MEMO

TO: Matthew Holcombe, MS4 Stormwater Program Coordinator, ADOT

FROM: Julia Manfredi, Vice President, Environmental Scientist, WSP

SUBJECT: ADOT Post-Construction Stormwater Retrofit Program Support

DATE: September 14, 2026

1. INTRODUCTION

WSP is pleased to submit this Memorandum to the Arizona Department of Transportation (ADOT) Environmental Planning Water Resources group to provide support of program compliance with Section 4.10 of ADOT's 2021 Municipal Separate Storm Sewer System (MS4) Permit (AZS0000018-2021) (Permit) for Post-Construction Stormwater Controls. This memorandum describes the process under which projects are established and delivered at ADOT and the approach used to apply Permit requirements to assess ADOT retrofit projects within those processes.

In support of this effort, WSP performed the following tasks:

- Assessed and identified an inventory of retrofit projects for the 2025-2026 permit year using existing criteria set in the assessment for the 2024-2025 permit year (including that required by MS4 Permit Section 4.10.A.2. and criteria that fit within current ADOT processes);
- Identified the status of projects outlined in stormwater-related planning studies; and
- Created a ranked list of projects based on identified criteria (including that required by MS4 Permit Section 4.10.A.2.b and that fit ADOT processes) using existing prioritization criteria.

2. BACKGROUND OF ADOT'S PROJECT DELIVERY PROCESS

A goal of this retrofit assessment, as part of the ADOT post-construction stormwater quality control program, is to integrate it into the existing ADOT Project Delivery Process to the furthest extent possible. The process is split into four phases: Project Planning and Programming; Project Design; Project Construction; and Operation and Maintenance.

In the Project Planning and Programming Phase of ADOT's Project Delivery Process, proposed projects are pre-scoped and evaluated for funding and programmed into ADOT's 2027-2031 Five-Year Transportation Facilities Construction Program (Five-Year Program)[1]. In the traditional Project Design Phase, the programmed projects go through the stages of design, environmental clearances, utility clearances, right-of-way clearances, and are then advertised and awarded to

[1] Arizona Department of Transportation (ADOT) 2027-2031 Five Year Transportation Facilities Construction Program, 2026. https://azdot.gov/sites/default/files/2026-06/Final_2027-2031_Program.pdf

the selected contractor(s). The projects then move into the Project Construction Phase where they are constructed and completed. Finally, in the Operation and Maintenance Phase, system operation and maintenance is primarily handled by ADOT Districts.

During the Project Planning and Programming Phase, potential projects go through the Planning to Programming (P2P) Process which scores them based on technical, policy, safety, and ADOT District considerations. These considerations include much of the prioritization criteria required by the Permit. This scoring system informs ADOT's Five-Year Program and identifies projects that are prioritized for funding, development, and construction. Within the program, projects are categorized as system preservation, expansion, modernization, or administration. Expansion and modernization projects are considered new developments or redevelopments under the definition provided in the ADOT MS4 Permit.

During the P2P Process, ADOT utilizes their Statewide Stormwater & Erosion Control Study[2], which is used to develop prioritization models, project scoping elements, and planning costs for prioritized projects in each ADOT District. The study identified and prioritized statewide stormwater management and erosion control needs for initial planning purposes. Additionally, it delivered a data model that operates within a defined project prioritization framework to provide ADOT with a quantitative, comprehensive, systematic, and replicable approach to augment stormwater management activities. This information is used to make a prioritized program of projects to incorporate into the annual P2P Process in support of ADOT's Five-Year Program.

Once the project moves into the Project Design Phase, additional criteria are applied to the design process to determine the specific details of the project. During this process, engineers and the Design Project Manager work to assess the specific project location and the type of permanent stormwater quality control needed.

After the design phase, the project moves into the Construction Phase, followed by the Operations and Maintenance phase. These two phases incorporate tools for compliance with Section 4.10.B of the Permit and are not discussed in context of the retrofit assessment in this Memorandum.

3. DEFINITION OF RETROFIT

The definition of retrofit as it applies to ADOT's MS4 Program is as follows:

> *"Stormwater Retrofit Controls incorporate stormwater permanent best management practice installation in the ADOT highway system where none previously existed, or improvement/upgrade of existing conditions to improve water quality in or adjacent to ADOT right-of-way. Stormwater retrofit projects are those that will be incorporated into ADOT expansion or modernization (redevelopment) projects as part of project planning and development."*

A stormwater project alone is unlikely to initiate retrofit development, but retrofit needs can be met though projects planned as part of ADOT's mission. As such, ADOT's Five-Year Program serves as a foundation for identifying and prioritizing retrofit projects.

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[2] Arizona Department of Transportation (ADOT), Statewide Stormwater & Erosion Control Study, 2020. https://azdot.gov/statewide-stormwater-erosion-control-study

4. ASSESSMENT OF STORMWATER RETROFIT PROJECTS – PERMIT SECTION 4.10.A.2.A

Section 4.10.A.2.a of the Permit requires ADOT's assessment of retrofit projects to include an inventory of potential retrofit locations and/or projects.

As part of this assessment, WSP evaluated and combined the criteria listed in Table 1 below with the processes that ADOT already uses within their Project Delivery Process to evaluate project needs.

ADOT's criteria to identify projects is based initially on the projects identified in the current ADOT Five-Year Program. Additionally, WSP reviewed the 2020 Statewide Stormwater & Erosion Control Study to verify incorporation into the P2P Process and support retrofit assessment project identification.

Table 1 below lists criteria for the identification of potential retrofit locations based on requirements in Section 4.10.A.2.a, and the information used to identify these locations based on the applicability to ADOT's MS4 Program and Project Delivery processes. Location assessments were conducted using Geographic Information Systems (GIS). The criteria below were spatially overlayed onto ADOT's Five-Year Program to assess the location of projects already programmed, as well as their presence in ADOT's Statewide Stormwater & Erosion Control Study. WSP compared the GIS layer provided by ADOT with the final Five-Year Program document to ensure that all programmed projects were included in the GIS data layer. WSP then compared the projects identified as fitting any of these criteria to those listed as priority in the Statewide Stormwater & Erosion Control Study.

Table 1 – Assessment Criteria of Potential Retrofit Locations

ADOT MS4 Permit Section 4.10.A.2.a Criteria	Incorporation of Criteria through ADOT MS4 Program and Project Programming and Delivery Processes
Locations that contribute to highway transportation-related pollutants of concern to a local agency municipal separate storm sewer system	Discharges to an adjacent Municipal Separate Storm Sewer System; Discharges to ADOT Priority Outfall Locations
Locations that contribute to highway transportation-related pollutants of concern to an impaired or not-attaining waterbody or OAW, and	Discharges into an Impaired, Outstanding Arizona Waters (OAW), Not-Attaining waters. This criterion incorporates locations where the project limits drain within ¼ mile of these waters and a protected surface water or Water of the United States; Discharges to ADOT Priority Outfall Locations
Locations with significant erosion that contribute highway transportation-related pollutants of concern to protected surface waters.	Identified in the 2020 Statewide Stormwater & Erosion Control Study. This criterion is included to capture previous work conducted by ADOT's Multi-modal Planning Division for inclusion in ADOT's Planning to Programming (P2P) efforts which inform the Five-Year Program. This study captures locations of significant erosion in ADOT's highway system and includes consideration of known impacts to adjacent landowners.

A summary of the 110 projects meeting the assessed criteria is outlined in Table 2 below. The most current comprehensive inventory is included in the Microsoft Excel Attachment of this memorandum under the spreadsheet tab titled, "RetrofitAssessmentProjectList."

Table 2 – Projects Meeting the Assessed Permit Section 4.10.A.2.a Criteria

Priority Rank	Retrofit Assessment Criteria					Number of Criteria Met	Total Projects Meeting the Identified Criteria
	5-Year Plan	ADEQ Protected Surface, OAW/Impaired	Discharges to Adjacent MS4	Priority Outfall	Erosion Control Study		
1	X	X	X	X	X	5	0
2	X	X	X	X		4	1
3	X		X	X	X	4	0
4	X		X	X		3	8
5	X	X	X			3	2
6	X	X		X		3	2
7	X			X		2	2
8	X	X				2	4
9	X		X			2	47
10	X				X	2	5
11	X					1	39

5. DEVELOPMENT OF A PRIORITIZED RANKING OF INVENTORIED RETROFIT LOCATIONS – PERMIT SECTION 4.10.A.2.B

This priority ranking happens at the following two stages in ADOT's Project Delivery Process:

1. As part of MS4 Program management, the assessment discussed above is completed annually, and projects are further identified and ranked based on project category.
2. The criteria listed in Section 4.10.A.2.b of the Permit are evaluated during project design using the ADOT Post-Construction Best Management Practices Manual[3] and the use of other implementation tools currently being established.

Each of these stages are described further in the sections below.

5.1 STAGE 1

As part of the first stage, WSP assessed and identified a list of projects from ADOT's Five-Year Program that meet the criteria in Section 4.10.A.2.a of the Permit. These projects are identified by ADOT as projects administered for other local public agencies, as system preservation projects, as system modernization projects, or as system expansion projects. For the priority ranking under Section 4.10.A.2.b of the Permit, WSP further refined the list of assessed projects to include only those that are listed as system modernization or system expansion projects (meeting the definition of new development or redevelopment under the Permit) and bridge projects. Bridge projects are listed in the Five-Year Program as preservation projects but may include bridge replacement and expansion making them potential candidates for stormwater

[3] Arizona Department of Transportation (ADOT), Post-Construction Best Management Practices Manual for Water Quality, 2016. https://azdot.gov/sites/default/files/2019/06/post-construction-best-management-practices-%28bmp%29-manual.pdf

retrofit. Any bridge project that included replacement, rehabilitation, and expansion are potential candidates and thus were included. Bridge projects that were pavement preservation only were not included. Projects administered for local public agencies were removed because they are not within ADOT's MS4. Pavement preservation projects were removed because they do not meet the definition of new development or redevelopment, and the scope and funding of the projects do not allow for retrofits to be included.

As the next step in developing the ranking inventory and prioritizing system modernization, expansion, and bridge projects, WSP re-applied the assessment criteria used in compliance with Section 4.10.A.2.a of the MS4 Permit. WSP identified the projects meeting these criteria and developed a ranking system, as shown in Table 3 below. Projects meeting all five criteria were identified as highest priority (Rank 1). Projects meeting four or three criteria were identified as moderate priority (Rank 2-6), and projects meeting two or one criteria were ranked lowest (Rank 7-11). 110 total projects were included in this ranking. The results of this assessment are summarized below in Table 3. The full listing is included as an attachment to this memo (Excel tab titled, "RankedProjectsList").

Table 3 – Retrofit Priority Ranking of Modernization, Expansion, and Bridge Preservation/Rehabilitation Projects in ADOT's 2027-2031 Five-Year Program (Prior to Evaluation During Design)

Priority Rank	Retrofit Assessment Criteria					Number of Criteria Met	Total Projects Meeting the Identified Criteria
	5-Year Plan	ADEQ Protected Surface, OAW/Impaired	Discharges to Adjacent MS4	Priority Outfall	Erosion Control Study		
1	X	X	X	X	X	5	0
2	X	X	X	X		4	1
3	X		X	X	X	4	0
4	X		X	X		3	8
5	X	X	X			3	2
6	X	X		X		3	2
7	X			X		2	2
8	X	X				2	4
9	X		X			2	47
10	X				X	2	5
11	X					1	39

5.2 STAGE 2

In the second stage of prioritization, the specific evaluation criteria listed in Section 4.10.A.2.b. of the Permit and the ADOT Post-Construction Best Management Practices Manual are evaluated as part of Project Design. This includes an evaluation of:

1. Stormwater pollutant control measures
2. Feasibility
3. Right-of-Way availability
4. Cost effectiveness
5. Roadway area potentially treated
6. Maintenance requirements

These criteria are incorporated into an evaluation process conducted by the project design team (using tools specifically developed to document this evaluation) to be completed by the 60% design stage. After each project is evaluated to ensure it meets the design criteria, ADOT Water Resources is notified of its status and can track its progress through construction completion. These projects are identified as the evaluation is completed on a project-by-project basis.

6. POTENTIAL EROSION CONTROL

While completing this assessment, WSP identified three potential projects that are within 0.5 miles of an Erosion Control Study site. These projects do not overlap areas identified in the Erosion Control Study; however, the close proximity could have potential to be included in the project. The projects are listed below:

- I-19 Ruby Road Bridge (#01240) over Potrero Creek and Union Pacific Railroad (ADOT ID; 103438): Within 0.4 miles of the Southcentral Erosion Project F
- Ash Fork ATSF RR OPEB & Ash Fork Ramp B (OR Ash Fork bridges #807 & #1767) (ADOT ID; 105018): within 0.2 miles of the Northwest District project A
- E Holbrook TI OP EB #1369/WB#1370 (ADOT ID: 103673): within 0.13 miles of the Northeast Erosion Project J

7. CONCLUSION

This assessment supports and demonstrates the implementation of a post-construction (permanent) retrofit program for stormwater quality control measures, which will lead to improved tracking of water quality control measures, maintenance, and compliance management.

ATTACHMENT

As one MS Excel File:
Retrofit Assessment Project List (Permit Section 4.10.A.2.a.)
Ranked Projects List (Permit Section 4.10.A.2.b)