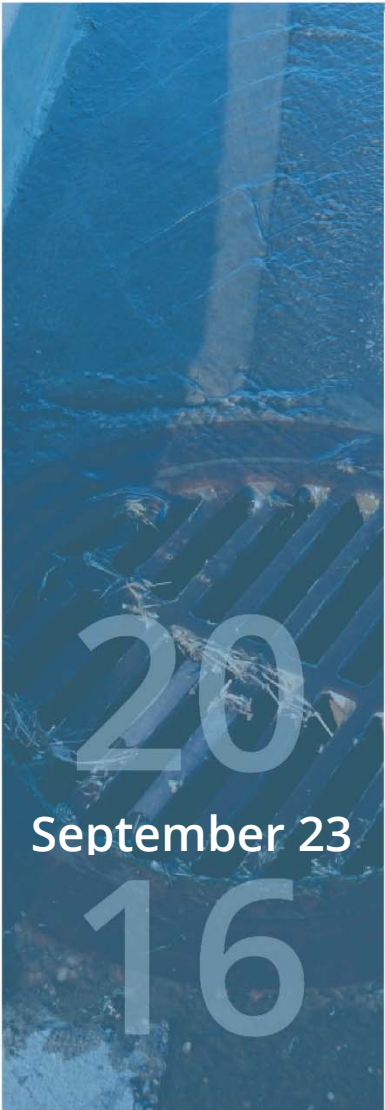




City of San Diego Storm Water Fee Study



Submitted to



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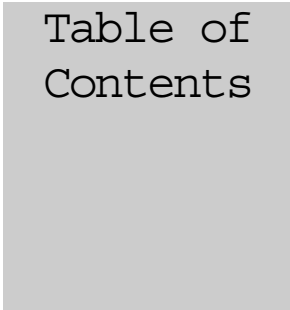


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Acronyms and Abbreviations

AB	Assembly Bill
AWWA	American Water Works Association
CalRecycle	California State Department of Recycling and Recovery
CARB	California Air Resources Board
CERF	Coastal Environmental Rights Foundation
CIP	Capital Improvement Program
CSD	City of San Diego
DIFs	Development Impact Fees
FY	Fiscal Year
GF	General Fund
IBA	Independent Budget Analyst
ISC	Impervious Surface Coefficients
JRMP	Jurisdictional Runoff Management Plan
MS4	Municipal Separate Storm Sewer System
NLCD	National Land Cover Database
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
PAYGO	Pay-As-You-Go
PRAG	Public Resources Advisory Group
RWQCB	San Diego Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SDOG	San Diegans for Open Government
SEC	Securities & Exchange Commission
SFD	Single Family Detached
Sq.Ft.	Square Feet
TMDLs	Total Maximum Daily Loads
TOT	Transient Occupancy Tax
WAMP	Watershed Asset Management Plan
WQIPs	Water Quality Improvement Plans

Executive Summary

The City of San Diego (City) Storm Water Fee Study (Fee Study) was completed to meet the requirements of Section 1.9 of the Settlement Agreement and Release (Agreement) between San Diegans for Open Government/Coastal Environmental Rights Foundation and the City. The Agreement stipulates that the City shall complete a fee study, conducted by a third-party expert, within three years of the effective date of the Agreement (September 27, 2013) and shall post the Fee Study on the City Storm Water Division's (Division) website by September 26, 2016. This Fee Study was developed solely to satisfy the terms of the Agreement and in no way obligates the City to pursue any further related action. The third-party expert for this effort consisted of a team of consultants led by Geosyntec Consultants with Michael Baker International, David Taussig & Associates, and Richard Watson & Associates, in coordination with the City.

This Fee Study was developed to be objective, technically robust, unbiased, well-documented, and transparent in its technical methodologies and assumptions. It describes a conceptual storm water fee that would generate revenue to pay the costs of the City's storm water program. The fee presented in the Fee Study was calculated based on the full compliance cost estimates associated with storm water and flood risk management activities over the next 20 years (FY2016 – FY2035) developed for the City's Watershed Asset Management Plan. The Fee Study includes: 1) establishing revenue requirements based upon the cost estimates provided by the City and examining various financing options; and 2) a projection of parcel fee levels based upon the estimated revenue requirements and a preliminary cost allocation methodology. The fee includes consideration of capital improvement costs as well as operations and maintenance (O&M) costs for each year during the 20-year study period.

In order to establish the revenue requirements, three key sets of assumptions were made. First, the City would use revenue generated through 1) a fee and 2) existing revenues from parking violation fines and other minor sources (\$6 million per year in 2015 dollars) to fund storm water and flood-related activity costs. Second, assumptions regarding possible means of financing capital requirements were made in the Fee Study. As a first step, the cost estimates above were broken down between the costs for Capital Improvements (CIP) and the costs for O&M. Third, costs were escalated from 2015 dollars at an assumed inflation rate of 2.79% in order to allow revenue needs to be stated in nominal dollars.

Based on the above, two financial management approaches were assumed to illustrate a possible range and are presented in this Fee Study. In the first approach, it was assumed that the City would finance 100% of its capital requirements for the storm water program during the 20-year compliance period. This would minimize initial revenue requirements, but would lead to the most rapid increase

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in required revenues over time. The second approach was designed to reduce the amount of debt issued by allowing fees to be collected in excess of revenue requirements in early years. These revenues would be applied toward capital costs, lowering long-term debt requirements. This approach is described as a “Flat Fee” scenario in the Fee Study. This scenario yielded an estimated allocation consisting of 74% debt financing of capital costs, with 26% of these costs covered from revenues in a pay-as-you-go (PAYGO) approach.

The estimated revenue requirements from fees developed under these two scenarios were allocated to individual parcels. Consistent with standard practices, impervious area was selected as the appropriate nexus between the level of storm water services provided by the City and individual parcels’ contributions to storm water runoff. This land surface characteristic is the most commonly used for development of storm water fees in the country. Furthermore, it is used as a surrogate for quantifying runoff to design BMPs in the City’s Storm Water Standards (CSD, 2012b). Accordingly, it was adopted as the primary basis for calculating a parcel-based storm water fee in the Fee Study.

The impervious area of individual parcels within the City was estimated using data published by San Diego Association of Governments (SANDAG, 2014). There are 95 land use types in the SANDAG land use database, which were grouped into the categories that represent the most common land use types. The potential estimated parcel fees based on the two assumed approaches (100% Financing and Flat Fee) were calculated for all land uses within the City. For purposes of illustration, average values for parcels within four land use categories are provided below in **Table ES-1**.

Table ES-1. Estimated Average Monthly Storm Water Fee per Parcel* of Selected Land Use Types

Land Use Type	100% Financing (\$/Parcel-Month)		Flat Fee (\$/Parcel-Month)	
	FY2016	FY2035	FY2016	FY2035
Single-Family Detached	\$10	\$39	\$19	\$32
Multi-Family Residential	\$41	\$156	\$78	\$128
Industrial Park	\$157	\$601	\$301	\$492
Arterial Commercial	\$17	\$64	\$32	\$52

Note: All numbers are rounded to the nearest dollar. *Monthly storm water fees for individual parcels vary, depending on the actual parcel size and impervious surface area.

Terms of Reference and Limitations

This Storm Water Fee Study (Fee Study) is submitted to satisfy the requirements of City of San Diego Contract No. H146064 (Fee Study Support, Task Order No. 13) between the City of San Diego and Michael Baker International, LLC. This work was performed by the Consultant Team led by Geosyntec Consultants, Inc. (Geosyntec) under the direction of Ken Susilo, P.E. (California Professional Civil Engineer) and was conducted by Dr. Zita Yu, Kris Helm, Jennifer Gordon (Geosyntec), and Andrea Roess (David Taussig & Associates). This Fee Study was peer reviewed by Venkat Gummadi, P.E., Trevor Alsop, P.E., Dr. Leila Talebi, P.E., Stacy Luell, P.E., Jai Panthail, Kevin Kopp, Curtis Fang (Geosyntec), and Julie Millett (Richard Watson & Associates); and senior reviewed by Dr. Yuval Cohen and Brian Hitchens, P.G., (Geosyntec), Nehal Thumar (David Taussig & Associates), and Richard Watson (Richard Watson & Associates) in accordance with Geosyntec's Quality Management Program.

Information contained herein and any statements contained within this Fee Study are based on information provided to and reviewed by the Consultant Team during the referenced project period. The Consultant Team has received and referenced information from third parties and has relied upon the reasonable assurances of the third parties, but does not warrant or guarantee the accuracy of such information. Any forward-looking statements are based upon interpretations or assessments of available information at the time of writing. Actual events may differ from those assumed, and outcomes are subject to change. Findings are time-sensitive and relevant only to conditions at the time of writing. Factors influencing the accuracy and completeness of the forward-looking statements may exist that are outside of the purview or knowledge of those involved. The Consultant Team provides no warranty, expressed or implied, with respect to the use of any information or methods disclosed in this document. Furthermore, the Consultant Team assumes no liability with respect to the use of any information, advice, or methods disclosed in this document. It is understood and agreed that this Fee Study contains reasonable assumptions, estimates, and projections, which may not be indicative of actual or future values or events and are therefore subject to substantial uncertainty.

The Consultant Team members performing this study are acting as storm water consultants and not in the capacity of municipal or financial advisors under the municipal advisor requirements of the Securities & Exchange Commission (SEC). The City is currently represented by, and relies on, the advice of independent registered municipal advisors (in the sense that it seeks and considers advice, analysis, and perspective of, before making a determination), Montague DeRose and Associates, LLC ("Montague") and Public Resources Advisory Group ("PRAG"), in considering information (other than general information that does not involve a recommendation) that is provided to the City regarding municipal financial products or the issuance of municipal securities. It is noted that neither Montague

TERMS OF REFERENCE AND LIMITATIONS

nor PRAG participated in the development of this Fee Study. This Fee Study was developed solely to satisfy the terms of the aforementioned Agreement, and in no way obligates the City to pursue any further related action.

1 Introduction

The City of San Diego (City) owns and operates a storm water drainage system (a Municipal Separate Storm Sewer System, or “MS4”) that conveys runoff from land surfaces throughout the City to inland receiving waters or to ocean outfalls. The primary function of this system is to convey runoff effectively and efficiently to protect life and property from damage due to floods. The City’s Storm Water Division (Division) within the Transportation and Storm Water Department is responsible for the management of the City’s MS4 in the City’s rights-of-way and on lands managed by the Park and Recreation Department. Its core functions include funding, planning, designing, constructing, and operating and maintaining the MS4. The Division also leads the City’s efforts to reduce pollutants in storm water and ultimately eliminate urban runoff to comply with National Pollutant Discharge Elimination System (NPDES) regulations, as implemented locally by the San Diego Regional Water Quality Control Board (RWQCB).

On May 8, 2013, the San Diego RWQCB adopted a new NPDES storm water discharge permit [Order No. R9-2013-0001] and subsequently amended it by Order No. R9-2015-00010001 and Order No. R9-2015-0100 (hereinafter, the “Permit”; CSD, 2015b). The Permit requires the City to prepare jurisdictional- and watershed-scale plans that detail how the City will comply with the new requirements. To this end, the Division prepared a Jurisdictional Runoff Management Plan (JRMP) and collaboratively developed Water Quality Improvement Plans (WQIPs) for the six watersheds that overlap the City’s jurisdiction (CSD, 2015b). The JRMP and WQIPs identify strategies and processes the City intends to implement for pollutant load reduction purposes, thereby achieving compliance with the Permit. These efforts include public education, employee training, water quality monitoring, source identification, code enforcement, watershed management, best management practices development, implementation, and enforcement. This study presents a conceptual analysis of a potential storm water fee structure.

1.1 Study Purposes and Scope

The City of San Diego Storm Water Fee Study (Fee Study) was completed to meet the requirements of Section 1.9 of the Settlement Agreement and Release (Agreement) between San Diegans for Open Government (SDOG)/Coastal Environmental Rights Foundation (CERF) and the City. The Agreement stipulates that the City shall complete a fee study, conducted by a third-party expert, within three years of the effective date of the Agreement, and shall post the Fee Study on the Division’s website. The deadline for completion of this study is September 26, 2016. While this Fee Study was developed to satisfy the terms of the Agreement, the existence of this Fee Study in no way obligates the City to pursue any further related action.

The third-party consultants for this effort consisted of a team led by Geosyntec Consultants, with Michael Baker International, David Taussig & Associates, and Richard Watson & Associates. The Consultant Team coordinated with City staff from Debt Management, Financial Management, and Transportation and Storm Water Departments for the development of the Fee Study. This Fee Study was developed to be objective, technically robust, unbiased, well-documented, and transparent in its technical methodologies and assumptions.

This Fee Study describes a conceptual storm water fee that would generate revenues to fund the costs of the City's storm water program. The fee structure evaluated is based on parcel impervious area. The cost estimates that are used as the basis for the storm water fee are developed to capture the compliance costs associated with storm water and flood risk management activities over the next 20 years (i.e., FY2016 – FY2035). These cost estimates include consideration of capital improvement costs as well as operations and maintenance (O&M) costs for each year during the 20-year study period, which were provided to the Consultant Team by the City. The principal sources of these cost estimates are:

- The City of San Diego's Watershed Asset Management Plan (CSD, 2013a and 2015a);
- The City of San Diego's six Water Quality Improvement Plans (CSD, 2015b); and
- The City of San Diego's Jurisdictional Runoff Management Plan Annual Reports (CSD, 2011-2015)

This Fee Study involves: 1) establishing revenue requirements based upon the cost estimates provided by the City and a select number financing options; and 2) projecting parcel fee levels based upon the estimated revenue requirements and a preliminary cost allocation methodology.

The City's ability to impose a fee or increase fees after initial adoption is constrained under current law, despite the existence of a legally binding schedule for the implementation of the WQIPs accepted by the RWQCB in February 2016¹ (RWQCB, 2016). The WQIPs indicate particular program efforts and projects that must be implemented over the 20-year period to comply with the Permit requirements. Insufficient funding could result in program implementation delays. Such delays could substantially change the actual program costs, affecting the timing and escalation of the fees necessary to generate required revenues. In the fee simulations presented in this Fee Study, the Consultant Team assumes that the storm water program would be implemented according to the defined schedule indicated in the WQIPs (CSD, 2015) accepted by the RWQCB (RWQCB, 2016).

Given that the storm water program is expected to be implemented over a 20-year period, these restrictions should be considered in developing a fee. In practice, fees may have to be authorized at a level that is higher than the fee that is ultimately imposed in a particular year. The fee structure examined in this study represents an estimate of total revenue required from the fee.

¹ http://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/wqip.shtml

1.2 Storm Water Program Overview

The City's storm water program encompasses three components: Flood Risk Management Program; WQIPs; and JRMP. These three components are knitted tightly together to accomplish multiple objectives. Summaries of these three components within the storm water program are presented below.

1.2.1 Flood Risk Management Program

The City's Flood Risk Management Program covers the development, O&M, and replacement of the storm drain and flood control system within the City. These facilities include, but are not limited to, a network of underground storm drain pipes, culverts, outfalls/inlets, detention basins, pump stations, and open channels. The locations of the storm drain conveyance system are presented in **Figure 1**. Details regarding this Program can be found in the City's Watershed Asset Management Plan (WAMP; CSD, 2013a). The WAMP can be downloaded at <https://www.sandiego.gov/stormwater/plansreports>.

1.2.2 Water Quality Improvement Plans (WQIPs)

The City has developed (or participated in the development of) WQIPs for six watersheds within or partially within City boundaries. These WQIPs present investment, O&M requirements necessary for compliance with standards set forth in the Permit, and Total Maximum Daily Load (TMDL) provisions (CSD, 2015b and RWQCB, 2015).). The Division has led the City's effort to prepare these WQIPs, which identify potential structural BMP needs within the City (**Figure 2**). It is expected that the Division will also be responsible for the implementation and management of the programs and activities detailed in the WQIPs (CSD, 2015b). Details regarding the City's portion of the WQIPs submitted to the RWQCB in 2015 can be found in:

- San Diego Bay Watershed Area Water Quality Improvement Plan (CSD, 2015b);
- San Diego River Watershed Area Water Quality Improvement Plan (CSD, 2015b);
- Mission Bay Watershed Area Water Quality Improvement Plan (CSD, 2015b);
- Los Peñasquitos Watershed Area Water Quality Improvement Plan (CSD, 2015b);
- San Dieguito Watershed Area Water Quality Improvement Plan (CSD, 2015b); and
- Tijuana River Watershed Area Water Quality Improvement Plan (CSD, 2015b).

The full WQIPs can be downloaded from the RWQRB's website at:

http://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/wqip.shtml

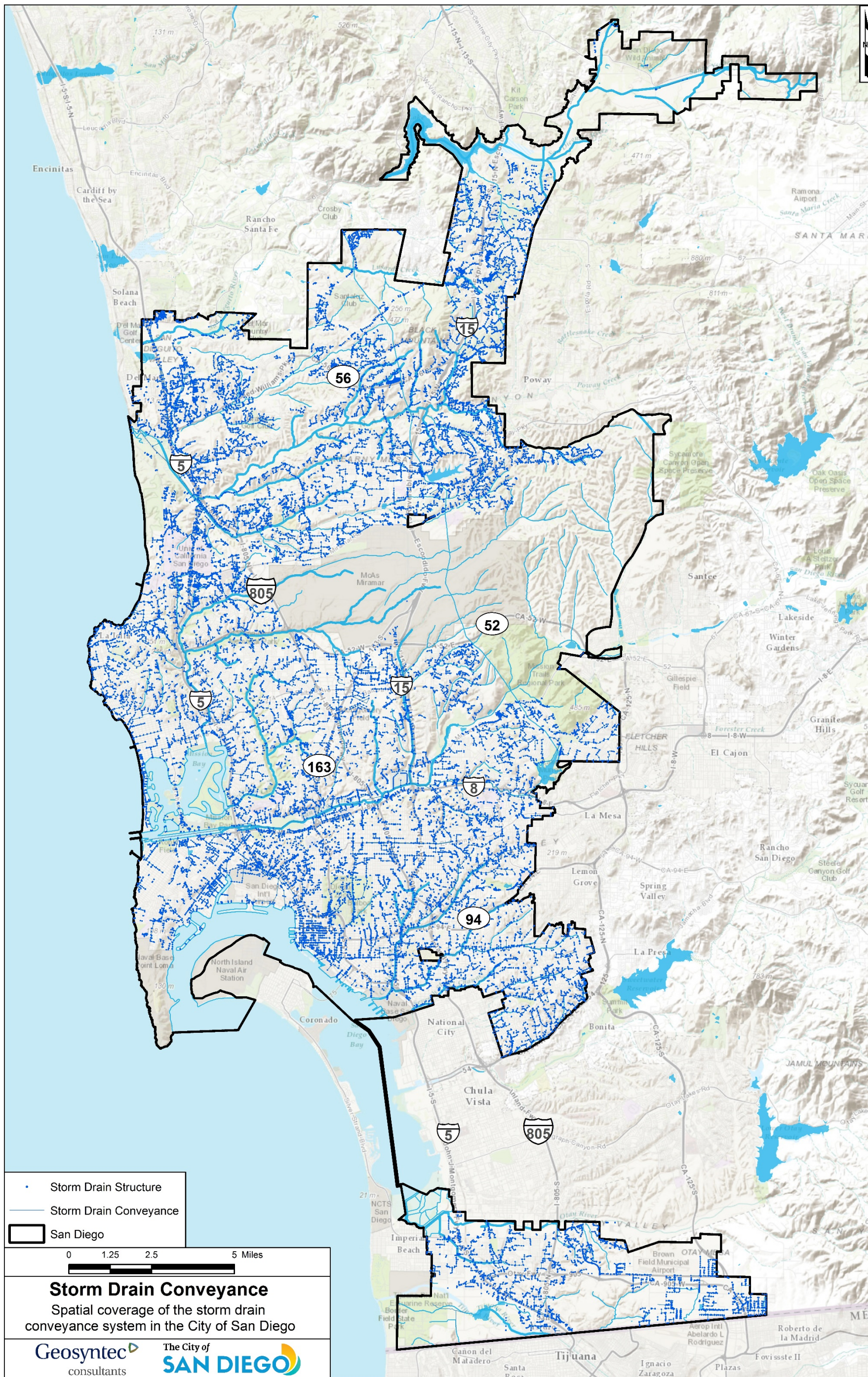


Figure 1. Spatial Coverage of the Storm Drain Conveyance System in the City of San Diego

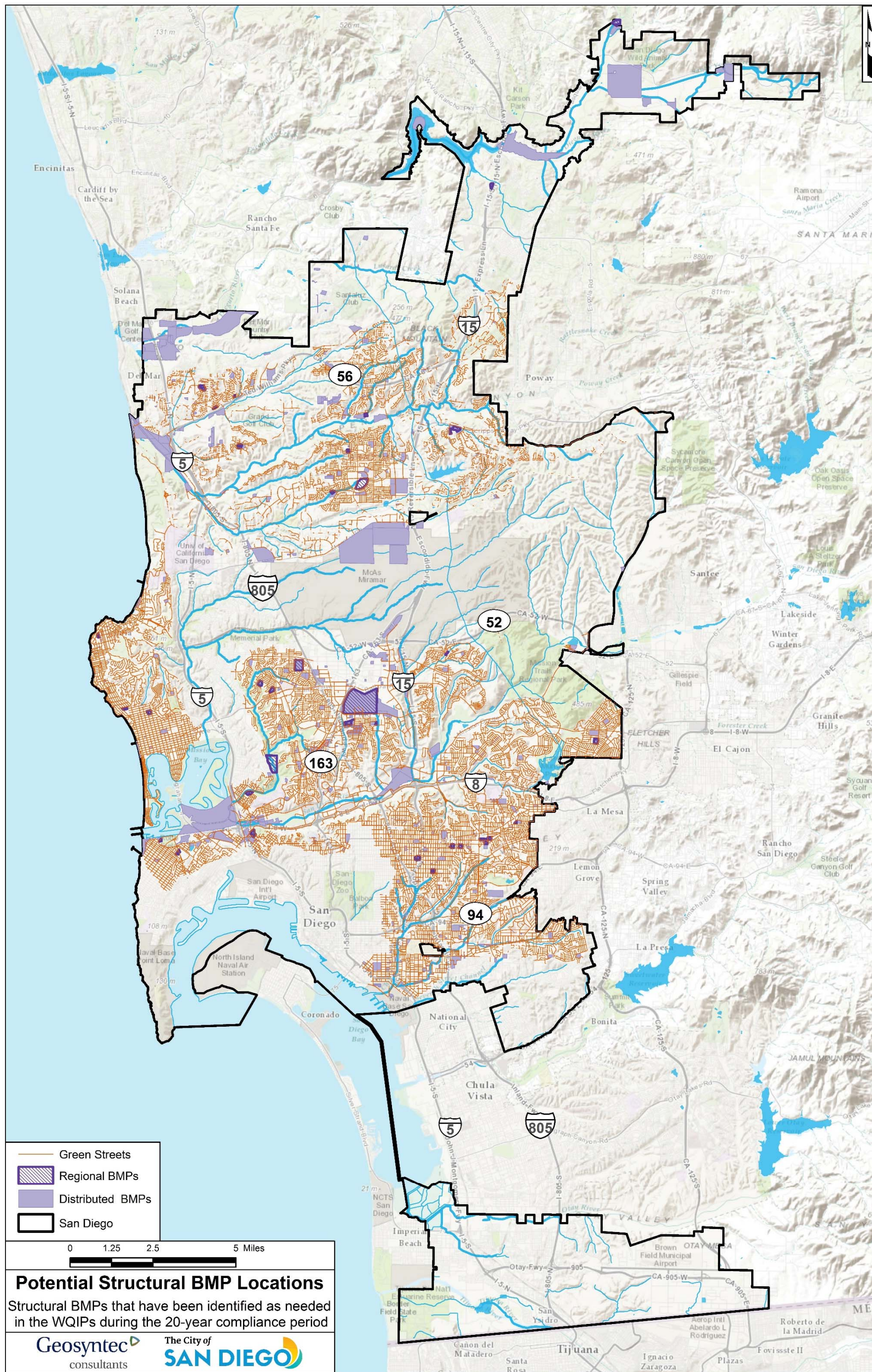


Figure 2. Structural BMPs that Have Been Identified As-Needed in the WQIPs During the 20-Year Compliance Period (Source: CSD, 2015 a-d)

1.2.3 Jurisdictional Runoff Management Plan (JRMP)

The JRMP (<https://www.sandiego.gov/stormwater/plansreports/jrmp>) describes the City's approach to improving water quality in its rivers, bays, lakes, and ocean through reducing pollutant discharge into the MS4 system. The development and implementation of the JRMP is part of the Permit requirements. The Division has led the City's effort to develop the JRMP. Both the Division, other non-enterprise City departments, and City enterprises are responsible for the implementation of the JRMP. The main activities covered under the JRMP include illicit discharge detection and elimination, planning development, site inspection, public education and outreach, and development of enforcement response plan. Details regarding the City's JRMP-related activities are documented in the JRMP Annual Report (CSD, 2015c).

1.3 Program Cost Estimate Overview

As discussed in Section 1.2, the storm water program addresses flood risk management and the implementation of the WQIPs and the JRMP. The flood risk management and WQIP-related activities are typically supported by the available funding allocated to the Division's Operations and Maintenance (O&M) program, which includes debt service and maintenance and repair expenses and the Capital Improvement Program (CIP). The Division also uses some of its allocated O&M funding to support a majority of the budget needs for the implementation of JRMP, while the remainder of the JRMP funding needs are provided by other non-enterprise City departments and divisions. A summary of the cost requirements for implementing the storm water program over a 20-year compliance period is presented in **Table 1**, and the distribution of the cost requirements for these three categories of activities is shown in **Figure 3**.

The Division has an estimated funding need of \$3.1 billion over the next 20 years (in 2015 dollars). When estimates of JRMP-related costs for other non-enterprise City departments that are currently supported by the City's General Fund are included, the total funding need increases to approximately \$3.2 billion, as illustrated in **Table 1**. Additionally, the estimates developed for the storm water program do not include funding needs associated with maintenance and repairs of the other non-enterprise City departments' storm drain assets and flood risk management costs; hence, this funding need is excluded from the Fee Study. This is primarily because detailed projected costs for other non-enterprise City departments' storm drain assets are unavailable at this time.

The current estimated funding need represents a 21% reduction, or approximately \$800 million decrease, from the original estimated funding need of \$3.9 billion presented in the Division's 2013 Watershed Asset Management Plan (WAMP).

The 2013 WAMP estimated that \$3.9 billion in funding would be needed over an 18-year period (FY2014 – FY2031) to comply with the requirements of the previous 2008 Municipal Storm Water Permit (and Comprehensive Load Reduction Plans). Costs to operate, maintain, and repair the City's storm drain system for flood risk management were also included in that estimate.

The majority of the estimated funding needs are associated with the City's TMDL compliance efforts. The Division has refined TMDL compliance options and has been able to reduce compliance cost

estimates from \$2.6 billion, as estimated in 2013, to a new estimate of \$1.6 billion. The Division has also similarly improved its effort to implement the JRMP Permit requirements, bringing associated costs down from \$470 million to the current estimate of \$326 million.

The primary reasons for the significant reduction in costs from the 2013 estimate to the current estimate are greater reliance on more efficient compliance activities, reduced operation and maintenance cost assumptions, and most significantly, proposed amendments to dissolved metals standards in the Chollas Creek Dissolved Metals TMDL.

It is recognized that final costs may be higher or lower depending on numerous factors including, but not limited to, changes in regulatory standards, science and technology advancements, and/or when maintenance projects are determined to be a capital expenditure because of the magnitude of the repair.

Table 1. Total Cost of the Storm Water Management Program Over 20-Year Compliance Period

Funding Components	CIP	GF	Total Cost	Reference
WQIPs	\$1,357M	\$245M	\$1,603M	CSD, 2015b
Flood Risk Management	\$558M	\$627M	\$1,185M	CSD, 2015a
Division's JRMP Cost	\$-	\$326M	\$326M	CSD, 2015c
Other Non-Enterprise City Departments' JRMP Cost*	\$ -	\$68M	\$68M	CSD, 2011, 2012a, 2013b, 2014a, 2015c
20-Year Total Need:	\$1,915M	\$1,266M	\$3,182M	

Note: The costs presented above are in current (or 2015) dollars. *The amount is estimated based on a five-year average between FY2011-FY2015 (CSD, 2011, 2012a, 2013b, 2014a, 2015c)

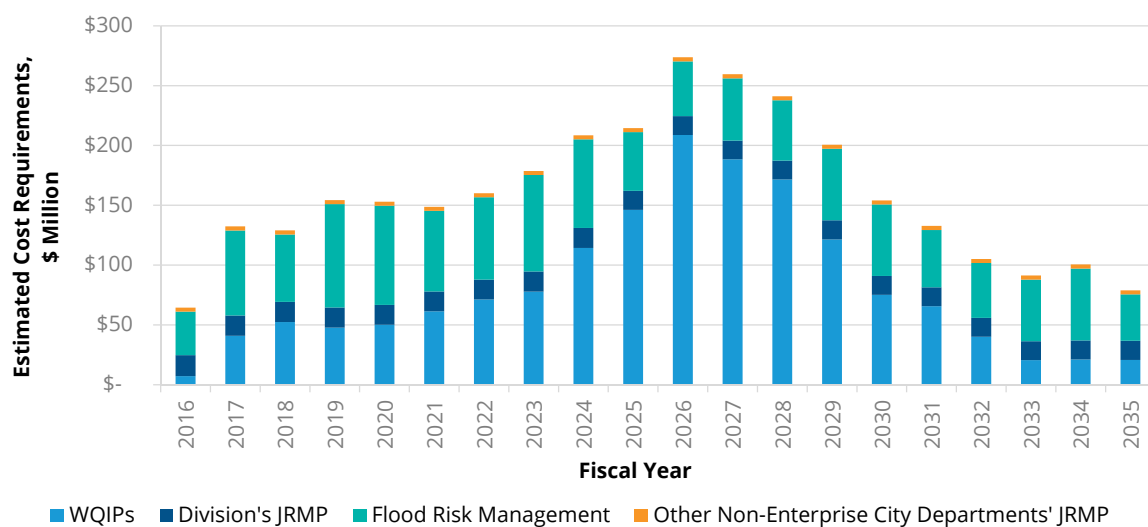


Figure 3. Annual Estimated Cost Requirements for the Storm Water Management Program Over the 20-Year Compliance Period (Costs in 2015 Dollars)



1.4 Historic Funding

Historically, the Division's operating budget has been funded from multiple sources that include the City's General Fund, storm drain fees, and parking violation fines. A list of the funding sources between FY2013 and FY2015 and the projected funding sources for FY2016 is presented in **Table 2**. The current storm drain fee, established in July 1996, is a flat monthly fee of \$0.95 for single-family residences. For multi-family, commercial, industrial, and other types of utility accounts, the fee is collected as a surcharge on water use equal to \$0.0677 per hundred cubic feet of water used by the account. The storm drain fee generated an average of \$5.7 million in revenue annually between FY2013 and FY2015. Parking violation fines have also provided another steady source of income with an average annual revenue received from this source between FY2013 and FY2015 of approximately \$5.3 million (**Table 2**).

Capital improvements for the Storm Water Division's CIP are being funded with a combination of bond proceeds backed by the City's General Fund, direct transfers from the City's General Fund, gas taxes, development impact fees, and grants. The aforementioned funding sources are not guaranteed and often vary from year to year. **Table 3** below lists the sources and amount of contributions to the Storm Water Division's CIP over the last five years.

Table 2. Historical Funding Sources for the Storm Water Division's Operations and Maintenance (O&M) Fund

	FY13 Actuals	FY14 Actuals	FY15 Actuals	FY16 Actuals¹	FY13-16 Average
Parking Violation Fines	\$5.0M	\$5.6M	\$4.8M	\$5.2M	\$5.1M
Storm Water Enforcement & Other Fines	(\$0.2M)	\$0.3M	\$0.3M	\$0.2M	\$0.2M
Other Revenue ²	\$0.7M	\$0.6M	\$0.5M	\$1.6M	\$0.9M
Sub Total (Non-Storm Drain Fee Revenue)	\$5.5M	\$6.5M	\$5.6M	\$7.0M	\$6.2M
Storm Drain Fund Revenue	\$5.6M	\$5.9M	\$5.7M	\$5.4M	\$5.7M
Total (Including Storm Drain Fee Revenue)	\$11.1M	\$12.4M	\$11.3M	\$12.4M	\$11.9M

Note: ¹ Unaudited actuals. ² Include licenses and permits, revenue from other agencies, charges for current services, and transfers from other funds. Source: CSD, 2015d

Table 3. Historical Storm Water Division's CIP Funding Sources and Amounts

Source	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017 (Adopted Budget)
Bond Proceeds	(\$0.2M)	(\$0.6M)	\$14.7M	\$4.2M	\$22.5M	\$4.9M	\$ --
Capital Outlay	\$ --	(\$0.1M)	\$ --	\$ --	\$0.3M	\$3.7M	\$ --
City General Fund	\$2.0M	\$1.3M	\$5.4M	(\$0.1M)	\$3.8M	\$5.2M	\$5.5M
TransNet	\$0.8M	(\$0.1M)	\$ --	\$3.8M	\$ --	(\$0.0M)	\$1.3M
DIF/FBA	\$1.1M	\$0.3M	\$ --	\$ --	\$ --	(\$0.0M)	\$ --
Grants	\$0.9M	\$1.2M	\$2.5M	\$0.1M	(\$0.9M)	\$ --	\$ --
Other	\$ --	(\$0.1M)	\$0.	\$0.1M	\$0.4M	\$5.0M	\$ --
Total	\$4.6M	\$1.9M	\$22.8M	\$8.1M	\$26.1M	\$18.8M	\$6.8M

Note: Amounts reflect net additions and reductions by revenue source. Other Category includes other revenue sources (i.e., donations, Rose Canyon Fund, Proposition 42 replacement, regional park improvements fund). Source: CSD, 2015d

2 Fee Structure Design

2.1 Funding Goals and Program Period

As discussed in Section 1.4, current funding for storm water services is a combination of revenues from multiple sources, as well as funds allocated from the City's General Fund. It is outside the scope of this Fee Study to determine choices that the City would ultimately make regarding how to fund future storm water activities. Nonetheless, this Fee Study examines a range of possible fee structures that would allow the Division to be self-sustaining and have the ability to provide the storm water services necessary for the City to be in compliance with the new Permit requirements and provide flood risk reduction services.

In this Fee Study, it is assumed that the Division would be separated from the City's General Fund and supported entirely as an enterprise within the City. Thus, the fee structures examined in this Fee Study would be designed to generate revenues over time to fund the expenditures associated with storm water services provided by the Division. It is assumed that funding from the City's General Fund proceeds would be eliminated. Other funding sources, such as joint project funding with other City departments, other San Diego regional funding sources (e.g., transportation-related revenue), and grants, have large degrees of uncertainty and therefore were not quantitatively considered for purposes of this Fee Study.

Parking violation fees are used to pay for a portion of storm water management activities related to the City's streets. These fees are included as a revenue source in the future. The remainder of required revenues would be generated by a parcel fee on properties within the City. This new fee would supersede the existing residential parcel fee and commercial property water-use surcharge currently dedicated to funding storm water management activities.

2.2 Constitutional Requirements for Property-Related Fees

Pursuant to Proposition 218 (California Constitution, Article XIII C and XIII D), a "fee" or "charge" means any levy other than an *ad valorem* tax, a special tax, or an assessment imposed by an agency on a parcel or a person as an incident of property ownership, including user fees or charges for a property-related service. Prior to implementing any new or increased fee or charge, the City must fulfill certain noticing, calculation, and election requirements. Proposition 218 also requires majority approval of affected property owners or a two-thirds majority approval of the electorate for any new or increased property-related fees.

California Constitution Article XIID Section 6(b) describes “Requirements for Existing, New or Increased Fees and Charges” and states that a fee or charge cannot be extended, imposed, or increased by any agency unless it meets five specific requirements. These requirements are discussed below:

1. “Revenues derived from the fee or charge shall not exceed the funds required to provide the property-related service [‘total service cost limitation’].” In this study, the fees are estimated annually based upon revenue requirement estimates that are strictly tied to the estimated costs of the program described above.
2. “Revenues derived from the fee or charge shall not be used for any purpose other *than that for which the fee or charge was imposed* [‘use limitation’].” This additional requirement relates to the terms for adoption of the fee and restrictions that would be put in place to ensure that fees generated for the storm water program would not be used for purposes outside the program. For this study, the fees are estimated to cover only the cost of the storm water program described above.
3. “The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel [‘proportional cost limitation’].” The conceptual procedures used to allocate fees to parcels as presented in this Fee Study were developed to meet the proportional cost requirement in Proposition 218. Costs are allocated to each land use within the City based on estimated impervious areas in an effort to determine the appropriate contribution to storm water runoff, and hence the amount collected from each parcel to provide the storm water service by the storm water enterprise. These procedures are further described in Sections 4 and 5 of this Fee Study.
4. “No fee or charge 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 or charges based on potential or future use of a 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 [Procedures and Requirements for All Assessments] and [‘future services prohibition’]”. It is assumed in this study that the conceptual fee structures described herein would comply with this requirement. The storm water program benefits all of the property within the City, and thus is available and used by all property owners. The conceptual fee structures described herein are based upon a program that is expected to be implemented over a compliance period of 20 years. Fees would be established at a level each year that meets the then-current revenue requirement of that particular year. No intent exists to cover potential or future use of the service beyond the specific program described herein. This is discussed in greater detail in Section 4.
5. “No fee or charge 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 property owners. Reliance by an

SECTION 2

agency on any parcel map, including, but not limited to, an assessor's parcel map, may be considered a significant factor in determining whether a fee or charge is imposed as an incident of property ownership for purposes of this article. In any legal action contesting the validity of a fee or charge, the burden shall be on the agency to demonstrate compliance with this article [‘general government service prohibition’].” The conceptual parcel-based fees presented in this Fee Study are based on the assumption that the City's storm water costs are recoverable from a parcel-based fee related to the relative contribution to runoff by each parcel. These procedures are further described in Section 5.

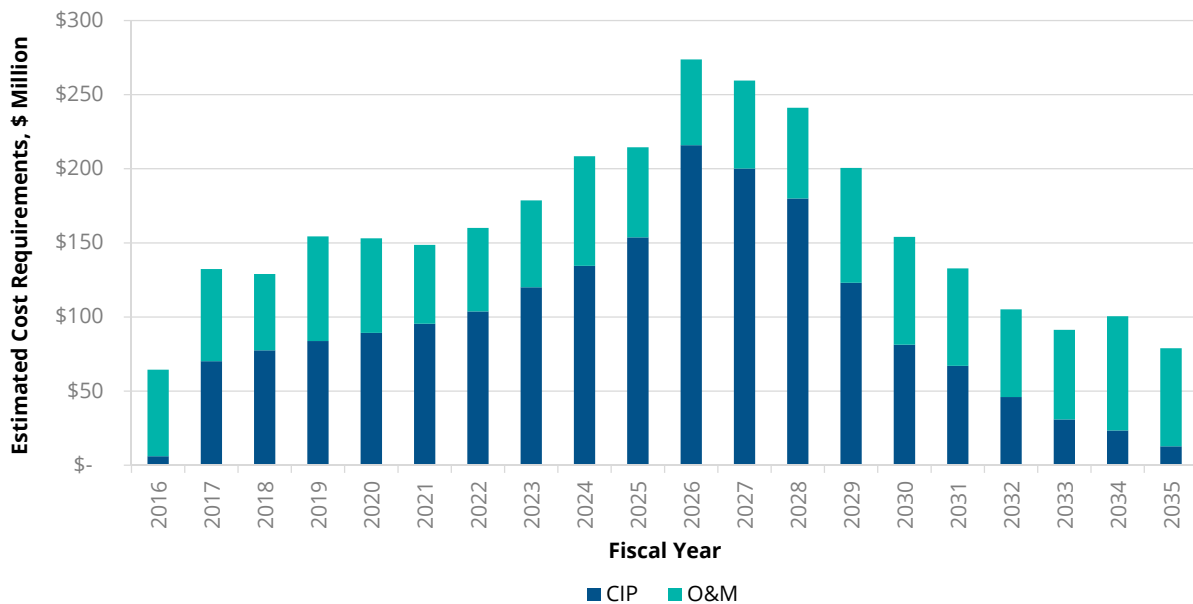


Figure 4. Annual CIP and O&M Cost Requirements for the Storm Water Program with a 20-Year Compliance Period (Costs in 2015 Dollars)

3 Possible Reductions in Fees from Other Revenue Sources

Cities and municipalities throughout the State are facing significant increases in storm water management costs due to the implementation of the Clean Water Act as administered by the RWQCB. The Permit described above is similar in scope to other permits issued elsewhere within the State where TMDL compliance is integrated directly into the Permit.

This Fee Study considers a potential dedicated revenue source for a storm water enterprise fund and, except for parking violation fines and other minor revenue sources, no other funding sources were assumed. It is recognized that there are a number of other potential funding sources that could offset a portion of the costs of the compliance program. The following lists examples of possible federal, state, and regional funding sources that could be examined in the future:

- Grants/Proposition 1 Grant for Implementation of Storm Water Programs;
- Caltrans Cooperative Implementation Agreements;
- Community Development Block Grants;
- Sewer and Water Fees (Water Resources/Alternative Water Supply);
- State Gasoline Taxes; and
- Development Impact Fees.

It is noted that the City is not prohibited from exploring other unrestricted revenue sources that can be used to augment the costs of the storm water program directly, such as property taxes and sales taxes.

4 Estimation of Annual Revenue Requirements

The Division has developed and updated cost estimates of the capital and O&M costs for the City's storm water program that covers Flood Risk Management, the JRMP, and the WQIPs through its WAMP over the next 20 years (CSD, 2013a). As noted in Section 1.3, these cost estimates exclude O&M needs related to other non-enterprise City departments' and City enterprises' storm drain assets and flood risk management, and JRMP costs for City enterprises that are not supported by the City's General Fund. These enterprises include the Airports Division, Refuse Disposal and Waste Recycling services provided by Environmental Services Department, Development Services Department, golf courses managed by Park and Recreation Department, and Public Utilities Department. The cost estimates are used for determining the annual revenue requirements and thus the size of fees presented in this Fee Study.

As shown in **Figure 4**, the program costs are expected to grow rapidly during the first 13 years of the storm water program and peak between FY2026 and FY2027, exceeding \$250 million per annum. Without a management strategy, the revenue requirements from fees during these peak-cost years would exceed two and a half times of the fees required during the years with lower cost requirements (e.g. FY2016, FY2033, and FY2035 with cost requirement below \$100 million per annum). Managing costs and revenue requirements from fees would be done by financing the costs for capital improvement projects and using reserves to stabilize revenue requirements from year to year.

The total costs of the storm water program over the 20-year compliance period exceed historic financial obligations and are expected to be significantly higher than the anticipated cost obligations beyond FY2035 or after compliance is achieved. As shown in **Figure 4**, a substantial amount of the cost requirement is a result of storm water CIP implementation; it is appropriate for the City to consider debt financing these capital obligations for the program in order to stabilize program costs on a year-to-year basis and also to provide equity between current and future property owners for repayment of the cost of these capital obligations that will serve the City's needs long into the future.

This section of the Fee Study describes options under which the City might use debt financing and a fee stabilization fund to pay for the program during the compliance period. These approaches would stabilize the total revenue requirements on a year-to-year basis.

4.1 Study Assumptions

To evaluate the conceptual options regarding the use of debt financing and reserves used to fund the program, the Consultant Team developed a simple spreadsheet model. This model was used to simulate resulting annual revenue requirements from fees based on the assumptions adopted.

- **Inflation:** The cost requirements established in the WAMP are “2015 dollars,” which is a common practice used by government agencies to express future costs. Thus the cost estimates presented in **Figure 4** do not include the future effects of inflationary increases on program costs. To facilitate the fee analysis, this Fee Study has assumed an average inflation rate of 2.79%. This inflation factor was developed based on the average consumer price index over the last 30 years. The inflation adjusted cost requirement is presented in **Figure 5**.
- **Simulation Period:** The simulation period adopted for this Fee Study is the compliance period of 20 years.
- **Key Financing Assumptions:** In all of the simulations, it is assumed that revenues from the fee would be used to support debt service payments on revenue bonds issued to pay for capital improvement project expenses. The key assumptions for cost of debt issuance are as follows:
 - Interest rate on bonds: 5%;
 - Term – 30 years, tax exempt revenue bonds;
 - Debt Issuance Schedule: For the purpose of the simulation, bonds are issued no more frequently than every three years based upon the estimated capital requirements over the succeeding three-year period; and
 - Bond covenants: As a surrogate for complex bond covenants, the simulations maintain a minimum debt service coverage ratio of 150% net of annual operating expenses.

It is noted that there are other alternative financing vehicles, such as the Clean Water State Revolving Fund loans and the Water Infrastructure Finance and Innovation Act (WIFIA) loans, which offer lower interest rates and could be utilized to reduce the debt service repayment obligations. These financing vehicles were not assumed for the purpose of this Fee Study.

- **Fee Stabilization Fund:** The simulations endeavor to minimize funds held in reserve. Accordingly, a single reserve fund has been set up for the purpose of the simulation, namely a fee stabilization fund. Funds residing in the fee stabilization fund may be withdrawn in any year to fund O&M expenses as necessary to make up the debt service coverage requirements. A minimum fund balance of 5% of annual revenue requirements should be maintained according to the City’s Reserve Policy (CSD, 2014b). To the extent that the fund is held in reserve year-to-year, the fund is presumed to earn interest each year at 1% of the end-of-year reserve balance.
- **Construction Fund:** A construction fund would be used to accumulate monies to support capital improvement projects. The fund is presumed to earn interest each year at 1% of the end-of-year reserve balance.

- Other major and minor revenues:** It is assumed that the City will continue to allocate revenues derived from parking violation fines levied within the City to defray the costs of operating, upgrading, and maintaining the storm water program in the future. The future revenue from these fines is estimated to be the average revenue from the last five years, in constant dollars. The future revenue from parking violation fines and other minor revenues is estimated to be \$6 million, which includes other minor revenue sources, escalating at the assumed annual inflation rate of 2.79%.
- Parcel fee adjustments:** To be consistent with anticipated City implementation strategies, it was assumed that fee increases would occur no more than every three years (instead of adjusting fees every year). Since the simulation period is only 20 years, fees are first adjusted after only two years so that the simulation ends with a three-year period of stable rates. When fees are increased, a constant percentage increase of fees is used throughout the simulation. However, as noted in some cases after an initial period of increase, revenue requirements may slow over time; in these cases, the fee would increase at a slower rate later in the simulations.

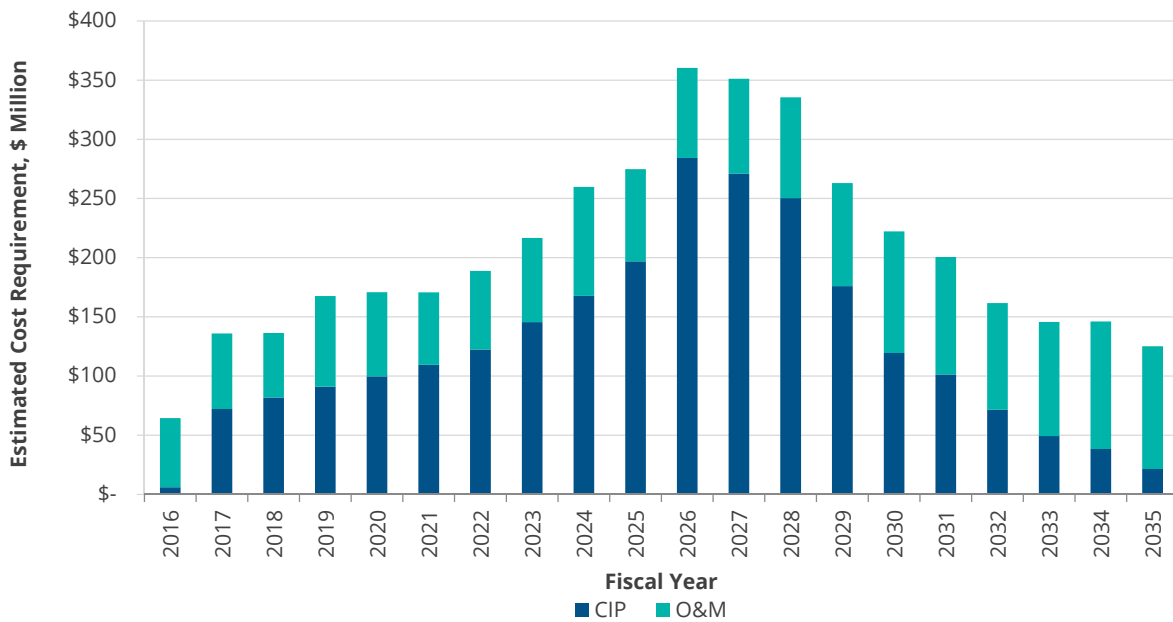


Figure 5. Inflation Adjusted Cost Requirements for the Storm Water Program with a Compliance Period of 20 Years

4.2 Financing Scenarios Used to Estimate Annual Revenue Requirements from Fees

Since the annual revenue requirements depend upon the funding approach ultimately employed by the City to manage these requirements, this Fee Study describes two financing scenarios by which the City could manage the capital expenses. The two scenarios represent opposite ends of a range of options for managing the future revenue requirements and are intended for illustrative purposes.

4.2.1 Scenario 1 – 100% Debt Financing

In this Scenario, it is assumed that the City would issue revenue bonds to finance 100% of the anticipated costs of the programs. Bonds would be issued immediately to cover anticipated capital costs for the next three years and thereafter at three-year intervals. Bonds would be sized to meet anticipated capital needs during the next three years. Assuming 100% debt financing is likely to be impractical, such an assumption can be considered an upper limit for possible fee scenarios. As shown in **Figure 6**, 100% debt financing would incur the lowest initial revenue requirements. However, given that debt service payments with 100% financing would ultimately be the largest, it also shows the highest peak revenue requirements among all the scenarios evaluated in this Fee Study.

As shown in **Figure 6**, the initial revenue requirements are at \$73 million in Year One, and then increase in increments of 30% every three years. In later years, the estimated revenue requirements reduce substantially compared to the earlier years, which in turn lowers the rate of increase in the fees. Beginning in FY2030, rate increases would be reduced to 13% and would remain the same until the end of the simulation period. It is noted that in this scenario, the fee stabilization fund would accrue more monies in early years. In the simulations, increased drawdown from the fee stabilization fund to pay for a portion of the O&M expenses would be expected in later years. The accumulation of funds in the stabilization fund is a combined result of the use of 100% debt financing and the constraints on a fee adjustment of every three years. An overview of the annual incoming fund deposited in the construction fund is presented in **Figure 7**. Details regarding operating results, capital funds, and the construction fund are presented in **Appendices 2, 3, and 4**, respectively.

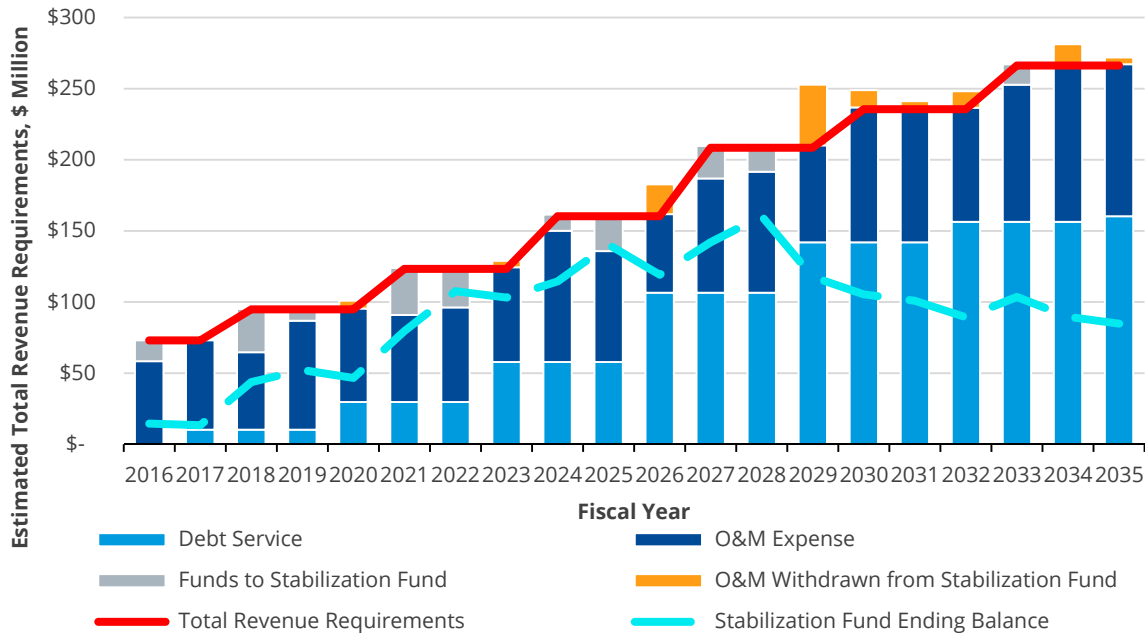


Figure 6. The Operating Results for 100% Financing Scenario During the Simulation Period

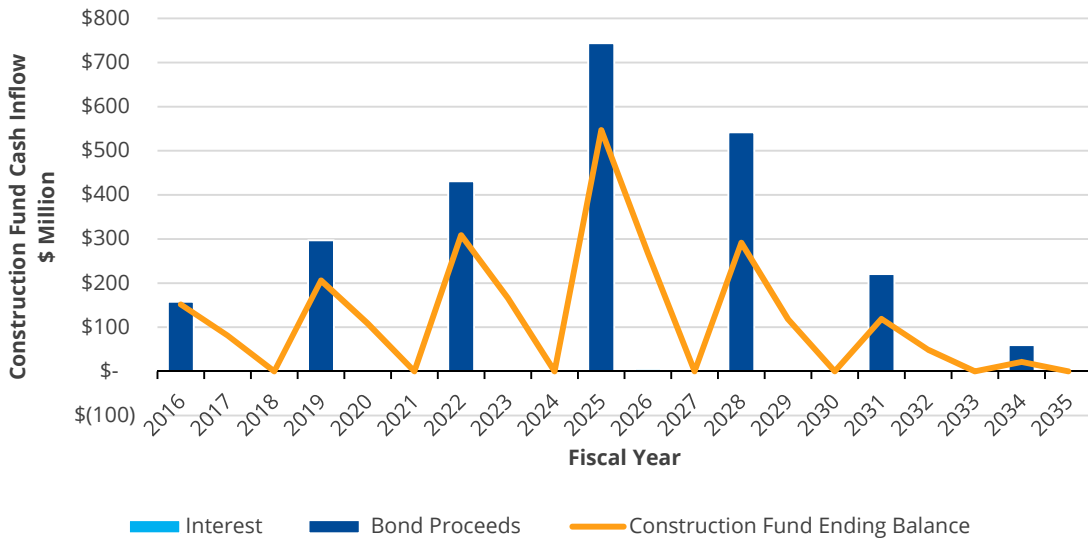


Figure 7. Incoming Monies Deposited in the Construction Fund During the Simulation Period²

² The amount of interest accrued in the construction is small compared to other cash inflow. The calculated values for interest received can be found in Appendix 4.



4.2.2 Scenario 2 - "Flat" Fee

In this scenario, a lesser amount of debt would be issued. The initial fee would be higher than in the prior scenario and revenues would be applied as "pay-as-you-go" or PAYGO. Throughout the simulation, the rate of fee increase would be approximately the same as the assumed rate of inflation. In constant dollars, the fee would essentially be flat.

To achieve a stable fee in constant dollars, the PAYGO becomes approximately 26% of the total capital expense, and debt financing is needed for only 74% of the capital requirements. As shown in **Figure 8**, the initial revenue requirements are set at \$134 million per year and then increase every three years at 8.6%, which is approximately the same as the assumed rate of inflation of 2.79%. The annual revenue requirements in FY2035 are \$220 million in nominal dollars. It is noted that the 26% PAYGO allows for a reduction in debt service by 26% at the end of the simulation compared to Scenario 1 - 100% Financing. A summary of the construction fund is presented in **Figure 9**. Details regarding operating results, capital funds, and construction fund are presented in **Appendices 5, 6, and 7**, respectively.

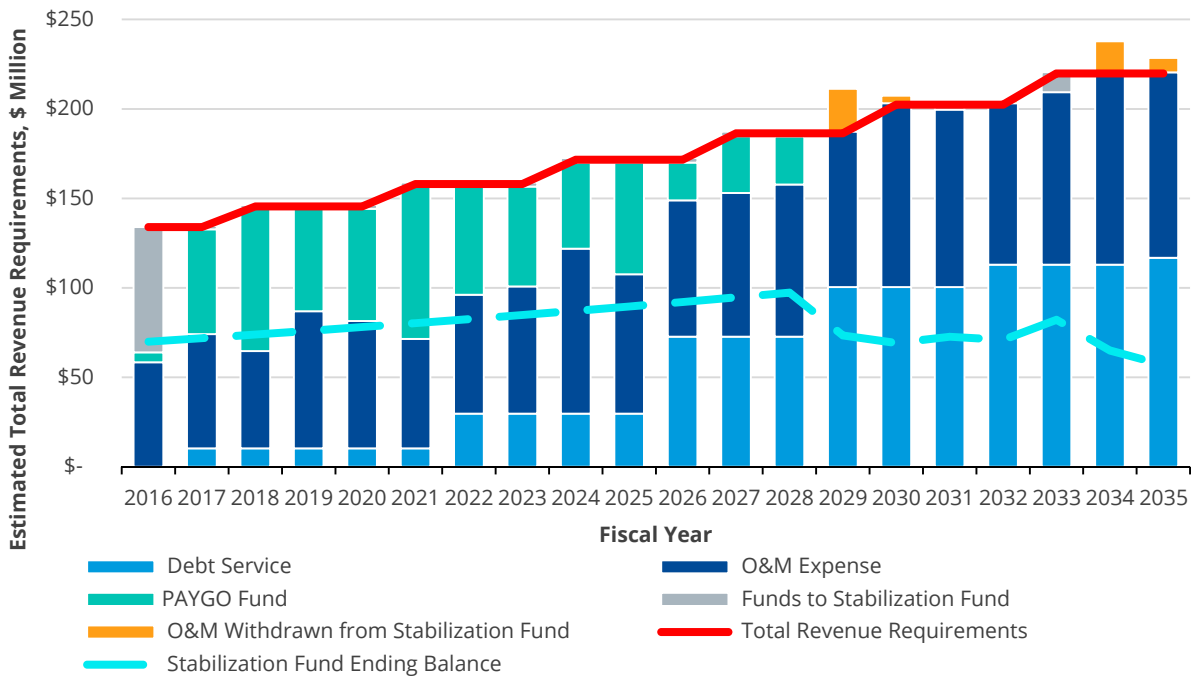


Figure 8. The Operating Results for a Flat Fee Scenario During the Simulation Period



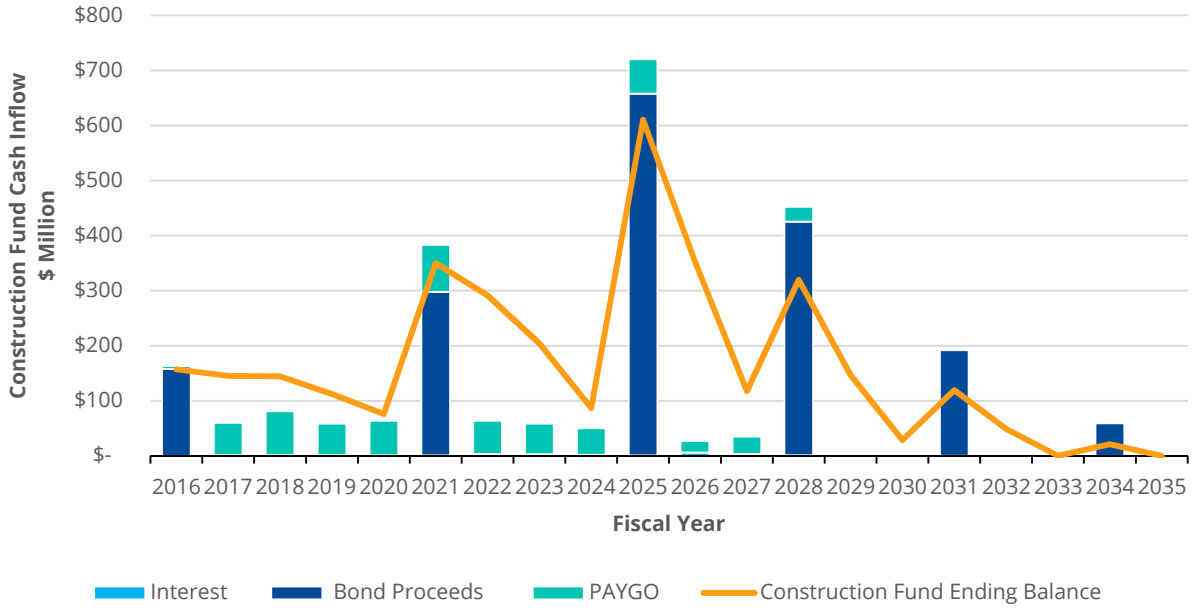


Figure 9. Incoming Monies Deposited in the Construction Fund for a Flat Fee Scenario During the Simulation Period³

³ The amount of interest accrued in the construction is small compared to other cash inflow. The calculated values for interest can be found in Appendix 7.



5 Parcel-Based Storm Water Service Fees

In order to allocate the revenue requirements from fees to individual parcels, the nexus between the level of storm water services provided by the City and individual parcels' contributions to storm water runoff must be established. According to the Guidance for Municipal Storm Water Funding developed by the National Association of Flood and Storm Water Management Agencies (NAFSMA, 2006), impervious area, gross area, percentage imperviousness, and land use are the most frequently used parameters for determining storm water fees. A 2014 national storm water utility survey reported that almost 80% of the storm water utilities participating in the survey developed their storm water utility fees based on impervious area (B&V, 2014). In California, there are a number of municipalities that calculate their storm water fees using impervious area approved under Proposition 218, which include the following examples:

- City of Palo Alto (approved in 2005);
<https://www.cityofpaloalto.org/faqs/categoryqna.asp?id=37>
- City of San Clemente (approved in 2002, 2007, and 2013);
<http://www.scwatersheds.com/pdf/Clean%20Ocean%20Fee%20FAQs.pdf>
- City of Rancho Palos Verdes (approved in 2005);
<http://www.rpvca.gov/DocumentCenter/View/921>
- City of Santa Clarita (approved in 2009);
<http://www.santa-clarita.com/home/showdocument?id=6828>
- Vallejo Sanitation and Flood Control District (approved in 2015);
https://www.vsfcd.com/Site_PDFs/VSFCD%20Notice.pdf
- City of Burlingame (approved in 2009); and
<https://www.burlingame.org/Index.aspx?page=1360>
- City of San Mateo (approved in 2009 and 2013).
<http://www.menlopark.org/DocumentCenter/View/7386>

Impervious area has also been used as a surrogate for quantifying runoff to design BMPs in the City's Storm Water Standards (CSD, 2012b). Impervious area is recognized as an appropriate metric proxy to estimate storm water runoff contributions; these estimates are used to establish an adequate service fee commensurate with the revenue needed to manage the runoff received from parcels.

Accordingly, parcel impervious area was adopted as the primary basis for a calculated parcel-based storm water service fee. Land use factors are commonly applied to account for pollutant generation

and the efficacy of BMPs when evaluating alternative compliance with storm water pollution management goals. However, these factors are not relevant for flood control and have not been directly incorporated into this analysis.

This section presents the approach used to estimate the impervious area associated with different land use types within the City limits. Impervious areas of different parcels are analyzed within a range of land use categories. The detailed approach and findings of this land impervious area analysis are presented in Section 5.1. The annual revenue requirements were allocated based on the findings presented in Section 5.2 to calculate the parcel-based storm water fees.

5.1 Land Impervious Area Analysis

5.1.1 Study Area

The study area for the parcel-based fee study is the City limits for the City of San Diego. Within the boundary of the City limits, the study area was subdivided by watershed. These watersheds include the San Dieguito River, Los Peñasquitos Lagoon, Mission Bay, San Diego River, San Diego Bay, and the Tijuana River.

5.1.2 Land Use Classification and Characteristics

In the Fee Study, 95 land use types were used as established by published data (2014) from the San Diego Association of Governments (SANDAG) for each individual parcel within the City were used. The definitions of these land use types from SANDAG are presented in **Appendix 11** for reference. These land use types are grouped into the categories indicated below.

1. Residential – Includes spaced rural developments, various single-family or multi-family residential, mobile home parks, and mixed use development;
2. Commercial and Office – Include hotels/motels, shopping centers, office buildings, and civic centers;
3. Industrial – Includes various light and heavy industry, warehousing, public storage, and junkyards/landfills;
4. Parks and Recreation – Includes convention centers, stadiums, tourist attractions, parks, golf course, and beaches;
5. Agriculture – Includes agriculture, orchards, or vineyards, and field crops;
6. Public Facilities and Utilities – Includes libraries, post offices, fire/police stations, military, and schools; and
7. Undeveloped – Includes lakes/reservoirs, areas under construction, and vacant areas.

5.1.3 Imperviousness Evaluation

5.1.3.1 Non-Residential Impervious Surface Analyses

Impervious area for the majority of non-residential (including mixed-use areas) land use was assigned based on the Impervious Surface Coefficients for General Land Use Categories for Application within San Diego County (ISC Study) (San Diego, 2008). This document established average impervious surface coefficients for all non-residential land use types, but not for residential land use types within San Diego County. Although these land use types mostly align with the current SANDAG land use classifications, approximately 20 classifications were different from the ISC study and were assigned to the closest applicable classification identified by the ISC study. From this analysis, the majority of non-residential land uses were designated an impervious surface coefficient on this basis.

The impervious square footage of non-residential parcels was calculated based on the total square footage of the parcel multiplied by the impervious surface coefficient for the parcel's land use type. The final land use analysis incorporates the impervious area evaluations above to develop an average cost of service per square foot for each land use type per watershed, based on the impervious acreages of each land use types. The impervious area of non-residential as well as residential land use types is presented in **Figure 10**.

In evaluating the City's parcel information, however, it was determined that 39 large governmental or industrial land use parcels had impervious areas that differ significantly from the ISC study-defined land use classifications. These parcels are parks, undeveloped government training facilities, and certain industrial extractive parcels. As such, parcel-specific impervious surface analyses were calculated in a manner similar to the residential parcel analysis described below.

5.1.3.2 Residential Parcel-Specific Impervious Surface Analyses

Impervious surface coefficients were not developed for residential parcels in the ISC study, as imperviousness of residential parcels can vary significantly from parcel to parcel within a single land use type, based on the density of housing, size of the parcel, and nature of development on the parcel. Therefore, to evaluate the imperviousness of residential properties, residential parcel boundaries were overlaid on the National Land Cover Database (NCLD) Percent Developed Impervious Area Grid (NCLD, 2011). This is the most recent, and highest resolution imperviousness dataset available for the City of San Diego. This database provides 30-meter impervious surface classifications across the United States, with an imperviousness value assigned to each 30-meter square grid cell. Each parcel was then individually assigned a percent impervious classification based on the average value of the NLCD impervious grid cells intersecting the parcel. The impervious square footage of each parcel was calculated by multiplying the total square footage of a parcel by the average percent imperviousness for that parcel, as determined by the average value of the intersecting 30-meter NLCD impervious area grid cells. Within each watershed, the average percent impervious area for each residential land use type was calculated based on the summed parcel-specific impervious square footage divided by the total square footage for that land use type. The imperviousness of residential as well as non-residential land use types is presented in **Figure 10**.

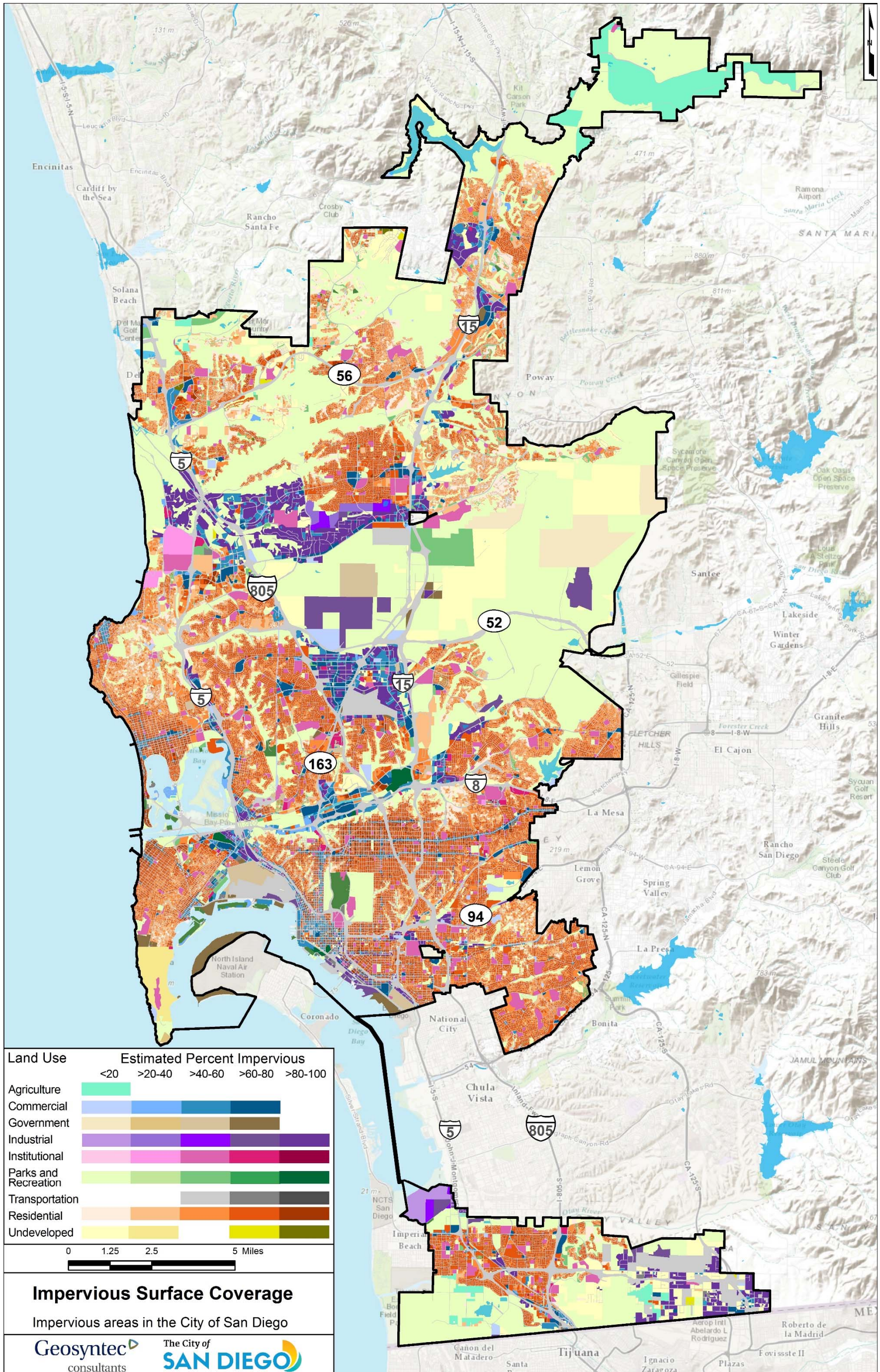


Figure 10. Imperviousness Distribution in the City of San Diego

5.1.4 Parcel Land Use Analysis

The parcel land use analysis incorporates the impervious area evaluations above to develop an average cost of service per square foot for each land use type based on the impervious acreages of each land use type. The impervious area for each parcel type is calculated as follows: parcel square footage is multiplied by either the impervious surface coefficient (for non-residential land uses), specific impervious areas (eleven large parcels) or by the average NLCD impervious area classification based on the NLCD data set (for residential land uses), as described above, resulting in an estimated impervious area for each parcel.

Equation 5.1-1. Impervious Area

$$\text{Property Area} \times (\text{Impervious Surface Coefficient or Average NLCD Classification}) = \text{Impervious Area (Parcel)}$$

The total impervious area, total area, and number of parcel counts of selected land use type within the City boundary are presented in **Table 4**. Parcel characteristics for all the land use types within the City boundary can be found in **Appendix 8**.

Table 4: Parcel Count, Imperviousness Characteristics of Selected Land Use Groups Included in the Fee Study within the City of San Diego

Land Use Category	Total Impervious Area, Sq. Ft. ¹	Total Area, Sq.Ft. ¹	Average Impervious Area, Sq.Ft./Parcel ²	Average Parcel Area, Sq.Ft./Parcel ²	Parcel Count, Parcels
Single-Family Detached	867,936,000	1,711,152,000	4,230	8,350	205,047
Multi-Family Residential and Single-Family Multiple-Units	347,517,000	602,466,000	9,750	16,900	35,647
Industrial Park and Light Industry - General	217,612,000	266,075,000	69,700	85,230	3,122
Office (Low-Rise)	56,970,000	88,476,000	41,070	63,790	1,387
Extractive Industry and Junkyard/Dump/Landfill	76,410,000	153,103,000	587,770	1,177,710	132
Elementary School and Senior High School	79,240,000	143,104,000	217,090	392,060	365
Community Shopping Center and Neighborhood Shopping Center	73,429,000	88,091,000	67,490	80,970	1,088
Vacant and Undeveloped Land	39,667,000	498,334,000	10,890	136,750	3,654
Military Use and Military Training	16,057,000	155,915,000	308,790	2,998,370	56

Note: ¹Numbers are rounded to the nearest 1,000. ²Numbers are rounded to the nearest 10.

5.2 Revenue Allocation and Monthly Parcel-Based Storm Water Service Fees

The revenue requirements are assumed to be met by two sources only: 1) revenues from parking violation fines and other minor sources; and 2) revenues from parcel-based storm water fees (fees). The revenue requirements from fees are determined by subtracting the revenues and other minor sources from parking violation fines from the total revenue requirements:

Equation 5.2-1. Annual Revenue Requirements from Fees

$$\begin{aligned} \text{Annual Revenue Requirement from Fees} &= \text{Total Annual Revenue Requirements} \\ &- \text{Annual Anticipated Revenues from Parking Violation Fines and Other Minor} \end{aligned}$$

The annual revenue requirements from fees are used as the basis for calculating a parcel-based storm water service fee. The annual revenue requirements from fees for the 100% financing and the flat fee scenarios are presented in Section 4. These results are then used for determining the impervious area unit fee as the first step for allocation of revenue requirements from fees. The unit fee for impervious area is calculated by dividing the total revenue requirements from fees by the total impervious area in the City. This impervious area unit fee is expressed in terms of cost per square foot of impervious area:

Equation 5.2-2. Monthly Impervious Area Unit Fee

$$\begin{aligned} &(\text{Annual Revenue Requirements from Fees}) / (\text{Total Impervious Area} \times 12 \text{ months}) \\ &= \text{Monthly Impervious Area Unit Fee} \end{aligned}$$

This unit fee is then used to calculate a parcel-specific impervious area fee. It is calculated by multiplying the monthly impervious area unit fee by the parcel impervious area of individual parcels, including public parcels owned by the City.

Equation 5.2-3. Monthly Impervious Area Fee

$$\begin{aligned} &\text{Monthly Impervious Area Unit Fee} \times \text{Parcel Impervious Area} \\ &= \text{Monthly Impervious Area Fee} \end{aligned}$$

Fifteen land use types have been designated as non-commercial public spaces. These land use codes and types include Parks, Open Spaces, Beaches, Undevelopable Natural Areas, Lakes, Bays, Freeways, Roads, Railroad Rights-of-Way, and Transit Centers (**Table 5**). The parcel characteristics of these land use types are presented in **Table A8.2 in Appendix 8**. These land uses benefit all other land uses and are spatially distributed throughout the City. There are multiple ways of paying for the cost of providing storm water services to these land use types. Such an endeavor would require additional analysis that is beyond the scope of this Fee Study. For the purpose of this analysis, these land uses' storm water service costs are translated into a base unit fee assessment that all other parcels pay. In other words, impervious areas of these land uses would not be subject to a storm water fee, but since these areas benefit all residents, an allocation of the impervious fees for these areas are applied to

each parcel not listed in **Table 5** (including City-owned parcels). This methodology complies with the substantive requirements of Proposition 218.

The sum of the calculated unit fees for these non-commercial public space “general use” parcels divided by the total property area of non-general use parcels becomes the base unit fee.

Equation 5.2-4. Monthly Base Unit Fee

$$\frac{\text{(General Use Property Calculated Monthly Fee)}}{\text{(Total Non-General Use Property Imperviousness Area)}} = \text{Monthly Base Unit Fee}$$

Table 5. Fifteen Non-Commercial Public Spaces

Land Use Code	Land Use Type
4111	Rail Station/Transit Center
4112	Freeway
4116	Park and Ride Lot
4117	Railroad Right of Way
4118	Road Right of Way
4119	Other Transportation
7601	Park - Active
7603	Open Space Park or Preserve
7604	Beach - Active
7605	Beach - Passive
7606	Landscape Open Space
7607	Residential Recreation
7609	Undevelopable Natural Area
9202	Lake/Reservoir/Large Pond
9506	Road Under Construction

Note: All other City-owned parcels not listed above are subject to parcel-based storm water fees.

For individual parcels, including City-owned parcels not listed in Table 5, the base fee is established by multiplying the base unit fee by the total square footage of each parcel.

Equation 5.2-5. Monthly Base Fee

$$\text{Monthly Base Rate} \times \text{Parcel Area} = \text{Monthly Base Fee}$$

The individual parcel-based monthly storm water service fee is calculated by summing the base fee and the impervious fee of each parcel.

Equation 5.2-6. Monthly Storm Water Service Fee

$$\text{Monthly Impervious Fee} + \text{Monthly Base Fee} = \text{Monthly Storm Water Service Fee}$$

5.3 Onsite BMPs and Potential Fee Offset

Many storm water utilities throughout the U.S. use credits to recognize onsite control systems or activities that reduce the public expense of storm water management; for example, providing partial service fee credits to industrial properties that have their own permits and private properties that have onsite BMPs, such as detention or retention facilities. Often, fee payers who do not have onsite systems will pay slightly more to cover the minor deficit resulting from the credits (NAFSMA, 2006).

Although evaluation of a potential fee credit or offset program is outside of the scope of this Fee Study, the use of a composite fee approach presented above would facilitate the implementation of such a program by allowing property owners, including single-family homes, who implement onsite BMPs to pay a reduced impervious area fee or even be excused from this portion of the fee completely. These property owners would still be required to pay for their share of the base fees since they would benefit from the City's storm water program provided to the non-commercial "general use" public spaces.

5.4 Storm Water Fee Results

The average monthly parcel-based storm water service fees for the selected land use types listed in **Table 4** are calculated based on the revenue requirements estimated for Scenario 1 – 100% Financing and Scenario 2 – Flat Fee. These results are presented in

Table 6 and **Table 7**, respectively. The fee calculation results for all parcels that would pay storm water fees for both scenarios are presented **Appendix 9**.

Table 6. FY2016 and FY2035 Average Monthly Storm Water Service Fees per Parcel* for Selected Land Use Types Using the Revenue Requirements Generated in Scenario 1 – 100% Financing

Land Use Types	FY2016 (\$/Parcel-Month)	FY2035 (\$/Parcel-Month)
Single-Family Detached	\$10	\$39
Multi-Family Residential and Single-Family Multiple-Units	\$23	\$86
Industrial Park and Light Industry - General	\$149	\$568
Office (Low-Rise)	\$93	\$354
Extractive Industry and Junkyard/Dump/Landfill	\$1,421	\$5,432
Elementary School and Senior High School	\$509	\$1,947
Community Shopping Center and Neighborhood Shopping Center	\$143	\$548
Vacant and Undeveloped Land	\$68	\$261
Military Use and Military Training	\$1,613	\$6,167

Note: All numbers are rounded to the nearest dollar. *Monthly storm water fees for individual parcels vary, depending on the actual parcel size and impervious surface area.

Table 7. FY2016 and FY2035 Average Monthly Storm Water Service Fees per Parcel* for Selected Land Use Types Using the Revenue Requirements Generated in Scenario 2 – Flat Fee

Land Use Types	FY2016 (\$/Parcel-Month)	FY2035 (\$/Parcel-Month)
Single-Family Detached	\$19	\$32
Multi-Family Residential and Single-Family Multiple-Units	\$43	\$71
Industrial Park and Light Industry - General	\$284	\$465
Office (Low-Rise)	\$177	\$290
Extractive Industry and Junkyard/Dump/Landfill	\$2,715	\$4,448
Elementary School and Senior High School	\$973	\$1,594
Community Shopping Center and Neighborhood Shopping Center	\$274	\$449
Vacant and Undeveloped Land	\$130	\$213
Military Use and Military Training	\$3,080	\$5,050

Note: All numbers are rounded to the nearest dollar. *Monthly storm water fees for individual parcels vary, depending on the actual parcel size and impervious surface area.

5.5 Storm Water Fee Calculations for a Typical Single-Family Detached Parcel

To demonstrate how storm water fees are calculated, a step-by-step process for calculating a parcel fee is provided below:

Example Scenario (Flat Fee):

- Impervious area fee:
 - Step 1: Determine the monthly impervious area unit fee (\$/sq.ft.) for a specific year (provided). In FY2016, the monthly impervious area unit fee was determined to be \$0.0032/impervious square foot in this Fee Study.
 - Step 2: Determine parcel impervious area square feet (sq.ft.). A typical single family detached parcel has about 4,100 sq. ft. of impervious area.
 - Step 3: Calculate impervious area fee by multiplying the results from Step 1 by Step 2. This translates to a monthly impervious area fee of \$13.12.

- Base fee:
 - Step 4: Determine monthly base unit fee (\$/sq.ft.) for a specific year. In FY2016, the monthly base unit fee was determined to be \$0.0007 per gross square foot.
 - Step 5: Determine gross parcel size (sq.ft.). A typical single family detached has a gross parcel size of 6,500 sq. ft.
 - Step 6: Calculate base fee by multiplying the results from Step 4 by Step 5. In this case, the monthly base fee would be \$4.55.
- Monthly storms water service fee:
 - Step 7: Sum the results from Steps 3 and 6. The monthly storm water service fee would be equal \$17.76 per month.

The actual monthly storm water service fee levels of a given single-family detached parcel would be calculated using the same procedure as shown in the above example. It is noted that the monthly fee would depend on the actual parcel size and impervious surface area of the assessed parcel.

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Appendix 1 Storm Water Regulations Compliance Schedules

TMDL: Chollas Creek Dissolved Metals (Copper, Lead and Zinc)				80% Reduction by 10/22/18						100% Reduction by 10/22/28			
TMDL: Bacteria for San Dieguito, Los Pen, Mission Bay, San Diego River, San Diego Bay			50% Reduction for dry weather by 4/4/18			100% Reduction for dry weather, 50% for wet weather by 4/4/21					100% Reduction for wet weather by 4/4/31		
TMDL: Los Peñasquitos Sediment					20% load reduction and/or show progress of lagoon restoration ² by 7/14/19			40% load reduction and/or show progress of lagoon restoration ² by 7/14/23	60% load reduction and/or show progress of lagoon restoration ² by 7/14/27		80% load reduction and/or show progress of lagoon restoration ² by 7/14/29	Full lagoon restoration completed by 7/14/34	
	FY2012	FY2014	FY2018	FY2019	FY2020	FY2021	FY2023	FY2024	FY2028	FY2029	FY2030	FY2031	FY2035
TMDL: Dissolved Copper in Shelter Island Yacht Basin	30 kg/year												
ASBS: ASBS: Mission Bay/La Jolla	0% Dry weather discharge by 3/20/12	Non -structural controls by 9/20/13	Structural controls by 3/20/18										
Tijuana River WQIP: Total Suspended Solids (Sediment)			6% Reduction for wet weather				33% Reduction for wet weather	38% Reduction for wet weather					
State Trash Policy (not yet adopted in Permit)													Final Compliance: 100% Full Trash Capture from Priority Land Areas (6/28/28 estimate)

¹City proposed modified interim TMDL compliance dates based on Municipal Storm Water Permit (adopted May 8, 2013).

²Compliance by showing progress of lagoon restoration is contingent on fully implementing the Water Quality Improvement Plan. Lagoon restoration progress must also be consistent with numeric targets.



Appendix 2 Annual Operating Results (Nominal) - Scenario 1
 Scenario 1 - 100% Financing with 30% Fee Increase

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Revenue	\$73,000,000	\$73,000,000	\$94,900,000	\$94,900,000	\$94,900,000	\$123,370,000	\$123,370,000	\$123,370,000	\$160,381,000	\$160,381,000
Debt Service	\$-	(\$10,315,102)	(\$10,315,102)	(\$10,315,102)	(\$29,733,354)	(\$29,733,354)	(\$29,733,354)	(\$57,903,662)	(\$57,903,662)	(\$57,903,662)
Revenues Net of Debt Service	\$73,000,000	\$62,684,898	\$84,584,898	\$84,584,898	\$65,166,646	\$93,636,646	\$93,636,646	\$65,466,338	\$102,477,338	\$102,477,338
Gross Revenue Debt Coverage	0%	708%	920%	920%	319%	415%	415%	213%	277%	277%
O&M Summary										
Interest From Stabilization Fund	\$-	\$145,637	\$135,238	\$438,301	\$522,556	\$467,713	\$797,196	\$1,076,986	\$1,031,512	\$1,145,122
Transfer from Stabilization Fund	\$-	\$14,563,696	\$13,523,842	\$43,830,146	\$52,255,569	\$46,771,304	\$65,657,605	\$70,013,828	\$91,116,335	\$76,730,193
O&M Expense	(\$58,436,304)	(\$63,870,389)	(\$54,413,832)	(\$76,597,776)	(\$71,173,467)	(\$61,156,057)	(\$66,454,801)	(\$71,090,814)	(\$92,147,847)	(\$77,875,315)
Net O&M Expense	(\$58,436,304)	(\$49,161,056)	(\$40,754,752)	(\$32,329,329)	(\$18,395,342)	(\$13,917,040)	\$-	\$-	\$-	\$-
Revenues Net of O&M Expense	\$14,563,696	\$13,523,842	\$43,830,146	\$52,255,569	\$46,771,304	\$79,719,606	\$93,636,646	\$65,466,338	\$102,477,338	\$102,477,338
Debt Coverage Net of O&M Expense	0%	231%	525%	607%	257%	368%	415%	213%	277%	277%
Transfer to Stabilization Fund	\$14,563,696	\$13,523,842	\$43,830,146	\$52,255,569	\$46,771,304	\$79,719,606	\$93,636,646	\$65,466,338	\$102,477,338	\$102,477,338
Transfer from Stabilization Fund to Construction Fund	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Stabilization Fund Ending Balance	\$14,563,696	\$13,523,842	\$43,830,146	\$52,255,569	\$46,771,304	\$79,719,606	\$107,698,648	\$103,151,158	\$114,512,161	\$140,259,307

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Revenue from Fees	\$160,381,000	\$208,495,300	\$208,495,300	\$208,495,300	\$235,599,689	\$235,599,689	\$235,599,689	\$266,227,649	\$266,227,649	\$266,227,649
Debt Service	(\$106,537,102)	(\$106,537,102)	(\$106,537,102)	(\$141,957,720)	(\$141,957,720)	(\$141,957,720)	(\$156,371,038)	(\$156,371,038)	(\$156,371,038)	(\$160,270,835)
Fee Revenues Net of Debt Service	\$53,843,898	\$101,958,198	\$101,958,198	\$66,537,580	\$93,641,969	\$93,641,969	\$79,228,651	\$109,856,610	\$109,856,610	\$105,956,814
Gross Revenue Debt Coverage	151%	196%	196%	147%	166%	166%	151%	170%	170%	166%
O&M Summary										
Interest From Stabilization Fund	\$1,402,593	\$1,193,251	\$1,421,061	\$1,603,815	\$1,176,745	\$1,054,891	\$1,009,682	\$893,556	\$1,036,717	\$897,196
Transfer from Stabilization Fund	\$74,778,140	\$79,177,138	\$83,682,781	\$109,244,668	\$105,827,336	\$98,162,826	\$90,841,293	\$89,355,588	\$103,671,665	\$89,719,589
O&M Expense	(\$76,180,733)	(\$80,370,389)	(\$85,103,842)	(\$110,848,483)	(\$107,004,081)	(\$99,217,717)	(\$91,850,975)	(\$96,434,089)	(\$124,845,404)	(\$111,684,916)
Net O&M Expense	\$-	\$-	\$-	\$-	\$-	\$-	\$-	(\$6,184,945)	(\$20,137,022)	(\$21,068,131)
Revenues Net of O&M Expense	\$53,843,898	\$101,958,198	\$101,958,198	\$66,537,580	\$93,641,969	\$93,641,969	\$79,228,651	\$103,671,665	\$89,719,589	\$84,888,682
Debt Coverage Net of O&M Expense	151%	196%	196%	147%	166%	166%	151%	166%	157%	153%
Transfer to Stabilization Fund	\$53,843,898	\$101,958,198	\$101,958,198	\$66,537,580	\$93,641,969	\$93,641,969	\$79,228,651	\$103,671,665	\$89,719,589	\$84,888,682
Transfer from Stabilization Fund to Construction Fund	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Stabilization Fund Ending Balance	\$119,325,065	\$142,106,125	\$160,381,542	\$117,674,454	\$105,489,087	\$100,968,230	\$89,355,588	\$103,671,665	\$89,719,589	\$84,888,682



Appendix 3 Capital Funding Summary – Scenario 1
 Scenario 1 - 100% Financing with 30% Fee Increase

Issuance Year	2016	2019	2022	2025	2028	2031	2034	Totals
Bond Series	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	
Issue Size	\$158,568,401	\$298,506,123	\$433,046,680	\$747,615,176	\$544,501,719	\$221,568,029	\$59,949,433	\$2,463,755,561
COI	\$792,842	\$1,492,531	\$2,165,233	\$3,738,076	\$2,722,509	\$1,107,840	\$299,747	\$12,318,778
Net Proceeds to Construction Fund	\$157,775,559	\$297,013,592	\$430,881,447	\$743,877,100	\$541,779,210	\$220,460,189	\$59,649,686	\$2,451,436,783
Interest in Construction Fund								\$24,358,272
PAYGO from Prior-Year Operating Revenues								\$-
Total Draws from Capital Fund								\$2,366,548,101
Total Reserve Funds End of Simulation (Nominal Value)								\$84,888,682

Appendix 4 Construction Fund Summary - Scenario 1
 Scenario 1 - 100% Financing with 30% Fee Increase

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Beginning Balance	\$-	\$151,720,198	\$81,087,522	\$0	\$206,001,263	\$108,401,585	\$(0)	\$308,501,233	\$166,024,645	\$0
Interest	\$-	\$1,517,202	\$810,875	\$0	\$2,060,013	\$1,084,016	\$(0)	\$3,085,012	\$1,660,246	\$0
Bond Proceeds	\$157,775,559	\$-	\$-	\$297,013,592	\$-	\$-	\$430,881,447	\$-	\$-	\$743,877,100
Funds Available for Contract Award	\$157,775,559	\$153,237,400	\$81,898,397	\$297,013,592	\$208,061,276	\$109,485,601	\$430,881,447	\$311,586,245	\$167,684,891	\$743,877,100
Construction Contract Awards	(\$6,055,361)	(\$72,149,878)	(\$81,898,397)	(\$91,012,329)	(\$99,659,691)	(\$109,485,601)	(\$122,380,214)	(\$145,561,600)	(\$167,684,891)	(\$196,914,855)
Transfer from Stabilization Fund to Construction Fund	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Construction Fund Ending Balance	\$151,720,198	\$81,087,522	\$0	\$206,001,263	\$108,401,585	\$(0)	\$308,501,233	\$166,024,645	\$0	\$546,962,245

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Beginning Balance	\$546,962,245	\$268,183,353	\$0	\$291,436,212	\$118,325,403	\$(0)	\$119,107,874	\$48,831,084	\$0	\$21,244,540
Interest	\$5,469,622	\$2,681,834	\$0	\$2,914,362	\$1,183,254	\$(0)	\$1,191,079	\$488,311	\$0	\$212,445
Bond Proceeds	\$-	\$-	\$541,779,210	\$-	\$-	\$220,460,189	\$-	\$-	\$59,649,686	\$-
Funds Available for Contract Award	\$552,431,868	\$270,865,186	\$541,779,210	\$294,350,575	\$119,508,657	\$220,460,189	\$120,298,952	\$49,319,395	\$59,649,686	\$21,456,986
Construction Contract Awards	(\$284,248,515)	(\$270,865,186)	(\$250,342,998)	(\$176,025,172)	(\$119,508,657)	(\$101,352,315)	(\$71,467,868)	(\$49,319,395)	(\$38,405,146)	(\$21,456,986)
Transfer from Stabilization Fund to Construction Fund	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Construction Fund Ending Balance	\$268,183,353	\$0	\$291,436,212	\$118,325,403	\$(0)	\$119,107,874	\$48,831,084	\$0	\$21,244,540	\$(0)

Appendix 5 Annual Operating Results (Nominal) - Scenario 2
 Scenario 2 - Flat Fee with 8.6% Fee Increase

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Revenue	\$134,000,000	\$134,000,000	\$145,524,000	\$145,524,000	\$145,524,000	\$158,039,064	\$158,039,064	\$158,039,064	\$171,630,424	\$171,630,424
Debt Service	\$-	(\$10,315,102)	(\$10,315,102)	(\$10,315,102)	(\$10,315,102)	(\$10,315,102)	(\$29,743,203)	(\$29,743,203)	(\$29,743,203)	(\$29,743,203)
Revenues Net of Debt Service	\$134,000,000	\$123,684,898	\$135,208,898	\$135,208,898	\$135,208,898	\$147,723,962	\$128,295,861	\$128,295,861	\$141,887,220	\$141,887,220
Gross Revenue Debt Coverage	0%	1299%	1411%	1411%	1411%	1532%	531%	531%	577%	577%
O&M Summary										
Interest From Stabilization Fund	\$-	\$700,000	\$719,530	\$739,605	\$760,240	\$781,451	\$803,253	\$825,664	\$848,700	\$872,379
Transfer from Stabilization Fund	\$-	\$63,170,389	\$53,694,302	\$73,960,489	\$70,413,227	\$60,374,606	\$65,651,548	\$70,265,150	\$84,869,981	\$77,002,936
O&M Expense	(\$58,436,304)	(\$63,870,389)	(\$54,413,832)	(\$76,597,776)	(\$71,173,467)	(\$61,156,057)	(\$66,454,801)	(\$71,090,814)	(\$92,147,847)	(\$77,875,315)
Net O&M Expense	(\$58,436,304)	\$-	\$-	(\$1,897,682)	\$-	\$-	\$-	\$-	(\$6,429,166)	\$-
Revenues Net of O&M Expense	\$75,563,696	\$123,684,898	\$135,208,898	\$133,311,216	\$135,208,898	\$147,723,962	\$128,295,861	\$128,295,861	\$135,458,054	\$141,887,220
Debt Coverage Net of O&M Expense	0%	1299%	1411%	1392%	1411%	1532%	531%	531%	555%	577%
Transfer to Stabilization Fund	\$75,563,696	\$123,684,898	\$135,208,898	\$133,311,216	\$135,208,898	\$147,723,962	\$128,295,861	\$128,295,861	\$135,458,054	\$141,887,220
Transfer from Stabilization Fund to Construction Fund	\$5,563,696	\$58,561,509	\$79,507,107	\$57,287,229	\$62,674,602	\$85,169,109	\$60,403,237	\$55,727,109	\$48,220,201	\$62,450,348
Stabilization Fund Ending Balance	\$70,000,000	\$71,953,000	\$73,960,489	\$76,023,986	\$78,145,056	\$80,325,303	\$82,566,379	\$84,869,981	\$87,237,853	\$89,671,789

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Total Revenue	\$171,630,424	\$186,390,640	\$186,390,640	\$186,390,640	\$202,420,235	\$202,420,235	\$202,420,235	\$219,828,375	\$219,828,375	\$219,828,375
Debt Service	(\$72,690,575)	(\$72,690,575)	(\$72,690,575)	(\$100,420,211)	(\$100,420,211)	(\$100,420,211)	(\$112,961,028)	(\$112,961,028)	(\$112,961,028)	(\$116,841,723)
Revenues Net of Debt Service	\$98,939,849	\$113,700,065	\$113,700,065	\$85,970,429	\$102,000,024	\$102,000,024	\$89,459,207	\$106,867,347	\$106,867,347	\$102,986,652
Gross Revenue Debt Coverage	236%	256%	256%	186%	202%	202%	179%	195%	195%	188%
O&M Summary										
Interest From Stabilization Fund	\$896,718	\$921,736	\$947,453	\$973,887	\$734,845	\$692,153	\$726,898	\$710,249	\$821,684	\$650,120
Transfer from Stabilization Fund	\$75,284,015	\$79,448,653	\$84,156,389	\$97,388,670	\$73,484,503	\$69,215,291	\$72,689,751	\$71,024,881	\$82,168,388	\$65,012,015
O&M Expense	(\$76,180,733)	(\$80,370,389)	(\$85,103,842)	(\$110,848,483)	(\$107,004,081)	(\$99,217,717)	(\$91,850,975)	(\$96,434,089)	(\$124,845,404)	(\$111,684,916)
Net O&M Expense	\$-	\$-	\$-	(\$12,485,926)	(\$32,784,733)	(\$29,310,273)	(\$18,434,326)	(\$24,698,959)	(\$41,855,332)	(\$46,022,781)
Revenues Net of O&M Expense	\$98,939,849	\$113,700,065	\$113,700,065	\$73,484,503	\$69,215,291	\$72,689,751	\$71,024,881	\$82,168,388	\$65,012,015	\$56,963,871
Debt Coverage Net of O&M Expense	236%	256%	256%	173%	169%	172%	163%	173%	158%	149%
Transfer to Stabilization Fund	\$98,939,849	\$113,700,065	\$113,700,065	\$73,484,503	\$69,215,291	\$72,689,751	\$71,024,881	\$82,168,388	\$65,012,015	\$56,963,871
Transfer from Stabilization Fund to Construction Fund	\$21,153,991	\$31,679,768	\$26,900,283	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Stabilization Fund Ending Balance	\$92,173,632	\$94,745,276	\$97,388,670	\$73,484,503	\$69,215,291	\$72,689,751	\$71,024,881	\$82,168,388	\$65,012,015	\$56,963,871



Appendix 6 Capital Funding Summary – Scenario 2
 Scenario 2 – Flat Fee with 8.6% Fee Increase

Issuance Year	2016	2021	2025	2028	2031	2034	0	Totals
Bond Series	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	Series 7	
Issue Size	\$158,568,401	\$298,657,533	\$660,206,364	\$426,272,475	\$192,783,098	\$59,655,799	\$-	\$1,796,143,670
COI	\$792,842	\$1,493,288	\$3,301,032	\$2,131,362	\$963,915	\$298,279	\$-	\$8,980,718
Net Proceeds to Construction Fund	\$157,775,559	\$294,920,506	\$654,597,015	\$421,776,544	\$190,922,889	\$59,348,377	\$-	\$1,787,162,952
Interest in Construction Fund								\$33,336,864
PAYGO from Prior-Year Operating Revenues								\$662,927,497
Total Draws from Capital Fund								\$2,385,494,320
Total Reserve Funds End of Simulation (Nominal Value)								\$65,085,726



Appendix 7 Construction Fund Summary - Scenario 2
 Scenario 2 - Flat Fee with 8.6% Fee Increase

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Beginning Balance	\$-	\$157,283,894	\$145,268,364	\$144,329,758	\$112,047,956	\$76,183,346	\$349,792,932	\$291,313,885	\$204,392,532	\$86,971,768
Interest	\$-	\$1,572,839	\$1,452,684	\$1,443,298	\$1,120,480	\$761,833	\$3,497,929	\$2,913,139	\$2,043,925	\$869,718
Bond Proceeds	\$157,775,559	\$-	\$-	\$-	\$-	\$297,164,245	\$-	\$-	\$-	\$656,905,332
Funds Available for Contract Award	\$157,775,559	\$158,856,733	\$146,721,048	\$145,773,055	\$113,168,435	\$374,109,424	\$353,290,862	\$294,227,023	\$206,436,458	\$744,746,817
Construction Contract Awards	(\$6,055,361)	(\$72,149,878)	(\$81,898,397)	(\$91,012,329)	(\$99,659,691)	(\$109,485,601)	(\$122,380,214)	(\$145,561,600)	(\$167,684,891)	(\$196,914,855)
Transfer from Stabilization Fund to Construction Fund	\$5,563,696	\$58,561,509	\$79,507,107	\$57,287,229	\$62,674,602	\$85,169,109	\$60,403,237	\$55,727,109	\$48,220,201	\$62,450,348
Construction Fund Ending Balance	\$157,283,894	\$145,268,364	\$144,329,758	\$112,047,956	\$76,183,346	\$349,792,932	\$291,313,885	\$204,392,532	\$86,971,768	\$610,282,311

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Beginning Balance	\$610,282,311	\$353,290,610	\$117,638,098	\$319,512,877	\$146,682,834	\$28,641,005	\$119,394,283	\$49,120,358	\$292,166	\$21,247,462
Interest	\$6,102,823	\$3,532,906	\$1,176,381	\$3,195,129	\$1,466,828	\$286,410	\$1,193,943	\$491,204	\$2,922	\$212,475
Bond Proceeds	\$-	\$-	\$424,141,113	\$-	\$-	\$191,819,183	\$-	\$-	\$59,357,520	\$-
Funds Available for Contract Award	\$616,385,134	\$356,823,516	\$542,955,592	\$322,708,006	\$148,149,662	\$220,746,598	\$120,588,226	\$49,611,561	\$59,652,608	\$21,459,937
Construction Contract Awards	(\$284,248,515)	(\$270,865,186)	(\$250,342,998)	(\$176,025,172)	(\$119,508,657)	(\$101,352,315)	(\$71,467,868)	(\$49,319,395)	(\$38,405,146)	(\$21,456,986)
Transfer from Stabilization Fund	\$21,153,991	\$31,679,768	\$26,900,283	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Construction Fund Ending Balance	\$353,290,610	\$117,638,098	\$319,512,877	\$146,682,834	\$28,641,005	\$119,394,283	\$49,120,358	\$292,166	\$21,247,462	\$2,951



Appendix 8 Complete Land Use Classification Summary Tables

Table A8.1. Parcel count, impervious area characteristics of land use types included in the fee study within the City of San Diego

Land Use Type	Total Impervious Area, Sq. Ft.	Total Area, Sq.Ft.	Average Impervious Area, Sq.Ft./Parcel	Average Area, Sq.Ft./Parcel	Parcel Count, Parcels
Spaced Rural Residential	4,999,393	21,645,572	30,671	132,795	163
Single Family Detached	868,578,033	1,711,162,504	4,236	8,345	205,047
Single Family Multiple-Units	149,656,964	276,492,155	6,095	11,260	24,555
Single Family Residential Without Units	855,333	1,950,433	1,642	3,744	521
Multi-Family Residential	197,912,707	325,974,360	17,843	29,388	11,092
Single Room Occupancy Units	389,635	430,888	8,290	9,168	47
Multi-Family Residential Without Units	407,889	574,719	5,998	8,452	68
Mobile Home Park	18,846,324	25,547,409	349,006	473,100	54
Jail/Prison	43,460	89,812	21,730	44,906	2
Dormitory	866,032	1,789,692	108,254	223,711	8
Military Barracks	11,624,542	24,022,613	5,812,271	12,011,307	2
Monastery	2,655	15,740	1,328	7,870	2
Other Group Quarters Facility	4,256,291	9,218,737	28,566	61,871	149
Hotel/Motel (Low-Rise)	8,281,648	16,825,779	28,265	57,426	293
Hotel/Motel (High-Rise)	3,823,918	5,362,387	52,382	73,457	73
Resort	5,447,224	9,263,986	160,212	272,470	34
Heavy Industry	7,792,254	9,747,628	194,806	243,691	40
Industrial Park	142,100,991	175,173,805	73,627	90,764	1,930
Light Industry - General	75,511,378	90,900,901	63,348	76,259	1,192
Warehousing	18,742,381	22,478,269	92,327	110,730	203
Public Storage	5,453,069	6,540,021	94,018	112,759	58
Extractive Industry	53,660,621	73,578,255	1,141,715	1,565,495	47
Junkyard/Dump/Landfill	49,187,130	79,526,483	578,672	935,606	85
Commercial Airport	9,593,600	21,238,875	233,990	518,021	41
Military Airport	14,098,339	31,211,730	14,098,339	31,211,730	1
General Aviation Airport	21,552,166	48,215,136	1,657,859	3,708,857	13
Communications and Utilities	22,087,860	55,552,969	66,530	167,328	332
Parking Lot - Surface	19,776,323	26,588,227	20,600	27,696	960
Parking Lot - Structure	1,489,356	2,469,501	22,913	37,992	65
Marine Terminal	1,678,207	2,854,093	47,949	81,546	35
Wholesale Trade	3,583,568	4,255,009	65,156	77,364	55
Regional Shopping Center	12,561,431	13,433,249	285,487	305,301	44
Community Shopping Center	40,591,385	49,035,256	92,253	111,444	440
Neighborhood Shopping Center	32,837,805	39,055,430	50,676	60,271	648
Specialty Commercial	4,966,815	6,210,071	103,475	129,376	48
Automobile Dealership	8,046,891	9,107,970	47,335	53,576	170
Arterial Commercial	27,536,460	38,920,792	7,553	10,675	3,646
Service Station	4,645,498	5,808,324	17,867	22,340	260
Other Retail Trade and Strip Commercial	13,126,469	16,412,189	15,534	19,423	845
Office (High-Rise)	4,186,559	6,947,493	36,091	59,892	116
Office (Low-Rise)	56,969,962	88,476,412	41,074	63,790	1,387
Government Office/Civic Center	8,963,120	11,244,662	137,894	172,995	65
Cemetery	8,908,045	20,268,590	217,269	494,356	41
Religious Facility	15,707,384	32,853,762	25,132	52,566	625
Library	1,196,764	2,101,061	26,595	46,690	45
Post Office	3,525,519	4,548,470	100,729	129,956	35
Fire/Police Station	2,090,071	3,333,979	31,668	50,515	66
Mission	19,223	398,000	19,223	398,000	1
Other Public Services	4,214,148	7,583,495	21,949	39,497	192
UCSD/VA Hospital/Balboa Hospital	22,371,338	49,154,680	430,218	945,282	52
Hospital - General	7,949,145	10,782,888	155,866	211,429	51
Other Health Care	5,503,880	8,102,282	22,104	32,539	249
Military Use	28,264,132	46,311,867	628,092	1,029,153	45
Military Training	80,158,093	131,342,115	7,287,099	11,940,192	11
Other University or College	10,272,046	19,254,070	270,317	506,686	38
Junior College	6,791,380	12,216,910	295,277	531,170	23
Senior High School	34,490,392	62,459,964	514,782	932,238	67
Junior High School or Middle School	18,269,038	33,380,300	338,316	618,154	54
Elementary School	44,749,206	80,643,730	150,165	270,617	298



STORM WATER FEE STUDY

Land Use Type	Total Impervious Area, Sq. Ft.	Total Area, Sq.Ft.	Average Impervious Area, Sq.Ft./Parcel	Average Area, Sq.Ft./Parcel	Parcel Count, Parcels
School District Office	2,580,812	3,592,444	135,832	189,076	19
Other School	3,219,954	6,407,868	42,368	84,314	76
Tourist Attraction	34,947,582	59,434,663	5,824,597	9,905,777	6
Stadium/Arena	11,977,779	12,947,551	2,994,445	3,236,888	4
Golf Course	5,413,263	128,581,065	48,333	1,148,045	112
Golf Course Clubhouse	2,558,466	4,965,966	284,274	551,774	9
Convention Center	1,185,977	1,788,533	197,663	298,089	6
Marina	8,032,406	13,660,555	138,490	235,527	58
Other Recreation - High	9,738,154	29,429,296	117,327	354,570	83
Other Recreation - Low	8,652,195	40,506,530	2,884,065	13,502,177	3
Orchard or Vineyard	1,001,295	38,960,886	91,027	3,541,899	11
Intensive Agriculture	7,644,544	118,888,716	119,446	1,857,636	64
Field Crops	2,213,978	26,356,883	22,592	268,948	98
Vacant and Undeveloped Land	39,683,702	498,538,975	10,860	136,437	3,654
Residential Under Construction	11,428,319	59,896,849	5,608	29,390	2,038
Commercial Under Construction	2,017,096	2,419,160	134,473	161,277	15
Industrial Under Construction	2,449,527	3,616,072	102,064	150,670	24
Office Under Construction	481,702	2,524,643	240,851	1,262,321	2
School Under Construction	721,070	1,064,467	360,535	532,234	2
Mixed Use	1,500,671	1,876,308	7,012	8,768	214
Total	2,388,659,984	4,945,543,127			263,227

Table A8.2. Parcel count, impervious area characteristics of excluded non-commercial public land use types within the City of San Diego

Land Use Type	Total Impervious Area, Sq. Ft.	Total Area, Sq.Ft.	Average Impervious Area, Sq.Ft./Parcel	Average Area, Sq.Ft./Parcel	Parcel Count, Parcels
Rail Station/Transit Center	1,532,049	2,002,155	30,641	40,043	50
Freeway	171,837,230	300,888,164	468,221	819,859	367
Park and Ride Lot	268,114	308,389	44,686	51,398	6
Railroad Right of Way	8,958,840	17,484,075	27,909	54,468	321
Road Right of Way	686,102,166	1,148,288,144	20,589	34,458	33,324
Other Transportation	16,899,216	30,871,787	101,803	185,975	166
Park - Active	24,172,611	174,279,819	59,392	428,206	407
Open Space Park or Preserve	136,622,460	2,461,665,942	30,186	543,894	4,526
Beach - Active	176,171	3,174,245	4,297	77,421	41
Beach - Passive	5,921	106,688	1,480	26,672	4
Landscape Open Space	8,441,158	41,725,943	5,575	27,560	1,514
Residential Recreation	1,897,113	10,640,004	8,584	48,145	221
Undevelopable Natural Area	322,789	4,055,137	23,056	289,653	14
Lake/Reservoir/Large Pond	4,959,709	68,980,648	72,937	1,014,421	68
Road Under Construction	176,645	925,813	4,416	23,145	40
Total	1,062,372,191	4,265,396,952			41,069

Appendix 9 Initial and Ending Average Monthly Storm Water Service Fees per Parcel* for Each Land Use Type

Scenario 1 - 100% Financing with 30% Fee Increase

Land Use Type	2016 (\$/Parcel-Month)	2035 (\$/Parcel-Month)
Spaced Rural Residential	\$102	\$392
Single Family Detached	\$10	\$39
Single Family Multiple-Units	\$14	\$55
Single Family Residential Without Units	\$4	\$16
Multi-Family Residential	\$41	\$156
Single Room Occupancy Units (SRO's)	\$17	\$66
Multi-Family Residential Without Units	\$13	\$50
Mobile Home Park	\$761	\$2,911
Jail/Prison	\$53	\$203
Dormitory	\$264	\$1,010
Military Barracks	\$14,186	\$54,227
Monastery	\$5	\$20
Other Group Quarters Facility	\$71	\$270
Hotel/Motel (Low-Rise)	\$69	\$262
Hotel/Motel (High-Rise)	\$115	\$440
Resort	\$370	\$1,413
Heavy Industry	\$418	\$1,596
Industrial Park	\$157	\$601
Light Industry - General	\$135	\$515
Warehousing	\$196	\$750
Public Storage	\$200	\$764
Extractive Industry	\$1,617	\$6,180
Junkyard/Dump/Landfill	\$1,318	\$5,036
Commercial Airport	\$584	\$2,231
Military Airport	\$35,167	\$134,425
General Aviation Airport	\$4,149	\$15,861
Communications and Utilities	\$174	\$664
Parking Lot - Surface	\$45	\$171
Parking Lot - Structure	\$53	\$201
Marine Terminal	\$111	\$423
Wholesale Trade	\$138	\$528
Regional Shopping Center	\$593	\$2,267
Community Shopping Center	\$196	\$750
Neighborhood Shopping Center	\$107	\$411
Specialty Commercial	\$222	\$848
Automobile Dealership	\$99	\$380
Arterial Commercial	\$17	\$64
Service Station	\$38	\$146
Other Retail Trade and Strip Commercial	\$33	\$127
Office (High-Rise)	\$83	\$316
Office (Low-Rise)	\$93	\$354
Government Office/Civic Center	\$296	\$1,131
Cemetery	\$560	\$2,142
Religious Facility	\$62	\$235
Library	\$62	\$237
Post Office	\$217	\$831
Fire/Police Station	\$72	\$275
Mission	\$177	\$678
Other Public Services	\$51	\$197
UCSD/VA Hospital/Balboa Hospital	\$1,071	\$4,092
Hospital - General	\$340	\$1,300
Other Health Care	\$49	\$188
Military Use	\$825	\$3,155
Military Training	\$4,551	\$17,395
Other University or College	\$641	\$2,450
Junior College	\$692	\$2,645
Senior High School	\$1,209	\$4,620
Junior High School or Middle School	\$796	\$3,044
Elementary School	\$352	\$1,346
School District Office	\$298	\$1,140
Other School	\$102	\$391
Tourist Attraction	\$6,785	\$25,936

STORM WATER FEE STUDY

Land Use Type	2016 (\$/Parcel-Month)	2035 (\$/Parcel-Month)
Stadium/Arena	\$6,234	\$23,828
Golf Course	\$500	\$1,910
Golf Course Clubhouse	\$681	\$2,602
Convention Center	\$442	\$1,690
Marina	\$323	\$1,235
Other Recreation - High	\$327	\$1,251
Other Recreation - Low	\$9,786	\$37,409
Orchard or Vineyard	\$1,981	\$7,573
Intensive Agriculture	\$878	\$3,357
Field Crops	\$138	\$529
Vacant and Undeveloped Land	\$68	\$261
Residential Under Construction	\$20	\$77
Commercial Under Construction	\$286	\$1,092
Industrial Under Construction	\$227	\$868
Office Under Construction	\$866	\$3,312
School Under Construction	\$802	\$3,067
Mixed Use	\$15	\$57

*Actual monthly storm water fees for individual parcels vary, depending on parcel size and impervious surface area.

Scenario 2 - Flat Fee with 8.6% Fee Increase

Land Use Type	2016 (\$/Parcel-Year)	2035 (\$/Parcel-Year)
Spaced Rural Residential	\$196	\$321
Single Family Detached	\$19	\$32
Single Family Multiple-Units	\$27	\$45
Single Family Residential Without Units	\$8	\$13
Multi-Family Residential	\$78	\$128
Single Room Occupancy Units (SRO's)	\$33	\$54
Multi-Family Residential Without Units	\$25	\$41
Mobile Home Park	\$1,455	\$2,383
Jail/Prison	\$101	\$166
Dormitory	\$505	\$827
Military Barracks	\$27,102	\$44,402
Monastery	\$10	\$16
Other Group Quarters Facility	\$135	\$221
Hotel/Motel (Low-Rise)	\$131	\$215
Hotel/Motel (High-Rise)	\$220	\$361
Resort	\$706	\$1,157
Heavy Industry	\$798	\$1,307
Industrial Park	\$301	\$492
Light Industry - General	\$257	\$422
Warehousing	\$375	\$614
Public Storage	\$382	\$625
Extractive Industry	\$3,089	\$5,060
Junkyard/Dump/Landfill	\$2,517	\$4,124
Commercial Airport	\$1,115	\$1,827
Military Airport	\$67,184	\$110,071
General Aviation Airport	\$7,927	\$12,987
Communications and Utilities	\$332	\$544
Parking Lot - Surface	\$86	\$140
Parking Lot - Structure	\$100	\$164
Marine Terminal	\$211	\$346
Wholesale Trade	\$264	\$432
Regional Shopping Center	\$1,133	\$1,856
Community Shopping Center	\$375	\$614
Neighborhood Shopping Center	\$205	\$336
Specialty Commercial	\$424	\$694
Automobile Dealership	\$190	\$311
Arterial Commercial	\$32	\$52
Service Station	\$73	\$120
Other Retail Trade and Strip Commercial	\$64	\$104
Office (High-Rise)	\$158	\$259
Office (Low-Rise)	\$177	\$290
Government Office/Civic Center	\$565	\$926
Cemetery	\$1,071	\$1,754
Religious Facility	\$118	\$193



STORM WATER FEE STUDY

Land Use Type	2016 (\$/Parcel-Year)	2035 (\$/Parcel-Year)
Library	\$118	\$194
Post Office	\$415	\$680
Fire/Police Station	\$137	\$225
Mission	\$339	\$555
Other Public Services	\$98	\$161
UCSD/VA Hospital/Balboa Hospital	\$2,045	\$3,351
Hospital - General	\$650	\$1,065
Other Health Care	\$94	\$154
Military Use	\$1,577	\$2,583
Military Training	\$8,694	\$14,244
Other University or College	\$1,224	\$2,006
Junior College	\$1,322	\$2,166
Senior High School	\$2,309	\$3,783
Junior High School or Middle School	\$1,521	\$2,492
Elementary School	\$673	\$1,102
School District Office	\$570	\$933
Other School	\$195	\$320
Tourist Attraction	\$12,963	\$21,237
Stadium/Arena	\$11,909	\$19,511
Golf Course	\$955	\$1,564
Golf Course Clubhouse	\$1,301	\$2,131
Convention Center	\$845	\$1,384
Marina	\$617	\$1,012
Other Recreation - High	\$625	\$1,024
Other Recreation - Low	\$18,696	\$30,631
Orchard or Vineyard	\$3,785	\$6,201
Intensive Agriculture	\$1,678	\$2,749
Field Crops	\$264	\$433
Vacant and Undeveloped Land	\$130	\$213
Residential Under Construction	\$39	\$63
Commercial Under Construction	\$546	\$894
Industrial Under Construction	\$434	\$711
Office Under Construction	\$1,655	\$2,712
School Under Construction	\$1,533	\$2,512
Mixed Use	\$29	\$47

*Actual monthly storm water fees for individual parcels vary, depending on parcel size and impervious surface area.



Appendix 10 SANDAG Land Use Definitions



LAND USE DEFINITIONS

1000 SPACED RURAL RESIDENTIAL – Single family homes located in rural areas with lot sizes greater than 1 acre. Rural residential estates may have small orchards, fields or small storage buildings associated with the residential dwelling unit.

1100 SINGLE FAMILY RESIDENTIAL

1110 SINGLE FAMILY DETACHED – Single family **detached housing units**, on lots smaller than 1 acre. Newer developments may include clubhouses, recreation areas, pools, tennis, etc. located within and associated with the residential development, if a separate parcel/lot designation does not exist.

1120 SINGLE FAMILY MULTIPLE-UNITS – Includes single family **attached housing units**, duplexes, townhouses, and lower density condominium developments (in general, less than or equal to 12 units per acre). Single family attached units are structures with one or more walls extending from ground to roof separating adjoining structures.

1190 SINGLE FAMILY RESIDENTIAL WITHOUT UNITS – Small parcels of land associated with larger residential parcels. Includes but not limited to strips of land adjacent to developed land, car ports, sloped land, or odd-shaped parcels. May include land where a building straddles parcels and only one parcel has dwelling units.

1200 MULTI-FAMILY RESIDENTIAL – Apartments and higher density condominium developments (in general, more than 12 units per acre). Newer developments may include clubhouses, recreation areas, pools, tennis, etc. located within and associated with the residential development, if a separate parcel/lot designation does not exist.

1280 SINGLE ROOM OCCUPANCY UNITS (SROs) – For Rent SROs provide small, fully furnished rooms with utilities included, and rent on daily weekly and monthly terms.

1290 MULTI-FAMILY RESIDENTIAL WITHOUT UNITS – Small parcels of land associated with larger residential parcels. Includes but not limited to strips of land adjacent to developed land, car ports, sloped land, or odd-shaped parcels. May include land where a building straddles parcels and only one parcel has dwelling units.

1300 MOBILE HOME PARK – Includes mobile home parks with 10 or more spaces that are primarily for residential use. (RV parks are included within the commercial recreation category).

1400 GROUP QUARTERS

1401 JAIL/PRISON/BORDER PATROL HOLDING STATION

1402 DORMITORY

1403 MILITARY BARRACKS

1404 MONASTERY

1409 OTHER GROUP QUARTERS FACILITY – Convalescent or retirement homes not associated with or within a health care facility, rooming houses, half-way houses, California Conservation Corps, Honor Camps and other correctional facilities.

1500 HOTEL/MOTEL/RESORT

1501 HOTEL/MOTEL (LOW-RISE) – Hotels, motels, and other transient accommodations with three or less floors. Commonly found along freeways and prime commercial areas.

1502 HOTEL/MOTEL (HIGH-RISE) – Hotels and motels that have four or more floors. Primarily found in downtown areas and near tourist attractions.

1503 RESORT – Resorts with hotel accommodations that usually contain recreation areas. Examples of resorts would be La Costa Health Spa, Lawrence Welk and the Olympic Resort in Carlsbad near the airport.

2000 HEAVY INDUSTRY

2001 HEAVY INDUSTRY – Shipbuilding, airframe, and aircraft manufacturing. Usually located close to transportation facilities and commercial areas. Parcels are typically large, 20-50 acres.

2100 LIGHT INDUSTRY

2101 INDUSTRIAL PARK – Office/industrial uses clustered into a center. The primary uses are industrial but may include high percentages of other uses in service or retail activities.

2103 LIGHT INDUSTRY-GENERAL – All other industrial uses and manufacturing not included in the categories above. These are not located inside of parks, but are usually along major streets or clustered in certain areas. Includes manufacturing uses such as lumber, furniture, paper, rubber, stone, clay, and glass; as well as light industrial uses as auto repair services and recycling centers. Mixed commercial and office uses (if not large enough to be identified separately) are also included. General industrial areas are comprised of 75 percent or more of industrial uses (manufacturing, warehousing, and wholesale trade).

2104 WAREHOUSING – Usually large buildings located near freeways, industrial or strip commercial areas.

2105 PUBLIC STORAGE – Public self-storage buildings are typically long, rectangular and closely spaced. Also includes RV storage areas.

2200 EXTRACTIVE INDUSTRY

2201 EXTRACTIVE INDUSTRY – Mining, sand and gravel extraction, salt evaporation.

2300 JUNKYARDS/DUMPS/LANDFILLS

2301 JUNKYARD/DUMP/LANDFILL – The landscape should show visible signs of the activity. Also include auto wrecking/dismantling and recycling centers.

4100 AIRPORTS

4101 COMMERCIAL AIRPORT – Lindbergh Field only.

4102 MILITARY AIRPORT – Airports owned and operated by the military. Found on Military bases.

4103 GENERAL AVIATION AIRPORT – All general aviation airports.

4104 AIRSTRIP

4110 OTHER TRANSPORTATION

4111 RAIL STATION/TRANSIT CENTER/SEAPORT – Major transit centers (e.g. Oceanside Transit Center, El Cajon Transit Center), rail stations (e.g. Santa Fe Depot, Solana Beach Station), Coaster stations (Oceanside, Carlsbad Village, Carlsbad Poinsettia, Encinitas, Solana Beach, Sorrento Valley, Old Town, San Diego), major trolley stations, and seaport terminals (Port of SD). Parking areas associated with these uses are included. Transit centers within shopping centers are included within the

shopping center category.

4112 FREEWAY – Divided roadways with four or more lanes, restricted access, grade separations, and rights of way greater than 200 ft. wide. Includes all right of way and interchange areas, but not frontage roads.

4113 COMMUNICATIONS AND UTILITIES – TV and radio broadcasting stations, relay towers, electrical power generating plants, water and sewage treatment facilities, and large public water supply storage tanks.

4114 PARKING LOT-SURFACE – All surface parking lots not associated with another land use.

4115 PARKING LOT-STRUCTURE – All large parking structures not associated with another land use.

4116 PARK AND RIDE LOT – Stand-alone parking areas that are not associated with any land use. These are usually located near freeways.

4117 RAILROAD RIGHT-OF-WAY – All railroad ROWs.

4118 SURFACE STREET RIGHT-OF-WAY – All street ROWs.

4119 OTHER TRANSPORTATION – Maintenance yards and their associated activities, transit yards and walking bridges.

4120 MARINE TERMINAL – National City and 10th Street (Centre City) marine terminals.

5000 COMMERCIAL

5001 WHOLESALE TRADE – Usually located near transportation facilities. Structures are usually large and cover the majority of the parcel. Examples are clothing and supply. Also includes swap meet areas.

5002 REGIONAL SHOPPING CENTER – Contain one to five major department stores, and usually have more than 50 tenants. Typically are larger than 40 acres in size.

5003 COMMUNITY SHOPPING CENTER – Smaller in size than the regional shopping centers. Contain a junior department store or variety store (i.e. a Target Center with other commercial stores) as a major tenant and have 15 to 50 other tenants. Smaller in size, 8 to 20 acres. May also have a variety store (i.e. Target, Home Depot or Price/Costco) by itself.

5004 NEIGHBORHOOD SHOPPING CENTER – Usually less than 10 acres in size with on-site parking. Includes supermarket and drug store centers not identified as community commercial. May include office uses that are not large enough to code separately. Neighborhood centers with over 100,000 sq. ft. are inventoried by the Chamber of Commerce, and The Union Tribune (Copley) also collects data on neighborhood centers.

5005 SPECIALTY COMMERCIAL – Tourist or specialty commercial shopping areas such as Seaport Village, Marina Village, Ferry Landing at Coronado, Bazaar del Mundo, Flower Hill, Glasshouse Square, The Lumberyard, Park Plaza at the Village, Promenade, Belmont Park, Del Mar Plaza.

5006 AUTOMOBILE DEALERSHIP – Includes National City Mile of Cars and Carlsbad's Car Country, among others.

5007 ARTERIAL COMMERCIAL – Includes commercial activities found along major streets (not in planned centers), with limited on-site parking. May include mixed office uses that are not large enough to be identified as a separate area. Also may include mixed residential uses, i.e. residential on top of commercial or residential units

adjacent to commercial establishments.

5008 SERVICE STATION – Includes gasoline service stations and associated convenience store on stand-alone parcels where it is the primary use.

5009 OTHER RETAIL TRADE AND STRIP COMMERCIAL – Other retail land uses not classified above.

6000 OFFICE

6001 OFFICE (HIGH-RISE) – High rise buildings with **more than four stories** containing banking, offices for business and professional services (finance, insurance, real estate), some retail activities and restaurants.

6002 OFFICE (LOW-RISE) – Low rise buildings with **less than five stories** containing banking, offices for business and professional services (finance, insurance, real estate), some retail activities and restaurants.

6003 GOVERNMENT OFFICE/CIVIC CENTER – Large government office buildings or centers (outside of military reservations) and civic centers, or city halls of local governments. Also includes the Chamber of Commerce buildings and DMV Offices.

6100 PUBLIC SERVICES

6101 CEMETERY

6102 RELIGIOUS FACILITY

6103 LIBRARY

6104 POST OFFICE

6105 FIRE/POLICE/RANGER STATION

6108 MISSION

6109 OTHER PUBLIC SERVICES – cultural facilities, museums, art galleries, social service agencies, humane societies, historic sites and observatories.

6500 HOSPITALS

6501 UCSD/VA HOSPITAL/BALBOA NAVAL HOSPITAL

6502 HOSPITAL-GENERAL – Hospitals not included above.

6509 OTHER HEALTH CARE – Medical centers and buildings or offices, health care services and other health care facilities. Smaller medical offices and facilities may be included within office, strip commercial or other surrounding uses.

6700 MILITARY USE

6701 MILITARY USE – Defense installations; operational facilities; maintenance facilities (non-weapons); research & development; supply & storage (non-weapons); community support facilities and any other military use that does not fall in other categories.

6702 MILITARY TRAINING – Academic, operational & combat training facilities; training ranges; and special purpose training ranges.

6703 WEAPONS FACILITY – Weapons assembly, maintenance and storage facilities.

6800 SCHOOLS

6801 SDSU/CSU SAN MARCOS/UCSD

6802 OTHER UNIVERSITY OR COLLEGE

6803 JUNIOR COLLEGE – Includes trade or vocational schools.

6804 SENIOR HIGH SCHOOL

6805 JUNIOR HIGH SCHOOL OR MIDDLE SCHOOL

6806 ELEMENTARY SCHOOL

6807 SCHOOL DISTRICT OFFICE

6809 OTHER SCHOOL – Includes adult schools, non-residential day care and nursery schools.

7200 COMMERCIAL RECREATION

7201 TOURIST ATTRACTION – Sea World, Zoo, and Wild Animal Park, Legoland.

7202 STADIUM/ARENA – Sports Arena, San Diego Stadium, and Petco Park.

7203 RACETRACK – Del Mar, San Luis Rey Downs.

7204 GOLF COURSE – Public and private golf courses.

7205 GOLF COURSE CLUBHOUSE – Clubhouses, swimming and tennis facilities and parking lots associated with the golf course.

7206 CONVENTION CENTER – Centre City, Embarcadero.

7207 MARINA – Includes marinas such as Oceanside Harbor, Quivira Basin, Shelter Island, Harbor Island, Embarcadero and Chula Vista marina.

7208 OLYMPIC TRAINING CENTER – Olympic Training Center in Chula Vista

7209 CASINO – Gambling establishments, typically located on Indian Reservations.

7210 OTHER RECREATION-HIGH – High intensity uses primarily in urban areas. Drive-in theaters, fitness clubs, boys/girls clubs, YMCA's, swim clubs, and stand-alone movie theaters. Also includes tennis clubs without golf, rodeo grounds and senior recreation centers.

7211 OTHER RECREATION-LOW – Campgrounds and other low intensity recreation. Includes public and private primitive and developed camping areas for tents and RVs. Also includes camps and retreat centers owned or used by religious organizations, scouting, or YMCA. Other low intensity uses such as rifle ranges are included.

7600 PARKS

7601 PARK-ACTIVE – Recreation areas and centers containing one or more of the following activities: tennis or basketball courts, baseball diamonds, soccer fields, or swings. Examples are Robb Field, Morley Field, Diamond Street Recreation Center, Presidio Park. Smaller neighborhood parks with a high level of use are also included as active parks.

7603 OPEN SPACE PARK OR PRESERVE – Wildlife and nature preserves, lands set aside for open space, and parks with limited development and access. Examples are Torrey Pines State Reserve, Penasquitos Canyon Reserve, San Elijo Ecological Preserve, Nature Conservancy properties.

7604 BEACH-ACTIVE – Accessible sandy areas along the coast or major water bodies (San Diego and Mission Bay) allowing swimming, picnicking, and other beach related recreational activities. Usually has parking associated with it.

7605 BEACH-PASSIVE – Other sandy areas along the coastline with limited parking and access (beaches along cliffs, or near preserves).

7606 LANDSCAPE OPEN SPACE – Actively landscaped areas within residential neighborhoods such as greenbelt areas, hillsides with planted vegetation (trees/shrubs), among others.

7607 RESIDENTIAL RECREATION – Active neighborhood parks that are for the use of residents only such as fenced in areas that may contain pools, tennis & basketball courts, barbecues & a community meeting room.

7609 UNDEVELOPABLE NATURAL AREA * **(Planned land-use only)** – Undevelopable natural areas that are not part of an established open space park or preserve. Examples are Cleveland National Forest and open space easements around developments.

8000 AGRICULTURE

8001 ORCHARD OR VINEYARD

8002 INTENSIVE AGRICULTURE – Nurseries, greenhouses, flower fields, dairies, livestock, poultry, equine ranches, row crops and grains.

8003 FIELD CROPS – Pasture, fallow.

9100 VACANT AND UNDEVELOPED LAND * (Historical and Existing only)

9101 VACANT

9200 WATER

9201 BAY OR LAGOON

9202 INLAND WATER – Lakes, reservoirs and large ponds.

9300 INDIAN RESERVATION * (Planned land-use only)

9400 PUBLIC/SEMI-PUBLIC * (Planned land-use only)

9500 UNDER CONSTRUCTION * (Historical and Existing only)

9501 RESIDENTIAL UNDER CONSTRUCTION – Usually located near existing residential developments.

9502 COMMERCIAL UNDER CONSTRUCTION – Usually located near existing commercial or residential areas.

9503 INDUSTRIAL UNDER CONSTRUCTION – Usually located near existing industrial or commercial developments.

9504 OFFICE UNDER CONSTRUCTION – Usually located near existing industrial or commercial developments.

9505 SCHOOL UNDER CONSTRUCTION

9506 -ROAD UNDER CONSTRUCTION

9507 - FREEWAY UNDER CONSTRUCTION

9600 SPECIFIC PLAN AREA * (Planned land-use only)

9700 MIXED USE * (Planned land-use only)

* The same 4-digit land-use coding system is used for historical, existing and planned land-use. Codes

that are used only for historical/existing or planned are indicated.

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