



**Summary of AMAFCA's MS4
Post-Construction Stormwater Management Program
FY 2022 (July 1, 2021 – June 30, 2022)**

NPDES Permit No. NMR04A000

Part I.D.5.b - Post-Construction Stormwater Management in
New Development and Re-development

Post-construction stormwater runoff is the stormwater that would flow from a project site to the Municipal Separate Storm Sewer System (MS4) after completion of a new development or redevelopment (not during the project construction). Controls for this type of runoff are necessary to maintain or restore stable hydrology in receiving waters by limiting surface runoff rates and volumes and reducing pollutant loadings from sites that undergo development or significant redevelopment.

Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving water bodies. The intent of the Post-Construction Stormwater Management requirements in the MS4 Permit, according to EPA, are to:

- Prevent or reduce pollutants in stormwater discharges from reaching the Rio Grande;
- Mimic predevelopment hydrology; and
- Reduce impacts on natural channels and flow paths due to changes in hydrology.

AMAFCA, in conjunction with the area MS4 through the Mid Rio Grande (MRG) Stormwater Quality Team, completed a review and recommendations memo for post-construction stormwater quality design standards in the MRG Watershed in April 2021 (final memo is attached along with AMAFCA's May 14, 2021 Stormwater Quality Volume Calculation for Onsite Retention Board Memorandum). Currently, the MRG MS4 permittees approach the stormwater quality design standard slightly differently.

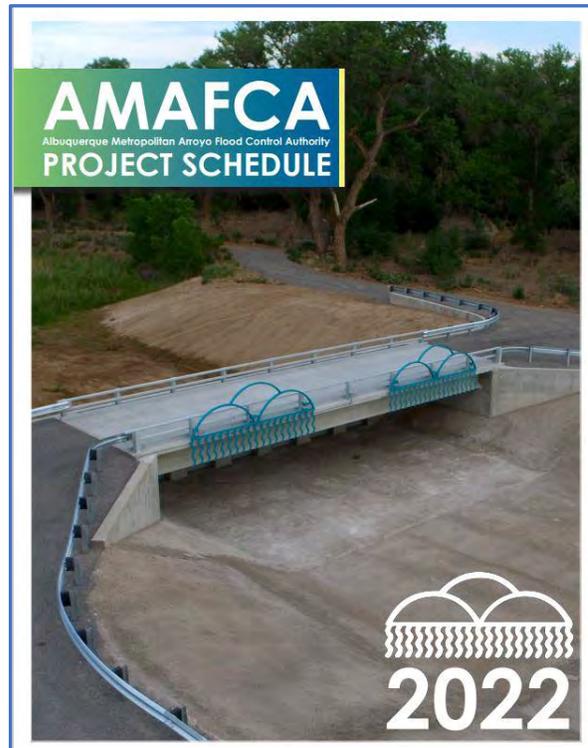
The Post-Construction Stormwater Quality Volume (SWQV) Comparison Tool was created as part of this task to assist the MRG MS4 permittees with comparing the stormwater quality design standards used within the MRG watershed related to post-construction stormwater management. It was recommended that developers be encouraged to include green stormwater infrastructure (GSI) and low impact development (LID) as well as increased landscape areas to reduce the total impervious area of a site, thereby reducing the required SWQV. It was also recommended that water quality and detention inspections include a review of the original impervious area used in the SWQV calculation to ensure that site modifications have not increased the impervious area of a site. The extent of the application and/or adoption of these recommendations for post-construction stormwater quality design standards and inspections will be determined and implemented by each MS4 permittee. Based on analysis from this document and discussions with New Mexico Environment Department (NMED) and EPA, Bernalillo County issued a

memorandum on May 12, 2021, that within 30 calendar days, all new development and redevelopment projects that disturb equal to or greater than 1 acre or are part of a larger common plan of development, will be required to use the rainfall depth to calculate the SWQV for impervious areas (including compacted areas) – this is available on the Bernalillo County website: https://www.bernco.gov/public-works/wp-content/uploads/sites/76/2021/05/SWQV_Calculation_memo_051221_encrypted.pdf

AMAFCA’s Drainage Management Plans (DMPs) calculate flood protection and water quality volumes for a given subwatershed’s facilities that can accommodate the SWQV independent of the rainfall/runoff numbers used to calculate required on-site retention. AMAFCA’s planning documents comply with the MS4 Permit by limiting the discharge from within a subwatershed to the pre-development flow condition. AMAFCA’s facilities are designed to attenuate the runoff from a storm event such that the river’s flow conditions are essentially unaffected by new development and/or redevelopment.

AMAFCA’s development engineer participates in area development reviews and often has the opportunity to comment on and request water quality components for projects. In addition, the AMAFCA Stormwater Quality Engineer participates in reviews subdivision reviews completed by Ciudad Soil and Water Conservation District, in accordance with their authority [47-6-11(F)(4) NMSA]. These reviews often cross-check with area terrain management plans and focus on post-construction runoff quantity, stormwater retention ponds, GSI/LID options, post-construction velocities, and maintenance requirements.

The AMAFCA Project schedule (https://amafca.org/downloadabledata/AMAFCA_Project_Schedule_2022_%5BReduced-Web%5D.pdf) identifies future planning efforts, joint funding initiatives, and design and construction projects that AMAFCA hopes to accomplish over the next six years. Planned stormwater quality projects are prioritized as required by the MS4 Permit. The prioritization assists AMAFCA and its Board of Directors in its mission to protect life and property. Projects subject to this scoring have a strong affinity towards water quality improvements, however, projects included in the Project Schedule which are not scored for water quality may still include water quality aspects as part of their scope. This figure below provides a summary of the scoring criteria used for water quality facilities.



Total project cost will ultimately determine the feasibility of a proposed project. As such, projects will be scored based on their total estimated project cost. The point scale below describes how points are assigned based on total project cost.

Total Cost	Points
Less than \$500K	2
Greater than \$500K but less than \$1M	1
Greater than \$1M	0

Location along a flow path to the Rio Grande is taken into consideration when assigning points to each project. Projects are scored higher if they are the only stormwater quality facility along the flow path to the Rio Grande, and lower if there is a facility(ies) above or below the proposed project. The point scale below describes points are assigned based on this location.

Flow path to the Rio Grande	Points
Project only WQ Facility	3
Project downstream of existing WQ Facility	1
Project Upstream of existing WQ Facility	1

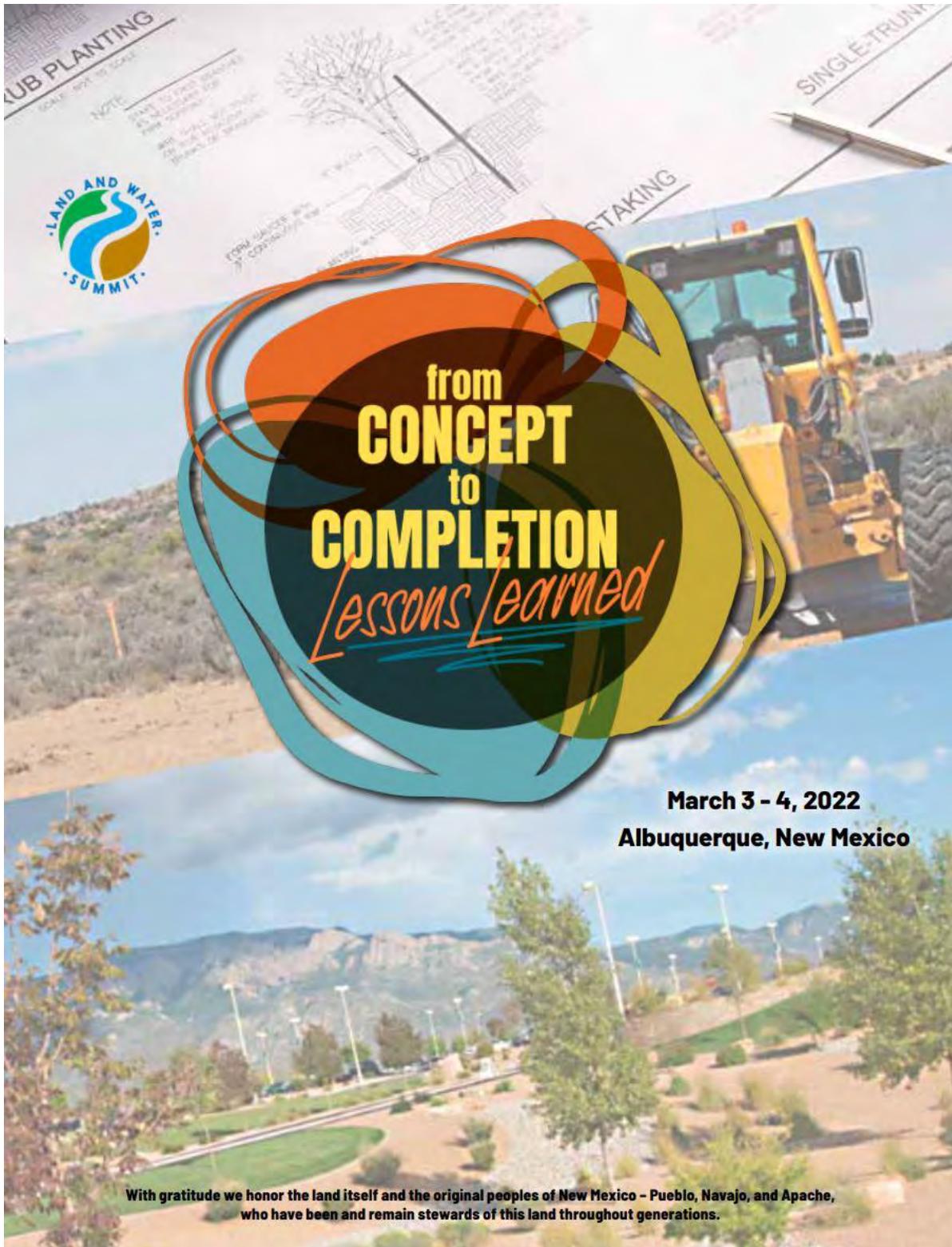
If a stormwater quality facility is located within the Bosque - the forested area surrounding the riparian zone of the Rio Grande floodplain - the project was awarded a "bonus" for being the ultimate water quality control measure before stormwater reaches the Rio Grande. The point scale below describes how the bonus points were assigned based on the above criteria.

"Bosque Bonus"	Points
Within Bosque	2
Not Within Bosque	0

Total Points Scale: 1-7

AMAFCA Project Schedule Water Quality Facility Scoring Criteria

In addition, AMAFCA has been a supporter of the annual Land and Water Summit in the Albuquerque area. The Land and Water Summit was created in 1986 by the Xeriscape Council of New Mexico. Developed to bring together design professionals, construction and management companies, agencies, farmers, artists, teachers, hydrologists, ranchers, climatologists, wildlife advocates, homeowners, and policy makers to find sustainable ways to protect and share our state's water and resources, the event is now hosted by Ciudad Soil and Water Conservation District, which serves as the event's fiscal agent. The group's primary goal is to educate the public about resource conservation and best practices for improving and protecting local landscapes – which ties well with the MS4 Post-Construction Stormwater Management education requirements. AMAFCA has been a financial sponsor as well as an active member on the planning committee. For information on the 2022 Land and Water Summit, please visit the conference website: [Past Land and Water Summits ▸ The Land and Water Summit \(landandwatersummitnm.org\)](http://landandwatersummitnm.org)



2022 Land and Water Summit Program Cover

Thanks for Your Support!



Land and Water Planning Committee:

Steve Glass, Chair • *Ciudad Soil and Water Conservation District*

Kali Bronson, Vice Chair • *Bernalillo County*

Astrid Hueglin, Treasurer • *Ciudad Soil and Water Conservation District*

Erin Blaz • *Ciudad Soil and Water Conservation District*

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Zoe R. Isaacson • *City of Santa Fe*

Melissa McDonald, RLA • *City of Santa Fe*

Megan Marsee • *Bernalillo County*

Richard Perce • *Albuquerque Bernalillo County Water Utility Authority*

George Radnovich • *Sites Southwest*

Erika Robers • *Groundwork Studio*

Phyllis Baker, Consultant • *Baker Creative*

2022 Land and Water Summit Planning Committee

AMAFCA Board Memorandum

To: AMAFCA Board of Directors
From: Patrick J. Chavez, PE, Stormwater Quality Engineer
Date: May 14, 2021
Subject: Stormwater Quality Volume Calculation for Onsite Retention

Earlier this year the AMAFCA Board of Directors was provided three memos detailing the inconsistent application in the use of rainfall depth and/or runoff depth for calculating the required stormwater quality volume (SWQV) within the watershed. A literature review and assessment of the stormwater quality volume calculation was conducted to prepare the recently published white paper titled *Post-Construction Runoff Values for Middle io Grande Watershed*.

Based on analysis from this document and discussions with NMED and EPA, Bernalillo County issued the attached memorandum on May 12, 2021 that within 30 calendar days all new development and redevelopment projects, that disturb equal to or greater than 1 acre or are part of a larger common plan of development, will be required to use the rainfall depth to calculate the SWQV for impervious areas (including compacted areas).

As described in the above-mentioned informational Board meeting memos, AMAFCA's Drainage Management Plans (DMPs) calculate flood protection and water quality volumes for a given sub-watershed's facilities that can accommodate the SWQV independent of the rainfall/runoff numbers used to calculate required on-site retention. AMAFCA's planning documents comply with the MS4 Permit by limiting the discharge from a new development or redevelopment site within a sub-watershed to the pre-development flow condition. AMAFCA's facilities are designed to attenuate the runoff from a storm event such that the river's flow conditions are essentially unaffected by new and/or redevelopment.

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MEMORANDUM

DATE: April 21, 2021

TO: Mid Rio Grande Stormwater Quality Team

FROM: Sarah Ganley, PE

SUBJECT: **Review and Recommendations for Post-Construction Stormwater Quality Design Standards in the Middle Rio Grande Watershed**

Land development changes the hydrologic properties of a given watershed and generally increases the pollutant load transported by runoff compared to predevelopment conditions. The term stormwater quality volume (SWQV) is generally used to define the amount of stormwater from any given storm that should be captured and treated in order to remove a majority of stormwater pollutants on an average annual basis before it is transported to receiving waters. Since the majority of all rainfall typically occurs in relatively small events, managing the discharge of the SWQV is considered to be a cost-effective standard for minimizing overall pollutant discharge to receiving waters.

The goals of this task related to the post-construction stormwater quality design standards are to:

- 1) Improve the MS4 permittees understanding of the various post-construction stormwater quality design standards in the Middle Rio Grande watershed.
- 2) Review the intent of the Middle Rio Grande Watershed Based (MRG WSB) MS4 Permit, Permit No. NMR04A000, Dec. 19, 2019, and related reference documents associated with post-construction runoff values.
- 3) Consider the equity of the application of differing post-construction stormwater quality design standards within the watershed.
- 4) Assist the MS4 permittees in preparing for the next MRG WSB MS4 Permit related to post-construction requirements.

The intent of the Post-Construction Stormwater Management requirements in the MRG WSB MS4 Permit, according to EPA, are to:

- Prevent or reduce pollutants in stormwater discharges from reaching the Rio Grande;
- Mimic predevelopment hydrology; and
- Reduce impacts on natural channels and flow paths due to changes in hydrology.

The literature review for this task provided multiple explanations of the purpose of using percentile storms to define and simplify a stormwater quality design standard. The quotes shown below are examples that explain that creating a stormwater quality design standard that maintains on site the 90th percentile storm event (new development) and 80th percentile storm event

(redevelopment) reasonably mimics predevelopment hydrology and addresses watershed water quality concerns.

"This permit proposes a **simple stormwater quality design standard** to ensure the hydrology associated with new development and redevelopment sites mirror the predevelopment hydrology of the previously undeveloped site."

-- Fact Sheet and Supplemental Information for the NPDES General Permit for Municipal Separate Storm Sewer Systems in the Middle Rio Grande Watershed – December 2014

"...predevelopment condition in the regulated MS4 area of the watershed is defined as the **rainfall depth above which measurable runoff first occurs under natural conditions.**"

-- Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, NM, April 2014, Kosco, et. al.

"...the performance standard to capture the 90th percentile storm event...is a **reasonable surrogate for mimicking predevelopment hydrology** for this watershed. Managing stormwater to predevelopment runoff conditions **will reduce water quality impacts on the receiving water.**"

-- Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, NM, April 2014, Kosco, et. al.

The post-construction predevelopment hydrology requirements in the MRG WSB MS4 Permit are met by agencies by defining a stormwater quality design standard. Post-Construction Part I.D.5 b.(ii).(b) of the MRG MS4 Permit states: "Incorporate a stormwater quality design standard that manages on-site the 90th percentile storm event discharge volume associated with new development sites and 80th percentile storm event discharge volume associated with redevelopment sites, through stormwater controls that infiltrate, evapotranspire the discharge volume,..." In predeveloped conditions, the 90th percentile storm represents the rainfall when runoff would first occur.

The MRG MS4 permittees approach the stormwater quality design standard slightly differently. There are three main components that factor into the application of a stormwater quality design standard.

- 1) The rainfall depth values.
- 2) Use of the rainfall depth or a reduced runoff depth in the stormwater quality design standard.
- 3) Area of the site to which the rainfall (or runoff) depth is applied. Some stormwater quality design standards apply this only to the impervious areas, some to all disturbed area, and others to the entire site.

The Post-Construction Stormwater Quality Volume (SWQV) Comparison Tool was created as part of this task to assist the MRG MS4 permittees with comparing the stormwater quality design standards used within the MRG watershed related to post-construction stormwater management. The Post-Construction SWQV Comparison Tool literature review research and findings were shared with the Mid Rio Grande Stormwater Quality Team (MRGSQT) in a virtual meeting on October 20, 2020. Review and feedback on the information and each agency's specific stormwater quality design standard was requested. Bernalillo County provided feedback to BHI and AMAFCA regarding the meeting, SWQV Comparison Tool, and agency stormwater quality design standards.

Figure 1 below illustrates the rainfall and runoff depths that are generally agreed to in the MRG Watershed. Table 1 on Page 4 provides a summary of the MRG watershed rainfall depths and the runoff depths, if applicable, with additional details and related references available in the SWQV Comparison Tool. Currently, there is fairly consistent consensus in the watershed on the rainfall depth value and a lack of consensus on if the rainfall depth or reduced runoff depth should be used in a stormwater quality design standard.

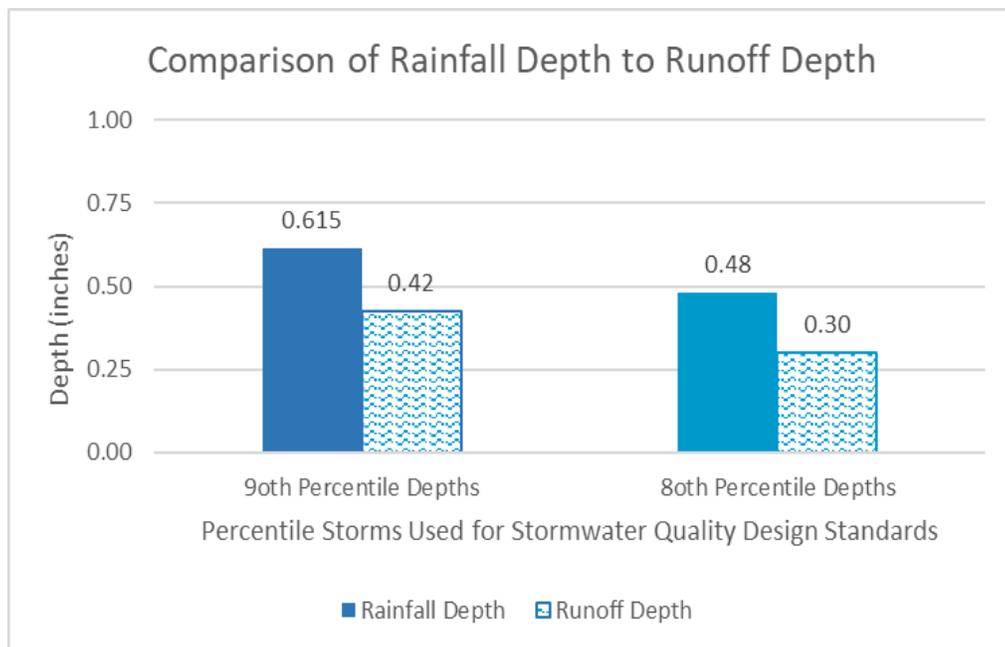


Figure 1: Comparison of Rainfall and Runoff Depths in the MRG Watershed

Table 1: Comparison of Rainfall Depths and Runoff Depths Used Within the MRG Watershed Related to Post-Construction Stormwater Management

Agency/Reference	New Development		Redevelopment	
	90th Percentile Storm Rainfall Depth	90th Percentile Storm Runoff Depth	80th Percentile Storm Rainfall Depth	80th Percentile Storm Runoff Depth
EPA, Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, NM, April 2014	0.615"	0.42"	Not stated - 0.48" directed by EPA (Nelly Smith - email included in Attachment to Memo)	Not stated - Calculated runoff value using TR-55, Rainfall depth = 0.48", CN of 98 (impervious) = 0.3"
EPA, Estimating Predevelopment Hydrology in New Mexico, 2015	0.65"	Not stated	0.48"	Not stated
City of Albuquerque, 2017 Memo (marked Draft) - Determination of 80th and 90th Percentile Storms for Stormwater Quality Volume	0.62"	0.42"	0.44"	0.26"
City of Albuquerque, DPM, June 8, 2020	0.62"	0.42"	0.48"	0.26"
Bernalillo County, Ordinance, Chapter 28, Article IV - Stormwater Quality	0.615"	County references 2014 predevelopment document	County references 2014 predevelopment document	County references 2014 predevelopment document
Bernalillo County, Technical Standards Document, currently being developed	0.615"	0.615"	0.48"	0.48"
SSCAFCA, DPM, Section 10, Stormwater Pollution Control	0.6"	0.46"	Not stated	Not stated
City of Rio Rancho, Ordinance, Chapter 153 - Erosion Control; Storm Drainage and Stormwater Quality	0.615"	CORR references 2014 predevelopment document	Not stated	Not stated
NMDOT, Drainage Design Manual, July 2018	0.615"	0.615"	0.48"	0.48"

The stormwater quality design standard is typically a SWQV calculation, which is a straightforward calculation:

$$\text{SWQV} = (R/12) * \text{Area} = \text{stormwater quality volume to be treated, in cubic feet}$$

R = 90th or 80th percentile event rainfall depth, in inches
Area = area of development or redevelopment, in square feet

To understand the magnitude of the impact of using the storm rainfall depth versus the reduced runoff depth in the stormwater quality design standard volume calculation, sample calculations were performed to demonstrate that use of the runoff depth leads to 69-percent lower volume requirements for the 90th percentile storm and 62-percent lower volume requirements for the 80th percentile storm. Figure 2 below illustrates this runoff volume reduction. The New Mexico Environment Department (NMED) Surface Water Quality Bureau shared that the use of the rainfall depth in the SWQV calculation was the intent of the language in the MRG WSB MS4 Permit (email documentation provided as an attachment to this memo).

The area used in the SWQV calculation also has an impact on the magnitude of water quality volume required. The SWQV calculation providing protection to the environment to the maximum extent practicable would apply the rainfall depth over the entire site. At the other end of the spectrum, the SWQV calculation providing protection to the environment to something less than the maximum extent practicable applies the reduced runoff depth to only the impervious areas of a given site. Using the impervious areas to calculate the SWQV is the current, standard practice in much of the MRG watershed. This current approach functions to encourage developers to include green stormwater infrastructure (GSI) and low impact development (LID) as well as increased landscape areas which would reduce the total impervious area of a site, thereby reducing the required SWQV. Compacted or disturbed areas may also be considered in the SWQV calculation if the agency reviewer has concerns about the stormwater quality runoff from these areas.

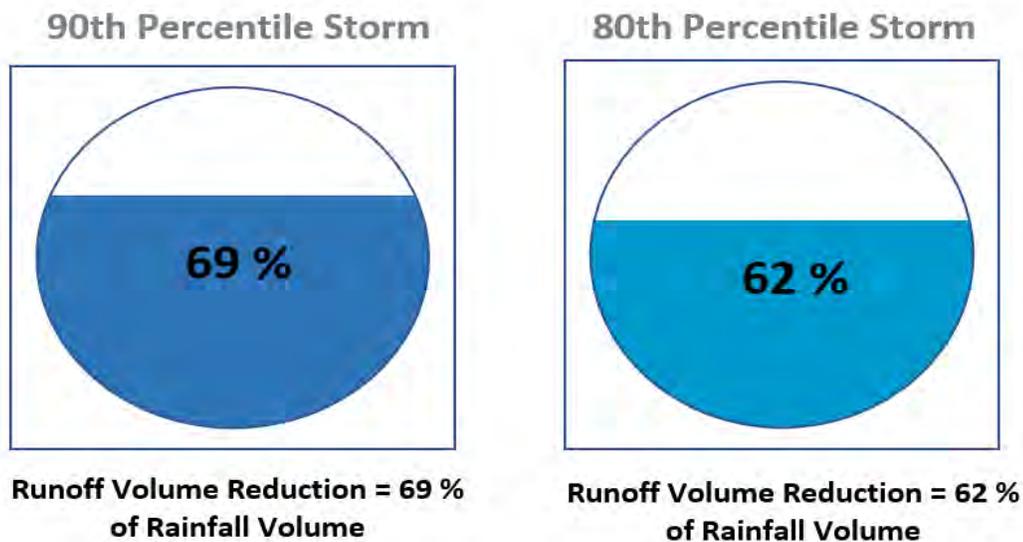


Figure 2: Comparison of Volumes if Using Rainfall and Runoff Depths Recommendations

Based on this literature review, research, and collaborative discussions, use of the rainfall depth in stormwater quality design standards is recommended for site development in the MRG watershed as the most protective standard for water quality. Rainfall depth is defined as 0.615” for the 90th percentile storm event for new development, and 0.48” for the 80th percentile storm event for redevelopment. Use of the runoff depth in stormwater quality design standards is used in the MRG, and it is a reduction in SWQV retention compared to use of the rainfall depth, although it does provide some water quality benefits. The MRG WSB MS4 Permit allows for alternative compliance for infeasibility to manage the SWQV on-site due to site constraints (as defined in the Permit), and some or all of the SWQV could be managed at downstream regional, public facilities that are designed for and have agreed to provide for water quality protection, as applicable for such projects. The intent of the MRG WSB MS4 Permit to prevent or reduce pollutants in stormwater discharges from reaching the Rio Grande and retention of the rainfall depth provides the most water quality protection.

The SWQV is recommended to be calculated for the impervious areas of a site. Compacted or disturbed areas may also be considered in the SWQV calculation. It is recommended that developers be encouraged to include green stormwater infrastructure (GSI) and low impact development (LID) as well as increased landscape areas to reduce the total impervious area of a site, thereby reducing the required SWQV. It is also recommended that water quality and detention inspections include a review of the original impervious area used in the SWQV calculation to ensure that site modifications have not increased the impervious area of a site. The extent of the application and/or adoption of these recommendations for post-construction stormwater quality design standards and inspections will be determined, and implemented by each MS4 permittee.

SJG/ab

Attachment 1 – Email Documentation Related to Rainfall Depth for MRG Watershed from EPA and NMED Surface Water Quality Bureau

**ATTACHMENT 1 –
EMAIL DOCUMENTATION RELATED TO RAINFALL
DEPTH FOR MRG WATERSHED FROM EPA AND
NMED SURFACE WATER QUALITY BUREAU**

From: Sarah Ganley [<mailto:sganley@bhinc.com>]
Sent: Wednesday, December 16, 2015 9:13 AM
To: Faidi, Hashem, NMDOT; Morgenstern, Steven, NMDOT
Cc: Barber, Ted L., NMDOT; Trujillo, Timothy R, NMDOT
Subject: FW: 80th & 90th percentile storm values for Albuquerque

Hello– based on Nelly’s responses – looks like the values to use for Middle Rio Grande MS4 – for post-construction requirements:

80th percentile storm = 0.48”

90th percentile storm = 0.615”

Thanks,

Sarah J. Ganley, PE
Engineer
Water Resources
Direct line: 505-923-3314

Bohannon Huston

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From: Smith, Nelly [<mailto:Smith.Nelly@epa.gov>]
Sent: Wednesday, December 16, 2015 9:09 AM
To: Sarah Ganley <sganley@bhinc.com>
Cc: Hashem Faidi (Hashem.Faidi@state.nm.us) <Hashem.Faidi@state.nm.us>; Steven Morgenstern (Steven.Morgenstern@state.nm.us) <Steven.Morgenstern@state.nm.us>; Tim Trujillo, PE (TimothyR.Trujillo@state.nm.us) <TimothyR.Trujillo@state.nm.us>; Barber, Ted L., NMDOT (Ted.Barber@state.nm.us) <Ted.Barber@state.nm.us>
Subject: RE: 80th & 90th percentile storm values for Albuquerque

Yes, Table 2-1 of the 2014 Report does not include the 80th percentile value. But Figure 2.6 can be used to extrapolate this value. It is less than 0.5” (as indicated in the Fact Sheet for the MRG MS4 Permit) - 0.48” can be used in the Albuquerque UA.

Thanks!

Nelly Smith
Municipal Stormwater Coordinator
EPA Region 6
Permits and Technical Assistance Section
NPDES Permits and TMDLs Branch

ph: 214-665-7109
Email: smith.nelly@epa.gov

From: Sarah Ganley [<mailto:sganley@bhinc.com>]
Sent: Wednesday, December 16, 2015 8:47 AM
To: Smith, Nelly
Cc: Hashem Faidi (Hashem.Faidi@state.nm.us); Steven Morgenstern (Steven.Morgenstern@state.nm.us); Tim Trujillo, PE (TimothyR.Trujillo@state.nm.us); Barber, Ted L., NMDOT (Ted.Barber@state.nm.us)
Subject: RE: 80th & 90th percentile storm values for Albuquerque

Thanks Nelly –

Based on this – the 90th percentile storm value for the Middle Rio Grande is 0.615”.

The ““*Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, New Mexico, EPA Publication Number 832-R-14-007*” does not have an 80th percentile storm value listed – which is a requirement for the post-construction standards. It only has an 85th, 90th and 95th. Is there a specific value you are using for the 80th percentile storm in Albuquerque?

Thanks,

Sarah

From: Smith, Nelly [<mailto:Smith.Nelly@epa.gov>]
Sent: Wednesday, December 16, 2015 7:36 AM
To: Sarah Ganley <sganley@bhinc.com>
Cc: Hashem Faidi (Hashem.Faidi@state.nm.us) <Hashem.Faidi@state.nm.us>; Steven Morgenstern (Steven.Morgenstern@state.nm.us) <Steven.Morgenstern@state.nm.us>; Tim Trujillo, PE (TimothyR.Trujillo@state.nm.us) <TimothyR.Trujillo@state.nm.us>; Barber, Ted L., NMDOT (Ted.Barber@state.nm.us) <Ted.Barber@state.nm.us>
Subject: RE: 80th & 90th percentile storm values for Albuquerque

For purpose of implementing the requirements of the MRG MS4 permit you should use the information in the ““*Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, New Mexico, EPA Publication Number 832-R-14-007*”. (p. 28 of Permit).

Both reports used different data set. The 2015 Report states on Pg. 8:

The previous predevelopment runoff study (Kosco, et. al., 2014) used data from the Albuquerque International Airport for the period 1950-2012. Because rainfall data for the other stations studied in this report did not extend back to 1950, this report used the most recent 30 year period of record (1983-2013) for all stations which resulted in a slightly higher 90th percentile event for Albuquerque.

- In terms of implementing the post construction standards in the Albuquerque UA, data should be used from the previous predevelopment runoff study (Kosco, et. al., 2014) or estimated through site specific pre-development hydrology and associated storm event discharge volume using the methodology specified in the 2014 USEPA Technical Report.

Thanks!

Nelly Smith

Municipal Stormwater Coordinator
EPA Region 6
Permits and Technical Assistance Section
NPDES Permits and TMDLs Branch

ph: 214-665-7109
Email: smith.nelly@epa.gov

From: Sarah Ganley [<mailto:sganley@bhinc.com>]
Sent: Wednesday, December 16, 2015 8:19 AM
To: Smith, Nelly
Cc: Hashem Faidi (Hashem.Faidi@state.nm.us); Steven Morgenstern (Steven.Morgenstern@state.nm.us); Tim Trujillo, PE (TimothyR.Trujillo@state.nm.us); Barber, Ted L., NMDOT (Ted.Barber@state.nm.us)
Subject: 80th & 90th percentile storm values for Albuquerque

Hi Nelly – In reviewing the two Pre-development hydrology papers for NM, I am unclear of the 80th & 90th percentile storm values for Albuquerque.

“Estimating Predevelopment Hydrology for Urbanized Areas in New Mexico”, Tetra Tech, March 2015 – has 0.48” for 80th and 0.65” for 90th

“Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed”, NM, Tetra Tech, April 2014 – does not have a 80th percentile storm event listed & the 90th percentile = 0.615”

The MRG MS4 Permit NMR04A000 specifically references this report: “Estimation of the 90th or 80th percentile storm event discharge volume is included in EPA Technical Report entitled *“Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, NewMexico, EPA Publication Number 832-R-14-007”*. (p. 28 of Permit).

I appreciate you help in clarifying these values for the Middle Rio Grande area.

Thanks,

Sarah J. Ganley, PE
Engineer
Water Resources
Direct line: 505-923-3314

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From: Holcomb, Sarah, NMENV <sarah.holcomb@state.nm.us>

Sent: Friday, April 16, 2021 8:30 AM

To: Patrick Chavez <pchavez@amafca.org>; Kali Bronson <kbronson@bernco.gov>; Sarah Ganley <sganley@bhinc.com>

Cc: Dean, Levi, NMENV <Levi.Dean@state.nm.us>; Gatterman, David <dgatterman@sscafca.com>; Burrell, Monica <Burrell.Monica@epa.gov>; smith.nelly@epa.gov

Subject: RE: Stormwater quality volume calculation

Hi all,

Good morning! Yes, I do believe **the intent behind the calculation was to use the rainfall amount rather than the runoff amount**. Forgive me for not having the time to write an in-depth summary today, but obviously Monica and Nelly can provide you further feedback, if needed.

I hope you all have a great weekend - Be well and hopefully our paths will cross again in the future!

Sarah Holcomb

PSRS Program Manager

Office: **505-819-9734** ← NOTE NEW PHONE NUMBER

From: Patrick Chavez <pchavez@amafca.org>

Sent: Thursday, April 15, 2021 3:04 PM

To: Holcomb, Sarah, NMENV <sarah.holcomb@state.nm.us>; Kali Bronson <kbronson@bernco.gov>; Sarah Ganley <sganley@bhinc.com>

Cc: Dean, Levi, NMENV <Levi.Dean@state.nm.us>; Gatterman, David <dgatterman@sscafca.com>

Subject: [EXT] RE: Stormwater quality volume calculation

Hi Sarah:

Just a quick note to follow up on the below email discussion.

After communicating with a few TAG folks we thought it would be a good idea to at least try to memorialize in some fashion your "institutional knowledge" on the below issue of rainfall/runoff. I recall you sharing with most of this email group on a previous zoom call that you recalled the intent (protection to the greatest extent practicable) of the watershed based permit writers to be for MS4s to use rainfall and not runoff when calculating the required post construction storm water quality volume. Is that correct in terms of your understanding of the intent of the calculation?

Sorry to put you on the spot before you leave NMED for your awesome new job. It's just that you truly are one of a kind; and your insights relative to the intent of EPA's permit writer(s) are of great value to the watershed's MS4s.

Thanks again and take care,
Patrick

Patrick Chavez, MSCE, PE, LEED AP+
Storm Water Quality Engineer
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