



Memorandum

DATE: June 10, 2020

TO: Stan Gryczko, City of Davis

SUBJECT: City of Davis – Comprehensive Stormwater/Drainage Rate Study

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1. INTRODUCTION

In response to the federal Clean Water Act (CWA) amendment of 1987 to address urban stormwater runoff pollution from Municipal Separate Storm Sewer Systems (MS4s), and the federal National Pollutant Discharge Elimination System (NPDES) regulations, the State Water Resources Control Board (State Water Board) issued a Phase II Small Municipal Separate Storm Sewer System (MS4) General Permit¹ (Phase II Permit) to the City of Davis (City) in 2003. This permit was subsequently renewed in 2013.²

The Phase II Permit regulates stormwater and non-stormwater discharges from the City's MS4 and requires implementation of/compliance with the following key components:

- Program Management (E.6)
- Education and Outreach Program (E.7)
- Public Involvement and Participation Program (E.8)
- Illicit Discharge Detection and Elimination (E.9)
- Construction Site Stormwater Runoff Control Program (E.10)
- Pollution Prevention/Good Housekeeping (E.11)
- Post Construction Stormwater Management Program (E.12)
- Water Quality Monitoring (E.13)

¹ NPDES Permit No. CAS000004, Order No. Order 2003-0005-DWQ

² State Water Resources Control Board Water Quality Order No. 2013-0001-DWQ National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000004 Waste Discharge Requirements (WDRS) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) (Phase II MS4 Permit)

- Program Effectiveness Assessment and Improvement (E.14)
- Total Maximum Daily Loads Compliance Requirements (E.15)
- Annual Reporting Program (E.16)

The City implements the stormwater program within its jurisdiction. Over the years, the range of actions and necessary level of effort to implement the stormwater program has increased in response to the evolving regulatory requirements and community needs.

The purpose of this Technical Memorandum (TM) is to present the results of a planning-level cost estimate that has been developed to identify the full costs of implementing the stormwater program by the City over the next ten years. The results of this analysis may be used to support an evaluation of the need for and feasibility of a stormwater utility or other fee-based options. The cost estimate includes a summary of current year (FY 19-20) and future projected (FY 20-21 through FY 29-30) implementation costs of the stormwater program and is accompanied by an Excel spreadsheet-based model.³

This memorandum is organized as follows:

1. Introduction
2. Approach
3. Results and Discussion
 - 3.1 Summary of Costs
 - 3.2 Detailed Costs

2. APPROACH

In order to understand the funding needs for the stormwater program, the costs for full implementation of the permit requirements must be understood and compiled. However, tracking and compiling staff time and resources across multiple departments and budget funds and accounts can be a complex and time-consuming process. To identify the implementation costs for the City as comprehensively and efficiently as possible, an interview was conducted with key staff that included structured questions and discussions regarding the agency's staffing, implementation approach(es) for the range of permit requirements, and the estimated costs for program implementation and compliance. *It should be noted that the costs described within this TM are for the regulatory, programmatic staff, and resource needs to manage and comply with the Phase II Permit. These costs do not include ancillary operations and maintenance (O&M) costs or capital improvement costs⁴.*

³ The City does not have a dedicated source of revenue for stormwater programmatic costs (i.e., regulatory, operations and maintenance). The City does have various potential sources of revenue for capital improvement project (CIP) costs, which are not detailed in this technical memorandum.

⁴ The O&M and CIP related costs are summarized in a separate TM.

3. RESULTS AND DISCUSSION

A summary of the total City costs for full implementation of the stormwater program during the current year (FY 19-20), and future years (FY 20-21 through FY 29-30), is provided within this section. The information is presented in two ways: a summary of City revenues and costs (**3.1. Summary of Costs**) and a detailed breakdown of costs (**3.2. Detailed Costs**). The approach and assumptions used to develop each of these summaries are described below. All costs are in present-value dollars.

3.1. Summary of Costs

Costs for the current and projected full implementation of the stormwater program were estimated based on budgetary and supplemental information provided by the City, as well as best professional judgement regarding future, anticipated requirements. The costs were compiled and organized by:

- Existing Identified Expenses, including the Phase II permit fees and baseline costs for the management and implementation of the program, which includes all “regulatory” portions of the stormwater program.
 - The baseline costs were identified by the estimated amount of time spent by City personnel conducting the related regulatory activities within each fund [Fund 541 (Programs 7411, 7414, and 7715), Fund 544 (Program 7730)]⁵.
 - The percent of time spent within each program fund by each position was identified by the City, and the resulting hours (a percentage of 2080 hours was assumed for full time employees, and of 1040 hours for part time employees) were further divided by the City into the percent of time spent on direct costs, O&M, and CIP. The FY 19-20 Step 5 (maximum level) fully burdened hourly rates were assumed for each personnel position. The baseline current cost for FY 19-20 was calculated as the sum of the regulatory costs for each personnel position.
 - Other operating costs were calculated as 21.74% of the baseline costs.
- Additional Needs, including current and future anticipated needs.
 - The current identified implementation needs are related to Phase II Permit components (e.g., illicit discharge detection and elimination, construction, annual reporting) as well as currently adopted and effective additional regulatory requirements (Statewide Trash Amendments).
 - Future anticipated needs include additional requirements pursuant to the renewal of the Phase II Permit as well as the adoption of the Pyrethroid Pesticides Total Maximum Daily Load (TMDL) and Basin Plan Amendment.

⁵ Regulatory activities were identified across all four programs (7411, 7414, 7715, and 7730), with additional support from operations and maintenance (O&M) and CIP activities within program 7730 and O&M within program 7715.

In addition, a 2.78% annual escalation factor⁶ was included for specific costs starting in FY 20-21. The escalation factor was calculated using information provided by the City and is the weighted average of the specific annual escalators for each aspect of personnel costs (e.g., salary, retirement, leave, health insurance) and other operating costs.

The Existing Identified Expenses for FY 19-20 and the Additional Needs for FY 20-21 through FY 29-30 are summarized in **Table 1** and **Figure 1**. Below are a few key observations regarding the overall estimated costs:

- In FY 20-21, the *Additional Needs* represent a 71% increase above the *Existing Identified Expenses*. In FY 21-22 through FY 29-30, the *Additional Needs* represent a 73% increase (on average) above the *Existing Identified Expenses* (**Table 1**).
- Based on the information available and the assumptions made, between FY 19-20 and FY 29-30, the total cost of the stormwater program may increase significantly (i.e., from \$516,000 to \$1,167,000) (**Table 1** and **Figure 1**).
 - Between FY 19-20 and FY 20-21, a significant increase in the total cost of the stormwater program is anticipated to occur due to the *Additional Needs*. This increase is based on a thorough evaluation of the City personnel costs required to implement the current Phase II Permit provisions.

⁶ Since the permit fee is based on the City's population from the most recently published U.S. Census, it is not subject to the percent increase.

Table 1. Summary of Total Estimated Costs for Stormwater Program, by Cost Category and Fiscal Year

Cost Category	Current	Projected Future									
	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30
Existing Identified Expenses	\$516,470	\$530,235	\$544,382	\$558,923	\$573,867	\$589,227	\$605,015	\$621,241	\$637,918	\$655,058	\$672,676
Additional Needs											
Current Additional Needs	\$0	\$355,895	\$299,760	\$308,093	\$316,658	\$325,461	\$334,509	\$343,808	\$353,366	\$363,190	\$373,287
Future Anticipated Needs	\$0	\$18,261	\$97,224	\$99,927	\$102,705	\$105,560	\$108,495	\$111,511	\$114,611	\$117,797	\$121,072
Total Additional Needs	\$0	\$374,156	\$396,984	\$408,020	\$419,363	\$431,022	\$443,004	\$455,320	\$467,977	\$480,987	\$494,359
Total Regulatory Expenses^[a]	\$516,000	\$904,000	\$941,000	\$967,000	\$993,000	\$1,020,000	\$1,048,000	\$1,077,000	\$1,106,000	\$1,136,000	\$1,167,000

[a] Rounded values.

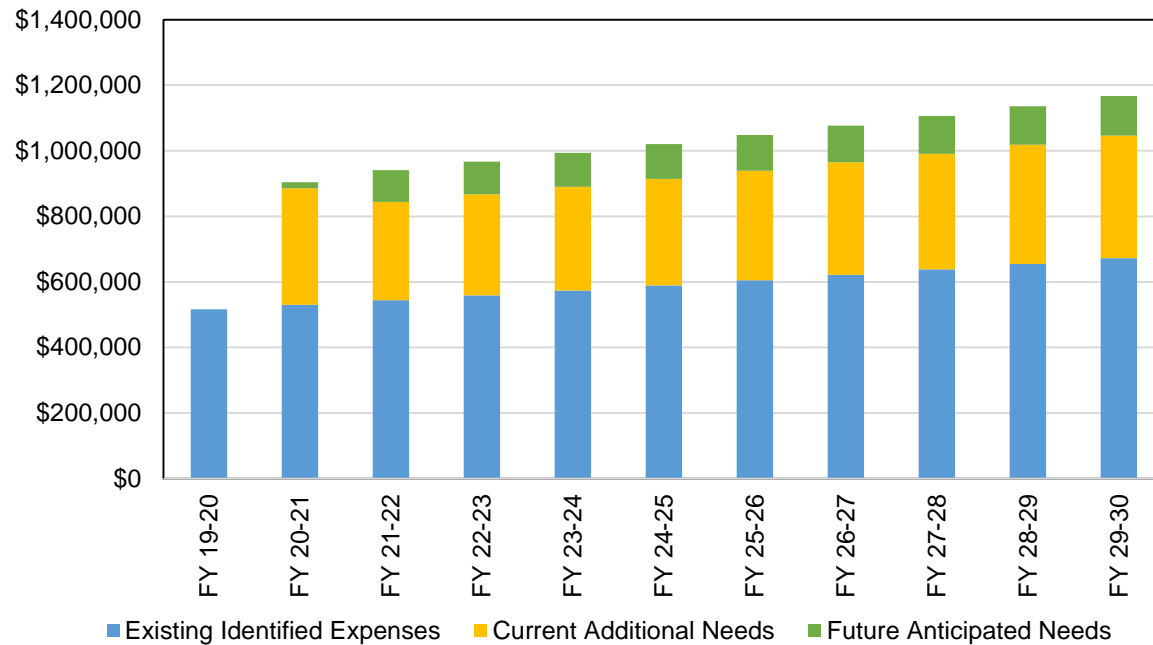


Figure 1. Total Estimated Costs for Stormwater Program, by Cost Category and Fiscal Year

3.2. Detailed Costs

Costs for stormwater program implementation for the Phase II Permit were estimated based on budgetary and supplemental information provided by the City, as well as estimates for the anticipated future costs. The approach and assumptions used were as follows:

- Information used to determine the Existing Identified Expenses shown in **Table 2** was primarily provided by the City during the interview and follow-up communications.
 - The stormwater permit fee is determined by the California Code of Regulations (CCR) Fee Schedule for NPDES Storm Water Fees.⁷ The fee is based on the population from the most recently published United States (U.S.) census, which was 2010. The City is in one bracket (population between 50,000 and 74,999) based on the 2010 U.S. Census, and the most recent estimate (2018) places the City in the same bracket. Thus, it can reasonably be assumed that the City's fee will remain at \$21,344 after the 2020 U.S. Census is published, and minor adjustments the regulatory authorities may make to that amount are not expected to be significant.
- Additional Needs identified are shown in **Table 2** and are as follows:
 - Current Additional Needs
 - Beginning with FY 20-21, costs for ongoing stormwater program implementation activities not included in existing costs were identified. These include:
 - Implementation costs related to Phase II Permit provisions, including illicit discharge detection and elimination, construction, and annual reporting.
 - Implementation costs associated with the requirements of the Statewide Trash Amendments, in particular, the City's *Track 2 – Implementation Plan for the State Water Resources Control Board's Trash Amendments*.
 - Costs were allocated to FY 20-21 for specific one-time activities associated with implementing the Statewide Trash Amendments that are not included in existing expenses. These costs are higher in FY20-21 then reduced to a lower ongoing value.
 - Future Anticipated Needs included the following:
 - Costs related to the requirements of the Basin Plan Amendment (BPA) for the Control of Pyrethroid Pesticide Discharges⁸, including the development and implementation of a Pyrethroid Management Plan.

⁷ 23 CCR § 2200. Annual Fee Schedules

⁸ Central Valley Regional Water Quality Control Board, Resolution R5-2017-0057. Basin Plan Amendment (BPA) for the Control of Pyrethroid Pesticide Discharges. Approved by OAL on February 19, 2019. Available at: https://www.waterboards.ca.gov/rwqcb5/water_issues/tmdl/central_valley_projects/central_valley_pesticides/pyrethroid_tmdl_bpa/

- Costs associated with the renewal of the Phase II Permit were estimated using best professional judgment, assuming that the renewal would result in increased and/or new requirements that would require additional funds. These costs were estimated at 15% of the baseline current costs (estimated at \$64,445, beginning in FY 21-22).
- Future cost projections were based on the Existing Identified Expenses (from FY 19-20), Additional Needs (from the years they began, primarily FY 20-21), and an annual escalation factor of 2.78%, to account for inflation/cost of living increases and other operating costs. The costs that were affected by the 2.78% annual escalation factor are shaded purple in **Table 2**.
 - No future cost projections were made for the one-time additional costs in FY 20-21 associated with the Statewide Trash Amendments.
- Other operating expenses were calculated as 21.74% of personnel costs for all categories, based on the percentage of the calculated operating expenses for Fund 7730 (\$64,178, not including the permit fee) out of total costs (\$380,762). Other operating expenses in Fund 7730 included O&M, contracts and professional services, and inter-department transfers.

Table 2. Detailed Costs for Stormwater Program, by Cost Category and Fiscal Year

Cost Category	Current		Projected Future ^[a]								
	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30
Existing Identified Expenses											
Phase II Permit											
Phase II Permit fees ^[b]	\$21,344	\$21,344	\$21,344	\$21,344	\$21,344	\$21,344	\$21,344	\$21,344	\$21,344	\$21,344	\$21,344
Baseline Costs ^[c]	\$406,708	\$418,015	\$429,635	\$441,579	\$453,855	\$466,472	\$479,440	\$492,769	\$506,468	\$520,547	\$535,019
Other Operating Costs ^[d]	\$88,418	\$90,876	\$93,403	\$95,999	\$98,668	\$101,411	\$104,230	\$107,128	\$110,106	\$113,167	\$116,313
Total Existing Identified Expenses	\$516,470	\$530,235	\$544,382	\$558,923	\$573,867	\$589,227	\$605,015	\$621,241	\$637,918	\$655,058	\$672,676
Additional Needs											
Current Additional Needs^[e]											
Phase II Permit											
Environmental Resources Specialist for Discharge Prohibitions (10% FTE) ^[f]	-	\$17,680	\$18,172	\$18,677	\$19,196	\$19,730	\$20,278	\$20,842	\$21,421	\$22,017	\$22,629
Construction Inspector (100% FTE) ^[f]	-	\$176,800	\$181,715	\$186,767	\$191,959	\$197,295	\$202,780	\$208,417	\$214,211	\$220,166	\$226,287
Assistance with Annual Reporting (20% FTE) ^[f]	-	\$35,360	\$36,343	\$37,353	\$38,392	\$39,459	\$40,556	\$41,683	\$42,842	\$44,033	\$45,257
Statewide Trash Amendments ^[g]	-	\$62,500	\$10,000	\$10,278	\$10,564	\$10,857	\$11,159	\$11,469	\$11,788	\$12,116	\$12,453
Other Operating Costs ^[d]	-	\$63,555	\$53,530	\$55,018	\$56,548	\$58,120	\$59,736	\$61,396	\$63,103	\$64,857	\$66,661
Total Current Additional Needs	\$0	\$355,895	\$299,760	\$308,093	\$316,658	\$325,461	\$334,509	\$343,808	\$353,366	\$363,190	\$373,287
Future Anticipated Needs^[h]											
Pyrethroid Pesticides TMDL and Basin Plan Amendment	-	\$15,000	\$15,417	\$15,846	\$16,286	\$16,739	\$17,204	\$17,682	\$18,174	\$18,679	\$19,199
Renewed Phase II Permit Requirements (15% of baseline current costs)	-	\$0	\$64,445	\$66,237	\$68,078	\$69,971	\$71,916	\$73,915	\$75,970	\$78,082	\$80,253
Other Operating Costs ^[d]	-	\$3,261	\$17,362	\$17,845	\$18,341	\$18,851	\$19,375	\$19,913	\$20,467	\$21,036	\$21,621
Total Future Anticipated Needs	\$0	\$18,261	\$97,224	\$99,927	\$102,705	\$105,560	\$108,495	\$111,511	\$114,611	\$117,797	\$121,072
Total Additional Needs	\$0	\$374,156	\$396,984	\$408,020	\$419,363	\$431,022	\$443,004	\$455,320	\$467,977	\$480,987	\$494,359
Total Regulatory Expenses (Rounded)	\$516,000	\$904,000	\$941,000	\$967,000	\$993,000	\$1,020,000	\$1,048,000	\$1,077,000	\$1,106,000	\$1,136,000	\$1,167,000

[a] Light purple shading indicates that an annual escalator of 2.78% was applied to estimate inflation. This value was determined using information provided by the City and is considered to be the weighted average of the specific annual escalators for each aspect of personnel costs (e.g., salary, retirement, leave, health insurance) and other operating costs.

[b] Permit fees were determined by the California Code of Regulations (CCR) Fee Schedule for NPDES Storm Water Fees (23 CCR § 2200. Annual Fee Schedules) and the population from the most recently published United States (U.S.) census, which was 2010.

[c] Calculated from fully burdened hourly rates at the Step 5 level (per the Excel file provided by the City, "Labor Rates Step 5 April 2020") and the percent of each position's annual hours spent on regulatory activities from each fund.

[d] Other operating costs are calculated as 21.74% of personnel costs for that category.

[e] Additional expenses were identified by the City through the interview process with LWA and via review of the City's Trash Implementation Plan.

[f] FTE: Full Time Employee, assuming \$85/hour fully burdened rate.

[g] Compliance with the Trash Implementation Plan requires two additional assessment field personnel and a designated office person as point-of-contact (from the *Track 2 – Implementation Plan for the State Water Resources Control Board's Trash Amendments*, City of Davis' Public Works Department Environmental Resources Division, December 2, 2018, Revised March 21, 2019). The City estimates this cost at between \$50,000-\$75,000 for the first year and \$10,000 for subsequent years, subject to the annual escalator.

[h] Future anticipated needs are based on best professional judgment.