CITY OF DAVIS

DRAFT FEE REPORT

STORMWATER FEE

OCTOBER 2020

PURSUANT TO THE ARTICLES XIIIC & D OF THE CALIFORNIA CONSTITUTION, AND THE GOVERNMENT CODE SECTIONS 38900 – 38901 ET AL.

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INTRODUCTION

OVERVIEW

The City of Davis ("City") has engaged SCI Consulting Group to study, make recommendations, and assist in the implementation of a funding approach for its municipal separate storm sewer system[1] ("MS4") including environmental programs, maintenance and operations, capital improvements, and compliance with all state and federal regulations associated with the National Pollutant Discharge Elimination System[2] ("NPDES") permit.

In the early 1990s the City established its first storm drainage fee. Since that time the City has operated its MS4 as a municipal utility akin to its water and sewer systems, where dedicated revenues are spent on the operations associated with the stormwater enterprise. Subsequently, the City established a second fee, the Storm Sewer Fee, to fund the increasing costs of NPDES compliance. Although the City has no comprehensive asset management plan or master plan, the City's Public Works Department has developed two key planning documents pertaining to its Storm Drainage Program ("Program"). These include the Stormwater and Sewer Stations Assessment (2016) and the Stormwater Operations Assessment Report (2018). These assessments made it clear that the Program would need to expand its levels of service to achieve the goals of responsible environmental stewardship and smart investment in the City's aging infrastructure.

In 2019, the City embarked on a project to consolidate its two existing storm drainage fees into a new, single fee structure in conformance with current law and contemporary rate-setting practices. The new rate structure is intended to establish the current minimum rate revenue needed to ensure the ongoing fiscal requirements of the Program including standard operation and maintenance of the collection system and pump stations, basic repair and replacement needs, capital improvement enhancements, and appropriate reserves.

CITY'S FACILITIES

The City operates and maintains a storm drainage system, as it is empowered to do per Government Code Sections 38900 and 38901. This complex system is comprised of integrated storm drainage pipes, inlets, outfalls, culverts, channels, pump stations, force mains, detention ponds, siphons and access roads to prevent flooding. As the community

[1] In this report, the terms "storm sewer," "storm drainage," "storm protection," and "stormwater" are used interchangeably, and are considered to be synonymous.

[2] Created in 1972 by the Clean Water Act, the NPDES permit program is authorized by the EPA to allow state governments to perform many permitting, administrative, and enforcement aspects of the program.

grew and neighborhoods and business districts expanded, the City's storm drainage system was developed. Parts of the system may date back over 100 years.

In 2003 the State Water Resources Control Board ("State Water Board") issued a Phase II Small MS4 General Permit ("Permit") to the City of Davis, which was renewed in 2013. "This Permit regulates stormwater and non-stormwater discharges from the City's MS4 and requires implementation of eleven key elements. 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."[3]

The operations and maintenance ("O&M") side of the Program has also developed many activities that support clean water goals and maintain the City's aging infrastructure to protect the neighborhoods and businesses from local flooding. On average, the industry-standard life expectancy of a storm drain system is approximately 60 years. The majority of the City's storm drainage pipes were installed more than 50 years ago, leaving the City with a system that is approaching the end of its useful life. At least two of the nine pump stations are more than 60 years old.

The City's complex storm drainage system has evolved to meet the unique needs dictated by the City's flat topography and location near the Yolo Bypass, a large drainage path with a system of weirs that diverts floodwaters from the Sacramento River away from the city of Sacramento and other nearby riverside communities. The system's balance has historically protected the City from flooding from storm runoff. Climate change is bringing about new challenges with a predicted rise in sea level of more than two feet of elevation as well as more frequent and more intense storms. While the City's storm drainage system must adapt to these changes, it alone cannot supply the full scope of remedies to meet these climate change challenges. Therefore, the fee recommendations in this Report will not fully address climate change.

STORMWATER FUNDING BACKGROUND

Since the City established its first storm drainage fee in the early 1990s, the City has used these dedicated revenues to fund the Program. Due to changes in the law the City can no longer increase the fee without the approval of property owners through a ballot measure.[4] For that reason, the storm drain fees have not been increased in nearly 15 years. As a result, the City has needed to limit capital expenditures and keep operations and maintenance activities to a less than desirable level of service, mostly responding to storm-related emergencies and basic regulatory compliance.

[3] From LWA technical memorandum, dated June 10, 2020, found in Appendix A.
[4] This "freeze" on the stormwater fees is due primarily to the stringent requirements of Proposition 218 for a ballot measure to increase fees. See next section for more details.

The scale and projected needs of the storm drainage system point toward the need for asking property owners to approve an increase in storm drainage fees in order to ensure a dedicated and sustainable funding stream. As many other municipalities in California have done, the City of Davis is considering developing a new, more secure and predictable source of funding for the Program. This Fee Report is the first step in that process, should the City decide to proceed.

LEGAL REQUIREMENTS OF STORMWATER FEES

This Report calculates the Stormwater Fee as a property-related fee. Property-related fees are subject to the requirements of Articles XIIIC and D of the State Constitution, which were approved by voters in 1996 through Proposition 218, as well as the Proposition 218 Omnibus Implementation Act (Government Code Sections 53750 – 53758).

Any property-related fee must comply with requirements of Article XIIID, Section 6. These include the following:

- Revenues derived from the fee shall not exceed the funds required to provide the property-related service;
- Revenues derived from the fee shall not be used for any purpose other than that for which the fee was imposed;
- The amount of a fee upon any parcel or person as an incident of property ownership shall not exceed the proportional costs of the service attributable to the parcel;
- No fee may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question. Fees based on potential or future use of service are not permitted. Standby charges, whether characterized as charges or assessments, shall be classified as assessments and shall not be imposed without compliance with the assessment section of the code; and
- No fee may be imposed for general governmental services including, but not limited to, police, fire, ambulance or library services where the service is available to the public at large in substantially the same manner as it is to the property owners.

The procedural requirements of Proposition 218 require that new or increased property-related fees submit to the following two-step process: 1) a 45-day public protest period culminating in a public hearing, and 2) a ballot proceeding whereby it must be approved by a 50% simple majority of property owners (or a two-thirds supermajority of registered voters) before new or increased fees could be authorized. However, fees for water, sewer and refuse collection were exempt from the second step. In the years following the passage of Proposition 218, there was uncertainty whether stormwater fees qualified as a type of sewer fee and therefore were not subject to the ballot proceeding requirement. The California Sixth

Appellate District Court clarified the question in a 2002 ruling[5] that found stormwater fees did not qualify as a type of sewer fee, and new or increased fees must be approved through a ballot proceeding. Subsequent to that date, the City Davis did not authorize any further inflation adjustments.

FACILITIES AND SERVICES

The City operates and maintains a municipal separate storm sewer system within the City's boundaries. The system is made up of man-made drainage systems including, but not limited to, curbs and gutters, integrated storm drainage pipes, inlets, outfalls, culverts, channels, pump stations, force mains, detention ponds, siphons and access roads. The system serves the entire City.

The primary storm drainage service provided by the City is the collection, conveyance, and overall management of stormwater and non-stormwater runoff from parcels. By definition, all parcels that shed stormwater into the City's system, either directly or indirectly, utilize, or are served by, the City's storm drainage system. The need and necessity of this service are derived from property improvements, which historically have increased the amount of stormwater runoff from the parcel by constructing impervious surfaces such as rooftops, pavement areas, and certain types of landscaping that restrict or retard the percolation of water into the soil beyond the conditions found in the natural, or unimproved, state. As such, open space land (in a natural condition) and agricultural lands that demonstrate stormwater absorption equal to or greater than natural conditions, are not charged a fee. Other vacant land that was once improved or has been prepared for future improvements do not qualify as open space or natural land and will typically be charged a fee.

A critical service provided by management of the City's storm drainage system is compliance with all water quality requirements through the City's NPDES permit. This service ensures that all parcels within the City are monitored and, in some cases, individually regulated to ensure such compliance. This applies to parcels that may drain directly to non-City receiving waters as well as all other parcels in the City. For this reason, all parcels (other than natural open space and qualifying agricultural) are included in the fee structure.

The storm drainage assessment documents referenced above contain thorough sets of maps and lists of various elements within the stormwater system. Those descriptions are the basis for this Report.

[5] Howard Jarvis Taxpayers Association v. City of Salinas, No. H022665.Sixth Dist. June 3, 2002.

FINANCIAL NEEDS AND REVENUE REQUIREMENTS

SUMMARY OF CLEAN WATER AND STORM PROTECTION SYSTEM NEEDS

As part of the fee implementation task, the SCI team conducted an analysis of the City's Stormwater system needs. This analysis included information from several source planning documents as well as recommendations from City staff members.

FINANCIAL STRUCTURE

The City's financial structure includes the following four separate funds for the storm sewer enterprise: 541, 542, 543, and 544 (as shown below in an excerpt from the two year adopted 2019-21 budget, on Page 3-13). Only Funds 541 and 544 are part of this Report; Funds 542 and 543 are only for use with special projects outside the scope of this analysis.

FUND NO	TITLE	WORKING CAPITAL LESS ENCUMB June 30, 2019	FY 2019/20 ADOPTED BUDGET REVENUES	EXPENDITURES	ADJUSTMENTS AND TRANSFERS	WORKING CAPITAL LESS ENCUMB June 30, 2020
	STORM SEWER FUNDS					
541	STORM SWR/DRN - MAINT & OPER	327,748	1,304,988	991,289	(393,625) [1]	247,822
542	STORM SWR/DRN - CAP REPL RESRV	721,265	22,400	1,500,444	393,625 [1]	(363,154)
543	STORM SWR/DRN - CAP EXP RESRV	2,159,357	68,880	65,794		2,162,443
544	STORM SEWER - QUALITY	763,978	626,080	975,724	0	414,334

Within those funds, there are several accounts that track storm sewer financial activity. They are itemized in the Table below, which also shows the budgeted expense for Fiscal Year 2019-20 ("FY 20") for reference. This report does not recommend any changes to this financial structure as it already is established as an enterprise fund within the City's accounting system.

TABLE 1 – FULL LIST OF ACCOUNTS WITHIN STORM SEWER ENTERPRISE (FY 20)

Division	Name	Category	Acct	Budget
Fund 541 - Storm Drainage				
City Manager Office	General Management	O & M	1110	$ 3,750
City Manager Office	Community Info & Outreach	O & M	1115	5,000
Finance Division	Utility Accounting	O & M	2850	59,404
Planning Division	Natural Resources Comm	O & M	3250	398
Parks Divisioin	Street Tree Planting & Mtce	O & M	4486	10,000
Admin Division (E&T)	Public Information	CIP	6155	2,558
Engr Division (E&T)	Preliminary Engineering	CIP	6602	17,543
Engr Division (E&T)	Planning Entitlement	CIP	6605	114
Engr Division (E&T)	Engineering Development	CIP	6642	48,975
Engr Division (E&T)	Public Works Permits	CIP	6643	8,235
Engr Division (E&T)	Mapping	CIP	6660	881
Admin Division (U&O)	General Administration	O & M	7101	56,574
Admin Division (U&O)	Public Works Info Mgt	O & M	7160	26,074
Transportation Division	Corporation Yard Facility	O & M	7244	2,294
Transportation Division	Street Mtce & Repair	O & M	7252	237
Storm Drainage Division	El Macero Mtce District	O & M	7411	95,244
Storm Drainage Division	Storm Drain Facility Mtce	O & M	7414	594,983
Storm Drainage Division	SD Inter-Dept Charges	O & M	7465	36,324
Enviromental Resources	Integrated Pest Management	O & M	7715	14,062
Fleet Services Division	Fleet Purchase and Disposal	O & M	7811	20,000
Fund 541 Total				$ 1,002,650
Fund 544 - Storm Sewer / Quality				
Stormwater	El Macero Mtce District	O & M	7411	$ 110,714
Stormwater	Storm Drain Facility Mtce	O & M	7414	466,721
Stormwater	SD Inter-Dept Charges	O & M	7465	22,496
Environmental Resources	Stormwater Regulatory Mgt	O & M	7730	380,762
Fund 544 Total				$ 980,693
Storm Sewer Enterprise Total (FY 2019-20)				**$ 1,983,343**

PROGRAM REVENUES

The first step of the analysis was to review the revenues available to the City's Program. Based on information from the City's 2019-20 budget, the existing revenues are projected through Fiscal Year 20-21 as shown in the Table below.

TABLE 2 – SUMMARY OF PROGRAM REVENUES

Shown in thousands

Revenue Source	FY 20	FY 21
Storm Drainage Fees	$ 1,235	$ 1,173
Storm Sewer (Water Quality) Fees	610	580
Interest & Other Misc Revenue	86	76
Total Budgeted Revenues	**$ 1,931**	**$ 1,828**

The adopted budget reflects a decrease in projected revenues for FY 21 due to recent impacts from the ongoing COVID-19 pandemic.

A comparison of the total expenses shown in Table 1 and the total revenues in Table 2 reveal a small deficit. With revenue growth limited, this deficit is expected to grow in future years. This is a primary reason for proposing a new fee structure that can be more flexible and better meet future Program needs.

PROGRAM COSTS

The City's Program is influenced primarily by the requirements to prevent local flooding and to comply with the NPDES Permit. Cost estimates were based on budgetary and supplemental information provided by the City including two recent studies:

- Stormwater and Sewer Stations Assessment (2016)
- Stormwater Operations Assessment Report (2018)

In broadly assessing the Program's costs and following the City's current financial structure, the following two main categories were used: Operations and Maintenance ("O&M") Costs, which include NPDES compliance, and Capital Improvement Program ("CIP") costs. These categories reflect how the City generally allocates funds to implement its day-to-day storm drainage-related programs.

SCI worked closely with City staff from both the Engineering Division and the Utilities and Operations Department to develop priorities for a sustainable Stormwater program.

O&M costs are relatively stable from year to year (approximately $2 million annually) and present a firm baseline. However, the SCI Team worked with City staff to evaluate the

activities and identified several areas where levels of service and compliance activities should be increased. When projected forward to FY 22,[6] the operating costs of the Program grow to nearly $3 million.

The Table below shows the budgeted O&M expenditures for FYs 20 and 21 as well as projected costs for FY 22.

TABLE 3 – SUMMARY OF OPERATIONS & MAINTENANCE COSTS

Shown in thousands

Element	FY 20	FY 21	FY 22
Operations & Maintenance			
El Macero Mtce District	$ 206	$ 211	$ 216
Storm Drain Facility Mtce	1,062	1,103	1,134
Stormwater Regulatory	381	387	398
Support Costs	335	312	319
Baseline Subtotal	$ 1,983	$ 2,013	$ 2,067
Add'l Regulatory Needs [A]			397
Add'l Operational Needs [B]			469
Total Operations & Maintenance Costs	**$ 1,983**	**$ 2,013**	**$ 2,934**

A - Taken from LWA memorandum dated 6/10/20 (Appendix A)

B - Derived from Staff interviews, summarized in Appendix B

The Capital Improvement Program ("CIP") costs shown in the Table below are a compilation of priority capital improvement projects or programs derived from the assessments listed above and staff recommendations. The costs for the first four projects were originally estimated in 2016 and included basic design costs. The first step was to escalate those cost estimates using the Construction Cost Index from the Engineering News Record. The second step was to include additional costs for environmental evaluation, permits, construction administration, and project administration. These "soft costs" were assumed to add another 20% to the project total. The final two projects were added as allowances for various studies and assessments[7], and for annual minor projects aimed at making the physical system work more effectively. These projects were planned to be implemented over a ten-year period. A full description of projects is shown in Appendix C.

[6] Fiscal Year 21-22 is the target year since any new fee structure will not be in place prior to that time.

[7] These include: Needs Assessment, Condition Assessment (hydro-jet and CCTV), and Climate Change and Capacity Study.

TABLE 4 – SUMMARY OF PRIORITY CAPITAL IMPROVEMENT PROJECTS / PROGRAMS

Shown in thousands

Projects / Programs	2015-16 Cost	2019-20 Cost		
	Base Costs	Base Costs	Soft Costs	Total Cost
SDS #6 Replacement	$ 1,400	$ 1,602	$ 320	$ 1,922
SDS #3 Replacement	12,200	13,960	2,792	16,752
SDS #5 Raising & Upgrades	5,200	5,950	1,190	7,140
Covell Channel Widening	1,150	1,316	263	1,579
Plans & Studies (Asset, Capacity, Ponds, Basins)				1,000
Annual Misc Upgrades (inlets, trash racks, siphons, sumps)				900
Total Capital Improvement Program	**$ 19,950**	**$ 22,828**	**$ 4,566**	**$ 29,293**

ANNUAL REVENUE REQUIREMENT

Since stormwater fees are subject to voter approval, it is recommended that a fee be structured in the beginning to be sustainable as well as steady over the long term. Unlike other utilities (e.g., water and sewer) where the fees can be reviewed and re-set at five-year (or less) intervals, stormwater fees are better set at an initial level that can be increased annually in accordance with a predetermined formula or index for many years to come. As a result, the revenue requirements must be expressed in annual terms that will reflect future years' needs (with the formulaic adjustments).

While the O&M costs are shown in Table 3 as annual costs, the CIP costs in Table 4 are shown as lump-sum, one-time costs. Therefore, the CIP costs must be annualized. This presents a significant challenge because City staff prefers to execute the primary projects in the first six years. In order to establish rates high enough to pay directly for this approach would likely be 1) too high to gain voter approval, and 2) higher than necessary after the six-year interval. A more common method of financing a front-loaded CIP is to incur debt that would provide early cash for project implementation and be paid back over time. This approach works best within a utility rate structure as it smooths out the cash flow peaks and provides for a steadier rate.

30-YEAR MODEL

In order to model the various options of debt versus pay-as-you-go ("PayGo"), SCI developed a 30-year rate model. This time frame was chosen as it allowed for either long-term debt or multiple shorter-term debt issuances. The 30-year period begins with FY 22 as the earliest time that a new fee structure could be implemented.

The model elements are as follows: two kinds of revenue (user fees and interest/ miscellaneous) and four types of obligations (operating costs, debt service costs, reserves, and PayGo CIP expenses). These are shown in the graphic at the right.

All elements are managed in the model as predetermined calculations with one exception: the PayGo CIP is computed only after all revenues and other obligations are accounted for. In other words, the PayGo CIP is the cushion used to balance each year's figures.

On a parallel track, the overall $29 million CIP is managed in two ways:

- It is reduced each year by the amount of:
  - Debt proceeds available for projects, and
  - PayGo expenditures.
- The remaining balance each year is escalated by the projected rate of change in the Construction Cost Index ("CCI").[8]

The overall goal of the model is for the $29 million CIP balance to be reduced to zero at the end of the 30-year period. This is managed by inputting sufficient revenue in the first year and balancing the debt amounts (and, thus, the debt service amount) to accomplish that goal.

In addition to the primary inputs, there are several assumptions[9] that must be incorporated into the model. These are detailed in the following Table.

[8] The CCI is published by the Engineering News Record.

[9] FINANCIAL ADVICE DISCLAIMER: Any reference to indebtedness is strictly an exercise in engineering economics for the purpose of forecasting revenue requirements in connection to the rate setting process. Neither SCI nor any of its employees are a registered municipal advisor under the SEC rules. This is not a recommendation with respect to any specific municipal financial products or the issuance of any specific municipal securities. In that regard, we 1) are not recommending an action to the City, 2) are not acting as an advisor to the City, and 3) do not owe a fiduciary duty to the City pursuant to Section 15B of the Exchange Act. The City should discuss any information and material contained in this communication with any and all internal or external advisors and experts that the City deems appropriate before acting on this information or material.

TABLE 5 – FINANCIAL PROJECTION ASSUMPTIONS

Escalation Rates		
Revenues	2.60%	Based on Consumer Price Index ("CPI")average over past 30 years, with an annual cap of 3% and "banking" allowed
O & M Costs	2.78%	Based on the "Leland Model" with personnel at 3.26% and other operating costs at 2.0%
CIP Costs	2.60%	Based on Construction Cost Index average over past 30 years
Interest Earned		
Reserve Interest	2.00%	As recommended by City staff
Debt Assumptions		
Interest	4.00%	
Debt Issuance Cost	2.00%	
Debt Reserve Amount		One year's debt service
Debt Service Structure		Level payments
Debt Service Coverage	110%	Ratio of pledged revenue to debt service

This set of assumptions is derived from the following two important City documents: The reserve policy for enterprise funds, and the Leland Model. As applied to Storm Sewer Funds, the three elements of the reserve policy are as follows:

- Operating – a three-month reserve of operation expenses. A figure of 25% of annual operating costs was used.
- Emergency Capital – Annual amount equal to the five-year average PayGo CIP expenditures. Due to fluctuations in the CIP amounts, a starting figure of $1 million was used. This was increased in certain scenarios when PayGo CIP expenditures increased significantly.
- Rate Stabilization – 5% of annual operating revenue.

For use in the 30-year model, the Operating and Rate Stabilization reserves were combined into a single amount of (25% + 5% =) 30% of operating costs. The full reserve policy can be found in Appendix D.

The Leland Model was developed to provide the City with a financial model for general fund expenditures. Recent utility cost of service studies have used the escalation rates from the general fund model (where applicable) to remain as consistent as possible across the City's funds. These were useful in establishing the escalation rate for operating expenditures in the 30-year model. The recommendations for personnel costs such as salaries and benefits were applied to the 7714 account (as the largest and most representative account in the Storm Sewer Funds) to compute a blended rate, which was computed as 3.26% per year. Other operating costs were assigned a 2% escalation rate based on the discretionary nature of many of those costs. When those two escalation rates were applied to the overall expenditures, the final blended escalation rate for all operating costs was 2.78%.

A question that arises about taking on municipal debt is that of added cost. To evaluate the impact of debt costs, SCI initially ran four debt models:

A. $20 million debt, 30-year term, remainder as PayGo
B. $10 million debt, 30-year term, remainder as PayGo
C. Two succeeding 10-year debts ($6 and $7 million), remainder as PayGo
D. No debt – all PayGo

As expected, the larger the debt, the higher the rate needed to be to pay for it. However, the spread between the $20 million debt and no debt options was only 3%. This is primarily due to how close the debt interest rate (4%) was to the rate of construction cost escalation (2.6%). Further, the debt interest rate is likely more conservative than necessary. As the debt interest approaches the value of the CIP escalation, the smaller the variations in revenue requirements. The conclusion is that the rates are not very sensitive to whether, and how much, debt is taken on in the future. This allows the City the flexibility of deferring the answer to that question until a future time.

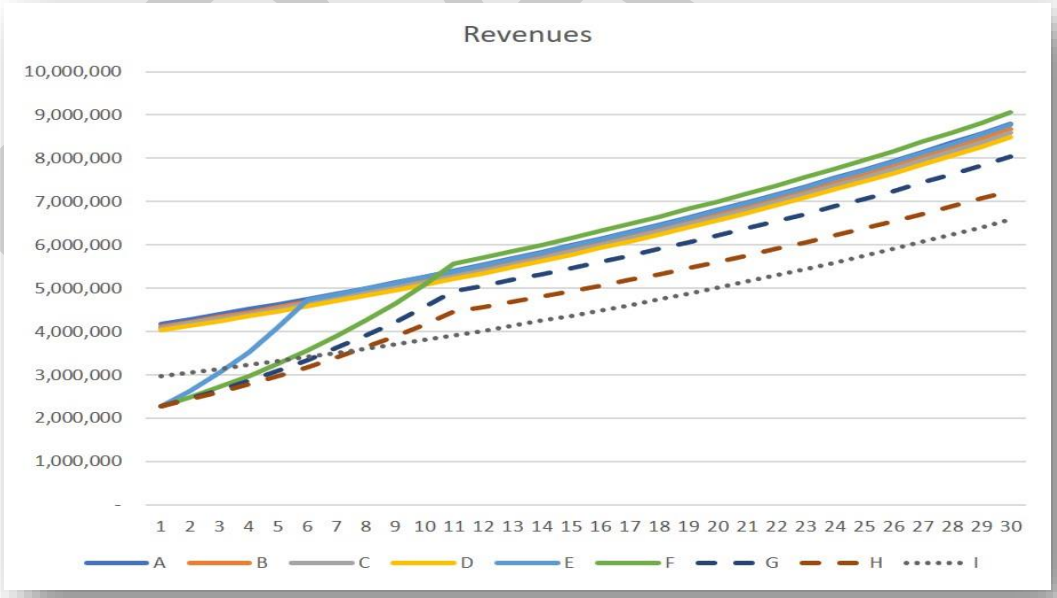
REVENUE REQUIREMENT FINDINGS

For the four scenarios listed above, the FY 22 revenue requirement ranged from $4.03 to $4.18 million. This is approximately double the current revenue levels, which would lead new user fees to increase significantly. This initial finding led to the development of additional scenarios where 1) revenues would be increased gradually, or ramped, over a period of years (scenarios E through H), and 2) CIP expenditures would be reduced (scenarios G, H and I). They are summarized in the Table below.

TABLE 6 – SUMMARY OF REVENUE SCENARIOS

	Scenario	CIP Amt (millions)	Rev Req't (millions)	Yr-31 CIP (millions)	Ramp % Increase
A	LT-20m Debt	$ 29.3	$ 4.178	$ 2.264	
B	LT-10m Debt	$ 29.3	$ 4.115	$ 2.339	
C	Multi-Debt	$ 29.3	$ 4.080	$ 2.264	
D	PayGo	$ 29.3	$ 4.031	$ 2.158	
E	Ramp 5	$ 29.3	$ 2.270	$ 2.450	15.9%
F	Ramp 10	$ 29.3	$ 2.270	$ 2.740	9.4%
G	Ramp 10	$ 20.0	$ 2.270	$ 0.879	8.1%
H	Ramp 10	$ 10.0	$ 2.270	$ 0.453	7.0%
I	No CIP	$ -	$ 2.974	$ 0.231	

The way in which these scenarios fluctuate over time is shown in the graphic below. Scenarios E through H are ramped up over five or ten years, and the starting revenue is approximately 10% higher than current levels. The only significant deviation from the first four scenarios is F (10-year ramp) which ends up with a higher revenue requirement due to the deferral of early revenues. Also, scenarios G, H and I are significantly lower due to the reduced CIP expenditures.



This graphic illustrates the negligible variation among the differing debt levels (A through D). It also illustrates that the revenue requirements are much more sensitive to the CIP expenditure levels (F through I; $29 million, $20 million, $10 million, and zero, respectively). It must be noted that these scenarios were crafted to evaluate these sensitivities. There are many other iterations of these factors that can also be explored.

REVENUE REQUIREMENT RECOMMENDATIONS

After consideration of the alternatives and consultation with the City, it is recommended that a blend of Scenarios A through D be the basis of the revenue requirement for a new fee, or $4.1 million for FY 22. This scenario has the following advantages:

- The entire CIP can be completed within the 30-year planning window.
- Due to the low sensitivity to how (if any) debt is employed, this scenario allows flexibility to the City regarding debt and the pace of delivering the CIP.
- The City's Reserve Policy can be implemented within the first three years.
- The CIP can begin early in the planning window. (All other options require delayed implementation of major CIP projects.)

The primary drawback of the recommended scenario is the immediate jump in rates from approximately $6.00 to $13.10 per month for the average home. A review of the utility bill for the average home in the City (summary at right) shows that this increase will cause the overall utility bill to increase approximately 5%. The two current stormwater fees account for approximately 4% of the bill; the proposed rate would increase that share to 8%.

	Existing	*Proposed*
Water	$ 53.15	*$ 53.15*
Storm	$ 6.00	*$ 13.10*
Other	$ 15.04	*$ 15.04*
Trash	$ 38.95	*$ 38.95*
Sewer	$ 44.11	*$ 44.11*
	$ 157.25	$ 164.35

RATE STRUCTURE ANALYSIS

Proposition 218 states that the amount of a fee upon any parcel shall not exceed the proportional costs of the service attributable to that parcel. It also states that no fee may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property. In compliance with Proposition 218, the proposed Stormwater Fee will only be imposed on properties that shed water, directly or indirectly, into the City's system or are otherwise served by the system. Additionally, the amount of use attributed to each parcel is proportionate to the amount of stormwater runoff contributed by the parcel, which is, in turn, proportionate to the amount of impervious surface area on a parcel (such as building roofs and pavements).

SINGLE-FAMILY RESIDENTIAL PARCELS AS BENCHMARK

The most widely used method of establishing storm drainage rates[10] is to use the average or median single-family residential parcel[11] ("SFR") as the basic unit of measure, or benchmark, which is called the single-family equivalent, or "SFE." Since the metric for this fee structure is impervious surface area, a benchmark amount of impervious surface area ("ISA") must be established.

Davis has a wide range of sizes of SFR parcels, which have varying percentages of impervious area ("%IA"). Generally, smaller, denser parcels tend to have a higher proportion of impervious area than larger, less dense parcels, which tend to have a lower percentage of impervious area. (This can be best visualized by the fact that larger residential properties tend to have a larger *proportion of pervious* landscaping, and therefore a smaller *proportion of impervious* area.) A random sample of 243 SFR parcels was selected, and the ISA of each sample parcel was measured using aerial photographs. This sample data forms the basis for determining the median ISA, which will then be the basis for determining the SFE.

The range of SFR parcels was grouped into four size categories based on trends that emerged in the %IA data. The median sized SFR parcel is 0.17 acre (approximately 7,405 square feet), which is also the median parcel size for the medium SFR rate category. The average %IA for the medium size group was found to be 46.84%. Therefore, the median parcel in Davis contains 3,468 square feet of impervious surface area ("ISA") as shown in

[10] *Stormwater Utility Survey*, 2017, page 2, Western Kentucky University. Other common names for this benchmark unit are Equivalent Runoff Unit (ERU) and Equivalent Drainage Unit (EDU).

[11] The SFR category also includes multiplex parcels of two, three or four units, since the lot development characteristics do not vary significantly from the SFR parcels of similar size. In all, this includes the approximately 564 multiplex parcels in the City, which were distributed to the same four parcel size categories as the other SFRs. Any residential parcel with five or more units is categorized as apartments, which is calculated separately.

the calculation below. This will be used as the benchmark (1 SFE) for all other size categories and other non-residential land uses.

$$\begin{aligned} 1\ SFE &= \%IA \times Median\ Parcel\ Size \\ &= 46.84\% \times 7{,}405\ sf \\ &= 3{,}468\ sf \end{aligned}$$

This becomes the basis for calculating the SFEs for all other types of land uses. The %IA for each size category was applied to the median size parcel in that category to calculate its median ISA. The SFE per parcel for each size category is a simple ratio of the median ISA for each category to the ISA (3,468 sf) for the benchmark category of medium-sized parcels as shown in the following formula:

$$SFE\ per\ Parcel = \frac{Median\ ISA}{3{,}468}$$

CONDOMINIUMS

Condominium units are particularly difficult to categorize as they are often on very small individual parcels yet share larger common areas that are made up of landscaped (pervious) areas, parking lots and shared roofs, and other recreational uses (either pervious or impervious). The data for these variables is not readily available, so some assumptions are made about their characteristics.

Condominiums can be grouped into two categories: Medium-density where there is only one level of residential units (e.g., townhomes) and high-density where there are multiple levels of residential units (similar to apartment buildings).

There are four sites containing 88 units of high-density condominiums in the City. Each of these sites were measured for ISA and analyzed as a class. The average ISA per unit was 1,045 square feet which equates to 0.30128 SFE per parcel.

Medium-density condominiums are more numerous (2,682 units). They share site characteristics with both the high-density condominium and single-family residences. Therefore, they are assigned an ISA value equal to the average ISA for high-density condominium (1,045 sf) and medium size SFR (3,468 sf), or 2,257 sf. This equates to 0.65064 SFE per parcel.

The Table below shows a summary of the SFEs for residential parcels.

TABLE 7 – SUMMARY OF RESIDENTIAL PARCELS

Lot Type	Parcel Size Range		# of Parcels [A]	Acres [A]	Median ISA (sf) [B]	SFE per Parcel
	Acres	Square Footage				
Small	under 0.14	under 5,881	2,557	269.37	2,710	**0.7812**
Medium	0.14 to 0.22	5,881 to 9,800	7,603	1,306.12	3,468	**1.0000**
Large	0.23 to 0.27	9,801 to 11,978	1,350	329.98	4,622	**1.3325**
Very Large	over 0.27	over 11,978	782	328.40	5,156	**1.4865**
Condo - Med Density [C]		na	2,682	174.15	2,257	**0.6506**
Condo - Hi Density		na	88	2.74	1,045	**0.3013**
		TOTAL	**15,062**	**2,410.76**		

A Numbers of Parcels and Acres do not factor into the basis of the SFE calculation; they are shown for informational purposes only.

B From Table 10, Appendix E.

C Medium-density condominiums are the average of Hi-Density Condo and Medium SFR

NON-RESIDENTIAL PARCELS

Unlike the residential parcels, the non-residential parcels can vary widely in size as well as impervious characteristics. For this reason, the parcels have been grouped into land use categories according to their %IA characteristics (as shown in Appendix E). The SFE for each land use category is based on a per-acre basis, so size can be a variable in the calculation of the fee. The SFE-per-acre can be computed for each category using the following formula:

$$\frac{(43{,}560\ sf / acre)\ x\ \%\ I\ A}{3{,}468\ sf / SFE} = SFE\ per\ Acre$$

where 3,468 square feet is the amount of ISA in one SFE.

The Table below shows a summary of resulting SFEs for each non-residential land use category.

TABLE 8 – SUMMARY OF NON-RESIDENTIAL PARCELS

Land Use Category	# of Parcels [A]	Acres [A]	% Imperv Area [B]	SFE per Acre
Mobile Home Park	3	43.10	59.7%	7.499
Apartment	221	471.22	63.3%	7.948
Comm / Industrial / Retail	372	396.49	83.8%	10.527
Office	275	136.53	69.1%	8.677
Institutional	58	118.16	59.7%	7.499
Institutional w/ Field	16	202.71	41.9%	5.261
Park	280	580.77	5.0%	0.628
Vacant (developed)	135	187.40	5.0%	0.628
Open Space / Agricultural	421	275.07	not charged	
TOTAL	1781	2,411.45		

A Aggregate numbers of Parcels and Acres do not factor into the basis of the SFE calculation; they are shown for informational purposes only.

B %IA is from Table 10, Appendix E.

Each individual parcel's SFE is then calculated by multiplying the parcel size (in acres) times the SFE per acre for that land use category, as shown in the following formula:

$$Parcel\ Size\ (acres) \quad x \quad SFE\ per\ Acre \quad = \quad SFE$$

NON-RESIDENTIAL CONDOMINIUMS

Non-residential condominium parcels such as commercial or office condominiums cannot be charged on the acreage of the individual unit because that would omit the acreage of the common areas, which are often parking lots with high %IA. In turn, the common area acreage data is sometimes duplicative of the acreages assigned to the individual units. For these reasons, and because there are relatively few such condominiums in the City, the full site acreage for each complex of condominiums has been apportioned to the individual units, prorated on the basis of the individual unit's floor space. From that, their SFEs are calculated in the normal method.

DEVELOPED VACANT[12] PARCELS

Developed vacant parcels are devoid of obvious structures or improvements but are distinguished from natural open space by one of several characteristics. Typically, a developed vacant parcel has been graded to be ready for building construction (possibly as

[12] "Vacant" in this Report refers to land that is devoid of improvements. It does not refer to land with vacant buildings or improvements, which would continue to shed water to the MS4 the same as if they were occupied.

part of the original subdivision or adjacent street grading). In some cases, the parcel previously contained a structure or improvement that has been removed, but its fundamental alteration from a natural state remains. Although developed vacant parcels may have significant vegetative cover, the underlying soil conditions resulting from grading work or previous improvements usually cause some rainfall to runoff into the storm drainage system. The %IA for developed vacant parcels is reasonably assumed to be 5%, which is also used as a minimum value of imperviousness for any land use type (excluding open space and agricultural land – see next section). Vacant parcels that have significant impervious paving remaining from prior improvements may be classified as Commercial or some other classification best representing the %IA of the parcel.

OPEN SPACE AND AGRICULTURAL PARCELS ARE NOT CHARGED

The City's storm drain system was developed in response to land development over many decades. Tracts of land that have not yet been developed, or have been used primarily for agricultural purposes, have not created an impact on the system beyond the natural condition, and are therefore considered to receive no service from the system. In practical terms, these parcels generate no additional storm runoff beyond the natural condition. For these reasons, open space and agricultural parcels are not charged a Fee.

HYBRID PARCELS

Some parcels may have both improvements as well as significant open space areas. For such parcels that contain a residence, the open space acreage does not increase the fee because residential parcels are not charged on a per-acre basis. Rather, they are charged based on the median ISA for that size category.

For such parcels that contain non-residential improvements (which are charged on a per-acre basis), the chargeable acreage should be adjusted downward to reflect the improved area only, leaving the open space area "invisible" to the fee calculation. Where parcels have been found in this category, that acreage adjustment has been made.

OTHER PARCELS

Parcels that do not fall within the land use descriptions listed above may be placed into the category having the closest %IA characteristics.

RATE CREDITS

LOW IMPACT DEVELOPMENT RATE CREDIT

The NPDES Permit requires certain properties to construct stormwater treatment and attenuation facilities, also known as low impact development ("LID"). These facilities are typically designed to capture a portion of the storm flows, retain them, and enable them to filter through a landscape, be used as an alternative water supply, or infiltrate into the ground. While this is intended to help filter pollutants from the water, it also can reduce the parcel's stormwater runoff quantity to some extent, which in turn can reduce a parcel's

impact on the system. In addition to Permit-required LID, other parcel owners may elect to follow LID guidelines voluntarily.

The section of the Permit that requires LID facilities is Provision E.12 (Post Construction Stormwater Management Program). Compliance with E.12 is a well-established and convenient metric on which to base customer activities that further Program goals and affect Program costs. E.12 compliance can have impacts to many of the Program elements. Based on a detailed study done for a similar city in the Bay Area[13] it has been determined that compliance with Provision E.12 equates to a reduction of Program impacts of approximately 25% based on the overall Program costs. Based on that analysis, E.12-compliant parcels shall receive a credit of 25% of their otherwise-calculated fee.

Some non-residential parcels may implement LID for only a portion of the parcel acreage. Since that effort and reduction in impacts to the City's storm drainage system should be recognized, those parcels should receive a partial credit. For any parcel that implements LID for 26% to 50% of the site acreage, the credit shall be 12.5%. For any parcel that implements LID for 25% or less of the site acreage, the credit shall be 6.3%.

STORMWATER FEE CALCULATION

The primary metric in this analysis is the SFE as illustrated above. To arrive at the fee amount for the various land use categories, the total City-wide SFEs must be divided into the total revenue requirement to arrive at the rate per SFE. Using the analysis above, that calculation is represented by the following formula:

$$SFE\ Rate = \frac{Annual\ Revenue\ Req't}{Total\ SFEs}$$

$$= \frac{\$4{,}100{,}000}{26{,}089.90}$$

$$= \$157.15 \quad per\ SFE\ per\ year$$

$$\text{or} = \$13.10 \quad per\ SFE\ per\ month$$

This SFE rate amount is then multiplied by the SFEs per parcel or per acre for the various land use categories to arrive at the Stormwater Fee Rate Schedule shown in the Table below. It should also be noted that the proposed rates shown below are proposed to replace

[13] City of Cupertino, CA, *2019 Clean Water and Storm Protection Fee Report*, February 2019, pages 11 and 12, as reproduced in Appendix F of this Report.

the two existing rates currently in effect, which total approximately $72 per year, or $6 per month, for the average residence.

Appendix G has information about stormwater rate initiatives implemented by other municipalities and rates adopted by other municipalities.

TABLE 9 – PROPOSED FY 22 STORMWATER FEE SCHEDULE

Land Use Category	Proposed Monthly Rate FY 2022	
Residential [A]		
Small *Under 0.14 ac*	$ 10.23	per parcel
Medium *0.14 to 0.22 ac*	$ 13.10	per parcel
Large *0.23 to 0.27 ac*	$ 17.45	per parcel
Very Large *Over 0.27 ac*	$ 19.47	per parcel
Condo - 1 Level	$ 8.52	per parcel
Condo - 2+ Levels	$ 3.95	per parcel
Non-Residential [B]		
Mobile Home Park	$ 98.20	per acre
Apartment	$ 104.08	per acre
Comm / Industrial / Retail	$ 137.86	per acre
Office	$ 113.63	per acre
Institutional	$ 98.20	per acre
Institutional w/ Field	$ 68.89	per acre
Park	$ 8.22	per acre
Vacant (developed)	$ 8.22	per acre
Open Space / Agricultural	not charged	

A - Residential category also includes duplex, triplex and four-plex.

B - Non-Residential parcel size is calculated to the hundredth of an acre.

These rates are proposed to be maximum rates. If the City chooses to propose, adopt or implement rates that are lower than these, the reductions should be uniform across all rate classes in order to preserve the proportionality and remain in compliance with Proposition 218.

ANNUAL COST INDEXING

The 2019 Stormwater Fee is subject to an annual adjustment tied to the Consumer Price Index-U for the San Francisco Bay Area as of December of each succeeding year (the "CPI"), with a maximum annual adjustment not to exceed 3%. Any change in the CPI in excess of 3% shall be cumulatively reserved as the "Unused CPI" and shall be used to increase the maximum authorized rate in years in which the CPI is less than 3%. The maximum authorized rate is equal to the maximum rate in the first fiscal year the Fee was approved adjusted annually by the lower of either 3% or the change in the CPI plus any Unused CPI as described above.

MANAGEMENT AND USE OF STORMWATER FUNDS

The City shall deposit into a separate account(s) all Stormwater Fee revenues collected and shall appropriate and expend such funds only for the purposes outlined by this Report. The specific assumptions utilized in this Report, the specific programs and projects listed, and the division of revenues and expenses between the two primary categories (O&M and CIP) are used as a reasonable model of future revenue needs and are not intended to be binding on future use of funds.

Dated: October 14, 2020

Engineer of Work

By_____

Jerry Bradshaw, License No. C48845

APPENDICES

APPENDIX A – TECHNICAL MEMORANDUM BY LWA

On the following pages is a technical memorandum, dated June 10, 2020, by SCI Team member LWA. This memorandum contains an analysis of the City of Davis' NPDES Permit compliance including additional needs.

Memorandum

LARRY WALKER ASSOCIATES

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DATE: June 10, 2020

TO: Stan Gryczko, City of Davis

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

Cc: Brian Mickelson, City of Davis
Jennifer Cariglio, City of Davis
Adrienne Heinig, City of Davis
Susan Barnes, SCI Consulting Group
Jerry Bradshaw, SCI Consulting Group
Karen Ashby, Larry Walker Associates

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 Permit[1] (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 costs*[4].

[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 factor[6] 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.

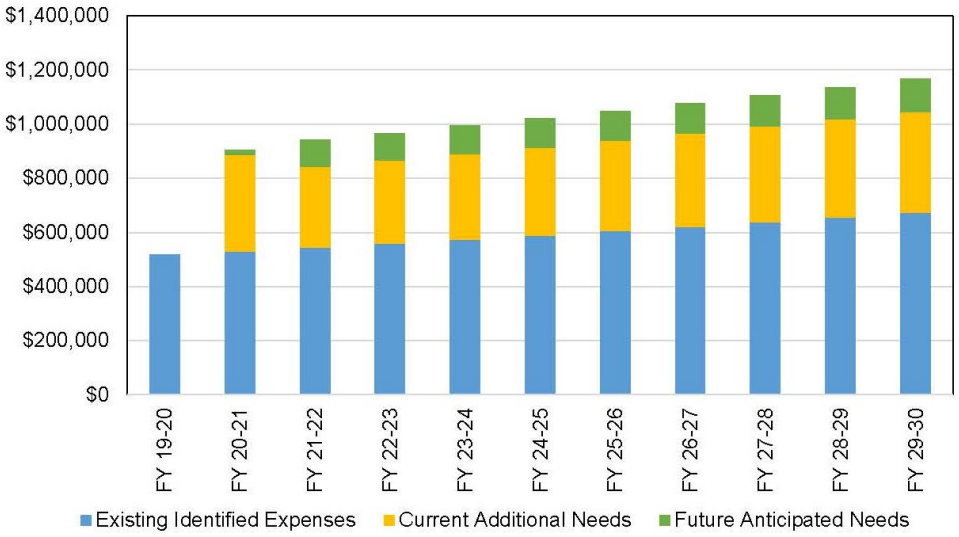

Figure 1. Total Estimated Costs for Stormwater Program, by Cost Category and Fiscal Year

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 Discharges[8], 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.

1

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.

APPENDIX B – ADDITIONAL NEEDS FOR OPERATIONS AND MAINTENANCE

TABLE 10 – ADDITIONAL NEEDS FOR OPERATIONS & MAINTENANCE

Item	Description	FY 20	FY 21
Increase Salaries	Increase 10% to achieve market rate	$ 43,562	$ 44,773
Additional Staff	* MWI * Collection System Tech	$ 263,058	$ 270,371
Contract Services	* Hydro Cleaning Storm Pipes * Channel Cleaning	$ 150,000	$ 154,170
Total Additional Costs for O & M		**$ 456,620**	**$ 469,314**

APPENDIX C – CIP PROJECT DESCRIPTIONS

On the following pages is a staff report to the Utilities Commission on September 16, 2020 that provides background on capital project priorities and details about the projects.

PUBLIC WORKS
UTILITIES AND OPERATIONS
DEPARTMENT
MAIN 530.757.5686

Memorandum

Date:	September 16, 2020
To:	Utilities Commission
From:	Stan Gryczko, Public Works Utilities and Operations Director Brian Mickelson, Assistant City Engineer Adrienne Heinig, Management Analyst
Subject:	Item 6D – Stormwater Capital Improvement Projects – Priority and Risk

Recommendation
Receive informational report.

Background
For the past few months, the Utilities Commission has been reviewing the financial plan for the Stormwater Utility, one of three cost of service studies that are currently underway. The City's stormwater rates have been in place since the mid-1990's, prior to the adoption of Proposition 218 in November of 1996, and the resulting changes to the rate implementation process associated with the proposition's approval. The current rate revenue does not fully cover the financial needs of the Stormwater program, as the system is aging, and needs upgrades and replacements to reflect the changing stormwater landscape of the City of Davis. It has been recommended that stormwater rates should be raised to capture current and planned future costs. To that end, staff have completed and presented a 30-year capital improvement project plan, although the majority of projects would be scheduled for completion within the first 10 years of the potential rate adoption. This project list, amounting to about $34 Million dollars over 30 years, is one of the largest drivers of the necessary rate increase.

Project Prioritization
Through the evaluation of the financial plan of the Stormwater Utility, questions arose as to whether City staff could rank or prioritize the capital projects, to smooth out necessary rate adjustments or reduce those adjustments. Staff has consistently indicated that all of the capital projects included within the financial plan are necessary and high priority. The projects are based on recommendations from a study conducted in February 2015. This study was used to understand the anticipated timelines, cost and priority for each project.

Within the study, prioritization is focused as follows: *The most problematic and immediate issues should be addressed first. Problematic issues include an inadequately sized pump station, safety concerns for the City's Staff or the general public, or regular and significant staff maintenance efforts.*

The City has 9 pump stations, with three that need extensive work as described below, and the remaining 6 in good working order. While the stations not identified as the highest priority could benefit from some renovation, it would not be appropriate to focus limited resources on those projects at this time, and that work is included as maintenance and smaller-cost efforts budgeted over time (captured in the study as Annual Misc. Upgrades). All of the capital projects listed in the financial plan have either inadequate sizing, safety concerns, and/or significant staff maintenance effort needed, making them high priority projects.

Each of these projects, with immediate hazards and risks, along with longer-term hazards and risks, are included below:

Note: *While the full failure of the stations might be an unlikely occurrence, even with the age of the infrastructure, staff were asked to include information on all risks associated with the CIP projects. Each of these sections will include information on what would occur in a full failure scenario.*

Capital Improvement Projects Listing and Detail

Storm Drainage Station No. 6

Year Constructed: 1924
Pump Type: Electric

SDS (Storm Drainage Station) #6 is the City's oldest station, and is located at Richards Blvd. and Olive Drive. The station was developed just after the construction of the undercrossing. The station is well past its useful life, as typically the useful life of pump station equipment is around 20-30 years, with structures having a useful life of around 50 years. Although the station has been maintained well by stormwater staff, the station needs to be replaced to address a number of safety issues and capacity concerns.

Immediate Hazards/Risks:

- Accessing the station – access is a walkway which is only separated from close large traffic by a chain. The access itself is below accepted requirements for operations and maintenance needs.
- Hazardous materials – The discharge pipe is comprised of asbestos cement.

Long-term Risks

As the station is the oldest in the Stormwater Utility, the surrounding needs of the City have changed considerably since construction. The station does not have the capacity to address the volume of stormwater needed to prevent flooding in the Richards Blvd undercrossing.

Failure of the Station

Failure of the station would result in flooding of the Richards Boulevard tunnel and would cut off this route into and out of the City. This would be an immediate impact to safety, as there is no interconnect to alert staff to the flooding. If flooding occurs and is not reported, this leaves drivers in an unsafe condition, especially at night when the flooding is less visible. In addition, this eliminates this route if needed for an evacuation, reduces in the ability to get goods into and

out of the City, and effects operations on Interstate 80 as northbound traffic would not have access to central Davis from this interchange, shifting traffic to other interchanges.

Storm Drainage Station No. 5 (El Macero Drainage Station)
Year Constructed: 1966
Pump Type: Electric
This station drains South Davis, Willowbank, El Macero, a large portion of unincorporated area comprised of agricultural lands and extends into Solano County. This station protects structures, Interstate 80 and adjacent properties from property and crop damage.

Immediate Hazards/Risks:

- Flooding - During larger storms, the station floods. This can be evidenced by a steel plate which was welded into the doorway which stands approximately 2 and a half feet tall in order to keep flood water from entering the door and flooding the station. If water enters the station, the control equipment will short out and cause the station to fail. During these times of water inundation, the only way staff can access the pump station is to wear waders and wade out to it. This presents a number of hazards to staff attempting to access the station, detailed below.
    - Shock hazard – The steel plate protecting the station can present a shock hazard for staff in flooding events.
    - Hazards to staff – Include drowning risks, as well as back or other injuries.
- Risk to equipment - the pumps themselves are at risk of being flooded causing them to short out and fail. Vegetation growth can cause issues by blocking the pumps, preventing staff from accessing them.
- Aging Equipment - station has seen wear and its components are wearing out.
- Frequent power outages occur, necessitating more maintenance work by staff, and requiring access during periods when the conditions may not be safe.

Long-term Risks
The station needs to be raised in order to proactively prevent the flooding events, and remove safety hazards for staff. In addition, the station location and service area (largely impacted by surrounding agricultural properties) necessitate a close review of the placement of the station, as well as protection for the station against material more likely to occur in a non-urban setting, such as ongoing sediment runoff requiring frequent cleanouts.

Failure of the Station
Failure of the station would result in significant flood damage to adjacent crops, structures and if flooding continued long enough, it could reach Interstate 80, causing safety and operational issues. In addition as failure of this station would flood the station, this would result in the large cost of loss of the mechanical, electrical and computer equipment in the station.

Storm Drainage Station No. 3 (H Street Pump Station)
Year Constructed: 1948
Pump Type: Diesel

This station is the largest of the City's pump stations, and is centrally located in town. With the changes around the station since the initial installation, including the construction of the Covell overpass, and the buildout of the Cannery development, the station is at risk for structural damage in a seismic event, and inadequately sized to meet the required capacity.

Immediate Hazards/Risks:

- Capacity - this station is responsible for draining a large area from approximately State Route 113 to Pole Line and from just north of Covell to Russell Boulevard, there is a large potential for flooding with only one station conveying all the stormwater. At times in the past, during larger storms, flooding has occurred on several streets including H Street, 14th Street, and L flooding has occurred on several streets including H Street, 14th Street, and L Street, as well as other areas. This flooding has been several feet deep and has inundated cars and yards.
- Aging Equipment - The overall pump station is aging. This includes control panels, pumps and overall structure. This is the City's second-oldest station, and is well past the 30 to 50-year operational period for equipment and station infrastructure.
- Difficult to backup - As this station runs diesel powered pumps, they do not lend themselves to backup power like electricity powered pumps. This leaves the largest station without backup power.
- Structural concerns - The structure is also built under the fill of Covell Boulevard which covers the majority of the north side of the structure. Seismic standards have changed over time and the facility should be evaluated based upon current seismic structural standards.
- Air quality concerns - The Yolo-Solano Air Quality district has been emphasizing that the City should convert the diesel-powered pumps to electric for some time.

Long-term Risks

Flooding already occurs with this station, as detailed above. Small equipment failures in the station could greatly increase the flooding that is already occurring.

Failure of the Station

Failure of this station would result in significant and widespread flooding within the area from State Route 113 to Pole Line and from just north of Covell to Russell Boulevard. This would present many safety issues for residents and would also result in extensive property damage. It would also compromise the transportation system making it difficult or impossible for emergency response and other users to traverse the system in a central portion of town.

Covell Channel Widening

Year Constructed: 1966

The Covell Channel, along the edge of Covell Blvd. in West Davis has been overflowing into City streets more and more frequently in recent years, and in some cases shut down the roadway to traffic. Planned improvements include the installation of box culverts across the west and north sides of Covell and Lake intersection, and widening and realigning the channel from Lake to Riesling. This will increase the capacity of the channel, move it farther from the edge of roadway, and align it with the improved section of channel in front of the hospital.

Immediate Hazards/Risks

- Capacity – This channel can no longer handle the flow of stormwater from the unincorporated areas west of the city limits. The original design was to divert stormwater from the west of Davis around developed areas to prevent flooding. With the changes to land use west of town, this amount of water entering this channel has increased significantly over the past 2 decades.
- Flooding – During larger storms the channel overflows and floods onto Covell Blvd. posing a significant hazard to vehicles traveling on Covell. This is most significant at the intersection of Lake and Covell and in front of Sutter Hospital. With the water covering the street, there is no indication of where the street is and the deep stormwater channel next to the street. This flooding is hazardous to drivers traversing next to this deep channel.

Long-term Risks

The largest long-term risk associated with the delay of this CIP project would be the recurrence and magnitude of flooding in the area, which is adjacent to residential areas and the City's only hospital with emergency services (flooding also occurred in the hospital parking lot in recent years, which was not directly related to the Covell Channel issues).

Necessary Assessments & Studies

The age of the infrastructure and equipment associated with the stormwater utility is a challenge, and highlights the need for the City to conduct studies to determine the most efficient and effective updates and upgrades to the system to best reflect the current and future needs of the City. In addition to the equipment and facilities already discussed, more than half of the City's drainage piping is over 40 years old, and 18 percent is over 60 years old. While there have been no piping failures, the continued assessment of the pipeline conditions is critical to planning out replacements and repairs moving forward. Without proper planning, failures within the stormwater system are more likely to occur, and can cause damage via flooding, as well as incur emergency repair costs.

In addition to infrastructure aging, there have been significant changes in hydrologic conditions in Davis, particularly in the West of Davis, which have in turn increased stormwater runoff and introduced unpredictable flow of stormwater. Studies need to be conducted to determine both the capacity of the City's system within each area of town, and what replacements or upgrades are necessary to meet the current and future demand. Also, the region's changing weather patterns will likely have a significant effect on runoff and will need to be evaluated.

Once the utility is able to conduct the necessary studies to determine the baseline needs for the infrastructure and capacity, the City can best prioritize and plan the projects and look for additional funding sources (grants, loans) as needed.

Funding Challenges

One of the most significant challenges associated with grant awards for stormwater has been the availability of implementation grants, and the lack of availability of planning grants. As discussed, stormwater staff need to conduct studies to determine the capacity and needs of each station, rather than replace the station in-kind, which requires planning activity. Without a "shovel ready" project, the City has been unable to apply for recent stormwater grants from the State. In recent years, the City has applied for planning grants now available through the Federal Management Agency (FEMA) Flood Mitigation Assistance program, however these applications have to date been unsuccessful. A planning grant was awarded to the City to look at meeting regulatory requirements for stormwater drainage in the downtown area at the Core Area Pond instead of individual developments. The City continues to apply for planning grants when opportunities arise.

Agencies with limited funding for stormwater infrastructure may look to other enterprise funds or general fund sources to offset expenditures. While one-time loans from other enterprise funds is possible, it is poor practice to rely on loans from other funds for standard operations and maintenance needs, and not a sustainable funding source. General fund dollars are subject to a different set of priorities – as the funds are not focused on a single utility (as with enterprise funds) and are more likely to retract with economic impacts to the region, such as recent recessions and the stay-at-home orders associated with the COVID-19 pandemic.

Future Costs/Challenges

Due to the fact that so much of the needs of the Stormwater utility are unknown, it is likely that there will be additional costs identified and additional projects necessary to bring the system into full and efficient functioning. As discussed in the details of the financial plan, should the rate adjustments be approved, the City would create a reserve for the Stormwater Fund, so funding associated with most of these projects (smaller operations and maintenance activities) would be taken from fund balance, and would not directly impact ratepayers. Larger projects identified would necessitate additional discussions around how the projects should be funded, likely during annual fund updates with the Commission and City Council.

APPENDIX D – CITY OF DAVIS RESERVE POLICY

On the following pages is a copy of the adopted financial reserve policy for City of Davis Enterprise Funds.

CITY OF DAVIS
WATER, WASTEWATER, SOLID WASTE, AND STORMWATER FUND RESERVE POLICY

1. PURPOSE

The purpose of this policy is to establish targeted levels of Water, Wastewater, Solid Waste and Stormwater Utility fund reserves, a crucial component in the financial resilience of public owned utilities. Strong and transparent financial policies, including maintaining adequate reserves for emergencies, rate stability, and working capital, are consistent with best practices in the utility industry, as they help to:

1) Ensure cash for daily financial needs to counter revenue volatility and unanticipated expenses is readily available
2) Fund equipment and infrastructure purchases to mitigate damages related to a catastrophic event such as a natural disaster
3) Protect constituents from rate increases due to unexpected variances from forecasted results that arise from non-recurring events or factors

2. BACKGROUND

The City of Davis Public Works Utilities and Operations Department provides water, wastewater, stormwater and solid waste services for citizens, businesses, and organizations. Public owned utilities are expected to provide uninterrupted service 24 hours a day, 7 days a week while relying largely on service-based revenue. As highlighted by the American Water Works Association, cash reserve balances are a critical component to the utility's financial resiliency and sustainability.

3. DEFINITIONS

***Operating Reserve*:** liquid, unrestricted assets that an organization can utilize to support its operations in the event of an unanticipated loss of revenue, working capital deficiencies, or an increase in expenses.

Emergency Capital Reserve: Funds reserved in this category shall be used to mitigate costs associated with capital purchases due to unforeseen emergencies, including natural disasters. Should unforeseen and unavoidable events occur that require expenditure of City resources beyond those provided in the annual budget, the City Manager shall have authority to approve appropriation of Emergency Reserve funds. The City Manager shall then present to the City Council – as soon as possible– a resolution confirming the nature of the emergency and formally authorizing the appropriation of Emergency Reserve funds.

Rate Stabilization Reserve: Rate stabilization reserves are established to cover wide fluctuations in projected revenue from season to season or year to year. A rate stabilization reserve allows a utility to draw on the fund balance during revenue shortfalls that result from lower than expected revenue. When use of the fund is deemed necessary, the City Manager shall present to the City Council a resolution confirming the nature of the need and authorizing the appropriation of Rate Stabilization Reserve funds.

4. POLICY

The policy illustrated below is the framework established for the Water, Sewer and Stormwater fund. The Public Works Utilities and Operations Director in conjunction with the City Treasurer shall review the Utility reserve balances annually and provide any updates as necessary to the Finance and Budget Commission, Utilities Commission and the City Council.

Reserve Type	Key Considerations	Policy	Methods to Achieve Funding Levels
Operating	• Revenue fluctuations • Working capital • Potential risks • Risk management • Daily financial needs • Operating expenditures	The City will maintain a target 3-month reserve balance for each utility.	As part of the annual utility review, the Public Works Utility and Operations Director will report the target reserves and actual balances in the operating funds.
Emergency Capital	• Cost of critical assets • Critical facilities • Catastrophic events such as natural disasters • Availability of other funds • Address unanticipated, nonrecurring needs.	Target reserve for each utility shall be the average of the planned expenditures in the 5-year Capital Improve Program as provided in each Utility Cost of Service Study (not including any debt-financed projects).	As part of the annual utility review, the Public Works Utility and Operations Director will report the target reserves and actual balances in the capital funds.
Rate Stabilization	• Impacts of revenue shortfalls • Drought restrictions • Revenue volatility • Weather • Regional economic conditions • Rate variability • Sharp demand reduction	Target reserve shall be 5% of annual operating revenue for Stormwater and Wastewater, and 10% of operating revenue for Water.	As part of the annual utility review, the Public Works Utility and Operations Director will report the target reserves and actual balances in the rate stabilization funds.

Solid Waste Reserve Fund Policy: The City of Davis Solid Waste Division is responsible for recycling, garbage, organics collections, street sweeping, and landfill tipping. Eighty-

six percent of the total cost in the fund is a franchise agreement with the waste hauler and the other fourteen percent accounts for state mandated programs, city administrative costs related to operations, and debt service requirements. The solid waste utility does not have assets or large capital expenditures similar to the other City utilities. Due to this difference, and to ensure the fiscal sustainability of the fund, the target reserve is **12** months of ***non-contractual*** operating expenditures. Non-contractual expenditures are defined as expenditures relating to obligations not expressed in a contract. This allows a reserve for changes in contracted service, emergency services, and revenue fluctuations.

Solid Waste Reserve Policy

Reserve Type	Key Considerations	Policy	Methods to Achieve Funding Levels
Operating	• Revenue fluctuations • Working capital • Potential risks • Risk management	Target reserve is 12 months of non-contractual operating expenditures.	As part of the annual utility review, the Public Works Utility and Operations Director will report the target reserves and actual balances in the operating funds.

APPENDIX E – PERCENTAGE OF IMPERVIOUS AREA CALCULATIONS

For most land use categories, a sample of parcels was analyzed using aerial photography and other data to determine the average percentage of impervious area ("%IA").

The Table below shows the results of that analysis.

TABLE 11 – PERCENTAGE OF IMPERVIOUS AREA CALCULATIONS

Land Use Category	# of Parcels	# Parcels Analyzed	Total Acres Sampled	Total Acres Impervious Area	Impervious Area [A]
Single-Family Residential					
Small *under 0.14 ac*	2,557	50	5.34	3.02	2,710 sf
Medium *0.14 to 0.22 ac*	7,603	151	25.95	12.15	3,468 sf
Large *0.23 to 0.27 ac*	1,350	27	6.60	2.92	4,622 sf
Very Large *over 0.27*	782	15	5.45	2.02	5,156 sf
Condo Med-Denisty [B]	2,682	not sampled			
Condo Hi-Density	88	88	2.58	2.11	1,045 sf
Non-Single-Family Residential					
Mobile Home Park [C]	3	not sampled			
Apartment	221	33	66.05	41.80	63.28%
Comm / Industrial / Retail	372	31	21.51	18.03	83.82%
Office	275	19	11.58	8.00	69.09%
Institutional	58	19	28.38	16.95	59.71%
Institutional w/ Field	16	16	202.71	84.91	41.89%
Park [D]	280	not sampled			
Vacant (developed) [D]	135	not sampled			
TOTAL	16,422	449	376.15	191.90	na

A For Residential, impervious area for each category is the average %IA applied to the median parcel size. For Non-Residential, impervious area is expressed as a percentage of parcel area (Total IA/Total Acres sampled).

B Condominium – Not sampled as explained on Page 16 of this Report.

C Mobile home parks were determined to be similar in imperviousness to Institutional parcels.

D Park and Vacant – Park and Vacant parcels were estimated to have a 5% impervious area based on other similar municipalities.

APPENDIX F – LOW IMPACT DEVELOPMENT RATE CREDIT ANALYSIS

On the following pages is an analysis done for the City of Cupertino in February 2019 that estimated the extent to which low impact development ("LID") reduces the impact on the City's storm drain system. Cupertino is similar to the City of Davis in that both are mid-sized cities with similar land use patterns, storm drainage systems, and magnitude of costs and needs.

CITY OF CUPERTINO

FEE REPORT

2019 CLEAN WATER AND STORM PROTECTION FEE

FEBRUARY 2019

PURSUANT TO THE ARTICLES XIIIC & D OF THE CALIFORNIA CONSTITUTION, AND THE GOVERNMENT CODE SECTIONS 38900 – 38901 ET AL.

ENGINEER OF WORK:
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Open Space and Agricultural Parcels are Not Charged

The City's storm drain system was developed in response to land development over the many decades. Tracts of land that have not yet been developed, or have been used primarily for agricultural purposes, have not created an impact on the system beyond the natural condition, and are therefore considered to receive no service from the system. In practical terms, these parcels generate no additional storm runoff beyond the natural condition. For these reasons, open space and agricultural parcels are not charged a Fee.

Hybrid Parcels

Some parcels may have both improvements as well as significant open space areas. For such parcels that contain a residence, the open space acreage does not increase the fee because residential parcels are not charged on a per-acre basis. Rather, they are charged based on the median ISA for that size category.

For such parcels that contain non-residential improvements (which are charged on a per-acre basis), the chargeable acreage should be adjusted downward to reflect the improved area only, leaving the open space area "invisible" to the fee calculation. Where parcels have been found in this category, that acreage adjustment has been made.

Low Impact Development Rate Adjustment

The current NPDES Permit requires certain properties to construct stormwater treatment and attenuation facilities, also known as low impact development ("LID"). These facilities are typically designed to capture a portion of the storm flows, retain them, and enable them to infiltrate into the ground. While this is intended to help filter pollutants from the water, it also can reduce the parcel's stormwater runoff quantity to some extent, which in turn can reduce a parcel's impact on the system. In addition to NPDES-required LID, other parcel owners may elect to follow LID guidelines voluntarily.

The section of the MRP that requires LID facilities is Provision C.3 (New Development and Redevelopment). Compliance with C.3 is a well-established and convenient metric on which to base customer activities that further Program goals and affect Program costs. C.3 compliance can have impacts to many of the Program elements. In order to analyze the extent to which C.3 compliance will impact Program costs, each Program element was rated with one of four impact levels: none (0%), minor (25%), medium (50%), and major (80%). By applying those impact levels to the costs of each Program element, it was determined that compliance with Provision C.3 equates to approximately 25% of the overall Program costs. Table 6 below shows the results of that analysis.

Based on that analysis, a commensurate reduction in the fees for certain C.3-compliant parcels is warranted. However, C.3 compliance brings with it some additional administrative burdens to verify ongoing compliance. While this burden is relatively minor, for single-family parcels where the annual fee is also relatively small, the administrative burden negates the LID benefits to the program. Therefore, single-family residential parcels do not qualify for the reduced fee. Conversely, C.3 compliance for condominiums is typically accomplished on a collective basis, so the minor administrative burden is spread across many parcels

making it insignificant. Therefore, a 25% reduction in fees will be applied to all C.3-compliant parcels that are either non-single-family or condominium.

TABLE 6 – LOW IMPACT DEVELOPMENT RATE ADJUSTMENT ANALYSIS

	MRP Provision	Impact Level: None	Minor	Medium	Major	Notes
Operations & Maintenance						
	Program Management					Does not lessen Program Management burden
C.2	Municipal Operations					Reduces storm flows in minor storm, reducing burden on operations
Clean Water Program						
C.1	Permit Compliance					Is a small part of overall Program Compliance
C.2	Municipal Operations					Does not lessen Municipal Operations compliance burden
C.3	New Development and Redevelopment					Is all about C.3
C.4	Industrial and Commercial Site Controls					Provides controls
C.5	Illicit Discharge Detection and Elimination					Does not lessen Illicit Discharge burden
C.6	Construction Site Control					Does not lessen Construction Controls burden
C.7	Public Information and Outreach					Aids in educating property owners
C.8	Water Quality Monitoring					Does not lessen WQ Monitoring burden
C.9	Pesticides Toxicity Control					Capture & infiltration may filter out pesticides
C.10	Trash Load Reduction					Many C.3 devices are considered a partial trash capture device
C.11	Mercury Controls					Capture & infiltration may filter out pollutants
C.12	PCBs Controls					Capture & infiltration may filter out pollutants
C.13	Copper Controls					Capture & infiltration may filter out pollutants
C.17	Annual Reports					Does not lessen reporting requirements

STORMWATER FEE CALCULATION

The primary metric in this analysis is the SFE as illustrated above. To arrive at the fee amount for the various land use categories, the total City-wide SFEs must be divided into the total revenue requirement to arrive at the rate per SFE. Using the analysis above, that calculation is represented by the following formula:

Table 4. City Estimated Expenditures for MRP, by Cost Category (Fund) and Fiscal Year

Fund	MRP Provision	Prior[a] 2017-2018	Current[a] 2018-2019	Future – Projected[b] 2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Fund 100-85, Operations & Maintenance								
	Program Management			$59,000	$61,000	$63,000	$65,000	$67,000
C.2	Municipal Operations			$493,000	$508,000	$523,000	$539,000	$555,000
	Fund Total	*$449,950*	*$476,503*	*$552,000*	*$569,000*	*$586,000*	*$603,000*	*$622,000*
Fund 230-81, Clean Water Program								
C.1	Permit Compliance			$23,000	$24,000	$25,000	$25,000	$26,000
C.2	Municipal Operations			$148,000	$153,000	$157,000	$162,000	$167,000
C.3	New Development and Redevelopment			$70,000	$72,000	$77,000	$80,000	$82,000
C.4	Industrial and Commercial Site Controls			$83,000	$86,000	$88,000	$91,000	$94,000
C.5	Illicit Discharge Detection and Elimination			$129,000	$133,000	$137,000	$141,000	$145,000
C.6	Construction Site Control			$43,000	$44,000	$46,000	$47,000	$49,000
C.7	Public Information and Outreach			$118,000	$122,000	$126,000	$129,000	$133,000
C.8	Water Quality Monitoring			$11,000	$11,000	$12,000	$12,000	$13,000
C.9	Pesticides Toxicity Control			$21,000	$21,000	$22,000	$23,000	$23,000
C.10	Trash Load Reduction			$130,000	$134,000	$148,000	$152,000	$157,000
C.11	Mercury Controls			$24,000	$25,000	$27,000	$27,000	$28,000
C.12	PCBs Controls			$51,000	$52,000	$57,000	$59,000	$61,000
C.13	Copper Controls			$11,000	$11,000	$12,000	$12,000	$13,000
C.17	Annual Reports			$29,000	$30,000	$33,000	$34,000	$35,000
	Fund Total	*$761,720*	*$720,785*	*$891,000*	*$918,000*	*$964,000*	*$994,000*	*$1,025,000*
	Total	**$1,211,670**	**$1,197,288**	**$1,443,000**	**$1,487,000**	**$1,550,000**	**$1,598,000**	**$1,646,000**

[a] Values are from the City's *Fiscal Year 2018-2019 Adopted Budget*[9] (2018 Adopted Budget and 2019 Adopted Budget for both Non-Point Source (Fund 230-81) (p. 407-409) and Storm Drain Maintenance (Fund 100-85) (p. 434-435)).

[b] Each value for the fiscal years under the "Future – Projected" column is considered to be estimated and has been rounded to the nearest $1,000; thus, summing individual values may result in a slightly different total than those shown in the "Fund Total" and "Total" rows.

[9] https://www.cupertino.org/home/showdocument?id=21776

APPENDIX G – STORMWATER RATES FROM OTHER MUNICIPALITIES

There have been relatively few voter-approved local revenue measures in the past 15 years to support stormwater programs in California. A summary of those efforts plus some others in process or being studied is shown in Table 12 on the following page, in roughly chronological order. Amounts are annualized and are for single family residences or the equivalent.

TABLE 12 – RECENT STORM DRAIN BALLOT MEASURES

Municipality	Status	Annual Rate	Year	Mechanism
San Clemente	Successful	$ 60.15	2002	Balloted Property Related Fee
Carmel	Unsuccessful	$ 38.00	2003	Balloted Property Related Fee
Palo Alto	Unsuccessful	$ 57.00	2003	Balloted Property Related Fee
Los Angeles	Successful	$ 28.00	2004	Special Tax - G. O. Bond
Palo Alto	Successful	$ 120.00	2005	Balloted Property Related Fee
Rancho Palos Verde	Successful , then recalled and reduced	$ 200.00	2005, 2007	Balloted Property Related Fee
Encinitas	Unsuccessful	$ 60.00	2006	Non-Balloted Property Related Fee adopted in 2004, challenged, balloted and failed in 2006
Ross Valley	Successful, Overturned by Court of Appeals, Decertified by Supreme Court	$ 125.00	2006	Balloted Property Related Fee
Santa Monica	Successful	$ 87.00	2006	Special Tax
San Clemente	Successfully renewed	$ 60.15	2007	Balloted Property Related Fee
Solana Beach	Non-Balloted, Threatened by lawsuit, Balloted, Successful	$ 21.84	2007	Non-Balloted & Balloted Property Related Fee
Woodland	Unsuccessful	$ 60.00	2007	Balloted Property Related Fee
Del Mar	Successful	$ 163.38	2008	Balloted Property Related Fee
Hawthorne	Unsuccessful	$ 30.00	2008	Balloted Property Related Fee
Santa Cruz	Successful	$ 28.00	2008	Special Tax
Burlingame	Successful	$ 150.00	2009	Balloted Property Related Fee
Santa Clarita	Successful	$ 21.00	2009	Balloted Property Related Fee
Stockton	Unsuccessful	$ 34.56	2009	Balloted Property Related Fee
County of Contra Costa	Unsuccessful	$ 22.00	2012	Balloted Property Related Fee
Santa Clara Valley Water District	Successful	$ 56.00	2012	Special Tax
City of Berkeley	Successful	varies	2012	Measure M - GO Bond
County of LA	Deferred	$ 54.00	2012	NA
San Clemente	Successful	$ 74.76	2013	Balloted Property Related Fee
Vallejo San & Flood	Successful	$ 23.00	2015	Balloted Property Related Fee
Culver City	Successful	$ 99.00	2016	Special Tax
Palo Alto	Successful	$ 163.80	2017	Balloted Property Related Fee Reauthorization of 2005 Fee
Town of Moraga	Unsuccessful	$ 120.38	2018	Balloted Property Related Fee
City of Berkeley	Successful	$ 42.89	2018	Balloted Property Related Fee
County of Los Angeles	Successful	$ 83.00	2018	Special Tax
Town of Los Altos	Unsuccessful	$ 88.00	2019	Balloted Property Related Fee
City of Cupertino	Successful	$ 44.42	2019	Balloted Property Related Fee
City of Alameda	Successful	$ 78.00	2019	Balloted Property Related Fee
City of Del Mar	Studying	NA	NA	Balloted Property Related Fee
City of Davis	Studying	NA	NA	Balloted Property Related Fee
City of Hillsborough	Studying	NA	NA	TBD
City of Sacramento	Studying	NA	NA	Balloted Property Related Fee
City of Salinas	Studying	NA	NA	TBD
City of San Clemente	Studying	NA	NA	Balloted Property Related Fee
City of San Mateo	Studying	NA	NA	TBD
City of Santa Clara	Studying	NA	NA	TBD
County of El Dorado	Studying	NA	NA	NA
County of Orange	Studying	NA	NA	NA
County of San Joaquin	Studying	NA	NA	Balloted Property Related Fee
County of San Mateo	Studying	NA	NA	NA
County of Ventura	Studying	NA	NA	NA

In addition to the agencies listed above in Table 12 that have gone to the ballot for new or increased Stormwater Fees, there are several other municipalities throughout the State that have existing Stormwater Fees in place. Some of these rates are summarized in Table 13 below. Amounts are annualized and are for single family residences or the equivalent.

The City's proposed $157.15 SFR rate falls within the range of stormwater rates adopted by other municipalities.

TABLE 13 – SAMPLE OF RATES FROM OTHER MUNICIPALITIES

Municipality	Annual Rate	Type of Fee
Alameda	$ 134	Property-Related Fee
Bakersfield	$ 200	Property-Related Fee
Culver City	$ 99	Special Tax
Davis	$ 85	Property-Related Fee
Elk Grove	$ 70	Property-Related Fee
Hayward	$ 29	Property-Related Fee
Los Angeles	$ 27	Special tax
Los Angeles County	$ 83	Special tax
Palo Alto	$ 164	Property-Related Fee
Redding	$ 16	Property-Related Fee
Sacramento (City)	$ 136	Property-Related Fee
Sacramento (County)	$ 70	Property-Related Fee
San Bruno	$ 46	Property-Related Fee
San Clemente	$ 60	Property-Related Fee
San Jose	$ 92	Property-Related Fee
Santa Cruz	$ 109	Special Tax
Stockton *	$ 221	Property-Related Fee
Vallejo Sanitation and Flood Control District	$ 24	Property-Related Fee
West Sacramento	$ 144	Property-Related Fee
Woodland	$ 6	Property-Related Fee

* This is the calculated average rate for the City of Stockton, which has 15 rate zones with rates ranging from $3.54 to $651.68 per year.

APPENDIX H - LIST OF ACRONYMS AND ABBREVIATIONS

%IA	Percent Impervious Area
CIP	Capital Improvement Program
CPI	Consumer Price Index (from the Bureau of Labor & Statistics)
E.12	Provision E.12 of the MRP – New Development and Redevelopment
FY	Fiscal Year, designated by the year in which it concludes (e.g., FY 21 refers to the year from 7/1/20 to 6/30/21)
G.I.	Green Infrastructure
GO Bond	General Obligation Bond
ISA	Impervious surface area
LID	Low impact development
MFR	Multi-family residential
MRP	Municipal Regional Permit (current version is MRP 2.0)
NPDES	National Pollution Discharge Elimination System (EPA)
O&M	Operations and maintenance
Permit	City of Davis NPDES Permit No. CAS000004, Order No. Order 2013-0001-DWQ
Program	General term for the City's Storm Drainage (Storm Sewer, Stormwater) enterprise activities
sf	Square feet
SFE	Single-family equivalent
SFR	Single-family residential