



# STAFF REPORT

**Report To:** Board of Supervisors

**Meeting Date:** May 17, 2018

**Staff Contact:** Darren Schulz, Public Works Director

**Agenda Title:** For Possible Action: to adopt Resolution No. \_\_\_\_, a resolution adopting the Carson City Storm Water Management Plan Update; and acknowledging the necessity to continue to develop and implement the strategies, best management practices, control measures, corrective actions, and appropriate enforcement mechanisms needed to protect water quality and reduce the discharge of pollutants from the City's storm drainage facilities. (Robb Fellows, RFellows@carson.org)

**Staff Summary:** The Carson City Storm Water Management Plan Update complies with the National Pollutant Discharge Elimination System General Permit for Discharges from Small Municipal Separate Storm Sewer Systems Permit No. NVS040000 administrated by the State of Nevada.

**Agenda Action:** Resolution

**Time Requested:** 15 minutes

## **Proposed Motion**

Move to approve Resolution No. \_\_\_\_, a resolution adopting the Carson City Storm Water Management Plan Update; and acknowledging the necessity to continue to develop and implement the strategies, best management practices, control measures, corrective actions, and appropriate enforcement mechanisms needed to protect water quality and reduce the discharge of pollutants from the City's storm drainage facilities.

## **Board's Strategic Goal**

N/A

## **Previous Action**

NA

## **Background/Issues & Analysis**

Carson City Storm Water Management Plan Update was schedule for February 2017, but due to the two flood disasters was delayed. The draft plan update has been posted to the stormwater website for over a year, there have been articles in the Nevada Appeal related to the plan, and an Open House was conducted in early December 2016 concerning the update. Also, a draft plan was delivered to the Nevada Builders Association. There were two comments on the plan. One related to upcoming Low Impact Development (LID) standards and the other wanting more monitoring and action in the Clear Creek Watershed. Low Impact Development, when implemented, will help reduce storm water flows and provide for better water quality. Likewise, with more interaction with property owners, tribal members and Federal agencies within the Clear Creek Watershed, water quality would improve. The updates to the Storm Water Management Plan Update address these questions and implement a number of other measures that will improve the water quality for the entire City. Finally, the updated plan is essentially a schedule of tasks and dates to complete in order to comply with the State permit.

## **Applicable Statute, Code, Policy, Rule or Regulation**

Federal Law - Clean Water Act. National Pollutant Discharge Elimination System, via the Municipal Separate Storm Sewer Systems (MS4) permit.

**Financial Information**

Is there a fiscal impact?  Yes  No

If yes, account name/number: n/a

Is it currently budgeted?  Yes  No

Explanation of Fiscal Impact: n/a.

**Alternatives**

The Board may modify the plan.

**Board Action Taken:**

Motion: \_\_\_\_\_

1) \_\_\_\_\_

2) \_\_\_\_\_

Aye/Nay

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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
(Vote Recorded By)

**RESOLUTION NO. \_\_\_\_\_**

RESOLUTION OF THE CARSON CITY BOARD OF SUPERVISORS ADOPTING THE CARSON CITY STORM WATER MANAGEMENT PLAN UPDATE; AND ACKNOWLEDGING THE NECESSITY TO CONTINUE TO DEVELOP AND IMPLEMENT THE STRATEGIES, BEST MANAGEMENT PRACTICES, CONTROL MEASURES, CORRECTIVE ACTIONS, AND APPROPRIATE ENFORCEMENT MECHANISMS NEEDED TO PROTECT WATER QUALITY AND REDUCE THE DISCHARGE OF POLLUTANTS FROM THE CITY'S STORM DRAINAGE FACILITIES.

WHEREAS, Carson City acknowledges the need to satisfy the appropriate water quality requirements of the Clean Water Act; and

WHEREAS, Carson City is committed to actively managing storm water runoff and improving storm water quality by complying with Federal and State requirements for National Pollutant Discharge Elimination System (NPDES) storm water discharge permits; and

WHEREAS, the Carson City Storm Water Management Plan Update continues to protect water quality and to reduce the discharge of pollutants from the City's storm drainage facilities, to the maximum extent practicable, by implementing the six minimum control measures and special conditions for discharges to water quality impaired water identified in the State's General Storm Water Permit; and

WHEREAS, the Carson City Storm Water Management Plan Update continues to outline a strategy for identifying and assessing sources of storm water pollution, for evaluating and selecting pollution protection measures, best management practices, controls and regulations that will eliminate or minimize the identified sources of pollution, and for educating and involving the public in these processes; and

WHEREAS, Carson City is committed to the Plan and to developing and implementing best management practices, controls, and regulations that will prevent or reduce the discharge of pollutants in storm water runoff, including establishing processes, procedures, measurable goals, prohibitions on practices, and other techniques that will result in an improvement over the baseline levels of pollutants identified in storm water discharges with due consideration to economic feasibility

NOW, THEREFORE, be it hereby resolved by the Carson City Board of Supervisors to adopt the Carson City Storm Water Management Plan Update, and to acknowledge the necessity of the Plan and to develop and implement the strategies, best management practices, control measures, corrective actions and appropriate enforcement mechanisms needed to protect water quality and reduce the discharge of pollutants from the City's storm drainage facilities.

ADOPTED this \_\_\_\_ day of \_\_\_\_\_, 2018.

AYES: Supervisors

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NAYS: Supervisors

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ABSENT: Supervisors

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Robert Crowell, Mayor

ATTEST:

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SUSAN MERRIWETHER, Clerk/Recorder

## Robb Fellows

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**From:** J M Bloom <jmbloom@outlook.com>  
**Sent:** Wednesday, January 04, 2017 5:14 PM  
**To:** Storm Water Hotline  
**Subject:** Stormwater Management Plan update

My primary comment on the plan is that the Clear Creek portion is quite thin and mostly refers the reader to the 2007 Clear Creek Stormwater Management Plan. That plan, in turn, is seriously outdated - almost 10 years old at this point. Development in Clear Creek Canyon has increased since 2007 and will continue to increase for the foreseeable future. For example, the Clear Creek Tahoe Golf Course will bring another 400 residences to the area. Also, the Legislature approved the sale of the Clear Creek Youth Camp and State Lands intends to rezone the land to permit further residential development. The Schulz family, one of the large landowners in the canyon, also plans to develop its unused ranch land. And the Washoe Tribe has expressed an interest in commercial development of its land above Fuji Park.

With the increased development comes increased traffic on Clear Creek Road. Nothing in either Stormwater Plan addresses the inadequate drainage on this road, the failure to clear sediments and rocks from the road, or the continual problems that drainage from US 50 creates. Despite NDOT's efforts, stormwater still flows freely from US 50 down Clear Creek Road and into Clear Creek. In addition, the plan should specifically address off road vehicle use in the canyon. Although most roads that previously forded Clear Creek are now fenced or at least gated, off road vehicle use continues in meadows, riparian areas, and on hillsides which adversely affects the water quality in Clear Creek.

Also, monitoring of construction in Clear Creek Canyon needs to be a priority. The plan gives lip service to this, but the reality is that monitoring is lacking. For example, individual land owners are cutting new dirt driveways seemingly at will, with no evidence of a permit or enforcement of BMP's in sight. The sediment washing off these roads is massive, yet City enforcement of any standards appears non-existent (pre- or post-construction).

Since Clear Creek passes through federal, state, and tribal land, as well as private land in both Carson and Douglas Counties, it is essential that one entity take the lead on stormwater enforcement and monitoring. The way things are now, there is simply a hope and a prayer that someday all entities will work together to protect Clear Creek. The plan needs to more specifically address these issues, including timelines, deadlines, and better defined goals.

Also, Carson City is perhaps the worst offender in the canyon. The storm water drainage control system in Fuji Park seems completely inadequate. The western part of the park along Vista Grande Blvd was stripped bare of vegetation years ago and the measures taken, if any, to direct and slow the water are not working. Not only does the dirt parking lot flood and remain flooded for days or weeks, but the dog park is a disgusting, watery cesspool almost year round. In times of increased rainfall like this winter, the flood waters dig a channel from the dog park, across the parking lot, and directly into Clear Creek. Any update to the plan should identify areas owned by Carson City, such as Fuji Park, where the City needs to improve its stormwater management and, again, include goals and timelines for addressing these problems.

Finally, the plan refers to a Stormwater System GIS map. This should be made publicly available on the city's website. And, if it is available now, then its link is too well hidden for anyone to find. Further, the Stormwater Hotline needs to be better explained on the Stormwater website. Given the hotline's importance to the plan, it should be given a more prominent place on your website and include an invitation to report stormwater issues and an explanation of what issues Carson City is interested in hearing about.

Thanks for the opportunity to comment.

Janette Bloom

775.291.8117

[jmbloom@outlook.com](mailto:jmbloom@outlook.com)

## Robb Fellows

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**From:** Michael D. Bennett, P.E. <mbennett@LumosInc.com>  
**Sent:** Friday, December 09, 2016 1:31 PM  
**To:** Storm Water Hotline  
**Subject:** Storm Water Management Program Update

To Whom It May Concern:

I attended the open house on December 6, 2016, highlighting the efforts to update Carson City's Storm Water Management Program. Overall, I am pleased with the progress made with the program. I was specifically interested to learn about the goal of setting Low Impact Design (LID) development standards by the end of 2018. Several times through my design career I have had an opportunity to utilize LID elements on a project in the Northern Nevada area. However, that effort is routinely hindered because of a lack of standards and the need to educate the reviewing agency on what they are looking at. Therefore, I applaud Carson City for taking a proactive approach and embracing modern design solutions.

Thank you for your time.

Regards,  
Mike



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**CARSON CITY  
MUNICIPAL SEPARATE STORM SEWER SYSTEM  
STORM WATER MANAGEMENT PLAN UPDATE  
SUMMARY**





## Minimum Control Measures

**Public Education and Outreach.** An informed and knowledgeable community is crucial to the success of a stormwater management program since it helps to ensure greater support for the program and greater compliance. To satisfy this minimum control measure, the Permittee needs to:

- ❑ Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of stormwater discharges on local waterbodies and the steps that can be taken to reduce stormwater pollution; and
- ❑ Determine the appropriate BMPs and measurable goals for this minimum control measure.

**Public Participation and Involvement.** An active and involved community is crucial to the success of a stormwater management program because it fosters broader public support, shorter implementation schedules due to fewer public and legal challenges, and may provide an avenue for cross-connections with other programs. To satisfy this minimum control measure, the Permittee needs to:

- ❑ Comply with applicable State, Tribal and local public notice requirements; and
- ❑ Determine the appropriate BMPs and measurable goals for this minimum control measure;
- ❑ NOI and SWMP public review and comments;
- ❑ Selection of responsible person(s) to implement and measure the success of this portion of the SWMP.

**Illicit Discharge Detection and Elimination.** Discharges from MS4s often include wastes and wastewater from non-stormwater sources. Illicit discharges enter the system through either direct connections, such as wastewater piping either mistakenly or deliberately connected to the storm drains, or indirect connection, such as infiltration from cracked sanitary sewers, spills collected by drain outlets, or materials dumped into storm drains. To satisfy this minimum control measure, the Permittee must develop, implement and enforce an illicit discharge detection and elimination program. This program must include the following:

- ❑ A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
- ❑ An ordinance, or other regulatory mechanism, to prohibit (to the extent allowable under State, Tribal, or local law) non-stormwater discharges in the MS4, and appropriate enforcement procedures and actions;
- ❑ A plan to detect and address non-stormwater discharges, including illegal dumping, into the MS4;
- ❑ The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
- ❑ The determination of appropriate BMPs and measurable goals for this minimum control measure.
- ❑ Develop a plan for detection, enforcement, and elimination illicit discharges.

**Construction Site Runoff Control.** Polluted stormwater runoff from construction sites often flows to MS4s and ultimately is discharged into local rivers and streams. The Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement, and enforce a program to reduce pollutants in stormwater runoff to their MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The Permittee is required to:

- ❑ Have an ordinance or other regulatory mechanism requiring the implementation of proper erosion and sediment control, and control for other wastes, on applicable construction sites;
- ❑ Have procedures for site plan review of construction plans that consider potential water quality impacts;
- ❑ Have procedures for site inspection and enforcement of control measures;
- ❑ Have sanctions to ensure compliance (established in the ordinance or other regulatory mechanism);
- ❑ Establish procedures for the receipt and consideration of information submitted by the public; and
- ❑ Determine the BMPs and measurable goals for this minimum control measure.

**Post-Construction Runoff Control.** Stormwater runoff generated post development impacts receiving waters in several ways. The water quality of the receiving water may be affected due to pollutants carried in stormwater. The peak rate of runoff from impervious surfaces can cause erosion of downstream conveyance facilities and cause downstream flooding.

A post-construction stormwater program will help Carson City address these issues by the use of design standards and prescribed BMPs. These BMPs will include both structural and non-structural, source control and site design options. The goal of all the post-construction BMPs will be to prevent stormwater discharges from causing downstream water quality violations and improve ambient water quality in the receiving water body.

The Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement, and enforce a program to reduce the pollutants and discharges in post-construction runoff to their MS4 from new development and redevelopment projects that result in the land disturbance of greater than or equal to 1 acre. The small MS4 operator is required to:

- ❑ Develop and implement strategies which include a combination of structural and/or non-structural BMPs;
- ❑ Develop low impact development measures that will remain after construction is complete;
- ❑ Have an ordinance or other regulatory mechanism requiring the implementation of post construction runoff controls to the extent allowable under State, Tribal or local law;
- ❑ Inspect and enforce proper installation and long-term operation and maintenance of controls;
- ❑ Determine the appropriate BMPs and measurable goals for this minimum control measure;

- ❑ Determine procedures to assure that future regional flood management project assess the impacts on the water quality of receiving water bodies;
- ❑ Inventory and track structural BMPs, whether publically or privately owned;
- ❑ Development and implementation of structural BMPs and documentation on the methodology for determining applicability and sizing.

**Pollution Prevention/Good Housekeeping.** This measure requires the MS4 operator to examine and subsequently alter their own actions to help ensure a reduction in the amount and type of pollution that: (1) collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and (2) results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems.

The Phase II rule requires the operator of an MS4 to:

- ❑ Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm sewer systems;
- ❑ Include employee training on how to incorporate pollution prevention/good housekeeping techniques into municipal operations such as park land open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance;
- ❑ Determine the appropriate BMPs and measurable goals for this minimum control measure;
- ❑ Develop an operations and maintenance program to reduce pollutants coming from municipal operations. Provide a list of those operations that are affected by this O&M program;
- ❑ Develop maintenance goals and long-term inspection procedures to reduce pollutants from MS4's operations;
- ❑ Address specifically any sand/salt stockpiles and the BMPs adopted to prevent runoff into the MS4;
- ❑ Develop standard operating procedures (SOPs) for vehicle fueling and maintenance.

**Clear Creek Master Storm Water Management Program (CCSWMP).** This measure requires the operator to maintain a separate program for Clear Creek. Program BMPs that differ from the overall MS4 program are to be clearly indicated. The CCSWMP must be developed, implemented, and enforced to reduce the discharge of pollutants to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

The additional Phase II rule requires the operator of an MS4 to:

- ❑ Provide silt fences, vegetative buffer strips, or equivalent sediment controls for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of a construction area, unless a sediment basin providing storage for a calculated volume of runoff from a 2 year, 24 hour storm or 3,600 cubic feet of storage per acre drained;

- ❑ Provide a detailed description of BMPs that have been, or will be, implemented on construction projects located in the Clear Creek watershed;
- ❑ Provide a detailed description of sediment controls for all down slope boundaries (and for those side-slope boundaries deemed appropriate as dictated by individual site conditions) that have been, or will be, used on construction projects located in the Clear Creek watershed;
- ❑ Provide a detailed description of control techniques that have been, or will be, used by the Permittee to the MEP to ensure no illicit discharge of pollutants into Clear Creek;
- ❑ Provide a detailed description of system design and/or engineering methods the Permittee has used, or plans to use, to protect Clear Creek from illicit discharges of pollutants;
- ❑ Provide a schedule of implementation for all future short-term and long-term activities describing program development, implementation and maintenance;
- ❑ Develop an annual monitoring program to ensure the overall quality and health of Clear Creek;
- ❑ Develop an inventory and tracking program for all maintenance yards that have the potential to discharge pollutants into Clear Creek;
- ❑ Show that the Permittee’s inspection program on its MS4 or construction sites to ensure no illicit discharges of pollutants into Clear Creek; and
- ❑ The Permittee may partner with other MS4s to develop and implement the CCSWMP.

## **Measurable Goals and Timeframes**

### **1. Public Education and Outreach**

#### Goals

- Continue direct mailing in January and July to all developed parcels in the city.
- Continue providing worksheets to all second and fourth grade students.
- Continued use and promotion of the hazardous material/used oil collection program.
- Continue direct mailing to all lawn care businesses in the City.
- Continue to improve stormwater website. Show a 5% increase of website visits each year from unique visitors.
- Continue to collaborate with CWSD on watershed wide outreach. Participate in at least two outreach meeting or events each year.
- Implement an “Adopt a Watershed” program.

#### Timeline

Year 2018 - Implement an “Adopt a Watershed” program by September 20, 2018.

### **2. Public Involvement/Participation**

#### Goals

- Continue to maintain stormwater website and hotline with a ten percent annual increase in calls made to the hotline.
- Continue to support and participate in CWSD activities.
- One watershed adopted annually.

#### Timeline

Year 2018 – One watershed adopted by October 25, 2018.

### **3. Illicit Discharge Detection and Elimination**

#### Goals

- Continue regular updates to the storm sewer map.
- Continue to enforce illicit discharge program ordinance.
- Continue to maintain stormwater hotline.
- Continue to monitor stormwater outfalls on a biannual basis.
- Continue to inspect the storm drain system, inspection 20% of the system annually.
- Continue to train staff in illicit detection program and procedures.
- Continue to operate and promotion of the hazardous material/used oil collection program.

#### Timeline

Year 2018 – Complete GIS data base transfer for the storm sewer map by November 16, 2018.

### **4. Construction Site Runoff Control**

#### Goals

- Continue to maintain stormwater hotline and Carson City Connect.
- Continue to enforce BMPs for construction site erosion and sediment control as required under the Development Standards, Division 13.
- Continue to train staff in construction site erosion/sediment control management and enforcement methods per the training policy.

#### Timeline

No additional task to complete under this control measure

### **5. Post-Construction Storm Water Management**

#### Goals

- Continue to review the adequacy of the stormwater utility and fees.
- Continue to enforce post construction BMP maintenance ordinance.
- Continue Implementation of inspection program for existing stormwater quantity and quality control facilities.

#### Timeline

Year 2019 – Develop and adopt LID standards and incorporate them into Stormwater Division 14 of the Development Standards by December 19, 2019.

## **6. Pollution Prevention/Good Housekeeping for Municipal Operations**

### Goals

- Continue to follow the procedures of the Good Housekeeping Program.
- Continue to train Public Works and Parks staff per City policy.
- Continue to follow Integrated Pest Management program.
- Continue to collaborate with CWSD and other governmental agencies in the watershed to implement pollution prevention/good housekeeping programs.

### Timeline

Year 2018 – Update the Municipal Pollution Prevention/Good Housekeeping program and Integrated Pest Management program by November 15, 2018.

## **7. Clear Creek Master Storm Water Management Program (CCSWMP)**

### Goals

- Continue to collaborate with all entities within the watershed under the approved CCSWMP.
- Include any specific BMP that relates to the Clear Creek watershed in the LID standards and incorporate them into Stormwater Division 14 of the Development Standards.

### Timeline

Year 2019 – Develop and adopt LID standards and incorporate them into Stormwater Division 14 of the Development Standards.

# NOTICE OF INTENT

## CARSON CITY NPDES PHASE II PERMIT COMPLIANCE STORMWATER MANAGEMENT PLAN UPDATE



**May 2018**

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## I. BACKGROUND

The quality of the nation's waters is protected by the Clean Water Act (CWA). Phase I of the U.S. Environmental Protection Agency's (EPA) stormwater program provided permit coverage to medium and large municipal separated storm sewer systems (MS4s) generally serving populations of 100,000 or greater, construction activity disturbing five (5) acres of land or greater, and 10 additional categories of industrial activity. Phase II of the EPA stormwater program expands the Phase I program by requiring additional operators of MS4s in urbanized areas and operators of small construction sites over one (1) acre of land to implement programs and practices to control polluted stormwater runoff.

Carson City, including portions of Lyon and Douglas County, comprise an urbanized area that is required under the Phase II definitions to meet the requirements set forth in the General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (NVS040000) as issued by the Nevada Division of Environmental Protection (NDEP). The approximate geographic center of the Carson City MS4 is at latitude 39°09'52.47" N and longitude 119°46' 01.70" W.

The NDEP issued a revised general permit for Phase II designated small MS4s in 2010. The existing permit coverage for Carson City's MS4 from 2003 was allowed to remain in effect with the hope of forming a regional stormwater management plan (SWMP) with Lyon and Douglas Counties. Over the past several years, Carson City has been working on the regional SWMP with NDEP, Carson Water Subconservancy, Douglas and Lyon Counties with modest success. NDEP has now required the City to complete their SWMP update and not wait for a regional SWMP. The Notice of Intent (NOI) must be accompanied by a SWMP summary that discusses the best management practices (BMPs) that will be used to achieve compliance with the Phase II requirements, a timeline for implementation of the BMPs, and measurable goals to assure the program is meeting its objectives. The Phase II stormwater management program must be fully implemented by the end of the first permit term, typically a 5-year period. The City did complete and fully implement its stormwater management plan prior to 2010.

The Carson River and its tributaries in the urban area are the water bodies of concern for the Carson City MS4. The reaches of the Carson River that lie within the Carson City urban area have been listed on the State of Nevada 2014 303(d) List of Impaired Waters. This information is from the Nevada 2014 Water Quality Integrated Report with EPA Over Listing Assessment Period - October 1, 2007 through September 30, 2012. The pollutants of concern for the individual reaches are shown in Table 1.

**Table 1  
Carson River  
2014 303(d) List**

Reach	River Mile	Pollutant
Cradlebaugh Bridge to Mexican Ditch Gage	7.4 miles	Escherichia coli Temperature
Mexican Ditch Gage to New Empire	7 miles	Escherichia coli Temperature Mercury – Fish Tissue Oxygen - Dissolved
New Empire to Dayton Bridge	10.4 miles	Mercury – Fish Tissue Mercury – Sediment

Total maximum daily loads (“TMDLs”) were developed for the Carson River in the early 1980’s under the Water Quality Management (208) Plan for the Carson River Basin, Nevada (1982). These TMDLs contained maximum daily loads for dissolved oxygen, biochemical oxygen demand, orthophosphates, nitrates and total dissolved solids. These particular pollutants are most commonly associated with wastewater treatment plant effluent discharges. All wastewater treatment plant discharges were eliminated from discharging into the Carson River. As a result, all the TMDLs from the 208 plan are no longer listed.

In 2005, the Nevada Division of Environmental Protection (NDEP) filed a report with the Federal EPA that established a TMDL for total phosphorus for the Carson River. A second report in 2007 established TMDLs for total suspended solids and turbidity. These three pollutants are currently being monitored by NDEP and require additional attention in the SWMP.

The water quality standards for the Carson River are included in Chapter 445A NAC. Per NAC 445A.1239, water quality criteria specified for a control point (a particular location in a waterbody) apply to all surface waters of Nevada in the watershed upstream from the control point or to the next upstream control point. Water quality standards are given for several control points along the Carson River. The water quality control points that apply to the Carson City MS4 area from downstream to upstream are:

- Dayton Bridge – NAC 445.1818 (reach from Dayton Bridge to New Empire)
- New Empire – NAC 445.1816 (reach from New Empire to Mexican Gage)
- Mexican Gage – NAC 445.1814 (reach from Mexican Gage to Cradlebaugh Bridge)

Clear Creek standards for water quality can be found at NAC 445A.1836. This reach of Clear Creek is located from its origin to gauging station number 10-3105 located in NE ¼ of the NW ¼ of section 1, T. 14N., R. 19E., M.D.B. and M. Downstream of the gauging station to the Carson River, Clear Creek's water quality is shown in NAC 445A.1838.

Phase II is a narrative rule that requires the implementation of BMPs to assure that stormwater discharges will not cause or contribute to instream exceedences of water quality standards. Carson City is required to develop, implement and enforce a SWMP designed to reduce the discharge of pollutants from the MS4 area to the maximum extent practicable (MEP) to protect water quality and to satisfy the appropriate water quality requirements of the CWA.

The NDEP requirements for a small MS4 General Permit include the six minimum control measures included in the EPA Phase II NPDES program and special conditions for discharges to water quality impaired water. The six measures, as described by EPA, are discussed below.

**Public Education and Outreach.** An informed and knowledgeable community is crucial to the success of a stormwater management program since it helps to ensure greater support for the program and greater compliance. To satisfy this minimum control measure, the Permittee needs to:

- Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of stormwater discharges on local waterbodies and the steps that can be taken to reduce stormwater pollution; and
- Determine the appropriate BMPs and measurable goals for this minimum control measure.

**Public Participation and Involvement.** An active and involved community is crucial to the success of a stormwater management program because it fosters broader public support, shorter implementation schedules due to fewer public and legal challenges, and may provide an avenue for cross-connections with other programs. To satisfy this minimum control measure, the Permittee needs to:

- Comply with applicable State, Tribal and local public notice requirements;
- Determine the appropriate BMPs and measurable goals for this minimum control measure;
- NOI and SWMP public review and comments;

- Selection of responsible person(s) to implement and measure the success of this portion of the SWMP.

**Illicit Discharge Detection and Elimination.** Discharges from MS4s often include wastes and wastewater from non-stormwater sources. Illicit discharges enter the system through either direct connections, such as wastewater piping either mistakenly or deliberately connected to the storm drains, or indirect connection, such as infiltration from cracked sanitary sewers, spills collected by drain outlets, or materials dumped into storm drains. To satisfy this minimum control measure, the Permittee must develop, implement and enforce an illicit discharge detection and elimination program. This program must include the following:

- A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
- An ordinance, or other regulatory mechanism, to prohibit (to the extent allowable under State, Tribal, or local law) non-stormwater discharges in the MS4, and appropriate enforcement procedures and actions;
- A plan to detect and address non-stormwater discharges, including illegal dumping, into the MS4;
- The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste;
- The determination of appropriate BMPs and measurable goals for this minimum control measure;
- Develop a plan for detection, enforcement, and elimination of illicit discharges.

**Construction Site Runoff Control.** Polluted stormwater runoff from construction sites often flows to MS4s and ultimately is discharged into local rivers and streams. The Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement, and enforce a program to reduce pollutants in stormwater runoff to their MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The Permittee is required to:

- Have an ordinance or other regulatory mechanism requiring the implementation of proper erosion and sediment control and control for other wastes on applicable construction sites;

- ❑ Have procedures for site plan review of construction plans that consider potential water quality impacts;
- ❑ Have procedures for site inspection and enforcement of control measures;
- ❑ Have sanctions to ensure compliance (established in the ordinance or other regulatory mechanism);
- ❑ Establish procedures for the receipt and consideration of information submitted by the public;
- ❑ Determine the BMPs and measurable goals for this minimum control measure.

**Post-Construction Runoff Control.** Stormwater runoff generated post-development impacts receiving waters in several ways. The water quality of the receiving water may be affected due to pollutants carried in stormwater. The peak rate of runoff from impervious surfaces can cause erosion of downstream conveyance facilities and cause downstream flooding.

A post-construction stormwater program will help Carson City address these issues by the use of design standards and prescribed BMPs. These BMPs will include both structural and non-structural, source control and site design options. The goal of all the post-construction BMPs will be to prevent stormwater discharges from causing downstream water quality violations and improve ambient water quality in the receiving water body.

The Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement, and enforce a program to reduce the pollutants and discharges in post-construction runoff to their MS4 from new development and redevelopment projects that result in the land disturbance of greater than or equal to 1 acre. The small MS4 operator is required to:

- ❑ Develop and implement strategies which include a combination of structural and/or non-structural BMPs;
- ❑ Develop low impact development measures that will remain after construction is complete;
- ❑ Have an ordinance or other regulatory mechanism requiring the implementation of post construction runoff controls to the extent allowable under State, Tribal or local law;
- ❑ Inspect and enforce proper installation and long-term operation and maintenance of controls;

- ❑ Determine the appropriate BMPs and measurable goals for this minimum control measure;
- ❑ Determine procedures to assure that future regional flood management projects assess the impacts on the water quality of receiving water bodies;
- ❑ Inventory and track structural BMPs, whether publically or privately owned;
- ❑ Development and implementation of structural BMPs and documentation on the methodology for determining applicability and sizing.

**Pollution Prevention/Good Housekeeping.** This measure requires the MS4 operator to examine and subsequently alter their own actions to help ensure a reduction in the amount and type of pollution that: (1) collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and (2) results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems.

The Phase II rule requires the operator of an MS4 to:

- ❑ Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm sewer systems;
- ❑ Include employee training on how to incorporate pollution prevention/good housekeeping techniques into municipal operations such as park land open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance;
- ❑ Determine the appropriate BMPs and measurable goals for this minimum control measure;
- ❑ Develop an operations and maintenance program to reduce pollutants coming from municipal operations. Provide a list of those operations that are affected by this O&M program;
- ❑ Develop maintenance goals and long-term inspection procedures to reduce pollutants from MS4's operations;

- Address specifically any sand/salt stockpiles and the BMPs adopted to prevent runoff into the MS4;
- Develop standard operating procedures (SOPs) for vehicle fueling and maintenance.

**Clear Creek Master Storm Water Management Program (CCSWMP).** This measure requires the operator to maintain a separate program for Clear Creek. Program BMPs that differ from the overall MS4 program are to be clearly indicated. The CCSWMP must be developed, implemented, and enforced to reduce the discharge of pollutants to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

The additional Phase II rule requires the operator of an MS4 to:

- Provide silt fences, vegetative buffer strips, or equivalent sediment controls for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of a construction area, unless a sediment basin providing storage for a calculated volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet of storage per acre drained;
- Provide a detailed description of BMPs that have been, or will be, implemented on construction projects located in the Clear Creek watershed;
- Provide a detailed description of sediment controls for all down slope boundaries (and for those side-slope boundaries deemed appropriate as dictated by individual site conditions) that have been, or will be, used on construction projects located in the Clear Creek watershed;
- Provide a detailed description of control techniques that have been, or will be, used by the Permittee to the MEP to ensure no illicit discharge of pollutants into Clear Creek;
- Provide a detailed description of system design and/or engineering methods the Permittee has used, or plans to use, to protect Clear Creek from illicit discharges of pollutants;
- Provide a schedule of implementation for all future short-term and long-term activities describing program development, implementation and maintenance;
- Develop an annual monitoring program to ensure the overall quality and health of Clear Creek;

- Develop an inventory and tracking program for all maintenance yards that have the potential to discharge pollutants into Clear Creek;
- Show that the Permittee's inspection program on its MS4 for construction sites ensures that no illicit discharges of pollutants enter Clear Creek;
- The Permittee may partner with other MS4s to develop and implement the CCSWMP.

This NOI for the Phase II permit includes the following:

- Information regarding compliance with Section II of the Small MS4 General Permit;
- Identification of the chosen BMPs and the measurable goals for each of the stormwater minimum control measures;
- Timeframe for implementing each of the BMPs;
- Identification of the person or persons responsible for implementing or coordinating the Stormwater Management Program.

The information provided in the following section follows the outline provided in Sections II and VI of the Small MS4 General Permit developed by NDEP.

## **II. Discharges to Water Quality Impaired Waters**

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

*IIA.1 The Permittees must evaluate whether stormwater discharges from any part of the MS4 contributes directly or indirectly to the listing of a waterbody on the most current 303(d) list (i.e., impaired waterbody). If Permittees have discharges meeting this criterion, or if there is a TMDL on receiving waters, the Permittee must comply with Part II.B. Part II does not apply if the Permittees do not have discharges meeting this criterion.*

Stormwater runoff from the Carson City MS4 discharges either directly or through tributary water sources to the Carson River. The Carson River is listed as an impaired waterbody on the State of Nevada 2006 303(d) list. Portions of the Carson River within the Carson City MS4 include:

- Cradlebaugh Bridge to Mexican Ditch Gage (NV08-CR-08)
- Mexican Ditch Gage to New Empire (NV08-CR-09)
- New Empire to Dayton Bridge (NV08-CR-10).



The pollutants listed on the 303(d) list for these sections or the Carson River can be found in Table 1, Carson River 2014 303(d) List.

## **II.B Total Maximum Daily Load (TMDL)**

*II.B.1 The Permittees must determine whether the MS4 discharges to a waterbody for which a TMDL has been developed and approved by NDEP. If there is a TMDL, the Permittees must comply with Part II.B.2.*

TMDLs for the Carson River were developed in Water Quality Management (208) Plan for the Carson River Basin, Nevada, (1982). The 208 Plan identified the problems causing water quality impairment of the Carson River and its tributaries. The problems identified included:

- Periods of highly turbid conditions due to natural and man-included land disturbing activities.
- Discharge of low-quality sewage effluent into the river.
- Groundwater contamination from septic tanks and leach field systems (including landfill leachate).

TMDLs were developed based on information contained in the 208 Plan. The TMDL contained maximum allowable daily loads for dissolved oxygen, biochemical oxygen demand, orthophosphates, nitrates and total dissolved solids.

In 2005, the 208 Plan was revised and the TMDLs previously listed were removed. The Plan attributes the elimination of all wastewater treatment discharges to the Carson River for the decrease in listed pollutants. No other TMDLs were listed in the revised 208 Plan.

In 2005 and 2007, the Nevada Department of Environmental Protection issued two new reports to the EPA listing additional TMDLs for the Carson River.

*II.B.2 If a TMDL is approved for any waterbody into which the Permittees discharge, the Permittees shall:*

*II.B.2.a Determine and report whether the approved TMDL is for a pollutant likely to be found in stormwater discharges from the Permittees' MS4.*

The reports attribute the pollutants exceeding the allowable limits to a degradation of the river system and its ability to filter these pollutants, agricultural return flows, runoff from surfaces applied with treated effluent

and other non-point sources. Stormwater runoff can be a contributing factor for these particular pollutants.

*11.B.2.b Determine and report whether the TMDL includes a pollutant wasteload allocation (WLA) or other performance requirements specifically for stormwater discharge from the Permittees MS4. If there is no waste load allocation (“WLA”) or other performance requirements specifically for stormwater from the Permittee’s MS4, the Permittee must comply with Part II.B.3.*

No WLA for TMDL pollutants listed were established.

*II.B.3 The Permittees must determine whether the MS4 discharges to a water on the current State of Nevada 303(d) List of Impaired Waters. If a waterbody is listed, the Permittees shall include a section in the Annual Report describing the condition(s) for which the water(s) was listed, evaluating possible BMPs that might practicably be implemented, examining whether these BMPs would make a substantial improvement on water quality and identifying any BMPs that are selected for implementation.*

The annual reports submitted to NDEP as a requirement of this general permit include a section on the reaches of the Carson River that are listed on the 303(d) list and the status of the current and proposed BMPs selected for those areas.

Generally, Carson City MS4 removes tons of sediment, trash and debris from streets, gutters, pipes, inlets, channels and basins each year. Total suspended solids and turbidity relate mainly to sediment and by removing sediment from the stormwater, the river is less impacted from the stormwater. Phosphorus is also a concern, as well as pet waste. Phosphorus can be associated with fertilizer and decay of organics. Pet waste is often found along waterways and on sidewalks. Again, Carson City MS4 removes tons of organic debris from the stormwater system and requires lawn care services to do the same. Carson City also uses natural systems, such as man-made wetlands, which consume the phosphorus and other nutrients to clean the stormwater. The City provides informational signs near waterways to encourage pet owners to pick up pet waste and dispose of it in trash containers. The 2016 annual report will show these removals, as directed from NDEP, in average pounds per day units.

### **III. Obtaining Coverage for New Applicants**

This section does not apply to the Carson City MS4 as it is a previous Permittee.

### **IV. Stormwater Management Program Requirements for New Permittees**

This section does not apply to the Carson City MS4 as it is a previous Permittee.

### **V. Stormwater Management Program Requirements for Existing Permittees**

A thirty (30) day public review and comment period will begin on November 7, 2016. The Draft SWMP will be available on the City's stormwater website. Also, the draft plan will be discussed at an open house event in late November or early December. All comments will be logged and worked through prior to presenting the Plan to the Board of Supervisors in February 2017.

### **VI. Minimum Control Measures**

#### **VI.A. Public Education and Outreach**

**VI.A.1. Permit requirement.** *The Permittee shall implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.*

The Carson City SWMP will continue its public education program by distributing educational materials to the community via print and visual media and through community programs. The education and outreach program will inform the community about the impacts of stormwater pollution on receiving water quality and identify BMPs the general population, business and industry can take to reduce stormwater pollution. In the last few years, the City has been working with the Carson Water Subconservancy District (CWSD) and other counties in the watershed to develop a watershed wide outreach program.

**VI.A.2. Decision process.** *The Permittee shall document the Permittee's decision process for the development of a stormwater public education and outreach program. The Permittee's rationale statement must*

*address the overall public education program and the individual BMPs, measurable goals and persons responsible for the program. The rationale statement must include, at a minimum, the following information:*

The Carson City SWMP will use a multi-faceted approach to providing public education and outreach on stormwater impacts to receiving waters. The Carson City SWMP recognizes that much of the pollution that enters the receiving waters is generated through carelessness and ignorance. The City has developed print material discussing such areas as erosion/sediment control, lawn and yard maintenance, private maintenance, and hazardous waste and trash disposal. These brochures have been distributed in utility bills and through information kiosks at various buildings around the city. The educational information may be further updated in the future for the various target groups, i.e., homeowners, businesses, children in a regional watershed sense.

***VI.A.2.a*** *The plan the Permittee will use to inform individuals and households about the available steps to reduce stormwater pollution;*

Carson City will continue to update and develop brochures for the general public or specific audiences working with CWSD that could be included in utility bills, information packets, or information kiosks. Previous brochures have included information on lawn and garden activities, water conservation practices, proper disposal of pet wastes, trash/hazardous waste management and erosion and sediment control. The brochures will inform the target group about the potential for stormwater pollution due to various activities and identify behaviors or BMPs that could be instituted to minimize stormwater pollution.

The CarsonSW.org website will be maintained and new information will be added. All the other media used in the public education efforts will be posted on this website and/or the City's main website, Carson.org.

The Carson City SWMP will continue to work with CWSD who is currently involved in watershed management, river stewardship and environmental protection in the Carson City watershed to assure that the information contained in the public education materials is compatible with existing programs.

***VI.A.2.b*** *The plan the Permittee will use to inform individuals and groups on how to become involved in the stormwater program;*

The Carson City SWMP will continue to provide a kiosk or materials at City events where citizens could learn about pollution carried by stormwater or pick up educational materials.

The SWMP will continue to include information via printed material regarding on-going stormwater pollution prevention programs. In addition, information will be made available to the general public regarding how to contact the stormwater clearing house or web site. Information on upcoming opportunities for participation in clean-up programs, training programs or stormwater pollution related projects would be available on the website or the City's Facebook page.

SWMP plans on promoting the formation of "adopt a watershed". The program would be similar to adopt a highway, where civic groups, businesses or schools would meet in the watershed to perform an activity such as trash collection. Information regarding adopt a watershed and its functions and signups would be presented on the stormwater website.

Carson City provides a permanent household hazardous waste collection facility at the City's Landfill. The program also provides recycling of motor oil, antifreeze and car batteries. This program provides a great opportunity to dispose of waste materials and recycle items properly. This program is identified on the City's website.

**VI.A.2.c** *The selected target audiences for the Permittee's education program that are likely to have significant stormwater impacts (including commercial, industrial and institutional entities) and the reason(s) those target audiences were selected;*

The SWMP has had a targeted outreach program for over ten years which consisted of school age children, businesses and residents. Future targeted outreach may include those with large parking areas, such as Carson High School. A secondary outreach will be the construction industry. Development and redevelopment in Carson City will continue to be considered.

The erosion and sediment control and post-construction stormwater pollution control for the construction and business/industry sectors will continue to be targeted in the Clear Creek basin.

**VI.A.2.d** *The target pollutant sources that the Permittee's public education program is designed to address;*

Total phosphorous loading has been identified as the most severe water quality impact to the receiving waters in the Carson City basin. Phosphorous

loading generally results from soil erosion both during and after construction, excessive fertilizer use and vegetation decay. Other target pollutant sources are total suspended solids, turbidity, pet waste, and motor oil.

**VI.A.2.e** *The plan the Permittee will use for public outreach, including the mechanisms (e.g., printed brochures, newspapers, media, workshops, etc.), the Permittee will use to reach the Permittee's target audiences, and the number of people expected to be reached by the public outreach plan during the term of the permit.*

The Carson City SWMP outreach strategy is to use a combination of printed and visual media, community gatherings and school programs to reach a broad range of groups, including homeowners, industries, the development community, and children (and through them, their parents). The Carson City SWMP has a combined population of approximately 54,500. The commitment of the outreach has been and will continue to reach 100% of the developed parcels in the city. This has been done through a direct mailing twice a year.

**VI.A.2.f** *The person(s) responsible for overall management and implementation of the Permittee's stormwater public education and outreach program and, if different, the person(s) responsible for each of the BMPs identified in this program;*

Carson City Public Works – Stormwater Division is the organization responsible for the overall management and implementation of the stormwater education and outreach program.

**VI.A.2.g** *The measures the Permittee will use to evaluate the success of this minimum measure, including how the Permittee selected the measurable goals for each of the BMPs.*

Outreach goals have been met and will continue to be met with all target groups reached every year. The past waste oil collect goal of 10% increase each year has not been met and is not a viable measure of success. Currently, auto parts stores take waste oil which has diminished the volume of waste oil taken by the City. Instead, having a waste oil collection program available to the public in itself has been a success. The stormwater website, carsonSW.org received about 25,170 visits with 11,648 unique visitors in 2015. The stormwater page in the City's main website, carson.org, received 273 visits in 2015.

These measurable goals will be considered successful if the Program:

- Continues direct mailing in January and July to all developed parcels in the city.
- Continues to provide worksheets to all second and fourth grade students.
- Continues to use and promote the hazardous material/used oil collection program.
- Continues to send direct mailing to all lawn care businesses in the City.
- Continues to improve stormwater website. Show a 5% increase of website visits each year from unique visitors.
- Continues to collaborate with CWSD on watershed-wide outreach. Participate in at least two outreach meetings or events each year.
- Implements an “Adopt a Watershed” program.

## Timeline

Year 2018 - Implement an “Adopt a Watershed” program by September 20, 2018.

## VI.B Public Involvement/Participation

**VI.B.1 Permit requirement.** *The Permittee shall, at a minimum, comply with State and local public noticing requirements when implementing a public involvement/participation program.*

**VI.B.2 Decision process.** *The Permittee shall document the decision process for the development of a stormwater public involvement/participation program. The Permittee’s rationale statement must address the overall public involvement/participation program and the individual BMPs, measurable goals, and person(s) responsible for the program. The rational statement must include the following information, at a minimum:*

**VI.B.2.a** *The steps taken by the Permittee to involve the public in the development and submittal of the Permittee’s NOI and Stormwater Management Plan;*

Carson City staff will continue to solicit input from the public on the SWMP. The plan will be posted to carsonSW.org and carson.org websites, links will be placed on the Public Works' Facebook page, and the plan will be possibly presented at one public meeting. Also, a hard copy will be available for public review at the community library. Letters will also be sent out inviting comments from BAWN (Builders Association of Western Nevada) and the Chamber of Commerce. The City will evaluate the comments provided by the public and make changes to the NOI and Stormwater Management Plan as deemed necessary.

***VI.B.2.b*** *The plan the Permittee will use to actively involve the public in the development and implementation of your program.*

The Carson City SWMP has been developed and in place since 2003. This updated SWMP will be posted to the City's website and if time allows, possibly presented at one public meeting. During the 30-day period, everyone is invited to comment on the plan.

***VI.B.2.c*** *The target audiences for the Permittee's public involvement program, including a description of the types of ethnic and economic groups engaged. The Permittee is encouraged to actively involve all potentially affected stakeholder groups, including commercial and industrial businesses, trade associations, environmental groups, homeowner's associations, and educational organizations, among others;*

A specific ethnic, business, industrial or environmental group will not be targeted. The draft SWMP update will be sent to CWSD for review and comment. CWSD reaches many private and public individuals.

***VI.B.2.d*** *The types of public involvement activities included in the Permittee's program. These public involvement activities may include:*

***VI.B.2.d.i*** *Citizen representatives on a stormwater management panel;*

***VI.B.2.d.ii*** *Public hearings;*

***VI.B.2.d.iii*** *Working with citizen volunteers willing to educate others about the program;*

***VI.B.2.d.iv*** *Volunteer monitoring for stream or lake clean-up activities.*

The Carson City SWMP will encourage stream stewardship through CWSD events, such as River Wranglers, Snapshot Day. Carson City plans on



promoting the formation of “Adopt a Watershed”. This program would be similar to Adopt a Highway, where civic groups, businesses or schools would meet in the watershed to perform an activity such as trash collection. Information regarding Adopt a Watershed and its functions and signups would be presented on the stormwater website.

The Carson City SWMP will develop a webpage where citizens can find out information on “Adopt a Watershed”, volunteering, and educational opportunities.

**VI.B.2.e** *The person(s) responsible for the overall management and implementation of the Permittee’s stormwater public involvement/participation program and, if different, the person(s) responsible for each of the BMPs identified for this program.*

Carson City Public Works – Stormwater Division will be responsible for the overall management and implementation of the public involvement/participation program.

**VI.B.2.f** *Metrics the Permittee will use to evaluate the success of this minimum control measure, including how the Permittee selected the measurable goals for each of the BMPs.*

Public Involvement/Participation will be evaluated by measuring increased activity in the use of the hotline. Also, public involvements will be collected from CWSD activities.

These measurable goals will be considered successful if the Program:

- Continues to maintain the stormwater website and hotline with a ten percent annual increase in calls made to the hotline.
- Continues to support and participate in CWSD activities.
- One watershed adopted annually.

## **Timeline**

Year 2018 – One watershed adopted by October 25, 2018.

## **VI.C. Illicit Discharge Detection and Elimination**

An illicit discharge is defined as any discharge to an MS4 that is not composed entirely of stormwater or otherwise permitted discharges. The exceptions to this definition include discharges from NPDES-permitted industrial sources and discharges from fire-fighting activities.

Illicit discharges can enter an MS4 through direct connection (incorrectly connected sanitary sewer) or through indirect connection including but not limited to spills into catch basins, cracked sanitary sewers and illegal dumping.

**VI.C.1. Permit requirement.** *The Permittee must:*

**VI.C.1.a** *Develop, implement and enforce a program to detect and eliminate illicit discharges (as defined in 40 CRF§122.26(b)(2)) into the Permittee's MS4;*

A GIS-based storm sewer map has been created to facilitate the detection program to help facilitate the detection and elimination of illicit discharges.

The City adopted an Illicit Discharge Program Ordinance in 2005 to provide the mechanism to detect, enforce and eliminate illicit discharges to the stormwater system and Carson River.

**VI.C.1.b** *Develop, if not already completed, a storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharge from those outfalls;*

The storm sewer system map has been developed.

**VI.C.1.c** *To the extent allowable under State or local law, effectively prohibit, through ordinance or other regulatory mechanism, non-stormwater discharges into the Permittee's MS4 and implement appropriate enforcement procedures and actions;*

Carson City adopted an ordinance that addresses illicit stormwater discharges and connections. The 2005 ordinance (12.19) provides City staff the ability to inspect, enforce and correct any known illicit discharge in Carson City.

**VI.C.1.d** *Develop and implement a plan to detect and address non-stormwater discharges, including illegal dumping, into the Permittee's MS4;*

The Environmental Control Division of Public Works provides most of the detection and elimination of non-stormwater discharges, including illegal

dumping, to the stormwater system. Since 1992, our (ECA) Environmental Control Authority has operated with measurable success an EPA approved Pretreatment Program. The ECA division currently inspects on average 550 facilities a year. As a part of their daily industrial and commercial site inspections, Environmental Control personnel look for potential illicit discharge sources but also act on any suspicious flows.

Priority areas of illicit discharge detection can change based on the type of business or industrial use. Often a change in management causes increased site inspections and observations.

Priority areas likely to have illicit discharges are identified by business/industry activity and their location near drainage facilities.

Cross connections between sanitary sewer and storm drain systems have not been a problem in the City.

Also, field inspections for illicit discharges are conducted randomly by the Stormwater Division personnel. Field notes and sometimes photographs are taken during the inspection. In addition, a visual inspection of each outfall is conducted biannually. Dry weather observations are particularly useful in detecting non-stormwater discharges.

***VI.C.1.e*** *Inform public employees, businesses and the general public about the hazards associated with illegal discharges and improper disposal of waste;*

Information regarding illicit discharges detection and elimination has been created. This information is given to the public through direct mailing and provided at several locations around the city, such as the City Hall.

Public Works – Stormwater Division has placed aluminum markers on every drainage inlet in Carson City. The marker says “no dumping, drains to river”. Also, there are signs in several areas that restrict dumping or storage of material in floodways.

***VI.C.1.f*** *Address the discharges listed in Part I.E (non-stormwater pass through flows) or flows (i.e., illicit discharges) only if the Permittee identifies them as a significant contributor of pollutants to the Permittee’s MS4;*

None of the listed non-stormwater sources 1 through 15 are considered significant contributors of pollution in the city, see list of exception in CCMC 12.19.090 2(a).

**VI.C.1.g** *The Permittee may also develop a list of other similar occasional incidental non-stormwater discharges (e.g. non-commercial or charity car washes, etc.) that will not be addressed as illicit discharges. These non-stormwater discharges must not be reasonably expected to be significant sources of pollutants to the MS4 either because of the nature of the discharges or conditions the Permittee has established for allowing these discharges to the Permittee's MS4 (e.g., a charity car wash with appropriate controls on frequency, proximity to sensitive waterbodies, BMPs on the wash water, etc.) Permittee must document in the SWMP any local controls or conditions placed on the discharges. The Permittee shall include a provision prohibiting any individual non-stormwater discharge that is determined to be contributing significant amounts of pollutants to the MS4.*

Also, under CCMC 12.19.090 is a list of other exceptions to the prohibited discharges.

"2.The commencement, conduct or continuance of any illegal discharge to the storm sewer system is prohibited except as described as follows:

- (a)The following discharges are exempt from discharge prohibitions established by this ordinance: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wet-land flows, swimming pools (if dechlorinated - typically less than one PPM chlorine), firefighting activities, and any other water source not containing pollutants.
- (b)Discharges specified in writing by the ECA as being necessary to protect public health and safety.
- (c)Dye testing is an allowable discharge, but requires a verbal notification to Carson City development services prior to the time of the test.
- (d)The prohibition shall not apply to any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm sewer system."

**VI.C.2. *Decision process.*** *The Permittee shall document the decision process for the development of a stormwater illicit discharge detection and elimination program. The Permittee's rationale statement must address both the overall illicit discharge detection and elimination program and the individual BMPs, measurable goals, and responsible persons for the program. The rationale statement must include the following information, at a minimum:*

**VI.C.2.a** *How the Permittee will develop a storm sewer map showing the location of all outfalls and the names and location of all receiving waters. Describe the sources of information the Permittee will use for the maps and how the Permittee plans to verify the outfall locations with field surveys. If the Permittee has already completed the map, describe how the map was developed. Also, discuss how the Permittee will update the map and the frequency of the updates;*

A storm sewer map has been created several years ago. The maps were in the form of run book pages that divide the city into a grid. The run book pages are updated monthly and accessed by Public Works personnel through iPad tablets. In conjunction with the run books, a GIS-based map system has been developed showing the existing storm sewer pipe, manhole, inlets, channels and basins.

The storm sewer map and database are kept in the City's GIS data base and are updated through "record drawings" of permitted and constructed public and private facilities. Inputting new facilities into the GIS data base is a continual task. A method has been developed for Utilities, Stormwater Utility, and Street personnel to provide updated information to the GIS Division when discrepancies are noted in the field. City personnel are able to detect discrepancies during normal and routine maintenance of the various utility systems and provide the updated information to be included or changed in the GIS data base.

**VI.C.2.b** *The mechanism (ordinance or other regulatory mechanism) the Permittee will use to effectively prohibit illicit discharges into the MS4 and why the mechanism was chosen. If the Permittee needs to develop this mechanism, describe the plan and the schedule to do so. If the Permittee's ordinance or regulatory mechanism has already been developed, include a copy of the relevant sections with the SWMP;*

The City chose to adopt a City Ordinance in 2005 (CCMC 12.19) that specifically dealt with illicit discharges in the MS4.

**VI.C.2.c** *The Permittee's plan to ensure that by using appropriate enforcement procedures and actions, the illicit discharge ordinance (or other regulatory mechanism) is implemented.*

The ordinance has a "right of entry" provision and the City has well-trained staff knowledgeable in the detection and identification of illicit discharges.

**VI.C.2.d** *The Permittee’s plan to detect and address illicit discharges to the system, including discharges from illegal dumping and spills. The Permittee’s plan shall include dry weather field screening for non-stormwater flows and field tests of selected chemical parameters as indicators of discharge sources. The Permittee’s plan shall also address on-site sewage disposal systems that overflow (“Sanitary Sewer Overflows”) into the storm drainage system. The Permittee’s description must address the following, at a minimum:*

**VI.C.2.d.i** *Procedures for locating priority areas which include areas with a higher likelihood of illicit connections (e.g., areas with older sanitary sewer lines, for example) or ambient sampling to locate impacted reaches;*

**VI.C.2.d.ii** *Procedures for tracing the source of an illicit discharge, including the specific techniques that will be used to detect the location of the source;*

**VI.C.2.d.iii** *Procedures for removing the source of the illicit discharge;*

**VI.C.2.d.iv** *Procedures for program evaluation and assessment;*

CCMC Chapter 12.19 - Stormwater System Illicit Discharges and Connections describes the procedure for the above questions in detail. Environmental Control personnel are in charge of enforcing the ordinance. The illicit detection discharge program includes site inspections of business/industrial sites, field investigation, complaint/tip follow-up and education on methods to eliminate illicit discharge. This program does include periodic visual inspections of major outfalls and procedures for tracing illicit connections.

Also, field inspections for illicit discharges are conducted randomly by the Stormwater Division personnel. Field notes and sometimes photographs are taken during the inspection. In addition, a visual inspection of each outfall is conducted biannually. Dry weather observations are particularly useful in detecting non-stormwater discharges.

If non-stormwater discharges are identified at an outfall, the source of the discharge will be investigated through several means including identifying potential sources within the basin, chemical analysis of the non-stormwater discharge to identify potential source may be needed, review of citizen complaints or dumping, odors, unusual activity, and review of sanitary sewer maps to identify possible cross connections. The list of potential non-stormwater discharge sites within the basin will be matched to the type of discharge identified. Generally the investigation would start at the downstream end of the basin and work upstream. Procedures may include

smoke testing or the storm and possibly sanitary sewer systems and dye testing of suspected drains or connections. TV inspection may be required of suspected reaches.

If a specific business or industry is identified as the source of the non-stormwater discharge, the site will be visited and a visual examination of the piping connections and review of the plumbing and architectural plans will be examined. An assessment of whether it is a one-time occurrence or a chronic situation is made. Appropriate corrections are identified. The correction may include education to correct the behavior that caused the discharge and removal of illicit connections to the storm drainage system. If the illicit discharge is not corrected, criminal prosecution may result.

Illegal dumping is the disposal of waste in an unpermitted area, such as a back area of a yard, stream bank or other off-road area. Illegal dumping can also be the pouring of liquid wastes or disposing of trash down storm drains. The Carson City SWMP employs public education as a means of minimizing stormwater pollution due to illegal dumping. Public education materials have been developed to alert the citizens and business and industry community to the water quality consequences of illegal dumping and provide guidance to help citizens identify illegal dumping activities. The information urges citizens to call the stormwater hot line to report illegal dumping activities.

Carson City has had a storm drain inlet marker program in place for many years. This program alerts citizens to the fact that dumping of liquid waste or trash down storm drains is not allowed. This program will continue as new facilities are built.

Carson City Public Works maintains the storm water system and will inspect at least 20 percent of the system annually. Under Public Works' 2005 Good Housekeeping Municipal BMPs and 2013 Stormwater Operations and Maintenance manuals, the system is evaluated and is either classified as good or scheduled for maintenance as identified in the manuals.

The City operates a household hazardous waste program at its landfill. The program is currently being reviewed and may have to be modified limiting waste products that have low or no value for the recycled waste product. Information on hours of operation and items collected are given on the City's website, [www.carson.org](http://www.carson.org).

**VI.C.2.d.v** *The plan the Permittee will use to inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste. Discuss how this plan will coordinate with the public education minimum*

*measure and the pollution prevention/good housekeeping minimum measure programs;*

The Carson City SWMP provides information to citizens and businesses throughout the community through print or video media or on the stormwater web site regarding illicit discharges. The information will be prepared in a similar format to the general storm system program information and will reinforce and build on all the other information on stormwater pollution. The information provided in the SWMP staff training regarding pollution prevention/good housekeeping covers the hazards of improper disposal of wastes.

The Carson City SWMP provides several points of contact, the stormwater hotline, Carson City Connect app, Public Works' office and email addresses, where citizens can call or email to report illicit discharges to the stormwater system. There are many ways citizens are able to inform the City or get additional information on stormwater pollution, volunteer opportunities or file complaints.

***VI.C.2.d.vi*** *The person(s) responsible for overall management and implementation of the stormwater illicit discharge detection and elimination program and, if different, is the person(s) responsible for each of the BMPs identified for this program;*

Carson City Public Works – Environmental Control Division will be responsible for the overall management and implementation of the illicit discharge detection and elimination program.

***VI.C.2.d.vii*** *Discuss how the Permittee will evaluate the success of this MCM, including how the Permittee selected the measurable goals for each of the BMPs;*

These measurable goals will be considered successful if the Program:

- Continues regular updates to the storm sewer map.
- Continues to enforce illicit discharge program ordinance.
- Continues to maintain stormwater hotline.
- Continues to monitor stormwater outfalls on a biannual basis.
- Continues to inspect the storm drain system, inspect 20% of the system annually.
- Continues to train staff in illicit detection program and procedures.
- Continues to operate and promote the hazardous material/used oil collection program.



## Timeline

Year 2018 – Complete GIS data base transfer for the storm sewer map by November 16, 2018.

### VI.D. Construction Site Stormwater Runoff Control

A major source of the TMDL listed pollutants for the Carson River (total phosphorous, total suspended solids and turbidity) is sediment carried from construction sites. Runoff from construction sites may also contain oil/grease, solid and sanitary wastes, pesticides, and construction chemicals. Carson City has adopted design standards and BMPs for erosion and sediment control and pollution control for construction sites. The City has also adopted ordinances to provide the mechanism for the City to inspect and enforce the required BMPs prior to and during construction.

The Carson City SWMP prepared a separate SWMP for the Clear Creek watershed. The CCSWMP includes requirements to ensure that there will be no discharge of pollutants into Clear Creek as a result of construction activity. The CCSWMP will be evaluated to determine the effectiveness of the chosen BMPs and may contain different minimum threshold limits to eliminate the potential for sediment and erosion control from construction projects less than one acre.

**VI.D.1 Permit requirement.** *The Permittee shall develop, implement, and enforce a program to reduce pollutants from any stormwater runoff to the Permittee's MS4 from construction activities that result in a land disturbance of greater than or equal to one (1) acre. Reduction of stormwater discharges from construction activity disturbing less than one (1) acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one (1) acre or more. If the NDEP waives the requirements for stormwater discharges associated with small construction activity in accordance with 40CRF§122.26(b)(15)(i), the Permittee is not required to develop, implement, and/or enforce a program to reduce pollutant discharges from such sites. The Permittee's program must include the development and implementation of, at a minimum:*

The Carson City SWMP has developed and implemented a more stringent program to reduce pollutants in stormwater runoff from construction activities than a land disturbance of greater than or equal to one acre. Reduction of

stormwater discharges from construction activity disturbing less than one acre is included in the program as stated in CCMC 12.18.030(3).

Development creating 10,000 square feet of new impervious area and/or 50 cubic yards of grading and/or one acre or more of earth disturbance is subject to the requirements of the ordinance.

**VI.D.1.a** *An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State or local law;*

The Carson City SWMP adopted an ordinance providing authoritative powers to the City's Development Standards (Carson City Municipal Code 12.18). The Development Standards, specifically Division 13, Erosion & Sediment Control, require erosion and sediment controls and ensure compliance. The Standard also requires construction site operators to implement appropriate erosion and sediment control BMPs; trash management BMPs; procedures for site plan review that includes consideration of potential water quality impacts; procedures for receipt and consideration of information submitted by the public regarding erosion and sediment control problems; and procedures for site inspection and enforcement of control measures.

The enforcement mechanisms are included in both the Design Standards and the Municipal Code as described in the City ordinances. These mechanisms include review of stormwater site plans and erosion and sediment control plans, inspection of construction projects, stop-work orders and denial of a building permit until all erosion/sediment control measures are approved and maintained.

**VI.D.1.b** *Requirements for construction site operators to implement appropriate erosion and sediment control BMPs;*

Construction site operators are required, by ordinance, to implement erosion and sediment control BMPs. A menu of BMPs is provided in Division 13 of the Development Standards.

BMPs include the following:

- Mark clearing limits
- Establish construction access including vehicle wash areas
- Control flow rates
- Install sediment controls
- Stabilize soils
- Protect slopes
- Protect drain inlets
- Stabilize channels and outlets

- Control pollutants
- Management of pH modifying sources
- Maintenance of the BMPs

The SWMP and CCSWMP contain specific information and requirement for erosion and sediment control facilities including sizing and design criteria.

***VI.D.1.c*** Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;

Construction site operators are required, by the ordinance, to control building wastes, chemicals, litter and sanitary wastes to prevent stormwater pollution. A menu of BMPs is provided in Division 13 – Erosion & Sediment Control.

***VI.D.1.d*** Procedures for site plan review which incorporate consideration of potential water quality impacts;

One of the requirements that is included in the erosion and sediment control ordinance is a review of the stormwater site plan and construction plans to verify that proper erosion and sediment control and site maintenance measures are adequate to prevent water quality impacts. The stormwater site plan is a comprehensive plan that contains all of the technical information and analysis necessary for regulatory agencies to evaluate a proposed new development or redevelopment project of compliance with stormwater requirements.

***VI.D.1.e*** Procedures for receipt and consideration of information submitted by the public; and

The public can submit comments on any subject in multiple ways. The public can call the Stormwater hotline, email the Stormwater hotline, use Carson City Connect, call a department or person within a department or send a letter to a department. Any information is routed to the appropriate person or department within the City.

***VI.D.1.f*** Procedures for site inspection and enforcement of control measures.

City inspectors are knowledgeable in erosion/sediment control methodology. They are able to determine erosion/sediment control BMPs that are not adequate and have the authority to take enforcement actions, such as stop work orders.

**VI.D.2** ***Decision process.** The Permittee shall document the decision process for the development of a construction site stormwater control program. The Permittee's rationale statement must address both the overall construction site stormwater control program and the individual BMPs, measurable goals, and responsible person(s) for the program. The rationale statement must include the following information, at a minimum:*

**VI.D.2.a** *The mechanism (ordinance or other regulatory mechanism) the Permittee will use to require erosion and sediment controls at construction sites and why that mechanism was chosen. If the Permittee needs to develop this mechanism, describe the plan and the schedule to do so. If the Permittee's ordinance or regulatory mechanism is already developed, include a copy of the relevant sections with the SWMP description;*

The Carson City SWMP developed an ordinance to require erosion and sediment controls at construction sites. The ordinance method was chosen so that the appropriate sanctions to ensure compliance could be included in the regulation. Carson City reviewed ordinances developed by other municipal agencies and regions to help develop the adopted ordinance. Division 13 of City's Design Standards was adopted in 2006.

Part of the City's ordinance and design standards is the preparation of Construction Stormwater Pollution Prevention Plan (SWPPP) to be submitted as part of the plan review process. The SWPPP shall include, but is not limited to, the following:

- Mark clearing limits
- Establish construction access
- Control flow rates
- Install sediment controls
- Stabilize soils
- Protect slopes
- Protect drain inlets
- Stabilize channels and outlets
- Control pollutants
- Control dewatering
- Maintain BMPs
- Manage the project

Permit issuance, after City review, will require the construction site operators to install and maintain the stormwater BMPs at all times. Inspection frequency will be established and monitored through the duration of the permit.

**VI.D.2.b** *The Permittee's plan to ensure compliance with the erosion and sediment control regulatory mechanism, including the sanctions and enforcement mechanisms that will be used to ensure compliance. Describe the procedures the Permittee will use when imposing certain sanctions. Possible sanctions include monetary penalties such as fines and non-monetary penalties such as stop work orders, bonding requirements, and/or permit denials for non-compliance;*

The Carson City SWMP includes control measures in the Construction Site Erosion and Sediment Control ordinance (CCMC 12.18, Div 13). The control measures have been established to promote compliance with the Municipal Code, City design standards and the conditions of this permit. The control measures include:

- The permit associated with any applicable land development will require an erosion and sediment control plan. Permit conditions will require the installation and maintenance of permitted BMPs.
- City's inspectors are provided with right of entry to inspect construction BMPs.
- Non-compliance with the erosion and sediment control plan will warrant notification by the City Engineer, or authorized agent, and correction of non-compliant items by City's forces or contractor if the non-compliance persists, including Stop Work orders.
- Costs associated with City-required corrective measures will be charged to the permit holder and/or in a lien assessed to the property. The City can also withhold any further permits until all costs are paid.

**VI.D.2.c** *The Permittee's requirements for construction site operators to implement appropriate erosion and sediment control BMPs and control waste at construction sites that may cause adverse impacts to water quality. Such waste includes discarded building materials, concrete truck washouts, chemicals, litter and sanitary waste;*

The control of other waste sources, i.e., discarded building materials, concrete truck washouts, sanitary wastes, are part of the SWPPP requirements and verified during plan review. The other waste source BMPs will be inspected and enforced with programs established with the stormwater site runoff BMPs.

**VI.D.2.d** *The Permittee's procedures for site plan reviews, including the review of pre-construction site plans which incorporate potential water quality impacts. Describe the Permittee's procedures and the rationale for how the Permittee will identify certain sites for site plan review, if not all plans are reviewed. Describe the estimated number and percentage of sites that will have pre-construction site plans reviewed;*

A Stormwater Site Plan is a comprehensive plan containing all of the technical information and analysis necessary for the regulatory agency to evaluate a proposed new development or redevelopment project for compliance with stormwater requirements. Site plan requirements, at a minimum, require the following:

- Collect and analyze information on existing conditions
- Prepare preliminary development layout
- Perform off-site analysis
- Determine applicable minimum requirements
- Prepare a Permanent Stormwater Control Plan
- Prepare a Construction Stormwater Pollution Prevention Plan

The minimum land disturbing threshold for triggering the preparation of a Stormwater Site Plan is earth disturbances of more than 1 acre in size or areas greater than 10,000 square feet of new impervious surface or of more than 50 cubic yards of grading.

**VI.D.2.e** *The Permittee's procedure for receipt and consideration of information submitted by the public. Consider coordinating this requirement with the Permittee's public education program.*

The public can submit comments on any subject in multiple ways. The public can call the stormwater hotline, email the stormwater hotline, use Carson City Connect, call a department or person within a department or send a letter to a department. Any information is routed to the appropriate person or department within the City. Specific correspondence related to a permit review is either by email or U.S. mail to the permit applicant.

**VI.D.2.f** *The Permittee's procedures for site inspection and enforcement of control measures, including how the Permittee will prioritize sites for inspection;*

The Carson City SWMP has developed a site inspection program in conjunction with the development of the erosion and sediment control ordinance. Site inspection is required in order to implement an effective erosion and sediment control program. The site inspector uses a check list to

conduct site inspections. Site inspections must be conducted on each site-issued permit that meets the minimum thresholds for stormwater controls.

The City current decision matrix for determining which sites require a higher level of involvement deals with the site's location near the Carson River. The matrix takes into consideration factors such as project type, project size, vicinity to stormwater receiving waters, soil conditions, citizen complaints, etc., for determining which projects, if any, will receive more involvement.

***VI.D.2.g*** *The person(s) responsible for overall management and implementation of the construction site stormwater control program and, if different, the person(s) responsible for each of the BMPs identified for this program;*

Carson City Development Services will be the organization responsible for the overall management and implementation of the City's construction site stormwater runoff control program.

***VI.D.2.h*** *Describe how the Permittee will evaluate the success of this minimum measure, including how the Permittee selected the measurable goals for each of the BMPs*

Staff training is based on City policy related to each department's responsibility in the SWMP. Staff training is biannual with minimum contact hours and training subject set by the immediate supervisor. There are three main components to SWMP training. They consist of construction BMPs, Good Housekeeping Practices, and the City's Storm Water Management Program. Training materials used include videos such as "Municipal Storm Water Pollution Prevention", "Ground Control", and "Rain Check" from Excal Visual; and Powerpoint presentations.

These measurable goals will be considered successful if the Program:

- Continues to maintain stormwater hotline and Carson City Connect.
- Continues to enforce BMPs for construction site erosion and sediment control as required under the Development Standards, Division 13.
- Continues to train staff in construction site erosion/sediment control management and enforcement methods per the training policy.

## **VI.E. Post-Construction Stormwater Management Requirements for New Development and Significant Redevelopment Projects**

**VI.E.1** *The Permittee shall develop a post-construction stormwater management BMP program for new development and significant redevelopment (“NDSR”) projects that is suited for the unique hydrologic, hydrogeologic and regional conditions of the Permittee’s locality. The program shall focus on planning procedures consistent with the goals identified in Part VI.E.2.*

**VI.E.2** *The post-construction stormwater management program shall have the following goals:*

**VI.E.2.a** *To prevent stormwater discharges from post-construction projects from causing or contributing to downstream violations of water quality standards of any pollutant of concern to the MEP; and*

**VI.E.2.b** *To promote the improvement of ambient water quality by reducing the discharge of pollutants in stormwater.*

The Carson City SWMP has developed, implemented, and enforced a program to address stormwater runoff from new development and significant redevelopment projects that disturb more than 1 acre in size or for areas greater than 10,000 square feet of new impervious surface or for more than 50 cubic yards of grading (CCMC 12.18).

**VI.E.3** *The post-construction stormwater management program shall address at a minimum the following elements:*

**VI.E.3.a** *Describe how the Permittees will review and enhance the SWMP post-construction program requirements in a manner appropriate for the unique hydrologic, hydrogeologic and regional conditions and needs of the Permittee’s locality. The review shall address the following elements:*

**VI.E.3.a.i** *Describe how the Permittees will develop, implement and enforce a program to address post-construction urban runoff from NDSR projects that disturb areas  $\geq 1$  acre, including project  $<1$  acre that are part of a larger common plan of development or sale, that discharge into the MS4 by ensuring that NDSR projects are complying to the MEP with the requirements of this program;*

Any project that meets the threshold of CCMC 12.18 is required to maintain their on-site stormwater system. If a significant redevelopment project is being proposed and meets the minimum thresholds in CCMC 12.18, the redevelopment project would have to include construction of stormwater facilities and maintain those facilities.



**VI.E.3.a.ii** *Describe how the Permittees will develop low-impact development (“LID”) measures that will remain in effect after construction is complete and are effective and appropriate for the Permittee’s locality and its environment. The program will outline the selected LID measures found effective and appropriate for the Permittee’s locality along with a summary and schedule for implementation in the MS4;*

Low Impact Development (LID) is an approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible (EPA Website, 2011). Incorporating LID practices during the initial development design or during redevelopment will help reduce the amount of stormwater runoff contributed and reduce the potential pollutants carried to the storm system.

The Carson City SWMP will work to develop LID practices that are appropriate for the climate and hydrology of the Carson City. LID practices and requirements would be included in Division 14 Storm Drainage in the Development Standards. Implementation of LID would be in the fall of 2018.

Below is a list of LID practices that will be reviewed for inclusion as post-construction BMPs:

- Rain Gardens and Bio-retention
- Sidewalk Storage
- Vegetated Swales, Buffers, and Strips; Tree Preservation
- Roof Leader Disconnection
- Rain Barrels and Cisterns
- Permeable Pavements
- Soil Amendments
- Impervious Surface Reduction and Disconnection
- Source controls

**VI.E.3.a.iii** *Describe how the Permittees will develop any additional structural and non-structural BMPs that will remain in effect after construction is complete and are effective and appropriate for the Permittee’s locality and its environment. The program will outline the selected BMP measures found effective and appropriate for the Permittee’s locality along with a summary and schedule for implementation in the MS4;*

The Carson City SWMP will develop and implement strategies including a combination of structural and non-structural BMPs. The BMPs chosen will be appropriate for the arid climate of Carson City, will minimize water quality impacts and attempt to maintain pre-development conditions. The BMPs

chosen will be applied to the general urbanized area Stormwater Management Plan and the CCSWMP. The Stormwater Management Plan and the CCSWMP may include the following BMPs.

#### Non-structural BMPs

- Policies to provide requirements and standards to direct development to use low impact development techniques to the extent practicable
- Policies to minimize impact to sensitive areas, maintain or increase open space, provide buffers along waterways, especially Clear Creek
- Policies to minimize impervious surfaces and disturbance of soil
- Operation and maintenance programs and policies for stormwater facilities
- Education programs for developers and the public about designs that minimize water quality impacts

#### Structural BMPs.

- Filtration practices such as grassed swales, sand filters and filter strips
- Infiltration practices such as infiltration basins and infiltration trenches
- Runoff pretreatment practices, such as catch basin inserts, manufactured products for stormwater inlets

Adopted post-construction BMPs will be evaluated for effectiveness and maintainability after initial construction. BMPs found to not provide the desired level of benefit or are too cumbersome to maintain, resulting in a decreased level of effectiveness, will be re-evaluated.

New post-construction BMPs will be evaluated and included in the SWMP or Carson City Design Standards if they are shown to be effective and maintainable.

***VI.E.3.a.iv Describe procedures to assure that future regional flood management projects assess the impacts on the water quality of receiving water bodies;***

New flood hazard management projects will be required to follow the rules and regulations developed under the Construction Site Stormwater Runoff Control and Post-Construction Stormwater Management in New Development and Redevelopment minimum control measures. As improvements are made to existing flood management projects, the MS4 will evaluate whether additional water quality protection devices or practices are warranted.

**VI.E.3.a.v** Describe how the Permittees will develop and implement an ordinance or other regulatory mechanism to address urban stormwater runoff from NDSR projects;

The Carson City Municipal Code 12.18, Erosion and Sediment Control, was adopted by the City as the mechanism to address urban stormwater runoff. The ordinance requires permittees to submit for plan review, incorporate post-construction stormwater controls in their design, and provide maintenance for those controls.

The ordinance also includes mechanisms for City inspectors and personnel to correct deficiencies and impose penalties on property owners who fail to maintain BMPs associated with their property.

**VI.E.3.a.vi** Describe how the Permittees will provide verification of maintenance provisions for structural BMPs located on private property that are subject to post-construction structural BMP requirements;

The City ordinance already adopted allows for inspection of stormwater controls on private property and penalties for property owners who fail to maintain the BMPs associated with their property. This requirement applies to any stormwater or water quality facility that is part of the development.

**VI.E.3.a.viii** Describe how the Permittees will develop and implement an inventory and tracking system for post-construction structural stormwater BMPs. The inventory and tracking system shall use at a minimum the following items: project or property owner's name, project location, project acreage, BMP type and description, inspection or contact date and summary of recommendations or any necessary corrective actions undertaken;

Privately held stormwater controls will be inventoried and shown on the City's storm sewer map. A catalog of all stormwater facilities will be maintained by the City in a GIS data base. Catalog information will include:

- Name and location of structural BMP
- Type of BMP
- Critical design criteria
- Required maintenance and at what frequency
- Recommended inspection frequency and inspection logs

**VI.E.3.a.viii** Describe how the Permittees will inspect and enforce the proper installation and long-term maintenance of post-construction structural stormwater BMPs;

Under CCMC 12.18, Erosion and Sediment Control, the City is authorized to inspect and enter property to repair stormwater facilities that are not properly maintained.

***VI.E.3.a.ix*** Describe how the Permittees will update its MS4 maps to show areas of NDSR, including any new stormwater major infrastructure that was constructed to serve these areas.

The current storm sewer map includes private, City, and State Transportation (NDOT) facilities. Permitted structural BMPs will be added to the stormwater map when the permits are completed and the projects have been signed off by the City.

New stormwater improvement projects initiated by the City will be added to the storm sewer map as the projects are completed and accepted by the City, as well as new NDOT facilities.

***VI.E.3.b*** All NDSR projects submitted to the permitting authority subsequent to program implementation as identified in VI.E.3.a.i that fall into one of the following categories shall be subject to one or more of the SWMP design standards developed in accordance with Part VI.E.4:

***VI.E.3.b.i*** Residential subdivisions five (5) acres or greater in size;

***VI.E.3.b.ii*** Single-family residences subject to local ordinances governing hillside development;

***VI.E.3.b.iii*** 100,000 square foot commercial and industrial developments;

***VI.E.3.b.iv*** Automotive repair shops (with Standard Industrial Classification (“SIC”) codes 5013, 7532, 7533, 7534, 7537, 7538, and 7539);

***VI.E.3.b.v*** Retail gasoline outlets disturbing greater than one (1) acre;

***VI.E.3.b.vi*** Restaurants disturbing greater than one (1) acres;

***VI.E.3.b.vii*** Parking lots greater than one (1) acre potentially exposed to urban runoff;

***VI.E.3.b.viii*** Any other NDSR projects the Permittee deems necessary to be included in this part.

The Carson City SWMP will develop a list of project categories which will require specific BMPs and special considerations. The adopted list will include those categories listed above as well as any other that are deemed significant to the MS4 as needing a more stringent control on the required BMPs.

Specific geographic areas may also be identified within the Carson Urban Area that will require any NDSR project to meet a higher level of stormwater control. These geographic areas may be near identified wetlands, sensitive areas, or the Carson River itself.

**VI.E.4** ***Design Standard.** The post–construction stormwater management program shall describe how NDSR projects specified in the previous section will implement the design standards outlined in this section. Subject to Section VI.E.4.e, the design standards program shall address at a minimum the following criteria:*

**VI.E.4.a** ***Peak-Urban Runoff Discharge Rates.** Describe how the Permittee will develop design standards for peak-urban runoff from NDSR projects that will provide protection against downstream erosion;*

City development standards already have criteria relating to flow velocity and methods to dissipate the erosion potential of the flow using energy dissipaters.

**VI.E.4.b** ***Site Design BMPs.** Describe how the post-construction stormwater management program will develop and implement site design BMPs in the site layout during the design and approval process to meet the goals of this program identified in Part VI.E.2;*

The requirement of LID once in the development standards would be implemented as any of the current requirements. The City uses a procedure call Major Project Review to inform applicants of standards they would need to consider while designing the project site.

**VI.E.4.c** ***Source Control BMPs.** The post-construction stormwater management program shall describe how source control BMPs will be implemented. The design standards program shall include the following source-control BMPs that are consistent with the goals of this program.*

**VI.E.4.c.i** *Slopes and channel design or protection to minimize erosion;*

**VI.E.4.c.ii** *Outdoor material storage areas designed to minimize the risk of stormwater runoff contacting and carrying away pollutants to the MS4;*

**VI.E.4.c.iii** *Trash storage areas designed to minimize the risk of stormwater runoff contacting and carrying away pollutants to MS4.*

**VI.E.4.d Structural Treatment Control BMPs.** *The post-construction stormwater management program shall describe how treatment control BMPs will be developed and implemented. “Treatment control BMPs” and “treat” refer to any onsite or offsite process that provides for infiltration or detention of stormwater or that removes pollutants through any physical, chemical, or biological process. The design standards program shall describe in sufficient detail how the Permittee will size treatment control BMPs using accepted hydrologic engineering quantitative methods and the following design criteria:*

**VI.E.4.d.i. Volumetric treatment Control BMP design criteria.** *The post-construction stormwater management program shall describe how the Permittee will design volume-based BMPs to treat the increase of stormwater discharges from projects listed in Part VI.E.3.b. The Permittee shall use one of the following conditions to develop the volumetric treatment control BMP design criteria:*

**VI.E.4.d.i.1** *Historical rainfall records for the Permittee’s locality to determine the maximized capture stormwater volume for the area for the 24-hour event using the formula recommended in Urban Runoff Quality Management, Water Environment Federation Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or*

**VI.E.4.d.i.2** *The volume of annual runoff based on unit basin storage water quality volume, to achieve at least 80% of volume treatment by the method recommended in hydrology manuals, textbooks or similar technical publications; or*

**VI.E.4.d.i.3** *An alternative treatment design criteria, appropriate for the unique hydrologic, hydrogeologic, and regional conditions of the Permittee’s locality. Any alternative design criteria shall be submitted to NDEP with sufficient technical data to establish the appropriateness of the alternative treatment design criteria.*

**VI.E.4.d.ii Flow-Based BMP design criteria.** *The post-construction stormwater management program shall describe how the Permittee will design flow-based BMPs to treat stormwater discharges from*

projects listed in Part VI.E.3.b. The Permittee shall use one of the following conditions to develop flow-based BMP design criteria:

**VI.E.4.d.ii.1** Historical rainfall data for the Permittee's locality to determine the maximum flow rate of runoff from rainfall per house, for each hour of a storm event; or

**VI.E.4.d.ii.2** The maximum flow rate of runoff produced by the 80<sup>th</sup> percentile hourly rainfall intensity (for each hour of the storm event), as determined from the local historical rainfall record; or

**VI.E.4.d.ii.3** The maximum flow rate of runoff for each hour of a storm event, as determined from the local historical rainfall record that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 80<sup>th</sup> percentile hourly rainfall intensity; or

**VI.E.4.d.ii.4** An alternative treatment design criteria, appropriate for the unique hydrologic, hydrogeologic and regional conditions of the Permittee's locality. Any alternative design criteria shall be submitted to NDEP with sufficient technical data to establish the appropriateness of the alternative treatment design criteria.

**VI.E.4.e** If the Permittees will not use some or all of the design standards described in this section, the Permittee shall provide justification using documentation and engineering analyses, and propose reasonable alternatives that are appropriate for the unique hydrologic, hydrogeologic and regional conditions in the Permittee's locality.

**VI.E.4.f** **Effect of the Post-Construction Stormwater Management Program on Water Quality Standards and Drinking Water Supply**

**VI.E.4.f.i** The Permittees shall provide a written evaluation whether the criteria developed as part of the post-construction stormwater management program will tend to cause or contribute to elevated levels of pollutants of concern in surface waters within Permittee's locality and shall submit the evaluation to NDEP as part of the post-construction program; and

**VI.E.4.f.ii** If any criteria developed under the post-construction stormwater management program in accordance with the provisions of this permit would have a reasonable potential of causing or contributing to any water quality or water quantity impairment, or violates

*Nevada law, they shall be rescinded, and the Permittees shall determine whether alternate criteria can be implemented without causing water quality or water quantity impairments or violating Nevada law.*

Carson City SWMP acknowledges the above stated criteria and requirements and will work through each item as a part of developing the LID portion of Division 14 of the Development Standards.

These measurable goals will be considered successful if the Program:

- Continues to review the adequacy of the stormwater utility fees.
- Continues to enforce post construction BMP maintenance ordinance.
- Continues Implementation of inspection program for existing stormwater quantity and quality control facilities.

### **Timeline**

Year 2019 – Develop and adopt LID standards and incorporate them into Stormwater Division 14 of the Development Standards by December 19, 2019.

### **VI.F. Pollution Prevention/Good Housekeeping for Municipal Operations**

#### **VI.F.1. Permit requirement. The Permittee shall:**

**VI.F.1.a** *Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations; and*

The Carson City SWMP has developed and implemented an operation and maintenance program including training on stormwater pollution prevention at City operated shops and facilities.

**VI.F.1.b** *Using training materials that are available from EPA, the Division, Tribe or other organizations, the Permittees program must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.*



The Carson City SWMP pollution prevention/good housekeeping municipal training program includes pollution prevention training in lawn and grounds maintenance, vehicle maintenance and repair, maintenance of the stormwater conveyance system and utility construction and maintenance.

**VI.F.2** ***Decision process.** The Permittee shall document the decision process for the development of a pollution prevention/good housekeeping program for municipal operations. The Permittee's rationale statement must address both the overall pollution prevention/good housekeeping program and the individual BMPs, measurable goals, and responsible persons for the program. The rationale statement must include the following information, at a minimum:*

**VI.F.2.a** *The Permittee's operation and maintenance program to prevent or reduce pollutant runoff from the Permittee's municipal operations. The Permittee's program shall specifically list the municipal operations that are impacted by this operation and maintenance program. The Permittee shall also include a list of industrial facilities the Permittee owns or operates that are subject to the NDEP's Industrial Stormwater General Permit or individual NPDES permits for discharges of stormwater associated with industrial activities that ultimately discharge to the Permittee's MS4. Include the NDEP permit number or a copy of the Industrial NOI form for each facility.*

The pollution prevention/good housekeeping BMPs provide schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

The pollution prevention/good housekeeping program addresses the municipal operations within the MS4 that have the greatest potential for generating stormwater pollution and particularly the TMDLs of concern in the Clear Creek and Carson River systems. Many of the practices that are included in the pollution prevention/good housekeeping program are currently practiced by the SWMP. The pollution prevention/good housekeeping program does address the following aspects of municipal operation:

- Park, lawn and open space maintenance
- Vehicle operation and maintenance
- Street sweeping
- Street maintenance and repair

- Storm drainage system cleaning
- Utility construction and repair
- Hazardous materials storage

The municipal fleets operated and maintained by Carson City include vehicles used by Public Works, JAC, Fire, Police and Parks. The City provides major repair to public transportation vehicles through its vehicle operation and maintenance facility. Carson City vehicle maintenance facilities can generate significant loads of hydrocarbons, trace metals and other pollutants that can be carried off-site in stormwater runoff. Some of the sources of pollution generated at vehicle maintenance facilities include: solvents, antifreeze, brake fluid and brake lining, batteries, motor oils, fuels, and lubricating grease. Wash water from all vehicle washing done indoors or outdoors drains to the sanitary sewer system. The pollution prevention/good housekeeping program has provided BMPs for vehicle repair including such items as working in a building or undercover, proper procedures for draining fluids from vehicles and handling materials generated during vehicle repair.

The pollution prevention/good housekeeping program includes an existing street sweeping program. Regular street sweeping minimizes pollutant export to receiving waters. Sources of stormwater pollution that can be controlled by street sweeping include general trash, dirt and particulate matter on streets, sand and de-icing materials applied in the winter. Carson City currently has a fleet of three regenerative air sweepers. Street sweeping is done four days a week. Each month, the entire city-owned streets are swept. Tonnage of collected waste is recorded each month as well as evaluated on content. Annual reporting for 2016 will include a breakdown by weight of sediment, trash and green waste materials.

Carson City routinely cleans the storm drain system. Routine cleaning reduces the amount of pollutants, trash, and debris. Frequency of cleaning the storm drain system is dependent on criteria laid out in the Storm Drain Facilities Operation and Maintenance manual and the MS4 Good Housekeeping Municipal BMPs manual. The pollution prevention/good housekeeping plan will continue to include instruction on the proper methods of cleaning and waste material disposal.

The pollution prevention/good housekeeping program will continue to include education on the proper erosion and sediment control techniques that should be employed by maintenance crews during utility construction or repair.

The pollution prevention/good housekeeping program will continue to include BMPs that should be followed to properly store, use and dispose of hazardous materials that are used in the municipal operations.

**VI.F.2.b** *Any employee training program the Permittee will use to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. Describe any existing, available materials the Permittee plans to use. Describe how this training program will be coordinated with the outreach programs developed for the public information minimum measure and the illicit discharge minimum measure.*

The emphasis of the pollution prevention/good housekeeping program is training of employees to increase awareness of the stormwater pollution potential of everyday activities and provide instruction on methods that can be used to prevent or minimize stormwater pollution. Various departments of the Carson City work force currently receive limited training in BMPs for safe handling of potentially harmful materials and proper disposal techniques for waste materials including wastes from vehicle maintenance and repair. The pollution prevention/good housekeeping program will continue training programs for the proper handling of materials used by staff or generated during routine operations including, but not limited to, materials removed during storm drainage cleaning, hazardous materials, yard wastes and the use of lawn care products. These training programs are extended to all employees who work in areas where the training may be appropriate. Furthermore, staff training is based on City policy related to each department's responsibility in the SWMP. Staff training is biannual with a minimum contact hours and training subject set by the immediate supervisor.

An integrated pest management program and lawn care program was developed in 2006. The information developed for this program will be reviewed and updated if necessary.

Carson City sewer and stormwater utility personnel will continue to be trained in methods of detecting illicit connections as part of the illicit connection reduction minimum control measure as well as good housekeeping BMPs.

**VI.F.2.c** *The Permittee's program description must specifically address the following areas:*

**VI.F.2.c.i** *Maintenance activities, maintenance goals, and long-term inspection procedures for controls to reduce floatables and other pollutants to the Permittee's MS4.*

The reduction of floatables and other pollutants to the storm drainage system will require a multi-faceted approach. The specific programs for each of the municipal operations included under the pollution prevention/good

housekeeping program will continue to include training on the proper methods of waste disposal and performance of maintenance activities that will prevent the release of floatables and other pollutants. Maintenance activities are scheduled to allow enough time to make sure that the work area is thoroughly cleaned and secured at the end of the workday. Street sweeping after large public events is done to reduce trash and floatables from entering the MS4. The pollution prevention/good housekeeping programs will continue to emphasize the importance of routine and long-term inspections and refresher training sessions to assure that all employees maintain high standards of pollution prevention awareness.

***VI.F.2.c.ii.*** *Controls for reducing the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yard, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas the Permittee operates. These measures shall include:*

***VI.F.2.c.ii.1A*** *description of salt and salt/sand storage piles at any of the Permittee's facilities. Salt and salt/sand piles shall be enclosed or covered by a storm resistant shelter to prevent exposure to rain, snow, snowmelt and /or runoff. If applicable, describe any temporary practices used to prevent exposure of salt and salt/sand piles to rain, snow, snowmelt and /or runoff. Sand may be stored outside and uncovered if BMPs such as setback from the storm sewer inlet, drop inlet protection, perimeter controls, or sedimentation basins are maintained to prevent discharge of sand to the MS4;*

***VI.F.2.c.ii.2*** *Permittees must develop and implement standard operating procedures ("SOP") for vehicle fueling, and receiving of bulk fuel deliveries at maintenance yard operations;*

***VI.F.2.c.ii.3*** *Permittees shall develop and implement an SOP for vehicle maintenance and repair activities that occur at municipal maintenance yard operations;*

***VI.F.2.c.ii.4*** *Permittees shall eliminate the unpermitted discharge of equipment and vehicle wash wastewater to waters of the U.S. from municipal maintenance yard operations by either installing a vehicle wash reclaim system, capturing and hauling the wastewater for proper disposal, connecting to sanitary sewer, (where applicable and approved by local authorities), ceasing the activity and /or applying for and obtaining a separate NPDES permit;*

The pollution prevention/good housekeeping program will continue using the existing management strategies, training and procedures to reduce or eliminate discharge of pollutants from the various municipal operations. The program includes procedures, instruction in and compliance with the following BMPs. The Standard Operation Procedures (SOP) were approved in 2005.

- Spill Prevention, Control & Cleanup
- Material Handling – Outdoor Loading/Unloading
- Outdoor Storage of Materials
- Sanitary Sewer Maintenance
- Water Utility Maintenance
- Drainage System Maintenance
- Landscape Management
- Vehicle and Equipment Fueling
- Vehicle and Equipment Cleaning
- Road and Street Maintenance
- Road Salt Application and Storage
- Plaza and Sidewalk Cleaning

Public Works has provided a covered shed over their winter salt storage.

***VI.F.2.c.ii.5*** *Procedures for the proper disposal of waste removed from the Permittee's MS4 and the Permittee's municipal operations, including dredge spoil, accumulated sediments, floatables and other debris;*

The pollution prevention/good housekeeping program contains waste disposal procedures that are followed for the disposal of wastes generated by the municipal operations. Carson City has a sweeper and vactor waste disposal dumpster at the Corporate Yard. The dumpster is hauled to the City's landfill when full. Carson City will continue the current practice of collecting hazardous waste, oil, anti-freeze and vehicle batteries from the public as well as its own operations.

***VI.F.2.c.ii.6*** *The person(s) responsible for overall management and implementation of the pollution prevention/good housekeeping program and, if different, the person(s) responsible for each of the BMPs identified for this program;*

Carson City Public Works is responsible for preparing and implementing the pollution prevention/good housekeeping program.

***VI.F.2.c.ii.7*** *Describe how the Permittee will evaluate the success of this minimum measure, including how the Permittee selected the measurable goals for each of the BMPs;*

The pollution prevention/good housekeeping program will be a success if all employees who work in areas that could potentially contribute to stormwater pollution have received training in pollution prevention/good housekeeping measures and the measures have been fully implemented.

These measurable goals will be considered successful if the Program:

- Continues to follow the procedures of the Good Housekeeping Program
- Continues to train Public Works and Parks staff per City policy
- Continues to follow Integrated Pest Management program
- Continues to collaborate with CWSD and other governmental agencies in the watershed to implement pollution prevention/good housekeeping programs

### **Timeline**

Year 2018 – Update the Municipal Pollution Prevention/Good Housekeeping program and Integrated Pest Management program by November 15, 2018.

### **VI.G. Carson City Urbanized Area Discharges to Clear Creek**

In addition to the updating of the SWMP for the general Carson City Urbanized Area discussing the programs and BMPs, the Carson City MS4 will continue to implement the six minimum control measures in the Clear Creek Master Stormwater Management Plan (CCSWMP). The requirements for the CCSWMP are listed below. The summary of the programs and BMPs that will be included in the CCSWMP are discussed in proceeding sections. When a program or BMP for the Clear Creek area differs from that proposed for the general Carson City Urbanized Area it will be clearly indicated.

- VI.G.1** *Permittees within the Carson City Urbanized Area shall maintain a separate Clear Creek Master Stormwater Management Program (“CCSWMP”). The CCSWMP must be developed, implemented, and enforced to reduce the discharge of pollutants to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of a construction area, unless a sediment basin providing storage for a calculated volume of runoff from a 2-year, 24-hour storm*

or 3,600 cubic feet of storage per acre drained, shall be provided. The CCSWMP shall include the following:

- VI.G.1.a** *A detailed description of BMPs that have been, or will be, implemented on construction projects located in the Clear Creek watershed;*
- VI.G.1.b** *A detailed description of sediment controls for all down slope boundaries (and for those side-slope boundaries deemed appropriate as dictated by individual site conditions) that have been, or will be, used on construction projects located in the Clear Creek watershed;*
- VI.G.1.c** *A detailed description of control techniques that have been, or will be, used by the Permittee to the MEP to ensure no illicit discharge of pollutants into Clear Creek;*
- VI.G.1.d** *A detailed description of system design and/or engineering methods the Permittee has used, or plans to use, to protect Clear Creek from illicit discharges of pollutants;*
- VI.G.1.e** *A schedule of implementation for all future short-term and long-term activities describing program development, implementation and maintenance;*
- VI.G.1.f** *An annual monitoring program to ensure the overall quality and health of Clear Creek;*
- VI.G.1.g** *An inventory and tracking program for all maintenance yards that have the potential to discharge pollutants into Clear Creek;*
- VI.G.1.h** *The Permittee's inspection program on its MS4 or construction sites to ensure no illicit discharges of pollutants into Clear Creek; and*
- VI.G.1.i** *The Permittee may partner with other MS4s to develop and implement the CCSWMP.*

In 2007, Carson City approved the CCSWMP for Clear Creek. Since Clear Creek is within Carson City, the approved ordinances and programs for erosion control, illicit discharge, construction BMP, post construction maintenance, good housekeeping, integrated pest management, outreach and public participation applies and is in full force. Again, Carson City SWMP has partnered with CWSD to provide a regional approach to reduce pollution in the Clear Creek watershed.

These measurable goals will be considered successful if the Program:

- Continues to collaborate with all entities within the watershed under the approved CCSWMP
- Includes any specific BMP that relates to the Clear Creek watershed in the LID standards and incorporate them into Stormwater Division 14 of the Development Standards.

Timeline

Year 2019 – Develop and adopt LID standards and incorporate them into Stormwater Division 14 of the Development Standards.

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 gathered and evaluated 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 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.

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