



Public Education and Outreach

BMP PE 01: Using Media

Minimum Control Measure: Public Education and Outreach

Target Pollutants: Typical Urban Pollutants

Audiences: Residents, Businesses (Institutions, and Commercial), Contractors, Developers, City.

Existing: X New:

Desired Results: Provide easy contact information and resource information to assist citizens and businesses who want to obtain information on the proper disposal of wastes.

Measurable Goal: On the City Web Site, provide the following information:

- 1) Information about Logan City's recycling program, curb side recycling, and locations of recycling drop locations.
- 2) Information about Logan City's green-waste facility, curb side pickup program, and green waste drop locations.
- 3) Information about household hazardous waste disposal program with descriptions of what is taken and any associated fees.
- 6) Information on illegal garbage disposal (dumping) and environmental impacts associated with it.
- 7) Information and guidelines concerning the impacts, responsibility, and methods for reducing or eliminating storm water impacts associated with illicit discharges, litter and garbage, fertilizers, pesticides, herbicides, yard wastes, oil and antifreeze, pet wastes, paint and cleaners, and soaps (yard and parking lot car wash issues, proper use of salt and other deicing materials.
- 8) Copy of storm water master plan
- 9) Links to low impact development (LID) guidelines and information.

Justification: The internet is becoming a convenient and widespread means of disseminating information to interested citizens.

Measures of Success:

- 1) Update of website annually.

Responsible Agency in River Heights City: Public Works Department, Office Staff

Milestones: Continue program and update as necessary.



Public Education and Outreach

BMP PE 02: Classroom Education on Storm Water

Minimum Control Measure: Public Education and Outreach

Target Pollutions: TSS, Phosphorus, nitrogen, Common Urban Pollutants

Audiences: Residents, focusing on 4th Grade Students

Existing: X New:

Desired Goal: Help fourth graders in the Logan City and Cache County School Districts gain an understanding of the importance of water quality and help build a habit of water quality protection.

Measurable Goal: Provide a water fair opportunity for fourth graders to attend once per year covering water shed protection, erosion control, water conservation, and good housekeeping to reduce residential pollution.

Justification: Providing education to students establishes a foundation for civic consciousness throughout the student's lives, and the students carry the message back into their homes creating a multiplier effect for the information presented.

Measure of success: Attendance of 4th grade classes from the Logan City and Cache County School District.

Responsible Agency in River Heights City: Public Works Department

Milestones: Continue program and update as necessary.



Public Education and Outreach

BMP PE 03: Educational Materials

Minimum Control Measure: Public Education and Outreach

Target Pollutions: TSS, Phosphorus, Nitrogen, Trash, Dust, and Debris

Audiences: Contractors and Developers

Existing: X New:

Desired Goal: Help educate contractors and developers in River Heights City MS4 about the SWMP and requirements associated with General Construction Permit.

Measurable Goal:

- 1) Require Contractors and Developers to attend the Logan City annual contractors meeting to instruct contractors of the requirements and BMPs associated with construction sites and post construction activities, especially NOI, SWPPP, and NOT requirements.
- 2) Train contractors on access and application of standards and specifications and reiterate these requirements for contractors during any preconstruction meetings.
- 3) Train Developers and Engineers on access and application to City requirements regarding construction, post construction, low impact development

Justification: Contractors are the single largest producer of water pollution during storm events if sites are not appropriately maintained and appropriate BMPs are not installed.

Measure of success:

- 1) Require Contractors and Developers to show proof of attendance at annual contractors meeting
- 2) Keep a log of Contractor training in SWMP.

Responsible Agency in River Heights City: Public Works Department, City Engineer.

Milestones: Continue program and update as necessary.



Public Education and Outreach

BMP PE 04: Employee Training

Minimum Control Measure: Public Education and Outreach

Target Pollutions: TSS, Phosphorus, Nitrogen, Hydrocarbons, Salts/ De-Icing, Dust, and Debris

Audiences: City Staff

Existing: X New:

Desired Goal: Educate the public, institutions, industrial/commercial and City staff on Storm Water Impacts

Measurable Goal:

- 1) Provide statement on City utility bill that directs the public to the City web page for information regarding potential impacts to storm water annually.
- 2) Provide training of City Staff addressing storm water pollution impacts and reference to City web page for additional information. Provide specific training to City staff based on job type and associated SOP's
- 3) Provide annual training and documentation on LID practices, green infrastructure and post construction BMP's to MS4 engineers, land use planners, review staff and others as applicable.

Justification: City planners and engineering design review are the first line of defense to protect water quality before construction ever gets started.

Measure of success:

- 1) Provide annual training to City staff, MS4 engineers, land use planners and design review staff on impacts pollution of storm water, website information, design review process, LID practices, green infrastructure and specific job SOP's.

Responsible Agency in River Heights City: Public Works Department, City Engineer.

Milestones: Continue program and update as necessary.



Public Participation / Involvement

BMP PI 01: Public Participation

Minimum Control Measure: Public Participation / Involvement

Target Pollutants: TSS, phosphorus, nitrogen, litter, green waste materials, debris, and other wastes

Audience: Residential, Businesses, City, Contractors & Developers

Existing: X New:

Desired Results: Continue educating and involving the public, businesses, City employees, and contractors and developers, concerning reduction, reuse, and recycling of solid and hazardous waste materials as well as green waste materials in order to prevent littering and dumping of these materials such that they come in contact with storm water run-off.

Measurable Goal:

- 1) Deliver a solid waste management newsletter annually.
- 2) Post advertisements, educational tips, and public service announcements made available by Logan City Environmental Department.
- 3) Post education and information about solid waste management and recycling made available by the Logan City Environmental Department's web site.
- 4) Work with citizens to insure cleanliness of driveways, curb and gutter, and irrigation ditches

Justification: Gutters, ditches, and other storm water conveyance systems frequently contain litter (paper, plastics, and food containers), as well as green waste and organic materials. This BMP aims at educating and involving the public about the appropriate local disposal, recycling, and composting programs for solid waste, hazardous wastes, and green waste materials.

Measure of Success: Success will be defined as completion of the following areas and an annual report documenting progress:

- 1) All newsletter and advertisements will be compiled in a scrap book or filed electronically.
- 2) The River Heights City web site is available for review at any time.
- 3) Continue working with citizens and volunteer groups

Responsible Agency in River Heights City: Public Works and Office Staff

Milestones: Continue program and update as necessary.



Public Participation / Involvement

BMP PI 02: Storm Water Steering Committee

Minimum Control Measure: Public Participation / Involvement

Target Pollutants: TSS, phosphorus, nitrogen, trash, dust and debris.

Audience: City, Contractors, Businesses, Developers, and Residents.

Existing: X New:

Desired Results: Provide a means for the public to provide public comment and gain understanding into the activities of the Storm Water Utility.

Measurable Goal:

- 1) Maintain a Storm Water Steering Committee to review and make recommendations to City staff and the City Council on policy and programs affecting storm water management within River Heights City.
- 2) Maintain membership on Storm Water Steering Committee consisting of representatives of the entire Target Audience.

Justification: Public involvement, especially from representatives of those interest groups who will be most impacted by storm water management policies and programs, is important to the success of any program. The Storm Water Steering Committee will serve as an advisory body to City Staff and the City Council and will review policies, programs and project plans for storm water management involving both quantity and quality issue.

Measure of Success:

- 1) Meet at least annually.

Responsible Agency in River Heights City: Public Works Department

Milestones: Continue program and update as necessary.



Illicit Discharge Detection and Elimination

BMP ID 01: Storm Water System Mapping

Minimum Control Measure: Illicit Discharge Detection and Elimination

Target Pollutants: TSS, phosphorus, nitrogen and potential industrial contaminants

Audience: City

Existing: X New:

Desired Results: Map all storm water outfalls and the storm water system to facilitate illicit discharge inspections and to support MCM activities for Construction Sites, Post Construction, and General House Keeping.

Measurable Goal:

- 1) Maintain a map of all system outfalls within River Heights City.
- 2) Update all storm drain maps including existing system, new development, redevelopment, and public projects as it occurs.

Justification: Illicit discharges are illegal and unauthorized discharges to the storm water system or sewer system. Any illicit discharge program requires knowledge of where the storm water outfalls and collection system are located.

Measures of Success:

- 1) Continue to improve system mapping.
- 2) Survey and add new development, redevelopment, and public projects to the map as they are completed.

Responsible Agencies in River Heights City: Public Works Department, City Engineer.

Milestones: Continue program and update as necessary.



Illicit Discharge Detection and Elimination

BMP ID 02: Ordinance and Enforcement

Minimum Control Measure: Illicit Discharge Detection and Elimination

Target Pollutants: Urban Pollution.

Audience: City, Residents, Businesses, Contractors, Development

Existing: New: X

Desired Results: Provide authority for inspection, prohibit illicit discharge, develop an escalating enforcement mechanism, develop standard procedures for enforcement, and document enforcement activities to eliminate non-storm water discharges.

Measurable Goal:

1) Continually update storm water ordinance including section for the elimination of illicit discharges (allowable discharges include non-storm water, irrigation, groundwater, or UPDES permitted discharge) and submit to City Council for approval. Include prohibition of illicit discharges, spills, illicit connection, illegal dumping, and sanitary sewer overflows (SSOs) into the storm drainage system.

- a. Include in ordinance requirements for removal of illicit discharges
- b. Include in ordinance definition of who has authority to issue enforcement.
- c. Include in the ordinance adequate authority to detect, investigate, eliminate and enforce against illicit discharges.

2) Include a variety of enforcement options in order to apply escalating enforcement procedures as necessary for the severity of violation. Review and update SOPs for ceasing illicit discharge including notifications of appropriate authorities, notification of property owner, technical assistance for removing the source of the discharge or otherwise eliminating the discharge, follow-up inspections, and escalating enforcement and legal actions if the discharge is not eliminated.

3) Update documentation process of all illicit discharge enforcement actions.

Justification: Illicit discharges are illegal and unauthorized discharges to the storm water sewer system. Implementation of an ordinance giving the authority and prohibitions by law is necessary before the River Heights City MS4 can stop these discharges and the associated storm water contamination as required by the provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 2004, as amended (the "Act") and the Federal Water Pollution Control Act (33 U.S.C. §§ 1251 et. seq., as amended to date), and the Rules and Regulations made pursuant to those statutes.

Measures of Success:



1) Enforce Storm Water Ordinance

Responsible Agencies in River Heights City: Public Works Department, City Engineer

Milestones: Continue program and update as necessary.



Illicit Discharge Detection and Elimination

BMP ID 03: Illicit Discharge Detection and Investigation

Minimum Control Measure: Illicit Discharge Detection and Elimination

Target Pollutants: Urban Pollution.

Audience: City, Residents, Businesses, Contractors, Development

Existing: New: X

Desired Results: Provide standard procedures for the detection and investigation of illicit discharges into the River Heights City MS4 including tracing and characterization of discharges.

Measurable Goal:

- 1) Develop and implement a written systematic procedure for locating and listing the priority areas likely to have illicit discharges based on:
 - a. Areas with older infrastructure
 - b. Commercial, or mixed use areas.
 - c. Areas with a history of illegal dumping
 - d. Areas with older sewer lines or with a history of sewer overflows or cross connections
 - e. Areas upstream of sensitive water bodies
 - f. Other areas the Permittee determines
- 2) Develop and document basis for selection of priority areas and update annually.
- 3) Update, publically list, and publicize a local telephone number for public reporting of spills and other illicit discharge. Develop written record forms to track call information, follow-up actions taken, and feedback received.
- 4) Update a written spill/dumping response procedures and flow chart that show the procedures for responding to public referrals of illicit discharges including the various responsible agencies and their contact information.
- 5) Update and implement field assessment activities, including an inspection form, for verifying outfall locations and detecting illicit discharges, including dry weather screening of outfalls or facilities serving priority areas identified in item 1 of this BMP.
- 6) Update and implement an SOP for tracing sources of an illicit discharge including:
 - a. Visual inspections



- b. Manhole inspections
- c. Collection of water samples

7) Update and implement SOPs for characterizing the nature of, and potential public or environmental threat posed by any illicit discharge reported to or found by River Heights City MS4. SOPs shall include instructions for evaluating how discharge shall be contained and steps taken to implement the containment instructions

8) Update the illicit discharge form that contains:

- a. Date of discovery or report of illicit discharge
- b. Date discharge was observed
- c. Date the River Heights City MS4 initiated investigation
- d. Location of the discharge
- e. Method of discovery
- f. Date of removal or repair
- g. Enforcement action taken
- h. Date of removal or repair action follow-up inspection
- i. Method of follow-up inspection

9) Update database tracking system including mapping, tracking of the number and type of illicit discharges, and inspections completed

Justification: Illicit discharges are illegal and unauthorized discharges to the storm water sewer system. Implementation of a program to locate and eliminate these discharges to the Logan City MS4 can reduce storm water contamination as required by the provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 2004, as amended (the "Act") and the Federal Water Pollution Control Act (33 U.S.C. §§ 1251 et. seq., as amended to date), and the Rules and Regulations made pursuant to those statutes.

Measures of Success:

- 1) Continue to publically list, and publicize a local telephone number for public reporting of spills and other illicit discharge. .
- 2) Continually update the written spill/dumping response procedures and flow chart that show the procedures for responding to public referrals of illicit discharges including the various responsible agencies and their contact information.



3) Continually update and implement field assessment activities, including an inspection form, for verifying outfall locations and detecting illicit discharges, including dry weather screening of outfalls.

4) Update SOP for tracing sources of an illicit discharge per current MS4 permit.

Responsible Agencies in River Heights City: Public Works Department, Office Staff

Milestones: Continue program and update as necessary.



Illicit Discharge Detection and Elimination

BMP ID 04: Illicit Discharge Training

Minimum Control Measure: Illicit Discharge Detection and Elimination

Target Pollutants: Urban Pollutants.

Audience: City

Existing: X New: ___

Desired Results: Train employees about the IDDE program including: identification, investigation, termination, cleanup, and reporting of illicit discharges including spills, improper disposal, and illicit connections.

Measurable Goal:

- 1) Train newly hired staff immediately and Public Works office staff at least annually who might receive initial reports of illicit discharge how to identify a spill or illicit discharge, improper disposal, or an illicit connection to the MS4 and proper procedures for reporting the discharge and issuing work orders.
- 2) Train newly hired staff immediately and field staff at least annually how to respond, safely identify, notify, eliminate and inspect an illicit discharge as it applies to their job function. Training will focus on utilization of tracing and characterization SOPs, notification procedures, reporting procedures, elimination and repair procedures, enforcement, and follow-up inspections.
- 3) Train all City staff, contracted staff, other responsible entities, and others that might receive reports of illicit discharges annually in the IDDE program, including identification, investigation, termination, cleanup, and reporting of illicit discharges.

Justification: Illicit discharges are illegal and unauthorized discharges to the storm water system or sewer system. Any illicit discharge program requires knowledge of where the storm water outfalls and collection system are located.

Measures of Success:

- 1) Hold training classes before April 1 annually.
- 2) Keep training log and file with SWMP

Responsible Agencies in River Heights City: All City Departments

Milestones: Continue program and update as necessary.



Construction Site Runoff Control

BMP CS 01: Inspection of Construction Projects

Minimum Control Measure: Construction Site Runoff Control

Target Pollutants: TSS, phosphorus, nitrogen, trash, dust and debris.

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: X New:

Desired Results: Continue to implement and enforce a program to reduce pollutants in storm water runoff to the River Heights City MS4 from construction sites with a land disturbance greater than or equal to 1.0 acre, including projects less than one acre that are part of a larger common plan of development.

Measurable Goal:

- 1) Inspect all construction sites with a land disturbance greater than or equal to 1.0 acre, including projects less than one acre that are part of a larger common plan of development at least monthly by qualified personnel using the state approved inspection form.
- 2) Inspect all priority construction sites at least biweekly using approved inspection form. Priority construction sites are defined as a site that has the potential to threaten water quality when considering the following: soil erosion potential, site slope, project size and type, sensitivity of receiving water bodies, proximity to receiving water bodies, non-storm water discharges, and past record of non-compliance.
- 3) Inspect all phases of construction: prior to land disturbance, during active construction, and following active construction.
- 4) Update and maintain a procedure for being notified by construction operators/owners of their completion of active construction so that verification of final stabilization and removal of all temporary control measures may be conducted.
- 5) Document enforcement actions to ensure compliance in accordance with enforcement strategy defined in standard operating procedures.
- 6) Provide training to staff responsible for plan review, construction site inspections, and enforcement. The Permittee shall ensure that all new hires are trained upon hire and before commencing storm water related duties and annually thereafter, at a minimum.
- 7) Perform reviews and maintain a record of all projects covered by this BMP including at a minimum: site plan reviews, SWPPPs, NOIs, NOTs, inspection reports, documentation of enforcement action taken, and records of preconstruction meetings.



Justification: Construction sites without the proper BMPs implemented as part of their SWPPP are a major source of erosion and generate large amounts of trash and dust. As a result, significant improvements to the MS4 water quality result from the implementation of this BMP.

Measure of Success: Success will be defined as projects meeting the below measures:

- 1) Inspect construction sites with a land disturbance greater than or equal to 1.0 acre, including projects less than one acre that are part of a larger common plan of development prior to land disturbance, during active construction, and following active construction. Use approved inspection form and data bases to track when inspections are completed. Include copy of project inspection forms in individual project file.
- 2) Identify if a project is priority construction project during preconstruction inspection. If it is a priority project, track all inspections biweekly using approved inspection form.
- 3) Track all inspections of construction phases including: prior to land disturbance, during active construction, and following active construction.
- 4) Use end of project inspections, and warranty inspections to verify completion of active construction so that verification of final stabilization and removal of all temporary control measures may be conducted prior to the release of bonds for all commercial sites. Include site stabilization as requirement in Land Disturbance Permit for subdivisions and residential sites.
- 5) If enforcement is required, track enforcement in compliance with River Heights City Storm Water Ordinance and in accordance with standard operating procedures.
- 6) Provide necessary training opportunities annually to City staff.
- 7) Maintain scans of project submittals in project files tracking site plan reviews, SWPPPs, NOIs, NOTs, inspection reports, documentation of enforcement action taken, and records of preconstruction meetings.

Responsible Agency in River Heights City: City Engineer, Public Works Director

Milestones: Continue program and update as necessary.



Construction Site Runoff Control

BMP CS 02: Standards and Specifications for Construction

Minimum Control Measure: Construction Site Runoff Control

Pollutants: TSS, phosphorus, nitrogen, trash, pH, dust, and debris.

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: X New:

Desired Results: Continue to implement and enforce a program to reduce pollutants in storm water runoff to the River Heights City MS4 from construction sites with a land disturbance greater than 1.0 acre, including projects less than one acre that are part of a larger common plan of development.

Measurable Goal: Implement standard requirements in design guidelines for preparation of SWPPP and post this on the River Heights City website that includes the following:

- 1) Update storm water design standards and construction standards and specifications annually.
- 2) Enforce this BMP on all construction sites with a land disturbance greater than 1.0 acre, including projects less than one acre that are part of a larger common plan of development.
- 3) Utilize a preconstruction SWPPP checklist for design review on all projects.
- 4) Incorporate water quality impacts and procedures as part of the SWPPP review checklist.
- 5) Include the evaluation of potential low impact design (LID) and green infrastructure alternatives in the checklist and design criteria.

Justification: Comprehensive standards and specifications defining acceptable BMPs for all aspects of construction are essential to reduce erosion and sedimentation problems associated with construction. Further utilization of a standard checklist will ensure that projects are not allowed to proceed to construction until compliance with the BMP has been accomplished.

Measures of Success: Compliance with these measures on all qualifying projects

- 1) Update storm water design standards and construction standards and specifications annually. Document amendment dates
- 2) Perform design review of all projects tracking compliance with this BMP. Do not issue building permits or notices to proceed until the project is compliant.



- 3) Update the SWPPP review checklist for design review. Include the checklist used during design review in the project file.
- 4) Include water quality impacts and procedures as part of the SWPPP review checklist.
- 5) Include the evaluation of potential low impact design (LID) and green infrastructure alternatives in the checklist and design criteria.
- 6) Include the Identification priority construction sites as defined in current MS4 permit, including the reason for the priority construction site classification on the checklist and copy this to the storm water inspector.

Responsible Agent in River Heights City: City Engineer, Public Works Director

Milestones: Continue program and update as necessary.



Construction Site Runoff Control

BMP CS 03: Storm Water Ordinance

Minimum Control Measure: Construction Site Runoff Control

Pollutants: TSS, phosphorus, nitrogen, trash, dust and debris.

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: X New:

Desired Results: Continue to implement and enforce a program to reduce pollutants in storm water runoff to the River Heights City MS4 from construction sites with a land disturbance greater than 1.0 acre, including projects less than one acre that are part of a larger common plan of development.

Measurable Goal:

- 1) Update as necessary and enforce an ordinance that requires the use of erosion and sediment control practices at construction sites with equivalent technical requirements per the current Utah General Permit for Discharges from Construction Activities, (UCGP) or the General Storm Water Permit for Construction Activity Connected with Single Lot Housing Projects Common Plan Permit (CPP)
- 2) Evaluate and update ordinance provisions for site access by authorized individuals to inspect construction storm water BMPs on private properties that discharge to the River Heights City MS4.
- 3) Evaluate and update escalating enforcement procedures and actions that ensure rapid compliance.
- 4) Update standard procedures that include specific processes and sanctions to minimize the occurrence of violations, and obtain compliance from violators.

Justification: Update ordinance or other regulatory mechanism that requires the use of erosion and sediment control practices at construction sites. The ordinance or other regulatory mechanism shall, at a minimum, be equivalent with the technical requirements set forth in the UPDES Storm Water General Permit for Construction Activities, or the CPP. The ordinance or other regulatory mechanism shall include penalties or fines to facilitate compliance. The ordinance or other regulatory mechanism shall apply, at a minimum, to construction projects disturbing greater than or equal to one acre and to construction projects of less than one acre that are part of a common plan of development.

Measure of Success:

- 1) Approval of updated Ordinance by City Council and Administration.



2) Update standard procedures that complies comply with the measurable goals in this BMP.

Responsible Agent in River Heights City: City Engineer, Public Works Director

Milestones: Continue program and update as necessary.



Long Term Storm Water Management in New Development and Redevelopment

BMP PC 01: Storm Water Ordinance

Minimum Control Measure: Long Term Storm Water Management in New Development and Redevelopment

Target Pollutants: TSS, phosphorus, nitrogen and dust

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: X New:

Desired Results: Update and enforce the program to reduce pollutants in storm water runoff to the River Heights City MS4 from new development and redevelopment with a land disturbance greater than 1.0 acre, including projects less than one acre that are part of a larger common plan of development.

Measurable Goal:

- 1) Update the ordinance and design standards that require long-term post construction storm water controls at new development and redevelopment sites at least equivalent to requirements set forth in the current MS4 permit.
- 2) Update the enforcement strategy and update the enforcement provisions of the ordinance including processes and sanctions to minimize occurrence of and obtain rapid compliance from violators which shall include appropriate escalating enforcement procedures and actions.
- 3) Ensure storm water ordinance provides access to private property for post construction inspections.

Justification: The objective of this BMP is for the hydrology associated with new development and redevelopment to mirror pre-development peak flows and total runoff of the previously undeveloped site and to improve the hydrology of a redeveloped site and decrease the discharge of storm water flows (volumes and peaks) and contaminants by the River Heights City MS4.

Measure of Success:

- 1) Approval by City Council and Administration of the updated ordinance that complies with the measurable goals in this BMP.
- 2) Approval by Administration of the updated standard procedures for enforcement of this ordinance.
- 3) Continue to provide training to all City engineering and public works inspectors who will be enforcing the storm water ordinance.



Responsible Agent in River Heights City: City Engineer, Public Works Director

Milestones: Continue program and update as necessary.



Long Term Storm Water Management in New Development and Redevelopment

BMP PC 02: Standards and Specifications for Development and Redevelopment

Minimum Control Measure: Long Term Storm Water Management in New Development and Redevelopment

Target Pollutants: TSS, phosphorus, nitrogen

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: X New:

Desired Results: Implement and enforce a program to reduce pollutants in storm water runoff to the River Heights City MS4 from new development and redevelopment with a land disturbance greater than 1.0 acre, including projects less than one acre that are part of a larger common plan of development.

Measurable Goal: Implement and make available to the public the standard requirements in design guidelines for new development and redevelopment that includes the following:

- 1) Update storm water design standards and construction standards and specifications annually.
- 2) Require designers to provide BMPs that will minimize the negative impacts on water quality from new development and redevelopment
- 3) Implement land development code restrictions to the development of sensitive lands susceptible to erosion and sediment loss or provide areas that provide important water quality benefits, and protect the integrity of natural resources and sensitive areas.
- 4) Update and modify the process to evaluate and select low impact development (LID) methods.
- 5) Update and refine River Heights City's plan to retrofit existing developed sites that are adversely impacting water quality emphasizing Low Impact Development and green infrastructure including but not limited to: infiltration basins, depressed grassed swells, and water harvesting as allowed by State Code.
- 6) Update the method and standard procedures for calculating runoff volumes and flow rates to ensure consistent sizing of structural BMPs and incorporate retaining the 90th percentile storm event.

Justification: The objective of this BMP is for the hydrology associated with new development and redevelopment to mirror pre-development hydrology of the previously



undeveloped site and to improve the hydrology of a redeveloped site and reduce the discharge of storm water flows (volumes and peaks) and contaminants by the River Heights City MS4. This will reduce flows rates and volumes into the canals, streams, and rivers as well as improve overall water quality.

Measures of Success:

- 1) Update storm water design standards and construction standards. Track amendment dates
- 2) Mandate water quality BMPs, including LID methods, that will minimize the negative impacts on water quality by new development and redevelopment.
- 3) Update in the standards and specifications a reference to the land development code restrictions for the development of sensitive lands susceptible to erosion and sediment loss or provide areas that provide important water quality benefits, and protect the integrity of natural resources and sensitive areas.
- 4) Finish remapping the flood plain and continue flood plain management program to identify areas where future flood control structures may be built.
- 5) Refine the process to evaluate and encourage low impact development (LID).
- 6) Update the method and standard procedure for calculating runoff volumes and flow rates to ensure consistent sizing of structural BMPs using the 100-year 24 hour storm for all design except retention basins which shall use the 100-year 48-hour storm. The updated standard will require retaining the 90th percentile storm event.

Responsible Agent in River Heights City: City Engineer, Public Works Director

Milestones: Continue program and update as necessary.



Long Term Storm Water Management in New Development and Redevelopment

BMP PC 03: Retrofit Existing Development Impacting Water Quality

Minimum Control Measure: Long Term Storm Water Management in New Development and Redevelopment

Target Pollutants: TSS, phosphorus, nitrogen, trash, dust and debris

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: New: X

Desired Results: Implement and enforce a program to reduce pollutants in storm water runoff to the River Heights City MS4 from existing development and redevelopment that are identified by the implementation of the post construction facility inspections, illicit discharge inspections, mapping and inspecting existing septic tanks, and water quality monitoring and sampling

Measurable Goal: Implement program and process to reduce storm water pollution from existing development within the City Boundary by:

- 1) Incorporate additional results from water quality monitoring and sampling.
- 2) Incorporate results from the MCM Illicit Discharge Detection and Elimination Program.
- 3) Incorporate results from the post construction inspections.
- 4) Using GIS maps of sensitive lands; develop a ranking system for prioritizing projects to correct deficient areas based on proximity to the receiving water; distance to discharge into Spring Creek, or other waters of the U.S; hydrologic condition of the water body; proximity to sensitive ecosystem or protected areas; and upcoming development that could be further enhanced in cooperative effort.
- 5) Develop prioritization list of projects and incorporate these into the planned CIP projects based on available funding.

Justification: The objective of this BMP is for the hydrology associated with existing development to mirror pre-development hydrology of the previously undeveloped site and to improve the hydrology of a redeveloped site and reduce the discharge of storm water flows (volumes and peaks) and contaminants by the current MS4. This BMP coincides with the standards and criteria requirements associated with the MCM's for Construction Sites and Illicit Discharge Detection and Elimination. This will reduce flow rates and volumes into the canals, streams, and rivers as well as improve overall water quality.



Measures of Success:

- 1) Using investigative data from other BMP's develop a map of water quality problem areas. Update this information annually.
- 2) Annually update prioritization list of projects and incorporate these into the master planned CIP projects.

Responsible Agent in River Heights City: City Engineer, Public Works Director

Milestones: Continue program and update as necessary.



Long Term Storm Water Management in New Development and Redevelopment

BMP PC 04: Design Review Process Development, Redevelopment, and Retrofit Projects

Minimum Control Measure: Long Term Storm Water Management in New Development and Redevelopment

Target Pollutants: TSS, phosphorus, nitrogen

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: X New:

Desired Results: Update and enforce a program to reduce pollutants in storm water runoff to the River Heights City MS4 from new and existing development and redevelopment projects and retrofit projects being completed by City, State, and private entities.

Measurable Goal: Update the Design Review Process that accomplishes the desired results by:

1) Update a checklist and standard operating procedure for design review to ensure compliance with this SWMP related to post construction BMPs.

Justification: The objective of this BMP is for the hydrology associated with existing development to mirror pre-development hydrology of the previously undeveloped site and to improve the hydrology of a redeveloped site and reduce the discharge of storm water flows (volumes and peaks) and contaminants by the River Heights City MS4. This BMP coincides with the standards and criteria requirements associated with the MCMs for Construction Sites and Illicit Discharge Detection and Elimination. This will reduce flows rates and volumes into the canals, streams, and rivers as well as improve overall water quality.

Measures of Success:

1) Success with BMP CS 02 and BMP PC 02.

2) Use of design review checklist on all qualifying projects.

3) Compliance with design review process on all qualifying projects to ensure projects being built will comply with the goals of the BMP.

Responsible Agent in River Heights City: City Engineer, Public Works Director

Milestones: Continue program and update as necessary.



Long Term Storm Water Management in New Development and Redevelopment

BMP PC 05: Post Construction Inspection

Minimum Control Measure: Long Term Storm Water Management in New Development and Redevelopment

Target Pollutants: TSS, phosphorus, nitrogen, debris

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: X New:

Desired Results: Update and enforce a program to reduce pollutants in storm water runoff to the River Heights City MS4 from existing development projects and retrofit projects existing within the boundaries of River Heights City MS4 by inspecting the existing facilities annually to ensure proper operations and maintenance.

Measurable Goal:

- 1) Ensure ordinance provides authority to require and enforce annual inspection of private storm water facilities that discharge to the River Heights City MS4.
- 2) Update and implement maintenance agreements that will require property owners of Long Term Storm Water Management BMPs to be maintained and inspected at least annually.
- 3) Continue to require non-City owned facilities be inspected annually by a licensed qualified professional to ensure that facilities are being maintained and operated as designed. Require non-City owned facilities be inspected at least once every five (5) years by City staff.
- 4) Continue to require City owned facilities be inspected by a City qualified staff member annually.
- 5) Update River Heights City MS4 Post Construction facility checklist to be used in all annual inspections, whether by City staff or by third party qualified inspector which includes:
 - a. Inspection Date
 - b. Name and Signature of inspector
 - c. Project Location
 - d. Description of facilities
 - e. Description of storm water control measure including quality of



- i. Vegetation and soils
 - ii. Inlet and outlet channels and structures
 - iii. Catch basins
 - iv. Spillways v. Weirs/Orifices
 - vi. Sediment and debris accumulation
 - vii. Specific maintenance issues and violations found that need to be corrected by property owner along with deadlines and re-inspection dates.
- f. Update post construction inspection SOP.

Justification: The objective of this BMP is for the hydrology associated with existing development to mirror pre-development hydrology of the previously undeveloped site and to improve the hydrology of a redeveloped site and reduce the discharge of storm water flows (volumes and peaks) and contaminants by the River Heights City MS4. This BMP coincides with the standards and criteria requirements associated with the MCMs for Construction Sites and Illicit Discharge Detection and Elimination. This will reduce flows rates and volumes into the canals, streams, and rivers as well as improve overall water quality.

Measures of Success:

- 1) Update the maintenance agreement that requires property owners of Long Term Storm Water Management BMP's be maintained and inspected at least annually
- 2) Evaluate and update tracking procedure and SOP to continue the storm water post construction inspections.
- 3) City to inspect 100 percent of mapped City owned facilities annually and 20 percent of mapped non-city owned facilities once every year.
- 4) Update post construction inspection SOP.

Responsible Agent in River Heights City: City Engineer, Public Works Director

Milestones: Continue program and update as necessary.



Long Term Storm Water Management in New Development and Redevelopment

BMP PC 06: Post Construction Inspector Training

Minimum Control Measure: Long Term Storm Water Management in New Development and Redevelopment

Target Pollutants: TSS, phosphorus, nitrogen

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: X New:

Desired Results: Update and enforce a program to reduce pollutants in storm water runoff to the River Heights City MS4 from existing development projects and retrofit projects existing within the boundaries of River Heights City MS4 by inspecting the existing facilities annually to ensure proper operations and maintenance. This BMP provides for the training of post construction inspectors and defines “qualified” as a registered storm water inspector (RSI) with the Utah Chapter of the American Public Works Association or other recognized storm water inspector certification.

Measurable Goal:

- 1) Provide annual training opportunities to all City staff involved in post-construction storm water management, planning and review, inspections, and enforcement.
- 2) Provide training annually to staff involved in inspections, both City staff and third party staff on the use of the approved post-construction inspection checklist.

Justification: The objective of this BMP is for the hydrology associated with existing development to mirror pre-development hydrology of the previously undeveloped site and to improve the hydrology of a redeveloped site and reduce the discharge of storm water flows (volumes and peaks) and contaminants by the River Heights City MS4. This BMP coincides with the standards and criteria requirements associated with the MCMs for Construction Sites and Illicit Discharge Detection and Elimination. This will reduce flows rates and volumes into the canals, streams, and rivers as well as improve overall water quality.

Measures of Success:

- 1) Continue to provide training opportunities to ensure key positions have been trained.
- 2) Maintain log of training classes including course dates, course titles, course descriptions, names and qualifications of instructors, and names and positions of attendees.

Responsible Agent in River Heights City: City Engineer, Public Works Director

Milestones: Continue program and update as necessary.



Long Term Storm Water Management in New Development and Redevelopment

BMP PC 07: Post Construction Facility Mapping

Minimum Control Measure: Long Term Storm Water Management in New Development and Redevelopment

Target Pollutants: TSS, phosphorus, nitrogen

Audience: City, Contractors, Businesses, Developers, and Residential

Existing: New: X

Desired Results: Update and enforce program to reduce pollutants in storm water runoff to the River Heights City MS4 from existing development projects and retrofit projects within the boundaries of River Heights City MS4 by inspecting the facilities annually to ensure proper operations and maintenance. This BMP provides for mapping the long term storm water infrastructure within the River Heights City MS4.

Measurable Goal:

1) Update map of all storm water infrastructure and long term BMPs within River Heights City MS4 boundaries.

2) Update GIS layers and database tracking:

- a. Short description of each storm water control measure
- b. Create a short description of maintenance requirements
- c. Document structure ownership and contact information in GIS.
- d. Document City inspection frequency requirements and private inspection frequency requirements.
- e. Track inspections in GIS in support of BMP PC 05.

3) Update inventory based on inspections.

Justification: The objective of this BMP is for the hydrology associated with existing development to mirror pre-development hydrology of the previously undeveloped site and to improve the hydrology of a redeveloped site and reduce the discharge of storm water flows (volumes and peaks) and contaminants by the current MS4 permit. This BMP coincides with the standards and criteria requirements associated with the MCM's for Construction Sites and Illicit Discharge Detection and Elimination. This BMP will provide the documentation necessary to implement the rest of the BMPs in this MCM.

Measures of Success:



- 1) Provide quality control, inspection, verification and update of 20 percent of storm water infrastructure within River Heights City annually.
- 2) Update infrastructure inventory with the construction of all development, re-development, and retrofit of storm water infrastructure.
- 3) Create tracking database using GIS for annual inspection results.
- 4) Update the SOP for implementing this BMP.

Responsible Agent in River Heights City: Public Works Department

Milestones: Continue program and update as necessary.



Pollution Prevention / Good Housekeeping

BMP GH 01: Annual Facility Inventory

Minimum Control Measure: Pollution Prevention / Good Housekeeping

Target Pollutants: TSS, nutrients, metals, hydrocarbons (BTUX, GRO, DRO), pesticides, chlorides, phosphorus, nitrogen, and trash.

Audience: City

Existing: X New:

Desired Results: To develop and implement an operations and maintenance (O&M) program for River Heights City MS4 owned and operated facilities, operations and structural storm water controls that include standard operating procedures (SOPs) and a training component that reduce pollutant runoff.

Measurable Goal:

- 1) Develop and maintain a current written inventory of all City-owned and operated facilities and storm water controls as listed in the current MS4 permit.
- 2) Assess the written inventory for their potential to discharge to the target pollutants into the storm drainage system
- 3) Identify facilities that discharge to the storm drainage systems and identify the “high priority” facilities
- 4) Develop a Storm Water Pollution Prevention Plan (or similar type document) for each “high priority” City-owned facility .

Justification: MS4 permit requires that all components of an O&M program be included in the SWMP document and must identify the department and specific staff responsible for performing each activity described in the permit. The annual inventory will identify those facilities that have the potential to discharge contaminants to the storm water system.

Measures of Success:

- 1) Completion of dye tests, camera inspections, or smoke tests showing the discharge points from all facilities. If flows are to the storm water system, the inventory will identify facility discharge points to the storm drain system.
- 2) Prepare a standard methodology for initially assessing if the facilities are a “high priority.”
- 3) Rank the City owned and operated facilities as high priority or low priority using standard methodology and include the results in the SWMP.



4) Develop High Priority facility SWPPP (If necessary)

Responsible Agent in River Heights City: Public Works Director

Milestones: Continue program and update as necessary.



Pollution Prevention / Good Housekeeping

BMP GH 02: High Priority Facilities SOPs

Minimum Control Measure: Pollution Prevention / Good Housekeeping

Target Pollutants: TSS, nutrients, metals, hydrocarbons (BTUX, GRO, DRO), pesticides, chlorides, phosphorus, nitrogen, and trash.

Audience: City

Existing: X New:

Desired Results: To develop and implement an operations and maintenance (O&M) program for River Heights City MS4 owned and operated facilities, operations and structural storm water controls that include standard operating procedures (SOPs) and a training component that reduce pollutant runoff.

Measurable Goal:

1) Based on assessments completed in BMP GH 01, re-evaluate maintenance SOPs to prevent storm water contamination for high priority facilities in each category below as required by the current MS4 permit:

- a. Buildings and Facilities
- b. Materials storage areas, heavy equipment storage areas, and maintenance areas.
- c. Parks and open space.
- d. Vehicle and equipment.
- e. Roads, highways, and parking lots.
- f. Storm water collection and conveyance system.
- g. Sanitary sewer facilities.
- h. Other facilities and operations that may discharge contaminated runoff.

2) Develop standard agreements with any third party who conducts maintenance or operations using City owned facilities to comply with the City SOP.

Justification: The current MS4 permit requires that all components of an O&M program be included in the SWMP document and must identify the department and specific staff responsible for performing each activity described in the permit. The SOPs will provide the required safety to reduce or eliminate possible storm water contamination.

Measures of Success:

1) Completion of maintenance SOPs for all "high priority facilities."



2) Inventory of any third parties who operate or maintain City facilities and amend their contracts for compliance with the City SOPs.

3) Evaluate current contracts with third parties operating City owned facilities.

Responsible Agent in River Heights City: Public Works Director

Milestones: Continue program and update as necessary.



Pollution Prevention / Good Housekeeping

BMP GH 03: City Owned and Operated Facility Inspections

Minimum Control Measure: Pollution Prevention / Good Housekeeping

Target Pollutants: TSS, nutrients, metals, hydrocarbons (BTUX, GRO, DRO), pesticides, chlorides, phosphorus, nitrogen, and trash, per current MS4 permit

Audience: City

Existing: X New:

Desired Results: Re-evaluate operations and maintenance (O&M) program for River Heights City MS4 owned and operated facilities, operations and structural storm water controls that include standard operating procedures (SOPs) and a training component that reduce pollutant runoff.

Measurable Goal:

- 1) Departments owning facility shall complete a weekly inspection of “high priority” facilities in accordance with SOPs to minimize potential pollutant discharge. Departments must complete a weekly log and checklist of inspections with deficiencies and corrective actions. Completed logs must be included with the SWMP
- 2) Departments responsible parties identified in the SOPs shall complete, at least quarterly, a comprehensive inspection of all storm water controls in accordance with the SOPs. An inspection report and checklist, including any deficiencies and corrective actions must be completed and included with the SWMP document
- 3) Complete visual observations of storm water discharges at least quarterly (weather permitting, but in no case less than four times annually) documenting any observed problems including color, foam, sheen, turbidity, odor or other evidence of pollution that may be associated with the site. Visual observations must be documented, including deficiencies and any corrective actions, and included with the SWMP.

Justification: The current MS4 permit requires that all components of an O&M program be included in the SWMP document and must identify the department and specific staff responsible for performing each activity described in the permit. The inspection program will evaluate the effectiveness of the SOPs.

Measures of Success:

- 1) Maintain weekly inspection logs and quarterly inspection logs for high priority facilities. Maintain quarterly visual storm water discharge inspection forms for high priority facilities.
- 2) Maintain a tracking and reporting system to facilitate completion and inclusion of report logs in SWMP, both digital and hard copies.



3) Implement tracking and reporting SOPs for weekly and quarterly inspections.

Responsible Agent in River Heights City: Public Works Department

Milestones: Continue program and update as necessary.



Pollution Prevention / Good Housekeeping

BMP GH 04: General Housekeeping Training

Minimum Control Measure: Pollution Prevention / Good Housekeeping

Target Pollutants: TSS, nutrients, metals, hydrocarbons (BTUX, GRO, DRO), pesticides, chlorides, phosphorus, nitrogen, and trash.

Audience: City employees and contracted staff

Existing: X New:

Desired Results: To provide training to appropriate city and contracted staff regarding the general and high priority facility specific SOPs and likely impacts to storm water quality.

Measurable Goal:

- 1) Train appropriate city and contracted staff in appropriate departments regarding general and facility specific SOPs. Focus on staff responsible for SOP implementation at "high priority" facilities identified in BMP GH01.
- 2) Track training of existing staff and new hires to ensure all staff receives appropriate training in storm water quality.

Justification: To provide training that will enable City staff that are likely to impact storm water quality to know how to perform their job functions to prevent or minimize impacts to water quality, SOP's and SWPPP for the various Permittee owned facilities.

Measures of Success:

- 1) Create log identifying training offered, trainer, each attendee, and date of training.
- 2) Provide annual refresher training for employees and training of new employees when they are hired and update logs regularly.
- 3) Maintain annual training logs with the SWMP.

Responsible Agent in River Heights City: Public Works Director

Milestones: Continue program and update as necessary.