

DWQ Response to Comments received during Public Notice of the 2016 Small MS4 General Permit

Comment (Permit Part 1.2.2.2.): Perhaps you should define water line flushing to ensure it is not associated with dechlorination. Also ensure that lawn watering runoff (lawn sprinklers systems) do not include fertilizer injection systems. Does the law specifically state residential car washing can occur in the street or is it just silent on the subject?

Response: All allowable non-storm water discharges in Permit Part 1.2.2.2. are from the Code of Federal Regulations. As such, any local entity can choose to be more restrictive but cannot add further non-storm water exemptions. If the Permittee is aware of sprinkler systems with fertilizer injection, this would be an excellent opportunity to provide education concerning nutrient reduction (Permit Part 3.2.).

Comment (Permit Parts 2.3.2. and 4.2.2.3.): 120 days is not sufficient to make the necessary changes be given to revise the SWMP. City standards need to be updated to include LID design, ordinances need to be revised and adopted, and Public Works employees need to be trained.

Response: Permit Part 2.3.2. requires that the revised SWMP document be submitted to the Division within 120 days of the effective date of this Permit. A City may submit a SWMP that contains the draft ordinance and provide the status of its review, possible modifications, and subsequent approval. The SWMP is a living document and will, and should evolve over time. Public input is to be provided throughout the life of the Permit (see Permit Part 4.2.2.3). In terms of changes to a post-construction ordinance, many MS4s include design standards in master planning, standards and specifications, etc. documents which are easier to amend than the City's ordinances. Each Permittee must conduct an annual review of the SWMP and make the necessary changes to keep it current and factual. Provided that has been done according to the current Permit and given that there are few changes to the permit, the Division feels that 120 days is a reasonable timeframe to submit a revised SWMP for a fully implemented program consistent with the current permit (renewal permittees).

Comment (1.2.1.2. – 1.2.1.6.): The subsections currently numbered as 1.2.1.2 through 1.2.1.6 appear to be subsections to Section 1.2.1.1 and should be renumbered as 1.2.1.1.1 through 1.2.1.1.5.

Response: This section of the Permit has been renumbered.

Comment (2.3.3., 2.3.4.): The subsections currently numbered 2.3.3. and 2.3.4. appear to be subsections to 2.3.2.

Response: This section of the permit has been renumbered.

Comment: Many municipalities within the State have private irrigation systems strewn through municipal boundaries. These irrigation systems also collect storm water prior to discharging to Waters of the State. Who determines if these discharges are acceptable mixed sources?

Response: It is the Permittee's responsibility through complying with this Permit, to keep pollutants out of any receiving body water which includes irrigation canals. If an MS4 has an agreement with a local irrigation canal company to utilize an irrigation canal for the conveyance of storm water, the MS4 must work with the irrigation canal company to determine maintenance responsibilities, illicit discharge response and any needed remediation, etc.

Comment: Does “after permit coverage” mean the same thing as “after effective date” of permit.

Response: Yes

Comment: Does the DWQ expect the SWMP document to be updated, put out for public review and comment, revised, and then submitted to the DWQ within 120 days.

Response: The DWQ expects that the SWMP document be updated, submitted to DWQ, and placed on the Permittee’s website for public input for the entire Permit term within 120 days. The Permit does not require the Permittee to formally public notice the revisions to the SWMP. If the Permittee’s local public noticing rules require the formal public notice of the revised SWMP and all modifications and updates throughout the life of the 5-yr. Permit term, then that is what the Permittee should do. However, the DWQ still requires that version to be submitted within 120 days. If there are changes that need to be made to the document after public noticing or at any time during the 5-yr. Permit term, the Permittee is to submit these changes to DWQ following the requirements of Permit Part 4.4.

Comment: Must the Permittee resubmit the SWMP document or applicable portions of the SWMP document to DEQ within 180 days for implementation of onsite retention of the 90th percentile storm or does this process need to be addressed and included within the revised SWMP due 120 days after the Permit is issued.

Response: The process by which the Permittee will address the Permit requirement of onsite retention of the 90th percentile storm must be included in the revised SWMP document due 120 days after the Permit is issued. Full implementation of the Long-Term Storm Water Management in New Development and Redevelopment (Post-Construction Storm Water Management) minimum control measure is required within 180 days after the Permit is issued.

Comment (Permit Part 4.4.): Are Permittees expected to comply with Section 4.4. for each revision through the SWMP process?

Response: Permittees are expected to submit a revised SWMP within 120 days. Any revisions to the SWMP after this initial submittal must follow the requirements for updating the SWMP which can be found in Permit Part 4.4.

Response (Permit Part 4.1.2.): Permit part 4.1.2. indicates that Permittees are to have an ongoing documentation process for gathering, maintaining, and using information to conduct planning, set priorities, track the development and implementation of the SWMP, evaluate Permit compliance/non-compliance, and evaluate the effectiveness of the SWMP implementation within **90** days. The 90 day timeframe is a typographical error and has been removed. This was a requirement of the 2010 MS4 General Permit and as such should have already been developed and implemented.

Nitrogen and Phosphorus Reduction

Comment (Permit Part 3.2.): My concern is that this requirement appears to be general; not necessarily based on whether the receiving waters from the MS4 are impaired. Can this be changed to allow flexibility based on whether receiving waters are impaired by nutrients?

Response: This Permit requirement is intended to target sources of nutrient and phosphorus pollution and serve as a preventative approach whether a receiving water has been thoroughly studied for impairment or not.

Comment (Permit Part 3.2.): This feels like the expectation is to conduct studies or do water quality sampling and testing. Are there federal resources available to give guidance and reimbursement for doing this? How specific is this to be? Can an MS4 just talk in general terms – like identifying “typical” nitrogen and phosphorus sources for each general category (e.g. residential, industrial, agricultural, or commercial)?

Response: The Permit has been changed to indicate that an example of a collaborative program could be the storm water coalitions that most MS4 Permittees already belong to. It is not the expectation of the Division for permittees to engage in water quality studies, sampling or testing at this time. Compliance with this requirement can be achieved by determining sources that are contributing to, or have the potential to contribute nitrogen and phosphorus to the waters receiving the MS4 discharge authorized under this Permit. Permittees must then prioritize these sources and distribute educational materials or equivalent outreach accordingly. There are no federal resources available for reimbursement of compliance for any of the Permit requirements. Yes, the MS4 may address “typical” sources of nitrogen and phosphorus sources.

Discharges to Water Quality Impaired Waters

Comment (Permit Part 3.1.): If a Permittee does not discharge directly to an impaired water body, but downstream of said discharge there is a TMDL for an impaired water body, does this Section apply to the Permittee?

Response: Yes. This section applies if both water bodies are within the regulated MS4’s jurisdiction and the unimpaired water body discharges to the impaired water body.

Illicit Discharge Detection and Elimination

Comment (Permit Part 4.2.3.3.1): This section gives requirements for locating and listing priority areas for Illicit Discharge Detection and Elimination. This requirement is very prescriptive in the way it requires certain areas to be designated as “priority” areas. However, some of the areas listed to include as priority may have no good reason to otherwise be a priority area, but just happen to be an area with “older infrastructure” or have commercial activity nearby. I think that more consideration should be allowed in designating priority areas. I suggest changing the permit such that the areas listed in the permit are considered, but not automatically designated as priority. Alternately, I request the inspection frequency of priority areas (Section 4.2.3.3.2) be changed to lessen the increase in workload for inspecting these areas.

Response: The Division feels that areas with older infrastructure and areas with commercial/ industrial sources of pollution are very good areas to priority for further inspection. However, the MS4 can add and remove areas from its list as needed according to changing priorities. The Permit will be modified to also include an option for the MS4 to designate other areas than the ones included. The inspection frequency will remain the same at 20% of the list of priority areas inspected annually. The Permit requirement regarding Dry Weather Screening was reduced significantly to allow more resources for Priority Area inspections.

Construction Site Storm Water Runoff Control

Comment (Section 4.2.4.1): Clarify the last sentence. The last sentence implies that each MS4 is required to implement a program for projects that do not fall under the UPDES Permit for Construction Activities (UTR00000) or the Common Plan Permit (UTRH00000); where does this permit require the MS4's to have additional coverage?

Response: Permittees may have local requirements for sites smaller than an acre or not part of a Common Plan of Development. The intent of the last sentence of this section is that any local requirements shall be retained in addition to those in the Small MS4 Permit No. UTR090000 and the most current Construction General Permits. The permit language has been changed to "Existing local requirements to apply storm water controls at sites less than 1 acre or not part of a Common Plan of Development may be retained."

Comment (Sections 4.2.4.3. and 4.2.4.6.): Please clarify the requirement to retain records of projects for 5 years or until construction is completed. Is it intended that records be retained for 5 years after construction is completed?

Response: It is intended that records be retained for 5 years or until construction is complete, whichever is longer. As most construction projects have a less than 5 year duration, most project records will be kept for 5 years (minimum). In the case of a Common Plan of Development project, they may be kept far longer.

Comment (Section 4.2.4.3.3.): Requiring the design of an effective post construction plan and to expect the owner or contractor to design LIDs at the construction stage is not practical. To create a plan as implied by MCM5; (4.2.5.3, 4.2.5.3.2, 4.2.5.4.1, 4.2.5.5.3) would require significant change orders and time delays to accomplish any post construction controls that will make a difference. The practical and realistic stage to design Post Construction Controls is at the development stage. It is far too late once the contractor is mobilized to begin work.

Response: Agreed. Post Construction Controls must be considered early in the design process. The reference to LID and green infrastructure in Section 4.2.4.3.3 has been removed. The requirements for LID are included in Section 4.2.5.

Long-Term Storm Water Management in New Development and Redevelopment (Post-Construction Storm Water Management)

Comment (Section 4.2.5.): "The objective of this control...to mirror the pre-development hydrology of the previously undeveloped site or to **improve** the hydrology of the redeveloped site..." The word **improve** is subjective. It is necessary to set a measureable standard to ensure all MS4's are applying this requirement equally. It puts MS4's at odds with each other from an economic and development stand point when the regulation is too open ended.

Response: The objective of this minimum control measure for this permit and the previous permit term has been for development to mirror or improve the hydrology of the undeveloped site. This permit places a numeric standard for projects in which the volume associated with 90th percentile storm must be retained on site unless technically infeasible. This is a requirement for all Permittees.

Comment (Section 4.2.5.): Mimicking predevelopment hydrology is a central goal of a low impact development approach to stormwater management. However, this goal is not interchangeable with the

clear directive given in the Clean Water Act to “reduce discharge of pollutants of concern to the maximum extent practicable” and should not replace this directive. Doing so reorients the stormwater program toward pursuing runoff reduction as a goal in and of itself when has been clearly established that the runoff is not the problem. The pollutants transported by runoff and the structural effects resulting from changes in runoff rates, durations, volumes and temperature due to urbanization are the problems we should be trying to solve. Runoff reduction should be prioritized as a strategy used to meet these goals, but the goals are not interchangeable. There may be instances where prioritizing runoff reduction over pollutant reduction leads to BMP selection choices that don’t satisfy the Clean Water Act directive. For example, flow through bioretention has been shown on average to export nutrients instead of reducing them when conventional sand and compost media is used. A runoff reduction centric regulation would still prioritize these systems over media filters that have less runoff reduction capabilities even in watersheds with known nutrient sensitivity or impairment. Flexibility should also be given where site level runoff reduction may conflict with larger water management goals. For example, infiltration on a site where groundwater cannot be recovered may be less beneficial than treating and releasing runoff where there is a downstream water supply reservoir or aquifer that can be recharged.

Suggested Change:

Restate section 4.2.5 to read:

“The objective of this control measure is to reduce the discharge of pollutants of concern to the maximum extent practicable such that applicable water quality standards are met in receiving waters.

Were it produces the greatest pollutant load reduction and is consistent with water supply and groundwater quality objectives, permittees should ensure that BMPs are selected such that the hydrology associated with new development mirrors the pre-development hydrology of the previously undeveloped site or to improve the hydrology of a redeveloped site and reduce the discharge of storm water.”

Response: DWQ agrees that runoff reduction and pollutant reduction are both goals of this minimum control measure and should both be considered in a long-term storm water management program. However, EPA Region 8 determined that the long-term storm water management requirements of Permit Part 4.2.5 of the previous permit are insufficient to meet current expectations of the Maximum Extent practicable standard for MS4s and that the State of Utah must include a specific retention design standard for long-term storm water management upon reissuance. Long-term storm water management must include approaches that consider both structural and nonstructural controls. Site design must prioritize a focus on infiltration, evapotranspiration and rain water harvesting which will reduce the volume and therefore reduce the quantity of pollutants reaching receiving waters. If a LID approach cannot be utilized, the Permittee must document an explanation of the reasons preventing this approach and the rationale *for the chosen alternative* on a case by case basis. Permit Section 4.2.5.2.2 requires a regulatory mechanism such that Permittees review and document the selection of BMPs for protection of water quality and reduction of the discharge of pollutants for new development.

Comment (Section 4.2.5.2.2): “Technical basis which supports the **performance** claims for the selected BMPs” The word **performance** is subjective. It is necessary to set a measureable standard to ensure all MS4’s are applying this requirement equally. It puts MS4’s at odds with each other from an economic and development stand point when the regulation is too open ended.

Response: This section pertains to the enforcement of the requirement for long term BMPs for new and redevelopment. If a Developer or the Permittee is selecting a BMP based on performance claims, they must document the source of these claims (pollutant removal, etc.). This is a requirement for all Permittees.

Comment (Section 4.2.5): Reword the sentence at the bottom of page 22 and top of page 23 to read “not replace or substitute water quality...”

Response: No change needed.

Comment (Section 4.2.5.3): This section is exceptionally vague. Permittees should be required to develop quantifiable performance objectives for storm water management BMPs. At a minimum, BMPs should be moderately or highly effective for anticipated pollutants of concern from the site. This would include any conventional storm water pollutants like trash, oil and grease, nutrients, heavy metals, and bacteria that are associated with the project land use. In addition, specific numeric load reductions from any receiving water TMDL should be addressed.

Suggested Change:

“The Permittee's new development/redevelopment program must have quantifiable requirements or standards to ensure that any storm water controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality. At a minimum, BMPs must be selected that address pollutants of concern known to be discharged or anticipated to be discharged from the site.”

Response: Water quality controls for Discharges to Impaired Waterbodies are addressed in Permit Section 3.1. Permit Section 4.2.5.2.2 requires a regulatory mechanism such that Permittees review and document the selection of BMPs for protection of water quality and reduction of the discharge of pollutants for new development. DWQ appreciates the comment and suggested change and agrees that BMPs must be selected to address known or anticipated pollutants of concern. The second sentence of the suggested change has been added to read “BMPs must be selected that address pollutants known to be discharged or anticipated to be discharged from the site.”

Comment (Section 4.2.5.3.1): “...program **should** include...”. Is this regulation required or not? MS4's need strong regulation language to obtain City council support. Also some Storm water community personnel have responded to weak language as optional resulting no action.

Response: Non-structural BMPs are required as part of long-term storm water management plan where practicable. The language has been changed to reflect this requirement.

Comment (Section 4.2.5.3.2): “...Permittee may or may not be required to register the use [of rainwater]...”. Why not write “Meet the requirements of the Utah Division of Water Rights to harvest rainwater”

Response: Agreed. Permit language has been changed to the suggestion.

Comment (Section 4.2.5.3.2): It's important to distinguish between those BMPs that retain the water quality design storm and those that do not. Those BMPs, like infiltration and rainwater harvesting that retain the entire design storm volume without runoff can be assumed to be 100% effective in removing pollutants from captured storm flows and should be used where feasible. BMPs like swales, flow through bioretention (biofiltration) and media filtration may have some runoff reduction capability, but how much will depend on site characteristics, especially native soil infiltration rates. These BMPs should be selected based on their relative load reduction capabilities for pollutants of concern on the site. This pollutant load centric approach inherently incentivizes runoff reduction since retaining runoff reduces effluent loads.

Suggested Change:

“...the program shall include a process which requires the evaluation of a Low Impact Development (LID) approach which encourages the implementation of BMPs that infiltrate, evapotranspire or harvest and use storm water from the site to protect water quality. Structural controls that retain the entire water quality design storm, for example through infiltration or rainwater harvesting, shall be utilized where feasible. On a project by project basis, where full retention of the water quality design storm is infeasible, the Permittee must document the reasons for infeasibility and must select treatment controls that reduce the discharge of pollutants of concern on site the maximum extent practicable.”

Response: Permittees shall prioritize LID techniques which infiltrate, evapotranspire or harvest and use storm water to protect water quality in order to meet the permit requirement of retention of the 90th percentile storm event. This requirement is not intended to replace local requirements for treatment controls for various types of development or pollutants.

Comment (Section 4.2.5.3.4): This section has been changed to require that runoff from a 90th percentile storm event be managed on site, essentially with LID practices. This requirement is a major change from the requirement in the current permit. If this requirement becomes effective, it will have a big impact on the way developments are designed, reviewed, approved, and constructed. Therefore, can this requirement be changed to allow the MS4 to give developers an incentive to meet the requirement, but not necessarily make the requirement? Otherwise, can each MS4 be given at least 12 months to implement this section; perhaps section 4.2.5 could include a time frame of 12 months to implement requirements for this control measure.

Comment (Section 4.2.5.3.4): I imagine most cities would have to revise their storm drain master plans to reflect this change in storm water management. That would take a significant amount of time.

Comment: Section 4.2.5.3.4 requires development of hydrologic methods for calculation of runoff flows and implementing retention requirements for the 90th percentile storm within 180 days of effective date of the permit. The City has the following questions regarding the above dates and requirements:

1. These milestones do not allow sufficient time to perform the required tasks, obtain public input, and then make revisions within the time period noted.
2. Does “after permit coverage” mean the same thing as “after effective date” of the permit?
3. Does the DEQ expect the SWMP document to be updated, put out for public review and comment, revised, and then submitted to the DEQ within 120 days?
4. Must the Permittee resubmit SWMP document or applicable portions of the SWMP document to DEQ within 180 days for implementation of onsite retention of the 90th percentile storm or does this process need to be addressed and included within the revised SWMP submittal due 120 days after the permit is issued.
5. In general, these milestones will require multiple revisions to accomplish the deadlines and seem to conflict with one another. Are Permittees expected to comply with Section 4.4 for each revision throughout the SWMP revision process?

Response: The intent of this permit *and* the previous permit was for development to mirror or improve the pre-development hydrology and reduce the discharge of storm water. In the previous permit, MS4s were to develop their own hydrologic methods and standards to accomplish this intent. MS4 were to “encourage an LID approach...where practicable... that infiltrate, evapotranspire or harvest and use storm water to protect water quality.” In other words, the requirement to retain storm water on site is not a new requirement. EPA Region 8 determined that the long-term storm water management requirements of Permit Part 4.2.5 of the previous permit are insufficient to meet current expectations of the Maximum Extent practicable standard for MS4s and that the State of Utah must include a specific design standard for post-construction in its Permit upon reissuance. The process by which the Permittee will address the Permit requirement of onsite retention of the 90th percentile storm must be included in the revised SWMP document due 120 days after the Permit is issued. Full implementation of the Long-Term Storm Water Management in New Development and Redevelopment (Post-Construction Storm Water Management) minimum control measure is required within 180 days after the Permit is issued. “After Permit coverage” is the “effective date” of the Permit for new Permittees. The Permittee must secure resources necessary to meet all requirements of this permit per Section 4.1.2.2.

Comment (Section 4.2.5.3.4 and 4.2.5.3.2): It mentions that if the retention standard or LID approaches are infeasible, a rationale and documentation must be provided on a case by case basis. Is this documentation kept on file with the Permittee, or does it need to be submitted to the State?

Response: If technical design constraints render retention of the 90th percentile storm event or the use of LID infeasible, the Permittee must document the rationale for selection of alternative design criteria and chosen alternative controls. This documentation is to be retained with the Permittee. Considerations should be made on a case by case basis.

Comment (Section 4.2.5.3.4 and 4.2.5.3.2): Can a Permittee provide rationale and documentation for an entire area based on site restraints instead of requiring it on a case by case basis?

The verbiage requiring this to take place "on-site" eliminates the opportunity to create a regional storm water pond, or even a regional irrigation pond to put the water to use, as allowed by law.

Response: The objection of this Section is to manage storm water at its source and reduce the discharge of storm water to the MS4 and receiving waters through a combination of practices; site design, structural and non-structural controls that are designed, constructed, and maintained to infiltrate, evapotranspire and/or harvest and reuse rainwater. In some cases, regional retention may satisfy the Permit requirements; however the rationale for this approach must be documented by the Permittee. Considerations should be made on a case by case basis.

Comment (Section 4.2.5.3.4): There is the potential that retention basins would eventually become jurisdictional wetlands and be regulated as such due to the standing water. The permit should address this issue so that the Permittee can perform maintenance without the need to acquire an additional permit from the US Army Corps of Engineers.

Response: Constructed wetlands for storm water retention and treatment are a technique which may be used to meet retention standards. As with all structural BMPs, consideration of permitting requirements, including US Army Corps of Engineers regulation of jurisdictional wetlands, must be considered.

Comment (Section 4.2.5.3.4): Is DDW steering people away from Class V injection wells in DWSP zones? Would this position be sufficient for municipalities to prohibit the installation of additional class V wells and/or other LID infiltration practices within these zones and still meet the requirements to minimize runoff from developed sites found in paragraph 4.2.5.3.4? Does DEQ including DDW staff feel that storm water class V injection wells or other LID infiltration practices located in DWSP zones pose additional risks/concerns to drinking water? Does DEQ see any conflicts between the MS4 permit requirement to retain the 90th percentile rainfall event by infiltration, evapotranspiration and/or harvesting and reuse of rainwater with the requirements of DWSP zones as defined by DWQ?

Response: According to Source Protection Program Manager Kate Johnson, DDW's source protection user guide identifies Class V injection wells as something that water systems should identify in their SP zones and evaluate as a potential contamination source. The DDW does not have a policy of steering people away from Class V injection wells in DWSP zones. If the system operator determines them to be a contamination source which is "uncontrolled," the system would need to identify a risk reduction strategy.

LID infiltration practices, including vegetated swales, bioretention and permeable pavement, are typically not Underground Injection Program (UIC) regulated Class V storm water drainage wells (see July 13, 2008 EPA Memorandum

<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/resources/EPAmemo infiltration class v wells.pdf>). Moreover, infiltration strategies are only one of the LID/green infrastructure techniques available for

achieving the storm water retention requirement. Therefore, a policy of minimizing and eliminating Class V wells in DWSP zones is not, in itself, sufficient to meet the requirements of Permit Section 4.2.5.3.4.

Comments (3) (Section 4.2.5.3.4): It appears the additional requirements for reduced storm water discharge may have a significant effect on water rights in the State. Are we allowed to hold back that much water according to water rights? Holding back the water would reduce the runoff that reaches the Great Salt Lake and the wetlands.

Response: DWQ has discussed the proposed retention standard with the Utah Division of Water Rights (DWR). The DWR supports efforts to manage storm events and conveyance of water in an efficient manner. According to State Engineer Kent L. Jones, P.E., there is nothing in the proposed retention standard “that would cause us concerns. To “retain, detain, or infiltrate” should not cause undue harm to the water rights of others and may, in fact, provide additional protections for some of those rights. If in the retention, detention, or infiltration of the water there is a plan to intentionally beneficially use the water, a water right would have to be obtained for that proposed use.”

Comment (Section 4.2.5.3.4): Have the proposed changes have been adequately communicated to the entities that will be responsible to pay the costs associated with the changes (developers, local governments, the State Legislature, etc.). To implement these changes, particularly the requirement for on-site retention, developments will be significantly affected and the cost to develop will increase. Developments will need larger retention areas which could reduce developable area. Cities or developments will also need to maintain more basins since the concept of regional detention facilities will be altered with the permit change.

Additional training requirements in the permit will also increase costs for small MS4s.

Response: The Permittee is responsible for adequately conveying the requirements of the Permit to the Developers in working in their jurisdiction. The Permittee must secure resources necessary to meet all requirements of this permit per Section 4.1.2.2.

Comment (Section 4.2.5.3.4): This section states that projects must manage rainfall on-site and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to the 90th percentile rainfall event. Further clarification and explanation needs to be given to define what the 90th percentile event is. What is the time period for this event? Is it over a 24 hour period? Also, is the intent of this requirement to put the water back in the ground or to merely retain the runoff on-site? If a City has a high water table and clayey soils the water would not infiltrate into the ground as well and very large retention basins with standing water would be required. This would be difficult to do and impractical in most situations.

Comment (Section 4.2.5.3.4): Along the Wasatch Front the 90th percentile storm equates to roughly 0.6” of rainfall. The difficulty here will be in interpreting the intent. The wording says, “prevent the off-site discharge of the precipitation from **all** rainfall events less than or equal to...” Does this mean we have to account for back-to-back 90th percentile storms? If these events occurred on consecutive days it would almost double the size of the retention required because the storage would be full from the previous day when the second storm hits. In heavy clay soils we could effectively create ponds that would turn to wetlands making it almost impossible to maintain, because now they are protected. We also will have concerns with mosquito populations and West Nile Virus with large amounts of standing water, not to mention concerns with small children and potential drowning.

Comment (Section 4.2.5.3.4): The requirement to retain the 90th percentile storm will create storm water ponds that are approximately three times the size of detention ponds that are currently used to

mimic pre-development conditions. The infiltration of storm water may increase the amount of water present around the foundations of homes. In some location, soils have limited ability to infiltrate water. Standing water in storm water ponds is perceived as a nuisance because of the smell that can become present. Mosquitoes will utilize the standing water to reproduce.

Response: The intent of the numerical standard is for sites to retain the portion of storm water equivalent to the volume associated with the 90th percentile storm event. The Section goes on to say that this standard is to be met where “technically feasible.” Design considerations must be considered which will include but are not limited to management of consecutive storm events, soil types, infiltration rates, DWSP zones, permitting requirements, and safety. If technical design constraints render retention of the 90th percentile storm event infeasible, the Permittee must document the rationale for selection of alternative design criteria. This documentation is to be retained with the Permittee. Considerations should be made on a case by case basis.

The objective of this Section is to manage storm water at its source and reduce the discharge of storm water to the MS4 and receiving waters through a combination of practices; site design, structural and non-structural controls that are designed, constructed, and maintained to infiltrate, evapotranspire and/or harvest and reuse rainwater.

The 90th percentile storm was chosen as the standard over a specific rainfall depth to account for the hydrologic diversity of the State of Utah. This standard accounts for small, frequently occurring storms which typically are infiltrated in a pre-development condition and account for a large portion of the total annual precipitation volume. The retention standard does not replace or substitute for the Permittee’s water quantity and flow management design requirements. Requirements can be accomplished in conjunction with conveyance and flood management, or separately.

The 90th percentile rainfall event is the event whose precipitation total is greater than or equal to 90 percent of all storm events over a given period of record. The 90th percentile rainfall event for the Salt Lake City Airport is approximately 0.6 inches. Guidance for calculating the 90th percentile storm can be found in the Center for Watershed Protection’s *Urban Stormwater Retrofit Practices Manual No. 3* (August 2007) and is summarized below.

1. Obtain a long-term rainfall record from a nearby weather station (daily precipitation is fine, but try to obtain at least 30 years of daily record). See NOAA at <http://www.ncdc.noaa.gov/?datasetabbv=SOD&countryabbv=&georegionabbv=>.
2. Edit out small rainfall events that are 0.1 inch or less and snowfall events that do not immediately melt. Events less than 0.1 inch are excluded because they do not generally result in any measurable runoff due to absorption, interception and evaporation.
3. Using a spreadsheet or simple statistical package, analyze the rainfall time series and develop a frequency analysis to determine the percentage of rainfall events greater than or equal to a given numerical value (e.g., 0.2, 0.5, 1.0, 1.5 inches, etc).
4. Construct a table and curve showing rainfall depth versus percentile.
5. Use the data to define the 90th percentile rainfall depth.

Comment (Proposed New Section 4.2.5.3.5): Manufactured treatment systems can be useful either as pretreatment upstream of infiltration or detention systems or in some cases as stand-alone treatment BMPs where retention is not feasible. To ensure that specification decisions are made on the basis of robust performance data, independent verification of performance claims is needed. In the absence of federal leadership on the issue, state programs in Washington State and New Jersey have established robust testing protocols for innovative technologies. If devices are determined by a panel of experts to have been tested following these protocols and demonstrate adequate performance, approval is granted. Reciprocating approvals from these programs ensures that BMPs will operate as claimed without

requiring local investment in similar vetting programs. At least 20 storm water treatment systems from 8 companies have been evaluated by these programs so referencing them provides site designers many options. Including this requirement also encourages companies to pursue testing for unapproved technologies which promotes fair and transparent competition. The Washington State program page for “Evaluation of Emerging Stormwater Treatment Technologies” can be found at:

<http://www.ecy.wa.gov/programs/wq/stormwater/newtech/index.html>

The New Jersey program page for “Stormwater Manufactured Treatment Devices” can be found at:

<http://www.njstormwater.org/treatment.html>

Suggested Change: Add new section 4.2.5.3.5

“Performance claims for manufactured treatment devices shall be independently verified based on testing following a nationally recognized testing protocols such as the Technology Assessment Protocol – Ecology (TAPE) from the Washington State Department of Ecology, or the “Stormwater Manufactured Treatment Device Protocols” from the New Jersey Department of Environmental Protection.

Documentation of performance shall be provided on a project by project basis in the form of a General Use Level Designation from the Washington State Department of Ecology, or a final Certification from the New Jersey Department of Environmental Protection. Device design and sizing shall be consistent with those approvals and long term operation and maintenance shall be according to manufacturer’s recommendations.”

Response: Approval and selection of specific treatment BMPs is the responsibility of the Permittee. Permit Section 4.2.5.2.2 requires that Permittees review and document the selection of BMPs for protection of water quality and reduction of the discharge of pollutants for new development including basis for selection, expected pollutant removal, and the technical performance claims for selected BMPs. Upon construction or installation, the Permittee must verify that the BMP was constructed as designed per Permit Part 4.2.5.5.2. Long-term inspections and maintenance shall be performed in accordance with the site maintenance agreement as outlined in Section 4.2.5.5.3.

Comment (Section 4.2.5.4.2): Please provide clarification to the types of development that a MS4 is required to mandate design specifications. Does it require only types of developments listed within the subsection that are located in, adjacent to, or discharging to sensitive area; or does it apply to ALL projects located in, adjacent to, or discharging to sensitive areas?

Response: This Section refers to the types of development occurring in the Permittees’ jurisdiction (the list provides examples, however, the Permittee must determine relevant development types) *and* all projects located in, adjacent to, or discharging to sensitive areas.

Comment (Section 4.2.5.4.3): This section implies that design information **shall** be distributed in forms of a flyer, brochure, pamphlet etc., but this approach is passive. From experience passive approaches have not resulted in significant LIDs. Flyers, brochures, and pamphlets are voluntary to designers when the approach is passive and if it cost more than traditional designs the handouts will end up in the garbage. Designers build what their client pay them to build and usually only respond to MS4 **required** details, templates, and design standards at the development application stage. Generally they will only design infrastructure necessary to get a permit, so why waste our time trying to passively educate them as part of MCM5. Perhaps this is an approach for MCM1? However, providing preferred options that will meet the regulations minimums coupled with incentives after they make development application does make sense and these approaches can be incorporated into MS4 provided required standards, details and templates.

Response: This section refers to the documentation of the distribution of materials described in Section 4.2.5.4.2 (preferred design specifications).

Comment (Section 4.2.5.6): “Training shall be provided or made available for staff in the fundamentals of long-term stormwater management through the use of structural and non-structural control methods.” This sentence does not make sense. Do you mean “**for the use of** structural and non-structural control methods”? Are not non-structural control methods just SOPs? Is fundamentals of long-term stormwater management document simply just an SOP and specific maintenance manuals for structural devices? Perhaps this section could be clarified.

Response: This section requires that all MS4 staff involved in long-term storm water management be trained regarding the various methods of long-term storm water management, both those that are constructed or installed within their jurisdiction and those that are management-type BMPs.

Sharing Responsibility

Comment Permit Part 4.3.5.: This wording requires the permittee to train outside entities. For example, if the MS4 works in cooperation with the County Health Department to complete some of the IDDE elements of the program, the MS4 is required to train the County Health Department. I understand the idea here but feel like there are cases where the MS4 hires someone to do something because that someone knows more about how to do that activity than the MS4 does.

Response: The need for a responsible entity to understand the regulated MS4’s permit requirement and associated SOPs has been emphasized in this permit. Nearly all regulated MS4s participate in a Storm Water Coalition for the purpose of pooling resources to meet the public education and outreach requirements of the MS4 General Permit. The training component of Permit Part 4.3.5 more directly applies to when an MS4 relies partly or wholly on an outside entity to meet permit requirements. For example, this could be a contractor performing MS4 maintenance, or construction site inspections, or a local health department responding to complaints of illicit discharges. In instances such as these, it is the regulated MS4’s responsibility to ensure that the responsible entity understands the MS4 permit requirements, has received the appropriate training on the requirements as applicable and that the responsible entity is meeting these requirements. In terms of the specific example of a written agreement established with a local health department, the MS4 would address all of these factors when establishing the written agreement and continually ensure that the both parties are upholding their defined roles. If an MS4 makes any changes to an SOP that would affect the responsible entity’s role, the MS4 would need to educate, train, review, etc. these changes with the responsible entity as needed.

Standard Permit Conditions

Comment Permit Part 6.2.: Please consider changing the word “person” to the word Permittee throughout the entire document the Permittee is required to comply with the Permit requirements. Why would a person or individual be punished and not the Permittee?

Response: Permit Part 6.2. is a standard permit condition that is included in all UPDES permits and is derived from the Utah Water Quality Act, specifically *Utah Code Annotated 19-5-115 (Act)*, and will therefore will not be changed. Civil enforcement actions are generally against the Permittee as a whole and not a single individual or person. However, the *Act* does allow for penalties to be issued to individuals when warranted as appropriate.

