Farmington City

Storm Water Management Program

Permit # UTR090006

Submitted to:
State of Utah
Department of Environmental Quality
Division of Water Quality

Submitted by:
Farmington City
160 S Main
Farmington, UT 84025

November, 2021

Purpose

Farmington City's Storm Water Management Program (SWMP) is intended to give direction to the City in satisfying Federal and State water quality requirements as set forth under the National Pollutant Discharge Elimination System (NPDES) and Utah Pollutant Discharge Elimination System (UPDES) permits. The purpose of the SWMP is to establish a program which will effectively limit the discharge of pollutants from the Farmington City storm drainage system to the maximum extent practicable (MEP).

In an effort to prevent harmful pollutants from being carried by storm water runoff into local water bodies, this program outlines the implementation of controls in specific areas. The six minimum control measures addressed under the UPDES permit are:

1. Public Education and Outreach on Storm Water Impacts
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Storm Water Runoff Control
5. Long-Term Storm Water Management in Development and Redevelopment (Post-Construction Storm Water Management)
6. Pollution Prevention and Good Housekeeping for Municipal Operations

The SWMP includes the following information for each of the six minimum control measures:

- The Best Management Practices (BMPs) that the City will implement.
- The measurable goals for each of the BMPs.
- The persons/positions responsible for implementing or coordinating the BMPs.
- A rationale for how and why each of the BMPs and measurable goals for the program was selected.

Legal Authority

Federal

In 1972 Congress enacted the Clean Water Act (CWA). The primary purpose for this federal statute is to protect the nation's waters. The objective of the Act is the total elimination of the discharge of pollutants into the nation's waters. The NPDES is a provision of the CWA. This provision prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the Environmental Protection Agency (EPA), a state, or another delegated agency. As authorized by the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge into waters of the United States. Point sources are discreet conveyances such as pipes or man-made ditches.

Phase II of the NPDES permit program focuses on Small Municipal Separate Storm Sewer Systems (MS4s). The regulated entities must obtain coverage under an NPDES

stormwater permit and implement a SWMP. The main objective of the program is to control point source pollution in urbanized areas to the maximum extent practicable.

State

The State Department of Environmental Quality (DEQ) administers the NPDES permit program in the State of Utah. The State has a General Permit. The DEQ issues UPDES permits under the State's General Permit.

County

Each of the 15 cities in Davis County files for separate permits. Although Farmington City has been issued a separate permit, the City works jointly with the Davis County Storm Water Coalition and the Davis County Health Department to facilitate a program addressing the first three minimum control measures:

1. Public Education and Outreach on Storm Water Impacts
2. Public Involvement/Participation
3. Illicit Connection and Illicit Discharge Detection and Elimination

Components of the Coalition's program include public education and training among joint partners in the County. The Davis County Health Department cooperates with illicit discharge detection and elimination by providing an emergency spill contact.

City

Farmington is located in Davis County. The population of the community is estimated to be 25,000 (2020). The majority of the land use in the City is residential. There are some agricultural areas, and commercial development is increasing.

Farmington City will implement management practices that will effectively limit the discharge of pollutants from the Municipal Separate Storm Sewer System (MS4), protect water quality, and satisfy the appropriate water quality requirements of the *Utah Water Quality Act*. The City has established legal authority to control discharges to and from the storm drainage system through a combination of statutes, ordinances, permits, contracts and orders.

Management and oversight of the Farmington City Storm Water Management Program is funded by the Farmington City Storm Water Utility. The Farmington City SWMP is coordinated by the Storm Water Official.

SWMP Review and Modification

Farmington City will participate in an annual review of the SWMP. In conjunction with that review, an annual report will be prepared and submitted to the State. Any changes or modifications will be described and submitted. This review will include the following:

- A status review of the program implementation and compliance with the schedule of compliance contained in the SWMP
- A review of any revision or change of BMPs in the reporting year and assessment of the change or revision for effectiveness
- An overall assessment of the goals and direction of the SWMP and effectiveness of BMPs

An annual report will be submitted using the report form provided on the Division of Water Quality's (Division) website.

The SWMP may be modified in compliance with the following:

- Changes adding (but not subtracting) components, controls, or requirements to the SWMP may be made at any time upon written notification to the Division.
- Changes replacing an ineffective or unfeasible BMP specifically identified in the SWMP with an alternate BMP may be adopted at any time, provide the analysis is clearly outlined and subsequently approved by the Division. An analysis shall include:
    1. An explanation of why the BMP is ineffective or infeasible.
    2. Expectations or report on the effectiveness of the replacement BMP.
    3. An analysis of why the replacement BMP is expected to achieve the goals of the BMP to be replaced, or has achieved those goals.

- Change requests or notification must be made in writing and signed as required.

Chapter One
Public Education and Outreach on Storm Water Impacts

Chapter 1 defines the outreach and education efforts used to inform the public about storm water pollution issues in Farmington City. The City will continue to participate with the Davis County Storm Water Coalition in its efforts to provide public education and outreach to the citizens in Davis County.

Appendix A is a table showing the proposed activities of the Davis County Storm Water Coalition in which Farmington City will participate.

Permit Requirement 4.2.1

Farmington City will participate in a public education and outreach program to promote behavior change by the public to reduce water quality impacts associate with pollutants in storm water runoff and illicit discharges. The effort will include a multimedia approach and shall be targeted and presented to specific audiences for increased effectiveness. Education and outreach efforts will include the following four audiences:

(1) residents,
(2) businesses, institutions, and commercial facilities,
(3) developers and contractors (construction), and
(4) MS4-owned or operated facilities.

The minimum performance measures which should be based on land use and target audiences found within the community include:

Permit Requirement 4.2.1.1 *Targeted Pollutants Endangering Farmington Waters:*

Targeting specific pollutants and pollutant sources determined by the Coalition or City to be impacting, or have the potential to impact, the beneficial uses of receiving water. This includes providing information and outreach activities which describe the potential impacts from storm water discharges; methods for avoiding, minimizing, reducing and/or eliminating the adverse impacts of storm water discharges and the actions individuals can take to improve water quality, including encouraging participation in local environmental stewardship activities, based on the land uses and target audiences found within the City. Specific targeted pollutants and audiences were discussed in meetings with the Coalition members. Notes from those meetings are on record at Farmington City Hall.

Permit Requirement 4.2.1.1 – 4.2.1.6 *Document Educational Information Dispersed:*

(Public) Provide and document information given to the general public of the City's prohibitions against and the water quality impacts associated with illegal discharges and improper disposal of waste. The City and Coalition together will determine topics most relevant to the community.

(Institutions) Provide and document information given to institutions, industrial, and commercial facilities on an annual basis of the Permittee's prohibition against and the water quality impacts associated with illicit discharges and improper disposal of waste.

(Contractors) Provide information for engineers, construction contractors, developers, development review staff, and land use planners about the development of storm water pollution prevention plans (SWPPPs) and BMPs for reducing adverse impacts from storm water runoff from development sites.

(Employees of MS4) Provide and document information and training given to employees of Permittee owned or operated facilities concerning the Permittee's prohibition against and the water quality impacts associated with illicit discharges and improper disposal of waste.

(Managers of MS4) Provide and document training given to MS4 engineers, development and plan review staff, land use planners, and other parties as applicable to learn about Low Impact Development (LID) practices, green infrastructure practices, and to communicate the specific requirements for post-construction control and the associated Best Management Practices (BMPs) chosen within the SWMP.

Permit Requirement 4.2.1.7 *Evaluation of Program Effectiveness:*

The City program must show evidence of focused messages and audiences as well as demonstration that the defined goal of the program has been achieved. The City must define the specific messages for each audience. The City must identify methods that will be used to evaluate the effectiveness of the educational messages and the overall education program. Any methods used to evaluate the effectiveness of the program must be tied to the defined goals of the program and the overall objective of changes in behavior and knowledge.

Permit Requirement 4.2.1.8 *BMP Selection Rationale:*

The City must include written documentation or rationale as to why particular BMPs were chosen for its public education and outreach program.

Measurable Goals

The table below represents measurable goals that are to be implemented and assessed during the permit term. The purpose of measurable goals is to gauge permit compliance and program effectiveness.

Measurable Goals- Public Education & Outreach			
Target Date	**BMP**	**Responsible Party**	**Rationale**
		DCSWC= Davis County Storm Water Coalition	
1st Year July, 2021	○ Provide funding and review of 4th grade outreach program and provide education for all 4th grade classes in Davis County in cooperation with the Davis County Storm Water Coalition	DCSWC	This fits in with the curriculum and reaches future adults in the community
	○ Provide funding and participate in annual Water Fair for 4th graders in cooperation with the Davis County Storm Water Coalition	DCSWC	This fits in with the curriculum and reaches future adults in the community
	○ Publish one article in the Farmington City Newsletter addressing local storm water issues	Storm Water Official DCSWC	There is a need to educate residents. The newsletter reaches everyone with the water bill.
	○ Provide funding through the Davis County Storm Water Coalition for the Davis County television ad campaign	DCSWC	This is a joint program with other counties which has been funded for several years to reach the maximum number of residents.
	○ Provide funding and support for contractor, municipal employee, developer, institutions, industrial and commercial facilities etc. training annually through the Davis County Storm Water Coalition		There is a need to fund training for these groups. The coalition can facilitate the training for all participating communities.
2nd Year July, 2022	○ Provide funding and review of 4th grade outreach program and provide education for all 4th grade classes in Davis County in cooperation with the Davis County Storm Water Coalition	DCSWC	This fits in with the curriculum and reaches future adults in the community
	○ Provide funding and participate in annual Water Fair for 4th graders in cooperation with the Davis County Storm Water Coalition	DCSWC	This fits in with the curriculum and reaches future adults in the community
	○ Publish one article in the Farmington City Newsletter addressing local storm water issues	Storm Water Official DCSWC	There is a need to educate residents. The newsletter reaches everyone with the water bill.
	○ Provide funding through the Davis County Storm Water Coalition for the Davis County television ad campaign	DCSWC	This is a joint program with other counties which has been funded for several years to reach the maximum number of residents.
	○ Provide funding and support for contractor, municipal employee, developer etc. training annually through the Davis County Storm Water Coalition		There is a need to fund these groups. The coalition can facilitate the training for all participating communities.

3rd Year July, 2023	○ Provide funding and review of 4th grade outreach program and provide education for all 4th grade classes in Davis County in cooperation with the Davis County Storm Water Coalition ○ Provide funding and participate in annual Water Fair for 4th graders in cooperation with the Davis County Storm Water Coalition ○ Publish one article in the Farmington City Newsletter addressing local storm water issues ○ Provide funding through the Davis County Storm Water Coalition for the Salt Lake County television ad campaign ○ Provide funding and support for contractor, municipal employee, developer, institutions, industrial and commercial facilities etc. training annually through the Davis County Storm Water Coalition	DCSWC DCSWC Storm Water Official DCSWC DCSWC	This fits in with the curriculum and reaches future adults in the community This fits in with the curriculum and reaches future adults in the community There is a need to educate residents. The newsletter reaches everyone with the water bill. This is a joint program with other counties which has been funded for several years to reach the maximum number of residents. There is a need to fund these groups. The coalition can facilitate the training for all participating communities.
4th Year July, 2024	○ Provide funding and review of 4th grade outreach program and provide education for all 4th grade classes in Davis County in cooperation with the Davis County Storm Water Coalition ○ Provide funding and participate in annual Water Fair for 4th graders in cooperation with the Davis County Storm Water Coalition ○ Publish one article in the Farmington City Newsletter addressing local storm water issues ○ Provide funding through the Davis County Storm Water Coalition for the Salt Lake County television ad campaign ○ Provide funding and support for contractor, municipal employee, developer, institutions, industrial and commercial facilities etc. training annually through the Davis County Storm Water Coalition	DCSWC DCSWC Storm Water Official DCSWC DCSWC	This fits in with the curriculum and reaches future adults in the community This fits in with the curriculum and reaches future adults in the community There is a need to educate residents. The newsletter reaches everyone with the water bill. This is a joint program with other counties which has been funded for several years to reach the maximum number of residents. There is a need to fund these groups. The coalition can facilitate the training for all participating communities.

5th Year July, 2025	○ Provide funding and review of 4th grade outreach program and provide education for all 4th grade classes in Davis County in cooperation with the Davis County Storm Water Coalition ○ Provide funding and participate in annual Water Fair for 4th graders in cooperation with the Davis County Storm Water Coalition ○ Publish one article in the Farmington City Newsletter addressing local storm water issues ○ Provide funding through the Davis County Storm Water Coalition for the Salt Lake County television ad campaign ○ Provide funding and support for contractor, municipal employee, developer, institutions, industrial and commercial facilities etc. training annually through the Davis County Storm Water Coalition	DCSWC DCSWC Storm Water Official DCSWC DCSWC	This fits in with the curriculum and reaches future adults in the community This fits in with the curriculum and reaches future adults in the community There is a need to educate residents. The newsletter reaches everyone with the water bill. This is a joint program with other counties which has been funded for several years to reach the maximum number of residents. There is a need to fund these groups. The coalition can facilitate the training for all participating communities.

Chapter Two

Public Involvement and Participation

Chapter 2 outlines a plan to include public involvement and participation in the process for developing this Storm Water Management Program.

Permit Requirement 4.2.2

The City must implement a program that complies with applicable state and local public notice requirements. The SWMP shall include ongoing opportunities for public involvement and participation such as advisory panels, public hearings, watershed committees, stewardship programs, environmental activities, other volunteer opportunities, or other similar activities. The City should involve all potentially affected stakeholder groups, which include but are not limited to, commercial and industrial businesses, trade associations, environmental groups, homeowners associations, and education organizations. The minimum performance measures will be:

Permit Requirement 4.2.2.1 *Program to Include Public Input to SWMP:*

Farmington City has constructed a policy to create opportunities for the public to provide input during the decision making processes involving the development, implementation and update of this Storm Water Management Program (SWMP), including development and adoption of all required ordinances and regulatory mechanisms. This is done through public transparency in edits to the SWMP by providing a working draft online at http://www.farmington.utah.gov/ Notice of all SWMP-related public hearings should be published in a community publication or newspaper of general circulation to provide opportunities for public involvement.

Permit Requirement 4.2.2.2 *Deadline of SWMP Edits Available to the Public:*

Farmington City, during the UPDES renewal process, shall make the revised SWMP document available to the public for review and input within **120** days from the effective date of this permit.

Permit Requirement 4.2.2.3 *Program to Maintain Public Input to SWMP:*

Farmington City will make the latest updated version of the SWMP available to the public for review and input. A current version of the SWMP will remain available for public review and input for the life of the permit. The City will post the latest version of the SWMP here http://www.farmington.utah.gov/ to all the public to review and provide input.

Permit Requirement 4.2.2.4 *State and Local Public Notice:*

The City must at a minimum comply with State and Local public notice requirements when implementing a public involvement/participation programs.

Measurable Goals

Measurable Goals- Public Involvement & Participation			
Target Date	**BMP**	**Responsible Party**	**Rationale**
1st Year July, 2021	○ Hold a public hearing to provide input and adopt the SWMP ○ Participate in Storm Water Coalition meetings which include input from private sector representatives ○ Post SWMP on Farmington City Website and request public input into program ○ Respond to all comments received concerning SWMP ○ Revise SWMP on an annual basis if needed	Farmington City Storm Water Official Storm Water Official Storm Water Official Storm Water Official	Want to receive public review and input Helps us to work together to address issues and get input from the private sector Permit requirement and desire to have public input Permit requirement and desire to address public concerns Permit requirement
2nd Year July, 2022	○ Hold a public meeting to solicit input on potential changes to the SWMP ○ Participate in Storm Water Coalition meetings which include input from private sector representatives ○ Post the SWMP on the Farmington City Website and request public input into program ○ Respond to all comments received concerning SWMP ○ Revise SWMP on an annual basis if needed	Farmington City Storm Water Official Storm Water Official Storm Water Official Storm Water Official	Want to receive public review and input Helps us to work together to address issues and get input from the private sector Permit requirement and desire to have public input Permit requirement and desire to address public concerns Permit requirement
3rd Year July, 2023	○ Hold a public meeting to solicit input on potential changes to the SWMP ○ Participate in Storm Water Coalition meetings which include input from private sector representatives ○ Post the SWMP on the Farmington City Website and request public input into program ○ Respond to all comments received concerning SWMP	Farmington City Storm Water Official Storm Water Official Storm Water Official	Want to receive public review and input Helps us to work together to address issues and get input from the private sector Permit requirement and desire to have public input Permit requirement and desire to address public concerns Permit requirement

	○ Revise SWMP on an annual basis if needed	Storm Water Official	
4th Year July, 2024	○ Hold a public meeting to solicit input on potential changes to the SWMP ○ Participate in Storm Water Coalition meetings which include input from private sector representatives ○ Post the SWMP on the Farmington City Website and request public input into program ○ Respond to all comments received concerning SWMP ○ Revise SWMP on an annual basis if needed	Farmington City Storm Water Official Storm Water Official Storm Water Official Storm Water Official	Want to receive public review and input Helps us to work together to address issues and get input from the private sector Permit requirement and desire to have public input Permit requirement and desire to address public concerns Permit requirement
5th Year July, 2025	○ Hold a public meeting to solicit input on potential changes to the SWMP ○ Participate in Storm Water Coalition meetings which include input from private sector representatives ○ Post the SWMP on the Farmington City Website and request public input into program ○ Respond to all comments received concerning SWMP ○ Revise SWMP on an annual basis if needed	Farmington City Storm Water Official Storm Water Official Storm Water Official Storm Water Official	Want to receive public review and input Helps us to work together to address issues and get input from the private sector Permit requirement and desire to have public input Permit requirement and desire to address public concerns Permit requirement

Chapter 3

Illicit Discharge Detection and Elimination (IDDE)

Permit Requirement 4.2.3

Chapter 3 outlines Farmington City's Illicit Discharge Detection and Elimination (IDDE) program. Designed to systematically find and eliminate sources of non-storm water discharges from the Farmington City MS4 *(Permit No. UTR090006)* and to implement defined procedures to prevent illicit connections and discharges according to the minimum performance measures listed below. The components of the IDDE program shall be included below and will identify the responsibilities for performing each activity described in this section.

Requirements

*The items below are in reference to Minimum Control Measures listed in the Small MS4 General UPDES Permit. This SWMP is designed to relate directly to that permit for ease in compliance. Please utilize the Small MS4 General UPDES Permit for reference:

Permit Requirement 4.2.3.1 *Storm Drain System Map:*

Farmington City keeps an up-to-date map of the City's storm drain system that identifies all MS4 owned or operated storm drain facilities that conveys storm water to Waters of the State including but not limited to drain pipe inlets, man holes, ditches, canals, and other conveyance structures with information relevant to the storm drain system. This map is dynamic and is updated annually. Please see Appendix AA

Farmington City has developed a current written inventory of all municipal owned or operated facilities, operations, and storm water controls including "high priority" facilities along with all the associated details to manage them. This inventory is dynamic and is updated annually. Please see Chapter 6-Appendix Q.

Farmington City has delineated the City storm drain infrastructure into 5 separate regions with approximately 20% of the MS4 assets within each. As per the Small MS4 General UPDES Permit illicit discharge detection, and municipal asset inspection/maintenance are to be conducted on all MS4 storm drain infrastructure within the permitting period, at a rate of 20% of defined assets per year. The IDDE and O&M program will conduct inspections/maintenance following the delineated storm drain zones. The zones are provided in the Storm Drain System Map-Appendix AA.

Permit Requirement 4.2.3.2 *Ordinances Prohibiting Illicit Discharge:*

Title 16, Chapter 4 - City Code of Farmington, Utah, passed August 20, 2019.
https://www.sterlingcodifiers.com/codebook/index.php?book_id=1042

4.2.3.2.1 IDDE Program Legal Authority: The Illicit Discharge Detection and Elimination program, found in Appendix B, references the legal authority the program utilizes to detect, investigate, eliminate, and enforce against non-storm water discharges, including illegal dumping to the MS4.

Permit Requirement 4.2.3.3 *Written Plan for IDDE:*

The written plan to detect and address non-storm water discharges to the MS4, including spills, illicit connections, sanitary sewer overflows, and illegal dumping are included in Appendix B.

4.2.3.3.1. Systematic Procedures for Listing Priority Areas: Farmington City will identify Priority Areas that have increased potential for illicit discharges, as well as the drainage basins they reside in. The basis for selection of Priority Areas follows the decision matrix in Appendix R. The mapped areas (Drainage Basins) with priority areas listed within will be represented in the Storm Drain System Map. The outfalls within each prioritized basin will then be targeted annually for dry weather screening. Priority Areas include all Farmington City operations listed in Appendix Q.

4.2.3.3.2 Priority Area Annual Inspection: Farmington City will inspect each defined Priority Area annually using the SOP: *Inspecting Long-Term Controls (Private) (IE-3)* or SOP: *Inspecting Long-Term Controls (Public) (IE-4)*. These procedures are found in Appendix S. For all municipal owned or operated facilities inspections will be conducted following the O&M plan defined in Chapter 6, specifically 4.2.6.5.

4.2.3.3.3. Dry Weather Screening Plan: The written IDDE Plan, see Appendix B, includes an inspection form to detect and address non-storm water discharges to the MS4 from outfalls to Waters of the State. Every identified outfall within the MS4 will be inspected once during a period of 5-years, or 20% of outfall inventory annually.

4.2.3.3.4. Identifying a need for Individual UPDES Permits: As per the written IDDE Plan, see Appendix B, the systematic procedure has the ability for the City to determine if a discharge is in need of a separate UPDES permit, and how to notify the division within 30 days of discovery.

Permit Requirement 4.2.3.4. *IDDE SOPs-Tracing:*

Standard Operating Procedures have been created and implemented into this SWMP to trace, and identify illicit discharges, see Appendix S-SOP: *Tracing an Illicit Discharge (IDDE-3).*

Permit Requirement 4.2.3.5. *IDDE SOPs-Characterization*:

Standard Operating Procedures have been created and implemented into this SWMP to characterize illicit discharges and the potential public or environmental threat posed by them. See Appendix S-SOP: *Eliminating an Illicit Discharge (IDDE-4)*.

4.2.3.5.1. IDDE SOP-Inspection & Report: Standard Operating Procedures have been created and implemented into this SWMP to inspect all illicit discharges and report issues via a response and reporting matrix. See Appendix S-SOP: *Eliminating an Illicit Discharge (IDDE-4) &* SOP: *Response & Reporting Decision Matrix (SI-1)*.

Permit Requirement 4.2.3.6. *IDDE SOPs-Elimination*:

Standard Operating Procedures have been created and implemented into this SWMP to eliminate illicit discharges and the potential public or environmental threat posed by them. See Appendix S-SOP: *Eliminating an Illicit Discharge (IDDE-4)*.

4.2.3.6.1. IDDE Cessation: Upon detection, tracing, and characterization the IDDE will be managed pursuant to Appendix B and the SOPs for Illicit Discharge Detection and Elimination to ensure responsible parties are enforced to cease all illicit discharges.

4.2.3.6.2. Liability Release to Permittee: As per permit requirement 4.2.3.2., and City ordinance illicit discharges are prohibited. The presence of illicit discharges occurring within MS4 boundaries does not impart responsibility on Farmington City.

4.2.3.6.3. IDDE Documentation: All IDDE investigations are recorded and documented. The records are to be reported to the State DWQ via the MS4 Annual Report.

Permit Requirement 4.2.3.7. *Public Education:*

Farmington City, as a member of the Davis County Storm Water Coalition, will inform public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste annually through strategies outlined in Chapter 1 of this SWMP, pursuant to Small MS4 General UPDES Permit item 4.2.1.

Permit Requirement 4.2.3.8. *Household Hazardous Waste Collection:*

Farmington City Public Works Departments accepts household hazardous waste (oil, batteries, cleaning chemicals, etc). This is public information advertised on the Public Works website and published in the City newsletter. Appendix Z contains the Interlocal Agreement that establishes the Davis County Storm Water Coalition.

Permit Requirement 4.2.3.9. *Spill Reporting Hotline:*

Farmington City, as a member of the Davis County Storm Water Coalition, has established a spill reporting hotline to report spills and other illicit discharges. This phone number is managed by the Davis County Health Department and all calls are recorded and investigated. Appendix Z contains the Interlocal Agreement that establishes the Davis County Storm Water Coalition.

4.2.3.9.1. Response & Reporting Decision Matrix: A written spill and improper disposal response SOP with a flow chart and decision matrix is provided in

Appendix S. SOP: *Response & Reporting Decision Matrix (SI-1)* identifies the procedures for responding to public referrals of illicit discharges, the various responsible agencies, as well as who would be involved in illicit discharge incident response.

Permit Requirement 4.2.3.10. *IDDE Program Evaluation:*

Farmington City will conduct a report on the program success, and feasibility according to its reported data from spills or illicit discharges identified; and inspections conducted. This program evaluation is to be completed during the Annual Report.

Permit Requirement 4.2.3.11 *Educating Staff to IDDE Risk & Procedures*

Farmington City shall ensure that all staff, contracted staff, or other responsible entities receives annual training in the IDDE program outlined in Chapter 6 of this SWMP pursuant to Small MS4 General UPDES Permit item 4.2.6. The trainings will be recorded and included in the Annual Report.

Permit Requirement 4.2.3.12 *Directors Executive Authority*

The Director reserves the right to request documentation or further study of a particular non-storm water discharge of concern, to require a reasonable basis for allowing the non-storm water discharge and excluding the discharge from Farmington City's program, and to require inclusion of the discharge in Farmington City's program, if water quality concerns cannot otherwise be reasonably satisfied.

Measurable Goals- IDDE			
Target Date	**BMP**	**Responsible Party**	**Rationale**
1st Year July, 2021	○ Develop the IDDE Program for the City.	Storm Water Official	Permit requirement
	○ Adopt the IDDE Program after receiving public input at a public hearing.	Farmington City	Will provide authority to carry out the program, and allow citizens to provide input
	○ Update the list of priority areas likely to have illicit discharges	Storm Water Official	Permit Requirement- will be part of IDDE
	○ Inspect 100% of priority areas identified and 20% of other areas.	Storm Water Official	Permit requirement
	○ Produce a Field Inspection Form to document findings of inspections.	Storm Water Official	Will need this to document inspections
	○ Implement SOPs for tracing the source of an illicit discharge.	Storm Water Official	Will be part of IDDE program
	○ Implement SOPs for characterizing the nature of, and the potential public or environmental threat posed by any detected illicit discharge.	Storm Water Official	Will be part of IDDE program
	○ Implement SOPs for ceasing illicit discharges.	Farmington City	Will be part of IDDE program
	○ Develop a written spill/dumping response procedure and flow chart.	Storm Water Official	Public works needs to have this as part of their SOP
	○ Provide employee training about the IDDE program.	Storm Water Official	Permit requirement and desire to educate employees
2nd Year July, 2022	○ Implement the IDDE program for the City.	Storm Water Official	Permit requirement
	○ Implement the SOPs for tracing sources of illicit discharges.	Storm Water Official	Permit requirement
	○ Implement SOPs for characterizing the nature of, and the potential public or environmental threat posed by any detected illicit discharge.	Storm Water Official	Permit requirement
	○ Inspect 100% of priority areas identified and 20% of other areas and document all inspections.	Storm Water Official	Permit requirement Permit requirement
	○ Update storm water system map to include any new discharge points.	Storm Water Official	Via Utilisync
	○ Input results of inspections in GIS data base.	Storm Water Official	Permit requirement Permit requirement
	○ Monitor suspected outfalls.		

	○ Identify and fix sources of illicit discharge. ○ Provide employee training about the IDDE program.	Storm Water Official Storm Water Official	Permit requirement Via StormwaterGO
3rd Year July, 2023	○ Inspect 100% of priority areas identified and 20% of other areas and document all inspections. ○ Update storm water system map to include any new discharge points. ○ Input results of inspections in GIS data base. ○ Monitor suspected outfalls. ○ Identify and fix sources of illicit discharge. ○ Review ordinance and revise to meet needs identified in IDDE program that are not currently addressed. ○ Provide employee training about the IDDE program.	Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Farmington City Storm Water Official	Permit requirement Permit requirement Via Utilisync Permit requirement Permit requirement/ need to address issues Want to make sure ordinance address needs of the IDDE program Permit requirement and desire to educate employees. Via StormwaterGo
4th Year July, 2024	○ Inspect 100% of priority areas identified and 20% of other areas and document all inspections. ○ Update storm water system map to include any new discharge points. ○ Input results of inspections in GIS data base. ○ Monitor suspected outfalls. ○ Identify and fix sources of illicit discharge. ○ Review ordinance and revise to meet needs identified in IDDE program that are not currently addressed. ○ Provide employee training about the IDDE program.	Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Farmington City Storm Water Official	Permit requirement Permit requirement Via Utilisync Permit requirement Permit requirement/ need to address issues Want to make sure ordinance address needs of the IDDE program Permit requirement and desire to educate employees. Via StormwaterGo

5th Year July, 2025	○ Inspect 100% of priority areas identified and 20% of other areas and document all inspections. ○ Update storm water system map to include any new discharge points. ○ Input results of inspections in GIS data base. ○ Monitor suspected outfalls. ○ Identify and fix sources of illicit discharge. ○ Review ordinance and revise to meet needs identified in IDDE program that are not currently addressed. ○ Provide employee training about the IDDE program. Continuation…	Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Farmington City Storm Water Official	Permit requirement Permit requirement Via Utilisync Permit requirement Permit requirement/ need to address issues Want to make sure ordinance address needs of the IDDE program Permit requirement and desire to educate employees. Via StormwaterGo

Chapter 4

Construction Site Storm Water Runoff Control (SWRC)

Permit Requirement 4.2.4.

Chapter 4 outlines Farmington City's Storm Water Runoff Control program (SWRC). Designed to reduce pollutants in any storm water runoff to the MS4 from construction sites with a land disturbance of greater than or equal to one acre. Including projects less than one acre that are part of a larger common plan of development or sale which collectively disturbs land greater than or equal to one acre. As well as all construction projects seeking a building permit or structure requiring earth moving within municipal bounds according to the minimum performance measures listed below. Public and private projects shall comply with these requirements.

Requirements

*The items below are in reference to Minimum Control Measures listed in the Small MS4 General UPDES Permit. This SWMP is designed to relate directly to that permit for ease in compliance. Please utilize the Small MS4 General UPDES Permit for reference:

Permit Requirement 4.2.4.1. *Construction Site Storm Water Runoff Control:*

Farmington City has developed City Ordinance Title 16 to require the use of erosion and sediment control practices at construction sites. The Storm Water Land Disturbance Permit (Land Disturbance Permit) in 16-3-010 in Farmington City Code details the regulatory controls. Those said controls are equivalent with requirements set forth in the most current UPDES Storm Water General Permits for Construction Activities. The permit includes sanctions to ensure compliance.

Title 16 Chapter 3 – City Code of Farmington, Utah, passed August 20, 2019 https://codelibrary.amlegal.com/codes/farmingtonut/latest/farmington_ut/0-0-0-21256

4.2.4.1.1. Storm Water Pollution Prevention Plan (SWPPP): The Land Disturbance Permit, enforced by the City Ordinance above, requires construction projects to prepare a Storm Water Pollution Prevention Plan (SWPPP) and apply sediment and erosion control BMPs as necessary to protect water quality, reduce the discharge of pollutants, and control waters. This includes, but not limited to, discarded building materials, concrete truck washout, chemicals, litter and sanitary waste, foreign soils, invasive weed species and other pollutants that may cause adverse impacts to water quality. For construction sites with a land disturbance of greater than or equal to one acre a Construction General Permit (CGP) SWPPP Template from the State of Utah Department of Water Quality is required. Projects less than one acre that are part of a larger common plan of development or sale which collectively disturbs land greater than or equal to one acre are required to obtain a Common Plan Permit (CPP) SWPPP Template from

the State of Utah Department of Water Quality. For all other construction sites not fitting the aforementioned criteria a Farmington City SWPPP template is required.

4.2.4.1.2. State-Level UPDES Storm Water General Permits: Regardless of size a City-level Land Disturbance Permit is required for any development requiring earth moving. For large construction sites with a land disturbance of greater than or equal to one acre a Construction General Permit (CGP) is required to be obtained from the State of Utah Department of Water Quality. Projects less than one acre that are part of a larger common plan of development or sale which collectively disturbs land greater than or equal to one acre are required to obtain a Common Plan Permit (CPP) from the State of Utah Department of Water Quality.

4.2.4.1.3. Construction Site Access: The Land Disturbance Permit, enforced by the City Ordinance above allows access by qualified personnel to inspect construction storm water BMPs on private properties that discharge to the MS4. And/or inspect any construction site for compliance with State or City-level permits.

Permit Requirement 4.2.4.2. *Written Enforcement Strategy:*

Farmington City has developed a written enforcement strategy to implement and enforce provisions of City Ordinance Title 16 and this SWMP.

4.2.4.2.1. Standard Operating Procedures: Farmington City has created Standard Operating Procedures (SOPs) for the inspection and enforcement of all construction projects covered under the Land Disturbance Permit. These SOPs include appropriate, escalating enforcement procedures and actions, including an appeals process that is published in a publicly accessible location. Please see Appendix S.

4.2.4.2.2. Documentation of Enforcement: The SOP: Enforcing Construction Site Requirements (IE-2) requires the documentation and tracking of all enforcement actions taken.

Permit Requirement 4.2.4.3. *Pre-Construction Storm Water Permit Review*

A written checklist for pre-construction SWPPP review with consistent requirements to that of the current UPDES General Permits for construction activities issued by the State (those being the CGP and CPP) has been adopted and utilized by the City of Farmington Department of Building as part of the issuance of a Building Permit. The SWPPP checklist is utilized regardless of project scope or size. The records of which are kept for 5 years.

4.2.4.3.1. Pre-Construction Meeting: Prior to the beginning of any construction activity that has acquired a Land Disturbance Permit the Storm Water Manager conducts a meeting to review the site design, planned operations at the construction site, planned BMPs during the construction phase, and planned BMPs to be used to manage runoff created after development.

4.2.4.3.2. Comment Consideration: During the aforementioned pre-construction SWPPP review comments between the Storm Water Manager and applicant are received, considered and documented.

4.2.4.3.3. Priority Construction Site Identification: Utilizing the pre-construction SWPPP review the following site characteristics will be considered to determine a construction sites priority level (high or low). Those factors being: potential soil erosion, site slope, project size and type, proximity to receiving waterbodies, sensitivity of receiving water bodies, and past record of non-compliance by the applicant.

Permit Requirement 4.2.4.4. *Construction Site Inspections*:

Farmington City has developed and implanted SOPs as well as Title 16 Chapter 3 of the City Ordinances for construction site inspection and enforcement of construction storm water pollution control measures. These procedures identify who is responsible for site inspections, as well as, who has authority to implement enforcement procedures.

4.2.4.4.1. Inspection Rates: At a minimum, monthly inspection of all new construction sites under a State issued UPDES Storm Water General Permit are to be conducted. These inspections are conducted by a qualited person using the State issued Construction Storm Water Inpsection Form. For definitions as to who is a qualified inspector please see the State of Utah Department of Water Quality website.

4.2.4.4.2. Inspection of Phases: The City will inspect all phases of construction, including prior to land disturbance, during active construction, and following active construction. The inspections will be documented and will continue until the permit applicant files a Notice of Termination triggering a final inspection to verify the final stabilization and removal of all temporary control measures has been completed. This knowledge of this process is issued during the pre-construction meeting noted in 4.2.4.3.1.

4.2.4.4.3. Biweekly Inspection of Priority Sites: All priority sites, deemed as such pursuant to 4.2.4.3.3. above will be inspected bi-weekly by the City.

4.2.4.4.4. Site Inspection Software: The City may utilize an electronic site inspection tool as long as it can demonstrate to the Director that the tool meets the requirements of Chapter 4 of the SWMP.

4.2.4.4.5. Site Inspection Follow-Up: Based on site inspection findings, the City will take all necessary follow-up actions (re-inspection, enforcement, and escalation) to ensure compliance in accordance with this SWMP. This process will be tracked and documented.

Permit Requirement 4.2.4.5. *Employee Training:*

All employees, contracted staff, and other responsible entities whose primary job duties are related to implementing the construction storm water program, including permitting, plan review, construction site inspections, and enforcement, are annually trained to conduct those activities. Please see Appendix U.

Permit Requirement 4.2.4.6. *Records*

All projects that require a Land Disturbance Permit at minimum will have all records saved for at least 5 years or until construction is complete, whichever is longer.

Measurable Goals- Construction Site Storm Water Runoff Control

Measurable Goals- Construction Site Storm Water Runoff Control			
Target Date	**BMP**	**Responsible Party**	**Rationale**
1st Year July, 2021	○ Review Title 16 and identify areas where it is not equivalent to the technical requirements set forth in the UPDES Storm Water General Permit for Construction Activities, UTR00000 and MS4 General UPDES Permit No. UTR090006.	City Attorney	The ordinance we are to enforce needs to allow us to do the things required by the permit.
	○ Develop a written enforcement strategy.	Storm Water Official	To allow a clear understanding of what is expected
	○ Review all SWPPPs prior to construction.	Storm Water Official	Permit requirement
	○ Inspect all construction sites requiring a permit at least monthly and document inspections.	Storm Water Official	Permit requirement
	○ Inspect priority construction sites at least biweekly and document inspections.	Storm Water Official	Permit requirement
	○ Take all necessary follow-up action and track and document them.	Storm Water Official	Permit requirement
	○ Take all necessary follow-up action and track and document them.	Storm Water Official	Permit requirement
	○ Maintain records of all projects requiring a permit.	Storm Water Official	Permit requirement
	○ Track all training of enforcement staff.	Storm Water Official	Permit requirement
2nd Year July, 2022	○ Implement the enforcement strategy	Storm Water Official	Permit requirement
	○ Review all SWPPPs prior to construction.	Storm Water Official	Permit requirement
	○ Identify priority construction sites.	Storm Water Official	Permit requirement
	○ Inspect all construction sites requiring a permit at least monthly and document inspections.	Storm Water Official	Permit requirement

	○ Inspect priority construction sites at least biweekly and document inspections.	Storm Water Official	Permit requirement
	○ Take all necessary follow-up action and track and document them.	Storm Water Official	Permit requirement
	○ Maintain records of all projects requiring a permit.	Storm Water Official	Permit requirement
	○ Track all training of enforcement staff.	Storm Water Official	Permit requirement
	○ Revise Title 16 to address any issues identified during the year.	Farmington City	Need to update ordinance to address any issues of concern identified while enforcing policies.
3rd Year July, 2023	○ Identify priority construction sites.	Storm Water Official	Permit requirement
	○ Inspect all construction sites requiring a permit at least monthly and document inspections.	Storm Water Official	Permit requirement
	○ Inspect priority construction sites at least biweekly and document inspections.	Storm Water Official	Permit requirement
	○ Take all necessary follow-up action and track and document them.	Storm Water Official	Permit requirement
	○ Maintain records of all projects requiring a permit.	Storm Water Official	Permit requirement
	○ Attend at least one training opportunity which addresses storm water pollution prevention compliance.	Storm Water Official	Need to remain up-to-date on storm water issues
	○ Require SWPPPs for all developments meeting minimum threshold requirements.	Storm Water Official	Permit requirement
	○ Review all SWPPPs prior to construction.	Storm Water Official	Permit requirement
	○ Track all training of enforcement staff.	Storm Water Official	Permit requirement
	○ Revise Title 16 to address any issues identified during the year.	Farmington City	Need to update ordinance to address any issues of concern identified while enforcing policies

4th Year July, 2024	○ Identify priority construction sites. ○ Inspect all construction sites requiring a permit at least monthly and document inspections. ○ Inspect priority construction sites at least biweekly and document inspections. ○ Take all necessary follow-up action and track and document them. ○ Maintain records of all projects requiring a permit. ○ Attend at least one training opportunity which addresses storm water pollution prevention compliance. ○ Require SWPPPs for all developments meeting minimum threshold requirements. ○ Review all SWPPPs prior to construction. ○ Track all training of enforcement staff. ○ Revise Title 16 to address any issues identified during the year.	Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Farmington City	Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement Need to remain up-to-date on storm water issues Permit requirement Permit requirement Need to update ordinance to address any issues of concern identified while enforcing policies
5th Year July, 2025	○ Identify priority construction sites. ○ Inspect all construction sites requiring a permit at least monthly and document inspections. ○ Inspect priority construction sites at least biweekly and document inspections. ○ Take all necessary follow-up action and track and document them. ○ Maintain records of all projects requiring a permit. ○ Attend at least one training opportunity which addresses storm water pollution prevention compliance.	Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official	Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement Need to remain up-to-date on storm water issues

	○ Require SWPPPs for all developments meeting minimum threshold requirements ○ Review all SWPPPs prior to construction. ○ Track all training of enforcement staff. ○ Revise Title 16 to address any issues identified during the year.	Storm Water Official Storm Water Official Storm Water Official Farmington City	Permit requirement Permit requirement Need to update ordinance to address any issues of concern identified while enforcing policies

Chapter 5

Long-Term Storm Water Management (LTSWM)

Permit Requirement 4.2.5

Chapter 5 outlines Farmington City's Long-Term Storm Water Management Program designed to address post-construction storm water runoff to the Farmington City MS4 *(Permit No. UTR090006)* from private and public new development and redevelopment construction site. The objective is for the hydrology of a new development, or redevelopment, to mirror the pre-development hydrology of the previously undeveloped site. In effect reducing the amount of storm water discharge while improving storm water quality entering the MS4. The components of the LTSWM program shall be included below and will identify the department responsible for performing each activity described in this section.

Requirements

*The items below are in reference to Minimum Control Measures listed in the Small MS4 General UPDES Permit. This SWMP is designed to relate directly to that permit for ease in compliance. Please utilize the Small MS4 General UPDES Permit for reference:

Permit Requirement 4.2.5.1 *Post-Construction Controls:*

Farmington City has developed City Ordinances and internal Engineering Standards to ensure storm water controls or best management practices (structural and non-structural) for new development and redevelopment to prevent or minimize impacts to water quality.

Title 16, Chapter 3 – City Code of Farmington, Utah, passed August 20, 2019. https://codelibrary.amlegal.com/codes/farmingtonut/latest/farmington_ut/0-0-0-21234

Farmington City Engineering Standards
http://www.farmington.utah.gov/departments/public-works/engineering/

4.2.5.1.1. Non-Structural BMPs to Preserve Sensitive Areas: The LTSWM program, through City Ordinance 16-3-150, acknowledges critical areas with sensitive resources. Unique to the geography and environment of Farmington these sensitive areas are determined by project and its proposed alteration. If determined to be affecting a designated sensitive area additional performance criteria are subjected to the review process including the restriction of development.

4.2.5.1.2. Retention Requirement (Pre-Developed Hydrology Goal): Farmington City has defined the 80th percentile storm event for its specific geographical location. See Appendix BB.

New development projects that disturb land greater than or equal to one acre, including projects that are part of a larger common plan of development or sale which collectively disturbs land greater than or equal to one acre must manage rainfall on-site and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to the 80th percentile precipitation event or a predevelopment hydrologic condition, whichever is less.

Redevelopment projects that disturb greater than or equal to one acre, including projects less than an acre that are part of a larger common plan of development or sale which collectively disturbs land greater than or equal to one acre must provide a site-specific and project-specific plan aimed at net gain to onside retention or a reduction to impervious surface to provide similar water quality benefits. I fa redevelopment project increases the impervious surface by greater than 10% the project shall manage rainfall on-site and prevent the off-site discharge of the net increase in the volume associate with the precipitation from all rainfall events less than or equal to the 80th percentile precipitation event.

Farmington City has developed City Ordinance 16-3-150 for Storm Water Management Performance Criteria. The City has also defined the State of Utah Department of Water Quality Low Impact Development Manual (containing multiple methods) as the specific hydrologic standard for calculating runoff volumes and flow rates to ensure consistent sizing of structural BMPs. See Appendix J.

4.2.5.1.3. Low Impact Development: For any new development or redevelopment that qualifies, as per 4.2.5.1.2., the City requires the evaluation of a Low Impact Development (LID) approach. The LID approach will implement BMPs that allow storm water to infiltrate, have evapotranspiration or harvest and use storm water on site to reduce runoff from the site and protect water quality. The Farmington City Development Review Committee has selected 5 LID practices most feasible in the region to be utilized by development or redevelopment. These 5 LID options are not required and should not act as constricting obstacles in the greater goal of mimicking pre-development hydrology. See the State of Utah Department of Water Quality Low Impact Development Manual Appendix C for all LID BMPs. For Farmington City's specific 5 preferred LID BMPs see Appendix P.

4.2.5.1.4. Feasibility of Low Impact Development Design: Due to one or more of the following site conditions: high groundwater, drinking water source protection zone, soil conditions not suitable for percolation, slopes, accessibility, excessive costs, or any other justifiable constraint making the adoption of Low Impact Development BMPs infeasible the City of Farmington will accept efforts made to retain up to the 80th percentile while excusing amounts not feasible to meet retention goals set in 4.2.5.1.2. The rationale for excusing the required retention of the 80th percentile or approved alternative design criteria is determined by the Development Review Committee and is subjective due to the unique site and its proposed development.

Permit Requirement 4.2.5.2 *Regulatory Mechanism*:

Farmington City has developed City Ordinances and internal Engineering Standards to ensure storm water controls or best management practices (structural and non-structural) for new development and redevelopment to utilize Low Impact Development design. The ordinance and standards listed below requires BMP selection, design, installation, operation, and maintenance, standards necessary to protect water quality through storm water retention.

Title 16, Chapter 3 – City Code of Farmington, Utah, passed August 20, 2019. https://codelibrary.amlegal.com/codes/farmingtonut/latest/farmington_ut/0-0-0-21234

Farmington City Engineering Standards
http://www.farmington.utah.gov/departments/public-works/engineering/

Appeal Process: City Ordinance 16-1-040 allows for any applicant to appeal the requirement of Low Impact Development made under Title 16. Please refer to this City code using the URL above for further details.

4.2.5.2.1. Enforcement of Low Impact Development Design: Farmington City has developed a Storm Water Bond Agreement to enforce the City ordinances detailing long-term storm water management performance criteria and contains procedures for specific processes and sanctions to encourage private development to comply with this LTSWM program. The City has developed the SOPs: *Inspecting Long-Term Controls (Private) (IE-3), Inspecting Long-Term Controls (Public) (IE-4), & Enforcing Long-Term Controls (IE-5)* to monitor and enforce compliance with the LTSWM program. These SOPs can be found in Appendix S.

4.2.5.2.2. Documentation of LTSWM Program Credibility: Farmington City maintains documentation on how the 5 most feasible Low Impact Development BMPs were selected, this can be found in Appendix P. The pollutant removal performances expected from the installment of these LID BMPs, as well as the technical basis which supports the performance claims of those selected LID BMPs can also be found in Appendix P. These empirical performance metrics have been derived from the State of Utah Department of Water Quality Low Impact Development Manual.

4.2.5.2.3. Long-Term Storm Water Management Plan: In order to regulate provision 4.2.5.2.1. of this LTSWM program Farmington City has adopted the Long-Term Storm Water Management Agreement and Plan from the Utah Storm Water Advisory Sub-Committee on Long-Term Controls. This regulatory mechanism is required prior to any development between the City and the private developer. It gives the City, or a 3rd party, access to inspect storm water control measures on private properties that discharge to the MS4 to ensure that adequate maintenance and reporting is being performed. These documents can be found in Appendix M.

4.2.5.2.4. Site Plan Inspection: Prior to the completion of the construction project and the subsequent release of the Storm Water Bond the permanent structural BMPs shall be inspected by the Storm Water Manager or Public Works Inspector to verify that long-term BMPs were constructed as designed from the Development Review Committee approved site plan.

4.2.5.2.5. Permit-Term Inspection Reports: All long-term storm water controls and structural BMPs will be inspected and any necessary maintenance completed at least every other year or as necessary to maintain functionality of the control. These inspections must be done in accordance with the submitted LTSWM Agreement and Plan outlined in 4.2.5.2.3. Private holdings must submit the inspection to Farmington City. Any controls or BMPs managed by the City will be inspected and recorded as well. Once every 5 years Farmington City will inspect all private long-term controls and BMPs to ensure adequate maintenance and reporting is being conducted. The City has developed the SOPs: *Inspecting Long-Term Controls (Private) (IE-3), Inspecting Long-Term Controls (Public) (IE-4), & Enforcing Long-Term Controls (IE-5)* to complete this line item. The Long-Term Inspection Report can be found in Appendix CC.

Permit Requirement 4.2.5.3. *Plan Review:*

Prior to any Development or Building permit approval in Farmington the Development Review Committee (DRC) and/or the building department reviews the submitted proposals for compliance with this SWMP. The Storm Water Manager is part of both internal review processes and utilizes this document in its entirety, the Small MS4 General UPDES Permit, and other pertinent documents to make determinations.

4.2.5.3.1. Water Quality Review: The internal review responsibilities of the Storm Water Manager as part of the DRC and/or Building Department will evaluate potential water quality impacts from the proposed site plans. All development reviewed by the DRC is required to submit a State of Utah Department of Water Quality Storm Water Quality Study. All projects reviewed by both the DRC and Building Department must have a site plan stating the acknowledgement of water quality impacts from construction and comply with City Ordinance Title 16 Chapter 3 to design permanent BMPs adequately to maintain water quality to pre-development levels.

4.2.5.3.2. Post-Construction Review: All construction projects are to be inspected after completion prior to bond return or issuance of Certificate of Occupancy in order to determine compliance with the submitted, DRC/Building Department approved site plan. This includes the approval of all long-term storm water management controls as they were designed.

Permit Requirement 4.2.5.4. *Inventory:*

Farmington City has developed a current written inventory of all post-construction structural storm water control measures installed and implemented at new development and redeveloped sites that qualify for LID. The inventory includes both public and private sector sites located within the City. This inventory is dynamic and is updated annually. Please see Appendix Q.

4.2.5.4.1. Inventory Information: Each post-construction structural storm water control measure has the following information in its attribute table: projects name, owners name, contact information, location, short description of each storm water control measure, short description of maintenance requirements, inspection formation and history, as well as the LTSWM Plan & Agreement.

Permit Requirement 4.2.5.5. *Training:*

Farmington City ensures that all staff involved in post-construction storm water management, including those that conduct plan review, annual maintenance inspections, and enforcement, receive appropriate training in the LTSWM program outlined in Chapter 6 of this SWMP pursuant to Small MS4 General UPDES Permit item 4.2.6. The trainings will be recorded and included in the Annual Report.

Measurable Goals- Long-Term Storm Water Management in New Development and Redevelopment			
Target Date	**BMP**	**Responsible Party**	**Rationale**
1st Year July, 2021	○ Review ordinances and make sure they contain all regulations required by Permit # UTR090006.	Storm Water Official	Need to make sure our ordinance requires all that is required by the Permit
	○ Revise ordinance to include any missing items.	Farmington City	Need to have an updated ordinance
	○ Develop a written enforcement strategy.	Storm Water Official	Permit requirement
	○ Provide documentation on how the ordinance meets 4.2.5.2.2 of Permit # UTR090006.	Storm Water Official	Permit requirement
	○ Implement process to evaluate Low Impact Development (LID) approach for site development.	Storm Water Official	Permit requirement
	○ Use the "Rational Method" for calculating runoff volumes and flow rates unless another method is approved by the City Engineer.	Storm Water Official	This is the method suggested in Farmington City Development Standards 11-30-105 in the Subdivision Ordinance
	○ Implement procedures for site plan review which incorporate consideration of water quality impacts.	Storm Water Official	Permit requirement
	○ Review all SWPPPs to ensure plans include long-term storm water management measures.	Storm Water Official	Permit requirement
	○ Develop an inventory of all post-construction structural storm water control measures.	Storm Water Official	Permit requirement
	○ Develop SOP for site inspection and enforcement of post-construction storm water control measures.	Storm Water Official	Permit requirement
	○ Develop a schedule for inspecting existing long-term storm water management facilities.	Storm Water Official	Permit requirement

	○ Provide training for staff involved in post-construction storm water management, planning and review, and inspection and enforcement.	Storm Water Official	Permit requirement
2nd Year July, 2022	○ Implement the plan to retrofit existing developed sites that are adversely impacting water quality. ○ Implement procedures for site plan review which incorporate consideration of water quality impacts. ○ Provide preferred design specifications to more effectively treat storm water to developers and contractors. ○ Review all SWPPPs to ensure plans include long-term storm water management measures. ○ Develop and provide preferred design specifications to more effectively treat storm water to developers and contractors. ○ Inspect scheduled long-term storm water management facilities. ○ Provide training for new staff involved in post-construction storm water management, planning and review, and inspection and enforcement. ○ Maintain and update the inventory of all post-construction structural storm water control measures.	Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official	Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement

3rd Year July, 2023	○ Review all SWPPPs to ensure plans include long-term storm water management measures. ○ Provide preferred design specifications to more effectively treat storm water to developers and contractors. ○ Inspect scheduled long-term storm water management facilities. ○ Provide training for new staff involved in post-construction storm water management, planning and review, and inspection and enforcement. ○ Maintain and update the inventory of all post-construction structural storm water control measures. ○ Implement the plan to retrofit existing developed sites that are adversely impacting water quality. ○ Implement procedures for site plan review which incorporate consideration of water quality impacts.	Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official	Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement
4th Year July, 2024	○ Review all SWPPPs to ensure plans include long-term storm water management measures. ○ Provide preferred design specifications to more effectively treat storm water to developers and contractors. ○ Inspect scheduled long-term storm water management facilities. ○ Provide training for new staff involved in post-construction storm water management, planning and review, and inspection and enforcement. ○ Maintain and update the inventory of all post-construction structural storm water control measures.	Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official	Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement

	○ Implement the plan to retrofit existing developed sites that are adversely impacting water quality. ○ Implement procedures for site plan review which incorporate consideration of water quality impacts.	Storm Water Official Storm Water Official	Permit requirement Permit requirement
5th Year July, 2025	○ Review all SWPPPs to ensure plans include long-term storm water management measures. ○ Provide preferred design specifications to more effectively treat storm water to developers and contractors. ○ Inspect scheduled long-term storm water management facilities. ○ Provide training for new staff involved in post-construction storm water management, planning and review, and inspection and enforcement. ○ Maintain and update the inventory of all post-construction structural storm water control measures. ○ Implement the plan to retrofit existing developed sites that are adversely impacting water quality ○ Implement procedures for site plan review which incorporate consideration of water quality impacts	Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official Storm Water Official	Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement Permit requirement

Chapter 6

Pollution Prevention and Good Housekeeping For Municipal Operations (O&M)

Permit Requirement 4.2.6

Chapter 6 outlines Farmington City's Operations and Maintenance program (O&M) to manage City-owned or operated facilities, municipal operations, and structural storm water controls which include standard operating procedures (SOPs), pollution prevention BMPs, storm water pollution prevention plans or similar type of documents, and a training component that has the ultimate goal of preventing or reducing the runoff of pollutants to the Farmington City MS4 *(Permit No. UTR090006)* and the Waters of the State from municipal operations and facilities. The components of the O&M program shall be included below and will identify the department responsible for performing each activity described in this section.

Requirements

*The items below are in reference to Minimum Control Measures listed in the Small MS4 General UPDES Permit. This SWMP is designed to relate directly to that permit for ease in compliance. Please utilize the Small MS4 General UPDES Permit for reference:

Permit Requirement 4.2.6.1. *Written Inventory of City Owned or Operated Facilities*

Farmington City has developed a current written inventory of all municipal owned or operated facilities, operations, and storm water controls including "high priority" facilities along with all the associated details to manage them. This inventory is dynamic and is updated annually. Please see Appendix Q.

Farmington City keeps an up-to-date map of the City's storm drain system that identifies all MS4 owned or operated storm drain facilities that conveys storm water to Waters of the State including but not limited to drain pipe inlets, man holes, ditches, canals, and other conveyance structures with information relevant to the storm drain system. This map is dynamic and is updated annually. Please see Chapter 3-Appendix AA.

Farmington City has delineated the City storm drain infrastructure into 5 separate regions with approximately 20% of the MS4 assets within each. As per the Small MS4 General UPDES Permit illicit discharge detection, and municipal asset inspection/maintenance are to be conducted on all MS4 storm drain infrastructure within the permitting period, at a rate of 20% of defined assets per year. The IDDE and O&M program will conduct inspections/maintenance following the delineated storm drain zones. The zones are provided in the Storm Drain System Map-Appendix AA.

Permit Requirement 4.2.6.2. *Common Pollutants at Facilities*

Appendix Q lists the common pollutants associated with each municipal-owned or operated facility, operation, and storm water control. The process of determining these pollutants is based upon the use of said facility, operation, and storm water control. "High Priority" areas are determined by a decision matrix utilizing the results of common pollutants expected at each site. Please see Appendix R for the decision matrix.

Permit Requirement 4.2.6.3. *BMPs at High-Priority Facilities*

Based on the assessment required in 4.2.6.2. the City has identified "high priority" facilities or operations. Appendix Q has the listed BMPs in place at each "high priority" site to target the specified pollutants generated onsite, and/or pollutants associated with the impaired waters. BMPs referenced are found in Appendix F. Control measures are defined in each respective "high priority" area SWPPP. Both control measures and BMPs are monitored regularly, the frequency of which is specified by 4.2.6.5.

Permit Requirement 4.2.6.4. *SWPPPs at High-Priority Facilities*

Appendix Q lists the City owned or operated "high priority" facilities. The SWPPP in place at each defined "high priority" area is listed in the same Appendix Q adjacent to the site it protects. These SWPPPs are uniquely identified and stored electronically and physically at the "high priority" site. The inspection frequency follows the schedule defined by 4.2.6.5.

Permit Requirement 4.2.6.5. *High-Priority Inspection Schedules*

The following inspections shall be conducted at "high priority" City owned or operated facilities:

4.2.6.5.1. Monthly Visual Inspections: The City performs monthly visual inspections of "high priority" facilities and related storm water outfalls in accordance with the developed SOP: *High-Priority Site Monthly Visual Inspection (IE-6)* found in Appendix S to verify the performance of the BMPs and all other systems designed and placed to eliminate pollutant discharges. The monthly inspections are tracked in a log for every facility and the records kept with the SWPPP document. The inspection log includes any identified deficiencies and the corrective actions taken to fix the deficiencies.

4.2.6.5.2. Semi-Annual Comprehensive Inspections: Twice per year, a comprehensive inspection of "high priority" facilities, including all storm water controls, is performed, with specific attention paid to waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, and similar pollutant generating areas. The semi-annual inspection results are documented and recorded with the SWPPP document. This inspection is done in accordance with the developed SOP: *High-Priority Site Semi-Annual Comprehensive Inspection (IE-7)* found in Appendix S. The inspection report

includes any identified deficiencies and the corrective actions taken to remedy the deficiencies.

4.2.6.5.3. Annual Visual Observation of Storm Water Discharges: Once per year, the City visually observes the quality of the storm water discharges from the "high priority" facilities. Any observed problems that can be associated with pollutant sources or controls are remedied as soon as practicable, at a minimum, before the next storm event. Remediation is required to prevent discharge to the storm drain system. Visual observations are documented and records kept with the SWPPP document. This inspection is done in accordance with the developed SOP: *High-Priority Site Annual Visual Observation of Storm Water Discharges (IE-8)* found in Appendix S. The inspection report includes identified deficiencies and the corrective actions taken to remedy them.

Permit Requirement 4.2.6.6. *Standard Operating Procedures for Facilities*

The City has developed and implemented SOPs to protect water quality at each of the facilities owned or operated by the City and/or activities conducted by the City. See Appendix S.

4.2.6.6.1 SOPs for Activities: Appendix S includes Spill Incident Responses, Illicit Discharge and Elimination, Inspection & Enforcement, General, Parks and Recreation, Streets / Storm Drain, and Culinary Water procedures that protect water quality.

4.2.6.6.2. SOPs for Storm Drain Infrastructure: Appendix S hosts a chapter on Streets and Storm Drain operations to ensure the regular inspection, cleaning, and repair of catch basins, storm water conveyance pipes, ditches and irrigation canals, culverts, structural storm water controls, and structural runoff treatment and/or flow control facilities for the protection of water quality.

4.2.6.6.3. SOPs for Material Disposal: Appendix S includes SOPs to ensure and document the proper disposal methods of all waste and wastewater removed during cleaning and maintenance of the storm water conveyance system in accordance to federal, state and local laws.

4.2.6.6.4. SOPs for Vehicle Cleaning: Appendix S includes SOPs to ensure that vehicle, equipment, and other wash waters are not discharged to the MS4 or waters of the state as these types of discharges are strictly prohibited under the Small MS4 General UPDES Permit.

4.2.6.6.5. SOPs for Spill Response in Coordination with Fire Department: Appendix S has a developed spill prevention plan in coordination with the local fire department.

4.2.6.6.6. City Owned or Operated Facility Floor Drain Map: The City maintains an inventory of all floor drains inside all City-owned or operated buildings and

ensure that all floor drains discharge to appropriate locations. The inventory is found in Appendix T and shall be updated as necessary to ensure accuracy.

Permit Requirement 4.2.6.7. *City Contracted Contractors Certification*

All contractors performing O&M activities for the City enter into contract via the Storm Water Land Disturbance Permit with Farmington City to comply with Title 16 of the Farmington City Ordinances, and Section 4.2.4 of the MS4 Permit. During the entirety of the projects duration inspection of the work will be done utilizing SOP: *Inspecting Construction Sites (IE-1)* found in Appendix S.

Permit Requirement 4.2.6.8. *Water Quality Impact Review*

The City has developed and implemented a process to assess the water quality impacts and the design of all new flood management structural controls that are associated with the City or that discharge to the MS4. This process is included in Appendix K.

4.2.6.8.1. The Water Quality Impact Review: In Appendix K considers existing flood management structural controls to be assessed to determine whether changes or additions should be made to improve water quality.

Permit Requirement 4.2.6.9. *City Owned or Operated Facility Retrofit Plan*

Pursuant to 4.2.5. the City will consider the implementation of Low-Impact Development design criteria and City sanctioned engineering standards at all existing developed sites that adversely impact water quality regardless of size.

Permit Requirement 4.2.6.10. *Operations & Maintenance Training*

Appendix U contains the City Operations & Maintenance Training plan. All employees, contracted staff, and other responsible entities that have primary operation or maintenance job functions that are likely to impact storm water quality receive annual training. The annual training addresses the importance of protecting water quality, the requirements of the Permit, O&M requirements, inspection procedures, ways to prevent or minimize impacts to water quality by how they perform their job activities SOPs and SWPPPs for the various City-owned or operated facilities, as well as, procedures for reporting water quality concerns, including potential illicit discharges.

Pollution Prevention and Good Housekeeping For Municipal Operations Measurable Goals			
Target Date	**BMP**	**Responsible Party**	**Rationale**
1st Year July, 2021	○ Review inventory of all municipal facilities and operations- update if necessary.	Storm Water Official /Public Works/Parks & Rec	City can identify all its facilities and operations
	○ An assessment will be made of the inventory for their potential to discharge typical pollutants to the storm water system.	Storm Water Official /Public Works/Parks & Rec	City needs to know all potential areas for discharge
	○ High priority facilities or operations that have high potential to generate storm water pollutants will be identified- Update list.	Storm Water Official	The highest priority operations need to be identified
	○ Facility-specific SOPs will be adopted for the high priority facilities or operations.	Storm Water Official /Public Works/Parks & Rec	Permit requirement
	○ SOPs addressing the storm water collection system will be reviewed.	Storm Water Official /Public Works	Permit requirement
	○ SOPs will be reviewed for the shop/maintenance facilities	Storm Water Official /Public Works	Permit requirement
	○ SOPs will be reviewed for vehicle fleet and equipment maintenance.	Storm Water Official /Public Works	Permit requirement
	○ SOPs will be reviewed addressing roads, highways, parking lots and snow removal.	Storm Water Official /Public Works	Permit requirement
	○ SOPs will be reviewed for parks and open space operations and maintenance.	Storm Water Official /Parks & Rec	Permit requirement
	○ SOPs will be reviewed for municipal building maintenance	Storm Water Official /Public Works/Parks & Rec	Permit requirement
	○ One training session will be held for municipal employees.		Permit requirement
	○ An inventory of all floor drains inside all City owned or operated building will be reviewed.	Storm Water Official	Permit requirement
	○ An inventory including a map of all storm drains located on	Storm Water Official	Permit requirement

	the property of all City owned or operated buildings will be reviewed and updated		
2nd Year July, 2022	○ Review and update inventory of municipal facilities and operations.	Storm Water Official	Need to keep records up-to-date
	○ Inspect all municipal facilities at least once for SWPPP compliance.	Storm Water Official	Permit requirement
	○ Conduct one training session for municipal employees.	Storm Water Official	Need to keep employees trained on newest developments
	○ Review the list of priority storm water treatment and flow control facilities and inspect them after major storm events.	Storm Water Official	Permit requirement
	○ Obtain a UPDES Permit for any new construction projects	Storm Water Official	City must comply with all NPDES requirements
	○ Conduct pre-construction meetings to discuss BMPS for all new municipal construction.	Storm Water Official	City must comply with all NPDES requirements
	○ Conduct weekly visual inspections of “high priority” facilities.	Storm Water Official	Permit requirement
	○ Conduct at least quarterly comprehensive inspections of high priority facilities.	Storm Water Official	Permit requirement
	○Visually observe the quality of the storm water discharges from “high priority” facilities at least quarterly.	Storm Water Official	Permit requirement
	○ Develop and implement a process to assess water quality impacts in the design of all new flood management structural controls that discharge to the City storm water system.	Storm Water Official	Permit requirement

	○Assess existing flood management structural controls to determine whether changes or additions should be made to improve water quality		
3rd Year July, 2023	○ Review and update inventory of municipal facilities and operations.	Storm Water Official	Need to keep records up-to-date
	○ Inspect all municipal facilities at least once for SWPPP compliance.	Storm Water Official	Permit requirement
	○ Conduct one training session for municipal employees	Storm Water Official	Need to keep employees trained on newest developments
	○ Inspect priority storm water treatment and flow control facilities after major storm events.	Storm Water Official	Permit requirement
	○ Obtain a UPDES Permit for any new construction projects	Storm Water Official	City must comply with all NPDES requirements
	○ Conduct pre-construction meetings to discuss BMPS for all new municipal construction.	Storm Water Official	City must comply with all NPDES requirements
	○ Conduct weekly visual inspections of “high priority” facilities	Storm Water Official	Permit Requirement
	○ Conduct at least quarterly comprehensive inspections of high priority facilities.	Storm Water Official	Permit Requirement
	○Visually observe the quality of the storm water discharges from “high priority” facilities at least quarterly	Storm Water Official	Permit Requirement

4th Year July, 2024	○ Review and update inventory of municipal facilities and operations.	Storm Water Official	Need to keep records up-to-date
	○ Inspect all municipal facilities at least once for SWPPP compliance.	Storm Water Official	Permit requirement
	○ Conduct two training sessions for municipal employees	Storm Water Official	Need to keep employees trained on newest developments
	○ Inspect priority storm water treatment and flow control facilities after major storm events.	Storm Water Official	Permit requirement
	○ Obtain a UPDES Permit for any new construction projects.	Storm Water Official	City must comply with all NPDES requirements
	○ Conduct pre-construction meetings to discuss BMPS for all new municipal construction.	Storm Water Official	City must comply with all NPDES requirements
	○ Conduct weekly visual inspections of “high priority” facilities.	Storm Water Official	Permit Requirement
	○ Conduct at least quarterly comprehensive inspections of high priority facilities.	Storm Water Official	Permit Requirement
	○Visually observe the quality of the storm water discharges from “high priority” facilities at least quarterly	Storm Water Official	Permit Requirement
5th Year July, 2025	○ Review and update inventory of municipal facilities and operations.	Storm Water Official	Need to keep records up-to-date
	○ Inspect all municipal facilities at least once for SWPPP compliance.	Storm Water Official	Permit requirement
	○ Conduct two training sessions for municipal employees.	Storm Water Official	Need to keep employees trained on newest developments
	○ Inspect priority storm water treatment and flow control facilities after major storm events.	Storm Water Official	Permit requirement
	○ Obtain a UPDES Permit for any new construction projects.	Storm Water Official	City must comply with all NPDES requirements
	○ Conduct pre-construction meetings to discuss BMPS for all	Storm Water Official	City must comply with all NPDES requirements

	new municipal construction.		
	○ Conduct weekly visual inspections of “high priority” facilities.	Storm Water Official	Permit Requirement
	○ Conduct at least quarterly comprehensive inspections of high priority facilities.	Storm Water Official	Permit Requirement
	○Visually observe the quality of the storm water discharges from “high priority” facilities at least quarterly	Storm Water Official	Permit Requirement

APPENDIX TO THE FARMINGTON CITY
STORM WATER MANAGEMENT PROGRAM

Appendix A- List of Coalition activities in which Farmington City will participate
Appendix B- Farmington City Illicit Discharge Detection Elimination program
Appendix C- Procedure for Locating and Listing Priority Areas Likely to Have Illicit Discharges
Appendix D- Title 16 Farmington City Storm Water Ordinance
Appendix E- Enforcement Policy for Construction Site Storm Water Runoff Control
Appendix F- SOPs for Construction Site Storm Water Runoff Control
Appendix G- Enforcement Strategy for Long-Term Storm Water Management in New Development and Redevelopment
Appendix H- Documentation on How Title 16 Meets 4.2.5.2.2 of Permit #UTR090006
Appendix I- Process to Evaluate and Encourage Low Impact Development (LID)
Appendix J- Specific Hydrologic Method for Calculating Runoff Volumes and Flow Rates
Appendix K- Procedure for Site Plan Review Which Incorporate Consideration of Water Quality Impacts
Appendix L- Inventory of All Post-construction Structural Storm Water Control Measures
Appendix M- SOP for Site Inspection and Enforcement of Post-construction Storm Water Control Measures
Appendix N- Schedule for Inspecting Existing Long-term Storm Water Management Facilities
Appendix O- Plan to Retrofit Existing Developed Sites That Are Adversely Impacting Water Quality
Appendix P- Preferred Design Specifications to More Effectively Treat Storm Water
Appendix Q- Inventory of All Municipal Facilities and Operations

Appendix R- Assessment of Municipal Facilities and Operations For Their Potential to Generate Storm Water Pollutants to the Storm Water System
Appendix S- Standard Operating Procedures for City Operations
Appendix T- Inventory o f All Floor Drains Inside All City-owned or Operated Buildings
Appendix U- Process to Assess the Water Quality Impacts in the Design of All New Flood Management Structural Controls That are Associated With the City or Discharge to the MS4
Appendix V- Process to Assess Whether Changes or Additions Should be Made to Structural Controls to Improve Water Quality
Appendix W- SWMP Documentation Process
Appendix X- Fiscal Analysis
Appendix Y- Dry Weather Screening Plan
Appendix Z–Farmington City/Davis County Interlocal Agreement
Appendix AA- Spill/Illicit Discharge Response Procedure
Apendix BB – 80th percentile study
Apendix CC – Long-Term Storm Water Management Structural Control or BMP Inspection Report.

Appendix A

Table listing Activities of the Davis County Storm Water Coalition in which Farmington City Will Participate

1. 4th Grade Water Fair
2. Salt Lake County Media Campaign (commercials).
3. Coalition sponsored contractor training
4. Coalition sponsorship of RSI training
5. Produced targeted brochures for distribution to the public
6. Coalition-hired 4th grade storm water program teacher
7. Develop standardized SOPs to be adapted by individual cities
8. Produce Coalition BMP manual

Appendix B
Farmington City Illicit Discharge Detection Elimination program

This IDDE program will be implemented by Farmington City to detect and eliminate sources of non-storm water discharges from the MS4 and to implement defined procedures to prevent illicit connections and discharges.

4.2.3.1 A current storm sewer system map of the Farmington is maintained on the City's GIS system.

4.2.3.2 **16-4-140: ILLICIT DISCHARGES:**

A. Prohibited: No person or entity shall discharge or cause to be discharged into the city's storm drain system or watercourses any materials, including, but not limited to, pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards

B. Exceptions: The commencement, conduct or continuance of any illicit discharge to the city's storm drain system is prohibited, except as described as follows:

1. Water line flushing or other potable water sources;

2. Landscape irrigation or lawn watering;

3. Approved diverted stream flows;

4. Groundwater infiltration to storm drains;

5. Uncontaminated pumped groundwater;

6. Air conditioning condensation;

7. Natural riparian habitat or wetland flows;

8. Firefighting activities, and any other water source not containing pollutants;

9. Swimming pools (only if dechlorinated in accordance with federal regulations to less than 0.4 ppm chlorine);

10. Springs;

11. Natural riparian habitat or wetland flows; or

12. Discharges specified in writing by the stormwater official as being necessary to protect public health and safety.

C. Dye Testing: Dye testing is an allowable discharge, but requires a written notification to the stormwater official at least five (5) business days prior to the time of the test.

D. Permitted Discharges: The prohibitions set forth in this section shall not apply to any nonstormwater 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 drain system by the city.

E. Connections: The prohibitions set forth in this section expressly include, without limitation, connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection. The prohibition also expressly includes, without limitation, connections of sanitary sewer lines to the storm drain system.

F. Curbside Drainage Outlets: No person or entity shall install drainage outlets into curbsides unless approved by the city engineer or stormwater official. Approval shall be granted in limited circumstances and must be based on a showing of good cause. (Ord. 2008-03, 1-8-2003)

16-5-040: REMOVAL OF OBSTRUCTION:

In addition to any penalties which may be imposed pursuant to this title, the city may do the following:

A. Removal: Remove any of the obstructions and any pipelines or other devices installed in violation of the provisions of this title;

B. Notice: Give written notice to persons in violation of the provisions of this title requiring the removal of offending installations from natural channels or other storm drainage facilities. Notices may be personally served or may be mailed to violators by registered mail; provided, that a copy is also posted on offending installations for a period of ten (10) days. If such installations are not removed within ten (10) days after notice is given, the city may effect removal at the expense of the person in violation and may recover its costs and expenses therefor; and/or

C. Abatement: Bring an action for the abatement of the nuisance caused by the offending installation and/or for the recovery of the city's costs and expenses incurred in removing the offending installation pursuant to subsection A or B of this section. (Ord. 2008-03, 1-8-2003)

16-5-050: STOP WORK ORDER; REVOCATION OF PERMIT:

In the event that any person holding a storm water permit pursuant to this title fails to complete the work required under the permit, fails to comply with all the requirements, conditions and terms of the permit, or violates the terms of the permit, the city may suspend or revoke the storm water permit and/or the applicable site development permit and issue a stop work order as is necessary to eliminate any danger to persons or property and to leave the site in a safe condition. If the city issues a stop work order, the permittee, and its subcontractors, shall immediately stop all work on the project, building or permit activity. Except as otherwise authorized by the city, no work shall be conducted on the project, building or permit activity until and unless the violation has been remedied and the city has issued a reinstated permit. The permittee shall be required to pay a reinstatement fee in

accordance with the Farmington City fee schedule. The city may authorize completion of all necessary temporary or permanent erosion control or stabilization measures and may use authorized bond funds to pay for the same. The permittee shall be liable to the city for all costs and expenses that may be incurred or expended by the city in bringing the property into compliance with the requirements of the permit and any collection costs, including legal fees, incurred by the city. The city may recover these costs through appropriate legal action. (Ord. 2008-03, 1-8-2003)

16-5-060: ORDER COMPLIANCE:

Whenever the city finds that a person or entity has violated a prohibition or failed to meet a requirement of this title, the authorized enforcement official may order compliance by written notice of violation to the responsible person. Such notice may require, without limitation:

A. The performance of monitoring, analyses and reporting;

B. The elimination of illicit connections or discharges;

C. That violating discharges, practices or operations shall cease and desist;

D. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;

E. Payment of a fine to cover administrative and remediation costs; and

F. The implementation of source control or treatment BMPs. (Ord. 2008-03, 1-8-2003)

16-5-065: USE OF BOND PROCEEDS:

In addition to the remedies and procedures set forth in this chapter, the city is authorized to utilize the bond proceeds in accordance with the terms and conditions of the bond agreement entered into by the parties for the particular project, development or construction activity in accordance with section 16-3-055 of this title. (Ord. 2008-03, 1-8-2003)

16-5-070: VIOLATION AND PENALTY:

A. Criminal Violation: Any person who violates any provision of this title shall be guilty of a class B misdemeanor and shall be subject to fines as provided in Utah Code Annotated section 76-3-301, as amended, and/or imprisonment as provided in Utah Code Annotated section 76-3-204, as amended. Each day during which any violation of any of the provisions of this title is committed, continued or permitted shall constitute a separate offense.

B. Civil Penalty: Any person who violates any provision of this title may be subject to civil penalties as more particularly set forth by resolution or ordinance of the city council.

C. Damages: If, as the result of the violation of any provision of this title, the city or any other party suffers damage and is required to make repairs to and/or replace any materials, the cost of the repair or replacement shall be borne by the party in violation, in addition to any criminal fines and/or penalties.

D. Nuisance: In addition to the penalties provided herein, any condition caused or permitted to exist in violation of any of the provisions of this title shall be considered a threat to the

public health, safety, welfare and the environment, and may be declared and deemed a nuisance by the stormwater official, or his or her designee, and may be abated and/or restored by the city in accordance with nuisance procedures.

E. Other Relief: This section shall not limit the authority of any court of competent jurisdiction to impose any other sanction or order any other relief as may be appropriate and lawful under local, state or federal law. (Ord. 2008-03, 1-8-2003)

4.2.3.2.1 **16-1-030: ADMINISTRATION AND INTERPRETATION:**

The city manager is hereby designated as the city's authorized enforcement official and as such shall implement, administer and enforce the provisions of this title. Any powers granted or duties imposed upon the city manager may be delegated by the city manager or the city council to persons or entities acting in the beneficial interest of or in the employ of the city. (Ord. 2008-03, 1-8-2003; and. 2016 Code)

4.2.3.3.1 Priority areas likely to have illicit discharge:

A.

Appendix C

Procedure for Locating and Listing Priority Areas Likely to Have Illicit Discharge

1. Locate on the zoning map areas zoned for residential, commercial, industrial and mixed uses.
2. Discuss with the planning and public works departments which areas are oldest and most likely to have illicit connections.
3. Discuss with the County Public Health Department where there are permitted on-site sewage disposal systems or where there have been instances of sewer overflows or cross-connections
4. Identify sensitive water bodies in the community and use the zoning map to identify areas upstream from these water bodies.
5. Based on identified areas, develop a priority list of most likely areas to have illicit discharges and document the basis for the selection of each priority area.
6. Update the list annually.

Appendix D

Title 16 Farmington City Storm Water Ordinance

Below is a link to the Farmington City Storm Water Ordinance. A hard copy can be reviewed at Farmington City Hall.

http://www.sterlingcodifiers.com/codebook/index.php?book_id=1042

Appendix E
Enforcement Policy for Construction Site Storm Water Runoff Control

(Note: This policy will be updated to make sure it meets all the requirements of the current UPDES permit.)

Farmington City Storm Water Ordinance Enforcement Policy

The intent of the following policy for enforcing the Farmington City Title 16 Storm Water Ordinance is to encourage builders and developers in Farmington to police their construction sites and make sure there are no violations present before it is identified by City employees. This self-policing is intended to help ensure that there are fewer incidences of contamination of the City's storm water system which could be violations of the City's Utah Pollutant Discharge Elimination System (UPDES) permit.

Storm Water Ordinance Enforcement Policy:

1. At the time of building permit application, the applicant shall submit an application for a Storm Water Permit with its associated fee, an approved UPDES Permit from the State of Utah (this can be obtained on-line at https://secure.utah.gov/stormwater/) and a copy of the Storm Water Pollution Prevention Plan (SWPPP) that has been prepared in conjunction with the UPDES Permit or a copy of the contract transferring responsibility for the Developer's SWPPP to the applicant.
2. At the time of Building Permit issuance, the applicant shall post a $1000 cash bond to cover costs, required performance and fines for violations as authorized in the bond agreement.
3. If violations of the ordinance are identified, the applicant will be given a Notice of Violation posted at the location of the violation providing 24 hours for the violation to be addressed, and warning that a Stop Work Notice will follow along with a $100/violation/day fine to be deducted from the storm water cash bond.
4. If the violation is still evident after 24 hours, a Stop Work Notice will be posted at the site, a photo to document the violation will be taken and kept in the building permit file, and a fine in the amount of $100/violation/day since the violation was first noted will be deducted from the bond. If there is evidence that illegal materials actually entered the storm water system, the fine will be doubled to $200/violation/day. These fines are authorized by Farmington City Ordinance 16-5-060 (e).
5. Each violation of the ordinance will be subject to the fine for each day the violation exists.
6. If the bond amount remaining drops below $250, a Stop Work Notice will be posted at the site preventing work from continuing until the balance of the bond has been increased back up to $1000.
7. After the final inspection of the project by the Storm Water Official or his/her designee, the balance of the bond to be released will be computed, and the bond will be released.

8. Failure to comply with a Stop Work Notice could result in the issuance of a Citation, potentially resulting in additional fines or penalties.
9. Citations may be issued to individuals or subcontractors who are identified committing violations of the Storm Water Ordinance.
10. Spills or severe contamination of the storm water system will be reported to the Davis County Health department for investigation and prosecution. Their escalating fine procedure will be implemented depending on the severity of the violation.

Appendix F

City Best Management Practices

Adopted from the Davis County Storm Water Coalition

A Guide to Stormwater Best Management Practices

DAVIS COUNTY
STORM WATER
COALITION

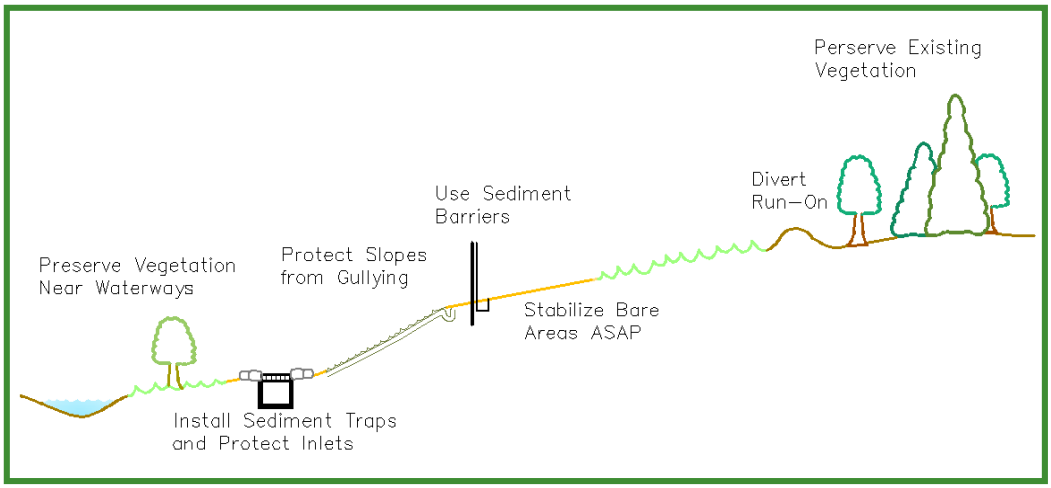
INTRODUCTION

Construction sites should be managed to minimize the pollution that can leave the site with storm water. Taking appropriate measures to reduce erosion, remove sediment, and manage construction materials and equipment will minimize storm water pollution.

Reducing soil erosion is a crucial aspect of storm water pollution prevention for construction sites. Reducing erosion is easier and less expensive than attempting to remove sediment from the storm water.

Contributions to an *increase* in erosion are:

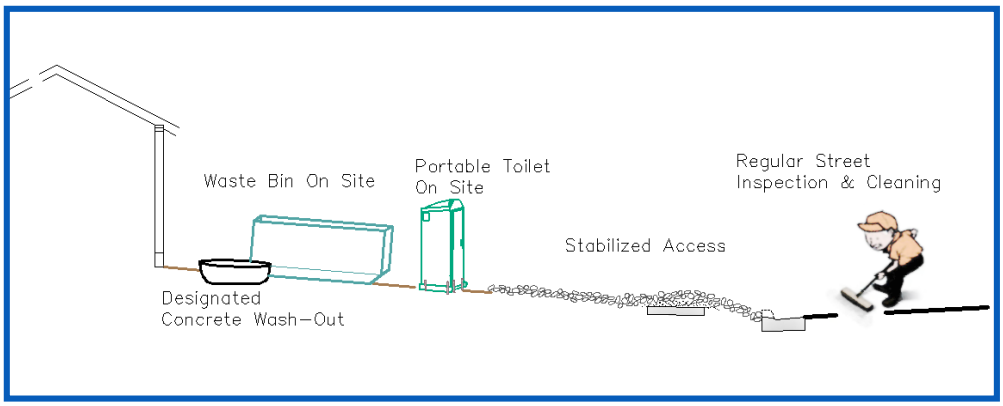
- Removing vegetation
- Exposing sub-soil to weathering
- Exposing sub-soil to vehicle traffic
- Re-shaping the land
- Allowing gullies to form and grow
- Longer/Steeper slopes



Steps must be taken to *minimize* these factors of erosion during and after construction.

Removing the sediment that does get into the storm water is also important to protect the storm drain system and waterways.

Managing construction material and equipment for pollution is important for any construction site, including building construction sites. There must be means for safe disposal of all types of waste. The tracking and washing of soil into the street must be prevented. Downstream storm water inlets should also be protected.



Regular inspection and proper maintenance of the site will help ensure the effectiveness of the BMPs in minimizing storm water pollution.

This manual includes Best Management Practices (BMPs) that are useful for reducing pollutants leaving construction sites, particularly those that may be discharged into the storm water systems. Implementing these measures is important because the water from the storm drain systems drains directly into the streams, usually untreated, then through the wetlands before entering the Great Salt Lake. Construction sites can be a significant source of pollution to the streams and wetlands, which can damage them and be detrimental to their role in our environment.

Not all possible BMPs are available from this menu. If you would like to use a BMP that is not included here, propose it to your local jurisdiction.

DAVIS COUNTY STORM WATER COALITION

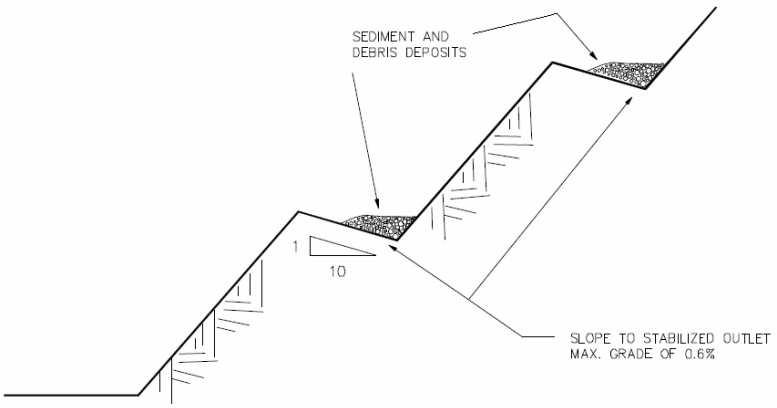
CONSTRUCTION

Best Management Practices

INDEX

		Waste and Material Management	Vehicle and Equipment Management	Stabilization	Runoff Diversion	Velocity Reduction	Sediment Removal
BE	Benching				✓		
BRF	Brush or Rock Filter						✓
BRRC	Building Repair, Remodeling, and Construction	✓					
CD	Check Dams				✓		
CESA	Contaminated or Erodible Surface Area			✓			
CM	Chemical Mulch			✓			
CP	Compaction			✓			
CR	Construction Road Stabilization			✓			
CST	Curb Sedimentation Trap						✓
CWM	Concrete Waste Management	✓					
DC	Dust Controls			✓			
DD	Diversion Dikes				✓		
DI	Drainage Isolation				✓		
EBB	Earth Berm Barrier	✓					
ECB	Erosion Control Blankets			✓			
EVWA	Equipment and Vehicle Washdown Area		✓				
FR	Fiber Rolls						✓
FS	Filter Strips			✓			
GM	Geotextiles and Mats			✓			
HM	Hydromulching			✓			
HWM	Hazardous Waste Management	✓					
IP-E	Inlet Protection - Excavated						✓
IP-GB	Inlet Protection - Gravel Bags						✓
IP-SB	Inlet Protection - Silt Bags						✓
IP-SF	Inlet Protection - Silt Fence or Straw Bale						✓
MS	Material Storage	✓					
MU	Mulching			✓			
OP	Outlet Protection					✓	
PEV	Preservation of Existing Vegetation			✓			
PT	Portable Toilet	✓					
SB	Sediment Basin						✓
SBB	Sand Bag Barrier						✓
SCE	Stabilized Construction Entrance			✓			
SCU	Spill Clean-Up	✓					
SD	Slope Drain				✓		
SF	Silt Fence						✓
SP	Seeding and Planting			✓			
SR	Surface Roughening					✓	
SS	Street Sweeping						✓
ST	Sediment Trap						✓
STB	Straw Bale Barrier						✓
TDS	Temporary Drains or Swales				✓		
TPS	Temporary and Permanent Seeding			✓			
TSC	Temporary Stream Crossing				✓		
VEC	Vehicle and Equipment Cleaning		✓				
VEF	Vehicle and Equipment Fueling		✓				
WD	Waste Disposal	✓					

BMP: Benching BE



DESCRIPTION:

Slope construction with benches spaced at regular intervals perpendicular to the slope which intercept and collect sheet flow and direct it to a stable outfall point.

APPLICATION:

- Unstabilized cut and fill slopes
- Large stockpiles
- Existing unstable slopes

INSTALLATION / APPLICATION CRITERIA:

- Benches should be formed as slope is constructed and graded to the outlet point
- Stabilized outlet with sediment controls should be in place prior to slope construction

LIMITATIONS:

- Construction slope design must accommodate benching
- Not appropriate for sandy or rocky soil
- Only effective if suitable outlet provided

MAINTENANCE:

- Inspect after major storm events and at least biannually; repair damaged areas
- Remove debris blocking water flow
- Inspect outlet, repair/replace sediment controls and remove sediment build up

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☒	☐	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

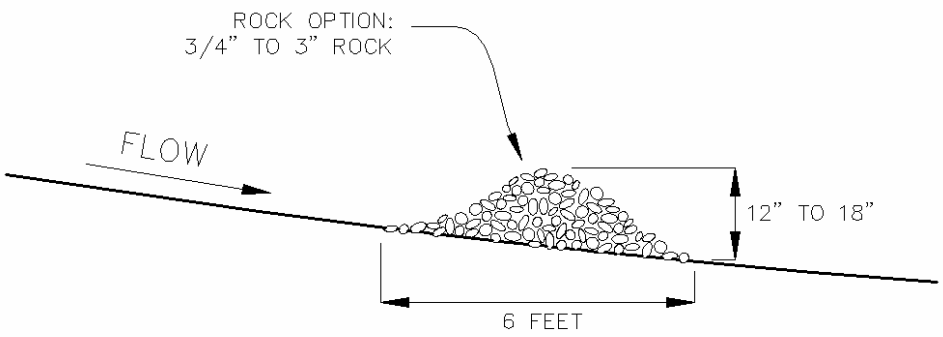
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Brush or Rock Filter — BRF



DESCRIPTION:

A rock filter is made of rock 3/4" - 3" in diameter and placed along a level contour. A brush filter is composed of brush (usually obtained during the site clearing) wrapped in filter cloth and anchored to the toe of the slope. If properly anchored brush or rock filters may be used for sediment trapping and velocity reduction.

APPLICATION:

- As check dams across mildly sloped construction roads
- Below the ote od slopes
- Along the site perimeter
- In areas where sheet flow occurs
- Around temporary spoil areas
- At sediment traps or culvert/pipe outlets

INSTALLATION / APPLICATION CRITERIA:

- For rock filter, use larger rock and place in a staked, woven wire sheathing if placed where concentrated flows occur
- Install along a level contour
- Leave area behind berm where runoff can pond and sediment can settle
- Drainage areas should not exceed 5 acres

LIMITATIONS:

- Rock berms may be difficult to remove
- Removal problems limit their usefulness in landscaped areas
- Runoff will pond upstream of the filter, possibly causing flooding if sufficient space does not exist

MAINTENANCE:

- Inspect after each rainfall and at a minimum of once every two weeks
- If berm is damaged, reshape and replace lost/dislodged rock
- Remove sediment when depth reaches 1/3 of berm height or 1 ft

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

	H	M	L
Sediment	☒	☐	☐
Nutrients	☐	☐	☒
Heavy Metals	☐	☐	☒
Toxic Materials	☐	☐	☒
Oil & Grease	☐	☐	☒
Floatable Materials	☐	☐	☒
Bacteria & Viruses	☐	☐	☒
Other Waste	☐	☐	☒

IMPLEMENTATION REQUIREMENTS

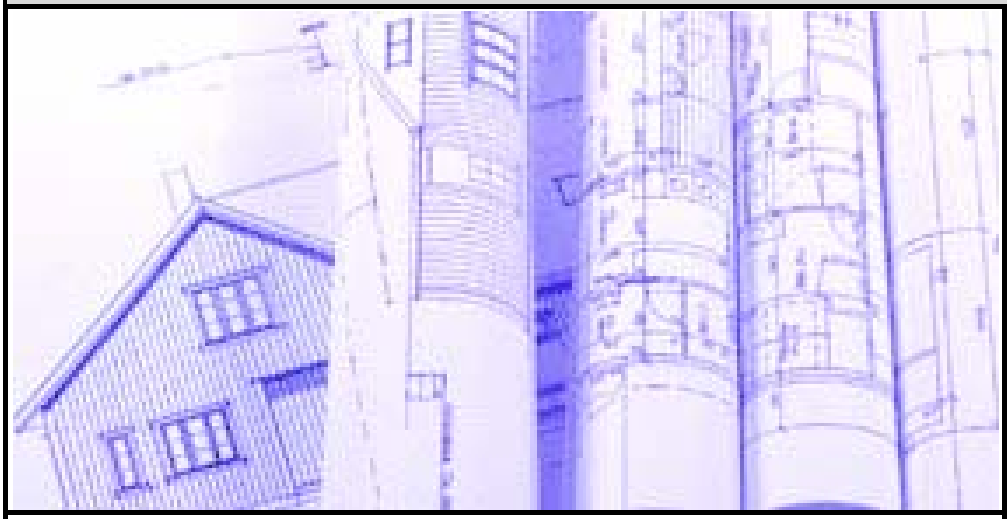
	H	M	L
Capital Costs	☒	☐	☐
O&M Costs	☐	☒	☐
Maintenance	☐	☐	☒
Training	☐	☐	☒
Staffing	☐	☐	☒
Administrative	☐	☐	☒

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Building Repair, Remodeling, and Construction — BRRC



DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from building repair, remodeling and construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

APPLICATION:

- Use soil erosion control techniques if bare ground is temporarily exposed
- Use permanent soil erosion control techniques if the remodeling clears buildings from an area that are not to be replaced

INSTALLATION / APPLICATION CRITERIA:

- Enclose painting operations consistent with local air quality regulations and OSHA
- Properly store materials that are normally used in repair and remodeling such as paints and solvents
- Properly store and dispose waste materials generated from the activity
- Maintain good housekeeping practices while work is underway

LIMITATIONS:

- This BMP is for minor construction only
- Hazardous waste that cannot be re-used or recycled must be disposed of by a licensed hazardous waste hauler
- Safer alternative products may not be available, suitable, or effective in every case
- Be certain that actions to help storm water quality are consistent with OSHA and air quality regulations

MAINTENANCE:

None

OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☐	☐	☒	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☒	☐	☐	Toxic Materials
☒	☐	☐	Oil & Grease
☒	☐	☐	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

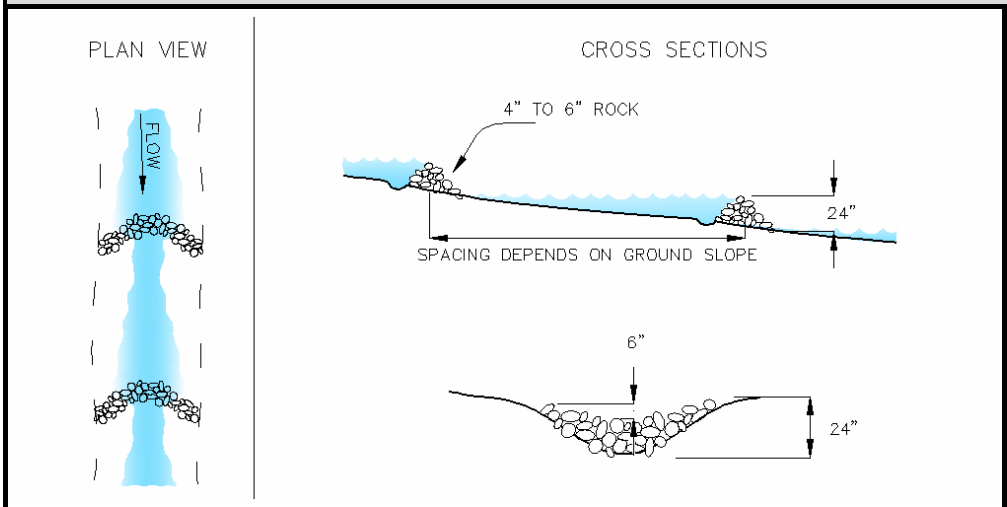
H	M	L	
☐	☐	☒	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☒	☐	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Check Dams CD



DESCRIPTION:

Small, temporary dams constructed across a drainage ditch to reduce velocity of concentrated storm water flows thereby reducing the erosion of the ditch.

APPLICATION:

- Temporary drainage paths
- Permanent drainage ways not yet stabilized
- Existing drainage paths receiving increased flows due to construction

INSTALLATION / APPLICATION CRITERIA:

- Prepare location of dam by removing any debris and rough grading any irregularities in channel bottom
- Place rocks by hand or with appropriate machinery; do not dump
- Space dams to make the base of the upstream dam the same elevation as the top of the next lower dam
- Construct dam with center lower to create a weir effect
- Construct 50% side slopes on dams

LIMITATIONS:

- Maximum recommended drainage area is 10 acres
- Maximum recommended height is 24"
- Do not use in running stream

MAINTENANCE:

- Inspect dams daily during prolonged rainfall after each major rain event and at a minimum of once every two weeks
- Remove any large debris and repair any damage to dam, channel or sideslopes
- Remove accumulated sediment when it reaches one half the height of the dam

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

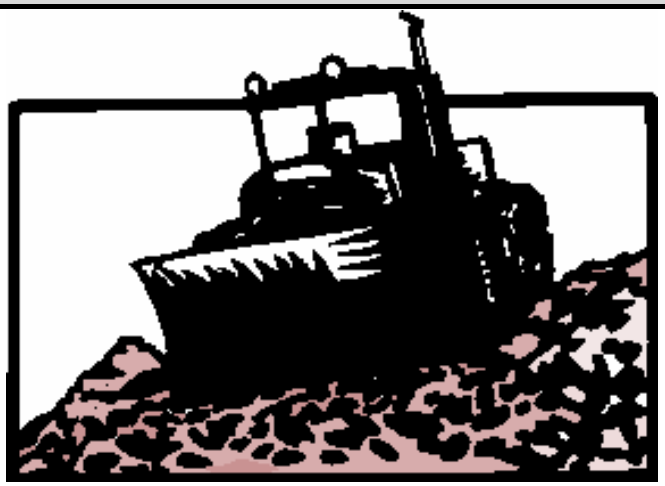
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Contaminated or Erodible Surface Areas — CESA



DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from contaminated or erodible surface areas by leaving as much vegetation on-site as possible, minimizing soil exposure time, stabilizing exposed soils, and preventing storm water runon and runoff.

APPLICATION:

This BMP addresses soils which are not so contaminated as to exceed criteria but the soil is eroding and carrrying pollutants off in the storm water.

INSTALLATION / APPLICATION CRITERIA:

Contaminated or erodible surface areas can be controlled by:
- Preservation of natural vegetation, revegitation, chemical stabilization, removal of contaminated soils or geosynthetics.

LIMITATIONS:

Disadvantages of preserving natural vegetation or re-vegetating include:
- Requires substantial planning to preserve and maintain the existing vegetation.
- May not be cost-effective with high land costs.
- Lack of rainfall and/or poor soils may limit the success of re-vegetated areas.

Disadvantages of chemical stabilization include:
- Creation of impervious surfaces.
- May cause harmful effects on water quality.
- Is usually more expensive than vegetative cover.

MAINTENANCE:

Maintenance should be minimal, except possibly if irrigation of vegetation is necessary.

OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☒	☐	☐	Nutrients
☒	☐	☐	Heavy Metals
☒	☐	☐	Toxic Materials
☒	☐	☐	Oil & Grease
☒	☐	☐	Floatable Materials
☒	☐	☐	Bacteria & Viruses
☒	☐	☐	Other Waste

IMPLEMENTATION REQUIREMENTS

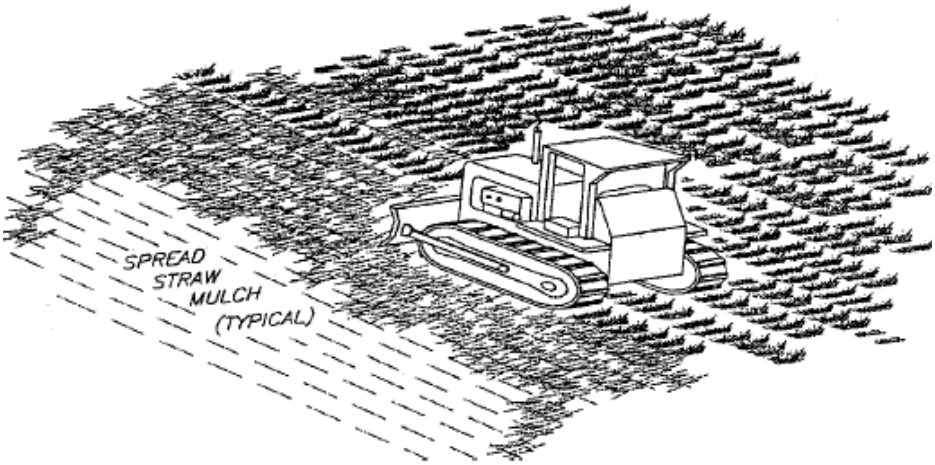
H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☐	☒	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Chemical Mulch — CM



DESCRIPTION:

Applying materials such as vinyl, asphalt, plastics, or rubber on an unprotected slope to temporarily stabilize the slope.

APPLICATION:

- As a tacking agent to aid the stabilization of mulches (where matting is not used)
- As a short-term alternative in areas where temporary seeding practices cannot be used because of seasonal condition or climate
- On steep and rocky slopes where neither mechanical methods or mulches and protective netting can be effectively applied

INSTALLATION / APPLICATION CRITERIA:

- The application rates and procedures recommended by the manufacturer of a chemical stabilization product should be followed to prevent the products from forming ponds and from creating large areas where moisture cannot get through.
- For permanent application, chemical mulches (when used with seed and mulch) should be applied over wood fiber or straw mulch

LIMITATIONS:

- Chemical mulches can create impervious surfaces and impact water quality if not properly applied
- Some products may not be suitable for use near live streams

MAINTENANCE:

- Inspect at regular intervals and after each runoff-producing storm event or at a minimum of once every two weeks
- Replace chemical mulch as needed to ensure adequate level of coverage

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

	H	M	L
Sediment	☒	☐	☐
Nutrients	☐	☒	☐
Heavy Metals	☐	☐	☒
Toxic Materials	☐	☐	☒
Oil & Grease	☐	☐	☒
Floatable Materials	☐	☐	☒
Bacteria & Viruses	☐	☐	☒
Other Waste	☐	☐	☒

IMPLEMENTATION REQUIREMENTS

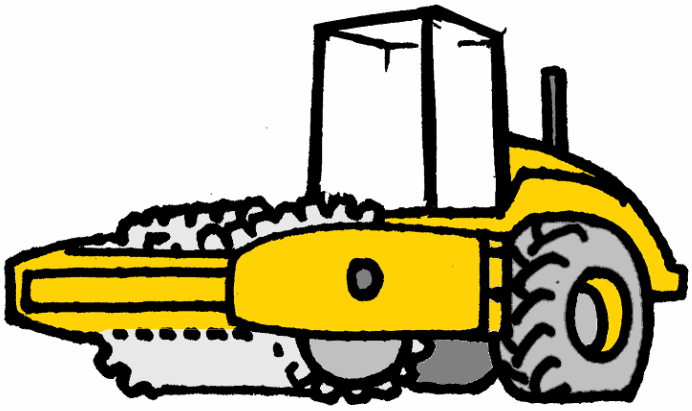
	H	M	L
Capital Costs	☐	☒	☐
O&M Costs	☐	☐	☒
Maintenance	☐	☐	☒
Training	☐	☐	☒
Staffing	☐	☐	☒
Administrative	☐	☐	☒

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Compaction CP



DESCRIPTION:

Use of rolling, tamping, or vibration to stabilize fill materials and control erosion by increasing the soil density. Increasing the density of soil improves soil strength, reduces long-term soil settlement, and provides resistance to erosion.

APPLICATIONS:

- Stabilize fill material placed around various structures.
- Improve soil in place as foundation support for roads, parking lots, and buildings.

INSTALLATION / APPLICATION CRITERIA:

- Make sure soil moisture content is at optimum levels.
- Use proper compaction equipment.
- Install sediment control and storm water management devices below compacted areas and runon interceptor devices above these areas. Drainage from compacted areas must be carefully planned to prodtect adjacent uncompacted soils.
- The surface of compacted areas should be scarified and seeded or mulched and seeded to increase the effectiveness of compaction.

LIMITATIONS:

- Compaction tends to increase runoff.
- Over-compaction will hamper revegitation efforts.

MAINTENANCE:

No maintenance required.

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

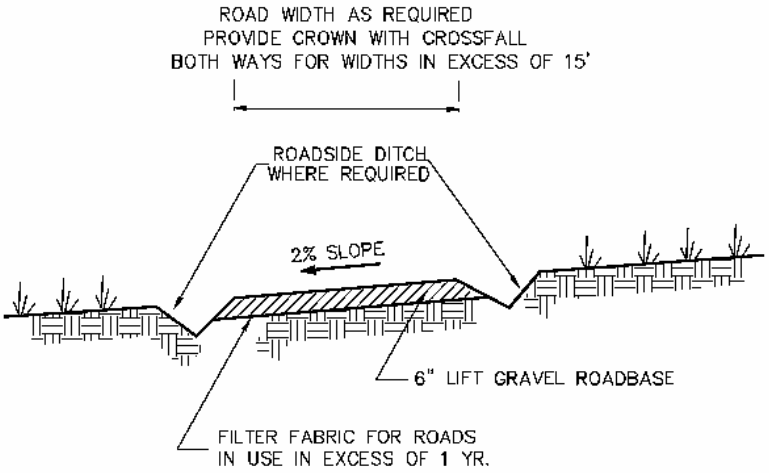
H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☐	☒	Maintenance
☐	☒	☐	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Construction Road Stabilization CR



DESCRIPTION:

Temporary stabilization of on-site roadway by placement of gravel roadbase.

APPLICATION:

- On-site roadways used daily by constructioin traffic (may not apply to gravelly type soils)
- Parking or staging areas susceptible to erosion due to traffic use

INSTALLATION / APPLICATION CRITERIA:

- Grade temporary access road with 2% cross fall, for two-way width provide crown
- Provide roadside ditch and outlet controls where required
- Place 6 inches of 2-inch to 4-inch crushed rock on driving area

LIMITATIONS:

- May require removal of gravel roadbase at completion of activities if final cover is not impervious
- May require controls for surface storm water runoff

MAINTENANCE:

- Inspect after major rainfall events and at a minimum of once every two weeks
- Place additional gravel as needed and repair any damaged areas
- Maintain any roadside drainage controls

OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

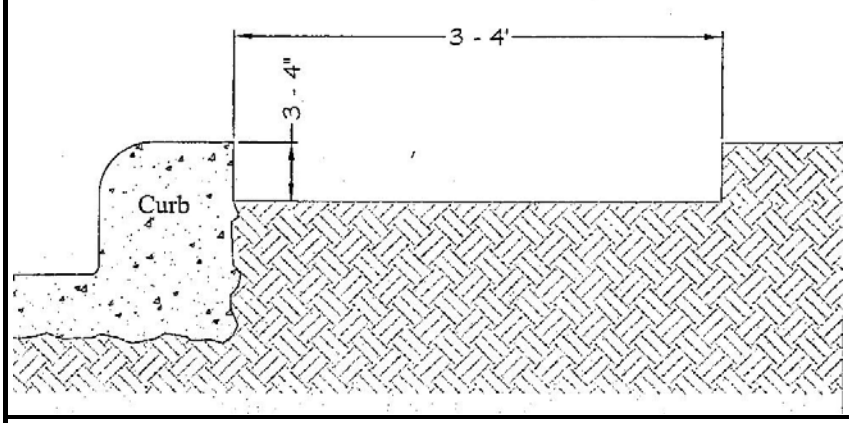
H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Curb Sedimentation Trap — CST



DESCRIPTION:

A temporary sediment trap formed by excavation behind the curb.

APPLICATION:

- Interception of runoff containing sediment from the lot during construction
- Retain sediment on the lot during construction

INSTALLATION / APPLICATION CRITERIA:

- Excavate soil behind the curb to a depth of 3-4 inches
- Extend excavation 3-4 feet behind the curb to form sediment trap

LIMITATIONS:

No limitations

MAINTENANCE:

- Inspect after each rainfall event and at a minimum of once every two weeks
- Remove accumulated sediment as it reaches 2/3 height of available storage
- May require additonal excavation if dirt from construction fills in the trap

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☒	☐	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☒	☐	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

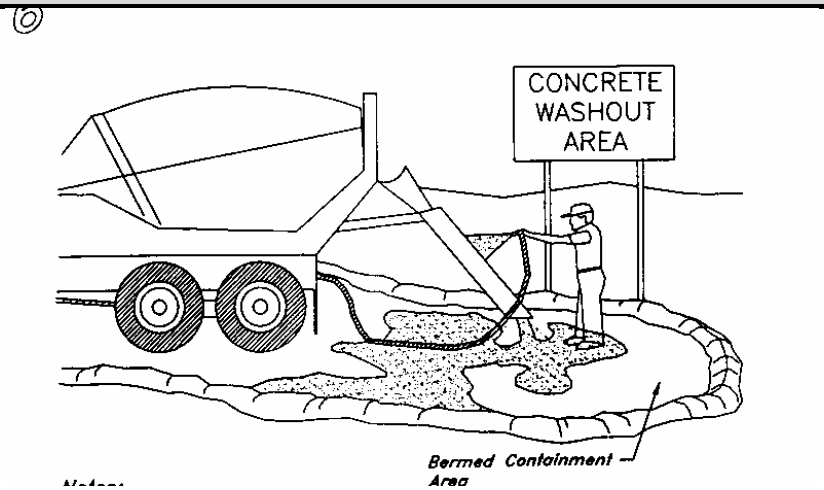
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Concrete Waste Management — CWM



DESCRIPTION:

Prevent or reduce the discharge of polllutants to storm water from concrete waste by conducting washout off-site, performing on-site washout ina designated area, and training employees and subcontractors.

APPLICATION:

This technique is applicable to all types of sites

INSTALLATION / APPLICATION CRITERIA:

- Store dry materials under cover, away from drainage areas
- Minimize excess mixing of fresh concrete, mortar or cement on site
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams
- Do not allow excess concrete to be dumped on-site, except in designated areas
- When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water within a bermed or level area (6" tall X 6' wide)
- Train employees and subcontractors in proper concrete waste management

LIMITATIONS:

- Off-site washout or concrete wastes may not always be possible

MAINTENANCE:

- Inspect subcontractors to ensure that concrete wastes are being properly managed
- If using a temporary pit, dispose of hardened concrete on a regular basis

OBJECTIVES

- ☐ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☐	☐	☒	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☒	☐	☐	Other Waste

IMPLEMENTATION REQUIREMENTS

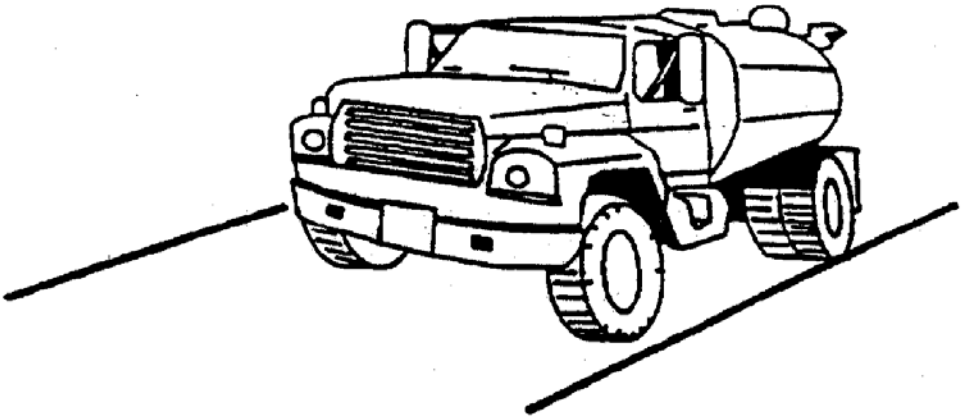
H	M	L	
☐	☐	☒	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☒	☐	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Dust Controls DC



DESCRIPTION:

Dust control measures are used to stabilize soil from wind erosion, and reduce dust by construction activities.

APPLICATION:

Dust control is useful in any process area, loading and unloading area, material handling agreas, and transfer areas where dust is generated. Street sweepin gis limited to areas that are paved.

INSTALLATION / APPLICATION CRITERIA:

- Mechanical dust collection systems are designed according to the size of dust particles and the amount of air to be processed. Manufacturers' recommendations should be followed for installation (as well as the design of the equipment.
- Two kinds of street sweepers are common: brush and vacuum. Vacuum sweepers are more efficient and work best when the area is dry.
- Mechanical equipment should be operated according to the manufacturers' recommendations and should be inspected regularly.

LIMITATIONS:

- More elaborate equipment may be impossible to maintain by plant personnel
- Is labor and equipment intensive and may not be effective for all pollutants (street sweepers)

MAINTENANCE:

If water sprayers are used, dust-contaminated waters should be collected and taken for treatment. Areas will probabley need to be resprayed to keep dust from spreading.

OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

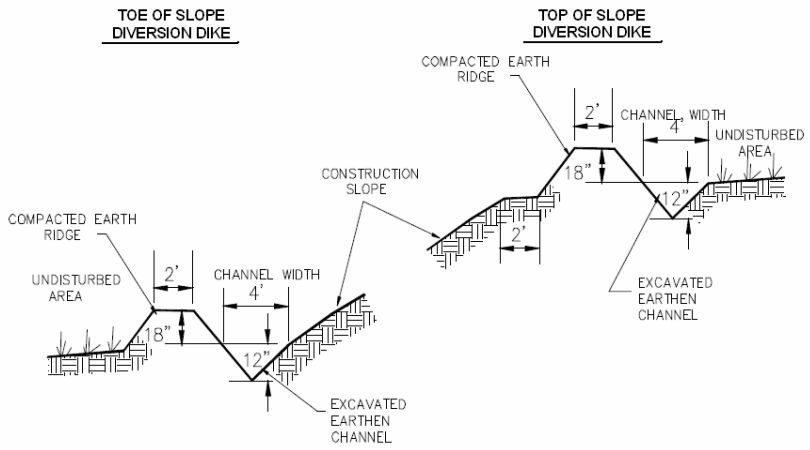
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☒	☐	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Diversion Dike DD



DESCRIPTION:

A temporary sediment barrier and storm runoff conveyance consisting of an excavation channel and compacted earth ridge.

APPLICATION:

- Construct along top of construction slope to intercept upgradient runoff and convey around construction site
- Construct along toe of construction to divert sediment laden runoff
- Construct along midpoint of construction slope to intercept runoff and channel to controlled discharge point
- Construct around base of soil stockpiles to capture sediment
- Construct around perimeter of disturbed areas to capture sediment

INSTALLATION / APPLICATION CRITERIA:

- Clear and grub area for dike construction
- Excavate channel and place soil on downgradient side
- Shape and machine compact excavated soil to form ridge
- Place erosion protection (riprap, mulch) at outlet
- Stabilize channel and ridge ad required with mulch, gravel, or vegetative cover

LIMITATIONS:

- Recommended maximum drainage area of 5 acres
- Recommended maximum sideslopes of 2h:1v (50%)
- Recommended maximum slope of 1% on channel

MAINTENANCE:

- Inspect immediately after any rainfall and at least daily during prolonged rainfall
- Look for runoff breaching dike or eroding channel or sideslopes
- Check discharge point for erosion or bypassing of flows
- Repair and stabilize as necessary
- Inspect daily during vehicular activity on slope, check for and repair any traffic damage

OBJECTIVES

- ☐ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
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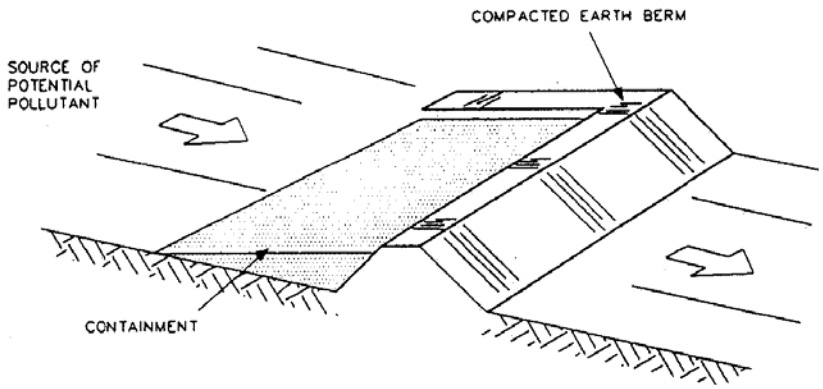
DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Earth Berm Barrier — EBB



DESCRIPTION:

A temporary containment control constructed of compacted soil.

APPLICATION:

- Construct around waste and materials storage area
- Construct around staging and maintenance areas
- Construct around vehicle parking and servicing areas

INSTALLATION / APPLICATION CRITERIA:

- Construct an earthen berm down hill of the area to be controlled. The berm should surround fueling facilities and maintenance areas on three sides to provide containment
- Berm needs to sized for application and be compacted by compactor equipment

LIMITATIONS:

- Not effective on steep slopes
- Limits access to controlled area
- Personnel need to quickly respond to spills with remedial actions

MAINTENANCE:

- Observe daily for any non-stormwater discharge
- Look for runoff bypassing ends of berms or undercutting berms
- Repair or replace damaged areas of the berm and remove accumulated sediment
- Recompact soil around berm as necessary to prevent piping

OBJECTIVES

- ☐ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☐	☐	☒	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☒	☐	☐	Toxic Materials
☐	☐	☒	Oil & Grease
☒	☐	☐	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

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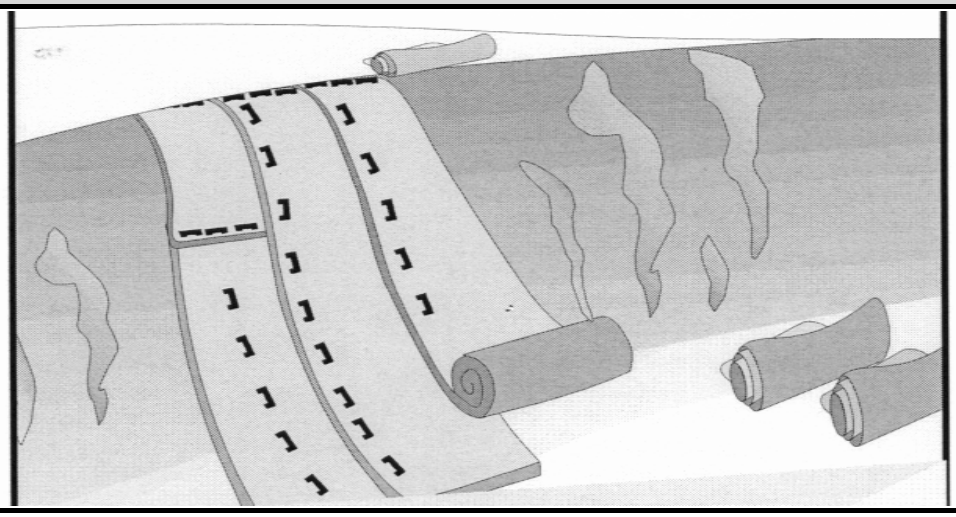
DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Erosion Control Blankets — ECB



DESCRIPTION:

Erosion control blankets are used on areas of high velocity runoff and/or steep grade, to aid in controlling erosion on critical areas by protecting young vegetation.

APPLICATION:

- Where vegetation is likely to grow too slowly to provide adequate stabilization
- In areas subject to high winds where mulch would not be effective

INSTALLATION / APPLICATION CRITERIA:

- Install erosion control blankets parallel to the direction of the slope
- In ditches, apply in direction of the flow
- Place erosion control blankets loosely on soil-do not stretch
- Ends of blankets should be buried no less than six inches deep
- Staple the edges of the blanket at least every three feet - per manufacturers' specifications

LIMITATIONS:

- Not recommended in areas which are still under construction

MAINTENANCE:

- Check for erosion and undermining periodically, particulary after rainstorms
- Repair dislocations or failures immediately
- If washouts occur, reinstall after repairing slope damage
- Monitor until permanently stabilized

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☒	☐	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☒	☐	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

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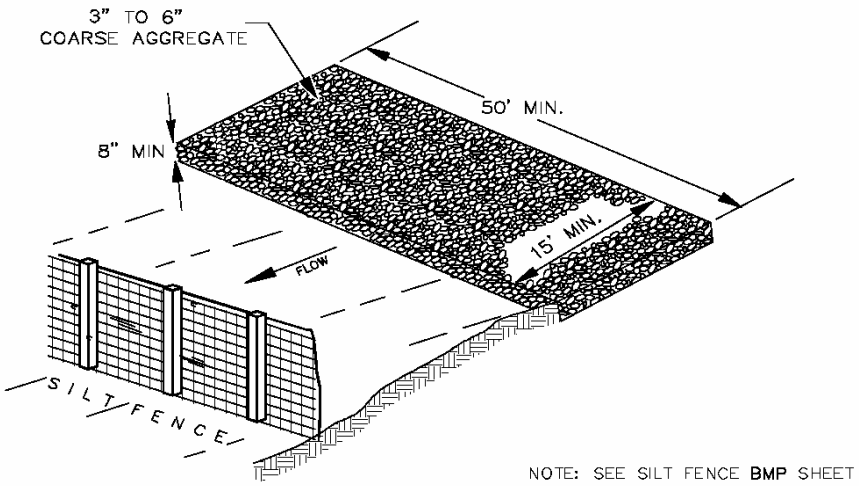
DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Equipment and Vehicle Wash Down Area EVWA



DESCRIPTION:

A stabilized pad of crushed stone for general washing of equipment and construction vehicles.

APPLICATION:

At any site where regular washing of vehicles and equipment will occur. May also be used as a filling point for water trucks limiting erosion caused by overflow or spillage of water.

INSTALLATION / APPLICATION CRITERIA:

- Clear and grub area and grade to provide maximum slope of 1%
- Compact subgrade and place filter fabric if desired (recommended for wash areas to remain in use for more than 3 months)
- Place coarse aggregate, 1 to 2-1/2 inches in size, to a minimum depth of 8 inches
- Install silt fence downgradient (see silt fence BMP information sheet)

LIMITATIONS:

Cannot be utilized for washing equipment or vehicles that may cause contamination of runoff such as fertilizer equipment or concrete equipment. Solely used to control sediment in wash water.

MAINTENANCE:

- Inspect daily for loss of gravel or sediment buildup
- Inspect adjacent area for sediment deposit and install additional controls as necessary
- Repair area and replace gravel as required to maintain control in good working condition
- Expand stabilized area as required to accommodate activities
- Maintain silt fence as outlined in specific silt fence BMP information sheet

OBJECTIVES

- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☒	☐	☐	Toxic Materials
☒	☐	☐	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

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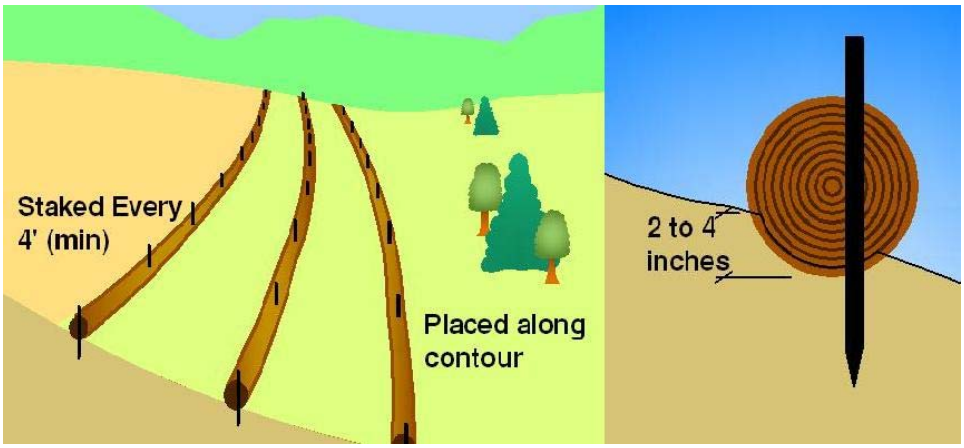
DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Fiber Rolls FR



DESCRIPTION:

Commercial products can be made from various types of fibers and shavings that are rolled up and used as sediment barriers.

APPLICATION:

- Good for sites with long slopes, generally flatter than 10:1

INSTALLATION / APPLICATION CRITERIA:

- Must be trenched into the ground 2 to 4 inches
- Must be staked every 4 feet (maximum)
- Manufacturer's instructions must be followed for installation of product

LIMITATIONS:

- Not applicable for high velocity flows
- Only use for a time period within the expected life-span of the product (check with manufacturer)

MAINTENANCE:

- Must be checked to ensure that runoff does not run under or bypass the fiber rolls
- Sediment buildup must also be checked and excess sediment must be removed

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☐	☒	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

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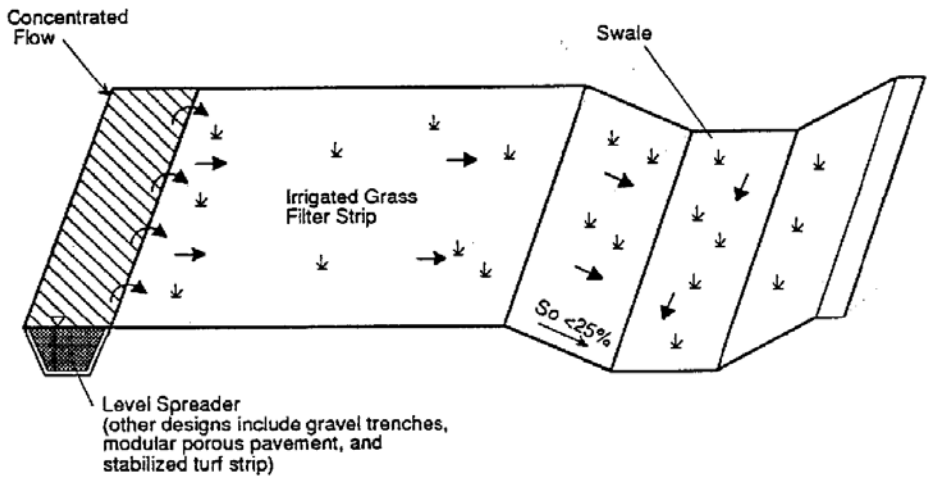
DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Filter Strips FS



DESCRIPTION:

Filter strips are 20-foot-wide strips of natural or planted vegetation around a construction site. They are designed to cause deposition of sediments within the vegetation layer.

APPLICATION:

- Suited for areas where the soils are well drained or moderately well drained
- Areas where the bedrock and the water table are well below the surface

INSTALLATION / APPLICATION CRITERIA:

- Make sure the vegetative cover is dense enough to protect underlying soil while causing sediment to settle
- Filter strip must be approximately 20 feet wide to function well
- The length should be approximately 50 to 75 feet. Where slopes become steeper the length of the strip must be increased.

LIMITATIONS:

- Only applicable in areas where vegetation is previously established or where sod is added
- Vegetated filter strips will not function well on steep slopes, in hilly areas, or in highly paved areas
- Sites with slopes of 15 percent or more may not be suitable for filtering storm water flows

MAINTENANCE:

- Check for channels and repair
- Provide rock aprons to aid in slowing flow if necessary
- Maintain vegetation at optimal height and thickness

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
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☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☒	☐	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
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☐	☐	☒	Administrative

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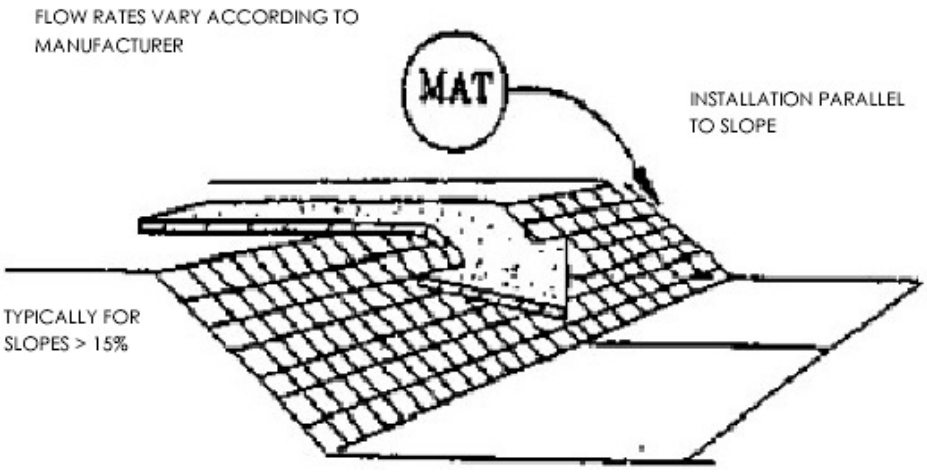
DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Geotextiles and Mats GM



DESCRIPTION:

Mattings made of natural or synthetic material which are used to temporarily or permanently stabilize soil.

APPLICATION:

- Typically suited for post-construction site stabilization, but may be used for stabilization of highly erosive soils.
- Channels and Streams.
- Steep slopes.

INSTALLATION / APPLICATION CRITERIA:

- Mattings may be applied to disturbed soils and where existing vegetation has been removed.
- The following organic matting materials provide temporary protection until permanent vegetation is established, or when seasonal circumstances dictate the need for temporary stabilization until weather or construction delays are resolved: Jute mattings and straw mattings.
- The following synthetic mattings may be used for either temporary or post-construction stabilization, both with and without vegetation: excelsior matting, glass fiber matting, mulch matting
- Staples are needed to anchor the matting.

LIMITATIONS:

- Mattings are more costly than other BMP practices, limiting their use to areas where other BMPs are ineffective (e.g., channels, steep slopes).
- May delay seed germination, due to reduction in soil temperature.
- Installation requires experienced contractor to ensure soil stabilization and erosion protection.

MAINTENANCE:

- Inspect twice monthly and after significant rainfall.
- Re-anchor loosened matting and replace missing matting and staples as required.

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☒	☐	Nutrients
☐	☐	☒	Heavy Metals
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☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☒	☐	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

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DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Hydromulching HM

DESCRIPTION:

A combination of wood fiber mulch, processed grass, or hay or straw mulch and a tacking agent. It is made into a slurry, then applied to bare slopes or other bare areas to provide temporary stabilization.

APPLICATION:

- Small roadside slopes
- Large, relatively flat areas

INSTALLATION / APPLICATION CRITERIA:

- Legume seeds should be pellet inoculated with the appropriate bacteria.
- The seed should not remain in the hydromulcher tank for more than 30 minutes
- Wood fiber may be dyed to aid in uniform application
- Slurry should be uniformly applied until an adequate coverage is achieved
- The applicator should not be directed at on location for a long period of time; erosion will occur

LIMITATIONS:

- Will lose effectiveness after 1 year
- Can use only on physically stable slopes (at natural angle of repose, or less)

MAINTENANCE:

•Periodically inspect for damage caused by wind, water or human disturbance
•Promptly repair damaged areas

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☐	☒	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☒	☐	☐	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☒	☐	Training
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☐	☐	☒	Administrative

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DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Hazardous Waste Materials — HWM

DESCRIPTION:

Prevent or reduce the discharge of pollutants to stormwater from hazardous waste throughproper material use,waste disposal,and training of employees and subcontractors.

APPLICATION:

Many of the chemicals used on-site can be hazardous materials which become hazardous waste upon disposal. These wastes may include:

- Paints and Solvents; petroleum products such as oils, fuels, and grease; herbicides and pesticides; Acids for cleaning masonry; and concrete curing compounds

In addition, sites with existing structures may contain wastes which must be disposed of in accordance with Federal, State, and local regulations, including:

- Sandblasting grit mixed with lead, cadmium, or chromium-based paints; Asbestos; and PCB's

INSTALLATION / APPLICATION CRITERIA:

The following steps will help reduce storm water pollution from hazardous wastes:

- Use all of the product before disposing of the container
- Do not remove the original product label, it contains important safety and disposal information
- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried off-site by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with Federal and State regulations.

LIMITATIONS:

Hazardous wastethat cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.

MAINTENANCE:

- Inspect hazardous waste receptacles and area regularly
- Arrange for regular hazardous waste collection

OBJECTIVES

- ☐ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☐	☐	☒	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
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☐	☐	☒	Oil & Grease
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☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☐	☒	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☒	☐	Training
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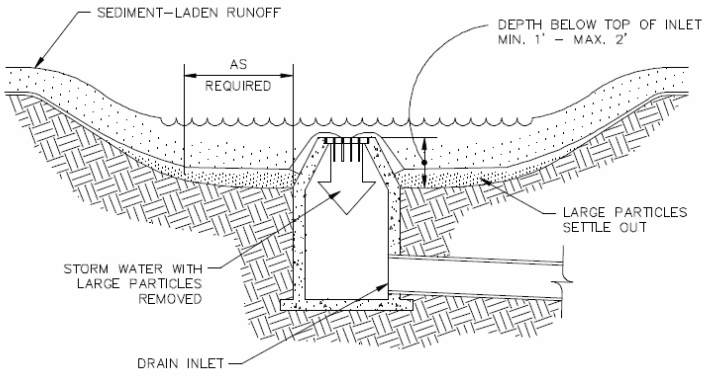
DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Inlet Protection - Excavated IP-E



DESCRIPTION:

An area excavated around a storm drain inlet to impound water below the inlet.

APPLICATION:

- Construct at storm drainage inlets located downgradient of areas to be disturbed by construction (for inlets in paved areas see other information sheets for inlet protection)

INSTALLATION / APPLICATION CRITERIA:

- Provide upgradient sediment controls, such as silt fence during construction of inlet
- When construciton of inlet is complete, excavate adjacent area 1 to 2 feet lower than the grate elevation. Size of excavated area should be based on soil type and contributing acreage

LIMITATIONS:

- Recommended maximum contributing drainage area of one acre
- Limited to inlets located in open unpaved areas
- Requires flat area adjacent to inlet

MAINTENANCE:

- Inspect inlet protection following storm event and at a minimum of once monthly
- Remove accumulated sediment when it reaches one half of the excavated sump below the grate
- Repair side slopes as required

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
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☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☐	☒	Capital Costs
☐	☐	☒	O&M Costs
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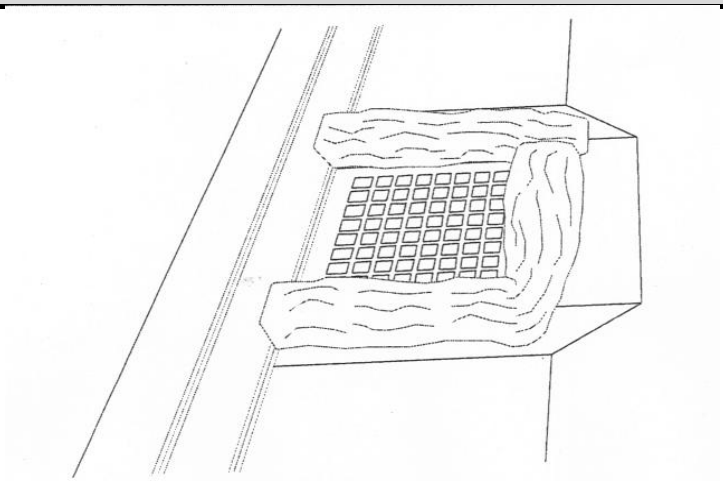
DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Inlet Protection - Gravel Bags IP-GB



DESCRIPTION:

Sediment barrier erected around storm drain inlet.

APPLICATION:

Construct at storm drainage inlets located down-gradient of areas to be disturbed by construction

INSTALLATION / APPLICATION CRITERIA:

- Provide up-gradient sediment controls, such as silt fence during construction of inlet
- When construction of curb and gutter and roadway is complete, install gravel filled bags around perimeter of inlet
- Fill to recommended levels to reduce splitting of bags

LIMITATIONS:

- Recommended maximum contributing drainage area of one acre
- Requires shallow sloped adjacent to inlet.

MAINTENANCE:

- Inspect inlet protection following storm event and at a minimum of once every 14 days.
- Remove accumulated sediment when it reaches half the height of the bag.
- Look for bypassing or undercutting and repair or realign as needed.
- Replace and clean up spilled gravel when bags split.

OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
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☐	☐	☒	Bacteria & Viruses
☒	☐	☐	Other Waste

IMPLEMENTATION REQUIREMENTS

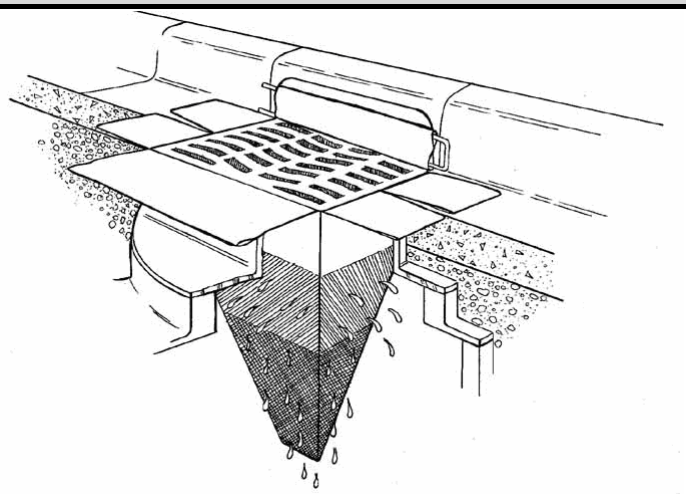
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Inlet Protection- Silt Bags IP-SB



DESCRIPTION:

Collect and trap sediment and debris entering catch basins from either grated or curb inlets. Insert is made of fabric and is placed in the drain inlet around the perimeter of the grate. Runoff passes through the bag before discharging into the drain outlet pipe. Overflow holes are usually provided to pass larger flows without causing a backwater at the grate. Certain manufactured products include polymers intended to increase pollutant removal effectiveness.

APPLICATIONS:

- Storm drain inlet boxes

INSTALLATION / APPLICATION CRITERIA:

- Regular Maintenance is necessary
- Evaluation of the device chosen should be balanced with cost
- Hydraulic capacity controls effectiveness
- Most useful in small drainage areas (< 1 Acre)
- Ideal in combination with other BMP's

LIMITATIONS:

- Cost
- Maintenance required to prevent plugging and remain effective

MAINTENANCE:

Inspection after all storm events and as required between events

OBJECTIVES

- ☐ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☒	☐	☐	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☒	☐	☐	Maintenance
☐	☒	☐	Training
☐	☐	☒	Staffing
☒	☒	☒	Administrative

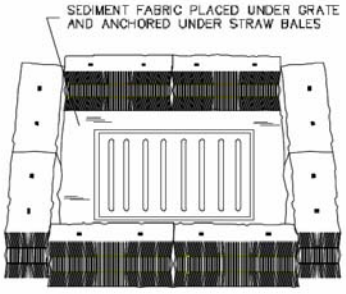
H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

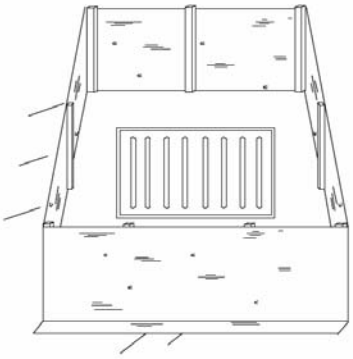
1500 East 650 North
Fruit Heights, UT 84037

BMP: Inlet Protection - Silt Fence or Straw Bale — IP-SF

STRAW BALE BARRIER



SILT FENCE



DESCRIPTION:

Sediment barrier erected around storm drain inlet.

APPLICATION:

- Construct at storm drainage inlets located downgradient of areas to be disturbed by construction (for inlets in paved areas see other information sheets for inlet protection)

INSTALLATION / APPLICATION CRITERIA:

- Provide upgradient sedimant controls, such as silt fence during construction of inlet
- When construction of linet is complete, erect straw bale barrier or silt fence surrounding perimeter of inlet. Follow instructions and guidelines on individual BMP information sheets for straw bale barrier and silt fence construction

LIMITATIONS:

- Recommended maximum contributing drainage area of one acre
- Limited to inlets located in open unpaved areas
- Requires shallow slopes adjacent to inlet

MAINTENANCE:

- Inspect inlet protection following storm event and at a minimum of once every two weeks
- Remove accumulated sediment when it reaches 4" in depth
- Repair or realign barrier/fence as needed
- Look for bypassing or undercutting and recompact soil around barrier/fence as required

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☒	☐	☐	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

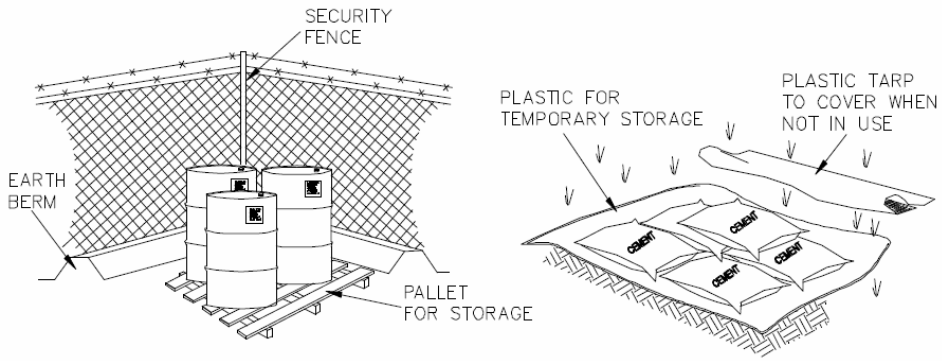
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Materials Storage MS



- CONTROLLED STORAGE LOCATION
- BARRIER AROUND PERIMETER
- ELEVATE CONTAINERS OFF GROUND
- COVER WHEN NOT IN USE

DESCRIPTION:

Controlled storage of on-site materials.

APPLICATION:

- Storage of hazardous, toxic, and all chemical substances
- Any construction site with outside storage of materials

INSTALLATION / APPLICATION CRITERIA:

- Designate a secured area with limited access as the storage location. Ensure no waterways or drainage paths are nearby
- Construct compacted earthen berm (See Earth Berm Barrier Information Sheet), or similar perimeter containment around storage location for impoundment in the case of spills
- Ensure all on-site personnel utilize designated storage area. Do not store excessive amounts of material that will not be utilized on site
- For active use of materials away from the storage area ensure materials are not set directly on the ground and are covered when not in use. Protect storm drainage during use

LIMITATIONS:

- Does not prevent contamination due to mishandling of products
- Spill Prevention and Response Plan still required
- Only effective if materials are actively stored in controlled location

MAINTENANCE:

- Inspect daily and repair any damage to perimeter impoundment or security fencing
- Check materials are being correctly stored (i.e. standing upright, in labeled containers, tightly capped) and that no materials are being stored away from the designated location

OBJECTIVES

- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☐	☐	☒	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☒	☐	☐	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☒	☐	Other Waste

IMPLEMENTATION REQUIREMENTS

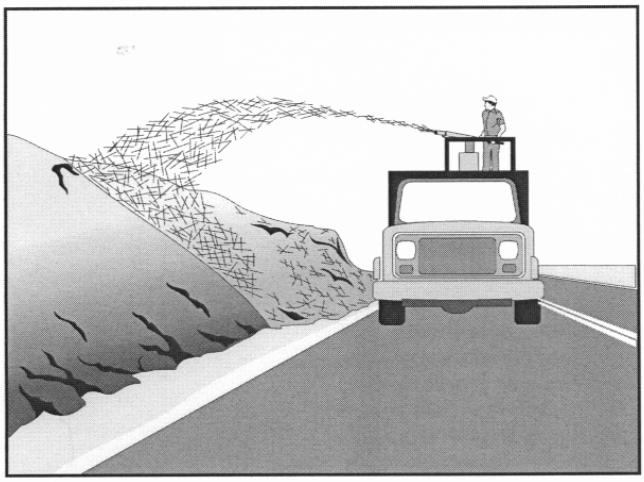
H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☒	☐	☐	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: MULCHING MU



DESCRIPTION:

Placement of material such as straw, grass, woodchips, or wood fibers over open areas.

APPLICATION:

- Any exposed area to remain untouched longer than 14 days and that will be exposed less than 60 days (seed areas to be exposed in excess of 60 days)
- Areas that havebeen seeded
- Stockpiled soil materials

INSTALLATION / APPLICATION CRITERIA:

- Roughen area to receive mulch to create depressions that mulch material can settle into
- Apply mulch to required thickness and anchor as necessary
- Ensure material used is weed free and does not contain any constituents that will inhibit plant growth

LIMITATIONS:

- Anchoring may be required to prevent migration or mulch material
- Downgradient control may be required to prevent mulch material being transported to storm water system

MAINTENANCE:

- Inspect mulched areas after every rainfall event and at a minimum of monthly
- Replace mulch on any bare areas and reanchor as necessary
- Clean and replace downgradient controls as necessary

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
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☐	☒	☐	Nutrients
☐	☐	☒	Heavy Metals
☒	☐	☐	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

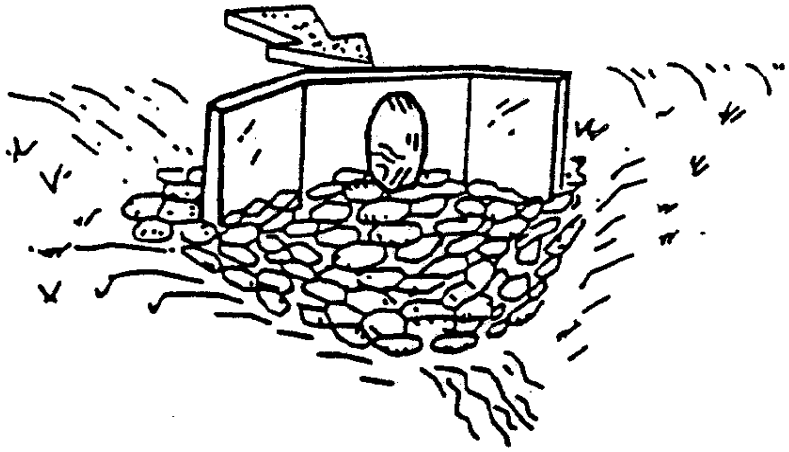
H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Outlet Protection OP



DESCRIPTION:

A rock outlet protection is a physical device composed of rock, or grouted riprap which is placed at the outlet of a pipe to prevent scour of the soil caused by high pipe flow velocities, and to absorb flow energy to produce nonerosive velocities.

APPLICATION:

- Wherever discharge velocities and energies at the outlets of culverts, conduits, or channels are sufficient to erode the next downstream reach
- Rock outlet protection is best suited for temporary use during construction because it is usually less expensive and easier to install than concrete aprons or energy dissipators
- A sediment trap below the pipe outlet is recommended if runoff is sediment laden
- Permanent rock riprap protection should be designed and sized by the engineer as part of the culvert, conduit or channel design
- Grouted riprap should be avoided in areas of freeze and thaw because the grout will break up

INSTALLATION / APPLICATION CRITERIA:

- Rock outlet protection is effective when the rock is sized and placed properly. When this is accomplished, rock outlets do much to limit erosion at pipe outlets. Rock size should be increased for high velocity flows. Best results are obtained when sound, durable, angular rock is used.

LIMITATIONS:

- Large storms often wash away the rock outlet protection and leave the area susceptible to erosion
- Sediment captured by the rock outlet protection may be difficult to remove without removing the rock
- Outlet protection may negatively impact the channel habitat

MAINTENANCE:

- Inspect after each significant rain for erosion and/or disruption of the rock, and repair immediately
- Grouted or wire-tied rock riprap can minimize maintenance requirements

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

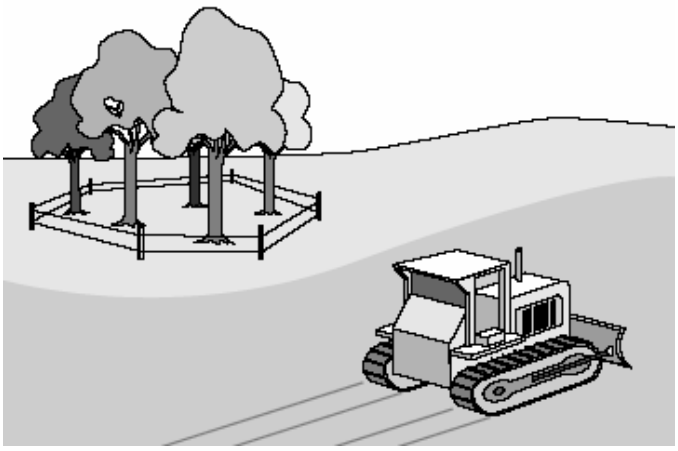
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: PEV



DESCRIPTION:

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees, vines, shrubs and/or grasses that serve as erosion controls.

APPLICATION:

This technique is applicable to all types of sites. Areas where preserving vegetation can be particularly beneficial are floodplains, wetlands, stream banks, steep slopes, and other areas where erosion controls would be difficult to establish, install, or maintain.

INSTALLATION / APPLICATION CRITERIA:

- Clearly mark, flag or fence vegetation or areas where vegetation should be preserved.
- Prepare landscaping plans which include as much existing vegetation as possible and state proper care during and after construction.
- Define and protect with berms, fencing, signs, etc. a setback area from vegetation to be preserved.
- Propose landscaping plans which do not include plant species that compete with the existing vegetation.
- Do not locate construction traffic routes, spoil piles, etc. where significant adverse impact on existing vegetation may occur.

LIMITATIONS:

- Requires forward planning by the owner/developer, contractor and design staff.
- For sites with diverse topography, it is often difficult and expensive to save existing trees while grading the site satisfactorily for the planned development.
- May not be cost effective with high land costs.

MAINTENANCE:

- Inspection and maintenance requirements for protection of vegetation are low.
- Maintenance of native trees or vegetation should conform to landscape plan specifications.

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

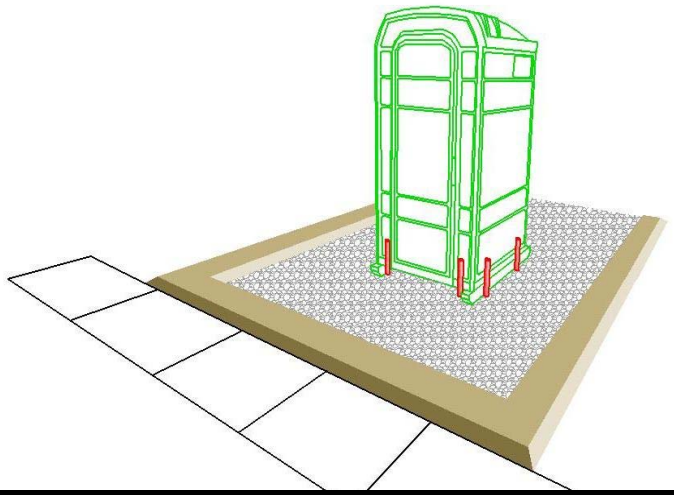
H	M	L	
☐	☐	☒	Capital Costs
☐	☐	☒	O&M Costs
☐	☐	☒	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M** = Medium **L** = Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Portable Toilet — PT



DESCRIPTION:

Temporary on-site sanitary facilities for construction personnel.

APPLICATION:

All sites with no permanent sanitary facilities or where permanent facility is too far from activities.

INSTALLATION / APPLICATION CRITERIA:

- Locate portable toilets in a convenient locations throughout the site
- Prepare level, gravel surface and provide clear access to the toilets for servicing and for on-site personnel
- Construct earth berm perimiter (see Earth Berm Barrier Sheet), control for spill / leak protection.
- Anchor the portable toilet to prevent tipping

LIMITATIONS:

No limitations

MAINTENANCE:

- Portable toilets should be maintained in good working order by licensed service with daily observation for leak detection
- Regular waste collection should be arranged with licensed service
- All waste should be deposited in sanitary sewer system for treatment with appropriate agency approval

OBJECTIVES

- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☐	☐	☒	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☒	☐	☐	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☒	☐	☐	Bacteria & Viruses
☒	☐	☐	Other Waste

IMPLEMENTATION REQUIREMENTS

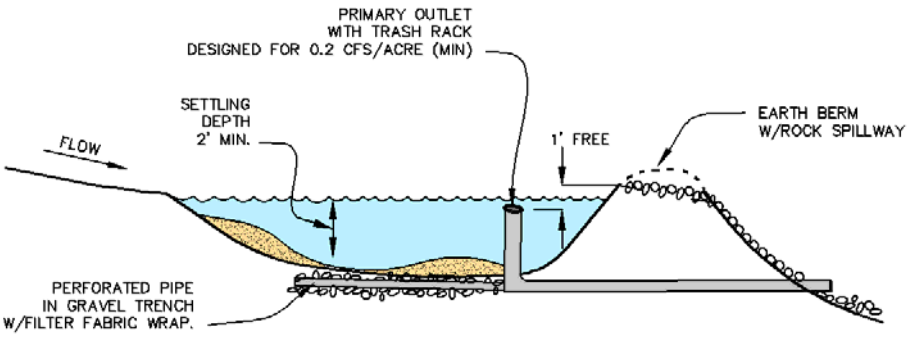
H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Sediment Basin SB



DESCRIPTION:

A pond created by excavating or construction of an embankment, and designed to retain or detain runoff sufficiently to allow excessive sediment to settle.

APPLICATION:

- At the outlet of all disturbed watersheds 10 acres or larger
- At the outlet of smaller disturbed watersheds, as necessary
- Where post construction detention basins will be located

INSTALLATION / APPLICATION CRITERIA:

- Design basin for site specific location, maintian effective flow length 2 times width
- Excavate basin or construct compacted berm containment; ensure no downgradient hazard if failure should occur. (Provide minimum of 67 cy. per acre of drainage area.)
- Construct dewtering and outfall structure and emergency spillway with apron

LIMITATIONS:

- Should be sized based on anticipated runoff, sediment loading and drainage area size
- May require silt fence at outlet for entrapment of very fine silts and clays
- May require safety fencing to prevent public access
- Height restrictions for embankment regulated by Utah Division of Dam Safety

MAINTENANCE:

- Inspect after each rainfall event and at a minimum of once every two weeks
- Repair any damage to berm, spillway or sidewalls
- Remove accumulated sediment as it reaches 2/3 height of available storage
- Check outlet for sedimentation/erosion of downgradient area and remediate as necessary. Install silt fence if sedimentation apparent

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☒	☐	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☒	☐	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

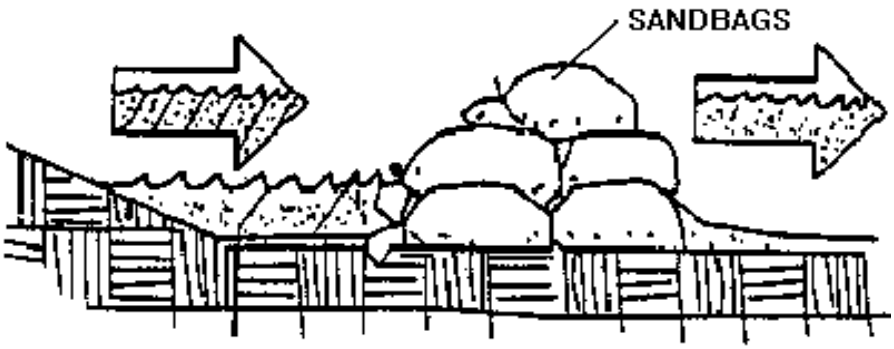
H	M	L	
☒	☐	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Sand Bag Barrier — SBB



DESCRIPTION:

Stacking sand bags along a level contour creates a barrier which detains sediment - laden water, ponding water upstream of the barrier and promoting sedimentation

APPLICATION:

- Along the perimeter of the site
- May be used in drainage areas up to 5 acres
- Along streams and channels
- Across swales with small catchments
- Around temporary spoil areas
- Below the toe of a cleared slope

INSTALLATION / APPLICATION CRITERIA:

- Install along a level contour
- Base of sand bag barrier should be at least 48" wide
- Height of sand bag barrier should be at least 18" high
- 4" PVC pipe may be installed between the top layer of sand bags to drain large flood flows
- Provide area behind barrier for runoff to pond and sediment to settle
- Place below the toe of a slope
- UV resistant bags should be used

LIMITATIONS:

- Sand bags are more expensive than other barriers, but also more durable
- Burlap should not be used

MAINTENANCE:

- Inspect after each rain and a minimum of once every two weeks
- Reshape or replace damaged sand bags immediately
- Remove buildup of sediment

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☒	☐	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☐	☒	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

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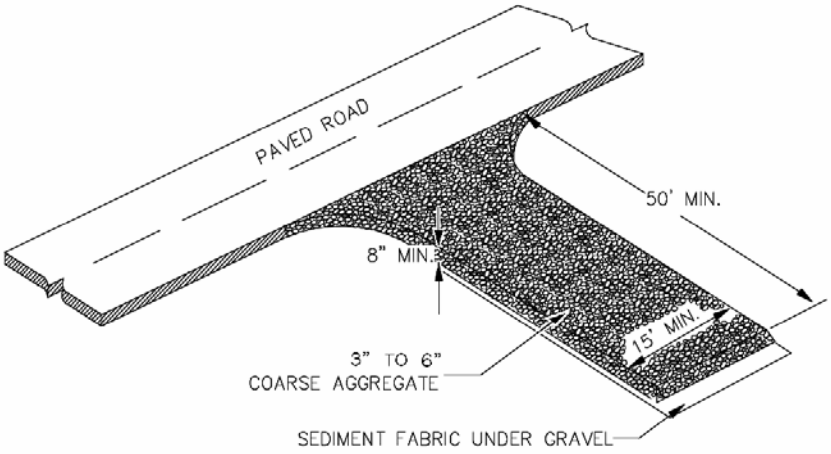
DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Stabilized Construction Entrance SCE



DESCRIPTION:

A stabilized pad of crushed stone located where construction traffic enters or leaved the site from or to paved surface.

APPLICATION:

At any point of ingress and egress at a construction site where adjacent traveled way is paved. Generally applies to sites over 2 acres unless special conditions exist.

INSTALLATION / APPLICATION CRITERIA:

- Clear and grub area and grade to provide maximum slope of 2%
- Compact subgrade and place filter fabric if desired (recommended for entrances to remain for more than 3 months
- Place coarse aggregate, 3-6 inches in size, to a minimum depth of 8 inches

LIMITATIONS:

- Requires periodic top dressing with additional stones
- Should be used in conjuction with street sweeping on adjacent public right-of-way

MAINTENANCE:

- Inspect daily for loss of gravel or sediment buildup
- Inspect adjacent roadway for sediment deposit and clean by sweeping or shoveling
- Repair entrance and replace gravel as required to maintain control in good working condition
- Expand stabilized area as required to accommodate traffic and prevent erosion at driveways

OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
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☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

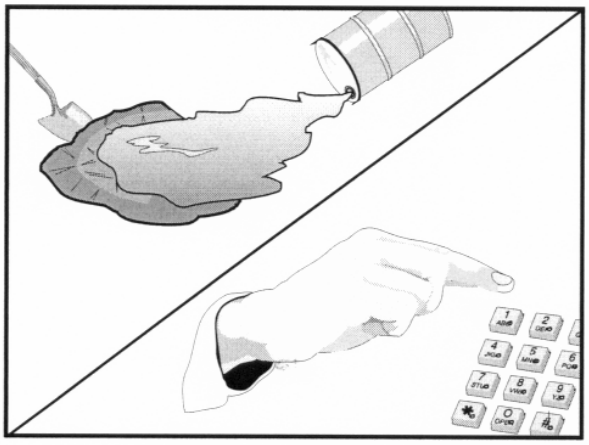
H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Spill Clean-Up SCU



Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

DESCRIPTION:

Practices to clean-up leakage/spillage of on-site materials that may be harmful to receiving waters.

APPLICATION:

All sites

GENERAL:

- Store controlled materials within a storage area
- Educate personnel on prevention and clean-up
- Designate an Emergency Coordinator responsible practices and for providing spill response
- Maintain a supply of clean-up equipment on-site response agencies with phone numbers

METHODS:

- Clean-up spills/leaks immediately and remediate cause
- Use as little water as possible. NEVER HOSE DOWN OR BURY SPILL CONTAMINATED MATERIAL
- Use rags or absorbent material for clean-up. Excavate contaminated soils. Dispose of clean-up material and soil as hazardous waste
- Document all spills with date, location, substance, volume, actions taken and other pertinent data.
- Contact local Fire Department and State Division of Environmental Response and Remediation (Phone #536-4100) for any spill of reportable quantity

OBJECTIVES

- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

	H	M	L
Sediment	☐	☐	☒
Nutrients	☐	☐	☒
Heavy Metals	☐	☐	☒
Toxic Materials	☒	☐	☐
Oil & Grease	☐	☒	☐
Floatable Materials	☐	☐	☒
Bacteria & Viruses	☐	☐	☒
Other Waste	☐	☐	☒

IMPLEMENTATION REQUIREMENTS

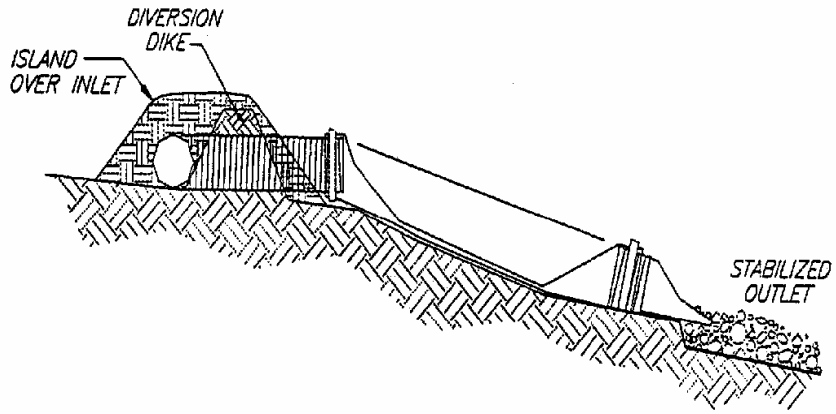
	H	M	L
Capital Costs	☐	☒	☐
O&M Costs	☐	☐	☒
Maintenance	☐	☐	☒
Training	☒	☐	☐
Staffing	☐	☐	☒
Administrative	☐	☐	☒

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Slope Drain SD



DESCRIPTION:

A tempoarary pipe or lined channel that drains the top of a slope to a stable discharge point at the bottom of a slope without causing erosion.

APPLICATION:

- Where concentrated flow of surface runoff must be conveyed down a slope in order ro prevent erosion
- Emergency spillway for a sediment basin

INSTALLATION / APPLICATION CRITERIA:

- Secure inlet and surround with dikes to prevent gully erosion, and anchor pipe to slope
- Size to convey at least the peak of a 10-year storm event
- Stabilize outlet (See Outlet Protection BMP.)

LIMITATIONS:

- Maximum drainage area per slope drain is 5 acres
- Clogged slope drains will force water around the pipe and cause slope erosion
- Dissipation of high flow velocities at the pipe outlet is required to avoid downstream erosion
- Failure can result in flooding and severe erosion

MAINTENANCE:

- Structure must be inspected weekly and after storms
- Inlet must be protected form undercutting and no water should circumvent the entry
- Outlet should not produce erosion; velocity dissipators must be maintained
- Pipe anchors must be checked to ensure that the pipe remains anchored to the slope

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

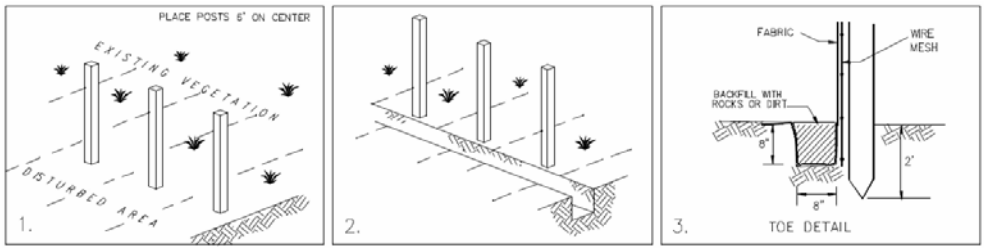
H	M	L	
☒	☐	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Silt Fence SF



DESCRIPTION:

A temporary sediment barrier consisting of entrenched filter fabric stretched across and secured to supporting posts.

APPLICATION:

- Perimeter control: place barrier at downgradient limits of disturbance
- Sediment barrier: place barrier at toe of slope or soil stockpile
- Protection of existing waterways: place barrier at top of stream bank
- Inlet protection: place fence surrounding catch basins

INSTALLATION / APPLICATION CRITERIA:

- Place posts 6' apart on center along contour (or use preassembled unit) and drive 2' minimum into ground. Excavate an anchor trench immediately up gradient of posts
- Cut fabric to require width, unroll along length of barrier and drape over barrier. Secure fabric to mesh with twine, staples, or similar, with trailing edge extending into anchor trench
- Backfill trench over fabric to anchor
- Fabric must have 85% minimum sediment removal efficiency

LIMITATIONS:

- Recommended maximum drainage area of 0.5 acre per 100 feet
- Recommended maximum upgradient slope length of 150'
- Recommended maximum uphill grade of 2:1 (50%)
- Recommended maximum flow rate of 0.5 cfs
- Ponding should not be allowed behind fence

MAINTENANCE:

- Inspect immedialty after any rainfall and at least daily during prolonged rainfall
- Look for runoff bypassing ends of barriers or undercutting barriers
- Repair or replace damaged areas of the barrier and remove accumulated sediment
- Reanchor fence as necessary to prevent shortcutting
- Remove accumulated sediment when it reaches 1/2 the height of the fence

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

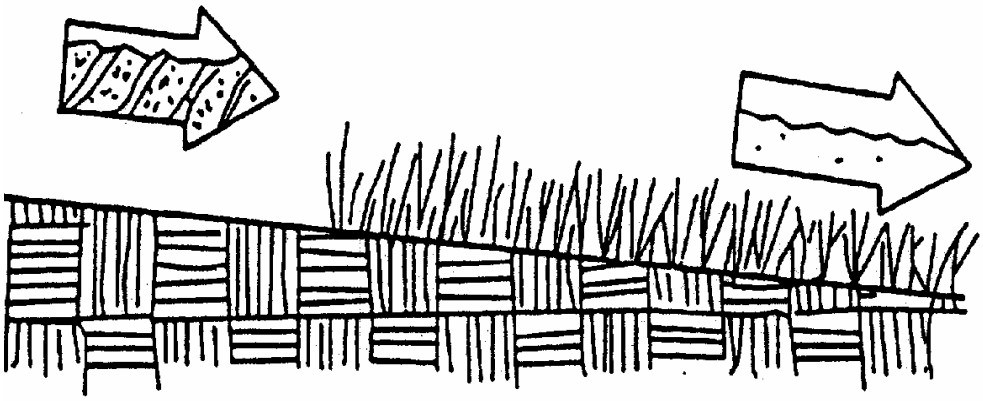
H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Seeding and Planting SP



DESCRIPTION:

Seeding of grass and plantings of trees, shrubs, vines and ground covers provide long-term stabilization of soil. In some areas, with suitable climates, grasses can be planted for temporary stabilization.

APPLICATION:

- Appropriate for site stabilization both during construction and post-construction
- Any graded/cleared areas where construction activities have ceased
- Open space cut and fill areas
- Steep slopes, spoil piles, vegetated swales, landscape corridors, stream banks. Use in conjunction with matting, mulch or blanketing where appropriate.

INSTALLATION / APPLICATION CRITERIA:

Type of vegetation, site and seedbed preparation, planting time, fertilization and water requirements should be considered for each application.

Grasses:

- Ground preparations: fertilize and mechanically stabilize the soil
- Tolerant of short-term temperature extremes and waterlogged soil composition
- Appropriate soil conditions: shallow soil base, good drainage, slope 2:1 or flatter
- Mowing, irrigating, and fertilizing are vital for promoting vigorous grass growth

Trees and Shrubs:

- Selection criteria: vigor, species, size, shape & wildlife food source
- Soil conditions: select species appropriate for soil, drainage & acidity
- Other factors: wind/exposure, temperature extremes, and irrigations needs

Vines and Ground Covers:

- Ground preparation: lime and fertilizer preparation
- Use proper seeding rates
- Appropriate soil conditions: drainage, acidity and slopes
- Generally avoid species requiring irrigation

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☒	☐	Nutrients
☐	☐	☒	Heavy Metals
☐	☒	☐	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Surface Roughening SR

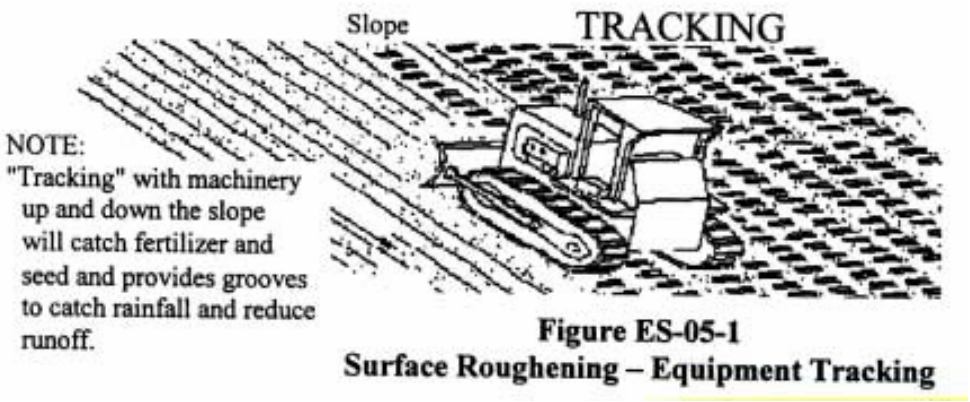


Figure ES-05-1
Surface Roughening – Equipment Tracking

DESCRIPTION:

Rough preparation of working areas leaving depressions and uneven surface. Depressions should be done parallel to contours.

APPLICATION:

- Surface roughening is appropriate for all construction that will not be receiving impervious cover within 14 days and that will be exposed less than 60 days (seed areas to be open in excess of 60 days)

INSTALLATION / APPLICATION CRITERIA:

- Surface should be left in rough condition during initial earthwork activity
- Surfaces that have become smoothed or compacted due to equipment traffic should be roughened by use of disks, spring harrows, teeth on front end loader, or similar, operating along the contours of the slope. Tracking (by crawler tractor driving up and down slope) may also be used to provide depressions parallel to contours
- Avoid compaction of soils during roughening as this inhibits plant growth and promotes storm water runoff. Limit tracked machinery to sandy soil
- Seed or mulch areas to be exposed in excess of 60 days
- Employ dust controls (see Dust Control Detail Sheet if appropriate)

LIMITATIONS:

- Will not withstand heavy rainfall
- Slopes steeper than 2:1 (50%) should be benched (see Benching Detail Sheet)

MAINTENANCE:

- Inspect following any storm event and at a minimum of weekly
- If erosion in the form of rills (small waterways formed by runoff) is evident, perform machine roughening of area
- For vegetated slopes reseed areas that are bare or have been reworked

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

	H	M	L
Sediment	☒	☐	☐
Nutrients	☐	☐	☒
Heavy Metals	☐	☐	☒
Toxic Materials	☐	☐	☒
Oil & Grease	☐	☐	☒
Floatable Materials	☐	☐	☒
Bacteria & Viruses	☐	☐	☒
Other Waste	☐	☐	☒

IMPLEMENTATION REQUIREMENTS

	H	M	L
Capital Costs	☐	☒	☐
O&M Costs	☐	☒	☐
Maintenance	☐	☒	☐
Training	☐	☐	☒
Staffing	☐	☐	☒
Administrative	☐	☐	☒

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Street Sweeping SS

DESCRIPTION:

Prevent sediment from entering storm water by sweeping the streets near construction activities.

APPLICATION:

- Useful for any paved streets near construction sites where sediment is blown, tracked, or spilled onto the streets.

INSTALLATION / APPLICATION CRITERIA:

- The equipment used should be appropriate for the conditions. Vacuum sweepers work more effectively when the area is dry. Brush sweepers work better when the sediment is wet or stuck to the surface.
- Mechanical equipment should be operated and maintained according to the manufacturer's recommendations

LIMITATIONS:

- Is labor and equipment intensive
- May cause dust

MAINTENANCE:

- The street should be checked daily for any sediment deposits. Street sweeping should be implemented whenever sediment from construction activity is found on the streets

OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

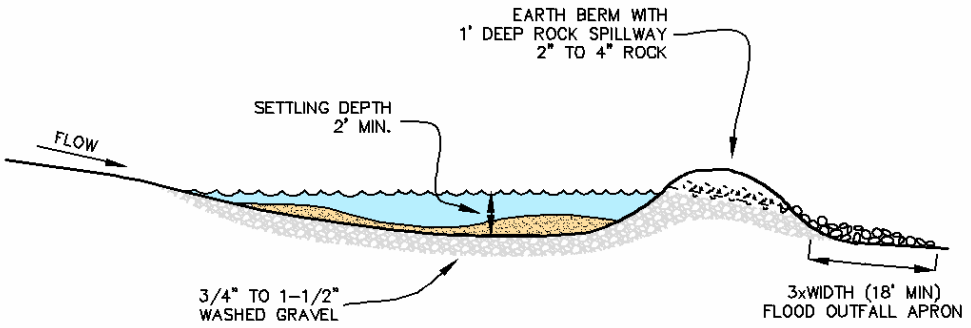
H	M	L	
☐	☐	☒	Capital Costs
☐	☒	☐	O&M Costs
☒	☐	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Sediment Trap ST



DESCRIPTION:

A sediment trap is a small excavated or bermed area where runoff from small drainage areas is detained and sediment can settle.

APPLICATION:

- Temporary control for runoff from disturbed areas of less than 3 arcres
- Temporary control for discharge from diversion dike, surface benching, or other temporary drainage measures

INSTALLATION / APPLICATION CRITERIA:

- Design basin for site specific location
- Excavate basin or construct compacted berm containment
- Construct outfall spillway with apron
- Provide downstream silt fence if necessary

LIMITATIONS:

- Should be sized based on anticipated runoff, sediment loading and drainage area size
- May require silt fence at outlet for entrapment of very fine silts and calys

MAINTENANCE:

- Inspect after each rainfall event and at a minimum of once every two weeks
- Repair any damage to berm, spillway or sidewalls
- Remove accumulated sediment as it reaches 2/3 height of available storage
- Check outlet for sedimentation/erosion of downgradient area and remediate as necessary. Install silt fence if sedimentation apparent.

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☒	☐	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

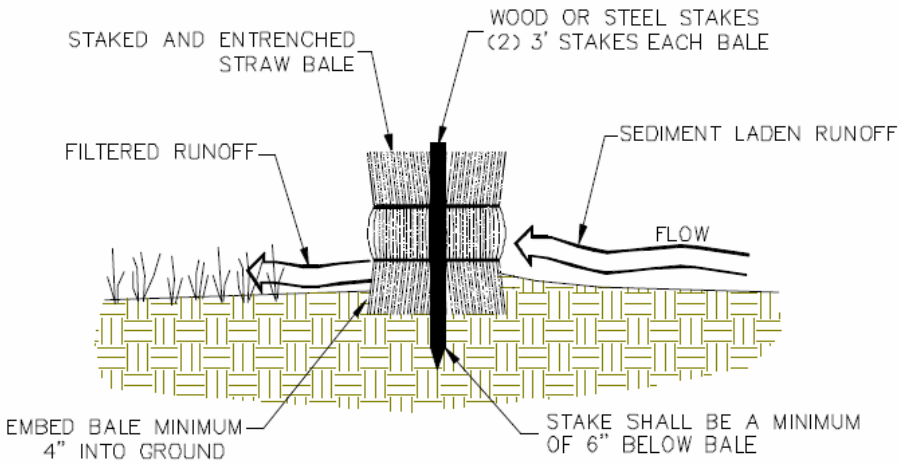
H	M	L	
☐	☒	☐	Capital Costs
☐	☒	☐	O&M Costs
☐	☐	☒	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Straw Bale Barrier — SBB



DESCRIPTION:

Temporary sediment barrier consisting of a row of entrenched and anchored straw bales.

APPLICATION:

- Perimeter Control: place barrier at downgradient limits of disturbance
- Sediment barrier: place barrier at toe of slope or soil stockpile
- Protection of existing waterways: place barrier at top of stream bank
- Inlet Protection

INSTALLATION / APPLICATION CRITERIA:

- Excavate a 4" minimum deep trench along contour line, i.e., parallel to slope, removing all grass and other material that may allow underflow
- Place bales in trench with ends tightly abutting; fill any gaps by wedging loose straw into openings
- Anchor each bale and compact to prevent piping; backfill on uphill side to be built up 4" above ground at the barrier

LIMITATIONS:

- Recommended maximum area of 0.5 acre per 100' of barrier
- Recommended maximum upgradient slope length of 150 feet
- Recommended maximum uphill grade of 2:1 (50%)
- Maximum duristation of use is 6 months

MAINTENANCE:

- Inspect immediately after any rainfall and at least daily during prolonged rainfall
- Look for runoff bypassing ends of barriers or undercutting barriers
- Repair or replace damaged areas of the barrier and remove accumulated sediment
- Realign bales as necessary to provide continuous barrier and fill gaps
- Recompact soil around barrier as necessary to prevent piping

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

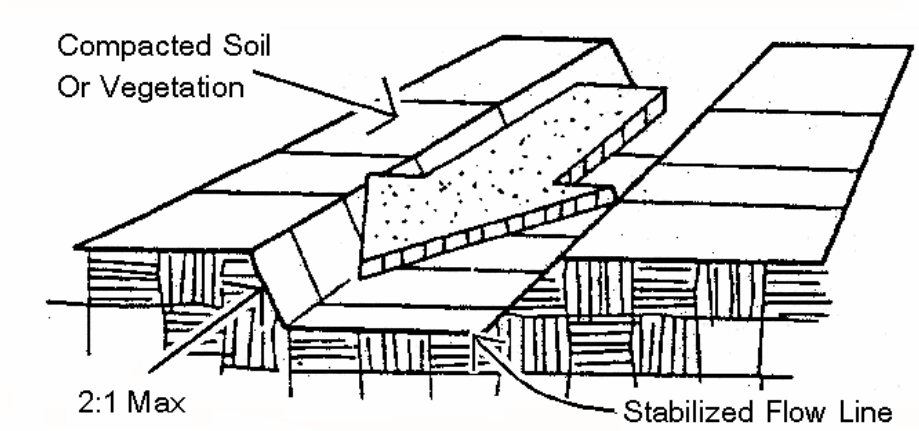
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Temporary Drains and Swales TDS



DESCRIPTION:

Temporary drains and swales are used to divert off-site runoff around the construction site, divert runoff from stabilized areas around disturbed areas.

APPLICATION:

- Temporary drains and swales are appropriate for diverting and upslope runoff around unstabilized or disturbed areas of the construction site
- Prevent slope failures. Prevent damage to adjacent property. Prevents erosion and transport of sediments into water ways. Increases the potential for infiltration. Diverts sediment-laden runoff into sediment basins or traps.

INSTALLATION / APPLICATION CRITERIA:

- Temporary drainage swales will effectively convey runoff and avoid erosion if built properly
- Size temporary drainage swales using local drainage design criteria. A permanent drainage channel must be designed by a professional engineer (see the local drainage design criteria for proper design)
- At a minimum, the drain/swale should conform to predevelopment drainage patterns and capacities
- Construct the drain/swale with an uninterrupted positive grade to a stabilized outlet. Provide erosion protection or energy dissipation measures if the flow out of the drain or swale can reach an erosive velocity

LIMITATIONS:

- Temporary drains and swales or any other diversion of runoff should not adversely impact upstream or downstream properties
- Temporary drains and swales must conform to local floodplain management requirements

MAINTENANCE:

- Inspect weekly and after each rain
- Repair any erosion immediately
- Remove sediment which builds up in the swale and restrcts its flow capacity

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☒	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☐	☒	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Temporary and Permanent Seeding — TPS

DESCRIPTION:

Temporary seeding-establishment of short term cover by application of rapidly germinating seed mix (alternatively hydroseeding may be utilized).
Permanent seeding-establishment of final term cover by application of perennial seed mix (alternatively sod may be utilized).

APPLICATION:

Disturbed areas that are at final grade and which will not be disturbed by continuing activities on site. Also areas that are not at final grade but which will be left untouched in excess of one year.

RECOMMENDED SEED MIX:

The recommended seed mix will be dependent on site specific information such as elevation, exposure, soils, water available and topography. Check with the County Extension Service for recommended mixes for site specific conditions:

Utah State University Extension Service
28 E. State Street (Room 20D)
Farmington, Utah 84025
Phone: (801) 451-3412

LIMITATIONS:

- Limited to areas that will not be subject to traffic or high usage
- May require irrigation and fertilizer which creates potential for impacting runoff quality
- May only be applied during appropriate planting season, temporary cover required until that time

INSTALLATION:

- Roughen soil to a depth of 2 inches. Add fertilizer, manure, topsoil as necessary
- Evenly distribute seed using a commonly accepted method such as; breast seeding, drilling, hydro-seeding
- Use a seed mix appropriate for soil and location that will provide rapid germination and growth. Check with County for recommended mix and application rate.
- Cover area with mulch if required due to steep slopes or unsuitable weather conditions

MAINTENANCE:

- Provide irrigation as required to establish growth and to maintain plant cover through duration of project
- Reseed as necessary to provide 75% coverage
- Remediate any areas damaged by erosion or traffic
- When 75% coverage is achieved inspect monthly for damage and remediate as necessary

OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☒	☐	☐	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☐	☒	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

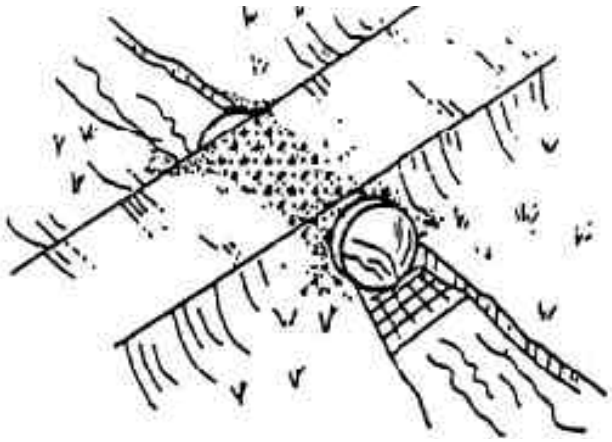
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Temporary Stream Crossing — TSC



DESCRIPTION:

A temporary access stream crossing is a temporary culvert, ford or bridge placed across a waterway to provide access for construction purposes for a period of less than one year. Temporary access crossings are not intended to be used to maintain traffic for the general public.

APPLICATION:

- Temporary stream crossings should be installed at all designated crossings of perennial and intermittent streams on the construction site, as well as for dry channels which may be significantly eroded by construction traffic.

INSTALLATION / APPLICATION CRITERIA:

- Requires knowledge of stream flows and soil strength and should be designed under the direction of a Utah registered engineer with knowledge of both hydraulics and construction loading requirements for structures.

LIMITATIONS:

- May be expensive for a temporary improvement
- Requires other BMP's to minimize soil disturbance during installation and removal
- Fords should only be used in dry weather
- A Stream Alteration Permit may be required, contact the Utah Division of Water Rights before implemention

MAINTENANCE:

- Inspect weekly and after each significant rainfall, including assessment of foundations
- Periodically remove silt from crossings
- Replace lost aggregate from inlets and outlets of culverts

OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☒	☐	☐	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☐	☒	Toxic Materials
☐	☒	☐	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Vehicle And Equipment Cleaning VEC

DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment cleaning by using off-site facilities, washing in designated, contained areas only, eliminating discharges to the storm drain by infiltrating or recycling the wash water, and/or training employees and subcontractors.

INSTALLATION / APPLICATION CRITERIA:

- Use off-site commercial washing businesses as much as possible. Washing vehicles and equipment outdoors or in areas where wash water flows onto paved surfaces or into drainage pathways can pollute storm water. If you wash large number of vehicles or pieces of equipment, consider conducting this work at an off-site commercial business. These businesses are better equipped to handle and dispose of the wash waters properly. Performing this work off-site can also be economical by eliminating the need for a separate washing operation at your site.
- If washing must occur on-site, use designated, bermed wash areas to prevent wash water contact with storm water, creeks, rivers, and other water bodies. The wash area can be sloped for wash water collection and subsequent infiltration into the ground.
- Use as little water as possible to avoid having to install erosion and sediment controls for the wash area. Use phosphate-free biodegradable soaps. Educate employees and subcontractors on pollution prevention measures. Do not permit steam cleaning on-site. Steam cleaning can generate significant pollutant concentrations.

LIMITATIONS:

- Even phosphate-free, biodegradable soaps have been shown to be toxic to fish before the soap degrades
- Sending vehicles/equipment off-site should be done in conjunction with Stabilized Construction Entrance

MAINTENANCE:

- Minimal, some berm repair may be necessary

OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☐	☐	☒	Sediment
☐	☐	☒	Nutrients
☐	☐	☒	Heavy Metals
☐	☒	☐	Toxic Materials
☐	☒	☐	Oil & Grease
☐	☐	☒	Floatable Materials
☐	☐	☒	Bacteria & Viruses
☐	☐	☒	Other Waste

IMPLEMENTATION REQUIREMENTS

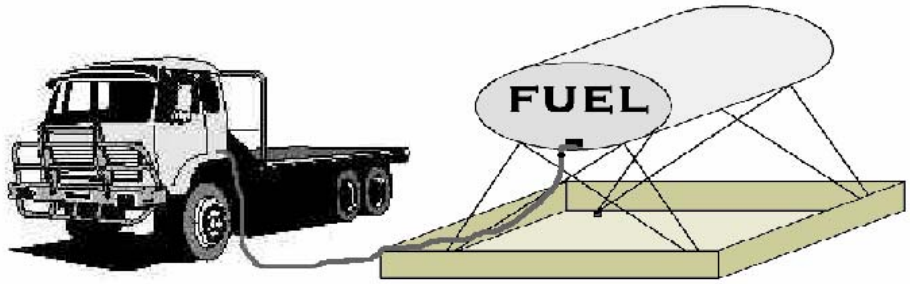
H	M	L	
☐	☒	☐	Capital Costs
☐	☐	☒	O&M Costs
☐	☒	☐	Maintenance
☐	☐	☒	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Vehicle And Equipment Fueling VEF



OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

	H	M	L
Sediment	☐	☐	☒
Nutrients	☐	☐	☒
Heavy Metals	☐	☐	☒
Toxic Materials	☐	☒	☐
Oil & Grease	☐	☒	☐
Floatable Materials	☐	☐	☒
Bacteria & Viruses	☐	☐	☒
Other Waste	☐	☐	☒

IMPLEMENTATION REQUIREMENTS

	H	M	L
Capital Costs	☐	☒	☐
O&M Costs	☐	☐	☒
Maintenance	☐	☒	☐
Training	☐	☒	☐
Staffing	☐	☐	☒
Administrative	☐	☐	☒

H = High **M =** Medium **L =** Low

DESCRIPTION:

Prevent fuel spills and leaks, and reduce their impacts to storm water by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors.

INSTALLATION / APPLICATION CRITERIA:

- Use off-site fueling stations as much as possible. Fueling vehicles and equipment outdoors or in areas where fuel may spill/leak onto paved surfaces or into drainage pathways can pollute storm water. If you fuel a large number of vehicles or pieces of equipment, consider using an off-site fueling station. These businesses are better equipped to handle fuel and spills properly. Performing this work off-site can also be economical by eliminating the need for a separate fueling area at your site.
- If fueling must occur on-site, use designated areas, located away from drainage courses, to prevent the run on of storm water and the runoff of spills. Discourage ”topping-off” of fuel tanks.
- Always use secondary containment, such as a drain pan or drop cloth, when fueling to catch spills/leaks. Place a stockpile of spill cleanup materials where it will be readily accessible. Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Carry out all Federal and State requirements regarding stationary above ground storage tanks.(40 CF Sub. J) Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and perhaps forklifts, most vehicles should be able to travel to a designated area with little lost time. Train employees and subcontractors in proper fueling and cleanup procedures.

LIMITATIONS:

Sending vehicles/equipment off-site should be done in conjunction with Stabilized Construction Entrance

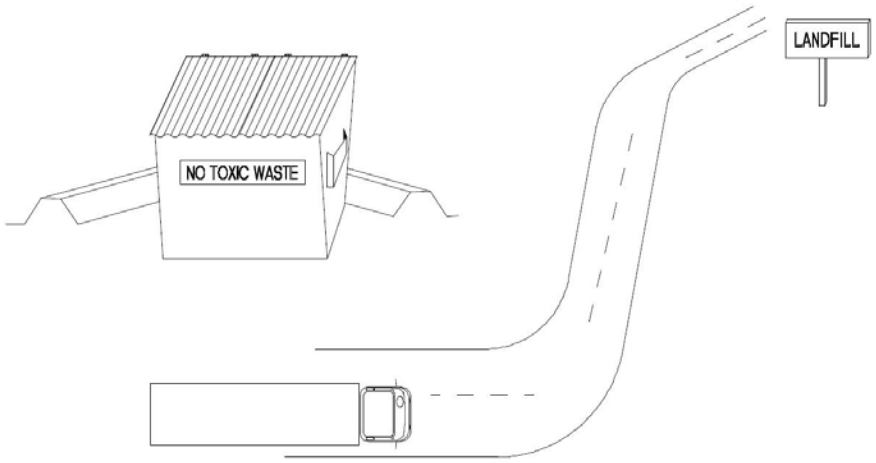
MAINTENANCE:

- Keep ample supplies of spill cleanup materials on-site
- Inspect fueling areas and storage tanks on a regular schedule

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

BMP: Waste Disposal WD



DESCRIPTION:

Controlled storage and disposal of solid waste generated by construction activities.

APPLICATION:

All construction sites

INSTALLATION / APPLICATION CRITERIA:

- Designate one or several waste collection areas with easy access for construction vehicles and personnel. Ensure no waterways or storm drainage inlets are located near the waste collection areas.
- Construct compacted earthen berm (See Earth Berm Barrier Information Sheet), or similar perimeter containment around collection area for impoundment in the case of spills.
- Ensure all on site personnel are aware of and utilize designated waste collection area properly and for intended use only (e.g. all toxic, hazardous, or recyclable materials shall be properly disposed of separately from general construction waste).
- Arrange for periodic pickup, transfer and disposal of collected waste at an authorized disposal location. Include regular Porto-potty service in waste management activities.

LIMITATIONS:

- On-site personnel are responsible for correct disposal of waste

MAINTENANCE:

- Discuss waste management procedures at progress meetings
- Collect site trash daily and deposit in containers at designated collection areas
- Randomly check disposed materials for any unauthorized waste (e.g. toxic materials).

OBJECTIVES

- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

TARGETED POLLUTANTS

H	M	L	
☐	☐	☐	Sediment
☐	☐	☐	Nutrients
☐	☐	☐	Heavy Metals
☒	☐	☐	Toxic Materials
☐	☒	☐	Oil & Grease
☒	☐	☐	Floatable Materials
☐	☐	☐	Bacteria & Viruses
☒	☐	☐	Other Waste

IMPLEMENTATION REQUIREMENTS

H	M	L	
☒	☐	☐	Capital Costs
☒	☐	☐	O&M Costs
☐	☒	☐	Maintenance
☒	☐	☐	Training
☐	☐	☒	Staffing
☐	☐	☒	Administrative

H = High **M =** Medium **L =** Low

DAVIS COUNTY STORM WATER COALITION

1500 East 650 North
Fruit Heights, UT 84037

STORMWATER RESOURCES

Environmental Protection Agency (EPA) Region VIII ..... (800) 227-8917

Army Corps of Engineers ..... (801) 295-8380

Utah Department of Environmental Quality

Division of Water Quality..... 538-6146

Division of Environmental Response and Remediation 536-4100

Division of Air Quality 536-4000

Solid and Hazardous Waste - Used Oil Hotline..... (800) 458-0145

Utah Division of Natural Resources

General Information..... 539-4001

Davis County Health Department

Water Quality and Hazardous Waste

Environmental Health

Davis County Public Works Engineering

Bountiful City
Centerville City
Clinton City
Farmington City
Fruit Heights City
Kaysville City
Layton City
North Salt Lake City
South Weber City
Sunset City
West Bountiful City
West Point City
Woods Cross City

Appendix G
Enforcement Strategy Long-Term Storm Water Management in New Development and Redevelopment

4.2.5.4 Procedure for site plan review which evaluate water quality impacts.

1. Require new developments to provide an analysis of potential pollutants that could impact water quality.
2. Require a description of BMPs that will be used to mitigate the water quality impact of any potential pollutants and rationale for selection of that BMP.
3. Require design specifications for proposed BMPs.
4. Require maintenance plans for long-term BMPs that are selected.

4.2.5.3.2 Process to evaluate LID approach which encourages the implementation of BMPs that infiltrate, evapotranspire or harvest and use storm water from the site to protect water quality.

1. Require new development plans to document the evaluation of LID approaches to storm water management.
2. Review the evaluation of LID approaches to make sure they have included BMPs to infiltrate, evapotranspire, harvest or use storm water from the site to protect water quality.
3. Review the proposed design of BMPs to make sure they meet the minimum standards required by the City.
4. If an LID approach cannot be utilized, require documentation explaining reasons preventing this approach and the rationale for the chosen alternative controls.

4.2.5.3.3 Plan to retrofit existing developed sites that are adversely impacting water quality

1. Create an inventory of developed sites that are adversely impacting water quality
2. Rank the site to determine those most suitable for retrofitting using the following criteria:
    a. Proximity to waterbody
    b. Status of waterbody to improve impaired waterbodies and protect unimpaired waterbodies
    c. Hydrologic condition of the receiving waterbody
    d. Proximity to sensitive ecosystem or protected area
    e. Any upcoming sites that could be further enhanced by retrofitting storm water controls
3. Notify the owner of the need to stop adversely impacting water quality
4. Require submittal of a plan by the owner to address the cause of the adverse impact on water quality. The submitted plan must emphasize controls that infiltrate, evapotranspire or harvest and use storm water discharges.
5. Review submitted plans and indicate whether they are acceptable.

6. Require owner to implement the plan to mitigate the source of the adverse impact on water quality.
7. Inspect the installation of the BMPs designed to mitigate the source of the adverse impact on water quality.

Appendix H

Documentation on How Title 16 Meets 4.2.5.2.2 of Permit #UTR090006

TO BE COMPLETED IN THE FIRST YEAR AND ADDED TO THE SWMP WHEN COMPLETE

Appendix I
Process to Evaluate and Encourage Low Impact Development (LID)

4.2.5.3.2 Process to evaluate LID approach which encourages the implementation of BMPs that infiltrate, evapotranspire or harvest and use storm water from the site to protect water quality.

1. Require new development plans to document the evaluation of LID approaches to storm water management.
2. Review the evaluation of LID approaches to make sure they have included BMPs to infiltrate, evapotranspire, harvest or use storm water from the site to protect water quality.
3. Review the proposed design of BMPs to make sure they meet the minimum standards required by the City.
4. If an LID approach cannot be utilized, require documentation explaining reasons preventing this approach and the rationale for the chosen alternative controls.

Appendix J

Specific Hydrologic Method for calculating Runoff Volumes and Flow Rates

Step 3: Volumetric Runoff Coefficient

Determine the volumetric runoff coefficient (R_V).

The volumetric runoff coefficient (also referred to as just the 'runoff coefficient') is a calculation of the percentage of rainfall that results in surface runoff. Runoff coefficients for small, frequent storms, such as for the 80th percentile, are not equivalent to runoff coefficients for large, less-frequent storms such as the 10-yr event and greater that are used with the Rational Method. The effects of infiltration, retention, and interception are increased for the smaller storm events compared to the larger events. Because of this, runoff coefficients for smaller storms are numerically smaller than for larger storms.

In 1983 data from over 50 sites nationwide was evaluated as part of the Nationwide Urban Runoff Program (NURP) (Driscoll, 1983). From these sites, mean and median R_V values were calculated and compared to the site's imperviousness. This research led to the following conclusions that are also discussed by Schueler who did additional analysis of the NURP sites:

1. "Most of the variation in mean R_V among sites can be attributed to differences in the level of urbanization, and in particular, to the site imperviousness."
2. "R_V's were found to be relatively consistent at individual sites and were only weakly correlated with storm-related variables such as precipitation volume, intensity, and duration."
3. "The runoff coefficient could serve as a reliable estimator of runoff volumes, given an initial estimate of rainfall volume." (Schueler, Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs, 1987)

Various coefficients for smaller storms have also been developed using national datasets and through local research. Municipalities are encouraged to research these and other runoff coefficients or develop their own in determining which method to use within their jurisdiction for use with the 80th percentile storm. Deciding on a single runoff coefficient methodology for a jurisdiction will simplify the design and review process.

Development of a runoff coefficient is done by monitoring the runoff volume produced from a storm event. The runoff coefficient is the ratio between the monitored runoff volume and the total precipitation volume expressed in the following equation and will vary depending on land use and imperviousness of the measured area:

$$R_V = \frac{V_R}{V_P}$$

Where:

R_V = Volumetric runoff coefficient, unitless

V_R = Monitored runoff volume, cf

V_P = Total precipitation volume, cf

The total precipitation volume can be determined using the following equation:

$$V_P = \frac{dA}{12}$$

Where:

d = Precipitation depth, in.

A = Drainage area, sf

It is not the intent of this manual or the Division of Water Quality to recommend specific methodologies. An in-depth summary of runoff coefficients used throughout the country by municipalities and DOTs was developed by the California Department of Transportation (Caltrans) and published as a Technical White Paper titled *Runoff Coefficient Evaluation for Volumetric BMP Sizing*. It can be found here: http://www.dot.ca.gov/design/hsd/guidance/CTSW-TM-15-312_03_01-Runoff_Coeff_for_Vol_BMP_Sizing.pdf. This white paper specifically discusses Method 1 in more detail.

For all the equations presented below, i represents the percent of imperviousness of the drainage area in decimal format (0.0 – 1.0).

Method 1 – Reese method

Comparing the imperviousness of 44 nationwide sites to their respective calculated volumetric runoff coefficient, a simple linear regression equation was created to estimate the volumetric runoff coefficient for small urban catchments. Land uses for these sites were classified as residential, mixed, commercial, industrial, and urban open and nonurban (Schueler, Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs, 1987). Outliers were removed from this dataset by Reese to derive the equation below. Removing outliers from the dataset reduces the impact of erroneous measurements (Reese, 2006).

$R_V = 0.91i - 0.0204$

Method 2 – Hydrologic soil groups

Regression equations for runoff coefficient equations were derived based on imperviousness and the NRCS hydrologic soil groups for the 2-year event as presented in *Table 5* (Guo, 2013).

Table 5: Runoff coefficient equations based on the NRCS Soil Group.

NRCS Soil Group		
A	B	C/D
$R_{V\text{-}A} = 0.84i^{1.302}$	$R_{V\text{-}B} = 0.84i^{1.169}$	$R_{V\text{-}C/D} = 0.83i^{1.122}$

Method 3 – Granato method

This runoff coefficient is calculated based on a two-line regression model of the runoff coefficient developed by the United States Geological Survey (USGS). This method of developing the runoff coefficient was developed to assist DOTs and contractors to estimate long-term volume reduction for highway projects and has been adopted for use by UDOT. Additional information relating to this runoff coefficient and its applicability can be found in NCHRP Report 792.

$R_V = 0.225i + 0.05$; when $i < 0.55$

$R_V = 1.14i - 0.371$; when $i \geq 0.55$

Step 4: 80th Percentile Volume

Calculate the 80th percentile volume using the following equations for V_{goal} or WQV.

$$V_{goal} = R_V dA \quad \text{or} \quad WQV = R_V dA$$

Where:

V_{goal} and WQV = 80th percentile volume, cf

R_V = Volumetric runoff coefficient, unitless

d = 80th percentile storm depth, ft (convert from inches to feet if required)

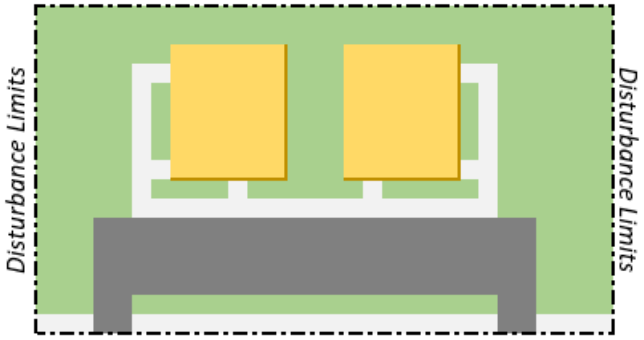
A = Project area or BMP drainage area, sf

The images on the following page show how V_{goal} and WQV are related. Examples from local case studies and different land uses further demonstrate the usage of these equations. See *Land Use Examples* and *Local Case Studies*.

V_{goal}

New Development

V_{goal} is the volume generated from the 80th percentile storm event over the entire project site or a predevelopment hydrologic condition, whichever is less.



$V_{goal} = R_V dA$

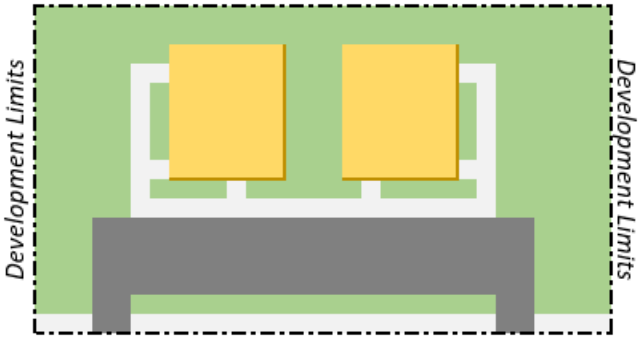
R_V = Volumetric runoff coefficient (based on the project's total area)

d = 80th percentile storm depth, ft

A = Project area, sf

Redevelopment

V_{goal} is the net volume increase generated from the 80th percentile storm event over the project area when the increase in impervious surface is greater than 10%.



Proposed Redevelopment
(Impervious surface increase > 10%)

$V_{goal} = V2 - V1$

$V_2 = R_V dA$

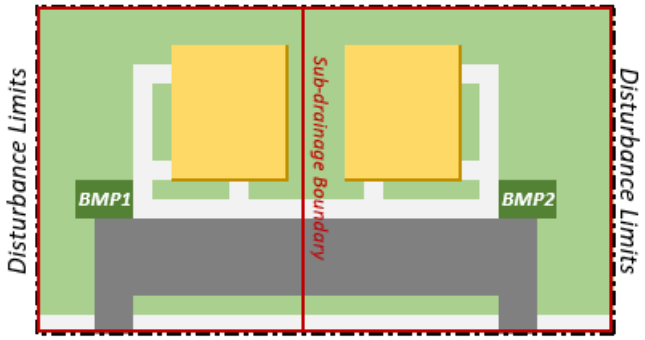
- Volume generated by the 80th percentile storm depth for the proposed project condition.

$V_1 = R_V dA$

- Volume generated by the 80th percentile storm depth for the existing project condition.

Water Quality Volume, WQV

The WQV is the 80th percentile volume of the sub-drainage area for each BMP.



Within the sub-drainage area boundaries, WQV is the 80th percentile volume based on the BMP's drainage area, the imperviousness of the BMP's drainage area, and the 80th percentile storm depth.

$WQV = R_V dA$

R_V = Volumetric runoff coefficient (based on the sub-drainage area's imperviousness)

d = 80th percentile storm depth, ft

A = Sub-drainage area, sf

Appendix K

Water Quality Impacts Review:

For:

Low-Impact New Development (4.2.5.1.)
Low-Impact Re-Development (4.2.5.1.)
Operations & Maintenance Flood Management Structural Controls (4.2.6.8.)

Procedure for site plan review to evaluate water quality impacts:

1. Define the urban watershed and nearest State Water of the project in question.
2. Require new or re-developments to provide an analysis of potential pollutants that could impact water quality.
3. Use the Utah Department of Water Quality Template (below) to study and document impacts to water quality from the proposed project.
4. Require a description of BMPs that will be used to mitigate the water quality impact of any potential pollutants and rationale for selection of that BMP.
5. Following the study if Water Quality impacts are proposed to be negative from the proposed project a revision will be required.
6. Following the study if Water Quality impacts are proposed to have no, or positive, effects from the proposed project it will pass.
7. Require maintenance plans for long-term BMPs that are selected.
8. All Water Quality Reports will be stored with the Stormwater Permitting documents necessary to complete said project.

Storm Water Quality Report – Template

Date: _____

Project Name: _____

Project ID: _____

Design Engineer: _____

Is the project within a watershed that is 303(d) listed? _____

If yes:

Name of receiving water(s): _____

Listed Impairment(s): _____

Does the watershed that has an approved TMDL? _____

If yes:

Approved TMDL(s): _____

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

_____

[name], Project Manager

_____

[name], Designate Storm Water Coordinator

_____

[name], Head of Maintenance

[stamp required at final design phase]

_____

[name], Landscape Architect or Equivalent

Project Information

80th Percentile Storm Depth (in): _____

New Development

Area of Land Disturbance (ac): _____

Project Impervious Area (ac): _____

Project Imperviousness (%): _____

Project Volumetric Runoff Coefficient, R_V: _____

80th Percentile Volume (cf): _____

Predevelopment Hydrologic Condition (cf): _____

Project Volume Retention Goal, V_{goal} (cf): _____

Redevelopment

Existing Project Impervious Area (ac): _____

Proposed Project Impervious Area (ac): _____

Change in Impervious Area (%): _____

If change in impervious area > 10%:

Existing Project Conditions

Imperviousness (%): _____

Volumetric Runoff Coefficient, R_V: _____

80th Percentile Volume, V_1 (cf): _____

Proposed Project Conditions

Imperviousness (%): _____

Volumetric Runoff Coefficient, R_V: _____

80th Percentile Volume, V_2 (cf): _____

$V_{goal} = V_2 - V_1$ = _____

Subsurface Information

Groundwater

Depth to Groundwater (ft): _____

Historical High Depth to Groundwater if known (ft): _____

Source: _____

Groundwater Contamination at Site: _____

Soil Information

Infiltration Rate (in/hr): _____

Hydrologic Soil Group: _____

Source: _____

Soil Contamination at Site: _____

Drinking Water

Within Drinking Water Source Area Protection: _____

Additional Relevant Site Information

_____

_____

_____

LID Drainage Areas

Add additional rows as needed.

Contributing Drainage Area	Area (ac)	Impervious Area (ac)	Imperviousness (%)	Volumetric Runoff Coefficient, R_V	Water Quality Volume, WQV (cf)
CDA 1					
CDA 2					
CDA 3					
CDA 4					
				Total WQV (cf)	

LID BMP Design

Add additional rows as needed.

Contributing Drainage Area	LID BMP Type	Water Quality Volume, WQV (cf)	Runoff Retained (cf)	Percent of Runoff Captured (%)
CDA1				
CDA 2				
CDA 3				
CDA 4				
		Total Volume Retained (cf)		

Percent of V_{goal} captured by LID BMPs: _____%

If 100% of V_{goal} is not captured, document and provide narrative of technical infeasibilities and/or alternate compliance measures below:

Describe additional storm water quality measures incorporated into the site:

Appendix L

Inventory of All Post-construction Structural Storm Water Control Measures

Detention Basin #	Address	# in AutoCAD	Subdivision	Year Designed	Size Measured (Acres)	Size Designed (Acres)	Capacity (ft³)	Notes
1	834 W Royal Oak Ct	1	Summer Wood	1985	0.2782		10,000	
2	1800 North 1473 W	2	Farmington City		0.434885			
3	1584-1596 N Oakridge Park Dr	3	Farmington City		0.517212			
4	1512 N Stayner Dr	4	Oakridge Village		0.161305	0.71	30,928	
5	1531 N Old Shepard Rd	5	The Village at Old Farm		Not Realistic	0.865		Detention and storm drain owned and operated by gardner old farm, LLC and Gardner BTS Old Farm, LLC
6	423 West 1300 North	6	Hidden Meadow, Hidden Quail, Forest Glen		Not Realistic			Google Earth shows no detention basin on this side hill.
7	1418 North 1700 West	7	Silverwood		0.906904	0.93		
9	1300 North 600 West	8	Hidden Meadow		0.140376	Can't Read it		
10	I89 and Sheppard Ln	9	Commision of Utah and UDOT		0.101005			
11	425 West 1150 North	10	Quail Cove P.U.D. / Quail Run		0.162446	Doesn't say theres a Det. Basin. Check constructions Plans		
12	950 North 1927-1930 West	11	CCP Farmington LLC		0.434311			
13	Burke Ln 675 N 750 West	12	Davis County and UDOT		22.076084			
14	Burke Ln 675 N 1720 West	13	Farmington Hollow		1.81243	Can't find anything.		
15	600 North 100 East	14	Farmington City		2.485001			
16	425 North 1535 West	15	American West Development		3.032919	Can't find anything.		
17	325 N Parairie View 2184 W	16	Farmington Ranches		0.088634	Farmington Ranches Phase 6. Worth looking into the plats(Farmington Ranches East Subd.) in the folder to see if there is another Detention Basin		
18	Clark Ln 100 N 1100 West Park Ln	17	American West Development		1.533454	Can't find anything.		
19	Citation Dr S N 1421 W	18	Farmington Greens 2C		0.176539			
20	226 S 1275 West	19	Farmington Greens PUD Plat 4		0.192731			
21	250 S 1525 West	20	Enterprises LLC Jung Family		1.366521			
22	475 South 1418 West	21	Chestnut Farms		0.459374			
23	470 South 1525 West	22	Chestnut Farms		1.325857			
24	500 South 783 West	23	Farmington City		Not Realistic			
25	595 South 650 West	24	Miller Meadows		3.268753			
26	1063 South 70 East	25	Farmington City Corp		0.247014			
27	Frontage Rd 1218 S	26	Cave Hollow Subdivision		0.359453			
28	Frontage Rd 1302 S	27	Cave Hollow Subdivision		0.325246			
29	Frontage Rd 1550 S	28	Sympony Homes		3.229237			
		29						

Stormtech detention systems- Station Park Cabelas

Appendix M

SOP for Site Inspection and Enforcement of Post-construction Storm Water Control Measures

STREETS/STORM DRAIN – Detention Ponds

1. **Preparation:**
   a. **Remove any sediment and trash off grates.**
   b. **Do a visual inspection to make sure grates are in good shape and everything is in good working order.**
   c. **Pull grates, inspect inside of basin.**

Process:

   d. **Start cleaning by using backhoe to remove silt and sediment off the bottom and try to keep anything from going downstream.**
   e. **Put all sediment into a dump truck.**

Clean-up:

   f. **After cleaning basins, clean off the concrete pads.**
   g. **Make sure they are swept up and clean.**
   h. **Haul to and dump trucks in the landfill.**

Documentation:

   i. **Keep logs of number of detention ponds cleaned.**
   j. **Record the amount of waste collected.**

c. Keep any notes or comments on any problems.

Appendix N

Schedule for Inspecting Existing Long-term Storm Water Management Facilities

TO BE COMPLETED IN FIRST YEAR AND INCLUDED IN SWMP WHEN DONE

Appendix O

Plan to Retrofit Existing Developed Sites That Are Adversely Impacting Water Quality

TO BE COMPLETED IN FIRST YEAR AND INCLUDED IN SWMP WHEN DONE

Appendix P
Preferred Design Specifications to More Effectively Treat Storm Water

Appendix Q

Inventory of All Municipal Facilities and Operations

			RISKS																
			4.2.6.2 Possible Pollutants								4.2.6.3. High Priority Indicators					4.2.6.2	4.2.6.5. Best Management Practices for High-Priority Sites		4.2.6.4
Departmer	Facility	Receiving Water	Sediment	Nutrients	Copper	Hydrocarbons	Pesticides	Chlorides	Trash	Animal Waste	Pollutants stored @ site?	Improperly stored materials?	Potential pollutant-generating activite	Proximity to Waters of the State (ft)?	Potential to discharge pollutants of cc	High Priority?	BMPs		SWPPP
Admin	City Administration Building	Steed Creek	-	-	-	-	-	-	-	-	-	-	-	1,100	-	-	-		-
Admin	Community Arts Building	Steed Creek	-	-	-	-	-	-	-	-	-	-	-	1,400	-	-	-		-
Admin	City Hall Museum	Farmington Creek	-	-	-	-	-	-	-	-	-	-	-	1,000	-	-	-		-
PW	Public Works Building	Farmington Creek	-	-	-	x	-	-	-	-	Y	-	Y	750	Y	Y	DI, EVVA, HVM, MS, SCU, SS, VEC, VEF, VD		PV 1
PW	Public Works Yard	Farmington Creek	x	-	-	x	-	-	-	-	Y	-	Y	800	Y	Y	CP, CVM, DI, EVVA, HVM, MS, SCU, SS, VEC, VEF, VD		PV 2
PW	Water Department Shed	Farmington Creek	-	-	-	x	-	-	-	-	Y	-	-	850	Y	Y	DI, EVVA, HVM, MS, SCU, SS, VEC, VEF, VD		PV 3
PW	Parks Department Shed	Farmington Creek	-	x	-	x	x	-	-	-	Y	Y	Y	850	Y	Y	DI, EVVA, HVM, MS, SCU, SS, VEC, VEF, VD		Parks
PW	Streets Debris Yard	Farmington Creek	x	-	-	x	-	-	x	-	Y	-	Y	350	Y	Y	CP, CVM, DI, EVVA, HVM, MS, SCU, SS, VEC, VEF, VD		PV 4
FD	Fire Station	Farmington Creek	-	-	-	x	-	-	-	-	Y	-	-	1,600	-	-	-		-
PD	Police Station	Steed Creek	-	-	-	x	-	-	-	-	-	-	-	250	-	-	-		-
Parks & Rec	City Swimming Pool	Farmington Creek	-	-	-	-	-	x	-	-	Y	-	Y	1,200	Y	Y	HVM, SCU, VD		Pool
Parks & Rec	Gymnasium	Farmington Creek	-	-	-	-	-	-	-	-	-	-	-	1,200	-	-	-		-
Parks & Rec	Farmington Pond Park	Farmington Creek	-	x	-	-	x	-	-	x	-	-	Y	0	Y	-	-		-
Parks & Rec	Regional Park	Farmington Creek	-	x	-	-	x	-	-	x	-	-	Y	0	Y	-	-		-
Parks & Rec	Ranches Park	Shepard Creek	-	x	-	-	x	-	-	x	-	-	Y	0	-	-	-		-
Parks & Rec	Heritage Park	Shepard Creek	-	x	-	-	x	-	-	x	-	-	Y	1,600	-	-	-		-
Parks & Rec	Forbush Park	Farmington Creek	-	x	-	-	x	-	-	x	-	-	Y	1,400	-	-	-		-
Parks & Rec	Moon Park	Shepard Creek	-	x	-	-	x	-	-	x	-	-	Y	850	-	-	-		-
Parks & Rec	Mountain View Park	Steed Creek	-	x	-	-	x	-	-	x	-	-	Y	1,200	-	-	-		-
Parks & Rec	Point of View Park	Farmington Creek	-	x	-	-	x	-	-	x	-	-	Y	1,200	-	-	-		-
Parks & Rec	Preserve Park	Spring Creek	-	x	-	-	x	-	-	x	-	-	Y	500	-	-	-		-
Parks & Rec	Shepard Park	Shepard Creek	-	x	-	-	x	-	-	x	-	-	Y	0	Y	-	-		-
Parks & Rec	South Park	Davis Creek	-	x	-	-	x	-	-	x	-	-	Y	100	-	-	-		-
Parks & Rec	Misc. Landsape Sites	All	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-		-
Parks & Rec	Woodland Park	Steed Creek	-	x	-	-	x	-	-	x	-	-	Y	0	Y	-	-		-
Water Dept.	Community Center Well	Farmington Creek	-	-	-	-	-	x	-	-	Y	-	Y	1,100	Y	Y	HVM, SCU, VD		Well 1
Water Dept.	Woodland Well C-5	Steed Creek	-	-	-	-	-	x	-	-	Y	-	Y	250	Y	Y	HVM, SCU, VD		Well 2
Water Dept.	Farmington Creek Well	Farmington Creek	-	-	-	-	-	x	-	-	Y	-	Y	0	Y	Y	HVM, SCU, VD		Well 3
Water Dept.	Glovers Lane Well	Davis Creek	-	-	-	-	-	-	-	-	-	-	-	600	-	-	-		-
Water Dept.	Woodland Well 286 South	Steed Creek	-	-	-	-	-	x	-	-	Y	-	Y	0	Y	Y	HVM, SCU, VD		Well 4
Water Dept.	N4 Above Bella Vista court	Shepard Creek	-	-	-	-	-	-	-	-	-	-	-	550	-	-	-		-
Water Dept.	Tank N3 off of Grand View Dr	Shepard Creek	-	-	-	-	-	-	-	-	-	-	-	1,500	-	-	-		-
Water Dept.	Tank N2 North Compton/Point of View D	Farmington Creek	-	-	-	-	-	-	-	-	-	-	-	4,000	-	-	-		-
Water Dept.	Tank C1 Above 100 E and 650 N	Farmington Creek	-	-	-	-	-	-	-	-	-	-	-	1,400	-	-	-		-
Water Dept.	Tank C2A Above Flag rock Dr	Farmington Creek	-	-	-	-	-	-	-	-	-	-	-	3,000	-	-	-		-
Water Dept.	Tank C2B LakeView Way /Woodland Dr	Steed Creek	-	-	-	-	-	-	-	-	-	-	-	1,500	-	-	-		-
Water Dept.	Tank C5 Above Woodland Dr	Steed Creek	-	-	-	-	-	-	-	-	-	-	Y	2,500	Y	-	-		-
Water Dept.	Tank S1 Above Water Turn Dr	Davis Creek	-	-	-	-	-	-	-	-	-	-	-	800	-	-	-		-
Water Dept.	Tank B1 Above Water Turn Dr	Davis Creek	-	-	-	-	-	-	-	-	-	-	-	800	-	-	-		-
Engineering	Farmington Mountain Bike Park	Farmington Creek	x	-	-	-	-	-	-	-	-	-	-	75	Y	-	-		-
Streets	Stormwater Detention Basins*	All	-	x	-	-	-	-	-	-	-	-	-	0	Y	-	-		-
Streets	Stormwater Conveyance Ditches (Creek:	All	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-		-
Streets	Parking Lots	All	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-		-

Notes

Farmington Creek is an impaired water as defined by the Utah DEQ. TMDL Required, no TMDL set as of August 2021. Impairments are: E.Coli & Copper

High Priority status is determined by the sum of defined risks in the table above.

*Please see the Storm Water Infrastructure Map for detailed information on SW Detention Basins & SW Conveyance Ditches

Appendix R

Decision Matrix for Determining High Priority Areas:

Procedure for City Owned or Operated facility review to evaluate water quality impacts:

All MS4 owned property, facilities, and physical BMPs are priority areas and managed pursuant to the Small MS4 General UPDES Permit to reduce pollutants from entering State waters. The decision matrix below is to determine which priority areas are deemed HIGH priority and have an increased risk of polluting State waters.

Areas that:

-Reduce Potential Pollutants are managed by BMPs

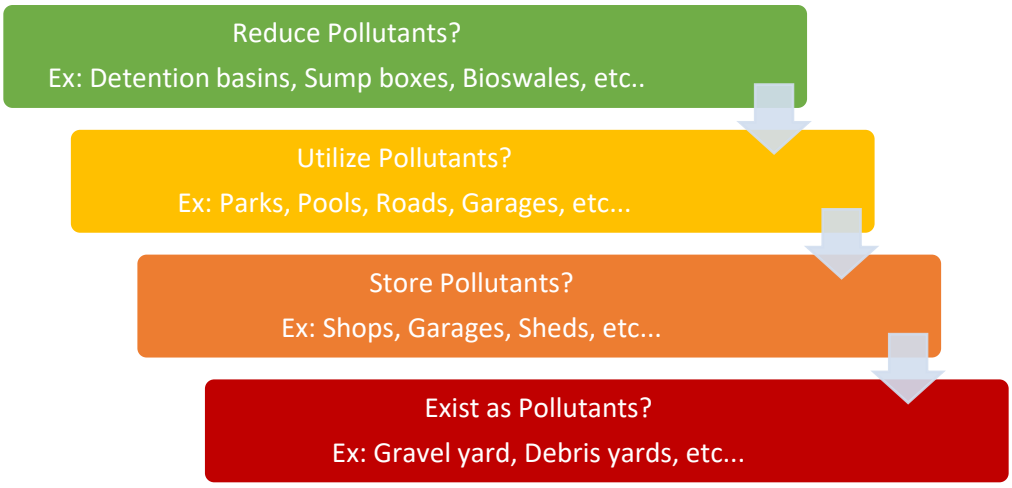
-Utilize Potential Pollutants are managed by SOPs

-Store Potential Pollutants are managed by SWPPPs

-Exists as Potential Pollutants are managed by SWPPPs

…to mitigate pollutants from reaching State Waters.

Does the Priority Area in Question…



High Priority Areas:

-Store Potential Pollutants

-Exist as Potential Pollutants

Or are a combination of areas that:

-Utilize Potential Pollutants and one of the above

Appendix S

City Standard Operating Procedures

Adopted from the Davis County Storm Water Coalition

RESOLUTION No.

A RESOLUTION ADOPTING STANDARD OPERATING PROCEUDRES FOR FARMINGTON CITY

WHEREAS, the Farmington City Utah Pollutant Discharge Elimination System (UPDES) Permit requires the adoption of Standard Operating Procedures (SOPs) for Permittee-owned or operated facilities, operation and structural storm water controls; and

WHEREAS, the Public Works and Parks & Recreation Departments have reviewed example SOPs developed by the Davis county Storm Water Coalition, revised as needed by the Farmington Storm Water Manager and have adapted them to meet the needs of the City; and

WHEREAS, the City Council finds it necessary to adopt the Standard Operating Procedures to protect the health, safety, and welfare of the residents and citizens of the City.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF FARMINGTON CITY, STATE OF UTAH:

Section 1. Adoption. The City Council hereby adopts the Farmington City Standard Operating Procedures, a copy of which is attached hereto and by this reference is made a part hereof. Copies of the Standard Operating Procedures shall be made available to the City staff and other interested persons in accordance with the policies and procedures of the City regarding records.

Section 2. Severability. If any section, clause, or portion of this resolution is declared invalid by a court of competent jurisdiction, the remainder shall not be affected thereby and shall remain in full force and effect.

Section3. Effective Date. This resolution shall take effect immediately upon the date of its passage.

PASSED AND ADOPED BY THE CITY COUNCIL OF FARMINGTON CITY, STATE OF UTAH, on this ____ day of _____, _____ .

FAMRINGTON CITY CORPORATION

By:_____

James Talbot

Mayor

Attest:_____

Heidi Bouck

City Recorder

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APPENDIX - S

Storm Water Management Plan (SWMP)

Farmington City

Standard Operating Procedures (SOP's)

Revised August 2021

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SPILL INCIDENT

ILLICIT DISCHARGE DETECTION & ELIMINATION

INSPECTION & ENFORCMENT

GENERAL

PARKS & RECREATION

SPILL INCIDENT	**SI-1**
Response & Reporting Decision Matrix	

1. Process: (When a spill is observed or a report of spill comes in)

Does the incident pose an immediate threat to life or health?

Yes – Call 911 (give description of material, amount, and extent)

- Describe incident in spill log.

No – Move to next step

Are you able to safely contain the spill with tools and/or material at hand?

Yes – Contain the spill and secure the area, then ensure clean-up is done

- Report according to the reporting list below, and
- Describe incident in spill log.

No – Move to next step

Is it during regular working hours?

Yes – Report according to reporting list below

- Describe incident in spill log.

No – Call 911 (give description of material, amount, and extent)

- Describe incident in spill log.
- On next working day report according to reporting list below

The Farmington City Storm Water Manager and/or Fire Chief should be contacted after any spills and should assist in making appropriate calls/escalation processes. 801-939-9286 and/or 801-939-9260

Follow SOP: Response & Reporting Contact List (SI-2)

SPILL INCIDENT	SI-2
Response & Reporting Contact List	

Pollutant Description - Report to:

Pollutant releases to water (surface or ground water):	Davis Co., UDEQ, & NRC
Hydrocarbons (fuel, oil), release of 25 gallons or more:	Davis Co. and UDEQ
Radiological Materials, any spill or release:	Davis Co. and UDEQ
Extremely Hazardous chemicals, 2.2 lb. or more: (e.g. Cyanides, Arsenic, Chlorine)	Davis Co. and UDEQ
Other Hazardous chemicals, 220 lb. or more:	Davis Co. and UDEQ
Underground Storage Tank, any leaking or release:	Davis Co. and UDEQ

Other spills, particularly those under the above limits and/or contained and cleaned up, do not need to be reported.

Phone Contact List:

Emergency	911
Farmington City Storm Water Manager	801-939-9286
Farmington City Fire Chief	801-939-9260
Davis County Environmental Health (Davis Co.)	801-525-5100
Utah Dept. of Environmental Quality (UDEQ)	801-536-4123
National Response Center (NRC)	1-800-424-8802
Utah Division of Solid and Hazardous Waste	801-538-6170
Utah Hazmat Response Officer	801-538-3745

Web Contact List:

Utah Dept. of Environmental Quality (UDEQ)	https://deq.utah.gov/general/report-an-incident

SPILL INCIDENT	SI-3
Discharge/Spill Inspection Report	

REPORTED INFORMATION

Reported by_____ Date _____

Location of Discharge _____

Description of Discharge _____

Amount of Discharge (estimated) _____

Report Taken by _____

INVESTIGATION INFORMATION

*Complete and attach **Field Sheet***

Date Investigation Began _____

Was Source of Discharge Found? □ Yes □ No

Any Discharge to Storm Drain? □ Yes □ No

Method(s) Used to Discover Source of Discharge _____

Agencies Discharge was reported to: _____ Date: _____

ILLICIT DISCHARGE REMOVAL INFORMATION

Description of Actions Taken to Remove the Discharge _____

_____

Has Illicit Discharge Been Eliminated? □ Yes Date_____ □ No

Future Scheduled Follow-Up Action: _____ Date: _____

ENFORCEMENT INFORMATION

List Enforcement Action(s) Taken

Date: _____ Enforcement Action _____

Date: _____ Enforcement Action _____

ILLICIT DISCHARGE DETECTION & ELIMINATION	IDDE-1
Outfall Inspections	

1. Preparation:
    a. Make sure you have the following supplies for the field work:
        i. Camera, flashlight, 1st aid kit, nitrile gloves, waterproof boots or waders, tape measure, phone or 2-way radio, watch (with stopwatch), GPS, and
        ii. Map(s) showing drainage system and outfalls in the area you plan to screen
        iii. pH and ammonia testers, thermometer, clear sample bottle(s), ziplock bags, and caulk or plumbers' putty, and
        iv. Physical or digital copies of *Field Sheet* (such as Appendix D-3 of the Center Watershed Protection's Illicit Discharge Detection and Elimination Guidance Manual)
    b. Notify private property owners whose property you'll need to be crossing.
    c. Inform an individual of your intent, location you're traveling, and time you will return.
2. Process:
    a. Upon arrival at each outfall/discharge, take photo(s), and gather information to complete *Field Sheet*
    b. Use the data observed, collected and recorded on Field Sheet and guidelines on *Field Sheet* to characterize the outfall/discharge as an "unlikely," "potential," "suspect," or "obvious" point of illicit discharge.
        i. Consider these as indicators: pH≤6 or pH >8, severity of 2; pH≤5 or pH >9, severity of 3; Ammonia ≥1.0, severity of 3.
        ii. If outfall is non-flowing and characterized as "obvious," "suspect," or "potential," place a caulk dam and schedule a return visit to attempt to collect a sample.
        iii. If characterized as "obvious," follow SOP: *Response & Reporting Decision Matrix (SI-1)* and SOP: *Response & Reporting Contact List (SI-2)*.
        iv. If characterized as "obvious" then initiate SOP: *Tracing an Illicit Discharge (IDDE-3)* and SOP: *Eliminating an Illicit Discharge IDDE (IDDE-4).*
        v. If outfall is flowing and characterized as suspect, initiate SOP: *Tracing an Illicit Discharge (IDDE-3)* and SOP: *Eliminating an Illicit Discharge IDDE (IDDE-4)* within two working days.
3. Clean-up:
    a. Place used gloves and other waste in bag and carry-out for disposal into waste bin.
    b. If any hazardous waste is produced (eg. used detergent/surfactant reagent), carry out and arrange for delivery to a hazardous waste facility.

Contact: Veolia Environmental Services 709 N. Taylor Way Suite 1 North Salt Lake, UT 84054, US

(801) 232-0976

4. Documentation:
    a. Record any further actions taken for potential, suspect, and obvious illicit discharges.

ILLICIT DISCHARGE DETECTION & ELIMINATION	IDDE-2
Manhole Inspections	

1. Preparation:
    a. Make sure you have the following supplies for the field work:
        i. Camera, flashlight, 1st aid kit, nitrile gloves, waterproof boots or waders, tape measure, phone or 2-way radio, watch (with stopwatch), GPS, and
        ii. Map(s) showing drainage system and outfalls in the area you plan to screen
        iii. pH and ammonia testers, thermometer, clear sample bottle(s), ziplock bags, and caulk or plumbers' putty, and
        iv. Physical or digital copies of *Field Sheet* (such as Appendix D-3 of the Center Watershed Protection's Illicit Discharge Detection and Elimination Guidance Manual)
    b. Notify private property owners whose property you'll need to be crossing.
    c. Inform an individual (preferably your manager) of your intent, location you're traveling, and time you will return.
2. Process:
    a. Upon arrival at each mahole, take photo(s), and gather information to complete *Field Sheet*
    b. Use the data observed, collected and recorded on Field Sheet and guidelines on *Field Sheet* to characterize the outfall/discharge as an "unlikely," "potential," "suspect," or "obvious" point of illicit discharge.
        i. Consider these as indicators: pH≤6 or pH >8, severity of 2; pH≤5 or pH >9, severity of 3; Ammonia ≥1.0, severity of 3.
        ii. If outfall is non-flowing and characterized as "obvious," "suspect," or "potential," place a caulk dam and schedule a return visit to attempt to collect a sample.
        iii. If characterized as "obvious," follow SOP: *Response & Reporting Decision Matrix (SI-1)* and SOP: *Response & Reporting Contact List (SI-2)*.
        iv. If characterized as "obvious" then initiate SOP: *Tracing an Illicit Discharge (IDDE-3)* and SOP: *Eliminating an Illicit Discharge IDDE (IDDE-4).*
        v. If outfall is flowing and characterized as suspect, initiate SOP: *Tracing an Illicit Discharge (IDDE-3)* and SOP: *Eliminating an Illicit Discharge IDDE (IDDE-4)* within two working days.
3. Clean-up:
    a. Place used gloves and other waste in bag and carry-out for disposal into waste bin.
    b. If any hazardous waste is produced (eg. used detergent/surfactant reagent), carry out and arrange for delivery to a hazardous waste facility.

Contact: Veolia Environmental Services 709 N. Taylor Way Suite 1 North Salt Lake, UT 84054, US

(801) 232-0976

4. Documentation:
    a. Record any further actions taken for potential, suspect, and obvious illicit discharges.

ILLICIT DISCHARGE DETECTION & ELIMINATION	IDDE-3
Tracing an Illicit Discharge	

1. Preparation:
    a. Review map(s) showing drainage system and area contributing to location of the discharge.
    b. Bring traffic –control devices and safety equipment for entering manholes and inlet boxes.
    c. Bring water-quality screening equipment and sample containers.
2. Process:
    a. Travel around the streets/adjacent properties of the area contributing to the discharge point and look for anything that may help reveal the source of the discharge (if the source is found, skip to step c.)
    b. From the point of discharge, check the nearest up-stream manhole or inlet box for a similar discharge.
        i. Put on safety equipment and set up traffic controls according to MUTCD, part 6
        ii. Remove manhole or box cover (if necessary). Make an observation of any flow present.
        iii. Use water-quality screening equipment and sample containers, if needed, to determine whether the discharge is similar in nature to the discharge present below.
        iv. Progress up the system, repeating the previous step until the source of the discharge is found or the segment of the drainage system where the discharge enters the system is isolated.
        v. If the source is not found, yet the segment of the drainage system where the discharge enters is isolated, make arrangements to get a video with distance measurements of that segment of the drainage system to trace the source.
        vi. If further investigation is needed, consider using smoke tests, dye testing, sampling for additional water quality parameters, and requesting assistance from the Davis County Health Department.
    c. Determine whether the source is an illicit discharge (review list of allowed non-storm discharges in city ordinance Title 16, Chapter 4) and if so, report according to SOP: *Response & Reporting Decision Matrix (SI-1)* and SOP: *Response & Reporting Contact List (SI-2)*.
    d. Determine whether If the source of the discharge is likely to need a separate UPDES discharge permit. If so, report to the Utah Division of Water Quality (SOP: *Response & Reporting Contact List (SI-2)).*
        i. Note: Most likely discharges in Bountiful that may need a separate UPDES permit are from: Construction Activities and Construction Dewatering.
3. Documentation:
    a. Add relevant information to Discharge/Spill Inspection Report.
    b. Note any discrepancies in the storm drain system maps from what is found in the field. Make sure that the maps get updated to correctly reflect actual conditions.

ILLICIT DISCHARGE DETECTION & ELIMINATION	IDDE-4
Eliminating an Illicit Discharge	

1. Preparation:
    a. Make sure reporting has been done according to SOP: *Response & Reporting Decision Matrix (SI-1)* and SOP: *Response & Reporting Contact List (SI-2)*.
    b. Begin completing report following SOP: *Discharge/Spill Inspection Report (SI-3).*
2. Process:
    a. If the discharge is due to a sewer cross connection:
        i. Determine the responsible party for the discharge
        ii. Issue a Notice of Violation to the violator requiring the problem to be corrected within two weeks to avoid further enforcement action.
    b. For other discharges contact the Davis County Health Department - Environmental Division for removing the discharge and bringing enforcement action to violator
        i. Assist county personnel as needed in determining the responsible party, providing utility information, and providing other screening or investigation information gathered regarding the discharge.
    c. For illicit discharges traced to construction activity:
        i. Ensure that the activity is permitted correctly at City and State level;
        ii. Issue a Notice of Violation to the violator requiring the problem to be corrected within two weeks to avoid further enforcement action.
        iii. If discharge is severe, negligible, or impacting surface/ground waters an immediate fine against the Storm Water Bond is applicable.
    d. Offer technical assistance to the violator; help them understand how to go about correcting the problem.
    e. Follow-up as needed to ensure that the discharge has been removed. If violator fails to remove the discharge bring criminal enforcement action
    f. If unable to immediately contain and/or cease the discharge, record the circumstances and submit a written rationale to the Division of Water Quality (see 2021 MS4 permit 4.2.3.6)
3. Clean-up:
    a. Clean catch basin, storm drain line, storm water conveyance channel, or initiate spill response with Davis County Health Department & Utah Department of Environmental Quality.
    b. Record efforts, material removed, infrastructure cleaned, and costs accrued.
        i. Send information as report to responsible party and include in documentation.
4. Documentation:
    a. Complete SOP: *Discharge/Spill Inspection Report (SI-3)* and/or obtain a copy of the discharge report from the Davis County Health Department - Environmental Division
    b. If unable to immediately contain and cease the discharge, write a rationale describing the circumstances and submit it to the Utah Division of Water Quality (e.g. for failing septic system).

INSPECTION & ENFORCEMENT	**IE-1**
Inspecting Construction Sites	

1. Preparation:
    a. Plan to inspect sites once per month (bi-weekly for high-priority sites) as per the UPDES.
    b. Review active permits in the EPA-CDX and update inspection software.
    c. Review information about SWPPP and previous inspections conducted.
    d. Ensure you are outfitted with the required PPE.
    e. All State Permits must be inspected by a Registered Stormwater Inspector.
        i. Don't have it? Can't do it.
        ii. Adhere to the principals and rules stated in the RSI handbook.
2. Process:
    a. Use the State Inspection Form as a guide to conduct the inspection.
        i. This is updated often so a copy will not be provided here, go to the DWQ website for the most recent version.
    b. Upon arrival at site, locate the SWPPP and review it to determine site requirements.
    c. Inspect conditions of BMP's, general site cleanliness, and compliance with the State or City permit the construction site is under.
    d. Remember that protecting waters of the State is the goal, if you see an issue previously undefined by the SWPPP, bring it to the attention of the contractor.
    e. Take numerous photos.
    f. Complete and certify the report.
        i. Noting any corrective actions needed for compliance.
        ii. Give the contractor a deadline for the corrective action items.
            1. Take note of severity and weather to determine timeline.
    g. Email a copy of the completed inspection report to the contractor.
    h. Save a copy of the inspection report for State and/or City records.
3. Follow-up:
    a. Return to check corrective action items shortly after any deadline given to the contractor has elapsed.
    b. Implement SOP: *Enforcing Construction Site Requirements (IE-2)* as needed to ensure compliance.
4. Documentation:
    a. File photos and inspection reports.
    b. Document enforcement actions taken.
    c. Record fines against the City Stormwater Bond and ensure adequate evidence is provided.

INSPECTION & ENFORCEMENT	**IE-2**
Enforcing Construction Site Requirements	

1. Preparation:
    a. Ensure that all corrective actions have been recorded and the contractor has been notified of those as per SOP: *Inspecting Construction Site (IE-1).*
    b. Review precious inspections, warnings given, and other enforcement actions taken.
    c. Prepare yourself. Do not engage emotionally.
2. Process:
    a. Use these escalating enforcement actions:
        i. Warning: Give the contractor a warning to correct problems with a reasonable deadline to complete corrections. Skip this step if the problems pose a serious threat to human safety or waters of the State's quality. This step is synonymous with the corrective action items identified in the originating inspection, this Warning can be skipped in favor of action 2.a.ii
        ii. Penalty Assessed: Fine the contractor an amount divisible by $100. This amount is deducted from the Stormwater Bond secured prior to construction with the City. Identify the corrective actions needing change, the timeline given the contractor, and their shortcomings in reaching permit compliance.
        iii. Stop Work Order: Once the penalties assessed to the project exceed $800, or 80% of the deposited Stormwater Bond amount then a Stop Work Order will be issued. Post the order in a visible location and immediately inform the Farmington City Building Department Superintendent.
    b. Photo evidence must be provided.
    c. Inspection report evidence must be provided.
3. Follow-up:
    a. Return to check the corrective action items were completed following the administration of the above enforcement actions.
    b. Take photos
    c. Conduct another inspection per SOP: *Inspecting Construction Site (IE-1).*
    d. Implement further escalating enforcement action as needed to ensure compliance.
4. Documentation:
    a. File photos and inspection reports.
    b. Document enforcement actions taken.
    c. Record fines against the City Stormwater Bond and ensure adequate evidence is provided.

INSPECTION & ENFORCEMENT	IE-3
Inspecting Long-Term Controls (Private)	

1. Preparation:
    a. Check Records; review terms of maintenance agreement (if any), information about the design and function of the control, and previous inspections that are on-file.
    b. Per the MS4 permit UTR090006 which Farmington City currently holds line item 4.2.5.2 gives authority to the Long-Term Stormwater Management Plan & Agreement to obligate the private owner of Long-Term Controls of annual inspection/maintenance responsibilities.
    c. Notify the owner of the inspection and schedule a time when owner (or owner's representative) will conduct the inspection and submit report to the City.
2. Process:
    a. Ensure the owner uses the Long-Term Control Inspection Form as appropriate for the type of control to be inspected.
    b. Ensure owner submits photos and adequate reports.
    c. Receive and document inspection report.
    d. Review inspection report and determine if any corrective actions are needed.
        i. If yes, communicate said corrective actions to owner and determine a timeline in which they must correct said items.
3. Follow-up:
    a. Return to check corrective action items shortly after any deadline given to the owner.
    b. Implement SOP: *Enforcing Long-Term Controls (IE-5)* as needed to ensure compliance.
4. Documentation:
    a. File inspection reports, photos, and notes of corrective actions performed.
    b. Document enforcement actions taken.

INSPECTION & ENFORCEMENT	IE-4
Inspecting Long-Term Controls (Public)	

1. Preparation:
    a. Check Records; review information about the design and function of the control, and previous inspections that are on-file.
    b. Schedule the inspection; plan to inspect each city-owned long-term structural control annually.
2. Process:
    a. Use the Long-Term Control Inspection Form as appropriate for the type of control to be inspected.
    b. Inspect condition of control according to the inspection form (whether adequately maintained, operating as designed, etc.).
    c. Take photos.
    d. Complete the report; note any corrective actions needed and schedule these to be completed within a reasonable time.
    e. Communicate corrective actions needed to the department responsible for maintenance.
3. Follow-up:
    a. Return to check corrective action items shortly after scheduled time for completion.
    b. Note any corrective actions performed.
    c. Take photos.
4. Documentation:
    a. File inspection reports and notes on corrective actions performed.
    b. If applicable; report activities to the Street Superintendent to update the Maintenance database.

INSPECTION & ENFORCEMENT	IE-5
Enforcing Long-Term Controls	

1. Preparation:
    a. Ensure that any problems needing corrective action have been documented and submitted to the responsible party.
    b. Ensure sufficient photo and inspection evidence is on file to support claims.
    c. Review maintenance agreement, previous inspections, warnings given, and other enforcement actions taken.
2. Process:
    a. Use these escalating enforcement actions:
        i. Warning: Give the owner a warning to correct problems with a reasonable deadline to complete corrections. Skip this step if the problems pose a serious threat to human safety or the environment.
        ii. Notice of Deficiency: If problems are not corrected by the deadline, of if the problem is re-occurring, issue a Notice of Deficiency by certified mail or hand delivery (with supervisor's approval). Also provide another reasonable deadline before pursuing additional enforcement action.
        iii. Correct Problem and Bill Owner: city crews can be utilized at $500/hr (one hour minimum).
        iv. Collection of Charges: coordinate with City Prosecutor and City Treasurer for collection of charges.
3. Follow-up:
    a. Return to check corrective action items shortly after any deadline given to the owner.
    b. Take photos.
    c. Implement further escalating enforcement action as needed to ensure compliance.
4. Documentation:
    a. File photos and inspection reports.
    b. Document enforcement actions taken.

INSPECTION & ENFORCEMENT	IE-6
High-Priority Site Monthly Visual Inspections	

1. Preparation:
    a. Review the high-priority site SWPPP physically located at site.
        i. Ensure monthly and semi-annual inspections are being documented.
    b. Review information about previous month inspections.
    c. Take note of any previous corrective action needed that has not been documented as complete.
    d. Ensure you are outfitted with the required PPE.
2. Process:
    a. Use the State Inspection Form as a guide to conduct the inspection.
        i. This is updated often so a copy will not be provided here, go to the DWQ website for the most recent version.
    b. Inspect and verify conditions of the BMP's and all other systems designed and placed to eliminate pollutant discharges, general site cleanliness, and compliance with the State MS4 permit.
        i. Remember that protecting waters of the State is the goal, if you see an issue previously undefined by the SWPPP, bring it to the attention of the Stormwater Manager.
    c. Take numerous photos.
    d. Complete and certify the report.
    e. Define any corrective actions needed for compliance.
    f. Give the responsible City Department a deadline for the corrective action items.
        i. Take note of severity and weather to determine timeline.
    g. Email a copy of the completed inspection report to the department head.
    h. Save a copy of the inspection report for State and/or City records.
3. Follow-up:
    a. Schedule any necessary corrective actions with Department Heads.
    b. Return to check corrective action items shortly after any deadline given to the contractor has elapsed.
    c. Implement SOP: *Enforcing Construction Site Requirements (IE-2)* as needed to ensure compliance.
4. Documentation:
    a. File inspection report, corrective actions, communication with responsible departments, and all photos.
    b. Record all details on the SWPPP on-site. If that is not possible ensure the SWPPP on-site has an accurate description to where the records can be found.

INSPECTION & ENFORCEMENT	IE-7
High-Priority Site Semi-Annual Comprehensive Inspections	

1. Preparation:
    a. Review the high-priority site SWPPP physically located at site.
        i. Ensure monthly and semi-annual inspections are being documented.
    b. Review information about previous month inspections.
    c. Take note of any previous corrective action needed that has not been documented as complete.
    d. Ensure you are outfitted with the required PPE.
2. Process:
    a. Use the State Inspection Form as a guide to conduct the inspection.
        i. This is updated often so a copy will not be provided here, go to the DWQ website for the most recent version.
    b. Inspect and verify conditions of the BMP's and all other systems designed and placed to eliminate pollutant discharges, general site cleanliness, and compliance with the State MS4 permit.
        i. Remember that protecting waters of the State is the goal, if you see an issue previously undefined by the SWPPP, bring it to the attention of the Stormwater Manager.
    c. Focus on the catalysts that make this location a high-priority site. Inspect each factor individually (salt shed, chlorine tank, fertilizer storage, fuel tanks, etc).
    d. Take numerous photos.
    e. Complete and certify the report.
    f. Define any corrective actions needed for compliance.
    g. Give the responsible City Department a deadline for the corrective action items.
        i. Take note of severity and weather to determine timeline.
    h. Email a copy of the completed inspection report to the department head.
    i. Save a copy of the inspection report for State and/or City records.
3. Follow-up:
    a. Schedule any necessary corrective actions with Department Heads.
    b. Return to check corrective action items shortly after any deadline given to the contractor has elapsed.
    c. Implement SOP: *Enforcing Construction Site Requirements (IE-2)* as needed to ensure compliance.
4. Documentation:
    a. File inspection report, corrective actions, communication with responsible departments, and all photos.
    b. Record all details on the SWPPP on-site. If that is not possible ensure the SWPPP on-site has an accurate description to where the records can be found.

INSPECTION & ENFORCEMENT	IE-8
High-Priority Site Annual Visual Observation of Storm Water Discharges	

1. Preparation:
    a. Review the high-priority site SWPPP physically located at site.
        i. Ensure monthly, and semi-annual inspections are being documented.
    b. Contact the Water Superintendent and organize a team to assist in flushing the Storm Drain lines.
    c. Identify the storm drain infrastructure and note all outfalls that drain the high-priority site in question.
    d. Ensure you are outfitted with the required PPE.
2. Process:
    a. Field locate all outfalls that drain the high-priority site.
    b. Conduct an inspection per SOP: *Outfall Inspections (IDDE-1)*.
    c. Post yourself or an individual at each outfall to observe storm water discharges.
    d. Find the nearest fire hydrant and organize team to attach flow regulator.
    e. Use SOP: *Waterline Flushing for Routine Maintenance (W-3)* to direct flow into storm drain inlets.
    f. Observe the function of the storm drain system as water floods region of focus.
    g. Use SOP: *High-Priority Site Monthly Visual Inspections (IE-6)* to guide observations.
    h. Turn off water.
    i. Clean any debris flushed out of the storm drain system.
3. Follow-up:
    a. Schedule any necessary corrective actions with Department Heads.
    b. Return to check corrective action items shortly after any deadline given to the department in question has elapsed.
4. Documentation:
    a. File inspection report, corrective actions, communication with responsible departments, and all photos.
    b. Record all details on the SWPPP on-site. If that is not possible ensure the SWPPP on-site has an accurate description to where the records can be found.

GENERAL	**G-1**
Debris Disposal	

1. Preparation:
    a. Know the location of the approved disposal facilities:
        i. Debris Disposal Area: Landfill or Public Works Debris Yard.
        ii. Other facility as arranged for specific project, and approved by Public Works Director
    b. Check and secure load as necessary to minimize loss of debris during transport;
2. Process:
    a. Transport the material to one of the above-listed facilities
    b. Unload the debris into the facility
3. Clean-up:
    a. Clean off loose material from vehicle prior to departure from disposal facility
    b. If washing vehicle see SOP: *Vehicle and Equipment Washing (G-6)*.

GENERAL	G-2
Painting	

1. Preparation:
    a. Calculate the amount of paint required for the job
    b. Set up traffic and pedestrian control, as necessary
    c. Prepare surfaces to be painted using dry methods (e.g. scraping, brushing)
    d. Have available absorbent material ready in case of an accidental spill
2. Process:
    a. Use drop clothes in areas of mixing paints and painting
    b. Use care to prevent over-spraying of paints
    c. Store latex paint rollers and brushes in air tight bags to be reused later with the same color when practical.
3. Clean-up:
    a. Paint out brushes and rollers as much as possible. Squeeze excess paint from brushes and rollers back into the containers prior to cleaning them.
    b. Pour excess paint from trays and buckets back into the paint can containers and wipe with cloth or paper towels. Dispose of the towels according to the recommendations on the paint being used.
    c. Remove traffic and pedestrian controls at appropriate times
    d. Rinse water-based paint brushes in the sink after pre-cleaning. Never pour excess paint or wastewater from cleanup of paint in the storm drain.
    e. Clean applicators of oil based paints with paint thinner using buckets; never clean oil based brushes in a sink or over a storm drain. Store used solvents in closed buckets indoors. Dispose at a hazardous waste disposal facility

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GENERAL	G-3
Transporting Saturated Soils	

1. Preparation:
    a. Determine destination, truck to use, and a haul route
2. Process:
    a. Load and Transport in manner to minimize spillage & tracking of material
        i. Clean surface between tailgate and truck bed to allow good seal to minimize leakage
        ii. Load truck such that the top of the saturated soils is at least one foot below bed walls
        iii. Clean off loose material from outside of truck that may fall on road during transport
        iv. Drive slowly to prevent spillage when turning, slowing, and accelerating
    b. Haul the material utilizing one route
3. Clean-up:
    a. Clean any spilled material from loading area
    b. Examine transport route; arrange for cleaning of any loose material* along route
    c. If washing equipment see SOP: *Vehicle and Equipment Washing (G-6)*.

GENERAL	G-4
Transporting Unsaturated Soils	

1. Preparation:
    a. Determine destination, truck to use, and a haul route
2. Process:
    a. Load and Transport in manner to minimize spillage & tracking of material
        i. Clean surface between tailgate and truck bed to allow good seal to minimize leakage
        ii. Load truck such that the top of the unsaturated soils is below bed walls
        iii. Clean off loose material from outside of truck that may fall on road during transport
        iv. Drive slowly to prevent spillage when turning, slowing, and accelerating
    b. Haul the material utilizing one route
3. Clean-up:
    a. Clean any spilled material from loading area
    b. Examine transport route; arrange for cleaning of any loose material along route
    c. If washing equipment see SOP: *Vehicle and Equipment Washing (G-6)*.

GENERAL	G-5
Vehicle and Equipment Storage	

1. Preparation:
    a. Take notice of fluids on parking areas that may indicate a leak
    b. Provide drip pans and sorbents for leaking vehicles
    c. Observe parking lot drainage inlets
2. Process:
    a. Whenever possible, store vehicles inside where floor drains are connected to sanitary sewer system
    b. When inside storage is not available, park vehicles and equipment in designated areas
    c. DO NOT PARK over a drainage inlet. This negates the ability to detect leaks.
    d. When a leak is detected, place a drip pan under the leaking vehicle to collect the drip, and arrange to get the leak repaired as soon as possible
3. Clean-up:
    a. Utilize SOP: *Response & Reporting Decision Matrix (SI-1)*
    b. Utilize SOP: *Response & Reporting Contact List (SI-2)*
    c. Utilize SOP: *Discharge/Spill Inspection Report (SI-3)*
    d. If under the specified amounts in the aforementioned SOPs then clean up any spills using dry cleanup methods: sorbent materials and sweeping; dispose of soiled sorbents in the garbage.
4. Documentation:
    a. Notify the Fleet Manager of the leak location and vehicle the leak originated from.

GENERAL	G-6
Vehicle and Equipment Washing	

1. Preparation:
    a. Be aware that washing must be done in designated locations only:
        i. Wash Bay – Public Works Department Building, North Side
        ii. Lawn mower cleaning may also be done on the lawn, provided the wash water does not run off
        iii. (Note) Other inside bays may also be used if it is know that the floor drain flows to a separator that is connected to a sanitary sewer
    b. If vehicle or equipment is too large for washing in one of the above locations, a commercial truck wash may be used
        i. Location: Flying J Travel Plaza (I-215 and Redwood Road)
    c. Transport vehicle/equipment to one of the approved locations
2. Process:
    a. Clean the vehicle/equipment inside the designated area
    b. Take care to avoid wash water from running away from wash-area drain
3. Clean-up:
    a. Clean the wash area after use by spraying dirt/debris into the wash drain

GENERAL	G-7
Waste Receptacles	

1. Preparation:
    a. Ensure each site has a sufficient number and size/type of waste containers
    b. (Note) Parks allowing pets are to have signs with bags available for collecting pet waste. These are to be placed near select waste receptacles.
    c. Strategically locate containers to be in a location where easily identifiable yet not prone to being accidently tipped or damaged
    d. Use containers that are covered (protected from precipitation) and have no drainage holes in the bottom
2. Process:
    a. Empty receptacles regularly
        i. Large bins to be emptied every week
        ii. Smaller receptacles (at parks, etc.) to be emptied according to seasonal needs as often as daily in summer
        iii. Stock bags for pet waste
    b. Notice areas where un-collected litter is accumulates to consider changing size, location, and/or schedule for emptying containers at facility
3. Clean-up:
    a. Dispose according to SOP: *Debris Disposal (G-1).*
    b. Perform an annual cleaning of smaller receptacles (at parks, etc.) according to the SOP: *Vehicle and Equipment Washing (G-6)*.
    c. Any cleaning of large containers must be done according to SOP: *Vehicle and Equipment Washing (G-6)*.
    d. (Note) Large receptacles are not normally cleaned, but rather replaced with new containers; old containers are placed in landfill for final disposal.

GENERAL	G-8
Chemical Management (Including Fertilizers, Herbicides, & Pesticides)	

1. Preparation:
    a. Make sure you are adequately trained on any chemical you'll be handling and understand the SDS
    b. Store chemicals indoors, away from hazards that would accidently tip or damage container
    c. Make sure containers are in good condition and properly labeled (any chemical-holding containers in poor condition are to be placed in chemical storage room with secondary containment)
    d. Have necessary containment and spill kits materials at location of chemical handling, suitable for the material to be handled
    e. Have appropriate PPE available
2. Process:
    a. Wear appropriate PPE
    b. Perform chemical-handling activity according to manufacturer's recommendations and SDS
    c. If a significant accidental spill occurs:
        i. Utilize SOP: *Response & Reporting Decision Matrix (SI-1)*
        ii. Utilize SOP: *Response & Reporting Contact List (SI-2)*
        iii. Utilize SOP: *Discharge/Spill Inspection Report (SI-3)*
    d. Once complete, ensure the chemical container is sealed and returned to storage.
3. Clean-Up:
    a. Dispose of excess waste material according to manufacturer's recommendations
    b. If material is hazardous it must be handled by a licensed hazardous waste handler and disposed of at a hazardous waste disposal site.
    c. If a significant spill occurs:
        i. Utilize SOP: *Response & Reporting Decision Matrix (SI-1)*
        ii. Utilize SOP: *Response & Reporting Contact List (SI-2)*
        iii. Utilize SOP: *Discharge/Spill Inspection Report (SI-3)*
    d. If under significant amount use dry cleanup methods

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GENERAL	G-9
Pressure Washing Building Exteriors	

1. Preparation:
   a. Consider using dry cleaning methods first; use this procedure for cases when dry methods are inadequate
   b. Plan to use only water and pressure; do not use detergents with this procedure
   c. Perform process only during dry weather
   d. Have storm drain inlet protection device available, See SOP: *Inlet Protection (S/S-1)*.
   e. Determine whether cleaning activity will potentially generate runoff. If so, place inlet protection device(s) down gradient in order to capture wash water then follow SOP: *Inlet Protection (SSD-1)*.
2. Process:
   a. Do NOT USE any soaps or chemicals that could enter the storm drain.
   b. Pressure wash the building exterior, ensuring any wash water runoff flows toward inlet protection devices.
   c. Allow accumulated wash water to evaporate or filter through inlet protection devices.
3. Clean-Up:
   a. Clean impervious walking surfaces around building
   b. Sweep up large fragments; and
   c. Sweep or spray residual fragments onto pervious landscaped surfaces.
   d. Remove inlet protection once accumulated wash water has evaporated and/or filtered through inlet protection.
   e. Clean around inlet protection according to SOP: *Inlet Protection (SSD-1)*.
   f. Dispose of waste according to SOP: *Debris Disposal (G-1).*

PARKS & RECREATION	**PR-1**
Chemical Application: Pesticides, Herbicides, & Fertilizers	

1. Preparation:
    a. Calibrate fertilizer and pesticide application equipment to avoid excessive application.
    b. Use pesticides only if there is an actual pest problem and test soils for determining proper fertilizer use when determined necessary by staff.
    c. Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendation for best results ("Read the Label").
    d. Know the weather conditions. Do not use chemical applications if rain is expected. Apply chemical applications only when wind speeds are low (less than 5 mph).
2. Process:
    a. Always follow the manufacturer's recommendations for mixing, application and disposal. ("Read the Label").
    b. Do not mix or prepare chemical applications for use near storm drains, mix inside a protected area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils. DO PREPARE IN PARKING LOT.
    c. Employ techniques to minimize off-target application (e.g. spray drift, over broadcasting.) of chemical applications.
3. Clean-up:
    a. Sweep/blow pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.
    b. Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
    c. Ensure that rinsing of the containers is being discharged to the area in which the product is being used or drain into the sewer. NEVER discharge rinse water to impervious surfaces or the storm drain infrastructure.
    d. Always follow all federal and state regulations governing use, storage and disposal of fertilizers, herbicides or pesticides and their containers. ("Read the Label").
4. Documentation:
    a. Keep copies of MSD sheets for all pesticides, fertilizers and other hazardous products used.
    b. Record fertilizing and pesticide application activities.
5. Emergency:
    a. If a spill occurs immediately contact a supervisor. Use SOP: *Response & Reporting (SI-2)*
    b. If the spill occurred on impervious surfaces deploy BMPs immediately to stop the chemical application from entering the storm drain. Use SOP: *Inlet Protection (SSD-1)*.
    c. Use SOP: *Inspection Report (SI-3)* to complete an inspection and record of the event.

PARKS & RECREATION	**PR-2**
Mowing & Trimming	

1. Preparation:
    a. Review process with all employees.
    b. Plan the area of work, its size, duration of work, and fuel needed.
    c. Fuel and prepare machines (oil, coolant, etc.) at the Parks & Recreation shop. DO NOT FUEL IN PARKING LOT.
2. Process:
    a. Mow edges of lawn with mow blade discharge directed back to the field of grass, not into the street, sidewalk, or parking lot.
    b. Avoid allowing clippings to enter storm drain inlets.
    c. Once completed with mowing and trimming all clippings are to be swept or blown back on to grass areas.
3. Clean-up:
    a. DO NOT BRUSH DOWN EQUIPMENT ON SITE. Mowers are to be scraped and brushed at shop.
    b. Spoils (lawn clippings and landscaping refuse) are dried, swept and disposed of.
    c. Equipment washed in approved wash station, see SOP: *Vehicle and Equipment Washing (G-6)*.

PARKS & RECREATION	PR-3
Planting Vegetation (Starters)	

1. Preparation:
   a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities. Dial 811 or 1-800-662-4111.
   b. Decide where any spoils will be taken.
2. Process:
   a. Dig holes; place spoils near the hole where they may easily be placed back around roots. DO NOT place spoils in the gutter, street or sidewalk.
   b. Bring each plant near the edge of the hole dug for it.
   c. Check the depth of the hole, and adjust the depth if necessary. The depth of the hole for a tree should be determined by park staff depending on soil conditions, groundwater depths, etc.
   d. Carefully remove pot or burlap.
   e. Place the plant in the hole.
   f. Backfill the hole with existing spoils, compost, and a litter fertilizer if desired. Do not use excessive amendments.
   g. Water the plant.
   h. Stake the plant, if necessary, to stabilize it.
3. Clean-up:
   a. Transport any excess material as per the SOP's: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4)*.
   b. Sweep dirt from surrounding pavement(s) into the planter area.

PARKS & RECREATION	PR-4
Planting Vegetation (Seeds)	

1. Preparation:
    a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities. Dial 811 or 1-800-662-4111.
    b. Decide on the application rate, method, water source, and ensure adequate materials are in possession.
    c. Grade and prepare the soil to receive the seed. Place any extra soil in a convenient location to collect.
    d. DO NOT Store any extra soil or spoils on impervious surfaces like the sidewalk, street, or gutter.
2. Process:
    a. Place the seed and any cover using the pre-determined application method (and rate).
    b. Lightly moisten the seed.
3. Clean-up:
    a. Transport any excess material as per the SOP's: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4)*.
    b. Sweep dirt, seed, and any cover material from surrounding pavement(s) into the planter area.

PARKS & RECREATION	PR-5
City Sponsored Festivals & Parades	

1. Preparation:
    a. Schedule crews to facilitate clean-up during and/or after event.
    b. Consider and plan for additional waste receptacles.
    c. Consider and plan for any necessary porta-johns.
    d. Consider and plan for any necessary storm water protections and utilize SOP: *Inlet Protection (SSD-1).*
2. Process:
    a. Hand collect loose trash material and animal waste during event.
    b. Empty waste receptacles; remove extra receptacles.
3. Clean-Up:
    a. Sweep streets, parking areas, and other areas impacted by the event according to SOP: *Street Sweeping (SSD-12)*.
    b. Dispose of waste according to SOP: *Debris Disposal (G-1).*
    c. Ensure any porta-johns used for the event are promptly removed following the event
4. Documentation:
    a. Document streets and parking areas that were swept in the storm drain maintenance log.

STREETS / STORM DRAIN	SSD-1
Inlet Protection	

1. Preparation:
    a. Acquire inlet protection material and make sure it is in good operational condition.
        i. Gravel bags (preferred), or
        ii. Wattles, or
        iii. Proprietary devices such as witches hat, or Flexstorm
    b. Determine best location for placing the inlet protection, typically at the nearest downstream inlet(s) subject to receiving flow from the activity.
        i. Note: in some cases, inlet protection may be placed in gutter upstream of inlet if it is subject to receiving flow from activity
2. Process:
    a. Place inlet protection in a way to avoid unintended bypass of flow; wattles may need to be weighed down.
    b. Periodically check the inlet protection for placement and condition, particularly after receiving runoff; replace if it is not in good working condition.
    c. Continually remove accumulated sediment and deposit per SOP: *Debris Disposal (G-1).*
3. Clean-up:
    a. Clean accumulated debris and dispose of according to SOP: *Debris Disposal (G-1).*
    b. Remove Inlet protection when activity is completed.

STREETS / STORM DRAIN	SSD-2
Cleaning Catch Basins & Drainage Pipes	

1. Preparation:
    a. Plan cleaning route(s) that progress down the system (if applicable)
    b. Set up traffic controls, as necessary
    c. Clean sediment and trash from grate.
2. Process:
    a. Brush off debris on and around grate/manhole cover.
    b. Remove grate/manhole cover.
    c. If an illicit discharge is suspected conduct an IDDE Inspection per SOP: *Manhole Inspection (IDDE-2)*
    d. Check to make sure grate, frame and box is in good repair.
    e. Clean sediment and debris from the box, manhole, and/or pipe.
    f. Replace cover; make sure it is secure.
3. Clean-up:
    a. Remove traffic controls if used.
    b. Sweep any debris littered onto impervious surfaces. If needed utilize SOP: *Street Sweeping (SSD-12).*
    c. Dispose of debris and waste water removed according to SOP: *Debris Disposal (G-1)*.
4. Documentation:
    a. Record catch basins cleaned in storm drain maintenance log.
    b. Note any apparent problems and report them to superintendent.

STREETS / STORM DRAIN	SSD-3
Cleaning Detention Ponds	

1. Preparation:
    a. Plan pond cleaning activities to occur during dry weather; do not clean detention ponds during wet weather unless there is an urgent need.
    b. Remove sediment and trash from grates.
    c. Check to make sure grates and other features are in good working order.
    d. Identify and mark any landscaping boxes, inlets, grates or other infrastructure present in the basin so as not to damage during process.
2. Process:
    a. Clean debris and accumulated sediment from pond in a manner that prevents sediment and debris from going downstream.
        i. Note: this means performing the work during dry weather.
    b. Load sediment and debris into a truck for disposal utilizing SOP's: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4)*.
    c. Conduct all work utilizing the Best Management Practices (BMPs) defined in the adjacent appendix of the Farmington SWMP.
3. Clean-up:
    a. After cleaning basins, clean off any pavement, loading areas, and if needed the street using SOP: *Street Sweeping (SSD-12).*
    b. Dispose of sediment and debris according to SOP: *Debris Disposal (G-1)*.
4. Documentation:
    a. Record detention ponds cleaned in storm drain maintenance log.
    b. Note any apparent problems and report them to superintendent

STREETS / STORM DRAIN	SSD-4
Creek Management	

1. Preparation:
    a. Monitor streams on a regular basis. Especially after storm events.
    b. Check culverts and crossings after every storm.
    c. Maintain access to stream channels wherever possible.
    d. Notify Public Works Director and City Engineer of issue.
2. Process:
    a. Identify areas requiring maintenance.
    b. Determine what manpower or equipment will be required.
    c. Identify access and easements to area requiring maintenance.
    d. Determine if the identified Creek is operated and maintained by Davis County Public Works.
        i. Haights, Shepherd, Farmington, Rudd, Steed, & Davis Creeks are maintained by Davis County Public Works.
        ii. If one of the above Creeks is impaired and need of attention contact Davis County Public Works with the defined issue.

Contact: Davis County Public Works 1500 East 650 North Fruit Heights, UT 84037, US
(801) 444-2230

a) Determine method of maintenance that will be least damaging to channel.
b) Conduct all work utilizing the Best Management Practices (BMPs) defined in the adjacent appendix of the Farmington SWMP.

3. Clean-up:
    a. Stabilize all disturbed soils.
    b. Remove all tracking from paved surfaces near maintenance site if applicable utilizing SOP: *Street Sweeping (IDDE-12).*
    c. Haul all debris or sediment removed from area to approved dumping site utilizing SOP's: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4)*.
4. Documentation:
    a. Keep log of actions performed.
    b. Record the amount of materials removed or imported.
    c. Keep any notes or comments on any problems.
    d. Record creeks cleaned in storm drain maintenance log.
    e. Note any apparent problems and report them to superintendent

STREETS / STORM DRAIN	SSD-5
Chip Seal	

1. Preparation:
    a. Identify stretch of road under consideration of chip seal.
    b. Notify public and residents of the timeline of work to be conducted.
    c. Apply storm drain infrastructure protections.
    d. Cover storm drain inlets, manholes, and catch basins to prevent oil and materials from getting inside the structures or system. Use SOP: *Inlet Protection (SSD-1).*
2. Process:
    a. Conduct all work utilizing the Best Management Practices (BMPs) defined in the adjacent appendix of the Farmington SWMP.
    b. Clean and dry areas where materials are to be applied.
    c. Follow closely behind emulsion distributor with chip spreader.
    d. Travel slowly enough to prevent chips from rolling when they hit the surface.
    e. Use street sweeper to pick up excess chips.
    f. Follow closely behind the chip spreader with rollers. Maximum speed 5 mph. Roll entire surface twice.
3. Clean-up:
    a. Remove loose aggregate from the roadway.
    b. Remove excess asphalt applications and spills.
        i. Dispose of excess material using SOP: *Debris Disposal (G-1)*.
    c. Remove storm drain infrastructure protections.
        i. When covers are removed, remove any materials which have entered the storm drain structures.
    d. Conduct a final sweep using SOP: *Street Sweeping (IDDE-12).*
4. Documentation:
    a. Record location and date on the maintenance database and map.

STREETS / STORM DRAIN	SSD-6
Slurry Seal	

2. Preparation:
    a. Identify stretch of road under consideration of slurry seal.
    b. Notify public and residents of the timeline of work to be conducted.
    c. Apply storm drain infrastructure protections.
    d. Cover storm drain inlets, manholes, and catch basins to prevent oil and materials from getting inside the structures or system. Use SOP: *Inlet Protection (SSD-1).*
3. Process:
    a. Conduct all work utilizing the Best Management Practices (BMPs) defined in the adjacent appendix of the Farmington SWMP.
    b. Remove weeds from the roads.
    c. Clean and dry areas where materials are to be applied.
    d. Verify that existing pavement has been inspected for detrimental effects of poor drainage.
    e. Apply materials smoothly and uniformly.
    f. Slurry material should not run onto adjacent pavement surface.
4. Clean-up:
    a. Remove loose aggregate from the roadway.
    b. Remove excess emulsion and spill materials.
        i. Dispose of excess material using SOP: *Debris Disposal (G-1)*.
    c. Remove storm drain infrastructure protections.
        i. When covers are removed, remove any materials which have entered the storm drain structures.
    d. Conduct a final sweep using SOP: *Street Sweeping (IDDE-12).*
5. Documentation:
    a. Record location and date on the maintenance database and map.

STREETS / STORM DRAIN	SSD-7
Crack Seal	

1. Preparation:
    a. Identify stretch of road under consideration of crack seal.
    b. Notify public and residents of the timeline of work to be conducted.
    c. Apply storm drain infrastructure protections.
    d. Cover storm drain inlets, manholes, and catch basins to prevent oil and materials from getting inside the structures or system. Use SOP: *Inlet Protection (SSD-1).*
2. Process:
    a. Conduct all work utilizing the Best Management Practices (BMPs) defined in the adjacent appendix of the Farmington SWMP.
    b. Remove weeds from the roads.
    c. Air-blast cracks to remove sediments from the crack to allow for proper adhesion.
    d. Clean and dry areas where materials are to be applied.
    e. Maintain proper temperature of material
    f. Apply sufficient material to form the specified configuration.
    g. Apply materials smoothly and uniformly.
3. Clean-up:
    a. Remove excess sealant application or spills.
        i. Dispose of excess material using SOP: *Debris Disposal (G-1)*.
    b. Remove storm drain infrastructure protections.
        i. When covers are removed, remove any materials which have entered the storm drain structures.
4. Documentation:
    a. Record location and date on the maintenance database and map.

STREETS / STORM DRAIN	SSD-8
Overlays & Patching	

1. Preparation:
    a. Identify stretch of road under consideration of overlay & patch.
    b. Notify public and residents of the timeline of work to be conducted.
    c. Apply storm drain infrastructure protections.
    d. Cover storm drain inlets, manholes, and catch basins to prevent oil and materials from getting inside the structures or system. Use SOP: *Inlet Protection (SSD-1).*
2. Process:
    a. Conduct all work utilizing the Best Management Practices (BMPs) defined in the adjacent appendix of the Farmington SWMP.
    b. Properly seal cracks. Remove alligator cracks and potholes and patch them-mill rutting.
    c. Clean and dry surface.
    d. Apply uniform tack coat and cure prior to placement of overlay.
    e. Check aggregate for:
        i. Proper temperature,
        ii. Percentage asphalt,
        iii. Gradation,
        iv. Air voids, and any other agency requirements.
    f. Surface texture should be uniform, no tearing or scuffing.
    g. Roll to achieve proper in-place air void specification.
3. Clean-up:
    a. Remove covering as soon as the threat of imported materials entering the system is reduced and prior to a storm event.
    b. Raise structure rims to elevation of new asphalt.
    c. Remove excess sealant application or spills.
        i. Dispose of excess material using SOP: *Debris Disposal (G-1)*.
    d. Remove storm drain infrastructure protections.
        i. When covers are removed, remove any materials which have entered the storm drain structures.
4. Documentation:
    a. Record location and date on the maintenance database and map.

STREETS / STORM DRAIN	SSD-9
Concrete Work	

1. Preparation:
    a. Identify a location, near the worksite, for the concrete truck to washout and to clean tools; the washout location must not allow the washout to runoff into the gutter.
        i. Washout basin must be a rigid container.
        ii. Note: backhoe bucket is an acceptable location.
    b. Plan to conduct concrete work during dry weather conditions; do not place concrete if precipitation is expected before concrete is expected to set up.
    c. Set up traffic controls according to MUTCD, part 6.
2. Process:
    a. Conduct all work utilizing the Best Management Practices (BMPs) defined in the adjacent appendix of the Farmington SWMP.
    b. Remove old concrete, soil, and any other spoils; load them into a truck to be hauled away using SOP's: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4)*.
    c. Place and compact base material*
    d. Form concrete to be placed**
    e. Place concrete**
3. Clean-up:
    a. Direct concrete truck driver to washout concrete truck at pre-determined washout location.
    b. Clean finishing tools at pre-determined washout location or on lawn.
    c. Clean street, gutters, and sidewalk from loose soil.
    d. Remove traffic control.
    e. Dispose of material removed and concrete wash according to SOP: *Debris Disposal (G-1)*.
4. Documentation:
    a. Record location and date on the maintenance database and map.

*Select, place, and compact base according to APWA and Farmington City Engineering Standards.

**Select, form, pace, and cure concrete according to APWA and Farmington City Engineering Standards.

STREETS / STORM DRAIN	SSD-10
Asphalt Paving	

1. Preparation:
    a. Plan to pave when weather will be:
        i. At least 50 degrees F; and
        ii. During dry weather.
    b. Make sure surface is pre-treated as follows:
        i. large cracks are sealed;
        ii. alligator cracks and potholes are removed and patched;
        iii. rutted areas are milled level;
    c. Sweep pavement surface according to SOP: *Street Sweeping (IDDE-12).*
    d. Allow street to dry.
    e. Mark locations of manhole and valve covers on the curb.
    f. Set up traffic controls according to MUTCD, part 6.
    g. Cover storm drain inlets, manholes, and catch basins to prevent oil and materials from getting inside the structures or system. Use SOP: Inlet Protection (SSD-1)
    h. Apply uniform tack coat on surface.
2. Process:
    a. Conduct all work utilizing the Best Management Practices (BMPs) defined in the adjacent appendix of the Farmington SWMP.
    b. Place hot mix asphalt uniformly to surface*.
    c. If raising manhole and valve lids during paving, carefully remove the material from the lid before taking the lid off of the frame, and carefully remove lid to avoid spilling the material into the manhole or valve box.
    d. After the riser is in place, carefully replace the manhole lid without pushing asphalt material into the manhole or valve box.
    e. Compact the asphalt to minimum 95% of Marshall density*
3. Clean-up:
    a. Remove excess asphalt material from surface at start and stop points with shovels
    b. Remove Traffic Control.
    c. Clean gutters from loose material.
    d. Dispose of excess asphalt according to SOP: *Debris Disposal (G-1)*.
    e. Clean equipment according to SOP: *Vehicle and Equipment Washing (G-6)*.
    f. Return within 2 days to sweep per SOP: *Street Sweeping (IDDE-12).*

*Select, place, and compact hot mix asphalt according to APWA standards and Farmington City Engineering Standards

STREETS / STORM DRAIN	SSD-11
Snow Removal & De-icing	

1. Preparation:
    a. Store de-icing material under a covered storage area.
    b. Understand City policy to keep roads open and free of snow or ice pack from any storm, in a way that uses a minimum amount of salt without compromising motorists' safety
    c. Wash out vehicles in preparation (if necessary) in approved washout area according to SOP: *Vehicle and Equipment Washing (G-6)*.
    d. Calibrate spreaders to minimize amount of de-icing material used and still be effective.
2. Process:
    a. Load material into trucks minimizing spillage.
    b. Distribute the minimum amount of de-icing material to be effective on roads.
    c. Park trucks with de-icing material inside when possible.
    d. If a hydraulic and/or fuel leak is detected while snowplowing STOP IMMEDIATELY.
        i. Utilize SOP: *Response & Reporting Decision Matrix (SI-1)*
        ii. Utilize SOP: *Response & Reporting Contact List (SI-2)*
        iii. Utilize SOP: *Discharge/Spill Inspection Report (SI-3)*
3. Clean-up:
    a. Sweep up all spilled de-icing material around loading area.
    b. Clean out trucks after snow removal duty according to SOP: *Vehicle and Equipment Washing (G-6)*.
    c. Sweep up residual from streets when weather permits using SOP: *Street Sweeping (IDDE-12).*
    d. If a spill occurred clean area using dry spill kit materials.
4. Documentation:
    a. Quantify the amount of de-icing material used and report to Public Works Director.
    b. If a spill occurred complete the SOP: *Discharge/Spill Inspection Report (SI-3)* and submit to Public Works Director and Storm Water Manager.

STREETS / STORM DRAIN	SSD-12
Street Sweeping	

1. Preparation:
    a. Follow the Storm Drain Maintenance Master Plan.
        i. Streets are to be swept as needed or specified by the city. Street maps are used to ensure all streets are swept at a specified interval.
    b. Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading.
    c. Restrict street parking prior to and during sweeping using regulations as necessary.
    d. Perform preventative maintenance and services on sweepers to increase and maintain their efficiency.
    e. Find and download a good podcast, playlist, or audio book.
2. Process:
    a. Drive street sweeper safely and pick up debris.
    b. If drowsy;
        i. STOP the vehicle;
        ii. Get out;
        iii. Stretch;
        iv. Do 10 pushups, 25 sit-ups, run as fast as you can 50 yards;
        v. Walk back to vehicle;
        vi. Resume.
    c. If a hydraulic and/or fuel leak is detected while street sweeping STOP IMMEDIATELY.
        i. Utilize SOP: *Response & Reporting Decision Matrix (SI-1)*
        ii. Utilize SOP: *Response & Reporting Contact List (SI-2)*
        iii. Utilize SOP: *Discharge/Spill Inspection Report (SI-3)*
3. Clean-up:
    a. Street sweepers will be cleaned out at the Public Works Debris Yard.
        i. Comply with the SWPPP for this specific site.
    b. After drying, waste from the sweeper will be collected and hauled to the landfill using SOP: *Debris Disposal (G-1).*
    c. If a spill occurs prior to emptying street sweeper at designated site;
        i. Clean area using dry spill kit materials, or
        ii. Utilize the street sweeper to pick up the material again.
4. Documentation:
    a. Keep accurate logs to track streets swept and streets still requiring sweeping.
    b. Report activities to the Street Superintendent to update the Maintenance database.

STREETS / STORM DRAIN	SSD-13
Curb Painting	

1. Preparation:
    a. Calculate the amount of paint required for the job.
    b. Use water based paints if possible.
    c. Determine whether the wastes will be hazardous or not and the required proper disposal of said wastes.
    d. Determine locations of storm drain inlets and sewer inlets that may need to be protected.
        i. If storm drain inlets are in the vicinity protect them from spills utilizing SOP: *Inlet Protection (SSD-1).*
    e. Prepare surfaces to be painted without generating wastewater; e.g. use sandblasting and or scraping.
    f. Use a citrus-based paint remover whenever possible, less toxic than chemical strippers.
    g. If wastewater will be generated, use curb, dyke, etc. around the activity to collect the water and collect the debris.
        i. Dispose of contaminates per SOP: *Debris Disposal (G-1).*
2. Process:
    a. Paint curb.
    b. Prevent over-spraying of paints and/or excessive sandblasting.
    c. Use drip pans and drop clothes in areas of mixing paints and painting.
    d. Store latex paint rollers and brushes in air tight bags to be reused later with the same color.
    e. If a spill occurs STOP IMMEDIATELY.
        i. Utilize SOP: *Response & Reporting Decision Matrix (SI-1)*
        ii. Utilize SOP: *Response & Reporting Contact List (SI-2)*
        iii. Utilize SOP: *Discharge/Spill Inspection Report (SI-3)*
3. Clean-up:
    a. Sweep up all spilled de-icing material around loading area.
    b. Clean out trucks after snow removal duty according to SOP: *Vehicle and Equipment Washing (G-6)*.
    c. Sweep up residual from streets when weather permits using SOP: *Street Sweeping (IDDE-12).*
    d. If a spill occurred clean area using dry spill kit materials.
4. Documentation:
    a. Quantify the amount of de-icing material used and report to Public Works Director.
    b. If a spill occurred complete the SOP: *Discharge/Spill Inspection Report (SI-3)* and submit to Public Works Director and Storm Water Manager.

STREETS / STORM DRAIN	SSD-14
Shouldering & Mowing	

1. Preparation:
    a. Determine length of job or task.
    b. Locate and determine a disposal site.
    c. Use proper equipment and avoid any safety hazards.
    d. Perform any roadside maintenance in a way to prevent eroded materials from entering the storm drain system.
    e. Install BMPs to protect storm drain inlets using SOP: *Inlet Protection (SSD-1)*.
2. Process:
    a. Load truck with material using SOP: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4)* or have it brought in.
    b. Verify load, travel same route. Smooth or grade road.
    c. Place import material as needed and perform grading to achieve proper drainage.
    d. Maintain proper slope in road for water runoff.
    e. Keep mow level 3 inches above dirt to reduce safety hazards, debris scattered on road, and vegetation destruction.
3. Clean-up:
    a. Remove grass clippings from paved surfaces and gutter after mowing.
    b. Clean up accumulated material around storm drain protection BMPs, then remove.
    c. Clean up equipment using SOP: *Vehicle and Equipment Washing (G-6)*. Spray down should not enter storm drain system.
    d. Clean up any debris on traveled roads.
4. Documentation:
    a. Keep accurate logs to track street mowing and streets still requiring maintenance.
    b. Report activities to the Street Superintendent to update the Maintenance database.

STREETS / STORM DRAIN	SSD-15
Secondary Road Maintenance	

1. Preparation:
    a. Determine length of job or task.
    b. Locate and determine a disposal site.
    c. Use proper equipment and avoid any safety hazards.
    d. Check for proper drainage: slopes, berms etc.
    e. Install BMPs to protect storm drain inlets using SOP: *Inlet Protection (SSD-1)*.
2. Process:
    a. Load truck with material using SOP: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4)* or have it brought in.
    b. Verify load, travel same route. Smooth or grade road.
    c. Maintain proper slope in road for water runoff.
3. Clean-up:
    a. Clean up accumulated material around gravel bags, then remove.
    b. Clean up equipment using SOP: *Vehicle and Equipment Washing (G-6)*. Spray down should not enter storm drain system.
    c. Clean up any debris on traveled roads.
4. Documentation:
    a. Keep accurate logs to track secondary streets maintained and streets still requiring maintenance.
    b. Report activities to the Street Superintendent to update the Maintenance database.

STREETS / STORM DRAIN	SSD-16
Material Storage	

1. Preparation:
    a. Review the material in question.
    b. Determine its location, duration, and material type
        i. If stored on impervious surfaces determine BMPs to mitigate runoff to storm drain inlets.
        ii. If stored for a duration longer than 14 days determine BMPs to mitigate wind, rain, and snow erosion to storm drain inlets.
            1. If easily transportable by hydraulic events (salt, sand, woodchips, etc) special consideration will be needed in determining BMPs.
    c. When possible store all material under cover, on an impervious surface contained by a threshold to reduce runoff from erosion to the MS4, or percolation into groundwater.
    d. Never allow landscaping material to be staged on the road, or in storm water conveyance channels without proper BMPs.
    e. Secure proper BMPs to protect material while stored and inform Stormwater Manager of plan/efforts.
2. Process:
    a. Deposit material.
    b. Install BMPs to protect material.
    c. Where applicable install BMPs to protect storm drain inlets using SOP: *Inlet Protection (SSD-1)*.
    d. If material pile is dynamically permanent (salt pile) then conduct BMP inspections per SOP: *High-Priority Site Monthly Visual Inspections (IE-6).*
3. Clean-up:
    a. Clean up area around material deposition using SOP: *Street Sweeping (IDDE-12).*
    b. Clean up any material caught by inlet protection.
    c. Remove inlet protection.
    d. Haul off excess soil and debris according to SOP: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4).*
    e. Dispose of waste per SOP: *Debris Disposal (G-1).*
4. Documentation:
    a. Record time of material deposition, and removal.
    b. Keep documentation of all inspections conducted on BMPs protecting material.

CULINARY WATER	W-1
Planned Waterline Excavation Repair/Replacement	

1. Preparation:
    a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of underground utilities: 811 or 1-800-662-4111
    b. Set up temporary traffic control - see Part VI of the MUTCD
    c. Saw cut pavement in area needing excavation.
    d. Determine where discharge flow will go.
    e. Clean gutter leading to inlets.
    f. Install BMPs to protect storm drain inlets using SOP: *Inlet Protection (SSD-1)*.
    g. Use proper equipment and avoid any safety hazards.
    h. Isolate waterline to be worked on by turning off valves.
2. Process:
    a. Drain line as much as possible from a hydrant or drain valve.
    b. Direct any discharge to protected inlet (determined in step 1d)
    c. Backfill and compact excavation
        i. Remove as much saturated soil as feasible.
        ii. Place and compact backfill in lifts no deeper than one foot.
        iii. Place and compact top lift to make it blend with surrounding pavement.
3. Cleanup:
    a. Clean up area around excavation using SOP: *Street Sweeping (IDDE-12).*
    b. Clean up any material caught by inlet protection.
    c. Remove inlet protection.
    d. Haul off excess soil and debris according to SOP: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4).*
    e. Dispose of waste per SOP: *Debris Disposal (G-1).*
4. Documentation:
    a. Report activities to the Street Superintendent, and Water Superintendent.

CULINARY WATER	W-2
Emergency Waterline Excavation Repair/Replacement	

1. Preparation:
    a. Isolate waterline to be worked on by turning off valves.
    b. Make sure service trucks are equipped inlet protection materials such as wattles or gravel bags.
    c. Set up temporary traffic control - see Part VI of the MUTCD.
    d. Call the Blue Stakes Center of Utah to notify them of the need to dig for an emergency repair: 811 or 1-800-662-4111.
    e. Install BMPs to protect storm drain inlets using SOP: *Inlet Protection (SSD-1)*.
    f. Use proper equipment and avoid any safety hazards.
2. Process:
    a. Drain line as much as possible from a hydrant or drain valve.
    b. Follow appropriate repair procedures in making the repair.
    c. Backfill and compact excavation.
        i. Remove as much saturated soil as feasible.
        ii. Place and compact backfill in lifts no deeper than one foot.
        iii. Place and compact top lift to make it blend with surrounding pavement.
3. Clean-up:
    a. Repair eroded areas as needed.
    b. Clean up loose material from apparent tracking or spills along travel path of trucked material.
    c. Clean up any material caught by inlet protection.
    d. Conduct sweeping as needed using SOP: *Street Sweeping (IDDE-12).*
    e. Remove inlet protection.
    f. Haul excess soils according to SOP: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4).*
    g. Dispose of waste per SOP: *Debris Disposal (G-1).*
4. Documentation:
    a. Report activities to the Street Superintendent, and Water Superintendent.

CULINARY WATER	W-3
Waterline Flushing for Routine Maintenance	

1. Preparation:
    a. Determine flow path of discharge to inlet of waterway.
    b. Clean flow path.
    c. Install BMPs to protect storm drain inlets using SOP: *Inlet Protection (SSD-1)*.
2. Process:
    a. If it appears that flushing straight from the hydrant or blow-off valve may cause a problem (such as erosion, or splash on vehicles), connect a hose or diffuser to the discharge fitting.
    b. Turn on the valve to flush the water, and leave it on until enough time has passed to allow adequate flushing of the line to occur.
    c. Turn off the water
3. Clean-up:
    a. Clean up any material caught by inlet protection.
    b. Remove inlet protection.
    c. Haul excess soils according to SOP: *Transporting Saturated Soils (G-3) and/or Transporting Unsaturated Soils (G-4).*
    d. Dispose of waste per SOP: *Debris Disposal (G-1).*
4. Documentation:
    a. Report activities to the Water Superintendent.

CULINARY WATER	W-4
Waterline Flushing after System Disinfection – Discharge to Storm Drain	

5. Preparation:
    a. Determine chlorine content of discharged water for utilizing appropriate de-chlorination equipment.
    b. Determine flow path of discharge.
    c. Clean the flow path.
    d. Install BMPs to protect storm drain inlets using SOP: *Inlet Protection (SSD-1)*.
6. Process:
    a. Place de-chlorination equipment on point of discharge according to manufacturer's recommendation.
    b. If it appears that flushing straight from the hydrant or blow-off valve may cause a problem (such as erosion, or splash on vehicles), connect a hose or diffuser to the discharge fitting.
    c. Allow water to run until line is adequately flushed, then turn off and remove de-chlorination equipment.
    d. Sample for chlorine residual.
7. Clean-up:
    a. Clean up any material caught by inlet protection and dispose according to SOP: *Debris Disposal (G-1).*
    b. Remove inlet protection.
    c. Remove equipment from flush point.
8. Documentation:
    a. Record result of chlorine residual test.

CULINARY WATER	W-5
Waterline Flushing after System Disinfection – Discharge to Off-site Location	

1. Preparation:
    a. Determine appropriate location for application of the chlorinated water.
    b. Estimate the amount of water to be flushed, and select tanker to use and number of trips that will be necessary.
2. Process:
    a. Flush to tanker.
    b. Haul the chlorinated water to the pre-selected location.
    c. Apply the chlorinated water to the soil such that the water does not run off of the site.
    d. Have a sample taken for a chlorine residual test
3. Clean-up:
    a. None
4. Documentation:
    a. Record result of chlorine residual test.

CULINARY WATER	W-6
Chemical Handling/Transporting and Spill Response	

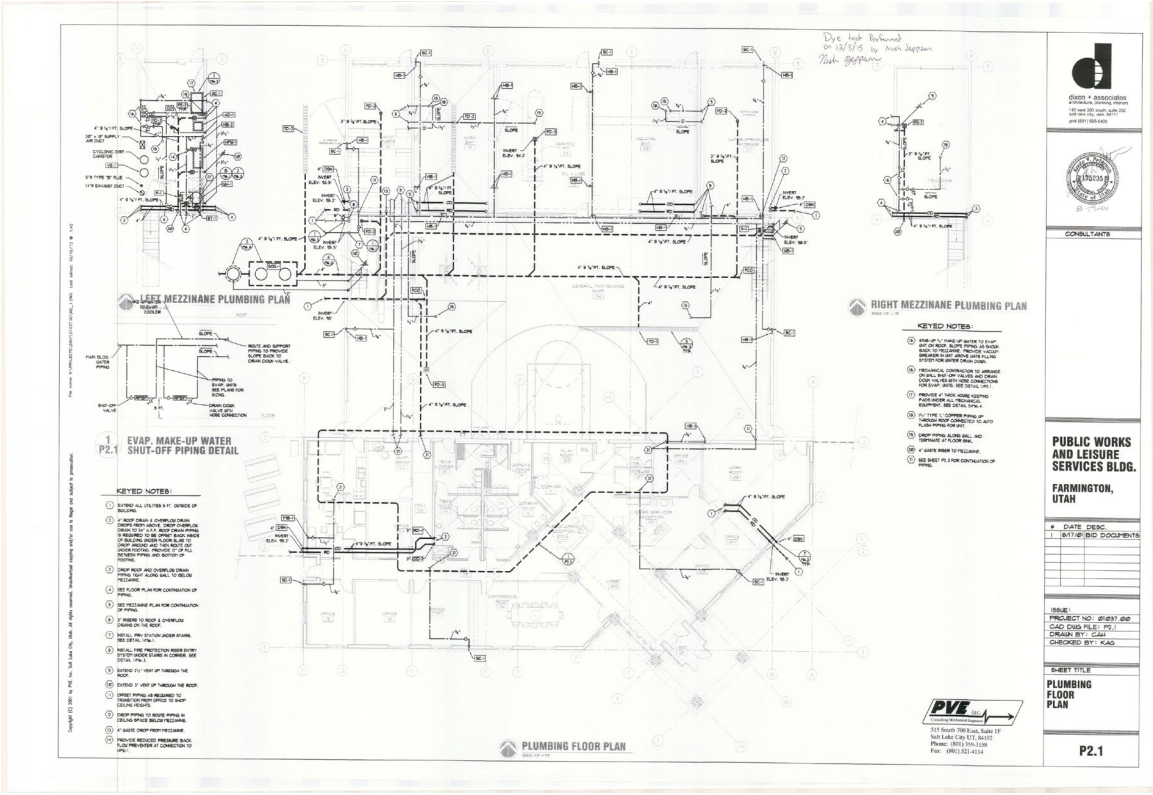
1. Preparation:
    a. Understand MSDS for handling and storage of product.
    b. Determine best location to handle product at destination site.
    c. Have necessary containment and spill kits at handling place, suitable for the material to be handled.
    d. If at a Priority Site review the SWPPP and follow all minimum control measures.
2. Process:
    a. Make connections.
    b. Begin transfer process.
    c. Discontinue operations if spill or leaking occurs, and repair before continuing.
    d. Disconnect and store handling equipment.
3. Clean-up:
    a. Respond to and report spills according to SOP: *Response & Reporting Decision Matrix (SI-1)* and SOP: *Response & Reporting Contact List (SI-2)*.
    b. Ensure that any spills are cleaned up. If spilled material is hazardous, it must be handled by a licensed hazardous waste handler and disposed at a hazardous waste disposal site.

Contact: Veolia Environmental Services 709 N. Taylor Way Suite 1 North Salt Lake, UT 84054, US

(801) 232-0976

Appendix T

Inventory of All Floor Drains Inside All City-owned or Operated Buildings



Public Works Facility Floor Drain Plan
(original large format version available at Public Works)

Appendix U

Process to Assess the Water Quality Impacts in the Design of All New Flood Management Structural Controls That are Associated With the City or Discharge to the MS4

4.2.6.8 Process to assess the water quality impacts on the design of new flood management structural controls.

1. Plans for new flood management structural controls will be submitted to the City for review.
2. The plans will be required to include impacts to water quality that will be created by the structural control.
3. Any negative impact, the design will be required to provide BMPs to mitigate the negative impact.

Appendix V

Process to Assess Whether Changes or Additions Should be Made to Structural Controls to Improve Water Quality

4.2.6.8.1 Process to assess water quality impacts of existing flood management control structures.

1. Develop and inventory of existing flood control management structures.
2. Determine potential sources of water quality impacts associated with the structure.
3. Identify BMPs that could be used to mitigate any potential impacts identified.
4. Identify the most critical needs for mitigation.
5. Develop a schedule for installing BMPs to address the most immediate concerns followed by less immediate concerns.

Appendix W
SWMP Documentation Process

1. Implementation of the Farmington City Storm Water Management Plan (SWMP) will be under the oversight of the Storm Water Official (SWO).
2. The SWO will be responsible for enforcing the requirements of the City's storm water ordinance and the MS4 permit requirements.
3. All SWPPPs will be reviewed by the SWO and will be kept in the SWO office or in storage facilities at the Farmington City Hall.
4. Inspection reports will be kept in files in the Storm Water Inspector's (SWI) office. These files may either be hard copy or electronic files.
5. Enforcement action documentation will be kept by the SWI. Actions on individual homes will be kept in the building permit files, and may be kept in electronic files as well. Violations for subdivision developments will be kept in the subdivision files, and may be kept in electronic files as well. Documentation of other types of violations will be kept in an electronic file.
6. The tracking of SWMP implementation will be done at the annual review of the SWMP as part of the UPDES reporting process.
7. Documentation for parts of the SWMP that are shared responsibilities of the Davis County Storm Water Coalition will be conducted as shown below:

Public Education and Outreach

The responsibilities for public education and outreach will be shared with the Davis County Storm Water Coalition. Please see Table 1 for the documentation process for this minimum control measure.

Public Involvement and Participation

1. The Davis County Storm Water Coalition will hold meetings that are open to the public for input and participation. The minutes of the meetings will be kept in record with the Chairman of the Coalition, and will be made available to the City upon request. Minutes may also be kept electronically on the Storm Water Official's computer.
2. A public hearing will be scheduled whenever the SWMP is to be adopted or amended. The public will have the opportunity to have input during this hearing. The hearing will be noticed on the Farmington City website, the Utah Public Notice website and on the City Council Agenda. The minutes of the hearing will be kept on record at Farmington City Hall.
3. The SWMP will be posted on the Farmington City web site. There will be a link provided for comments and public input on the SWMP through this site. A file containing comments received through the web site or by other means will be kept by the SWO.

Illicit Connection and Illicit Discharge Detection and Elimination

1. The records for illicit discharge inspections will be kept in the office of the SWI.
2. Records of calls to the illicit discharge hotline are kept by Davis County Public Health, and are provided to the City on a regular basis. Records of calls to the City will be kept with the SWO and the SWI.
3. A GIS data base may be set up to link individual discharge points in the City's MS4 with inspection reports as they are created.
4. The current storm drain system map will be kept in the GIS data base at Farmington Public Works office.
5. Copies of material distributed to the public will be available in the SWO office at City Hall.

Construction Site Runoff Control

1. A copy of all SWPPP reviews for new developments/redevelopment and residential construction will be kept in the SWO office at City Hall.
2. Copies of the SWMP, annual reports, the storm water ordinance and other relevant documents as required will be kept at the office of the SWO in Farmington City Hall.
3. Records of all inspections, notices of violation and other actions will be kept in the office of the SWI at Farmington Public Works office.

Post-Construction Storm Water Management in Development and Redevelopment

1. Plan reviews of proposed developments will be kept on file in the Farmington City Planning Department. This will include any inquiries for information concerning post-construction BMPs including green infrastructure and low impact development considerations.
2. The inventory of the post-construction structural storm water control measures will be kept at City Hall in the office of the SWO.
3. The inspection schedule for long-term storm water management facilities will be kept in the office of the SWI.
4. Documentation of training for staff will be kept in the office of the SWO, including attendance lists, training agendas and dates.
5. The plan to retrofit existing developed sites that are adversely impacting water quality will be kept at the SWO office.

Pollution Prevention and Good Housekeeping for Municipal Operations

1. The inventory of city-owned facilities will be kept in the office of the SWO.
2. The assessment of the inventory of municipal facilities and operations will be kept in the SWO office.
3. SOPs will be kept at the municipal facilities and in the SWO office.
4. Records of training including attendance, agenda and dates will be kept in the SWO office.

5. The inventory of floor drains will be kept in the SWO office and at the public works offices.
6. The map of all storm drains located on the property of City owned or operated buildings will be kept in the Public Works offices.
7. Records of inspections of municipal facilities will be kept at the Pubic Works offices.
8. UPDES permits will be kept in the SWO office.
9. The process to assess water quality impacts in the design of all new flood management structural controls that discharge to the City storm water system will be kept at the SWO office.
10. The assessment of the existing flood management structural controls to determine whether changes or additions should be made to improve water quality will be kept at the SWO office.

4.1.2 Documentation Process for Gathering, Maintaining and Using Information

1. All inspection information will be maintained by the Farmington City Storm Water Inspector. Each year it will be evaluated to determine specific areas where improvement is required and whether changes to the SWMP are required.
2. Information concerning training of contractors, the public, employees, etc. will be maintained in the Storm Water Administrator's office.
3. The City will work with the Davis County Storm Water Coalition to find ways to evaluate the effectiveness of the programs being implemented locally and by the Coalition.

Appendix X

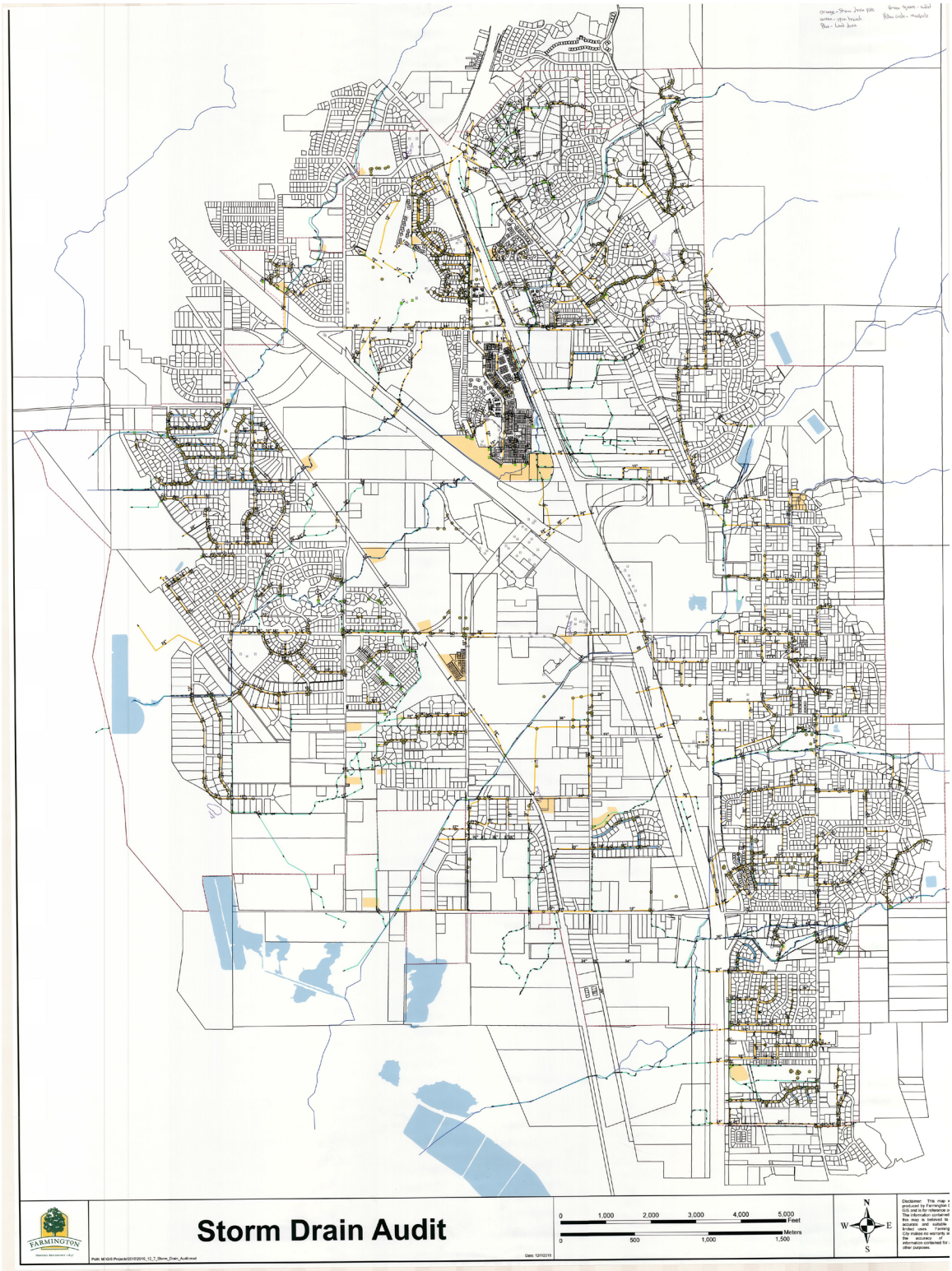
Fiscal Assessment

4.1.2.2 Summary of Fiscal Analysis

The resources necessary to implement the SWMP are provided through the collection of a Storm Water Utility Fee. Funds are allocated as necessary to cover fees associated with participation in the Davis County Storm Water Coalition, salaries of the Storm Water Official and Storm Water Inspector, street sweeper operation and maintenance, etc.

Appendix Y

Dry Weather Screening Plan



Large format version available at Public Works building

Appendix Z

Farmington City / Davis County Inerlocal Agreement

FARMINGTON CITY

HISTORIC BEGINNINGS • 1847

H. JAMES TALBOT
MAYOR

BRETT ANDERSON
SHAWN BEUS
SCOTT ISAACSON
AMY SHUMWAY
REBECCA WAYMENT
CITY COUNCIL

SHANE PACE
CITY MANAGER

City Council Staff Report

To: Honorable Mayor and City Council

From: Jens Jorgensen, Engineering Department

Date: June 21, 2021

Subject: **2021 Interlocal Agreement between Davis County Cities and Davis County for UPDES Permit**

Recommendation:

1. Approve the 2021 Interlocal Agreement between Davis County Cities and Davis County for UPDES Permit

Background:

On May 12th, 2021 the Utah Pollutant Discharge Elimination System (UPDES) General Permit for discharge from Small Municipal Separate Storm Sewer Systems (MS4s) became effective. In order to work cooperatively with other Davis County cities to carry out some of the requirements of the permit, such as education and training, illicit discharge enforcement, development of Standard Operating Procedures, etc., a new interlocal agreement must be approved by the city. This agreement allows the city to receive credit for joint activities that we would otherwise have to carry out on our own.

This interlocal agreement has been reviewed and found acceptable by Todd Godfrey, J.D.

Respectfully submitted,

Jens Jorgensen 7-15-21
Engineering Department

Review and Concur

Shane Pace
City Manager

160 S MAIN • P.O. BOX 160 • FARMINGTON, UT 84025
PHONE (801) 451-2383 • FAX (801) 451-2747
www.farmington.utah.gov

2021 INTERLOCAL COOPERATION AGREEMENT
BETWEEN DAVIS COUNTY CITIES AND
DAVIS COUNTY
FOR
UPDES GENERAL PERMIT

THIS AGREEMENT (Agreement) is entered into this ____ day of _____, 2021, by and between the following parties: DAVIS COUNTY, a body corporate and politic of the State of Utah, and the following cities, each of which is a municipal corporation of the State of Utah: BOUNTIFUL, CENTERVILLE, CLEARFIELD, CLINTON, FARMINGTON, FRUIT HEIGHTS, KAYSVILLE, LAYTON, NORTH SALT LAKE, SOUTH WEBER, SUNSET, SYRACUSE, WEST BOUNTIFUL, WEST POINT and WOODS CROSS(Parties).

WITNESSETH:

WHEREAS, the parties are "public agencies" and are authorized by the *Utah Interlocal Cooperation Act*, §11-13-101, *et seq.*, *Utah Code Annotated*, to enter into agreements with each other for joint or cooperative action; and

WHEREAS, the Environmental Protection Agency (EPA) has published its "Final Rule" setting forth the National Pollutant Discharge Elimination System (NPDES) permit application rules and regulations for stormwater discharges to municipal separate storm sewer systems; and

WHEREAS, the State of Utah, through its Department of Environmental Quality, Division of Water Quality (DWQ), has statutory rulemaking authority and authority to issue pollutant discharge elimination system permits within the State of Utah pursuant to the rules and regulations of the Utah Pollutant Discharge Elimination System (UPDES); and

WHEREAS, the State of Utah has issued a General Permit for Discharges from Small Municipal Separate Storm Sewer Systems, Permit No. UTR 090000 (Permit), to each party of this Agreement, which Permit is incorporated herein by this reference; and

WHEREAS, the rules and regulations provide that more than one entity may jointly implement activities to comply with UPDES permit requirements under Section 4.3 of the General Permit for Discharges from Small Municipal Separate Storm Sewer Systems; and

WHEREAS, the parties are willing to jointly implement activities to fulfill a portion of the UPDES permit requirements; and

WHEREAS the parties desire to enter into this Agreement setting forth their present understanding as to their respective responsibilities with regard to their participation as permittees under their Permit.

NOW, THEREFORE, in consideration of the mutual promises set forth herein, the parties agree as follows:

1. Compliance with Permit. As permittees, the parties agree to jointly implement and enforce within their own jurisdictions, their respective responsibilities for complying with the Permit requirements including but not limited to, those responsibilities and requirements set forth in Parts 4.0, 5.0, and 6.0 of the Permit.

2. Administration of Agreement. The administration of this Agreement shall be done by the public works directors of each party, or their official designee, constituting the Davis County Storm Water Coalition (Coalition). Each party will have one voting right. No separate legal entity is created by the terms of this Agreement.

3. Costs. The parties agree that each party shall be responsible to pay for those costs relating to their own stormwater systems, and that the parties shall reimburse each other for expenses incurred in providing services for each other as may be agreed by the parties concerning the various tasks and responsibilities required under the Permit

4. Joint Cooperation. As reasonably necessary, the parties agree to assist each other in providing and sharing information, drawings, plans, data, etc., which are required to comply

with the requirements set forth in the Permit. The specific activities that the parties agree to assist each other in are set forth as follows:

a. Jointly purchase educational and training materials, as determined by the Coalition, for distribution to:
    i. Residents
    ii. Institutions, industrial and commercial facilities
    iii. Developers and contractors (construction)
    iv. Municipal Separate Storm Sewer System (MS4) owned or operated facilities

b. Use the Coalition as a county-wide committee to:
    i. Train personnel
    ii. Create partnerships
    iii. Obtain input and feedback from special interest groups

c. Annually contribute updated storm drain system information for county-wide mapping purposes

d. Jointly prepare and promote model ordinances, updates and standards that addresses:
    i. Illicit discharges
    ii. Construction site storm water runoff
    iii. Long-term storm water management

e. Jointly arrange for and provide education about hydrologic methods and criteria for selecting and sizing post-construction BMPs

f. Jointly participate to develop draft Standard Operating Procedures

g. Jointly evaluate, identify, target and provide educational materials and

outreach to address the reduction of water quality impacts associated with nitrogen and phosphorus in discharges

5. Term of Agreement. The parties agree that the duration of this Agreement shall commence upon entry and shall continue in effect for the term of the Permit (which expires at midnight, May 11, 2026) and for an additional 120 days from the effective date of the renewal of the Permit by the Division.

6. Property. In the event that any property is acquired by the parties jointly for the undertaking, and paid for by them, then it shall be divided as the parties' representatives shall agree, or if no agreement is reached, then it shall be divided according to their respective payments for property, or if it cannot be practically divided, then the property shall be sold and the proceeds divided according to the parties' proportionate share of the purchase of the item of property. If property is purchased at one party's sole expense in connection with this Agreement, then the property so purchased shall be and remain the property of the party which purchased it.

7. Entire Agreement. This Agreement embodies the entire agreement between the parties, and it cannot be altered except in a written amendment which is signed by the parties.

8. Governmental Immunity. The parties recognize and acknowledge that each party is covered by the Utah Governmental Immunity Act, as set forth in *Utah Code Ann.* §§ 63G-7101, *et seq.*, as amended, and nothing herein is intended to waive or modify any and all rights, defenses or provisions provided therein. Officers and employees performing services pursuant to this Agreement shall be deemed officers and employees of the party employing their services, even if performing functions outside of the territorial limits of such party and shall be deemed officers and employees of such party under the provisions of the Utah Governmental Immunity Act. Each party shall be responsible and shall defend the action of its own employees,

negligent or otherwise, performed pursuant to the provisions of this Agreement.

9. No Third-Party Benefits. This Agreement is not intended to benefit any person or entity not named as a party hereto.

10. Severability. If any provision of this Agreement is determined by a court to be invalid or unenforceable, such determination shall not affect any other provision hereof, each of which shall be construed and enforced as if the invalid or unenforceable portion were not contained herein. Such invalidity or unenforceability shall not affect any valid and enforceable application thereof, and each such provision shall be deemed to be effective, operative and entered into in the manner and to the full extent permitted by applicable law.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement to be effective as of the day and year first above written.

[Signature Pages to Follow]

Approval of
Interlocal Cooperation Agreement between
Davis County and Davis County Cities for
UPDES General Permit

DAVIS COUNTY

By:_____
Randy Elliott, Chair
Davis County Commission

ATTEST:

_____
Curtis Koch
Davis County Clerk/Auditor

Approved as to Form:

_____
Office of Davis County Attorney

Approval of
Interlocal Cooperation Agreement between
Davis County and Davis County Cities for
UPDES General Permit

Date_____

CITY OF FARMINGTON

By:_____

Mayor

ATTEST:

_____
City Recorder

Approved as to Form:

_____
City Attorney

Appendix AA

City MS4 Map

http://www.farmington.utah.gov/departments/community-development/storm-water/

Appendix BB

80th Percentile Precipitation Event Study

Farmington City Storm Water Management Plan

80th Percentile Storm Retention Calculation

Abstract:

The following report examines Farmington City's methodology to define the 80th percentile of the region in question.

Introduction:

Pursuant to the Small MS4 General UPDES Permit 4.2.5.3.4 each permittee shall develop and define specific hydrologic methods for calculating runoff volumes and flow rates to ensure consistent sizing of structural BMPs in the Farmington City jurisdiction. New and re-development that qualifies for the Low-Impact Development standards must manage rainfall on-site, and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to a 24-hour period during the 80th percentile rainfall event.

The following study explains the methodology and data utilized to establish a rain event depth for a 24-hour period during an 80th percentile rainfall event for Farmington City. This rate will be met by all new or re-development projects that qualify for the LID requirement, unless appealed pursuant to Utah Code 19-5-108.5

Methodology:

To determine the 80th percentile precipitation depth event data was obtained from the National Oceanic and Atmospheric Administration (NOAA). Weather stations with reliable historical precipitation data meet the following conditions: acquired from an active rain gage; has at least 30 years of data; and 90% coverage for the period of record per the standards set in "A Guide to Low Impact Development within Utah" for the Utah Department of Environmental Quality Division of Water Quality.

Two stations were chosen from the NOAA website: https://www.ncdc.noaa.gov/cdo-web/datatools/selectlocation. A control station was utilized to compare and reinforce calculations. The Salt Lake City International Airport, NOAA station ID: USW0002412, was chosen. Station USW00024127 lies 13.5 miles to the South of Farmington 1.8 W, NOAA station ID: US1UTDV0001. The control station, USW00024127 was chosen as it has an active rain gage, 30 years of data, and 90% coverage of those 30 years. The Farmington station is lacking a reliable historical data with an active rain gage, data from June 12, 2008, and 90% coverage of those dates. However, other active NOAA weather gages within Farmington and eligible to be used for this unique regional study are not ideal as they do not have a currently active rain gage or are high in elevation, located in Farmington Canyon. These stations were determined to inaccurately represent Farmington City storm events at potential development areas.

Data from both sites was collected from the NOAA site referenced above. Daily precipitation totals were exported from the dates of March 28, 1990 to March 28, 2020 for both stations. The Farmington 1.8 W station however only provided 2 months shy of 12 years of data.

Daily precipitation totals were imported to a Microsoft Excel workbook. The precipitation column was copied and pasted to an individual column then sorted from smallest precipitation event to

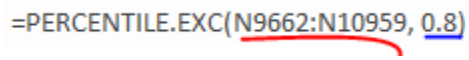
largest, for both station data sets. The stations contained the following precipitation events greater than 0.10 inches:

Farmington 1.8 W US1UTDV0001: 546 events greater than 0.10 inches

Salt Lake City International Airport USW00024127: 1,297 events greater than 0.10 inches

Only precipitation events over 0.10 of an inch were considered for this analysis. Other events with precipitation as snow fall were excluded due to the irrelevancy of snow fall to storm water retention plans. Once identified all precipitation events were calculated as a percentile greater than or equal to 0.80. Using the Microsoft Excel equation 'PERCENTILE.EXC' the calculations were determined. In Image 1 the underlined in red determines the range of cells analyzed, while the underlined in blue determines the percentile.

Image 1



(Image 1 shows the Excel calculation for station USW00024127)

Results:

NOAA Farmington station 1.8 W (US1UTDV0001) located at 40.987, -111.929 has an 80th percentile precipitation event of 0.49 inches. The resulting depth is established off of 11 years and 10 months of data, and does not meet the criteria of a reliable record of historical precipitation data established by the Utah Department of Environmental Quality.

The control station: NOAA Salt Lake City International Airport (USW00024127) located at 40.778, -111.969, 13.5 miles to the south of Farmington Station 1.8 has an 80th percentile precipitation event of 0.44 inches. The resulting depth is established off of 30 years of precipitation data with 90% data coverage.

Discussion:

When considering the 80th percentile for the immediate region of the UPDES Permittee in question, Farmington, the most similar station to potential development is the Farmington 1.8 W NOAA station. All other locations are at high elevations and result in a greater 80th percentile precipitation event, or lack a reliable record of historical precipitation data.

NOAA Salt Lake City International Airport station was considered as a control station due to its reliable 30 year record of precipitation data, its proximity to Farmington, and its geographic similarity to potential developmental area.

Although lacking the standards of a reliable historical record the Farmington station differs from the control station by 0.05 inches, which can be disregarded due to the difference in location.

Conclusion:

With consideration to the aforementioned variables Farmington City will adopt the 80th percentile precipitation depth of 0.49 inches established form the NOAA Farmington 1.8 W station. This

is lacking 18 years of data but is better representative of the immediate area Farmington and its future development resides in. This 80th percentile precipitation depth will be the standard amount of rain new and re-development must meet with o-site retention pursuant to the Small MS4 General UPDES Permit 4.2.5.3.4. This depth will be enforced until debated in the proper channels using Utah Code 19-5-108.5.