minor B	3	I-80	Elko	42.8	40° 57' 22.993"	-115° 28' 58.73"
Material Stockpile	Minor B	3	I-80	Elko	87.3	41° 5' 29.529"	-114° 42' 36.754"
Material Stockpile	Minor B	3	I-80	Elko	112.0	40° 55' 33.541"	-114° 19' 38.302"
Material Stockpile	Minor B	3	SR-225	Elko	56.5	41° 11' 3.348"	-115° 49' 24.96"
Material Stockpile	Minor B	3	SR-225	Elko	78.5	41° 29' 30.527"	-115° 49' 25.651"
Material Stockpile	Minor B	3	SR-225	Elko	109.1	41° 48' 57.274"	-115° 57' 8.05"
Material Stockpile	Minor B	3	SR-230	Elko	0.6	41° 3' 54.948"	-115° 17' 12.506"
Material Stockpile	Minor B	3	SR-226	Elko	19.4	41° 18' 1.763"	-116° 6' 55.779"
Material Stockpile	Minor B	3	SR-227	Elko	7.4	40° 46' 39.097"	-115° 40' 41.752"
Material Stockpile	Minor B	3	SR-228	Elko	5.9	40° 30' 9.163"	-115° 39' 45.354"
Material Stockpile	Minor B	3	SR-233	Elko	20.6	41° 14' 12.077"	-114° 13' 18.986"
Material Stockpile	Minor B	3	SR-535	Elko	21.7	40° 48' 32.564"	-115° 49' 34.076"
Material Stockpile	Minor B	3	SR-535	Elko	22.0	40° 48' 34.974"	-115° 49' 18.791"
Material Stockpile	Minor B	3	US-93	Elko	49.5	40° 45' 31.872"	-115° 2' 9.793"
Material Stockpile	Minor B	3	US-93	Elko	96.5	41° 23' 11.499"	-114° 46' 19.833"
Material Stockpile	Minor B	3	US-93A	Elko	15.6	40° 17' 14.595"	-114° 21' 48.566"
Material Stockpile	Minor B	3	US-93A	Elko	30.2	40° 25' 38.715"	-114° 10' 43.812"
Material Stockpile	Minor B	3	FREL28	Elko	4.3	41° 5' 53.834"	-115° 6' 57.609"
Material Stockpile	Minor B	3	FREU02	Eureka	2.1	40° 41' 50.854"	-116° 33' 17.871"
Material Stockpile	Minor B	3	SR-278	Eureka	35.3	40° 0' 59.444"	-116° 11' 33.351"
Material Stockpile	Minor B	3	SR-278	Eureka	61.2	40° 22' 16.865"	-116° 6' 45.561"
Material Stockpile	Minor B	3	SR-306	Eureka	2.9	40° 26' 16.681"	-116° 34' 16.002"
Material Stockpile	Minor B	3	US-95	Humboldt	22.4	41°17'22.639"	-117° 41' 29.949"
Material Stockpile	Minor B	3	I-80	Humboldt	23.7	41° 0' 54.033"	-117° 34' 22.82"
Material Stockpile	Minor B	3	I-80	Humboldt	36.0	40° 55' 18.579"	-117° 23' 37.018"
Material Stockpile	Minor B	3	I-80	Humboldt	53.1	40° 47' 20.288"	-117° 7' 41.362"
Material Stockpile	Minor B	3	SR-140	Humboldt	14.5	41° 24' 52.561"	-118° 3' 33.068"
Material Stockpile	Minor B	3	SR-140	Humboldt	88.2	41° 53' 59.414"	-118° 59' 24.863"
Material Stockpile	Minor B	3	SR-140	Humboldt	109.9	41° 59' 26.775"	-119° 19' 8.988"
Material Stockpile	Minor B	3	US-95	Humboldt	2.5	41° 0' 586"	-117° 43' 56.882"
Material Stockpile	Minor B	3	US-95	Humboldt	71.1	41° 57' 38.232"	-117° 42' 36.967"
Material Stockpile	Minor B	3	US-50	Lander	0.3	39° 32' 26.939"	-117° 28' 45.146"
Material Stockpile	Minor B	3	I-80	Lander	19.2	40° 39' 43.406"	-116° 44' 7.536"
Material Stockpile	Minor B	3	SR-305	Lander	72.8	40° 2' 46.485"	-117° 11' 3.043"
Material Stockpile	Minor B	3	SR-306	Lander	10.1	40° 22' 18.926"	-116° 36' 44.473"
Material Stockpile	Minor B	3	US-50	Lander	17.5	39° 29' 33.783"	-117° 11' 2.313"
Material Stockpile	Minor B	3	SR-318	Nye	20.9	38° 27' 8.561"	-115° 0' 43.958"
Material Stockpile	Minor B	3	I-80	Pershing	69.7	40° 47' 25.378"	-117° 59' 36.315
Material Stockpile	Minor B	3	US-50	White Pine	4.0	39° 22' 28.40"	-115° 50' 17.295"
Material Stockpile	Minor B	3	US-50	White Pine	34.4	39° 21' 20.518"	-115° 20' 11.478"
Material Stockpile	Minor B	3	US-6	White Pine	40.4	39° 13' 42.214"	-114° 51' 32.52"
Material Stockpile	Minor B	3	US-6	White Pine	65.0	39° 1' 28.235"	-114° 34' 48.053"
Material Stockpile	Minor B	3	US-93	White Pine	92.5	39° 47' 46.566"	-114° 44' 30.25"
Material Stockpile	Minor B	3	US-93	White Pine	112.8	40° 3' 54.662"	-114° 36' 53.948"

Table D2. Top 3 FPPP compliance issues noted during annual stormwater inspections over the previous 3 reporting periods in each District.

District 1					
FY 2015	Number	FY 2016	Number	FY 2017	Number
Absorbent Requiring Cleanup	7	Misc. Housekeeping	10	Other Fluid Leaks/Spills[1]	27
Material Stockpile BMPs	6	Sediment Controls	8	BMPs	8
Equipment Fluid Leak	5	Equipment Oil Leaks	7	Misc. Housekeeping	5
District 2					
FY 2015	Number	FY 2016	Number	FY 2017	
Other Fluid Leaks/Spills[1]	19	Sediment Controls	34	Other Fluid Leaks/Spills[1]	25
Material Stockpile BMPs	3	Other Fluid Leaks/Spills[1]	29	BMPs	3
Equipment Fluid Leaks	3	Misc. Housekeeping	24	Material Storage	1
District 3					
FY 2015	Number	FY 2016	Number	FY 2017	
Other Fluid Leaks/Spills[1]	5	Other Fluid Leaks/Spills[1]	23	Other Fluid Leaks/Spills[1]	16
Material Stockpile BMPs	4	Equipment Oil Leaks	19	BMPs	5
Wash Pad Maintenance	4	Sediment Controls[2]	7	Misc. Housekeeping	11

[1]Miscellaneous fluid drips, leaks, or minor spills including brine, hydraulic fluid, etc.

APPENDIX E

Stormwater Maintenance Task Summaries

Table E1. Carson Valley MS4 area Maintenance task summary.

Carson Valley MS4		
Task	*Unit of Measurement*	*Accomplishment*
Clean Culvert Openings	Each	50
Clean Culverts	Linear Ft.	-----
Clean Cuts & Ditches	Yd^3	93
Repair Fill and Cut Slopes[1]	Yd^3	1,184
Clean Drop Inlets	Each	511
Clean Retention/Detention Basins	Yd^3	-----
Clean Slotted Drains	Linear Ft.	1,169
Repair, Replace, Extend or Install Culverts	Linear Ft.	-----
Install, Repair, Replace Pollution Prevention Devices	Man-Hour Task	-----
Remove Debris[2]	Yd^3	410
Pick-up Trash Bags[2]	Yd^3	-----
Empty Litter Barrels	Each	-----
Pickup Broom Sweeping	Yd^3	630
Sweep/Clean Debris from Structures	Man-Hour Task	-----
Remove Storm Debris	Yd^3	15
Clean Sand/Oil Separators	Yd^3	-----
Snow and Ice Removal	Man-Hour Task	3,171
Salt	Yd^3	74
Salt/Sand	Yd^3	1,369
Brine	Gal.	14,065
Liquid-Chemical Anti-Icing Agent (MgCl)	Gal.	-----
Dry-Chemical Anti-Icing Agent[3]	Yd^3	-----
Treated Lane Miles (Brine)[4]	Gal.	133
Treated Lane Miles (MgCl)[4]	Gal.	-----
Fertilizer-Liquid	Gal.	-----
Fertilizer-Pellets	Lbs.	-----

[1]Material that is removed and then utilized onsite (i.e. recycled) or removed and hauled offsite.

[2]Trash collected as part of the Adopt-A-Highway program may be incorporated within this task.

[3]Products used could be Ice Slicer RS, Sierra Blend, Broken Arrow Salt, etc.

[4]Applied as pre-treatment

Table E2. Elko MS4 area Maintenance task summary.

Elko MS4		
Task	*Unit of Measurement*	*Accomplishment*
Clean Culvert Openings	Each	4
Clean Culverts	Linear Ft.	3,766
Clean Cuts & Ditches	Yd^3	90
Repair Fill and Cut Slopes[1]	Yd^3	-----
Clean Drop Inlets	Each	21
Clean Retention/Detention Basins	Yd^3	-----
Clean Slotted Drains	Linear Ft.	-----
Repair, Replace, Extend or Install Culverts	Linear Ft.	-----
Install, Repair, Replace Pollution Prevention Devices	Man-Hour Task	4
Remove Debris[2]	Yd^3	64
Pick-up Trash Bags[2]	Yd^3	6
Empty Litter Barrels	Each	-----
Pickup Broom Sweeping	Yd^3	662
Sweep/Clean Debris from Structures	Man-Hour Task	-----
Remove Storm Debris	Yd^3	180
Clean Sand/Oil Separators	Yd^3	-----
Snow and Ice Removal	Man-Hour Task	1,464
Salt	Yd^3	-----
Salt/Sand	Yd^3	2,873
Brine	Gal.	-----
Liquid-Chemical Anti-Icing Agent (MgCl)	Gal.	789
Dry-Chemical Anti-Icing Agent[3]	Yd^3	27
Treated Lane Miles (Brine)[4]	Gal.	-----
Treated Lane Miles (MgCl)[4]	Gal.	-----
Fertilizer-Liquid	Gal.	-----
Fertilizer-Pellets	Lbs.	-----

[1]Material that is removed and then utilized onsite (i.e. recycled) or removed and hauled offsite.

[2]Trash collected as part of the Adopt-A-Highway program may be incorporated within this task.

[3]Products used could be Ice Slicer RS, Sierra Blend, Broken Arrow Salt, etc.

[4]Applied as pre-treatment

Table E3. Las Vegas Valley MS4 area Maintenance task summary.

Las Vegas Valley MS4		
Task	*Unit of Measurement*	*Accomplishment*
Clean Culvert Openings	Each	10
Clean Culverts	Linear Ft.	7,854
Clean Cuts & Ditches	Yd^3	522
Repair Fill and Cut Slopes[1]	Yd^3	549
Clean Drop Inlets	Each	1,049
Clean Retention/Detention Basins	Yd^3	-----
Clean Slotted Drains	Linear Ft.	150
Repair, Replace, Extend or Install Culverts	Linear Ft.	-----
Install, Repair, Replace Pollution Prevention Devices	Man-Hour Task	-----
Remove Debris[2,5]	Yd^3	6,814
Pick-up Trash Bags[2]	Yd^3	667
Empty Litter Barrels	Each	-----
Pickup Broom Sweeping	Yd^3	5,502
Sweep/Clean Debris from Structures	Man-Hour Task	388
Remove Storm Debris	Yd^3	62
Clean Sand/Oil Separators	Yd^3	-----
Snow and Ice Removal	Man-Hour Task	-----
Salt	Yd^3	-----
Salt/Sand	Yd^3	-----
Brine	Gal.	-----
Liquid-Chemical Anti-Icing Agent (MgCl)	Gal.	-----
Dry-Chemical Anti-Icing Agent[3]	Yd^3	-----
Treated Lane Miles (Brine)[4]	Gal.	-----
Treated Lane Miles (MgCl)[4]	Gal.	-----
Fertilizer-Liquid (Gallons)	Gal.	-----
Fertilizer-Pellets (Pounds)	Lbs.	-----

[1]Material that is removed and then utilized onsite (i.e. recycled) or removed and hauled offsite.

[2]Trash collected as part of the Adopt-A-Highway program are incorporated within this task.

[3]Products used could be Ice Slicer RS, Sierra Blend, Broken Arrow Salt, etc.

[4]Applied as pre-treatment

[5]17,903 trash bags

Table E4. Washoe MS4 area Maintenance task summary.

Washoe MS4		
Task	*Unit of Measurement*	*Accomplishment*
Clean Culvert Openings	Each	149
Clean Culverts	Linear Ft.	4,887
Clean Cuts & Ditches	Yd^3	1,580
Repair Fill and Cut Slopes[1]	Yd^3	896
Clean Drop Inlets	Each	2,313
Clean Retention/Detention Basins	Yd^3	56
Clean Slotted Drains	Linear Ft.	90
Repair, Replace, Extend or Install Culverts	Linear Ft.	-----
Install, Repair, Replace Pollution Prevention Devices	Man-Hour Task	-----
Remove Debris[2,6]	Yd^3	2,023
Pick-up Trash Bags[2]	Yd^3	20
Empty Litter Barrels	Each	-----
Pickup Broom Sweeping	Yd^3	6,313
Sweep/Clean Debris from Structures	Man-Hour Task	18
Remove Storm Debris	Yd^3	377
Clean Sand/Oil Separators	Yd^3	-----
Snow and Ice Removal	Man-Hour Task	8,121
Salt	Yd^3	-----
Salt/Sand	Yd^3	5,150
Brine	Gal.	52,071
Liquid-Chemical Anti-Icing Agent (MgCl)	Gal.	-----
Dry-Chemical Anti-Icing Agent[3]	Yd^3	-----
Bridge Treatment (KCH_3COO)[4]	Gal.	-----
Treated Lane Miles (Brine)[5]	Gal.	28,793
Treated Lane Miles (MgCl)[5]	Gal.	-----
Fertilizer-Liquid	Gal.	2,822
Fertilizer-Pellets	Lbs.	250

[1]Material that is removed and then utilized onsite (i.e. recycled) or removed and hauled offsite.

[2]Trash collected as part of the Adopt-A-Highway program are incorporated within this task.

[3]Products used could be Ice Slicer RS, Sierra Blend, Broken Arrow Salt, etc.

[4]Applied on the bridge structures along I-580 (WA ~ 9.5 to 14.5)

[5]Applied as pre-treatment

[6]2,481 trash bags.

Table E5. Lake Tahoe MS4 area Maintenance task summary.

Lake Tahoe MS4		
Task	*Unit of Measurement*	*Accomplishment*
Clean Culvert Openings	Each	11
Clean Culverts	Linear Ft.	40
Clean Cuts & Ditches	Yd^3	20
Repair Fill and Cut Slopes[1]	Yd^3	726
Clean Drop Inlets	Each	743
Clean Retention/Detention Basins	Yd^3	10
Clean Slotted Drains	Linear Ft.	-----
Repair, Replace, Extend or Install Culverts	Linear Ft.	-----
Install, Repair, Replace Pollution Prevention Devices	Man-Hour Task	10
Remove Debris[2]	Yd^3	177
Pick-up Trash Bags[2]	Yd^3	-----
Empty Litter Barrels	Each	-----
Pickup Broom Sweeping	Yd^3	710
Sweep/Clean Debris from Structures	Man-Hour Task	-----
Remove Storm Debris	Yd^3	250
Clean Sand/Oil Separators	Yd^3	2
Snow and Ice Removal	Man-Hour Task	10,385
Salt	Yd^3	289
Salt/Sand	Yd^3	1,044
Brine	Gal.	97,323
Liquid-Chemical Anti-Icing Agent (MgCl)	Gal.	-----
Dry-Chemical Anti-Icing Agent[3]	Yd^3	-----
Treated Lane Miles (Brine)[4]	Gal.	2,783
Treated Lane Miles (MgCl)[4]	Gal.	-----
Fertilizer-Liquid	Gal.	-----
Fertilizer-Pellets	Lbs.	-----

[1]Material that is removed and then utilized onsite (i.e. recycled) or removed and hauled offsite.

[2]Trash collected as part of the Adopt-A-Highway program may be incorporated within this task.

[3]Products used could be Ice Slicer RS, Sierra Blend, Broken Arrow Salt, etc.

[4]Applied as pre-treatment

Table E6. Statewide MS4 area Maintenance task summary.

Statewide MS4		
Task	*Unit of Measurement*	*Accomplishment*
Clean Culvert Openings	Each	1,589
Clean Culverts	Linear Ft.	68,961
Clean Cuts & Ditches	Yd^3	8,541
Repair Fill and Cut Slopes[1]	Yd^3	129,563
Clean Drop Inlets	Each	8,653
Clean Retention/Detention Basins	Yd^3	247
Clean Slotted Drains	Linear Ft.	4,486
Repair, Replace, Extend or Install Culverts	Linear Ft.	1,612
Install, Repair, Replace Pollution Prevention Devices	Man-Hour Task	761
Remove Debris[2]	Yd^3	32,683
Pick-up Trash Bags[2]	Yd^3	1,099
Empty Litter Barrels	Each	7,800
Pickup Broom Sweeping	Yd^3	31,326
Sweep/Clean Debris from Structures	Man-Hour Task	1,428
Remove Storm Debris	Yd^3	11,376
Clean Sand/Oil Separators	Yd^3	128
Snow and Ice Removal	Man-Hour Task	113,037
Salt	Yd^3	1,298
Salt/Sand	Yd^3	145,166
Brine	Gal.	279,747
Liquid-Chemical Anti-Icing Agent (MgCl)	Gal.	11,800
Dry-Chemical Anti-Icing Agent[3]	Yd^3	3,022
Bridge Treatment (KCH_3COO)[4]	Gal.	6,010
Treated Lane Miles (Brine)[5]	Gal.	303,561
Treated Lane Miles (MgCl)[5]	Gal.	-----
Fertilizer-Liquid	Gal.	3,630
Fertilizer-Pellets	Lbs.	845

[1]Material that is removed and then utilized onsite (i.e. recycled) or removed and hauled offsite.

[2]Trash collected as part of the Adopt-A-Highway program are incorporated within this task.

[3]Products used could be Ice Slicer RS, Sierra Blend, Broken Arrow Salt, etc.

[4]Applied on bridge structures along I-580 (WA ~ 9.5 to 14.5); numbers not included with Washoe MS4 reports.

[5]Applied as pre-treatment

Table E7. Quantities of material recovered from NDOT Maintenance personnel sweeping efforts and sand-salt quantities applied during the previous 3 reporting period for specific MS4 areas and statewide.

FY	Task	Unit of Measurement	Lake Tahoe	Carson Valley	Elko	Las Vegas Valley	Washoe	Statewide
2015	Pickup Broom Sweeping	Yd^3	935	429	119	5,761	2,764	22,287
	Pickup Broom Sweeping	Man-Hours	1,781	1,158	181	10,573	2,983	33,950
	Pickup Broom Sweeping	Yd^3:Man-Hours	0.52	0.37	0.66	0.54	0.93	0.66
	Salt/Sand Applied	Yd^3	490	239	484	-----	753	42,166
2016	Pickup Broom Sweeping	Yd^3	1,186	751	399	6,176	4,784	27,645
	Pickup Broom Sweeping	Man-Hours	1,681	1,476	344	11,121	3,212	36,501
	Pickup Broom Sweeping	Yd^3:Man-Hours	0.71	0.51	1.16	0.56	1.49	0.76
	Salt/Sand Applied	Yd^3	1,354	811	2,383	-----	4,022	141,500
2017	Pickup Broom Sweeping	Yd^3	710	630	662	5,502	6,313	31,326
	Pickup Broom Sweeping	Man-Hours	1,071	1,119	487	11,403	3,962	37,784
	Pickup Broom Sweeping	Yd^3:Man-Hours	0.66	0.56	1.36	0.48	1.59	0.83
	Salt/Sand Applied	Yd^3	1,044	1,369	2,873	-----	5,150	145,166

APPENDIX F

Herbicide Application Summaries

Table F1. Maintenance Crew herbicide application summary[1]

Statewide[2]		
Product	*Unit of Measurement*	*Accomplishment*
Alligare 2,4-D Amine	Oz.	59,136
Alligare SMF 75	Oz.	11,560
Dimension Ultra 40 WP	Oz.	12,009
Diuron 80 DF	Lbs.	10
Gallary 75 DF	Lbs.	166
Isoxaben 75 WG	Oz.	624
Pendulum	Gal.	371
Rodeo	Gal.	2
Round Up Pro Concentrate	Gal.	7,613
Sureguard	Oz.	361
Dye-Helena Spray	Oz.	158
Specticle	Oz.	1,745
Specticle Flow	Oz.	700
Surflan AS	Gal.	28
Tordon K	Gal.	311
Tordon 22K	Oz.	10,049
Weedone LV-4	Gal.	609
RRSI IVM Marking Dye	Gal.	3
RRSI Non-Ionic Surfactant	Gal.	10
Spreader Activator Non-Ionic Surfactant	Gal.	33
Surf Ac-910 Surfactant	Oz.	5,455
Insist 90 Surfactant	Gal.	134
Carson Valley MS4[3]		
Product	*Unit of Measurement*	*Accomplishment*
Alligare 2,4-D Amine	Oz.	8,594
Dimension Ultra 40 WP	Oz.	429
Tordon 22K	Oz.	2,504
Round Up Pro Concentrate	Gal.	143
Surf-Ac 910 Surfactant	Oz.	146
Insist 90 Surfactant	Gal.	3.3
Las Vegas Valley MS4[4]		
Diuron 80 DF	Lbs.	5
Pendulum	Gal.	102
Round Up Pro Concentrate	Gal.	1,970
Washoe MS4[5]		
Task/Product Used	*Unit of Measurement*	*Accomplishment*
Alligare 2,4-D Amine	Oz.	6,968
Alligare SMF 75	Oz.	6,480
Diuron 80 DF	Lbs.	1
Gallary 75 DF	Lbs.	106
Specticle	Oz.	1,099
Specticle Flow	Oz.	247
Dimension Ultra 40 WP	Oz.	3,555
Round Up Pro Concentrate	Gal.	875
Surflan AS	Gal.	19
Tordon K	Gal.	2
Weedone LV-4	Gal.	238
RRSI IVM Marking Dye	Gal.	1
RRSI Non-Ionic Surfactant	Oz.	10
Surf Ac-910 Surfactant	Oz.	1,410
Insist 90 Surfactant	Gal.	46
Spreader Activator Non-Ionic Surfactant	Gal.	1

[1]Maintenance did not apply herbicide within the Elko and Lake Tahoe MS4 areas.

[2]Applied along 4116 shoulder miles

[3]Applied along 119 shoulder miles

[4]Applied along 508 shoulder miles

[5]Applied along 618 shoulder mile

Table F2. Contractor herbicide application summary.[1]

Districts 1 and 2		
Product	*Unit of Measurement*	*Accomplishment*
Tordon K (32 Oz. Per Acre)	Oz.	39,635
Nufilm (2.5 Oz. Per Acre	Oz.	2,883
Control (2 Oz. Per Acre)	Oz.	2,322
Turf Trax (10 Oz. Per Acre)	Oz.	12,107
Oust (2 Oz. Per Acre)	Oz.	2,461
Razor Pro (32 Oz. Per Acre)	Oz.	39,835

[1]Various state routes in Districts 1 and 2. No information was received from District 3.

Table F3. Summary of herbicide application performed under county contract.

Churchill County Weed Control[1]		
Product	*Unit of Measurement*	*Accomplishment*
Milestone	Oz.	1
Base Camp	Oz.	6,880
Surfactant	Oz.	1,207
Luminate Indicator	-----	3.52
Tri County Weed Control[2]		
Product	*Unit of Measurement*	*Accomplishment*
Telar	Oz.	67
Escort XP	Oz.	193
Transline	Oz.	16
Esplanade	Oz.	645
Tordon 22K	Pt.	603
Weedestroy AM-40	Pt.	23
Weedar 64	Pt.	600
Syl-Tac	Pt.	187
MSO w/Leci-Tech	Pt.	183
Super Spread MSO	Pt.	62
Plateau	Pt.	950
Polaris	Oz.	445
Rainier	Pt.	137
NIS-EA Nonionic Surfactant	Pt.	23
Douglas County Weed Control[3]		
Product	*Unit of Measurement*	*Accomplishment*
Opensite	Lbs.	14
Clean Amine	Oz.	23
Activator 90	Gal.	17
Garlon 4E	Gal.	11
Liberate	Oz.	12
Habitat	Oz.	23
2,4-D	Gal.	9
Attach	Gal.	25
Throttle	Lbs.	53
Perspective	Lbs.	29
Syltac	Gal.	3
Kleenup	Gal.	46
Esplanade	Gal.	8
Cleantraxx	Gal.	37
Oust	Lbs.	11

[1]State routes within Churchill County

[2]State routes and right-of-ways within Lincoln, Nye, White Pine, and Clark County

[3]State routes within Douglas County, and the Washoe and Carson wetland mitigation areas

APPENDIX G

Stormwater Monitoring Plan

Stormwater Monitoring Plan

FY 2017

Nevada Department of Transportation

Stormwater Management Program

Municipal Separate Storm Sewer Systems Permit NV0023329

TABLE OF CONTENTS

1 INTRODUCTION

This document is intended to provide a monitoring plan as required by the Nevada Department of Transportation (NDOT) Municipal Separate Storm Sewer Systems (MS4) Permit NV0023329, Part IV.A. The following summarizes stormwater monitoring activities that NDOT is planning to conduct during FY 2017.

Operators of MS4s are required to develop and implement a comprehensive Stormwater Management Program (SWMP) that incorporates pollution prevention measures, treatment or removal techniques, monitoring, use of legal authority, and other appropriate means to control the quality of stormwater and authorized non-stormwater discharged from the MS4 into Waters of the US (WOUS) to the maximum extent practicable (MEP).

Development of a stormwater monitoring plan is an important component of the SWMP. Monitoring data will be utilized (as appropriate) to assist with evaluating decisions regarding SWMP compliance, the appropriateness of identified best management practices (BMPs), and progress towards achieving identified SWMP programmatic BMP tasks and measurable goals.

2 OBJECTIVES

The primary objective of NDOT's SWMP is to prevent or reduce (to the MEP) stormwater pollutant discharges from NDOT's MS4 Permit area into receiving WOUS. The monitoring of several site specific BMPs will provide NDOT with an opportunity to assess the effectiveness of stormwater pollutant reduction measures for different elements of NDOT's operations, including post-construction, regular roadway use, and maintenance activities. It is anticipated that monitoring results will be used to help support operational and maintenance based decisions made by NDOT and to improve and revise the SWMP as needed.

3 STORMWATER MONITORING PLAN

3.1 STORMWATER MONITORING PROGRAM DEVELOPMENT

3.1.1 NDOT Watershed Prioritization Project

NDOT Stormwater Division is in the process of developing a watershed prioritization plan based on the potential impact of roadway stormwater runoff on surface water quality. NDOT Stormwater Division is currently assessing the different factors that will ultimately determine watershed prioritization. Once the high priority watersheds have been determined, monitoring sites will be selected to characterize stormwater discharge from NDOT's right-of-way and facilities. A Prioritization Matrix utilizing Excel is currently under development and will be used in combination with GIS to systematically and consistently prioritize watersheds and monitoring site locations. Based on the monitoring data, NDOT will assess the chemical, physical, and biological impacts to receiving waters resulting from stormwater discharges from NDOT's right-of-way and facilities.

3.1.2 NDOT Stormwater Monitoring Quality Assurance Program Plan

NDOT Stormwater Division is in the process of developing a Quality Assurance Program Plan (QAPrP) for stormwater monitoring. The QAPrP will describe the quality assurance and quality control (QA/QC) procedures for field activities and laboratory analyses associated with stormwater monitoring conducted by NDOT Stormwater Division. The primary goal of this QAPrP is to assure the quality and integrity of the collected samples, the representativeness of the results, the precision and accuracy of the analyses, the completeness of the data, and the delivery of defensible products and decisions. The QAPrP will include Standard Operating Procedures for field activities.

3.2 WATERSHED CHARACTERIZATION MONITORING

3.2.1 Clear Creek Watershed

In a jointly funded agreement, NDOT will continue to partner with the United States Geological Survey (USGS), Water Resources Discipline (WRD), through FY 2017 to document Clear Creek monitoring efforts that concluded in FY 2016. The monitoring objective is to examine the sediment transport characteristics and efficacies of erosion control efforts within the watershed on sediment loading and general water quality in Clear Creek. NDOT has implemented several small-scale site specific erosion control projects throughout the Clear Creek watershed in an effort to reduce the impacts of stormwater discharge from NDOT's right-of-way into Clear Creek. It is anticipated that by continuing monitoring efforts, insight will be provided as to the impacts of stormwater runoff from surrounding developed areas, and whether or not NDOT's erosion control efforts are having a positive effect on the water quality of Clear Creek.

Clear Creek is not currently listed on Nevada's 2014 303(d) List of Impaired Waters. In the past, the upstream reach (NV08-CR-17-A_00 – From its origin to gaging station number 103105, located in the NE 1/4 of the NE 1/4 of section 1, T. 14 N., R. 19 E., M.D.B. & M., except for the length of the creek within the exterior borders of the Washoe Indian Reservation) has been listed for pH and zinc. In addition, the downstream reach (From to gaging station number 103105, located in the NE 1/4 of the NE 1/4 of section 1, T. 14 N., R. 19 E., M.D.B. & M. to the Carson River, except for the length of the creek within the exterior borders of the Washoe Indian Reservation) has been listed in the past for dissolved oxygen, Escherichia coli, fecal coliform, iron, water temperature, and zinc.

The USGS, WRD conducted water quality monitoring efforts at three locations within the Clear Creek watershed upstream of US-395. Site 1 is an un-gaged location within the headwater area of the upper drainage basin upstream of US-50 which is representative of undeveloped, reference conditions. Site 2 is located at a USGS streamflow gage and represents the mid-drainage basin area which includes some low-density residential areas. Site 2 was monitored to evaluate any changes in water-chemistry characteristics downstream of continued development. Streamflow data from the USGS gaging station at this site was used to compute daily streamflow. Site 3 represents the lower drainage basin area, which includes more urbanization. Construction of large commercial buildings and parking lots adjacent to and near Clear Creek's lower reaches also may be affecting stream water quality and sediment yield.

Streamflow and suspended sediment samples were obtained every 6 to 8 weeks at each site and water column chemistry samples were collected quarterly and analyzed for various constituents including major ions, trace elements, and nutrients. Additional suspended sediment samples were collected at all three sites during high stream flow events and during the period of spring snowmelt to characterize suspended sediment loading during expected high load flows. An automatic sampler was also installed at Site 2 and programmed to collect suspended sediment samples when the gage measured a 0.04 foot increase in Clear Creek within a 15 minute period. After initiation, a suspended sediment sample was collected every hour over the next 24 hours. Initial samples of bed sediment were collected from this site and analyzed for total petroleum hydrocarbons (TPH). Data from these samples was used to evaluate the historic presence of or absence of TPH in Clear Creek. Aqueous concentrations of TPH were evaluated by deploying three small semipermeable membrane devices at this site. The USGS published all data in their publically available online database. Additionally, a USGS Scientific Investigations Report (SIR) is being prepared and will be published documenting all data collection and analysis for the FY 2013-16 monitoring period.

A new agreement is currently being discussed to continue data collection from FY 2017 to FY 2020.

3.3 Best Management Practices (BMP) Assessment

3.3.1 Post-Construction BMP Assessment Using Unmanned Aerial Vehicles

NDOT will conduct annual inspections of at least five post-construction BMPs, (such as retention basins) using Unmanned Aerial Vehicles (UAVs). NDOT will record the condition of inlet and outlet structures, side slopes, and the basin floor to determine the level of erosion, sediment build up, or amount of debris in the basin. NDOT will 1) collect imaging and 3-D terrain modeling data to demonstrate the condition of the basin and 2) submit a report to EPA and NDEP, no later than August 31, 2018, evaluating the usefulness of UAVs in conducting inspections of post-construction BMPs.

3.3.2 Lake Tahoe Stormwater Media Filtration Device Monitoring

See the Lake Tahoe Basin section for more information on this project.

3.4 Truckee Meadows Storm Water Permit Coordinating Committee Monitoring

3.4.1 Ambient and Storm Event Monitoring

NDOT will continue to partner with the Truckee Meadows Storm Water Permit Coordinating Committee (TMSWPCC) and utilize the services of Balance Hydrologics, Inc. (Balance) to implement the ambient and storm event monitoring described in the 2015 Stormwater and Analysis Plan (SAP) for the Truckee Meadows Watershed. Due to the co-mingling of stormwater runoff between NDOT and the municipalities comprising the TMSWPCC, NDOT has a vested interest in discerning the quality of stormwater runoff that discharges from outfalls and enters tributaries in this area. Since 2003, storm event water quality samples have been collected as part of the overall Truckee Meadows Regional Storm Water Quality Management Program.

Balance will conduct winter base flow sampling of the North Truckee Drain and Steamboat Creek in fiscal year 2017. Summer base flow sampling occurred at these monitoring sites in water year 2016. In addition, continuous streamflow gaging will occur on Alum Creek, Thomas Creek, and Chalk Creek. The program maintains two different sampling activities: 1) semi-annual scheduled ambient or baseflow sampling of tributaries, and 2) unscheduled storm event sampling of tributaries and urban outfalls. Ambient and storm event monitoring consists of both field and laboratory measurements. In the field, water temperature, dissolved oxygen (DO), pH, specific conductance (SC), turbidity, and flow rate are measured or recorded. Water samples collected are analyzed for total dissolved solids (TDS), total suspended solids (TSS), total phosphorus (Total-P), ortho-phosphate (Ortho-P), and total nitrogen (Total-N) at a local, State of Nevada certified laboratory. E. coli and nitrate (NO_3) are collected and analyzed at select

stations. In an effort to better quantify constituent loading under this program, two tributaries and four urban outfall monitoring stations have been instrumented with automated samplers. Automated samplers are paired with an existing streamflow gaging station or operated with area-velocity modules to facilitate quantification of streamflow/discharge and constituent loading over the course of the storm. Ambient and storm event monitoring will occur at twelve (12) sites located on tributaries of the Truckee River:

- Chalk Creek at Chalk Bluff
- Alum Creek at Truckee River
- Alum Creek at Steamboat Ditch
- North Truckee Drain at Orr Ditch
- North Truckee Drain at Kleppe Lane (Automated)
- Thomas Creek at Timberline Drive (to be replaced by new location)
- Thomas Creek at South Meadows Parkway
- Whites Creek at Timberline Drive (to be replaced by new location)
- Whites Creek at Old Virginia Highway
- Steamboat Creek at Rhodes Road
- Steamboat Creek at the Narrows
- Steamboat Creek at Clean Water Way (Automated)

In addition, storm event monitoring will occur at seven (7) urban outfalls:

- Arlington (Automated) – Telemetry Pilot Study in 2017
- Cottonwood Park
- Fisherman's Park II (Automated)
- Greg Street
- Mary Wahl Drain (Automated)
- Oxbow Park (Automated)
- Paradise Park - Galletti Way

Balance will produce the Truckee Meadows Storm Water Monitoring 2016 Annual Report. The draft report will be submitted in November 2016 and the final report will be submitted in January 2017. Balance will also submit an Addendum to the 2015 Sampling and Analysis Plan in November 2016.

The partnership in this monitoring effort and results from this study will allow NDOT to continue to meet stormwater quality monitoring requirements and provide information on water quality as it is co-mingled amongst multiple jurisdictions as we all attempt to achieve similar stormwater goals.

3.4.2 Watershed Assessment Program

NDOT will continue to partner with the Truckee Meadows Storm Water Permit Coordinating Committee (TMSWPCC) and utilize the services of CDM Smith Engineering (CDM) to analyze tributaries to the Truckee River in a Watershed Assessment Program. Due to the co-mingling of stormwater runoff between NDOT and the municipalities comprising the TMSWPCC, NDOT has a vested interest in discerning the impacts of stormwater runoff

tributary watersheds in this area. Detailed Truckee River tributary assessments were first performed in 2002 to support development of a Watershed Management and Protection Plan, which was prepared jointly by the Washoe County Department of Water Resources, the University of Nevada Cooperative Extension, and the Washoe-Storey Conservation District. The initial watershed assessments provided a broad range of valuable information, and it was determined that they should be performed annually to evaluate impacts from development and track trends in stream condition and overall stream health. Subsequently, tributary assessments were performed annually from 2005 to 2012 under direction of the TWSWPCC, but did not occur during 2013 or 2014 due to budgetary constraints. Tributary assessments were again performed in 2015. The results from the seventeen (17) creek reaches assessed in 2015 provide a snapshot of overall stream health within the Truckee Meadows watershed. Results are generally typical of stream channels impacted by urbanized watersheds with channel incision, disconnected floodplains, bank erosion, and invasive/noxious weeds observed throughout the project area. These conditions are partially attributed to hydromodification throughout the watershed resulting in higher peak flows, greater flow volumes, and more frequent high-flow events. Stream degradation may also be attributed, or exacerbated by, natural causes such as wildfires, drought, and climate change. Results of the 2015 study can be found in the Watershed Assessment for Tributaries to the Truckee River – 2015 Final Report.

The Watershed Assessment Program will continue in fiscal year 2017 and thirteen (13) reaches will be assessed:

- Upper Chalk Creek
- Lower and Upper North Evans Creek
- Lower and Upper North Truckee Drain
- Lower Alum Creek
- Lower and Upper South Evans Creek
- Lower and Middle Thomas Creek
- Lower Whites Creek
- Lower Galena Creek
- Lower Manzanita Creek

Tributary assessments include field data collection including:

- Photographs
- Observations at points of interest
- Proper Functioning Condition Assessment
- Determination of stream "health" trends
- Invasive species identification, location, and extent
- Mapping storm drain outfalls
- Documentation of problem areas
    - Headcuts larger than 1 foot
    - Active bank erosion
    - Damage to riparian areas
    - Scour at culvert outfalls
    - Sediment deposition

All photos, observation point descriptions, and locations of specific problems areas are provided in a GIS database. Additionally, the fiscal year 2017 watershed assessment will include a single Google KMZ file which includes the same GIS data described above, as well as geo-tagged assessment photographs.

The ongoing Watershed Assessment Program will assist local jurisdiction planners and NDOT design engineers in determining the best use for limited resources. This study is planned for a six month duration and will begin in the fall of 2016, with a final report expected February 2017.

3.5 LAKE TAHOE BASIN MONITORING

3.5.1 Lake Tahoe Stormwater Media Filtration Device Monitoring

On August 16, 2011 the United States Environmental Protection Agency approved the Nevada Division of Environmental Protection's Lake Tahoe Total Maximum Daily Load (TMDL). The ultimate goal of this TMDL is to improve deep water clarity in Lake Tahoe.

This TMDL identifies three pollutants that are responsible for the deep water clarity impairment of Lake Tahoe:

- Fine sediment particles (particles less than 16 micrometers in diameter);
- Nitrogen; and
- Phosphorus

The TMDL Implementation Plan identifies NDOT as a responsible party that will be required to implement controls to reduce the amount of pollutants in stormwater discharge that affect deep water clarity in Lake Tahoe. The Lake Tahoe TMDL identifies fine sediment particles as the most dominant pollutant contributing to the impairment of Lake Tahoe's deep water clarity, accounting for roughly two thirds of the lake's impairment.

Removing fine sediment particles from stormwater runoff is particularly difficult using standard best management practices (BMPs), such as detention basins. Thus, during the summer of 2012, NDOT installed one Contech Media Filtration System (MFS) and one Contech Jellyfish in order to reduce fine sediment particles in stormwater runoff from SR-431. In addition, these media filtration stormwater treatment vaults were installed in a side-by-side configuration to receive equivalent highway stormwater runoff in order to evaluate the fine sediment particle removal performance efficiency and the cost-effectiveness of each media filtration stormwater treatment vault.

NDOT, with the assistance of the Desert Research Institute (DRI) and the Tahoe Resource Conservation District (TRCD) began monitoring efforts to evaluate the effectiveness of these two media filtration stormwater treatment vaults in October 2012. The site is a part of the Lake Tahoe Implementers Monitoring Program described in 3.5.2. The monitoring efforts at this site are expected to continue indefinitely. This monitoring has demonstrated that both types of treatment vaults result in consistent, though variable, removal of total suspended solids (TSS), fine sediment particles, total phosphorus, and to some extent total nitrogen.

The continued monitoring will help NDOT assess the effectiveness of the media filtration stormwater treatment vaults and will support NDOT in efforts to meet the goals of the Lake Tahoe TMDL. In addition, this monitoring will provide NDOT with useful information to determine the appropriate deployment of these devices in the future as well as associated operations and maintenance requirements.

3.5.2 Lake Tahoe Implementers Monitoring Program

NDOT Stormwater Division will continue to participate in the Lake Tahoe Implementers Monitoring Program. This program is a partnership between Nevada Department of Transportation; California Department of Transportation; El Dorado County, CA; Placer County, CA; Washoe County, NV; Douglas County, NV; City of South Lake Tahoe, CA; Nevada Tahoe Conservation District; and Tahoe Resource Conservation District.

This monitoring program was developed jointly by the California and Nevada implementing jurisdictions in an attempt to collectively fulfill California National Pollutant Discharge Elimination System (NPDES) Permit requirements or Nevada Interlocal Agreement commitments. However, this monitoring plan also represents a historic first step toward implementing a comprehensive Regional Stormwater Monitoring Program (RSWMP) envisioned for the Tahoe Basin. All data will be collected in a manner consistent with RSWMP monitoring protocols so it can easily be analyzed to align with the goals and objectives presented in the multi-agency driven RSWMP Data Quality Objective Plan, Quality Assurance Project Plan, and Sample Analysis Plan.

The data collected under this monitoring plan will be evaluated by the Tahoe Resource Conservation District (Tahoe RCD) and presented to the Lahontan Regional Water Quality Control Board (Water Board) and the Nevada Division of Environmental Protection (NDEP) as part of meeting annual compliance reporting needs. This data will then be further analyzed under the purview of RSWMP such that recommendations can be provided to guide future stormwater program efforts.

RSWMP documents also identify the four “types” of monitoring needed to fill scientific data gaps; implementation, effectiveness, status and trend, and model support monitoring. The work performed under this monitoring plan will contribute to data collection that will help fulfill all of these monitoring needs. The California NPDES Permits and Nevada Interlocal Agreements qualify as implementation monitoring, whereas BMP evaluations would fall under effectiveness monitoring. Long-term consistent data sets generated through permit and agreement compliance will also be useful in refining model predictions and identifying status and trends in the watershed.

This monitoring effort will utilize and build upon a significant body of work performed by the California and Nevada stormwater jurisdictions, Desert Research Institute, University of California, Davis Tahoe Environmental Research Center, and Northwest Hydrologic Consultants (NHC). In addition, data collected for this work will assist in serving larger programmatic and regulatory needs and will benefit the Lake Tahoe TMDL’s Adaptive Management System, the Status and Trend Monitoring and Evaluation Program at TRPA (environmental indicator tracking), and even California’s Surface Water Ambient Monitoring Program which reports on surface water quality around the state.

Five catchment outfall sites and four BMP effectiveness projects covering two different treatment approaches have been selected for monitoring in five locations: SR431, Incline Village, Tahoma, Rubicon, and Pasadena. Some of these locations will be used as both outfall and BMP sites. All sites were chosen because of their high direct hydrologic connectivity to Lake Tahoe. Catchment outfall sites were selected based on a diversity of land uses, a range of catchment sizes, and a reasonably equitable distribution of sites among the participating jurisdictions. BMP effectiveness projects were selected because of their potential efficacy in treating storm water runoff characteristic of the Lake Tahoe basin, the broad interest in and lack of conclusive data regarding the efficiency of the selected BMPs in reducing runoff volumes and pollutant loads, especially FSP, and the importance of determining the maintenance required to retain effectiveness.

3.5.3 Lake Tahoe Highway Road Rapid Assessment Methodology

NDOT will continue its contract with the Nevada Tahoe Conservation District (NTCD) and 2NDNATURE, LLC to collaborate with Caltrans, and the other State Transportation jurisdiction in the Lake Tahoe Basin with high trafficked roadways, to work on the Highway Road Rapid Assessment Methodology (RAM) V3. This entails evaluating the pollutant load potential of roadways and developing protocols to eliminate the need for field personnel to access the drive lane when evaluating road conditions.

Highway Road Ram V3 will be conducted on SR-28, SR-207, and SR-341. If all construction is completed on US-50 by October 15, 2016, then Highway Road Ram V3 may be conducted on US-50 as well. Specific details of the drive lane will enable statistical testing and the development of an empirical method to predict the area and condition of a highway drive lane for any given observation. Data and information collected at the road segments will be used to test various statistical analysis tactics. Each tactic will be compared to the observed road condition scores to determine if the method is statistically comparable to the results obtained by completing the current protocols. Drive Lane Calculation, Worst Case Scenario, One Shoulder RAM, and Static Drive Lane (FSP) are the four approaches that will be used, but others may be developed and tested, as appropriate, once data is obtained and analyzed. The goal, once again, is to develop the most statistically reliable approach to predict the FSP pollutant load potential for a road without field personnel accessing the drive lane of the highway.

3.6 Continuous Real Time Monitoring

This project consists of upgrades to water quality monitoring devices to provide continuous monitoring and transmit the data to a central location to be uploaded to a publicly available platform. Real-time data from continuous monitoring can be used to improve the understanding of temporal variances in hydrology and water quality and can lead to more effective resource management, including improving the design and selection of stormwater BMPs. The purpose of this project is to 1) collect continuous water quality data and make it available to the public in real-time, 2) evaluate the benefits of making this data available in real-time through an online interface, and 3) provide and evaluate the effectiveness of real-time notifications to appropriate personnel when certain monitoring data and/or equipment operational thresholds are exceeded.

NDOT will evaluate the usefulness of posting the data on a publicly available website by measuring how often the webpage is visited as well as through formation of a Project Evaluation Group (PEG). NDOT will evaluate how PEG members use the data and, through the PEG, explore whether other types of data would be useful.

The following sites are preliminary monitoring locations for the project. The sites were selected based on where the data will be most useful such as areas with sensitive or impaired waters and/or a large urban population. The sites are subject to change based on field conditions and other factors that may be discovered as the project progresses.

3.6.1 SR-431

The SR-431 monitoring site is located on State Route 431 (SR-431) in Washoe County above Incline Village. This continuous real-time monitoring station is at the same location as the site being monitored by NDOT with the assistance of the Tahoe Resource Conservation District (TRCD) (see the Lake Tahoe Stormwater Media Filtration Device Monitoring section for more information on water quality monitoring efforts at this site). This site is also part of the Lake Tahoe Implementers Monitoring Program. The coordinates for the equipment box for this station are 39.274201, -119.946407. The elevation is 7,195'. The catchment outfall discharges directly into a perennial stream called Deer Creek which connects with Third Creek and discharges into Lake Tahoe, giving this site the distinction of being connected to the lake despite being 2.5 miles from it. Third Creek, East and West Forks and Third Creek (NV06-TB-12_00 – The East Fork from State Highway 431 to the West Fork (Rosewood Creek), the West Fork (Rosewood Creek) from its origin to the East Fork, and Third Creek from the confluence of the East and West Forks to Lake Tahoe) is listed on Nevada's 2014 303(d) List of Impaired Waters for pH and Total Phosphorus. NV06-TB-12_00 has also been listed in the past for dissolved oxygen and zinc. Lake Tahoe (NV06-TB-08_00 – The entire lake (Nevada Portion only)) has an approved TMDL for: Clarity, dissolved oxygen, total soluble inorganic Nitrogen, Plankton Count, and Soluble Phosphorus.

Monitoring performed at the SR-431 site can be used for evaluating and comparing the effectiveness of two adjacent stormwater treatment vaults containing different cartridge filters, a Contech MFS vault and a Contech Jellyfish vault. There are four monitoring stations at SR-431; the inflow and outflow to the Contech MFS vault, and the inflow and outflow to the Contech Jellyfish vault. Though located in a rural area with moderate highway traffic density, the SR-431 site isolates runoff from the highway and will also provide characterization of pollutants that specifically can be found in highway runoff for the area.

3.6.2 Las Vegas Wash above Sloan Channel (LW11.5)

The Desert Research Institute (DRI) on behalf of NDOT will install a continuous real-time monitoring station on the Las Vegas Wash above Sloan Channel. This continuous real-time monitoring station will be co-located with the Clark County Regional Flood Control District's wet weather monitoring station at LW11.5. The coordinates for the equipment box for this station are 36.1397472, -115.0431722. The elevation is 1,692'. LW11.5 is located upstream of the waste water discharges into the Las Vegas Wash. Therefore, LW11.5 only has 3 flow inputs: urban runoff, shallow groundwater, and storm flows. This reach of the Las Vegas Wash (NV13CL-

45_00 – Las Vegas Wash above Treatment Plants) was initially placed on Nevada's 303(d) List of Impaired Waters for Total Dissolved Solids (TDS), boron, and selenium during the 2008-2010 reporting cycle.

The Clark County Regional Flood Control District collects water quality samples at this location during stormwater runoff events using a Teledyne ISCO 6712 full-size portable sampler. NDOT's real-time monitoring station will collect water temperature, specific conductance, and turbidity data. In addition, a meteorological station will be set up at LW11.5.

3.6.3 Clear Creek at USGS Gaging Station #10310500

The Desert Research Institute (DRI) on behalf of NDOT will install a continuous real-time monitoring station on Clear Creek near Carson City. This continuous real-time monitoring station will be co-located with USGS Gaging Station #10310500. The coordinates for this station are 39.1134861, -119.7981. The elevation is 5,000'. This monitoring station represents the mid-drainage basin area, which includes some low-density residential areas. This monitoring station is located upstream of urbanization. This reach of Clear Creek (NV08-CR-17-A_00 – from its origin to gaging station number 103105, located in the NE 1/4 of the NE 1/4 of section 1, T. 14 N., R. 19 E., M.D.B. & M., except for the length of the creek within the exterior borders of the Washoe Indian Reservation) is not currently listed on Nevada's 2014 303(d) List of Impaired Waters. However, NV08-CR-17-A_00 has been listed in the past for pH and zinc.

This monitoring station is at the same location as Site 2 of the Clear Creek Watershed assessment being conducted by the USGS, WRD (see the Clear Creek Watershed section for more information on water quality monitoring efforts at this site).

NDOT's real-time monitoring station will collect pH, water temperature, specific conductance, and turbidity data. In addition, a meteorological station will be set up at this Clear Creek monitoring station.

APPENDIX H

Stormwater Management Program Related Expenditures

Table H-1. Expenditures associated with the administration and implementation of NDOT's Stormwater Management Program.

Category	$	Note
MS4 Permit Fee	957	
Fees / Fines	120,168	EPA penalty, Forest Service permit fee for Clear Creek
Training	186,190	Internal and external training
Erosion Control	9,205,319	Construction projects and agreements with a water quality emphasis; includes Clear Creek projects
Pollution Control	1,571,019	Temporary pollution control implementation on construction projects
Dust Control	1,549,300	Dust control implementation on construction projects
Facility Improvement	27,496	Various stormwater quality Maintenance facility improvements
Spill Response	70,210	Statewide hazardous materials response contract
Water Quality Project	905,353	Agreements with water quality emphasis
Weed Control/Pest Control	497,721	Statewide herbicide application
Maintenance	14,355,816	Maintenance tasks and betterment projects
Public Outreach	10,856	Educational materials and events
Equipment	1,158,026	Purchases and leases
Payroll	3,389,690	Refer to Table K-2 for category breakdown
Water Quality Monitoring	317,599	Agreements and laboratory analysis; includes Clear Creek water quality monitoring efforts
Administration	315,017	Program work and agreements
Supplies	43,418	Supplies and small equipment for the Stormwater program
Mapping/Database	83,617	Mapping and records maintenance of NDOT's Stormwater assets
Total	$33,807,772	

Table H-2. Stormwater Management Program expenditures broken down by payroll category.

Payroll Category	**$**
Maintenance of Highway Facilities-Federal	-----
Maintenance Facility Inspections-Federal	546
Construction Inspection-Federal	1,136
Design-Federal	85,982
Illicit Discharge	37,907
Maintenance of Highway Facilities-State	4,092
Training/Education	267,803
Maintenance Facilities	2,601
Construction Inspection-State	91,091
Public Outreach	95,287
Mapping/Database Development	30,559
Design-State	114,560
Industrial Facility Monitoring & Inspection	14,866
Herbicide Application	-----
Field Monitoring	145,717
Administration	2,368,364
Travel	87,797
Maintenance Facility Inspections-State	41,384
Total	$3,389,690