



CITY OF SEASIDE

Stormwater Master Plan Update – Phase 1



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RESOLUTION NO. 14-12

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SEASIDE
ACCEPTING THE STORMWATER MASTER PLAN.**

WHEREAS, the City of Seaside operates a stormwater system that serves the City of Seaside and the southern portions of the City of Sand City; and

WHEREAS, upgrades to the stormwater drainage system are necessary to alleviate localized flooding and ongoing operational and maintenance needs; and

WHEREAS, the City of Seaside retained Brown and Caldwell, Inc to prepare a Stormwater Master Plan; and

WHEREAS, the Stormwater Master Plan prepared by Brown and Caldwell describes operational and maintenance, capital outlay, and capital improvement projects necessary to maintain and improve the stormwater collection system operated by the City; and

WHEREAS, the City of Seaside currently maintains a Stormwater Management Utility to operate and maintain the City's storm and surface drainage system; and

WHEREAS, the Stormwater Management Utility is currently funded from the City's general fund; and

WHEREAS, the Master Plan presents the development of alternative schedules of stormwater management fees to recover the costs of operating, maintaining, and improving the City's storm and surface water management systems; and

WHEREAS, in accordance with California Constitution Article XIII D, Section 4(b), the Master Plan is prepared by a professional engineer registered in the State of California and provides

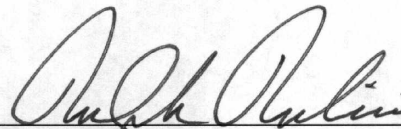
a nexus for potential fees that the City may collect to operate the stormwater collection system;
and

WHEREAS, the Master Plan has determined appropriate fees potentially imposed by the City of Seaside on parcels of land based upon costs reasonably incurred by the City.

NOW THEREFORE, BE IT RESOLVED, that the City of Seaside accepts the Stormwater Master Plan attached hereto.

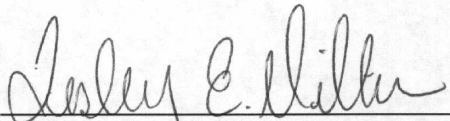
PASSED AND ADOPTED at a meeting of the City of Seaside duly held on the 20th day of February 2014, by the following vote:

AYES:	5	COUNCIL MEMBERS	Alexander, Edwards, Oglesby, Pacheco, Rubio
NOES:	0	COUNCIL MEMBERS	None
ABSENT:	0	COUNCIL MEMBERS	None
ABSTAIN:	0	COUNCIL MEMBERS	None

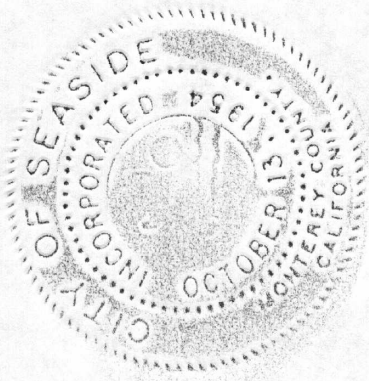


Ralph Rubio
Mayor

ATTEST:



Lesley E. Milton
City Clerk



FINAL

Stormwater Master
Plan - Phase 1

Prepared for
City of Seaside, California
May 2010
Updated: February 2014

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FINAL

Stormwater Master Plan - Phase 1

Prepared for
City of Seaside, California
May 2010
Updated: February 2014



BC Project No. 144748

A handwritten signature in blue ink, appearing to read "Chris M. Peters".

Christopher M. Peters
Engineer in Responsible Charge
California License No. C69669



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Walnut Creek, California 94596

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List of Abbreviations

AACE	Association for the Advancement of Cost Engineering International
AB	Assembly Bill
ACA	Assembly Constitutional Amendment
Blue Book	Rental Rate Blue Book for Construction Equipment
BMP	Best Management Practices
CADD	Computer-aided design and drafting
Caltrans	California Department of Transportation
CCI	Construction Cost Index
CCTV	Closed-circuit television
CIP	Capital Improvement Program
City	City of Seaside
CMMS	Computerized maintenance management system
ENR	Engineering News Record
ESFRU	Equivalent single-family residential unit
FTE	Full time equivalency
GIS	Geographic Information System
Master Plan	Stormwater Master Plan
MRSWMP	Monterey Regional Stormwater Management Program
MCA	Mechanical Contractors Association
NASSCO	National Association of Sewer Service Companies
NECA	National Electrical Contractors Association
NPDES	National Pollutant Discharge Elimination System
OD	Outside diameter
O&M	Operations and maintenance
PACP/MACP	Pipeline and Manhole Assessment Certification Program
POMA	Presidio of Monterey Annex
ROW	Right-of-Way
SCA	Senate Constitutional Amendment
SCSD	Seaside County Sanitation District
SWRCB	State Water Resources Control Board
USA	Underground Service Alert

Executive Summary

This Executive Summary summarizes the findings and recommendations of the Phase 1 Stormwater Master Plan (Master Plan) prepared for the City of Seaside (City). This Master Plan is based on preliminary assessments of the drainage system hydraulics and the operations and maintenance program. The conceptual recommendations and preliminary cost estimates were used to evaluate the financial impacts of a proposed stormwater utility fee that the City may implement at a later date. The hydraulic recommendations presented in this Master Plan are conceptual and should be confirmed with additional analysis.

Background

The City of Seaside owns, operates, and maintains a storm drain collection system within the city limits, as well as the 90-inch diameter Bay Avenue outfall in Sand City. This system conveys storm runoff out of the city through two ocean outfalls. At the time of this Master Plan, the system served the City of Seaside including Seaside proper, Seaside Highlands and Presidio of Monterey Annex (POMA). Brown and Caldwell was retained to prepare a Master Plan to document existing hydraulic deficiencies in the collection system and to identify supplemental operations and maintenance activities required to meet the National Pollutant Discharge Elimination System (NPDES) Phase II permit and to maintain the system to industry standards.

The purpose of Phase 1 of the Master Plan is to: 1) investigate certain documented existing system deficiencies and develop preliminary improvement projects for inclusion into a potential capital improvement program (CIP); 2) develop a program to meet requirements for operating, maintaining and inspecting the City's storm drainage system; 3) develop a preliminary CIP to address the known system deficiencies and prioritize projects; and 4) prepare a stormwater utility fee study on the basis of the proposed CIP, operations and maintenance, inspection, NPDES commitments and future Stormwater Master Plan study phases.

This report was originally developed in 2008 and has been updated in 2013 to reflect new requirements prescribed by the 2013 update of the NPDES Phase II Stormwater Program permit. Cost projections have been updated to reflect inflation as well an increase in costs associated with compliance due to the expanded requirements of the 2013 NPDES Stormwater Program. This update also reflects the addition of a capital improvement project in Area 10, "West Broadway".

Operations and Maintenance Program

The City has an operations and maintenance (O&M) program for the City's surface and storm drain system. This program is currently funded from the City's general fund. An evaluation was performed on the City's existing storm drainage program that evaluated typical O&M components: NPDES permit requirements; maintenance activities; staffing; and equipment, software, and training. A summary of the current storm drainage program costs is provided in Table ES-1.

Table ES-1. Current Annual Storm Drainage Program Costs

Item	Type	2013 Program Cost
Monterey Regional Stormwater Management Program (MRSWMP) / NPDES Permit Compliance	Annual	\$74,000
Storm Drainage Program Staff	Annual	\$369,426
Department Consumables for Equipment Maintenance and System Repairs	Annual	\$75,000
	Total	\$518,426

A review of the City's current storm drainage program identified a number of areas where the current program can be improved. Program enhancements to street sweeping, inspections and a computerized maintenance management system (CMMS) are recommended to assure that the City is able to meet its program objectives. Total costs for the proposed Seaside Storm Drainage Program are presented in Table ES-2. Costs are presented in 2013 dollars. One-time capital costs will be expended between 2014 and 2023. Maintenance and labor costs will be expended annually.

Table ES-2. Storm Drainage Program Total Costs

Item	One-Time Capital Cost (\$)	Annual Maintenance or Labor Cost (\$)
Monterey Regional Stormwater Management Program/NPDES Permit	--	\$74,000
Department Consumables for Equipment Maintenance and System Repairs	--	\$75,000
New Equipment, Software and Training	\$1,132,000	\$25,000
Existing Staff Labor	--	\$369,426
New Staff Labor	--	\$252,953
Total	\$1,132,000	\$796,379

Improvement Projects

The City identified 12 areas within their storm drainage system that experience poor control of stormwater or flooding from storm events, especially in conjunction with tidal changes. Conceptual capital improvement projects were developed to resolve these hydraulic deficiencies. Hydrologic and hydraulic analyses (i.e. modeling) were not performed as part of this study. Flow rates and other information used in the development of these projects were provided by the City. Preliminary capital projects and costs were developed for the following areas:

- Area 1: Del Monte Boulevard at Auto Center Parkway - \$452,000
- Area 2: Hilby Avenue - \$6,130,000
- Area 3: John Street at Redwood Avenue - \$105,000
- Area 4: Olympia Avenue at Catalina Street - \$372,000
- Area 5: 90-inch Bay Avenue Outfall - Phase 1: \$5,316,000 and Phase 2: \$31,889,000
- Area 6: Broadway Avenue at Fremont Boulevard - \$355,000
- Area 7: Hamilton Avenue at Fremont Boulevard - \$2,764,000
- Area 8: Canyon Del Rey at Hamilton Avenue - \$239,000
- Area 9: Roberts Lake Outfall - \$20,197,000

- Area 10: West Broadway - \$2,227,000
- Area 11: Military Avenue at Mendocino - 36,000
- Area 12: Storm Drain Water Quality Project – \$5,461,000

Capital Improvement Program

A capital improvement program (CIP) was developed to address hydraulic capacity and water quality concerns in the City's storm drain system and to provide O&M program equipment improvements to allow the City to maintain the stormwater system to industry standards. Anticipated CIP annual spending per fiscal year ending June 30, 2023 is summarized in Table ES-3. Total anticipated cost for the recommended CIP for City of Seaside is \$55,758,000.

Table ES-3. Capital Improvement Program								
Anticipated Spending (\$) per Fiscal Year Ending June 30								
2015	2016	2017	2018	2019	2020	2021	2022	2023
2,600,000	3,480,000	5,409,000	3,178,000	2,486,000	28,642,000	7,207,000	1,318,000	1,438,000

Stormwater Management Fees Implementation

The City of Seaside currently operates a Stormwater Management Utility to operate and maintain the City's storm and surface drainage system in accordance with the authority granted to the City by Governmental Code Section 54725 et seq. This utility is currently funded from the City's general fund.

Due to expected increases in annual costs resulting from the need to meet both water quality requirements, as specified by the City's NPDES permit requirements, and maintain and improve the system to current standards, the City may no longer be able to meet these costs with transfers from the general fund. It is the City's intention to establish a schedule of stormwater management fees to recover the costs of operating and improving the storm and surface water control facilities.

The City of Seaside will have to seek voter approval for adopting and implementing stormwater management fees in accordance with Proposition 218. Proposition 218 requires either 50 percent of the property owners or two-thirds of the general electorate to approve the fees. Getting approval of the property owners or general electorate may require a robust public outreach effort and its associated costs.

Stormwater Management Fees

The annual revenue requirements of the City's storm drain system consist of operation and maintenance expenses, equipment costs, and CIP related expenditures. This section presents the development of alternative schedules of stormwater management fees to recover the costs of operating, maintaining, and improving the City's storm and surface water management system. This study is intended to present a preliminary rate schedule and a formal rate study will be required prior to implementation. Also, these rates may need to be revisited at a future date as customer characteristics change over time.

Five revenue requirement alternatives were developed for the stormwater management fees. The assumptions for each alternative are summarized below.

Alternative 1. Fees would recover the costs of the proposed O&M program, O&M related capital costs, and the entire CIP with estimated grant funding as follows:

- 50 percent for projects P5A and P5B, 90-inch Bay Avenue Outfall (Phases 1 and 2)
- 75 percent for project P2, Hilby Avenue
- 75 percent for project P12, Water Quality Project.
- Recovery of a \$2,500,000 loan from the general fund incurred in FY 2014/15

Alternative 2. Fees to support the proposed O&M program, O&M related capital costs, and recovery of a \$1,700,000 loan from the general fund incurred in FY 2014/15 over the next four fiscal years. This alternative does not consider any potential grants to support the proposed activities.

Alternative 2a. Fees calculated on an annual basis with annual increases that vary from \$0.11 to \$0.88.

Alternative 2b. Fees calculated on an annual basis with annual increases that vary from \$0.30 to \$0.49. The average fee for the eight year study period is that same as in Alternative 2a.

Alternative 3. Fees to support Alternative 2 plus the entire CIP without any grants including recovery of a \$1,300,000 loan from the general fund incurred in FY 2014/15. This alternative results in the highest fees.

Alternative 4. Fees to support Alternative 3, excluding project P5B, without grants including recovery of a \$2,000,000 loan from the general fund incurred in FY 2014/15.

Alternative 5. Fees to support Alternative 4, with assumed grant funding the same as Alternative 1 including recovery of a \$2,000,000 loan from the general fund incurred in FY 2014/15.

Monthly fees for each alternative from FY16 to FY23 for an ESFRU are illustrated in Table ES-4.

Table ES-4. Summary of Alternative ESFRU Monthly Fees								
Alternative	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Alternative 1	\$29.06	\$29.44	\$29.65	\$30.02	\$30.63	\$30.75	\$30.83	\$30.92
Alternative 2a	\$7.88	\$7.99	\$8.86	\$9.74	\$9.98	\$10.14	\$10.40	\$10.62
Alternative 2b	\$7.88	\$8.36	\$8.85	\$9.34	\$9.82	\$10.12	\$10.43	\$10.81
Alternative 3	\$45.00	\$45.11	\$45.15	\$45.34	\$45.46	\$45.52	\$45.68	\$45.71
Alternative 4	\$24.07	\$24.55	\$24.77	\$24.82	\$25.07	\$25.31	\$25.76	\$26.01
Alternative 5	\$16.92	\$17.22	\$17.39	\$17.49	\$17.54	\$17.62	\$17.77	\$17.85
Alternative 1	CIP - All Projects / With Grants							
Alternative 2a	CIP - No Projects							
Alternative 2b	CIP - No Projects / Gradual Fee Increases							
Alternative 3	CIP - All Projects / No Grants							
Alternative 4	CIP - All Projects except P5B / No Grants							
Alternative 5	CIP - All Projects except P5B / With Grants							

Section 1

Introduction

The City of Seaside owns and maintains a storm drain collection system within the city limits and a 90-inch diameter Bay Avenue outfall in Sand City. This storm drainage system conveys stormwater runoff out of the City through two ocean outfalls. Brown and Caldwell was retained to prepare a Master Plan to identify existing hydraulic deficiencies in the collection system and to propose supplemental operations and maintenance (O&M) activities required to meet the NPDES Phase II permit and to maintain the system to industry standards.

The purpose of Phase 1 of the Master Plan is to: 1) investigate certain documented existing system deficiencies and develop preliminary improvement projects for inclusion into a potential capital improvement program (CIP); 2) develop a program to meet requirements for operating, maintaining and inspecting the City's storm drainage system; 3) develop a preliminary CIP to address the known system deficiencies and prioritize projects; and 4) prepare a stormwater utility fee study on the basis of the proposed CIP, operations and maintenance, inspection, NPDES commitments and future Stormwater Master Plan study phases. Paramount to this plan is the development of stormwater management fee options to recover the costs of operating, maintaining, and improving the City's storm drain system. This section summarizes the process undertaken to develop this Master Plan and provides background information on the study area, system, interagency agreements, and regulatory drivers.

This report was originally developed in 2008 and has been updated in 2013 to reflect new requirements prescribed by the 2013 update of the NPDES Phase II Stormwater Program permit. Cost projections have been updated to reflect inflation as well an increase in costs associated with compliance due to the expanded requirements of the 2013 NPDES Stormwater Program. This update also reflects the addition of a capital improvement project in Area 10, "West Broadway".

1.1 Scope of Work

The Phase 1 scope of work includes the following tasks.

Identify System Deficiencies and Recommend Improvement Projects. Investigate existing system hydraulic deficiencies and develop conceptual improvement projects for inclusion in the CIP.

Develop Operations and Maintenance and Inspection Program. Develop a program of operations and maintenance and inspection activities to meet the NPDES Phase II permit requirements and to maintain the system to industry standards.

Develop Preliminary Capital Improvement Program (CIP). Develop a preliminary CIP to address the identified hydraulic deficiencies and prioritize projects. The proposed program may be used to support the development of a stormwater fee.

Stormwater Utility Fee Study. Prepare a stormwater utility fee study to identify stormwater fees that would recover the estimated annual costs of providing stormwater service. This includes costs that specifically support the CIP, O&M, inspection, NPDES commitments and future Master Plan phases and updates.

Prepare Master Plan Report. Prepare a document that summarizes the recommendations of this Master Plan and identifies the fees necessary to recover the estimated annual costs of providing stormwater service. Present the Master Plan to City staff and the City Council.

1.2 Study Area

The City of Seaside is located in the northwest part of Monterey County, east of the City of Monterey and along Monterey Bay. The City owns and maintains the storm drain system within the City limits and the 90-inch diameter Bay Avenue ocean outfall which is located in Sand City. This includes the following areas that were recently annexed into the city limits from the former Fort Ord facility: Seaside Highlands and POMA. The City is responsible for operation, maintenance, inspection and repair to this system. The limits of the Phase 1 Master Plan evaluation are illustrated in Figure 1-1. Seaside proper is shown in Region A. Areas recently annexed from the former Fort Ord are shown in Regions B, C and D.

The City also provides limited maintenance and/or inspection services for the following areas outside of the City limits or to State-owned systems within the City limits. The City is reimbursed for work performed in these areas.

- Caltrans Highway Right-of-Way (ROW)
- California State University – Monterey Bay
- City of Del Rey Oaks
- City of Carmel
- Laguna Grande Parking Authority

Costs for performing work in the five areas listed above have not been evaluated and are not included in this Master Plan.

1.3 Previous Planning Reports

The City's previous evaluation of the storm drainage system was completed in 1961 by George S. Nolte Consulting Civil Engineers Inc. Prior to that a report was completed in 1956 by Clyde C. Kennedy. Additional investigations and reports have been prepared for isolated areas of the storm drain system and are as follows:

- Rousch Avenue Storm Drainage Study: George C. Bestor, 1957
- Waring Street and Hilby Avenue: Nolte Engineers, 1961
- Bay Street – Clementina Avenue Outfall: Nolte Engineers, 1962
- Laguna Grande Drainage Study: Koebig & Koebig, Inc, 1970
- Canyon Del Rey Watershed Drainage Studies: Wilsey & Ham, 1971 and Koretsky King Associates, Inc., 1977
- Military Avenue Watershed System: City of Seaside, 1974
- Del Monte Avenue Improvements: George C. Bestor, 1975
- Bay Avenue Storm Drain Hydrology: Schaaf & Wheeler, 2007
- West Broadway Avenue Specific Plan: Schaaf & Wheeler, 2007
- Stormwater Master Plan – Phase 1: Brown and Caldwell, 2010

These reports were used, in conjunction with other existing data, in the evaluation and development of the conceptual recommendations for the existing Seaside storm drain system.

1.4 Storm Drain System

The storm drain system consists of approximately 438 catch basins, 231 manholes, and 15 bubble-ups as identified on the storm drain system map. All stormwater conveyed by the collection system is transported to the bay via two outfalls, the Bay Avenue outfall and the Roberts Lake outfall.

The Bay Avenue outfall includes a 90-inch diameter pipeline extending out towards the ocean 124 feet. The outfall was constructed in 1966 and has undergone several modifications. The most recent modification was in 2007 when a Tideflex valve was installed on the outfall to prevent sand from flowing into the pipe.

Roberts Lake outfalls through four parallel 6-foot by 6-foot box culverts that transverse beneath California Highway 1. The outfall was constructed prior to 1971. The box culverts are routinely blocked by sand and have to be manually breached prior to a storm event to prevent Roberts Lake from flooding.

1.5 Interagency Agreements

The City is responsible for maintenance, repair, and legal obligations of the 90-inch diameter storm drain line within Sand City per an agreement signed on March 29, 1966 that is provided in Appendix E. The City also provides limited maintenance and/or inspection services for the following areas outside of the city limits or to State-owned systems within the city limits. The City is reimbursed for work performed in these areas.

- Caltrans Highway ROW
- California State University – Monterey Bay
- City of Del Rey Oaks
- City of Carmel
- Laguna Grande Parking Authority

1.6 Regulatory

The City is a member entity of the Monterey Regional Stormwater Management Program (MRSWMP). This regional program was developed in response to the SWRCB's implementation of the NPDES Phase II Stormwater Program. The City is responsible for conducting its stormwater management program in accordance with the terms of the Monterey Regional Stormwater Management Program (MRSWMP). The City is responsible for compliance with requirements set forth in the July 2013 update of NPDES Phase II Stormwater Program that are not met by the current MRSWMP.

The City must also follow the requirements of Proposition 218 when implementing a stormwater utility fee. On November 5, 1996, Proposition 218, the Right to Vote on Tax Act, was approved by California voters and became effective July 1, 1997. Prop 218 added Articles XIII C and XIII D to the California Constitution which established additional calculation and implementation requirements and limitations on new and increased taxes, assessments, and property-related fees and charges.

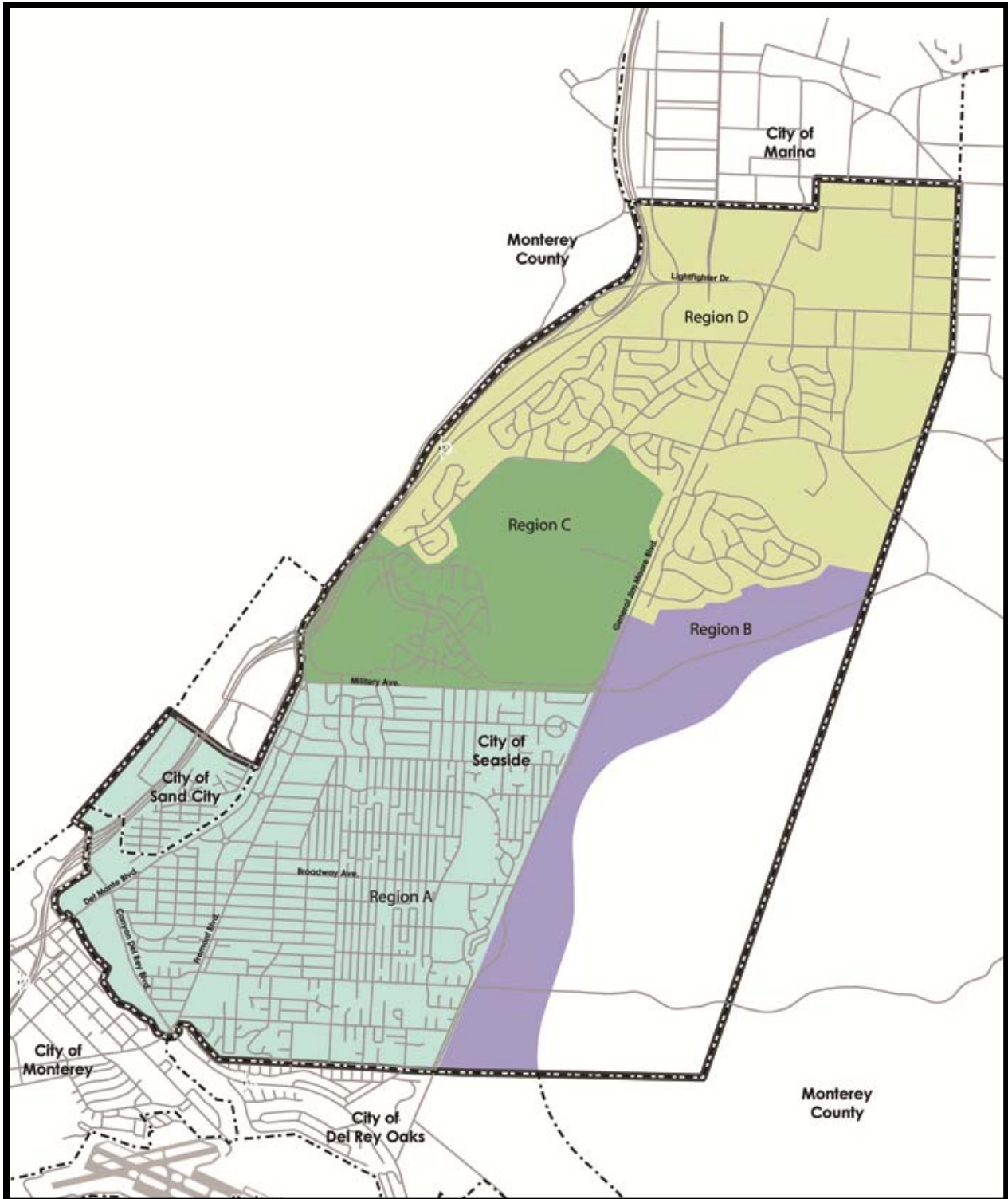


Figure 1-1. Master Plan Study Area

Section 2

Operations and Maintenance Program

The City has an operations and maintenance program for the surface and storm drain system. The O&M program has three objectives:

- Meet water quality requirements as specified by the City's NPDES permit requirements.
- Maintain the system to industry standards to minimize street and property flooding, preserve system integrity and protect the City's capital investment (Asset Management).
- Fulfill current maintenance agreements.

This section summarizes the City's maintenance practices, equipment, and staffing levels for the storm drain system. Information used in the development of this section was provided by city staff.

2.1 Service Area and Other Maintenance Agreements

The City is responsible for operation, maintenance, inspection and repair to the storm drain system within the city limits and the 90-inch diameter Bay Avenue Outfall located in Sand City. This includes the following areas that were recently annexed into the city limits from the former Fort Ord facility: Seaside Highlands and POMA. The City's storm drainage program also includes street sweeping to reduce the amount of debris that enters the system.

The City also provides limited maintenance and/or inspection services for the following areas outside of the city limits or to State-owned systems within the city limits.

- Caltrans Highway Right-of-Way (ROW)
- California State University – Monterey Bay
- City of Del Rey Oaks
- City of Carmel
- Laguna Grande Parking Authority

The City is reimbursed for work performed in these areas. Costs (labor, equipment and consumables) for performing this work are reimbursed to the City under separate contracts and are therefore not evaluated or included in this analysis.

2.2 Existing Storm Drainage Program

An evaluation was performed on the City's existing storm drainage program. This evaluation considered the following components that are typical of a storm drainage program: NPDES permit requirements; maintenance activities; staffing; and equipment, software and training. Each of these components is discussed below.

2.2.1 NPDES Permit Requirements

The City is a member entity of the Monterey Regional Stormwater Management Program (MRSWMP). This regional program was developed in response to the State Water Resources Control Board's implementation of the NPDES Phase II Stormwater Program. The purpose of this program is to implement and enforce Best Management Practices (BMPs) to reduce the discharge of pollutants from municipal separate storm sewer systems. The City is responsible for conducting its stormwater management program in accordance with the terms of the regional program.

There are seven minimum measures that the City must undertake to meet the requirements of the general permit. These measures are:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post-Construction Stormwater Management in New Development and Redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations
- Program Effectiveness Assessment and Improvement.

The City currently contributes to the Monterey Regional Stormwater Management Committee approximately \$74,000 annually to support the administration of the MRSWMP, prepare documentation for the NPDES annual report, and for local public education, outreach, and participation activities. Even with the new Phase II permit, this amount is expected to remain approximately the same. Illicit discharge detection and elimination is currently performed by the maintenance crews during their maintenance and cleaning of the system. The City's administrative, engineering, and building inspection staff has implemented measures to manage stormwater in new development and redevelopment. This includes reviewing development plans and performing inspections on permanent stormwater controls for new development. The City has also actively worked on pollution prevention for municipal operations. Recent projects include the Fire Station stormwater separation project, which is in support of Measure 6, and the 90-inch diameter outfall dry weather flow diversion project, which is in support of Measure 3. The City also performs street sweeping and catch basin cleaning in support of Measure 6.

Meeting the goals of the general permit requires ongoing training activities. City staff has previously received training on Measures 4 (parts 2 and 3) and 5 (part 2). Program specifics are documented in the MRSWMP. Additional training, specifically pertaining to Measure 5, post-construction stormwater management in new development, is needed. Continuing education for all of the minimum measures may be required to keep training current and to refresh staff knowledge.

Meeting the goals of the updated general permit requires development and implementation of low impact design (LID) processes as well as an extensive assessment and reporting plan to evaluate the program's effectiveness. For any new or rehabilitation projects, the City must develop and implement a process for incorporating water quality enhancement features. The City must also develop a Program Effectiveness and Improvement Plan to assess the effectiveness of implemented BMPs and improve upon BMPs that are underperforming. Compliance with the general permit requires substantial annual reporting through WRCB's online reporting system, Storm Water Multiple Application and Report Tracking System (SMARTS).

2.2.2 Maintenance Activities

The City currently performs ongoing maintenance activities on the storm drain system in support of each of the program objectives. A description of these activities is provided in the following sections.

2.2.2.1 Catch Basin and Pipeline Cleaning

The City's primary storm drain maintenance activity is catch basin cleaning. The City performs catch basin and pipeline cleaning within the city limits and in the Caltrans ROW. The City's NPDES permit requires annual catch basin cleaning at specified hot spots. These areas are identified in Appendix I of the MRSWMP. The City's current cleaning program requires two employees for approximately 2080 hours each year. Roughly 40 percent of the time is spent in the area defined as Seaside proper and 60 percent of the time is spent in POMA and Seaside Highlands.

Under the City's current storm drainage program, each catch basin is cleaned at least once annually. During the catch basin cleaning, City staff evaluates the presence of debris in the catch basins. Pipelines are generally not cleaned, unless there is substantial sediment, sand or debris.

2.2.2.2 Ocean Outfall Maintenance

The City performs maintenance on its two ocean outfalls. This includes the four box culverts at Roberts Lake and the 90-inch diameter Bay Avenue Outfall in Sand City. However, maintenance does not include cleaning catch basins attached to the 90-inch diameter storm drainage system in Sand City. The maintenance activities typically involve clearing the outfalls of sediment, sand and debris so the systems can freely discharge to the ocean. This maintenance program requires two employees for approximately 260 hours per year. The City is investigating if there are any structural solutions that will resolve these outfall maintenance issues and reduce the amount of time spent by maintenance staff. Ocean outfall maintenance is also difficult because it requires permit approval by the California Coastal Commission. The California Coastal Commission staff recently informed the City that they would no longer allow them to perform work in the coastal zone under emergency permit conditions, as the activity was becoming more routine than emergency. If structural solutions are not made to resolve these problems, the City will likely need to apply for a general permit with the California Coastal Commission to allow for this necessary maintenance.

2.2.2.3 Street Sweeping

The City performs street sweeping within the city limits as part of the NPDES permit requirements and to minimize the amount of debris that enters the storm drain system. The City's current street sweeping program requires one employee for approximately 1,560 hours per year. The City would like to expand the street sweeping program to improve effectiveness and to further reduce the amount of debris that ends up in the storm drain system. The current street sweeping program could be more effective if the City implemented a no parking schedule on street sweeping days. Currently, the street sweeping operator must negotiate around parked cars, which slows down the cleaning process and reduces its effectiveness.

2.2.2.4 Repairs

City maintenance staff performs minor repairs on city-owned catch basins and pipes. Major repairs or improvements in excess of \$5,000 are generally performed by outside contractors. The City also performs ongoing catch basin grate repairs for bicycle safety. The City estimates that they perform approximately five repairs per year.

2.2.2.5 Inspections

The City does not have a formal storm drain system inspection program. Informal pipeline, catch basin and illicit discharge inspections are made during annual catch basin maintenance activities.

These inspections are not formally documented. The City performs annual visual inspections on the four percolation ponds located near California State University, Monterey Bay.

The City's NPDES permit requires that inspection and cleaning of the system is fully documented. The City would like to implement a program to manage the storm drain inspection and maintenance activities. A computerized maintenance management system (CMMS) could help document and track the storm drain system inspection and maintenance programs.

The City would also like to expand its pipeline video inspection program. This would require additional staff, equipment and software upgrades for its current closed-circuit television (CCTV) inspection rig.

2.2.2.6 Other Activities

The City responds to customer concerns about storm drain deficiencies. Customer calls are generally related to flooding during rainfall events. Response is performed by the maintenance staff (sand bagging) and typically occupies two employees for approximately 40 hours per year.

The City also performs utility markings for the Underground Service Alert (USA) utility locating service. This activity occupies one employee for approximately 170 hours per year.

2.2.3 Staffing

The City's budgeted staff for the current storm drainage program is provided in Table 2-1. The City Engineer, Associate Civil Engineer, and Junior Engineer provide engineering support to meet the needs of the NPDES permit and for the ongoing O&M program in addition to any necessary capital or repair projects. The Maintenance and Utilities Superintendent directs the Maintenance Workers and the Street Sweeper Operator in the day-to-day cleaning and maintenance activities. Building Inspectors manage construction site runoff and stormwater in new development and redevelopment.

Table 2-1. Current Storm Drainage Program O&M Staffing

Position	Full-Time Equivalents (FTE)	2014 Labor Cost (\$)	2014 Burdened Labor Cost ^a (\$)	2014 Program Labor Cost (\$)
Deputy City Manager ^b	0.05	--	--	--
City Engineer	0.10	\$133,931	\$250,451	\$25,045
Associate Civil Engineer	0.05	\$96,179	\$179,855	\$8,993
Junior Engineer	0.25	\$69,264	\$129,524	\$32,381
Maintenance and Operations Superintendent ^b	0.10	--	--	--
PW Maintenance Worker I	1.00	\$47,549	\$88,916	\$88,916
PW Maintenance Worker II	1.00	\$58,656	\$109,687	\$109,687
Street Sweeper Operator	0.75	\$62,130	\$116,182	\$87,137
Building Inspector	0.14	\$65,957	\$123,339	\$17,267
Total	3.44	--	--	\$369,426

^aBurdened labor cost=Labor cost * 1.87. Labor burden includes cost of payroll taxes, workers' compensation insurance, general liability insurance, other employee benefits, and department and city-wide overhead and allocated common activities.

^bAssociated labor costs for Maintenance and Operations Superintendent and Deputy City Manager are included in the burdened labor multiplier.

2.2.4 Equipment

An inventory of the equipment currently used by the City to maintain the storm drain system is provided in Table 2-2. The estimated remaining life of each of these items was calculated based on the date of purchase and the City's estimated useful life-of-service. City staff indicated that an additional service truck would help facilitate their daily work.

Table 2-2. Current Storm Drainage Program Equipment and Tool Inventory

Equipment	Use	Date Purchased	Typical Useful Life-of-Service	Remaining Life	% Storm Drainage Program Use
Vactor Truck (Camel)	Catch basin cleaning and pipeline debris removal	2000	10-15 years	0-2 years	100
Street Sweeper 1	Debris removal from streets	2005	7-10 years	0-2 years	100
Street Sweeper 2	Debris removal from streets	2012	7-10 years	6-9 years	100
Backhoe	Excavation for repairs or sand removal from outfalls	2003	15-20 years	5-10 years	33
CCTV Inspection Rig	CCTV inspection of pipelines	1991	10-15 years	0 years	50

2.2.5 Department Consumables

The current O&M program includes a budget for consumable materials. This includes expenses for vehicle mileage and maintenance, equipment maintenance, debris disposal, and materials needed to complete repair projects.

2.2.6 Current Annual Program Costs

A summary of the current storm drainage program costs is provided in Table 2-3. The costs of existing equipment are not included in the current program costs.

Item	Type	2014 Program Cost
MRSWMP / NPDES Permit Compliance	Annual	\$74,000
Storm Drainage Program Staff	Annual	\$369,426
Department Consumables for Equipment Maintenance and System Repairs	Annual	\$75,000
	Total	\$518,426

2.3 Modifications to the Storm Drainage Program

A review of the City's current storm drainage O&M program, the NPDES permit requirements, and industry (Caltrans) standards has identified a number of areas where the current program can be improved. Program enhancements are recommended to improve the City's O&M and inspection program and to ultimately assure that the City is able to meet its program objectives.

2.3.1 O&M Program Enhancements

The following operation and maintenance enhancements are proposed for the storm drainage program. Each proposed activity has been categorized according to the program objective that it addresses.

2.3.1.1 Street Sweeping (NPDES)

The City currently performs street sweeping to minimize the amount of debris and pollutants that enter the storm drain system. The City's current street sweeping program requires 0.75 full time equivalency (FTE). According to the City, expanding this program to 1.25 FTE would allow them to more effectively remove debris from the streets and storm drain catch basins. The City should also consider funding a street sweeping routing study and implementation of a program that allows for more effective street sweeping. A cost for this program has not been included in the proposed storm drainage program.

2.3.1.2 Inspections (NPDES and Asset Management)

The City currently does not have a formal inspection program to identify maintenance deficiencies and assess the structural integrity of its storm drain system, though it does perform some inspection activities. Caltrans standards require an annual inspection of the drainage system as well as inspections after major storm events.

The City should continue to inspect pipes and search for illicit connections at the catch basin structures while performing cleaning activities. These activities should be formally documented. The City should also implement a video inspection program for pipes that are not visible from the surface. This can be completed by utilizing the closed-circuit television (CCTV) inspection equipment that is currently owned with Seaside County Sanitation District (SCSD). Implementing this program would require hardware and software upgrades to the CCTV inspection rig and would require two additional 0.5 FTE staff. This would allow the City to inspect the system on a regular cycle and would allow the City to identify defects that may contribute to street and property flooding.

Critical defects should be identified, catalogued, and rated using a standardized condition assessment system such as the National Association of Sewer Service Companies (NASSCO) Pipeline and Manhole Assessment Certification Program (PACP/MACP) for incorporation in the Storm Drainage CIP. Pipeline inspections and catch basin inspections that are currently performed should be documented. A CMMS would facilitate this task.

2.3.1.3 CMMS (NPDES and Asset Management)

The City should implement a CMMS to digitally track work orders, cleaning, inspections, illicit discharges, and other maintenance. Historic maintenance data can be digitally tracked and linked to the Geographic Information System (GIS) for analysis of repeat problem areas. This process would help develop the CIP and would help the City adjust maintenance activities to alleviate potential flooding and develop reports for audits required for the NPDES permit. The City owns three licenses for a CMMS called Accela that are not being fully utilized. In order to fully integrate this system, the City should consider additional training for the storm drainage program staff. This is best accomplished by utilizing the vendor through which the CMMS was originally purchased.

A 0.5 FTE engineering technician or administrative assistant is needed to operate the CMMS and GIS, input work orders and inspection data, and perform data analysis to monitor the system performance and adjust cleaning priorities.

2.3.2 Recommended Staffing

Based on the analysis of operations and maintenance activities, additional staff is needed to meet the program objectives. An additional 0.2 FTE Associate Civil Engineer is needed to develop and implement LID processes and meet annual reporting requirements as described in Section 2.2.1, an additional 0.5 FTE is needed to expand the street sweeping program, an additional 0.5 FTE PW Maintenance Worker I and 0.5 FTE PW Maintenance Worker II is needed to expand the pipeline inspection program, and a 0.5 FTE engineering technician or administrative assistant is needed to operate the CMMS. The recommended new positions are summarized in Table 2-4.

Table 2-4. Additional Storm Drainage Program O&M Staffing

Position	Full-Time Equivalents (FTE)	2014 Labor Cost (\$)	2014 Burdened Labor Cost ^a (\$)	2014 Program Labor Cost (\$)
Associate Civil Engineer	0.20	\$96,179	\$179,855	\$35,971
Street Sweeper Operator	0.50	\$62,130	\$116,182	\$58,091
Engineering Technician	0.50	\$63,732	\$119,179	\$59,589
PW Maintenance Worker I	0.50	\$47,549	\$88,916	\$44,458
PW Maintenance Worker II	0.50	\$58,656	\$109,687	\$54,843
Total	2.20	--	--	\$252,953

^aBurdened labor cost=Labor cost * 1.87. Labor burden includes cost of payroll taxes, workers' compensation insurance, general liability insurance, other employee benefits, and department and city wide overhead and allocated common activities.

2.3.3 Recommended Equipment, Software and Training

The recommendations for equipment and software are based on the remaining life analysis of existing equipment and the recommended enhancements to the storm drainage program. These recommendations are presented in Table 2-5.

Table 2-5. Additional Storm Drainage Program Equipment, Software and Training					
Equipment	Use	Justification	Anticipated Purchase Date	One-Time Capital Cost^a (\$)	Annual Maintenance Cost^a (\$)
Vactor Truck (Camel)	Catch basin cleaning and pipeline debris removal	Replacement	2014-2015	\$327,000	--
Street Sweeper 1	Debris removal from streets	Replacement	2014-2015	\$270,000	--
Street Sweeper 2	Debris removal from streets	Replacement	2019-2022	\$270,000	--
Backhoe	Excavation for repairs or sand removal from outfalls	Replacement	2022	\$160,000	--
CCTV Inspection Rig	CCTV inspection of pipelines	Upgrade	2014	\$11,000	\$8,000
Quickview Camera	CCTV inspection of pipelines	Expansion	2014	\$6,000	--
Service Truck	System maintenance and transportation	Expansion	2014	\$33,000	--
CMMS Implementation	Asset Management	Expansion	2014	\$55,000	\$6,000
NPDES Permit Training	Permit compliance	Expansion	2014	--	\$11,000
Total				\$1,132,000	\$25,000

^aCapital and Maintenance cost allocations based on percentages presented in Table 2-2. Costs shown are in 2013 dollars. Cost of CCTV inspection equipment and CMMS annual maintenance is 50 percent of the anticipated costs, based on cost-sharing with SCSD. Annual maintenance costs for equipment are included in the department consumables line item in Table 2-6.

2.4 Total Program Costs

Total costs for the proposed Seaside Storm Drainage Program are presented Table 2-6. These costs do not include a street sweeping routing study or implementation of parking controls. Costs are presented in 2013 dollars. One-time capital costs will be expended between 2014 and 2023, according to Table 2-5. Maintenance and labor costs will be expended annually.

Table 2-6. Storm Drainage Program Total Costs^a		
Item	One-Time Capital Cost (\$)	Annual Maintenance or Labor Cost (\$)
MRSWMP/NPDES Permit	--	\$74,000
Department Consumables for Equipment Maintenance and System Repairs	--	\$75,000
New Equipment, Software and Training	\$1,132,000	\$25,000
Existing Staff Labor	--	\$369,426
New Staff Labor	--	\$252,953
Total	\$1,132,000	\$796,379

^aStorm Drainage Program Costs are presented in 2013 dollars.

Section 3

Improvement Projects

The City of Seaside has identified a number of areas of their storm drainage system that experience flooding from storm events or in conjunction with tidal changes. This section presents the results of a preliminary assessment of these hydraulic deficiency areas in the storm drain system. The recommended modifications and enhancements will improve system performance and reduce the risk of street and property flooding. Prior to implementing the conceptual recommendations presented herein, the City should conduct a comprehensive hydrologic and hydraulic analysis to confirm the preliminary recommendations.

Hydrologic and hydraulic analyses (i.e. modeling) have not been performed as part of this study. Flow rates and other information used in the development of this section have been provided by City staff.

3.1 Approach

At the onset of this project, the City identified eleven areas within the City that experience street and private property flooding during heavy rainfall events. One area (Area 12) was subsequently added by the City to address stormwater quality in Laguna Grande, Roberts Lake, and the Monterey Bay National Marine Sanctuary. Each hydraulic deficiency area is identified in Figure 3-1.

The purpose of the initial task was to investigate these documented system deficiencies and develop conceptual improvement projects to remediate the flooding. Site visits were conducted to all areas, except Areas 6 and 12, which were added at a later date. The primary purpose of this exercise was to develop preliminary/conceptual improvement projects and estimated costs to support the efforts of the Stormwater fee study. Project worksheets and maps were developed for each deficiency area. These worksheets, provided in Appendix A, show the location of the deficiencies and the types/locations of proposed improvements.

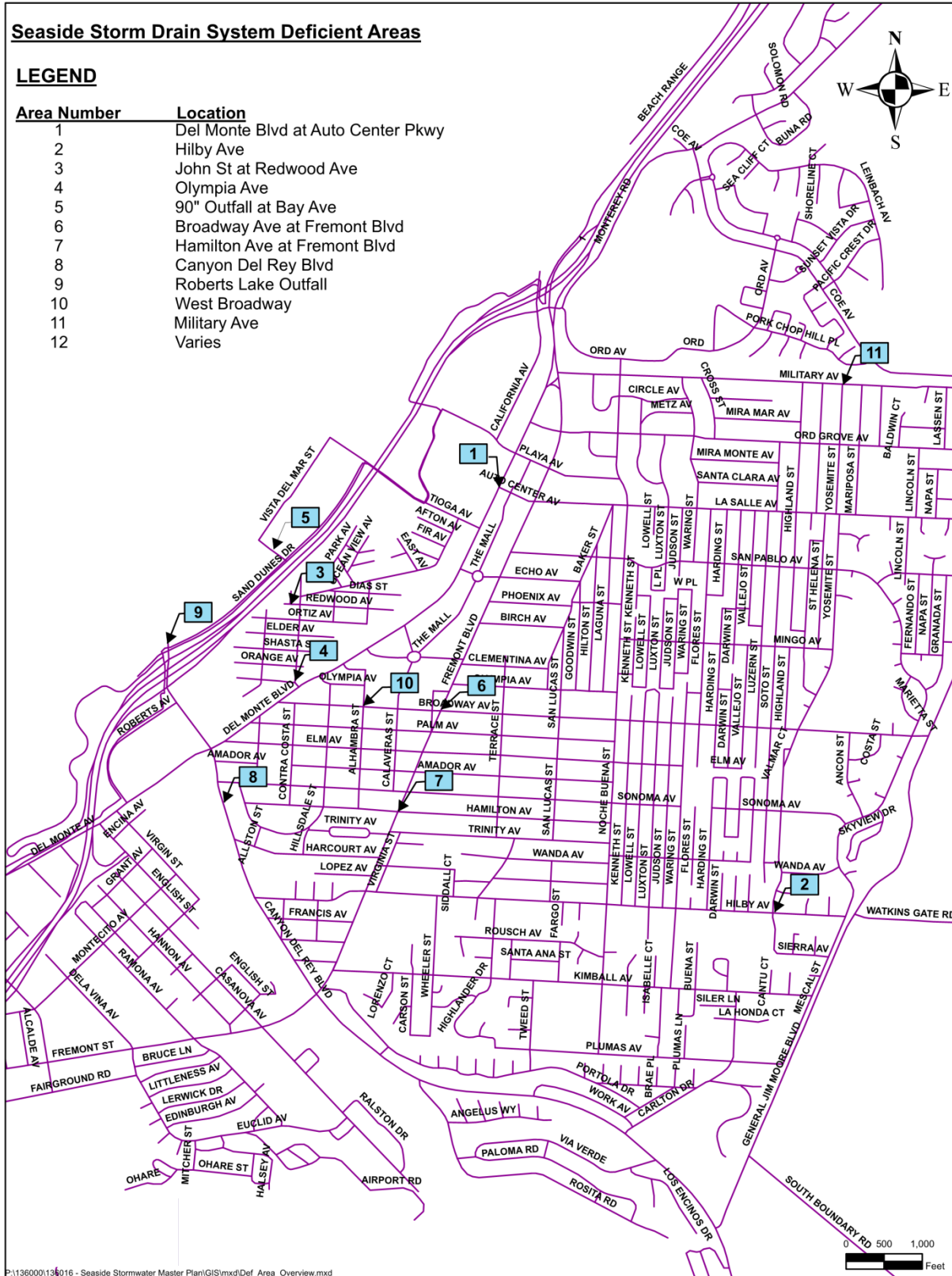


Figure 3-1. Hydraulic Deficiency Areas

3.2 Improvement Projects

Preliminary capital projects for ten of the twelve hydraulic deficiency areas were prepared as part of this project. Three options are presented for Area 5: 90-inch diameter Bay Avenue Outfall. Project worksheets and maps developed for each deficient area show the location of the deficiencies and the types/locations of proposed improvements.

3.2.1 Area 1: Del Monte Boulevard at Auto Center Parkway

Existing Conditions: Existing catch basins with 18- to 27-inch diameter pipes have insufficient capacity which results in flooding one to three times per year. Local property owners use sandbags to keep the buildings from flooding.

Improvement Plan: Construct new catch basins and pipeline system to provide additional storage and relieve existing inlets by intercepting flows from Del Monte Boulevard.

- Install new catch basins on the west and east sides of Del Monte Boulevard at the Auto Center Parkway intersection.
- Install new 24-inch diameter pipeline from the catch basins to an existing manhole on the east side of Del Monte Boulevard at the Auto Center Parkway intersection.
- Install new 24-inch diameter pipelines between the two existing and one new catch basins on the west side of Del Monte Boulevard.

3.2.2 Area 2: Hilby Avenue

Existing Conditions: Steep grade that flattens as it approaches Fremont Boulevard. Existing catch basins have insufficient capacity which results in flooding. An improvement project was designed by CH2MHILL in 1995 but never constructed.

Improvement Plan: Construct the new storm drain system along Hilby Avenue from Mescal Street to Fremont Street similar to the design by CH2MHILL to alleviate flooding.

3.2.3 Area 3: John Street at Redwood Avenue

Existing Conditions: Flat area in the vicinity of the 90-inch diameter outfall. Existing catch basins and pipes have insufficient capacity that has resulted in localized flooding. An improvement project for the 90-inch diameter outfall in 2005 included the installation of a Tideflex valve.

Improvement Plan: Replace existing catch basins with new catch basins with the ability for water to infiltrate through the base. The catch basins will be connected by 18-inch diameter RCP and empty into a manhole in Redwood Ave, which will drain into the existing 90-inch diameter outfall pipeline. The local system will be isolated from the 90-inch diameter outfall pipeline by a one way check valve that will prevent backflow.

3.2.4 Area 4: Olympia Avenue at Catalina Street

Existing Conditions: Del Monte Boulevard crests in the vicinity of Olympia Avenue. There are no existing catch basins on the north side of Contra Costa Street which appears to drain to a sag in Olympia Avenue. The open space to the south of Olympia Avenue is not graded to promote drainage off the roadway. At Catalina Street, the two inlets appear to hold runoff and when they become full, the inlets then overtop and drain down Catalina Street.

Improvement Plan: Construct new storm drain system along Olympia Avenue to alleviate flooding.

- Remove and replace existing catch basins at the corner of Catalina Street and Olympia Avenue, install new catch basins on the west side of Contra Costa Street and at the sag in Olympia Avenue.
- Install new pipes from the new Catalina Street and Contra Costa systems to the new Olympia Avenue catch basin.
- Outfall the new system into a new 400-foot swale into the former railroad right of way which will allow the runoff to infiltrate.
- Obtain a California Coastal Commission permit for construction.

3.2.5 Area 5: 90-inch Diameter Bay Avenue Outfall

Existing Conditions: An existing 90-inch diameter storm drain pipe conveys water from approximately 2,000 acres within the City of Seaside to an outfall at Monterey Bay. The existing outfall is frequently blocked by sand. In 2005 an improvement project included the installation of a Tideflex check valve at the outfall discharge to prevent migration of sand into the outfall culvert.

Improvement Plan:

The City is proposing a two-phased approach to solve the flooding at Area 5. The first phase would include implementing Project 5A to solve the immediate flooding concerns. The second phase, Project 5B, would be implemented following Phase 1 and is considered a long-term solution to this hydraulic deficiency area. The City anticipates a 10 percent cost contribution from the City of Sand City for these projects.

Project 5A – Continue manual breaching of the sand bar to allow gravity flow through the Tideflex valve. Obtain a general permit from the California Coastal Commission to allow annual maintenance activities on the beach. Also:

- Purchase the following four properties upstream of the outfall near the intersection of John Street and Redwood Avenue. These properties have the potential to flood during a 2-year recurrence interval storm (or greater) assuming the lower outfall is blocked by sand. These properties have a finished floor elevation less than 20.0 ft., which is the approximate location of the hydraulic grade line following reconstruction of the overflow box.
 - Colton, 449 Redwood Ave., Sand City, CA (011-177-011)
 - Sullivan, 449 Ortiz Ave., Sand City, CA (011-177-023)
 - Bella Mare Invest., 1815 Contra Costa St., Sand City, CA (011-177-026)
 - Bella Mare Invest., 1805 Contra Costa St., Sand City, CA (011-177-002)
- Demolish one property at John Street and Redwood Avenue and create an infiltration pond to mitigate flooding in this area.
- Reconstruct the existing outfall overflow box to reduce the occurrence of flooding and to facilitate the mining of sand in front of the lower outfall Tideflex valve. Reconstruction would include doubling the size of the box to increase the size of the emergency overflow outlet which currently restricts the flow. Also, a curbed channel will be constructed along the top of the existing 90-inch diameter culvert from the emergency outlet to the Tideflex valve. This channel will facilitate the mining of sand in front of the lower Tideflex check valve to allow the valve to open.
- Obtain a California Coastal Commission permit for construction.

Design Assumptions:

- The lower outlet was assumed to be completely blocked, and all flow exits the pipe through the overflow structure.
- The outlet box would be doubled in width and will have an opening 19 feet wide and 7 feet high. The bottom of the opening will be at elevation 11.63, one foot below the current overflow invert.
- The box opening would be covered with a steel grate with 3/8-inch bars spaced 6 inches on center, in both directions. The grate was assumed to be 20 percent blocked with trash or debris
- Assumed that flooding would be confined to the area surrounding Redwood Ave and John Street (this should be confirmed with hydraulic modeling).

Analysis was performed for the 2-year recurrence interval storm flow of 352 cfs as provided in the October 24, 2007 Technical Memorandum by Schaaf & Wheeler.

Project 5B – Construct a 500 cubic foot per second (cfs) pump station at John Street and Redwood Avenue, consisting of a mechanically cleaned debris removal screen and disposal room, a well sump, and two diesel engine driven pumps. Smaller electric pumps would be used to convey smaller flows and any incidental water that accumulates in the outfall pipeline. Modify the 90-inch diameter outfall to operate under pressurized conditions. The pumps will force water through the existing 90-inch diameter pipeline through the existing Tideflex check valve. The modified outlet structure on the beach will continue to act as the emergency overflow. A California Coastal Commission permit will be obtained for construction.

The outlet structure modifications include:

- Remove the top of the existing structure
- Raise the sides of the structure
- Install three new emergency exit ports

Design Assumptions:

- $Q = 500$ cfs; flow split between two pumps
- Maximum low water level in well sump one foot below discharge pipe invert (relative elevation of 1.69 ft.)
- Proposed maximum discharge water elevation at exit ports, approximately 3.2 ft. above existing maximum discharge water elevation (relative elevation of 19.91 ft.) assuming Tideflex is obstructed.

Analysis Results:

- Required horse power: 1200 h.p., each pump
- Operating head: 33.75 ft., water column

Project 5B Alternative – Construct two 250 cfs pump stations. The first one would be located at John Street and Redwood Avenue and would force water through the existing 90-inch diameter pipeline through the existing Tideflex valve. The second one would be located near Ortiz Avenue and Holly Street and would discharge to Roberts Lake through a new 60-inch diameter pipeline constructed in the old railroad right-of-way. The pump stations for this alternative would be similar to that described in Project 5B, but with smaller capacity pumps and overall dimensions. The 90-inch diameter pipeline would be modified to operate under pressure.

The outlet box on the beach would be modified as described in Project 5B and will continue to act as the emergency overflow. The outlet for the Robert's Lake pump station would consist of a 90 degree elbow that will direct the flow upwards to avoid scouring the lake bottom. A California Coastal Commission permit will be obtained for construction.

Design Assumptions - Beach Outfall Pump Station:

- Q = 250 cfs, flow split between two pumps
- Maximum low water level in well sump one foot below discharge pipe invert (relative elevation of 1.69 ft.)
- Proposed maximum discharge water elevation at exit ports, approximately 3.2 feet above existing maximum discharge water elevation (relative elevation of 19.91 ft.)

Analysis Results - Beach Outfall Pump Station:

- Required horse power: 400 h.p., each pump
- Operating head: 22.13 ft., water column

Design Assumptions – Robert’s Lake Pump Station:

- Q = 250 cfs, flow split between two pumps
- Maximum low water level in well sump one foot below discharge pipe invert (relative elevation of 4.25 ft.)
- Proposed maximum discharge water elevation at top of box culvert draining lake (relative elevation of 12 ft.)

Analysis Results – Robert’s Lake Pump Station:

- Required horse power: 400 h.p., each pump
- Operating head: 21.58 ft., water column

3.2.6 Area 6: Broadway Avenue at Fremont Boulevard

Existing Conditions: Existing local system has insufficient capacity for current flow which results in localized flooding. Since this site was added after the initial site visit, all information for this project was provided by the City.

Improvement Plan: Replace existing pipes with larger 30-inch diameter pipes. This will increase both capacity and storage volume of the local storm drain system.

3.2.7 Area 7: Hamilton Avenue at Fremont Boulevard

Existing Conditions: Existing local system has insufficient capacity which results in localized flooding. The catch basins in this area are large, but overflow during a storm event.

Improvement Plan: Install a new 60-inch diameter pipe to replace the existing 24-inch diameter pipe to conform to the 60-inch diameter pipe in the downstream system at the intersection of Hillsdale Street and Harcourt Avenue. Replace the existing inlets and manholes to accommodate the new, larger pipe.

3.2.8 Area 8: Canyon Del Rey Boulevard at Hamilton Avenue

Existing Conditions: The existing system is undersized for the amount of runoff it is conveying. Street runoff from Hillsdale Avenue, Canyon Del Rey Blvd. and a large parking lot are intercepted into this system. The existing pipes are 12-inch diameter.

Improvement Plan: Replace the existing 12-inch diameter pipe with 18-inch diameter pipe. Downstream of the final manhole on the west side of the pedestrian path, install a field inlet to allow water to flood out and shed into Robert’s Lake when the outlet is submerged (without conflicting with the adjacent pedestrian/bike path). Replace the existing inlets to accommodate the new, larger pipe. Obtain a California Coastal Commission permit for construction.

3.2.9 Area 9: Roberts Lake Outfall

Existing Conditions: The box culvert outfall at Roberts Lake is regularly blocked by sand, requiring a maintenance crew to excavate a channel from the four boxes prior to storm events. Once a trench is excavated, the water flows north and west along the beach out to the ocean.

Improvement Plan:

Option 1 – Continue manual breaching of the sand bar to allow gravity flow through box culverts. Renew the current general permit from the California Coastal Commission that allows periodic maintenance activities on the beach for a period of five years.

Option 2 – Construct a 250 cfs low-head pump station and a 60-inch diameter pipeline through one of the box culverts and pump water to breach the sand bar and allow gravity flow through the box culverts. Also obtain a California Coastal Commission permit for construction.

It is proposed that the City implement Option 1 as a near-term solution to this hydraulic deficiency. Option 2 would be implemented as a longer-term structural solution. The City anticipates a 90 percent cost contribution from the Canyon Del Rey Watershed Joint Powers Authority since other entities, such as the City and County of Monterey, contribute to the sediment loads and stormwater flows.

3.2.10 Area 10: West Broadway

Existing Conditions: An existing 90-inch diameter storm drain pipe conveys water from approximately 2,000 acres within the City of Seaside to an outfall at Monterey Bay. The 90-Inch storm drain is frequently over-charged because the out fall is blocked by sand and water quality is poor due to urban water impacts.

Improvement Plan: The project consists of construction of a Storm Water treatment and diversion systems in Broadway Avenue between Del Monte Boulevard and Fremont Boulevard and at Del Monte Boulevard. Treated water would be diverted to retention structures for groundwater recharge.

Currently, the proposed project is part of proposed infrastructure upgrades to the West Broadway area that include reconstruction of Broadway Avenue between Del Monte Boulevard and Fremont Boulevard and portions of Del Monte Boulevard from Broadway Avenue to Contra Costa Street. Improvements include a new or upgraded water, electrical, sewer, and stormwater utilities, new streets including curb and gutter and architecturally treated sidewalks, decorative street lighting, landscaping, irrigation, signing and striping along with modifying the existing traffic signals at Broadway Ave/Del Monte Blvd and Broadway Ave/Fremont Blvd and signal at Del Monte Blvd/Contra Costa St and a new traffic signal at Broadway Ave/Alhambra St. Estimated construction costs for the stormwater improvements only is \$1,370,000 (2013 construction) not including soft costs (mobilization, administration, inspections, staking, and other support and contingency, totaling 38.5 percent of the total capital cost).

In order to make this a stand-alone project, additional design and permitting work would need to be performed to make the proposed stormwater collection system work properly.

3.2.11 Area 11: Military Avenue at Mendocino

Existing Conditions: The outfall of this system has been affected by downstream development that results in flooding of private property on Military Avenue.

Improvement Plan: Construct a new field inlet to allow water to flow and infiltrate into a green space area located less than 100-feet downstream.

3.2.12 Area 12: Storm Drain Water Quality Project

Improvement Plan: Construct eight stormwater treatment and separation systems installed in the existing storm drain system. The proposed treatment systems will screen, separate, and trap debris, sediment, oil, and grease from stormwater runoff to Laguna Grande, Roberts Lake, and to the Monterey Bay National Marine Sanctuary. Two of the separation systems will be located at the outfalls into Laguna Grande and Roberts Lake. Five systems will be placed throughout northwest Seaside to catch and treat runoff upstream of Del Monte Blvd before it reaches the 90-inch stormwater outfall that discharges to the Monterey Bay. One system will be installed on the 90-inch storm drain in Del Monte Blvd. The treatment systems will catch runoff from the City of Seaside and also parts of the City of Monterey, the County of Monterey, and the City of Del Rey Oaks.

3.3 Other Capital Expenditures

The other capital expenditures that the City can expect to incur over the planning period are itemized in Table 4-1 in the following section and are described in detail below.

3.3.1 Stormwater Master Plan

It is recommended that the City complete the Master Plan project by performing the additional hydraulic analyses and condition assessment tasks that were not performed as part of Phase 1. These tasks include:

Develop Storm Sewer Mapping

- New, digital storm sewer maps of the existing and proposed storm sewer structures and pipes within the study area will be developed.
- The new digital map will be developed using ESRI ArcMap for incorporation into the City's GIS.

Storm Drainage Condition Assessment

- Conduct comprehensive field inspections from the surface of each storm drainage structure (manhole, junction, inlet, outfall, etc.).
- If defects are identified from the surface, those pipelines will be prioritized based on the information gathered with the camera images, discussions with City staff, and review of historical information.

Review Existing Land Development Policies and Create Design Criteria

- Design criteria and land development standards for retaining and/or treating stormwater run-off on-site will be recommended.
- The existing guidance will be assessed and recommendations for modifications to accommodate and stress low impact design strategies will be made.

Assess Hydrologic Conditions and Evaluate Hydraulic Capacity

- The capacity of the existing stormwater system deficiency areas will be evaluated using historical rainfall data and a design storm event that is acceptable to the City and other affected agencies.
- Industry-accepted public domain or commercially available hydrologic/hydraulic software (such as SWMM, HEC-HMS, HEC-RAS, FlowMaster, or equivalent) will be used for model development for the purposes of conducting limited studies to assess infrastructure capacity.

Update Capital Improvement Program

- The Capital Improvement Program will be updated following the hydraulic modeling and condition assessments. The CIP will clearly define and enumerate recommended capital projects in tables, figures, and maps. Projects will be prioritized using the asset management principles of risk and level of service. Planning level cost estimates will be developed for each project.

3.3.2 Future Master Plan Updates

The City should update its Master Plan every 5 to 10 years to account for proposed development, including development planned at the former Fort Ord that will impact the existing system and the Operations and Maintenance program. Costs for the Master Plans are estimated from \$300,000 to \$500,000 depending on the amount of hydraulic modeling and condition assessment performed.

3.3.3 Maintenance and Operation Expenditures

The CIP also includes the O&M program capital costs previously presented in Section 2 and itemized in Table 4-1. A contingency has not been added to these capital expenditures. Please refer to Section 2 for detailed descriptions of these expenditures.

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Section 4

Capital Improvement Program

This section presents the recommended capital improvement program developed to address hydraulic deficiencies in the storm drain system and expand the O&M program. Cost estimates for each project and the recommended prioritization are provided in Table 4-1. All costs are in 2013 dollars. Details of the cost estimates for pipeline projects are presented in Appendix B of this report. Priority rankings and scheduling for the projects were provided by the City.

The following sections present the basis for estimating the construction and capital costs of the recommended capital improvements. The total capital investment necessary to complete a project consists of expenditures for construction, engineering services, overhead items such as legal and administrative services and financing and contingencies. The various components of capital costs and the other capital expenditures the City can expect to incur over the planning period are itemized below.

4.1 Construction Costs

This is a Class 4 estimate in accordance with the Association for the Advancement of Cost Engineering International (AACE) criteria. A Class 4 estimate is defined as a Planning Level or Design Technical Feasibility Estimate. Class 4 estimates are used to prepare planning level cost scopes or to evaluate alternatives in design conditions and form the base work for the Class 3 Project Budget or Funding Estimate.

Expected accuracy for Class 4 estimates typically range from -30 percent to +50 percent, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. In unusual circumstances, ranges could exceed those shown.

This estimate was prepared using a Windows-based commercial estimating software engine that utilizes a material and labor database, historical project data, the latest vendor and material cost information, and other costs specific to the locale of the project (See Appendix B).

The cost estimates were prepared using quantity take-offs from the CIP worksheets, existing plans, vendor quotes, and equipment pricing furnished either by the design team or by the estimator. Where possible, estimates for work anticipated to be performed by specialty subcontractors have been used.

Construction labor crew and equipment hours were calculated from production rates contained in documents and electronic databases published by R.S. Means, Mechanical Contractors Association (MCA); National Electrical Contractors Association (NECA); and Rental Rate Blue Book for Construction Equipment (Blue Book).

The following assumptions were used in the development of these estimates.

- Estimated costs are based on a minimum of four bidders. Actual bid prices may increase for fewer bidders or decrease for a greater number of bidders.
- Contractor performs the work during normal daylight hours, nominally 7 a.m. to 5 p.m., Monday through Friday, in an 8-hour shift. No allowance has been made for additional shift work or weekend work.

- Contractor has complete access for lay-down areas and mobile equipment.
- Equipment rental rates are based on verifiable pricing from the local project area rental yards, Blue Book rates, and rates contained in the estimating database.
- Contractor markup is based on conventionally accepted values that have been adjusted for project-area economic factors.
- Major equipment costs are based on both vendor supplied price quotes obtained by the project design team and/or estimators, and on historical pricing of like equipment.
- Process equipment vendor training using vendors' standard O&M material, is included in the purchase price of major equipment items where so stated in that quotation.
- Bulk material quantities are based on manual quantity take-offs that have been entered into the estimating program.
- There is sufficient electrical power to feed the specified equipment. The local power company will supply power and transformers suitable for this facility.
- No dewatering of pipe trenches or excavations.
- New storm drainage piping is RCP Class III.
- Except for Area 2, storm drainage pipes less than 60 inches in diameter have 2 ft. of cover and pipes 60-inch diameter and greater have 4 ft. of cover.
- Trench width for pipes less than 27-inch diameter is 2 ft. plus pipe outside diameter (O.D.) and for 27-inch diameter pipes and greater is 3 ft. plus pipe O.D.
- For all pipelines, sand bedding to centerline of pipe, native backfill to within 2 ft. of surface, Caltrans Class II aggregate base to underside of asphaltic pavement.
- 4-foot diameter manholes for 33-inch diameter pipes and less, and 6-foot diameter for pipe greater than 33-inch diameter.
- Pipe lengths for each run between manholes/catch basins to nearest 8 foot length.
- Asphalt pavement average depth is 6 inches for demolition and replacement in trenches.
- All removed asphalt hauled to nearest recycling plant.
- Existing curb and gutter is 2 ft-6 inches wide with 6 inches high curb.
- Removal of 5 ft. of sidewalk/driveway typical along pipe routes in paved areas.
- Average asphalt dig-out depth in Area 2 is 2 ft.
- Average trench stabilization depth in Area 2 is 1 ft.
- Excess excavated material from drainage swale in Area 4 is reused on site.
- No fuel cost adjustment factor applied to equipment rates.
- No price escalation factors applied for project construction in future years.
- Vendor supplied O&M manuals.

The following estimating exclusions were assumed in the development of this estimate.

- Hazardous materials remediation and/or disposal.
- Utility agency costs for incoming power modifications.
- Permits beyond those normally needed for the type of project and project conditions unless otherwise noted.

4.2 Design, Administration, and Construction Period Services

Costs for Design, Administration, Permitting and Construction Period Services have been estimated at 25 percent of the construction cost. For projects P4, P5, P8, and P9, where extensive permitting costs are anticipated, costs for Design, Administration, Permitting and Construction Period Services have been estimated at 30 percent of the construction cost. Engineering services associated with projects include preliminary investigations and reports, site and route surveys, geotechnical explorations, preparation of drawings and specifications, construction services, surveying and staking, and sampling and testing of materials. Overhead charges cover such items as legal fees, financing expenses, administrative costs, and interest during construction.

4.3 Contingency

A 30 percent contingency was added to the Construction cost and the cost for Design, Administration, and Construction Period Services. It is appropriate to allow for the uncertainties unavoidably associated with planning-level layout of projects. Allowances in preliminary estimates are needed to account for factors such as unexpected geotechnical conditions, extraordinary utility relocation and alignment changes. All of these factors can increase project cost.

4.4 Cost Index

A good indicator of changes over time in construction costs is the Engineering News Record (ENR) 20-city Construction Cost Index (CCI), which is computed from prices of construction materials and labor, and based on a value of 100 in 1913. Cost data in this report are based on an ENR CCI of 9552, representing costs in July 2013.

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Table 4-1. Capital Improvement Program

Priority Ranking ^a	Project Designation	Fiscal Year In Service	Project Name	Construction Cost (\$)	Design, Admin, Construction Services (\$)	Contingency (\$)	Capital Cost ^e (\$)	Adjusted Capital Cost ^f (\$)	Anticipated Spending (\$) per Fiscal Year Ending June 30 ^{g,h}								
									2015	2016	2017	2018	2019	2020	2021	2022	2023
Projects																	
1	P3	2016	Area 3: John Street at Redwood Avenue	\$65,000	\$16,000	\$24,000	\$105,000	\$105,000	\$41,000	\$64,000	--	--	--	--	--	--	--
2A	P5A	2017	Area 5: 90-inch Bay Avenue Outfall (Phase 1) ^b	\$3,271,000	\$818,000	\$1,227,000	\$5,316,000	\$4,784,000	\$1,232,000	\$1,048,000	\$2,504,000	--	--	--	--	--	--
2B	P5B	2020	Area 5: 90-inch Bay Avenue Outfall (Phase 2) ^c	\$19,624,000	\$4,906,000	\$7,359,000	\$31,889,000	\$28,700,000	\$616,000	\$681,000	\$616,000	\$616,000	\$616,000	\$25,555,000	--	--	--
3	P1	2020	Area 1: Del Monte Boulevard. at Auto Ctr. Pkwy.	\$278,000	\$70,000	\$104,000	\$452,000	\$452,000	--	--	--	\$70,000	\$105,000	\$277,000	--	--	--
4	P11	2020	Area 11: Military Avenue at Mendocino	\$22,000	\$6,000	\$8,000	\$36,000	\$36,000	--	--	--	\$5,000	\$8,000	\$23,000	--	--	--
5	P2	2021	Area 2: Hilby Avenue	\$3,772,000	\$943,000	\$1,415,000	\$6,130,000	\$6,130,000	--	--	--	--	\$943,000	\$1,415,000	\$3,772,000	--	--
6	P7	2021	Area 7: Hamilton Avenue at Fremont Street	\$1,701,000	\$425,000	\$638,000	\$2,764,000	\$2,764,000	--	--	--	--	\$425,000	\$638,000	\$1,701,000	--	--
7	P6	2022	Area 6: Broadway Avenue at Fremont Street	\$218,000	\$55,000	\$82,000	\$355,000	\$355,000	--	--	--	--	--	\$55,000	\$82,000	\$218,000	--
8	P8	2022	Area 8: Canyon Del Rey at Hamilton Avenue	\$147,000	\$37,000	\$55,000	\$239,000	\$239,000	--	--	--	--	--	\$45,000	\$53,000	\$141,000	--
9	P9	2023	Area 9: Roberts Lake Outfall ^d	\$12,429,000	\$3,107,000	\$4,661,000	\$20,197,000	\$2,020,000	--	--	--	\$89,000	\$89,000	\$89,000	\$89,000	\$446,000	\$1,218,000
10	P4	2023	Area 4: Olympia Avenue at Catalina Street	\$229,000	\$57,000	\$86,000	\$372,000	\$372,000	--	--	--	--	--	--	\$69,000	\$83,000	\$220,000
11	P12	2019	Area 12: Storm Drain Water Quality Project	\$3,361,000	\$840,000	\$1,260,000	\$5,461,000	\$5,461,000	\$5,000	\$469,000	\$2,289,000	\$2,398,000	\$300,000	--	--	--	--
12	P10	2016/21	Area 10: West Broadway	\$1,370,000	\$343,000	\$514,000	\$2,227,000	\$2,227,000	--	\$1,113,000	--	--	--	--	\$1,114,000	--	--
Subtotal Projects				\$46,487,000	\$11,623,000	\$17,433,000	\$75,543,000	\$53,645,000	\$1,894,000	\$3,375,000	\$5,409,000	\$3,178,000	\$2,486,000	\$28,097,000	\$6,880,000	\$888,000	\$1,438,000
Other Capital Expendituresⁱ																	
1	PR1	2015	Stormwater Plan Public Relations	--	--	--	\$109,000	\$109,000	\$109,000	--	--	--	--	--	--	--	--
2	MP1	2015	Master Plan	--	--	--	\$327,000	\$327,000	\$327,000	--	--	--	--	--	--	--	--
3	E1	2016	CCTV Inspection Rig	--	--	--	\$11,000	\$11,000	--	\$11,000	--	--	--	--	--	--	--
4	E2	2016	Quickview Camera	--	--	--	\$6,000	\$6,000	--	\$6,000	--	--	--	--	--	--	--
5	E3	2016	Service Truck	--	--	--	\$33,000	\$33,000	--	\$33,000	--	--	--	--	--	--	--
6	E4	2016	CMMS Implementation	--	--	--	\$55,000	\$55,000	--	\$55,000	--	--	--	--	--	--	--
7	E5	2022	Street Sweeper 2	--	--	--	\$270,000	\$270,000	--	--	--	--	--	--	--	\$270,000	--
8	MP2	2020	Master Plan Update	--	--	--	\$545,000	\$545,000	--	--	--	--	--	\$545,000	--	--	--
9	E6	2021	Vactor Truck (Camel)	--	--	--	\$327,000	\$327,000	--	--	--	--	--	--	\$327,000	--	--
10	E7	2015	Street Sweeper 1	--	--	--	\$270,000	\$270,000	\$270,000	--	--	--	--	--	--	--	--
11	E8	2022	Backhoe	--	--	--	\$160,000	\$160,000	--	--	--	--	--	--	--	\$160,000	--
Subtotal Other Capital Expenditures				-	-	-	\$2,113,000	\$2,113,000	\$706,000	\$105,000	-	-	-	\$545,000	\$327,000	\$430,000	-
Total				\$46,487,000	\$11,623,000	\$17,433,000	\$77,656,000	\$55,758,000	\$2,600,000	\$3,480,000	\$5,409,000	\$3,178,000	\$2,486,000	\$28,642,000	\$7,207,000	\$1,318,000	\$1,438,000

^aHydraulic Project priorities provided by the City.

^bOption 3. This was the least cost option.

^cOption 1. This was the least cost option.

^dOption 2.

^eCosts presented in 2013 dollars. ENR CCI of 9552.

^fAnticipated cost for City of Seaside. Other responsible parties indicated in Section 3 project descriptions.

^gDoes not include annual escalation factor for inflation. This will be accounted for in the rate study.

^hImplementation of this plan is contingent upon revenues beginning in the FY ending in 2015.

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Section 5

Stormwater Utility Fee Implementation Options

The City of Seaside currently operates a Stormwater Management Utility to operate and maintain the City's storm and surface drainage system in accordance with the authority granted to the City by Governmental Code Section 54725 et seq. This utility is currently funded from the City's general fund. It is the City's intention to establish a schedule of stormwater management fees to recover the costs of operating and improving the storm and surface water control facilities.

5.1 Overview and Objective

This section presents a review of the available methods for adopting and implementing stormwater management fees according to the requirements of Proposition 218.

In addition, the stormwater fees and the methods used to adopt and implement these fees for other representative California cities were reviewed. Based on these reviews, the advantages and disadvantages of the two alternatives for stormwater fee adoption and implementation and their likelihood of success is described in the following sections.

5.2 Summary of Findings and Conclusions

Presented below is a summary of the findings of this investigation. The findings are based on our review of the following

- A review of Proposition 218
- A review of selected post Proposition 218 litigation
- Howard Jarvis Tax payers Association V. City of Salinas, 98 Cal. App. 4th 1351 (2002)
- Bighorn – Desert View Water Agency V. Verjil, 39 Cal. 4th 205 (2006)
- A review of selected legislative attempts to modify Proposition 218 implementation requirements
 - Assembly Bill (AB) 1546
 - AB 204
 - AB 1003
 - Assembly Constitutional Amendment (ACA) 10
 - ACA 13
 - Senate Constitutional Amendment (SCA) 12
- Discussions with numerous personal contacts from cities with either existing stormwater utility fees or those who are planning to implement stormwater utility fees.
- Discussions with City Attorneys from cities with existing stormwater utility fees and/or those contemplating implementing or increasing stormwater utility fees.

The City of Seaside will likely have to seek voter approval to pass a measure for the utility fee. To pass, either 50 percent of the property owners or two-thirds of the general electorate would have to approve the fees. Getting approval of the property owners or general electorate will require a robust public outreach effort.

If the City elects to argue that its storm “sewer” utility is a sewer utility, and therefore explicitly exempt from the voter approval as per the language of Proposition 218, the fees adopted are likely to be legally challenged as a result of the 2002 Salinas appellate court decision. The City would have to be prepared to take its case to the California Supreme Court. In view of other related California Supreme Court decisions (e.g., Bighorn), the California Attorney General’s opinion on enforcing the requirements of Proposition 218, and the aversion of the State Legislature to fees and taxes, a favorable decision is unlikely.

In August and September of 2013, BC reviewed each State of California Assembly Bill (AB) and Senate Bill (SB) enacted in 2011, 2012, and 2013 (over 1,500 bills) and only one of these bills were related to changing the requirements of Proposition 218.

Senate Bill No. 553 was approved by the governor on September 6, 2013 and will become operative on July 1, 2014. It adds Section 53755.5 to the government code. Existing statutory law provides notice, protest, and hearing procedures for the levying of new or increased assessments, fees and charges by local government agencies pursuant to Articles X111 C and X111 D of the State Constitution. (See section 5.3 below). This bill would, where a proposed fee or charge is submitted to the registered voters residing in the affected area for approval, require a county elections official to conduct that election. This bill would also require, if a local government agency opts to submit the proposed fee or charge for approval by a vote of the subject property owners, as provided, that specified procedures be applied regarding the form and tabulation of ballots.

An item of note in this Bill is in the third sentence of Section 1(b)(4), which states:

During and after the tabulation, the ballots and, if applicable, the information used to determine the weight of each ballot, shall be treated as public records, as defined in Section 6252, subject to public disclosure and made available for inspection by any interested person.

This may imply that if the agency opts to submit the proposed fee or charge for approval by a majority vote of the property owners, who will be subjected to the fee or charge, then the agency could weight the ballots as long as they provided information on how the ballots are to be weighted during the initial public hearing and in voter information packets. This may impact the City’s decision on how to conduct the vote (majority of weighted or un-weighted property owners, or 2/3 of the electorate).

5.3 Proposition 218 Requirements

On November 5, 1996, Proposition 218 was approved by California voters. It became effective July 1, 1997 and added Articles XIII C and XIII D to the California Constitution which established additional calculation and implementation requirements and limitations on new and increased taxes, assessments, and property-related fees and charges. This amendment of the California State Constitution was part of a long line of voter-approved initiatives, beginning with Proposition 13, restricting the authority of government agencies to raise and spend revenues. Article XIII C imposed restrictions on new and increased taxes while Article XIII D imposed restrictions on new and increased assessments and property-related fees and charges. We will confine our attention to Article XIII D.

Article XIII D, Section 6, regulates property-related fees and charges. Property-related fees and charges are defined as any levy imposed on a parcel or a person as an incident of property ownership, for a property-related service.

The definitions of fee, charge, property ownership, and property-related service, are found in Article XIII D, Section 2. The definitions for these three terms are shown below. See Attachment A for the complete text of Proposition 218 and all the definitions.

- Section 2(e) “Fee” or “charge” means any levy other than an ad valorem tax, a special tax or an assessment, imposed by an agency upon a parcel or upon a person as an incident of property ownership, including user fees or charges for a property related service.
- Section 2(g) “Property ownership” shall be deemed to include tenancies of real property where tenants are directly liable to pay the assessment, fee, or charge in question.
- Section 2(h) “Property-related service” means a public service having a direct relationship to property ownership.

Article XIII D, Section 6(a) specifies procedures for implementing new or increasing existing fees and charges. Article XIII D, section 6(a) states that an agency shall follow the procedures pursuant to this section in imposing or increasing any fee or charge as defined pursuant to this article, including, but not limited to the following:

- The parcels upon which a fee or charge is proposed for imposition shall be identified. The amount of the fee or charge proposed to be imposed upon each parcel shall be calculated. The agency shall provide written notice by mail of the proposed fee or charge to the record owner of each identified parcel upon which the fee or charge is proposed for imposition, the amount of the fee or charge proposed to be imposed upon each, the basis upon which the amount of the proposed fee or charge was calculated, the reason for the fee or charge, together with the date, time, and location of a public hearing on the proposed fee or charge.
- The agency shall conduct a public hearing upon the proposed fee or charge not less than 45 days after mailing the notice of the proposed fee or charge to the record owners of each identified parcel upon which the fee or charge is proposed for imposition. At the public hearing, the agency shall consider all protests against the proposed fee or charge. If written protests against the proposed fee or charge are presented by a majority of owners of the identified parcels, the agency shall not impose the fee or charge.

Another section, Article XIII D, Section 6 (b), Requirements for Existing, New, or Increased Fees and Charges, requires that a fee or charge shall not be extended, imposed or increased by any agency unless it meets all of the following requirements:

- Revenue Amount. Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.
- Revenue Use. 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.
- Cost of Service. 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.
- Use and Availability of Service. 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 Section 4.

- General Governmental Services. No fee or charge may be imposed for general government 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 property owners.

Finally, Article XIII D, Section 6(c) provides that some fees need not be submitted for voter approval. This section states that “Except for fees or charges for sewer, water, and refuse collection services, no property related fee or charge shall be imposed or increased unless and until such fee or charge is submitted and approved by a majority vote of the property owners of the property subject to the fee or charge or, at the option of the agency, by two-thirds vote of the electorate residing in the affected area.”

The Proposition 218 implementation compliance requirements are summarized schematically in Figure 5-1.

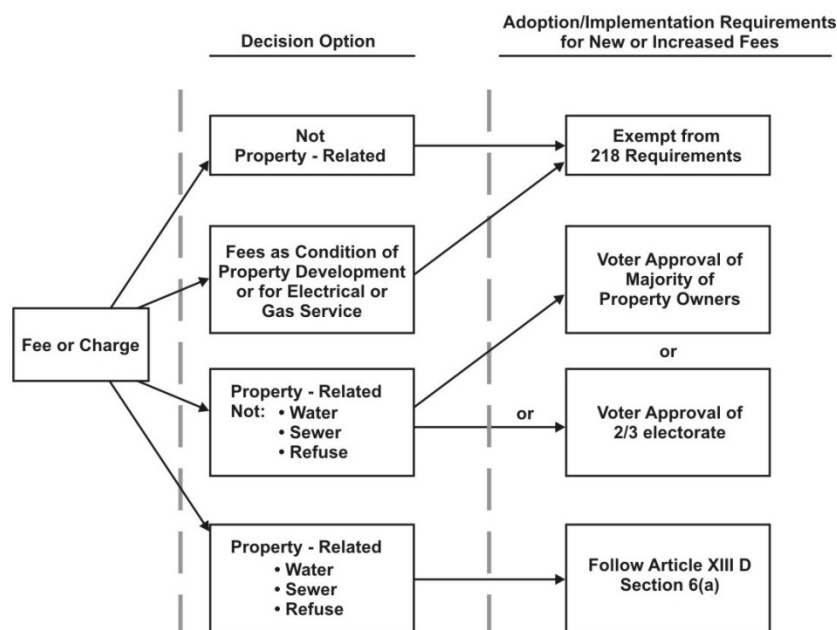


Figure 5-1. Proposition 218 Fee and Charge Compliance Requirements

From July 1997 until June 2002 most municipal agencies that either implemented new or increased existing water, sewer and solid refuse fees and charges used the process set forth in Article XIII D, Section 6(a). That is, they sent to each parcel or person the proper notification:

- The amount fee or charge
- The basis upon which the amount was calculated
- The reason for the fee or charge
- The date, time, and location of the public hearing

If, within 45 days, the agency did not receive protests from more than 50 percent of those to whom the notice was sent, the fee was adopted.

In addition to water, sewer, and solid refuse fees and charges, many storm sewer utilities adopted their fees and charges using the same process. They reasoned that language of Proposition 218 was silent with respect to the type of sewer utility, sanitary or storm. They also reasoned that because storm and sanitary sewers have the same or analogous functions such as monitoring, collecting,

treating, and disposing of liquid waste, they could also implement storm sewer fees and charges based on the requirements of Article XIII D, Section 6(a).

On June 3, 2002, in a decision in the court of Appeal of the State of California, sixth Appellate District (Howard Jarvis Tax Payers Association V. City of Salinas, 98 Cal. App. 4th 1351 [2002]) the court concluded that a fee on the property tax roll based on the amount of impervious area on a parcel was a property-related fee and that the exemptions in article XIII, Section 6(a) for water, sewer, and solid refuse fees included sanitary but not storm sewers. Since June, 2002 most municipal stormwater utilities sought voter or property owner approval before adopting new or increasing existing stormwater fees and charges.

5.4 Post Proposition 218 Legislation

There have been various attempts to adopt legislation that would allow for the easier implementation of stormwater fees and charges. Only one has thus far been successful. In 2003 AB 1546 (Simiton, D-Palo Alto) authorized the City/County Associations of Governments of San Mateo County to impose an annual \$4.00 fee on motor vehicle registrations to fund both traffic congestion mitigation programs and to mitigate stormwater pollution from roadways in the county (Government Code Section 65 089.11 et. seq.). A 2004 effort to extend this to the 9-county Bay Area, AB 204 (Natum, D-Marin) died in the state senate. AB 1003 which authorized the Ventura County Watershed Protection District to adopt a property-related fee to fund water quality improvement programs was vetoed by the Governor. ACA 10 in 2004 and ACA 13 in 2006 (Harmon, R-Huntington Beach) attempted to make storm sewer fees subject to majority protest died in the assembly. SCA 12 (Torilakson) which would exclude stormwater and urban run-off management fees from voter approval requirement of property-related fees and charges has not at this time been voted upon.

As a consequence of the past failures to pass legislation that would allow for the adoption of property related stormwater fees via the Proposition 218 notification process, it is unlikely that, in the near future, further attempts will be successful.

5.5 Conversations with Two City Attorneys

Conversations to two City Attorneys provide perspective on stormwater fees. Both cities are in Northern California; one in Alameda County and one in Santa Clara County. City A, in Alameda County, provides storm drainage service to a population of about 150,000. It does have a stormwater management utility and does assess a pre-Proposition 218 "fee" which is inadequate. The utility is mostly funded from the City's general fund. A preliminary schedule of stormwater fees was developed for the City in FY 2001/02. As a result of the Salinas decision the City elected to postpone adoption of any stormwater management fees. The City Attorney takes the conservative position that it will have to seek voter approval (either 1/2 of the property owners or 2/3 of the electorate) to implement stormwater management fees. The City Attorney bases his opinion on his perception of the attitude toward this matter by the California Attorney General and the recent court decisions (e.g., Salinas and Bighorn). In his opinion almost all recent decisions strengthen Proposition 218 and future decisions are not likely to weaken the requirements of Proposition 218 or provide any loop holes. The City has no current plans for a new Proposition 218/Proposition 26 compliant stormwater fee.

City B, in Santa Clara County, provides storm sewer service to a population of over one million. It has had a schedule of storm sewer fees in place since the early 1990s. In 1999 a schedule of storm sewer operations from parcels in proportion to both the amount and quality of run off was developed. The fees were adopted (effective July 1, 1999) via the Proposition 218 notification

method. The City collects these charges on the county's bi-annual tax bill. The City has increased these charges several times since July 1, 1999. The charge for a single-family residence is now \$7.88 per month. The most recent increase was made effective on July 1, 2011. Again, the increase was made in accordance with the notification requirements of Proposition 218 (Article XIII D, Section 6[a]).

Despite the 2002 Salinas Appellate Court decision, it was the opinion of a Deputy City Attorney that the City's storm sewer utility is the same as a sanitary sewer utility. Both have to collect, monitor, treat (if necessary), and dispose of flows from residences and commercial/industrial properties. Both utilities require NPDES permits. As a consequence the attorney believes the City's storm sewer charges are explicitly exempt from the requirement for voter approval. The attorney's position is that the Salinas case was not well argued by the defendants nor properly decided by the court (the requirement for a NPDES permit is not even mentioned in the decision) and, if challenged, is prepared to defend its storm sewer charges. It does recognize it is at risk for such a challenge. This Deputy City Attorney has recently retired (2012). Her replacement is not sure how future rate increases will be implemented.

5.6 Survey of Stormwater Management Fees and Charges Used By California Cities

The stormwater management fees assessed by other cities were reviewed to the extent allowed by the time schedule for this report. We attempted to choose utilities to review that are located in Northern California and that used either the Proposition 218 protest ballot method or the voting method to adopt and implement their stormwater management fees. Some utilities indicated that they elected not to adopt new fees or increase existing fees because of their uncertainty about the Proposition 218 requirements. Narrative descriptions of the results of our findings are described below. The description of the fees is summarized in Table 5-1. These descriptions were updated based on conversations with the staff of these various agencies during the month of August 2013.

Table 5-1. Survey of California City Stormwater Fees

City	Current Single-Family Monthly Fee	Method of Adoption/Implementation	Billing Method	Basis of Fee
City of San Jose	\$7.88	Notification/Protest/Public hearing in 2011	Santa Clara County tax roll	Quantity of run-off coefficient and size of parcel of property. Quality cost via Quality coefficient
City of Woodland	\$0.48 ^a	Notification/Protest/Public hearing in 1994 proposed increase in 2007 failed to obtain vote of majority of property-owners		
City of Carmel	N/A	Failed Vote of electorate in 2003	N/A	N/A
City of Palo Alto	\$11.99	Vote: Passed majority of property-owners on second try in 2005	Utility bill	Quantity of run-off as measured by parcel size
City of Davis	\$3.18 ^b	Notification/Protest//Public hearing in 2002	City utility bill	Quantity based drainage coefficient via land use and parcel size. Quality based on Quality coefficient and parcel size

Table 5-1. Survey of California City Stormwater Fees

City	Current Single-Family Monthly Fee	Method of Adoption/Implementation	Billing Method	Basis of Fee
City of Monterey	\$5.44	Notification/Protest/Public hearing in 2002	MRWPCA sewer bill	Quantity based on impervious area
City of Rancho Palos Verdes	\$7.71	Vote: Passed majority of property-owners in 2005	LA County tax roll	Quantity based on parcel size and impervious area
City of Santa Cruz	\$1.77 ^c	Notification/Protest/Public hearing in 2008	Santa Cruz County tax roll	Canvas of voters determined likely maximum fee for ballot
City of San Clemente	\$6.23	Vote: Passed majority of property owners in 2013	Water utility bill	Quantity of Run-off based on size of parcel

^a In addition to this \$0.48/month user fee, the City charges a capacity charge called a "Stormwater Quality In-Lieu Fee."

^b For 7,000 sq. ft. property

^c In addition, the City assessed a \$7.33/month fee for single family residents that are located in a defined 100-year flood plain. The City indicated that there are about 300-400 such single family residential units in the flood plain.

- The City of San Jose.** The City of San Jose has had a Storm sewer utility since the early 1990s and has always assessed storm sewer service charges. In 1999 the City revised its charges so as to recover costs of service from properties in proportion to their relative contribution to both flow and level of pollution to the storm sewer system. The annual charge to a single-family residence was increased to \$56.44, from \$47.40 effective July 1, 1999. Since July 1, 1999 the charge has been increased numerous times. The latest increase, which became effective July 1, 2011 (by City Council adoption of Resolution No. 75857 on June 14, 2011). The rates have not been increased since July 1, 2011. The annual charge to a single-family residence is currently (FY2013/14) \$94.44/year. The last rate increase was accomplished via the Proposition 218 requirement of notification. Each increase was made in accordance the notification/protest provisions of Article XIII D, Section 6(a) of Proposition 218.
- City of Woodland, California.** The City of Woodland, California had a small (\$0.48/month for a single-family dwelling unit) storm drain fee in place since 1994. Based on the results in a report (May 1, 2007) from a citizen's Storm Drain Advisory Committee confirming that operating and infrastructure need significantly exceeded revenues, the City council voted unanimously to seek property owner vote for an initial increase of the monthly fee to \$5.00 from \$0.48 with addition annual increases of \$0.75/month in subsequent years. The ballots received at the City clerk's office on the August 28, 2007 deadline indicated that the majority opposed the rate increase. Only 30 percent of the property owners supported the increase. The city has no specific plans at this time to try again to increase fees. Thus, the city is still spending about \$1.0 million per year and receiving revenues of only about \$170,000. The city recently adopted a "Stormwater Quality In-Lieu Fee (SQIF)." This in-lieu fee is essentially a connection or capacity charge to recover the cost of building a treatment facility at the city detention pond. It is called an in-lieu fee because those parcels that are required to treat their run-off may still do so individually rather than buy-in to the treatment facility at the detention pond. The level of the SQIF is calculated as:

 - $[(\$24.72 \times \% \text{ impervious area} \times 200) + \$1,460] \times [\text{area in acres}]$.
- City of Carmel, California.** The City of Carmel attempted to institute a \$2.00 month storm drainage fee in 2003. Because of the increased costs associated with meeting NPDES permit requirements, its expenditures exceeded revenues which consisted of general funds and state grants. The City elected to seek approval from 2/3 of its electorate (as opposed to 1/2 of its property-owners). Because of a significant absentee property ownership, the City felt that it was

more likely to get approval from the electorate. The vote failed. The City got only about 60 percent rather than the required 66.7 percent. They now feel that if they had only attempted to get the incremental annual cost increase via the proposed fee, rather than the entire annual revenue, they would have to be successful. The major argument against the fee was that “why should they pay for something via the parcel fee that the City was currently paying from other sources.” They have no current plans to try again.

- **City of Palo Alto.** The City of Palo Alto has assessed a schedule of storm drainage fees to recover the cost of stormwater management since 1990. The fees were increased in 1994 and 1996. After the passage of Proposition 218 (effective July 1, 1997) the City postponed increasing the fee until 2000, at which time it sought approval of 50 percent of the property owners to increase the fee for a single family dwelling from \$4.25/month to \$9.00/month. The City failed to get approval of the property-owners (they got only 37 percent).

In 2005 they again sought approval for a fee increase from \$4.25/month to \$10.00/month. In 2005 they changed their strategy. They: (a) formed a storm Drainage Committee (15 people from the community appointed by the Mayor); (b) limited annual fee increases to the level of inflation (as measured by the CPI) or 6 percent, whichever is less; and (c) the fee would last for only 12 years (until 2017) and would then be eliminated. The fee passed with 58 percent of the property owners approving.

The fee is now (2013) \$11.99/month for a single-family dwelling.

- **City of Davis.** The City has assessed a drainage fee continuously since 1978. In FY 2001/2002 (August 1) the City adopted a two part storm sewer fee, a drainage fee which recovers flow (run-off) related costs and a quality fee which recovers quality (e.g., NPDES) related costs.

As per the originating ordinance (1978) the drainage portion of this fee has had an automatic 3 percent annual escalation. In each case the increase was made in accordance with notification protest provisions of Article XIII D, Section 6(a) of Proposition 218. Since FY 2001/2002 the quality component of the City’s fee has not been increased as a result of the Salinas decision.

The drainage (Flood Control) and stormwater quality charge, as currently listed in the city’s stormwater ordinance Chapter 30 of the municipal code, are as follows for flood control:

Customer Classification	Fee, \$/ft ² /month
SF, duplex and mobile homes	0.000224
Multiple family	0.000288
Schools, churches, daycare, open space	0.000116
Commercial and industrial	0.000400

Unless waived by resolution of the City Council adopted prior to August 1st of any year, the amounts specified in this article shall be increased by three percent of the amount applicable to the preceding year.

For Stormwater Quality:

On or after August 1, 2003, the schedule of charges for stormwater quality shall be as follows:

Customer Classification	Monthly Rate per Square Feet
Residential	
Single-family dwelling unit through quadplex dwelling unit	0.0002321
Multi-dwelling units, 5 or more	0.0004643
Mobile home unit	0.0004643
Various	
Churches	0.0004643
Private daycare	0.0002321
Group living	0.0002321
Commercial	0.0004643
Industrial	0.0008357
Open space and irrigation	0.0002321
Agriculture	0.0009284

Note: Square footage is equal to the parcel size. Vacant parcels are exempt from the storm sewer water quality charge

- **City of Monterey.** The City of Monterey has had a storm drainage utility since 1994. At that time a fee of \$1.75 per month for a single-family residence was established. The City increased this fee to \$2.09 per month on January 1, 1996 and subsequently to \$2.76 per month, \$3.43 per month and \$5.44 per month on March 1, of 1998, 1999 and 2002, respectively. It has not increased fees since the Salinas appellate court decision in 2002. The fee currently remains at \$5.44 per month for single-family, duplexes and triplexes. Each of the residential classes is defined to have 3,313 sq. ft. of impervious area. All other properties (parcels) are assessed fees in proportion to their impervious area to that of a single-family unit. The fees are collected by the Monterey Regional Water Pollution Control Authority (MRWPCA) as a separate line item on their sewer bill. The City currently has no plans to increase this fee.
- **The City of Rancho Palo Verdes.** The City established a Water Quality and Flood Protection Program (The “Storm Drain Program”) in early 2005, after completion of a multi-year engineering and financial study that led to the resident Financial Advisory Committee’s recommendation to establish a dedicated revenue source (an annual Storm Drain User Fee) to repair the storm drain system. The issue was placed the ballot by the City council in November, 2007. The provisions were:
 - Establish a 10-year sunset for the User Fee (\$86 per year for a single-family residence) with a maximum annual increase of 2 percent (\$87.72 for FY 2007/08)
 - Establish a voter-enacted resident oversight committee for the duration of the fee

The ballot measures passed and the fee was implemented. On June 17, 2008, the City council held a public hearing to increase the fee for a single-family residence to a maximum of \$89.47 per year. The fee would be collected on the County of Los Angeles tax rolls. The City did not receive a majority protest and thus the fee will be collected on the tax rolls.

The history of the user fee since 2006 for the single-family residential units is shown below:

Fiscal year	Fee adopted by council, \$/year	% increase	Estimated annual revenues, \$ million
2006	86.00	--	1.12
2007/8	87.72	2.0	1.14
2008/9	89.47	2.0	1.164
2009/10	89.47	--	1.164
2010/11	90.72	1.4	1.18
2011/12	92.53	2.0	1.24

- **City of Santa Cruz.** The City has assessed a schedule of stormwater management fees (established by ordinance) since 1994. These pre-Proposition 218 adopted fees have not been increased since 1994. The current fees are:
 - Single-family residence - \$21.24 per year
 - All other developed parcels - \$85.00 per year
 - Undeveloped parcels - \$5.28 per year per acre

In addition to this city-wide fee, the City assesses an additional fee to parcels located in a defined 100 year flood plain. Of the city's 16,000 parcels, about ten percent are located in the flood plain. Of these 1,600 parcels, only about 20-30 percent are residential. The fee is \$87.86 per year/parcel.

As a result of large increases in run-off quality related costs, the City placed a parcel tax on the November 2008 ballot. The parcel tax passed with more than the two-thirds approval required. The fees are:

- Single-family residence - \$28.00 per year
- All other developed parcels - \$94.00 per year
- Undeveloped parcels - \$10.00 per year

The City chose to seek two-thirds approval of the electorate (rather than half of property owners) because of their large student population and the expected large turnout for the election. Their pre-election public relations effort has concentrated on "clean beaches and clean water," rather than on flood control, based on preliminary public surveys.

In summary, the stormwater cost recovery system is comprised of a city-wide fee, a City parcel tax, and an overlay fee to recover debt service costs associated with flood plain capital (levee) expenditures.

- City of San Clemente.** The City of San Clemente has a comprehensive Urban Runoff Management/Water Quality Program. This program includes structural runoff treatment projects to reduce pollution going to the City’s beaches, increased street sweeping, and new capital projects to maintain and repair the storm drainage system, and water quality inspections and enforcements. The program has been funded since 2003 by a temporary fee. The original fee (called as “Urban Runoff Management Fee”) was adopted (approved by 57 percent of the City’s property owners) on January 1, 2003. The fee was temporary and was due to expire on December 31, 2007. The fee was extended in 2008 (now referred to as the “Clean Ocean Fee”) for an additional 6-year period (to expire December 31, 2013) by a 75 percent approval of the City’s property owners. There was no increase in the level of the fees. The fees are based on a parcels expected contribution of storm and surface water runoff into the City’s storm drainage facilities. The current fee schedule is set forth in the following table.

Customer Class	Type of Street	
	Public	Private
Single family	\$5.02/unit	\$4.39/unit
Multiple family	\$4.01/unit	\$3.51/unit
Commercial/industrial	\$50.20/acre	\$43.90/acre
Undeveloped		
< 2 acres	\$2.51/acre	\$2.20/acre
> 2 acres	\$0.50/acre	\$0.44/acre

These fees raise about \$2.0 million per year in revenues.

On August 20, 2013, the City Council approved a process to increase their “Clean Ocean Fee.” To increase the fee, it will require a majority vote by the City property owners. The ballots are scheduled to be sent out on October 25, 2013 with ballots to be returned by December 10, 2013. The Public Works Department is considering two fee options for single-family dwellings:

Option	Type of Street		Duration
	Public	Private	
1.0	\$6.23	\$5.10	6.5 years
2.0	\$6.26	\$5.13	10.5 years

The lower amount for private streets is related to participation in the City’s street cleaning program.

5.7 Conclusions

There are several conclusions that can be drawn from the experiences of the above cities in establishing storm drainage fees or increasing existing fees. These include:

- With the exception of the City of San Jose, post the decision in the court of Appeal of the State of California, Sixth Appellate District [Howard Jarvis Tax Payers Association V. City of Salinas, 98 Cal. App. 4th 1351 (2002)] all of the above Cities have sought voter approval (either two-thirds of the electorate or half of the property-owners) for either the establishment of a storm drainage fee or the increase of an existing fee.
- Many cities have not attempted to increase existing fees since 2002 because of the uncertainty of getting voter approval and the fear of jeopardizing existing fees.
- In order to get voter approval, robust public outreach programs have included:

- The establishment of a citizen’s oversight committee to oversee the expenditure of funds for storm drainage activities only.
- A clear explanation for the need for the increase (why annual costs are increasing)
- Measures to limit subsequent annual increases in the fee
- A sunset clause that states that the fee will only remain in effect for given time period, and if at the end of that period the need continues, the process will be repeated.

Whether to seek approval of the voters (as was attempted in Carmel and Santa Cruz) or the property-owners (as in Palo Alto and Rancho Palos Verdes) is an important decision and should be made based on the demographics of the community. In addition, if the City elects to seek approval of property owners, it needs to determine if it should use weighted property ownership (weight with respect to run-off) or unweighted property ownership. The City should seek the advice of legal counsel in making this decision.

Section 6

Stormwater Utility Fee Study

This section presents the development of alternative schedules of stormwater management fees to recover the costs of operating, maintaining, and improving the City of Seaside's storm and surface water management system. This system is currently funded from the City's general fund. Due to expected increases in annual costs resulting from the need to meet both water quality requirements, as specified by the City's NPDES permit requirements, and maintain and improve the system to current standards, the City may no longer be able to meet these costs via transfers from the general fund.

6.1 Approach

The calculation of a schedule of stormwater management fees is a three step process as follows:

- The calculation of the annual revenue requirements to be recovered by the fee schedule. These annual revenue requirements are comprised of the following:
 - Annual operating and maintenance expenses
 - Expenditures for equipment (generally relatively small expenditures for equipment and software with accounting useful lives of less than seven years)
 - Capital Improvement Program expenditures. These CIP expenditures are usually for relatively large hydraulic facilities such as pipelines, culverts, outfalls, master planning efforts, and expensive pieces of rolling stock. These projects may have to be financed via the issuance of debt.
- The allocation of the annual revenue requirements to cost categories. The categories are organized as follows:
 - Costs that are independent of the amount of run-off from individual parcels. Such costs include, but are not limited to, NPDES activities (i.e. reporting and monitoring) and street sweeping that benefit all residents and property owners.
 - The costs associated with the amount of run-off from the individual parcels, as measured by the run-off coefficient. The run-off coefficient is the amount of impervious area per parcel. These allocations are described in Section 6.4.
- The development of user (parcel) characteristics. In order to recover the costs associated with the City's stormwater management system from each parcel in proportion to the amount of run-off from that parcel, the amount of run-off from each parcel was estimated based on random samplings of parcels for each land use category. The amount of run-off from a particular parcel is proportional to the product of the run-off coefficient and the parcel size. This information was developed for each parcel in each land use category. The details of this development are presented in Section 6.4.

6.2 Development of Annual Revenue Requirements

As indicated above, the annual revenue requirements of the City's stormwater management utility consist of O&M expenses, equipment costs, and CIP related expenditures. These expenses, costs,

and expenditures are presented in Sections 2 and 4 of this report. Tables presented in the following sections are included as Appendix C of this report.

Estimated baseline O&M expenses for 2014/15 are shown in Table C-1 together with projections for the eight year period, FYs 2015/16 through 2022/23. These O&M expenses total \$533,979 in FY 2015/16 and increase to \$656,727 for FY 2022/23. In addition to an estimate of baseline O&M expenses, other required staffing expenditures to meet program objectives and requirements are included. The additional labor expenditures and other annual O&M expenses are projected for the defined study period in Table C-2. These estimated O&M expenses total \$286,292 in FY 2015/16 and increase to \$352,103 for FY 2022/23. Total O&M expenses from Tables C-1 and C-2 are summarized in Table C-3.

In addition to these staffing expenses, costs related to support equipment, software, and training were included. These estimated expenditures are presented in Table 2-5 of Section 2 of this report and Table C-4 of Appendix C. It should be noted that both O&M and capital costs are escalated at a rate of 3.0 percent per year. This approximates the increase in the 20-City *Engineering News Record* (ENR) Construction Cost Index (CCI) over the last two years. The necessary equipment, software, and training costs total \$1,354,308 over the eight-year period FY 2015/16 through FY 2022/23. For each rate model scenario the \$706,000 in equipment, software, and training costs projected to be expended in FY 2014/15 are being funded from the general fund and will be repaid once the stormwater utility has been established and fees implemented.

In addition to the annual O&M expenses and the annual costs of equipment, software, and training, a comprehensive storm drainage CIP was developed. The recommended CIP and implementation schedule are presented in Table 4-1 of Section 4 of this report.

For each rate model scenario, CIP costs projected to be expended in FY 2014/15 are being funded from the general fund or through issuance of new debt. If funded by the general fund, the amount will be repaid once the stormwater utility has been established and fees implemented. If funded through issuance of new debt, the expenditures will be included in the first debt issue. Note that the general fund reimbursement is different for some alternatives due to the differences in O&M versus CIP expenditures and funding differences in debt and grants.

The total amount of this CIP (approximately \$55.8 million in 2014 dollars and approximately \$63.4 million in escalated dollars) is shown in Table C-4 (2014 dollars) and Table C-5 (escalated dollars). Note that costs for some projects are shared with other entities (besides the City) and that only the portion of those projects allocated to the City are included in the totals.

The rate model assumes that grant funding will cover 50 percent of the costs of project P5A and P5B, 75 percent of the costs of Project P2, and 75 percent of project P12. The amount of assumed grant funding is shown in Table C-6.

The portion of the CIP not funded by grants will be funded from debt or by stormwater fees. The terms for the debt issues will be a 20-year payback period with interest at 6.0 percent per year. Debt issues assumptions are shown in detail in Table C-7.

Total CIP costs, the amount funded by grants, the amount funded by fees, the amount funded by debt, and debt service payments are shown in Table C-8 for each year of the eight year study period.

The projected annual revenue requirements for the eight year study period are summarized in Table C-9.

Annual debt service coverage requirements and coverage ratio calculations for the eight year study period are shown in Table C-10. Annual expenditures, revenues and fund balances for the eight year study period are summarized in Table C-11. As shown, revenues exceed expenditures in all years. However, bond covenants generally require that net revenues (that is, revenues less O&M expenses)

must be between 110 percent and 125 percent of debt service. As shown in Table C-10, net revenues exceed 125 percent of debt service in all years.

The rate model is structured so that annual revenue requirements for both O&M and capital to be recovered from stormwater fees, as summarized in Table C-9, are allocated to those categories of costs that are independent of run-off quantity (i.e. non-runoff related costs such as NPDES activities and street sweeping) and costs that are dependent on the amount of run-off quantity (infrastructure improvements, repair, inspection, etc.). Non-runoff related costs will be recovered from individual parcels in accordance with their size. The costs which are dependent on the amount of run-off are further allocated between costs which are associated with run-off from streets and roads and costs associated with the run-off from individual parcels. The former costs are recovered from individual parcels in accordance with their size, whereas the latter costs are recovered in accordance with their run-off as determined by the amount of impervious area. The basis for the split between costs associated with roads and streets and costs associated with individual parcels is the ratio of the impervious area of each (roads/streets or parcels) to the total impervious area. The ratios are 6.8 percent for roads and streets and 93.2 percent for parcels. The schematic description of the allocation process is shown in Figure 6-1. The results of the allocation are presented in Table C-12.

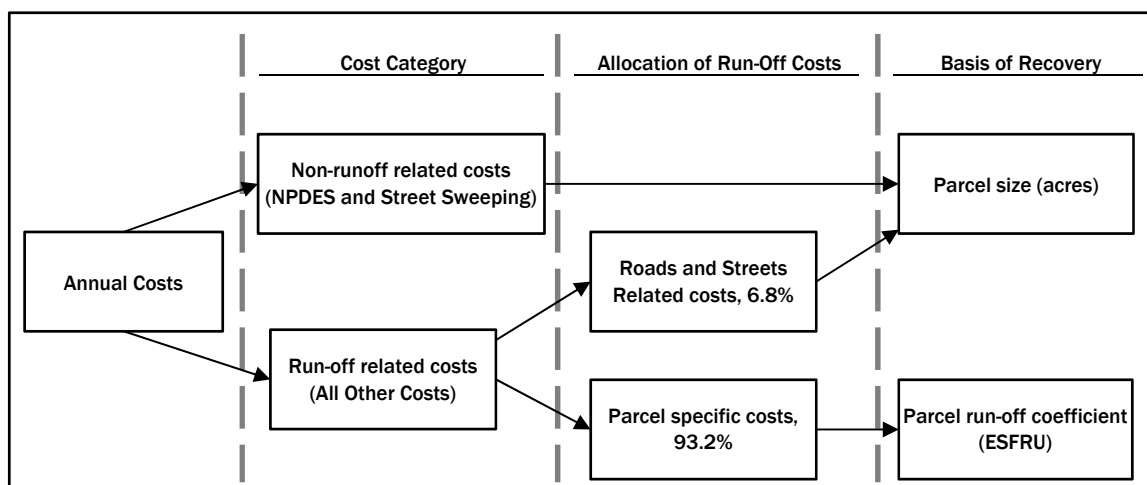


Figure 6-1. Allocation of Annual Cost of Service

6.3 Financial Assistance

In Section 6.5, “Stormwater Utility User Fees,” we have calculated stormwater utility user fees for five different revenue requirement alternatives. Two of these alternatives (alternatives 1 and 5) presume that portions of some of the capital projects will be funded from the proceeds of State of California Grants. As a consequence, we have conducted a brief review of the availability of both State of California Grant funding and low cost loans for stormwater projects.

Current potential funding sources from the State of California include, Clean Water State Revolving Fund, Proposition 84 and 1E funds, and unused or re-appropriated Proposition 13, 40 and 50 funds directed to the Clean Beaches Initiative. The three most likely sources for State of California Financial assistance for stormwater projects are as follows.

1. Proposition 84 Integrated Regional Water Management (IRWM) Grant Program will be accepting applications for a second round of funding beginning in late September 2013. The maximum award amount is \$3,000,000. There is a match requirement of 25 percent of the total project cost. Eligible projects types include:
 - a. Those that benefit stormwater capture, storage, clean-up, and management.
 - b. Those that implement non-point source pollution reduction, management, and monitoring.
 - c. Those that implement multipurpose flood management programs.
 - d. Those that provide watershed protection and management

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2. Clean Beaches Initiative (CBI) Grant Program will be accepting applications for a fifth round of funding beginning in late October 2013. Applicants must be a local public agency. The minimum grant eligible is \$150,000 and the maximum is \$5,000,000. There is a match requirement of 20 percent of the total project cost for projects costing \$1,000,000 and above, 15 percent for projects costing under \$1,000,000 and 75 percent for sewer infrastructure projects. Eligible projects must include:
 - a. Those that improve water quality at beaches and adjacent coastal waters
 - b. Those that improve existing sewer collection systems to restore or protect coastal water quality.
 - c. Those that implement stormwater and runoff pollution reduction and prevention programs and BMPs for the protection of coastal water quality.
 - d. Those that implement LID for the improvement of coastal water quality.
 - e. Those that implement a stormwater resource plan.

There is approximately \$32 million available for implementation projects. The latest proposal solicitation closes on January 13, 2014. For additional information contact:

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3. Proposition 1E Stormwater Flood Management program is also accepting applications for project funding. This program funds projects designed to manage stormwater runoff to reduce flood damage. In fact the enabling legislation (2006 Act) is called the Disaster Preparedness and Flood Prevention Bond Act. Grant amounts cannot exceed \$30 million per project. Despite the fact that the maximum amount per project for Prop. 1E funds is ten times that of Prop. 84 projects, the amount awarded in 2013 (\$92 million) was only three times that of Prop. 84

projects (\$31 million). Of the 31 projects requesting Prop. 1E funding in 2013, only 10 projects received any funding. The total cost of the 31 projects was approximately \$508 million, the grant requests were for \$210 million, and the amount of funding recommended was \$92 million.

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4. The State Water Board has a Clean Water State Revolving Fund (CWSRF) that may be used by local public agencies towards stormwater projects. Specifically, low cost loans are available to fund construction of stormwater treatment facilities and expanded use projects such as implementation of nonpoint source projects or programs. The interest rate is half most recent General Obligation Bond rate at the time of funding approval and terms are 20 to 30 years. There is no maximum funding limit. Annually, the program disburses between \$200 and \$300 million to eligible projects.
5. Other non-traditional sources of funding, such as internet and crowd sourcing, may be available but were outside of the scope of this study.

Predicting the level of grant funding currently available or to be available in the future is tenuous at best. The assumption of 50 percent for P5A and P5B and of 75 percent for P2 and P12 are reasonable estimates but can be revisited during the grant application process if necessary.

6.4 Stormwater Utility User Characterization

The proposed stormwater management fees are based on recovering the total annual cost of the City's Stormwater Management Utility from each parcel in proportion to a combination of the estimated run-off from that parcel and the area of the parcel. In general, run-off is proportional to the product of the size of the parcel and the amount of impervious area on the parcel:

$$\text{Run-off/parcel} = [\text{acres/parcel}] \times [\text{run-off coefficient}]$$

The total number of parcels, the size of each parcel, and the run-off coefficient for each parcel were determined. The bulk of the effort was to determine the run-off coefficient.

Parcel data was derived from Geographic Information System (GIS) information provided by the City. This GIS information included color aerial orthophotography; parcel shapefile database with Assessor's Parcel Number (APN) (dated July 7, 2008), parcel area and land use category; general plan land use; and building footprints. This data was exported to a computer-aided design and drafting (CADD) system and used to digitize all visible impervious area for each of the City's general plan land use categories. In the case of large land use categories with too many parcels to analyze individually, for instance low-density single family, medium-density single family, and medium-density multiple family, representative sample parcels were used to determine the amount of impervious area per unit parcel. The sampled parcels were selected such that the information was accurate to within five percent with a 95 percent confidence level. The end result of the user characterization is presented in Table C-13.

As shown in Table C-13, there are 7,275 parcels within the city limits comprising 5,414 acres; 5,902 parcels (81.1 percent) are single-family residential. There are an additional 564 multi-family residential parcels (7.8 percent). As a result, 89 percent of the City's parcels are residential. Due to

the preponderance of single-family residential parcels we have elected to define the quantity of run-off in terms of equivalent single-family residential units (ESFRU). Other land classifications will be defined in terms of the monthly fee for an ESFRU.

The parcel characteristics were further adjusted by estimating the number of parcels that may be exempt from fees because of an action taken to eliminate run-off, or because they were exempt from paying fees. It was estimated that one percent of all residential parcels and 10 percent of commercial parcels might be exempt from the run-off portion of the fees. It was further determined that all of the military and the State-owned public/ institutional parcels are exempt from fees.

As described above, the run-off potential per parcel is calculated as the product of the run-off coefficient and the acres per parcel. The average run-off potential per parcel can then be used to define the average run-off multiplier for the parcel class. The single-family residential parcels have a run-off potential per parcel of 0.135 which is used in the definition of an ESFRU making the multiplier for this class 1.0. An average run-off potential for multiple-family parcel is 0.257 and is equivalent to 1.900 (0.257/0.135) ESFRUs. Similarly, the average run-off potential from a commercial property is 0.464 and is equivalent to 3.432 (0.464 /0.135) ESFRUs. These multipliers are presented in Table C-13. These multipliers are used to develop the number of ESFRUs and, subsequently, average fees for all parcel land use classifications.

For purposes of this fee study, the number of ESFRUs was conservatively assumed to not increase over the eight year planning period. These projected parcel characteristics are presented in Table C-14.

6.5 Stormwater Utility User Fees

6.5.1 Fee Development (Alternative 1)

The fees developed in this section are for a single revenue requirement alternative (Alternative 1), and all related calculation tables are presented in Appendix C, including recovery of a \$2,500,000 loan from the general fund incurred in FY 2014/15. This fee development alternative assumes that the fees will recover the costs of the proposed O&M program, O&M related capital costs, plus the entire CIP with an estimated 50 percent grant funding for projects P5A and P5B, an estimated 75 percent grant funding for project P2, and an estimated 75 percent grant funding for project P12.

The portion of annual revenue requirements for Alternative 1, as summarized in Table C-12, that are to be recovered in proportion to parcel size are divided by total acres as shown in Table C-14 and a period of 12 months to yield the monthly fee per acre. This portion includes recovery of runoff related costs allocated to roads and streets and all non-runoff related costs (as shown in Figure 6-1, above).The projected \$/acre fees required to recover these costs are presented in Table C-15. Also presented in this table are the monthly fees for the average sized parcel in all the other land use classifications. The revenues to be recovered from each customer classification on the per acre fee are presented in Table C-16.

The portion of annual revenue requirements in Table C-12 that are to be recovered via ESFRUs are divided by the total ESFRUs as shown in Table C-14 and a period of 12 months to yield the monthly fee per ESFRUs. This portion includes recovery of all parcel-specific runoff related costs (as shown in Figure 6-1, above).The results are presented in Table C-17. Also presented in this table are the monthly fees for the average sized parcel in all the other land use classifications. The revenues to be recovered from each customer classification are presented in Table C-18. The fees for each year and each land use classification are summarized in Table C-19.

The total revenues to be recovered from each land use classification for each year are summarized in Table C-20.

The fees calculated for single family residential parcels in Table C-19 can be used for all the single family residential parcels because of the small variability in single family residential parcel size. However, the monthly fees for all the parcels in the other land use classifications can be calculated on an individual basis due to the larger parcel size variability. Calculating an average non-single family residential parcel fee can be accomplished in the same manner as for an average single family parcel. That is, the portion of monthly fee recovered on an ESFRU basis for any parcel can be calculated as the product of the run-off coefficient for that land use category, the area of the specific parcel, the ESFRUs multiplier, and the monthly fee for an ESFRU. Expressed mathematically:

$$\text{Monthly Fee} = \{[\text{area of parcel}] \times [\text{run-off coefficient of land use category}]\} \div [\text{ESFRU multiplier for land use category}] \times [\text{ESFRU monthly fee}]$$

Where the run-off coefficient and ESFRU multiplier are found in Table C-13 and the ESFRU monthly fee is found in Table C-17.

Similarly, the portion of the monthly fee to be recovered on a per size basis, can be calculated as the product of the per acre fee from Table C-15 and the size of the particular parcel.

A City ordinance/resolution used to adopt the fees would be written so that the fees for land use categories other than residential are calculated in this manner.

6.5.2 Stormwater User Utility Fee Alternatives

In order to provide options for consideration by the City, fees for four additional annual revenue requirements alternatives were developed. These alternatives are described below.

Alternative 2. Fees to support the proposed O&M program, O&M related capital costs, and recovery of a \$1,700,000 loan from the general fund incurred in FY 2014/15 over the next four fiscal years. This alternative does not consider any potential grants to support the proposed activities.

Alternative 2a. Fees calculated on an annual basis with annual increases that vary from \$0.11 to \$0.88.

Alternative 2b. Fees calculated on an annual basis with annual increases that vary from \$0.30 to \$0.49. The average fee for the eight year study period is that same as in Alternative 2a.

Alternative 3. Fees to support Alternative 2 plus the entire CIP without any grants including recovery of a \$1,300,000 loan from the general fund incurred in FY 2014/15. This alternative results in the highest fees.

Alternative 4. Fees to support Alternative 3, excluding project P5B, without grants including recovery of a \$2,000,000 loan from the general fund incurred in FY 2014/15.

Alternative 5. Fees to support Alternative 4, with assumed grant funding the same as Alternative 1 including recovery of a \$2,000,000 loan from the general fund incurred in FY 2014/15.

The results for Alternative 1 are presented in Appendix C, and Alternatives 2a through 5 are presented in Appendix D. Each alternative is described by two figures and two tables. The first figure shows the split between the portion of the fee recovered via the basis of both parcel size (\$/acre) and on the basis of run-off coefficient (\$/ESFRU) for an average single family parcel. The second figure shows expenditures, fund balances and monthly fees for an average single family parcel. The associated tables breakdown the costs shown in the figures (See also Table C-15 for more information on Projected \$/Acre Fees and Average Monthly Fee and Table C-17 for more information on Projected \$/ESFRU Fees and Average Monthly Fee) and are included for each alternative.

In summary, monthly fees for each alternative from FY 2015/16 to FY 2022/23 for an Equivalent Single Family Residential Unit (ESFRU) are shown in Table 6-1, below.

Table 6-1. Summary of Alternative ESRU Monthly Fees

Alternative	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Alternative 1	\$29.06	\$29.44	\$29.65	\$30.02	\$30.63	\$30.75	\$30.83	\$30.92
Alternative 2a	\$7.88	\$7.99	\$8.86	\$9.74	\$9.98	\$10.14	\$10.40	\$10.62
Alternative 2b	\$7.88	\$8.36	\$8.85	\$9.34	\$9.82	\$10.12	\$10.43	\$10.81
Alternative 3	\$45.00	\$45.11	\$45.15	\$45.34	\$45.46	\$45.52	\$45.68	\$45.71
Alternative 4	\$24.07	\$24.55	\$24.77	\$24.82	\$25.07	\$25.31	\$25.76	\$26.01
Alternative 5	\$16.92	\$17.22	\$17.39	\$17.49	\$17.54	\$17.62	\$17.77	\$17.85

Alternative 1 CIP - All Projects / With Grants

Alternative 2a CIP - No Projects

Alternative 2b CIP - No Projects / Gradual Fee Increases

Alternative 3 CIP - All Projects / No Grants

Alternative 4 CIP - All Projects except P5B / No Grants

Alternative 5 CIP - All Projects except P5B / With Grants

Section 7

Limitations

This document was prepared solely for the City of Seaside in accordance with professional standards at the time the services were performed and in accordance with the contract between the City of Seaside and Brown and Caldwell dated August 1, 2013. This document is governed by the specific scope of work authorized by the City of Seaside; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by the City of Seaside and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

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Appendix A: Improvement Project Worksheets

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Project: Area 1
Project Location: Del Monte Blvd. at Auto Center Pkwy.

Existing Conditions:

Existing catch basins with 18” to 27” diameter pipes have insufficient capacity which results in flooding one to three times per year. Local property owners use sandbags to keep the buildings from flooding.

Recommendations:

Construct new catch basins and pipeline system to provide additional storage and relieve existing inlets by intercepting flows from Del Monte Blvd.

- Install new catch basin on the west and east sides of Del Monte Blvd. at the La Salle Ave. intersection.
- Install new 24-inch diameter pipeline from the catch basins to an existing manhole on the east side of Del Monte Blvd. at the La Salle Ave. intersection.
- Install new 24-inch diameter pipelines between the two existing and one new catch basins on the west side of Del Monte Blvd.

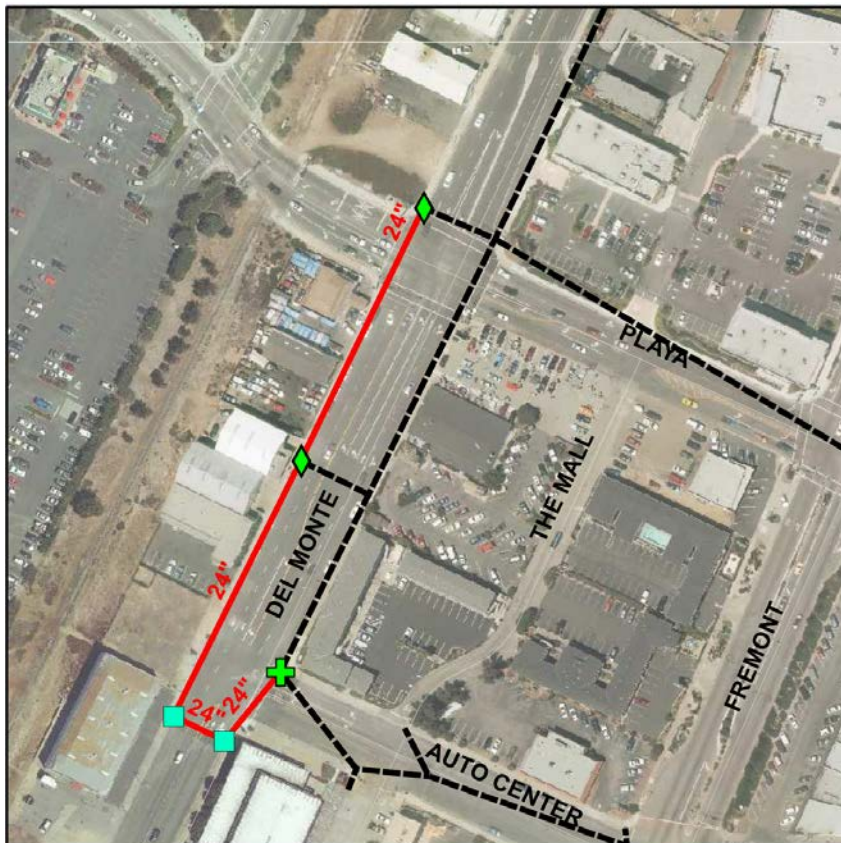
Estimated Capital Cost: \$415,000



View along Del Monte Blvd. towards Playa Ave.



Existing Catch Basin



Improvements

- | | |
|---------------------|-------------------------|
| ★ Bubble_up, Exist | ▲ FlaredEndSection, New |
| ◆ CatchBasin, Exist | ⊕ Manhole, Exist |
| ■ CatchBasin, New | ● Manhole, New |
| ✗ Field_Inlet, New | — Existing Stormdrains |
| | — New Storm Drain |



City of Seaside
 Capital Improvement Program
 Project Summary Sheet



Note: This is a conceptual improvement project. Additional analysis is required prior to design.

Project: Area 2:
Project Location: Hilby Ave.

Existing Conditions:

Steep grade that flattens as it approaches Fremont Blvd. Existing catch basins have insufficient capacity which results in flooding. An improvement project was designed by CH2MHILL in 1995 but never constructed.

Recommendations:

Construct the new storm drain system along Hilby Ave. similar to the design by CH2MHILL to alleviate flooding.

- Install new catch basins and pipes along Hilby Ave. from Mescal Street to Fremont Street.
- According to the design drawings by CH2MHILL, the new project will drain through an existing 42” diameter RCP storm drain along Hilby Ave to Laguna Grande.

Estimated Capital Cost: \$5,623,000

Note: See map on following page



View east along Hilby Ave.

City of Seaside
Capital Improvement Program
Project Summary Sheet



Project: Area 2 (continued)
Project Location: Hilby Ave.



Not To Scale
 N

- Improvements**
- ◆ Catch Basin, Exist
 - ◆ Catch Basin, New
 - ▲ Flared End Section, New
 - ★ Infiltration Shaft, New
 - Existing Stormdrains
 - ◆ Manhole, Exist
 - ◆ Manhole, New

City of Seaside
 Capital Improvement Program
 Project Summary Sheet



Note: This is a conceptual improvement project. Additional analysis is required prior to design.

Project: Area 3
Project Location: John St. at Redwood Ave.

Existing Conditions:

A flat area in the vicinity of the 90-inch diameter outfall. Existing catch basins and pipes have insufficient capacity which has resulted in localized flooding.

Recommendations:

Replace existing catch basins with new catch basins with the ability for water to infiltrate through the base. The catch basins will be connected by 18-inch diameter RCP and empty into a manhole in Redwood Ave, which will drain into the existing 90-inch diameter outfall pipeline. The local system will be isolated from the outfall pipeline by a one way check valve that will prevent backflow.

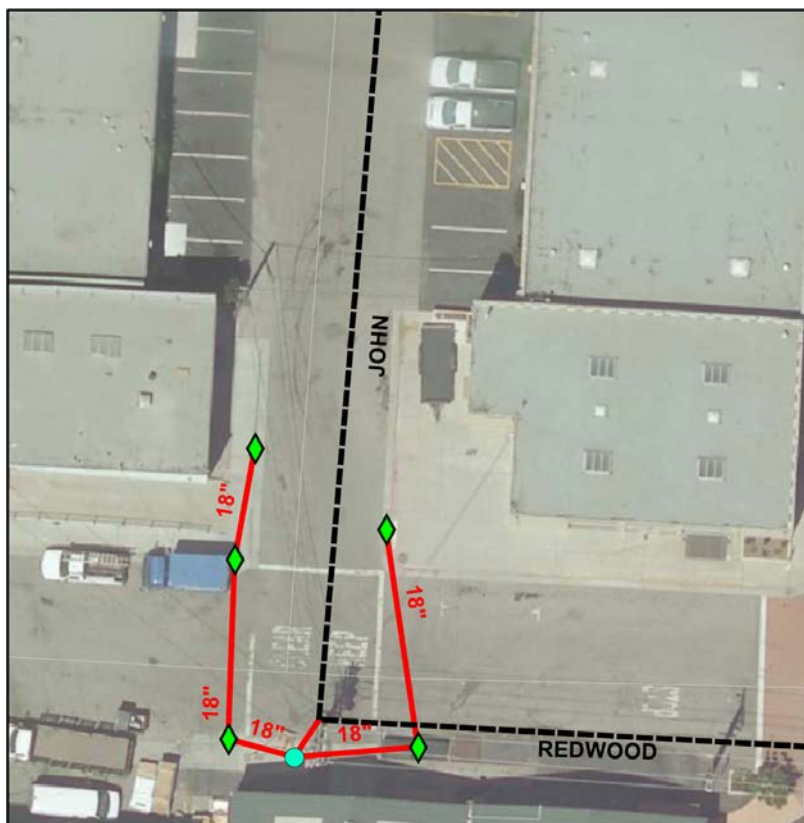
Estimated Capital Cost: \$98,000



Line drain along John St. towards Redwood Avenue



Drainage inlet at Redwood Ave. and John St.



Improvements

- ★ Bubble_up, New
- ◆ CatchBasin, Exist
- CatchBasin, New
- ✕ Field_Inlet, New
- ▲ FlaredEndSection, New
- ⊕ Manhole, Exist
- Manhole, New
- Existing Stormdrains
- New Storm Drain

Not To Scale



City of Seaside
 Capital Improvement Program
 Project Summary Sheet



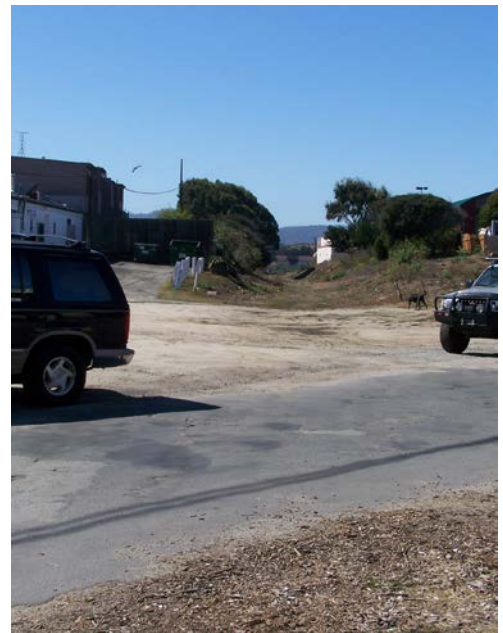
Note: This is a conceptual improvement project. Additional analysis is required prior to design.

Project: Area 4
Project Location: Olympia Ave. at Contra Costa St. and Catalina St. at Olympia Ave.

Existing Conditions:
 Del Monte Blvd. crests in the vicinity of Olympia Ave. There are no catch basins on the north side of Contra Costa St. which appears to drain to a sag in Olympia Ave. The open space to the south of Olympia Ave. is not graded to promote drainage off the roadway. At Catalina St., the two existing inlets appear to hold runoff and when they become full, the inlets then overtop and drain down Catalina St.

- Recommendations:**
 Construct a new storm drain system along Olympia Ave.
- Remove and replace existing catch basins at the corner of Catalina St. and Olympia Ave., install new catch basins on the west side of Contra Costa St. and at the sag in Olympia Ave.
 - Install pipes from the Catalina St. and Contra Costa St. inlets to the new Olympia Ave. catch basin.
 - Outfall the new system into a 400-foot swale in the railroad right of way which will allow the runoff to infiltrate.
 - Obtain a California Costal Commission permit for construction.

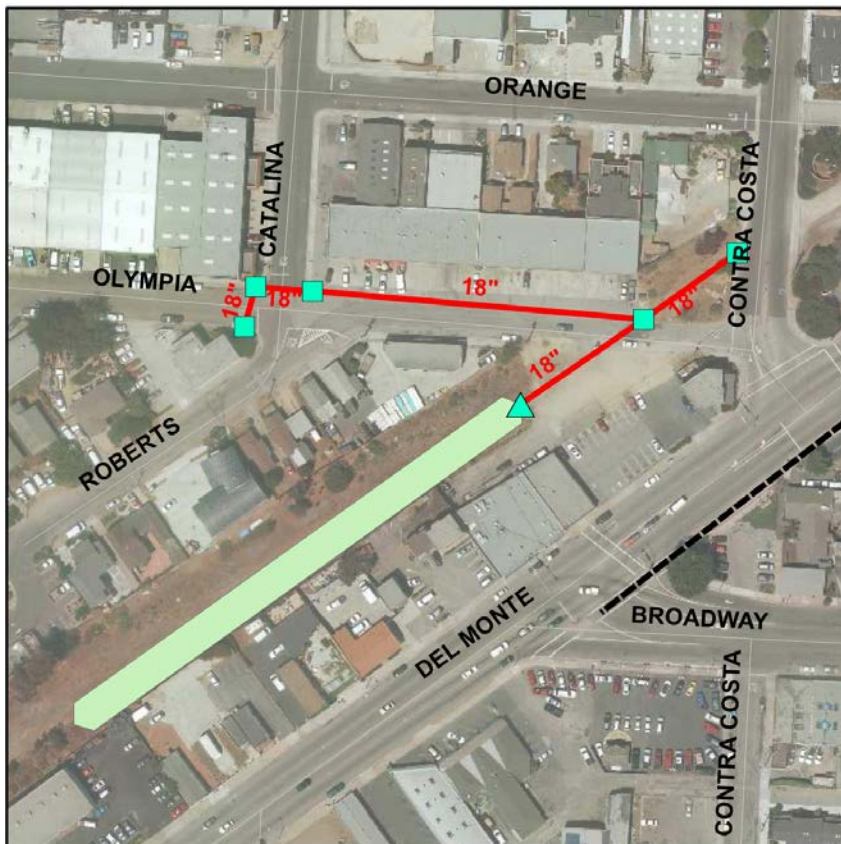
Estimated Capital Cost: \$355,000



View southwest from Olympia Ave. along old railroad right of way.



View west along Olympia Ave. towards Catalina St.



Improvements

- | | | |
|---------------------|-------------------------|----------------------|
| ★ Bubble_up, Exist | ▲ FlaredEndSection, New | ■ New Drainage Swale |
| ◆ CatchBasin, Exist | ⊕ Manhole, Exist | |
| ■ CatchBasin, New | ● Manhole, New | |
| ✕ Field_Inlet, New | — Existing Stormdrains | |
| | — New Storm Drain | |
- Not To Scale
 N
 ▲

Note: This is a conceptual improvement project. Additional analysis is required prior to design.

City of Seaside
 Capital Improvement Program
 Project Summary Sheet



Project: Area 5 – Project 5A
Project Location: 90-inch diameter Outfall at Bay Ave.

Existing Conditions:

An existing 90-inch diameter storm drain pipe conveys water from approximately 2,000 acres within the City of Seaside to an outfall at Monterey Bay. The existing outfall is frequently blocked by sand. In 2005 an improvement project included the installation of a Tideflex check valve at the outfall discharge to prevent migration of sand into the outfall culvert.

Recommendations:

Continue manual breaching of the sand bar to allow gravity flow through the Tideflex valve. Obtain a general permit from the California Coastal Commission to allow annual maintenance activities on the beach. Also:

- Purchase the following four properties upstream of the outfall near the intersection of John Street and Redwood Avenue. These properties have the potential to flood during a 2-year recurrence interval storm (or greater) assuming the lower outfall is blocked by sand. These properties have a finished floor elevation less than 20.0 ft., which is the approximate elevation of the proposed hydraulic grade line following reconstruction of the overflow box as described below.
 - Colton, 449 Redwood Ave, Sand City, CA
 - Sullivan, 449 Ortiz Ave, Sand City, CA
 - Bella Mare Invest. 1815 Contra Costa St., Sand City
 - Bella Mare Invest. 1805 Contra Costa St, Sand City
- Demolish one property at John Street and Redwood Avenue to create an infiltration pond to mitigate flooding in this area.
- Reconstruct the existing elevated emergency outlet structure to reduce the occurrence of flooding Reconstruction will include doubling the size of the box to increase the width of the emergency outlet structure which currently restricts the flood flows significantly. Also, to facilitate the mining of sand in front of the lower Tideflex check valve, a curbed channel will be constructed along the top of the existing 90-inch diameter culvert from the emergency outlet to the check valve.

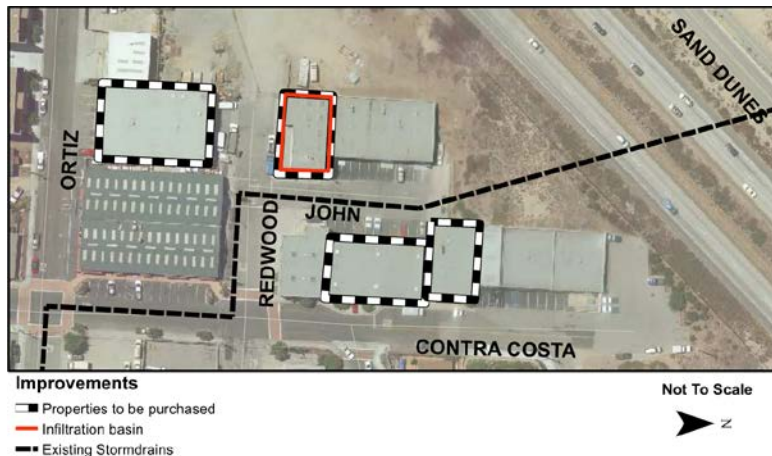
Estimated Capital Cost: \$5,070,000



Raised outlet box upstream of the lower Tideflex check valve shown below



Lower Tideflex check valve blocked by sand



City of Seaside
Capital Improvement Program
Project Summary Sheet



Project: Area 5 – Project 5B
Project Location: 90-inch diameter Outfall at Bay Ave.

Existing Conditions:

An existing 90-inch diameter storm drain pipe conveys water from approximately 2,000 acres within the City of Seaside to an outfall at Monterey Bay. The existing outfall is frequently blocked by sand. In 2005 an improvement project included the installation of a Tideflex check valve at the outfall discharge to prevent migration of sand into the outfall culvert.

Recommendations:

Construct a 500 cfs pump station at John St. and Redwood Ave. Pump through the existing 90-inch diameter pipeline forcing water through the existing Tideflex check valve. Modify the existing elevated emergency outlet structure on the beach. Modify the 90-inch diameter outfall to operate pressurized. Obtain a California Coastal Commission permit for construction.

Estimated Capital Cost: \$30,420,000



Raised outlet box upstream of the lower Tideflex check valve shown below



Lower Tideflex check valve blocked by sand



Improvements

- Proposed Pump Station
- Outlet Structure
- Existing Stormdrains
- New Force Main

Not To Scale



90-inch Outfall Option 1

City of Seaside
 Capital Improvement Program
 Project Summary Sheet



Note: This is a conceptual improvement project. Additional analysis is required prior to design.

Project: Area 5 – Project 5B (Alternate)
Project Location: 90-inch diameter Outfall at Bay Ave.

Existing Conditions:

An existing 90-inch diameter storm drain pipe conveys water from approximately 2,000 acres within the City of Seaside to an outfall at Monterey Bay. The existing outfall is frequently blocked by sand. In 2005 an improvement project included the installation of a Tideflex check valve at the outfall discharge to prevent migration of sand into the outfall culvert.

Recommendations:

Construct two 250 cfs pump stations. One would be located at John St. and Redwood Ave and would force water through the existing 90-inch diameter pipeline through the existing Tideflex valve. The other would be located near Ortiz Ave and Holly St. and would discharge to Roberts Lake through a new 60-inch diameter pipeline constructed in the old railroad right-of-way. The 90-inch diameter would be modified to operate pressurized.

The outlet box on the beach would be modified as described in Option 1. The outlet for Robert’s Lake pump station would consist of a 90 degree elbow that will direct the flow upwards to avoid scouring the lake bottom. A California Coastal Commission permit will be obtained for construction.

Estimated Capital Cost: \$39,813,000



Raised outlet box upstream of the lower Tideflex check valve shown below



Lower Tideflex check valve blocked by sand



Improvements

- Proposed Pump Station
- New Force Main
- Existing Stormdrains
- Outlet Structure

Not To Scale



90-Inch Outfall Option 2

City of Seaside
 Capital Improvement Program
 Project Summary Sheet



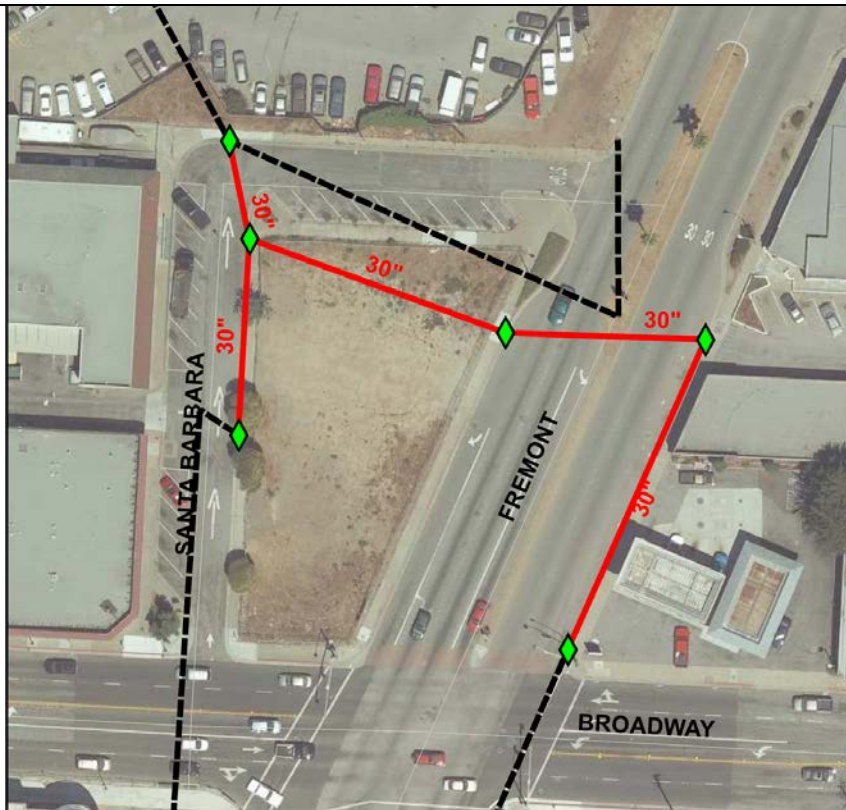
Note: This is a conceptual improvement project. Additional analysis is required prior to design.

Project: Area 6
Project Location: Broadway Ave at Fremont Blvd

Existing Conditions:
 Existing local system has insufficient capacity for current flow which results in localized flooding.

Recommendations:
 Replace existing pipes indicated below with larger 30-inch diameter pipes. This will increase both capacity and storage volume of the local storm drain system.

Estimated Capital Cost: \$325,000



Improvements

- ★ Bubble_up, Exist
- ◆ CatchBasin, Exist
- CatchBasin, New
- ✗ Field_Inlet, New
- ▲ FlaredEndSection, New
- ⊕ Manhole, Exist
- Manhole, New
- Existing Stormdrains
- New Storm Drain

Not To Scale
 N

City of Seaside
 Capital Improvement Program
 Project Summary Sheet



Note: This is a conceptual improvement project. Additional analysis is required prior to design.

Project: Area 7
Project Location: Hamilton Ave. at Fremont Blvd.

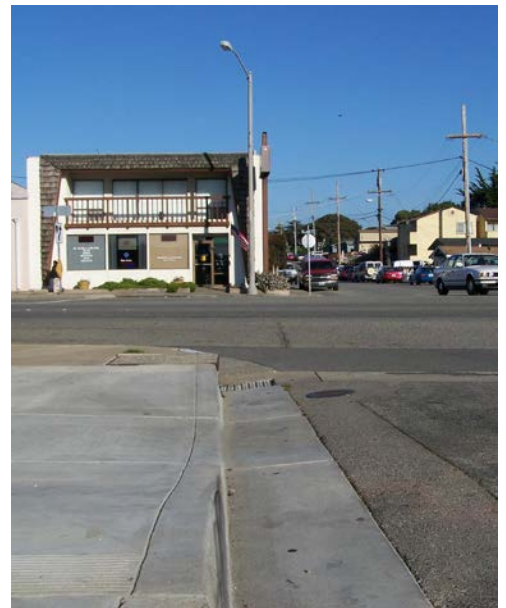
Existing Conditions:

Existing local system has insufficient capacity which results in localized flooding. The catch basins in this area are large, but overflow during storm events.

Recommendations:

- Replace the existing 24-inch diameter pipe with 60-inch diameter pipe downstream until the intersection of Hillsdale St. and Harcourt Ave. to conform to the 60-inch diameter pipe in the downstream system.
- Replace the existing inlets and manholes to accommodate the new, larger pipe.

Estimated Capital Cost: \$2,535,000



Looking East along Hamilton Ave. at Fremont St.



Improvements

- | | |
|---------------------|--------------------------|
| ★ Bubble_up, Exist | ▲ FlaredEndSection, New |
| ◆ CatchBasin, Exist | ⊕ Manhole, Exist |
| ■ CatchBasin, New | ● Manhole, New |
| ✕ Field_Inlet, New | --- Existing Stormdrains |
| | — New Storm Drain |

Not To Scale
 N

City of Seaside
 Capital Improvement Program
 Project Summary Sheet



Note: This is a conceptual improvement project. Additional analysis is required prior to design.

Project: Area 8
Project Location: Canyon Del Rey Blvd. between Harcourt Ave. and Sonoma Ave.

Existing Conditions:
 The existing system is undersized for the amount of runoff it is conveying. Street runoff from Hillsdale Ave., Canyon Del Rey Blvd., and a large parking lot are intercepted into this system.

- Recommendations:**
- Replace the existing 12-inch diameter pipe with 18-inch diameter pipe
 - Downstream of the final manhole and on the west side of the pedestrian path, install a field inlet to allow water to flood out and shed into Robert’s Lake when the outlet is submerged.
 - Replace the existing inlets to accommodate the new, larger pipe.
 - Obtain any necessary California Costal Commission permits required for construction.

Estimated Capital Cost: \$229,000



Drainage inlets east side of Canyon Del Rey Blvd.



Drainage inlet in parking lot that contributes flow to the deficient pipe



Improvements

- | | |
|---------------------|-------------------------|
| ★ Bubble_up, Exist | ▲ FlaredEndSection, New |
| ◆ CatchBasin, Exist | ⊕ Manhole, Exist |
| ■ CatchBasin, New | ● Manhole, New |
| ✕ Field_Inlet, New | — Existing Stormdrains |
| | — New Storm Drain |

Not To Scale
 N

Note: This is a conceptual improvement project. Additional analysis is required prior to design.

City of Seaside
 Capital Improvement Program
 Project Summary Sheet



Project: Area 9
Project Location: Roberts Lake Outfall

Existing Conditions:

The box culvert outfall at Roberts Lake is regularly blocked by sand requiring maintenance to excavate a channel from the four boxes prior to storm events. Once a trench is excavated, the water flows north and west along the beach out to the ocean.

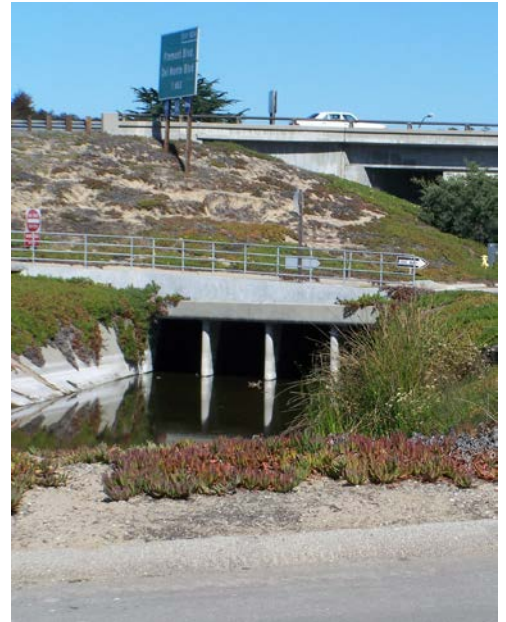
Recommendations:

Option 1 – Continue manual breaching of the sand bar to allow gravity flow through box culverts. Renew the current general permit from the California Coastal Commission that allows periodic maintenance activities on the beach every five years.

Estimated 20-Year NPV for O&M + Permit: \$100,000

Option 2 – Construct a 250 cfs low-head pump station and a 60-inch diameter pipeline through one of the box culverts and pump water to breach the sand bar and allow gravity flow through the box culverts. Obtain necessary California Coastal Commission construction permits.

Estimated Capital Cost: \$19,266,000



Box culvert entrance downstream of Roberts Lake



Box culvert outfall at the beach near a hotel



Improvements

- Proposed Pump Station
- Existing Stormdrains
- New Force Main

Not To Scale



Option 2 shown

City of Seaside
Capital Improvement Program
Project Summary Sheet



Note: This is a conceptual improvement project. Additional analysis is required prior to design.

Project: Area 11

Project Location: Military Ave. between Highland St. and Yosemite St.

Existing Conditions:

The outfall of this system has been blocked by downstream development causing flooding of private property on Military Avenue.

Recommendations:

- Construct a new field inlet to allow water to flow and infiltrate into a green space area located less than 100-feet downstream.

Estimated Capital Cost: \$31,000



Looking north towards the green space area



Looking west along Military Ave.



Improvements

- | | |
|---------------------|-------------------------|
| ★ Bubble_up, Exist | ▲ FlaredEndSection, New |
| ◆ CatchBasin, Exist | ⊕ Manhole, Exist |
| ■ CatchBasin, New | ● Manhole, New |
| ✕ Field_Inlet, New | — Existing Stormdrains |
| | — New Storm Drain |

Not To Scale



Note: This is a conceptual improvement project. Additional analysis is required prior to design.

City of Seaside
Capital Improvement Program
Project Summary Sheet



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Appendix B: Improvement Projects - Cost Estimates

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**SUMMARY ESTIMATE REPORT
WITH MARK-UPS ALLOCATED**

**City of Seaside
Stormwater Master Plan
10 % design**

Project Number: 136016-007-002

BC Project Manager: C. Peters

BC Office: WC

Estimate Issue Number: 01

Estimate Original Issue Date: 11/26/08

Estimate Revision Number: 01

Estimate Revision Date: 3/05/09

Lead Estimator: D. Goodburn

Estimate QA/QC Reviewer: B. Matthews

Estimate QA/QC Date: 11/10/08

PROCESS LOCATION/AREA INDEX

- Area 01
- Area 02
- Area 03
- Area 04
- Area 05-Option 1
- Area 05-Option 2
- Area 05-Option 3
- Area 06
- Area 07
- Area 08
- Area 09
- Area 11

Description	Total w/ Markups Allocated
--- Base Estimate ---	77,419,228
Area 01	
01 - GENERAL REQUIREMENTS	25,885
02 - SITE CONSTRUCTION	228,550
15 - MECHANICAL	73,610
Area 01 Total	328,045
Area 02	
01 - GENERAL REQUIREMENTS	217,832
02 - SITE CONSTRUCTION	3,659,424
15 - MECHANICAL	617,700
Area 02 Total	4,494,956
Area 03	
01 - GENERAL REQUIREMENTS	11,577
02 - SITE CONSTRUCTION	56,387
15 - MECHANICAL	11,261
15295 - Wastewater Valves	5,456
Area 03 Total	84,681
Area 04	
01 - GENERAL REQUIREMENTS	20,816
02 - SITE CONSTRUCTION	183,016
15 - MECHANICAL	63,982
Area 04 Total	267,814
Area 05-Option 1	
11 - EQUIPMENT	20,458,871
15 - MECHANICAL	3,000,000
Area 05-Option 1 Total	23,458,871
Area 05-Option 2	
01 - GENERAL REQUIREMENTS	2,264
02 - SITE CONSTRUCTION	512,975
11 - EQUIPMENT	27,005,709
15 - MECHANICAL	1,105,191
Area 05-Option 2 Total	28,626,139
Area 05-Option 3	
01280 - Design development	2,634,183
02060 - Site demolition	7,503
02160 - Rubbish handling	19,633

Description	Total w/ Markups Allocated
02200 - Site Preparation	89,684
02300 - Earthwork	6,226
02420 - Excavating, structural	17,391
02460 - Hauling	4,292
02570 - Catch basins or manholes	17,458
02700 - Bases, Ballasts, Pavements & Appurtenances	13,351
02800 - Site Improvements And Amenities	25,225
03300 - Cast-In-Place Concrete	30,966
05010 - Misc Metals	7,016
Area 05-Option 3 Total	2,872,928
Area 06	
01 - GENERAL REQUIREMENTS	12,404
02 - SITE CONSTRUCTION	118,264
15 - MECHANICAL	87,864
Area 06 Total	218,531
Area 07	
01 - GENERAL REQUIREMENTS	112,672
02 - SITE CONSTRUCTION	1,149,747
03 - CONCRETE	1,089
05 - METALS	6,183
15 - MECHANICAL	753,468
Area 07 Total	2,023,159
Area 08	
01 - GENERAL REQUIREMENTS	12,835
02 - SITE CONSTRUCTION	133,389
15 - MECHANICAL	28,754
Area 08 Total	174,977
Area 09	
02 - SITE CONSTRUCTION	741,595
11 - EQUIPMENT	13,502,855
15 - MECHANICAL	619,778
Area 09 Total	14,864,227
Area 11	
02 - SITE CONSTRUCTION	4,900
Area 11 Total	4,900

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DETAILED ESTIMATE REPORT

City of Seaside Stormwater Master Plan 10 % design

Project Number: 136016-007-002

BC Project Manager: C. Peters

BC Office: WC

Estimate Issue Number: 01

Estimate Original Issue Date: 11/26/08

Estimate Revision Number: 01

Estimate Revision Date: 3/05/09

Lead Estimator: D. Goodburn

Estimate QA/QC Reviewer: B. Matthews

Estimate QA/QC Date: 11/10/08

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- Area 05-Option 2
- Area 05-Option 3
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- Area 07
- Area 08
- Area 09
- Area 11

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Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	--- Base Estimate ---								
	Area 01								180,554
	01 - GENERAL REQUIREMENTS								
	01120 - Barricades								
	Traffic Control	30.0	day	334.40	125.00			459.4	13,782
	01200 - General equipment rental								
0330	Rent trench box, 3000 lbs 6'x 8'	10.0	day			58.30		58.3	583
	02 - SITE CONSTRUCTION								14,365
	02060 - Site demolition								
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	256.0	sqyd	4.83		2.58		7.4	1,898
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	63.0	sqyd	4.83		2.58		7.4	467
0260	Site dml, curbs, conc. reinforced	571.0	lnft	4.17		1.12		5.3	3,023
0540	Site dml, sidewalk removal, concrete, mesh reinforced, 4"	333.0	sqyd	7.65		2.06		9.7	3,232
	Utility Relocate Allowance	1.0	lsum	3,880.00		3,880.00		7,760.0	7,760
	02160 - Rubbish handling								
9999	Dump Charge, typical urban city, fees only, bldg constr mat'l's	68.0	ton				33.00	33.0	2,244
	02170 - Saw cutting								
0010	Saw cutting, asphalt, up to 3" deep	1,536.0	lnft	0.86	0.30	0.39		1.6	2,383
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	4,608.0	lnft	0.50	0.07	0.23		0.8	3,683
	02320 - Backfill								
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	330.0	cuyd	0.76	27.00	1.29		29.0	9,585
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	92.0	cuyd	0.76	27.00	1.29		29.0	2,672
	02340 - Bedding								
0010	Bedding, crushed stone 3/4" to 1/2"	147.0	cuyd	7.65	46.52	2.06		56.2	8,266
0010	Bedding, crushed stone 3/4" to 1/2"	7.0	cuyd	7.65	46.52	2.06		56.2	394
	02360 - Compaction								
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	57.0	cuyd	2.39		0.47		2.9	163
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	126.0	cuyd	2.39		0.47		2.9	360
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	297.0	cuyd	2.39		0.47		2.9	848
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	6.0	cuyd	2.39		0.47		2.9	17

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	6.0	cuyd	2.39			0.47		2.9	17
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	83.0	cuyd	2.39			0.47		2.9	237
	02420 - Excavating, structural									
0040	Excavating, structural, mach excav, com earth, hyd backhoe, 1-1/2 CY b	113.0	cuyd	7.44			4.85		12.3	1,389
	02450 - Excavating, trench									
0020	Excavate trench, common earth curb, 6'-10' deep, 1-1/2 CY hyd backhoe	512.0	cuyd	1.79			1.16		2.9	1,510
	02460 - Hauling									
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	640.0	cuyd	5.66			7.00		12.7	8,102
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	49.0	cuyd	5.66			7.00		12.7	620
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	185.0	cuyd	5.66			7.00		12.7	2,342
0900	Loading Trucks, F.E. Loader, 3 C.Y.	640.0	cuyd	0.70			0.43		1.1	722
0900	Loading Trucks, F.E. Loader, 3 C.Y.	49.0	cuyd	0.70			0.43		1.1	55
0900	Loading Trucks, F.E. Loader, 3 C.Y.	185.0	cuyd	0.70			0.43		1.1	209
	02570 - Catch basins or manholes									
0020	CB or manholes, conc, precast, 4' ID, 6' deep	4.0	each	547.29	850.42		93.69		1,491.4	5,966
0030	CB or manholes, conc, precast, 4' ID, 8' deep	1.0	each	820.93	1,025.51		140.53		1,987.0	1,987
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	4.0	each	143.44	201.00		38.56		383.0	1,532
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	1.0	each	143.44	201.00		38.56		383.0	383
0180	Catch basns or manholes, curb inlet FR, grate, large 24"x36" heavy dty	4.0	each	604.00	440.22		102.84		1,044.2	4,177
0260	Catch basns or manholes, frs and covs, hvy traffic, 36" diam, 1150 lb.	1.0	each	382.51	690.35				1,175.7	1,176
0310	CB or manholes, inverts, single channel brick, concrete	5.0	each	186.16	100.00				286.2	1,431
0350	Catch basins or manholes, steps, standard sizes, aluminum	10.0	each	13.43	26.50				39.9	399
	02610 - Asphaltic concrete pavement									
0120	Asphaltic conc pavement, pavement replacement over trench, 6" thick	319.0	sqyd	39.71	27.00		2.56		69.3	22,097
	02650 - Curbs									
0080	Curb & gutter, str, w/ 6"H curb & 6" T gutter, wd forms, 30"W, 0.066CY/LF	571.0	lnft	7.70	16.76				24.5	13,966
	02660 - Sidwllks, drivwys, & patios									
0010	Sidewalks, conc, 3000 PSI, CIP, w/ 6x6 mesh, broom fin, no base, 4" T	3,000.0	sqft	2.01	1.45				3.5	10,393
	15 - MECHANICAL									
	15090 - Pipe, drng & sewage, concret									
	SITE CONSTRUCTION Total									125,704

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
0050	Piping, drainage & sewage, RCP, class 3, no gaskets, 24" dia	776.0	lnft	21.84	24.12		3.09		49.0	38,060
0180	Piping, water dist,conc pipe, gasket, 24" dia	97.0	each		6.25				6.3	606
	15715 - Piping, testing									
	Pipe Joint Testing, 5 psi air, 24" dia	97.0	ea			18.75			18.8	1,819
	MECHANICAL Total									40,485

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
Area 02									
01 - GENERAL REQUIREMENTS									
01120 - Barricades									
	Traffic Control	253.0	day	334.40	125.00			459.4	116,228
0330	Rent trench box, 3000 lbs 6'x 8'	80.0	day			58.30		58.3	4,664
GENERAL REQUIREMENTS Total									
02 - SITE CONSTRUCTION									
02060 - Site demolition									
0030	Site dml, no hauling, remove existing catch basin or manhole	5.0	each	286.88		77.13		364.0	1,820
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	3,487.0	sqyd	4.83		2.58		7.4	25,851
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	202.0	sqyd	4.83		2.58		7.4	1,498
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	262.0	sqyd	4.83		2.58		7.4	1,942
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	13.0	sqyd	4.83		2.58		7.4	96
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	5,827.0	sqyd	4.83		2.58		7.4	43,199
0190	Site dml, conc to 6" thick, rod reinforced	22.0	sqyd	10.15		5.42		15.6	342
0260	Site dml, curbs, conc, reinforced	260.0	lnft	4.17		1.12		5.3	1,377
0260	Site dml, curbs, conc, reinforced	367.0	lnft	4.17		1.12		5.3	1,943
0430	Site dml, pipe removal, sewer/water, no excavation, 27" dia	160.0	lnft	11.95		3.09		15.0	2,406
0540	Site dml, sidewalk removal, concrete, mesh reinforced, 4"	87.0	sqyd	7.65		2.06		9.7	844
B0171	Site dml, pavement removal, cold milling, 1" to 3", 5,000 to 10,000 sy	2,453.0	sqyd	0.47		1.29		1.8	4,301
B0171	Site dml, pavement removal, cold milling, 1" to 3", 5,000 to 10,000 sy	5,579.0	sqyd	0.47		1.29		1.8	9,782
B0171	Site dml, pavement removal, cold milling, 1" to 3", 5,000 to 10,000 sy	2,808.0	sqyd	0.47		1.29		1.8	4,923
02160 - Rubbish handling									
9999	Dump Charge, typical urban city, fees only, bldg constr mat'l's	244.0	ton				33.00	33.0	8,052
02170 - Saw cutting									
0010	Saw cutting, asphalt, up to 3" deep	9,904.0	lnft	0.86	0.30	0.39		1.6	15,366
0010	Saw cutting, asphalt, up to 3" deep	727.0	lnft	0.86	0.30	0.39		1.6	1,128
0010	Saw cutting, asphalt, up to 3" deep	1,840.0	lnft	0.86	0.30	0.39		1.6	2,855
0010	Saw cutting, asphalt, up to 3" deep	4,370.0	lnft	0.86	0.30	0.39		1.6	6,780
0010	Saw cutting, asphalt, up to 3" deep	4,184.0	lnft	0.86	0.30	0.39		1.6	6,492

2,445,053

GENERAL REQUIREMENTS Total

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
0010	Saw cutting, asphalt, up to 3" deep	2,106.0	lnft	0.86	0.30		0.39		1.6	3,268
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	29,712.0	lnft	0.50	0.07		0.23		0.8	23,747
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	2,181.0	lnft	0.50	0.07		0.23		0.8	1,743
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	5,520.0	lnft	0.50	0.07		0.23		0.8	4,412
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	13,110.0	lnft	0.50	0.07		0.23		0.8	10,478
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	12,552.0	lnft	0.50	0.07		0.23		0.8	10,032
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	6,318.0	lnft	0.50	0.07		0.23		0.8	5,050
0030	Saw cutting, conc slabs, mesh reinforcing, up to 3" deep	120.0	lnft	0.92	0.41		0.42		1.8	210
0030	Saw cutting, conc slabs, mesh reinforcing, up to 3" deep	155.0	lnft	0.92	0.41		0.42		1.8	271
0040	Saw cutting, conc slabs, each addl inch of depth over 3"	120.0	lnft	0.57	0.14		0.26		1.0	115
0040	Saw cutting, conc slabs, each addl inch of depth over 3"	465.0	lnft	0.57	0.14		0.26		1.0	447
02320 - Backfill										
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	7,726.0	cuyd	0.76	27.00		1.29		29.0	224,395
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	1,453.0	cuyd	0.76	27.00		1.29		29.0	42,201
02340 - Bedding										
0010	Bedding, crushed stone 3/4" to 1/2"	2,218.0	cuyd	7.65	46.52		2.06		56.2	124,717
0010	Bedding, crushed stone 3/4" to 1/2"	133.0	cuyd	7.65	46.52		2.06		56.2	7,479
02360 - Compaction										
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	429.0	cuyd	2.39			0.47		2.9	1,225
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	1,907.0	cuyd	2.39			0.47		2.9	5,444
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	6,954.0	cuyd	2.39			0.47		2.9	19,852
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	116.0	cuyd	2.39			0.47		2.9	331
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	116.0	cuyd	2.39			0.47		2.9	331
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	1,307.0	cuyd	2.39			0.47		2.9	3,731
02420 - Excavating, structural										
0040	Excavating, structural, mach excav, com earth, hyd backhoe, 1-1/2 CY b	1,926.0	cuyd	7.44			4.85		12.3	23,679
02450 - Excavating, trench										
0020	Excavate trench, common earth curb, 6'-10' deep, 1-1/2 CY hyd backhoe	9,517.0	cuyd	1.79			1.16		2.9	28,072
0020	Excavate trench, common earth curb, 6'-10' deep, 1-1/2 CY hyd backhoe	148.0	cuyd	1.79			1.16		2.9	437
	Existing utilities protection allowance	4,952.0	lf	1.50			1.50		3.0	14,856
02460 - Hauling										
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	11,897.0	cuyd	5.66			7.00		12.7	150,602

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	2,408.0	cuyd	5.66			7.00		12.7	30,482
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	630.0	cuyd	5.66			7.00		12.7	7,975
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	230.0	cuyd	5.66			7.00		12.7	2,912
0900	Loading Trucks, F.E. Loader, 3 C.Y.	11,897.0	cuyd	0.70			0.43		1.1	13,427
0900	Loading Trucks, F.E. Loader, 3 C.Y.	2,408.0	cuyd	0.70			0.43		1.1	2,718
0900	Loading Trucks, F.E. Loader, 3 C.Y.	630.0	cuyd	0.70			0.43		1.1	711
0900	Loading Trucks, F.E. Loader, 3 C.Y.	230.0	cuyd	0.70			0.43		1.1	260
	02470 - Soil stabilization									
0010	Soil stabilization, geotextile fabric, woven, 200 lb. tensil strength	6,603.0	sqyd	0.27	2.07				2.3	15,435
	02570 - Catch basins or manholes									
0020	CB or manholes, conc, precast, 4' ID, 6' deep	26.0	each	547.29	850.42		93.69		1,491.4	38,776
0030	CB or manholes, conc, precast, 4' ID, 8' deep	17.0	each	820.93	1,025.51		140.53		1,987.0	33,779
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	17.0	each	143.44	201.00		38.56		383.0	6,511
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	43.0	each	143.44	201.00		38.56		383.0	16,469
0180	Catch basns or manholes, curb inlet FR, grate, large 24"x36" heavy dty	26.0	each	604.00	440.22		102.84		1,044.2	27,150
0260	Catch basns or manholes, frs and covs, hvy traffic, 36" diam, 1150 lb.	17.0	each	382.51	690.35				1,175.7	19,987
0310	CB or manholes, inverts, single channel brick, concrete	43.0	each	186.16	100.00				286.2	12,305
0350	Catch basins or manholes, steps, standard sizes, aluminum	215.0	each	13.43	26.50				39.9	8,585
	02610 - Asphaltic concrete pavement									
0020	Asphaltic conc pavement, and lg paved areas, binder course, 2" thick	3,680.0	sqyd	0.67	9.00		0.40		10.1	37,066
0020	Asphaltic conc pavement, and lg paved areas, binder course, 2" thick	9,104.0	sqyd	0.67	9.00		0.40		10.1	91,697
0020	Asphaltic conc pavement, and lg paved areas, binder course, 2" thick	8,949.0	sqyd	0.67	9.00		0.40		10.1	90,136
0020	Asphaltic conc pavement, and lg paved areas, binder course, 2" thick	4,212.0	sqyd	0.67	9.00		0.40		10.1	42,424
0040	Asphaltic conc pavement, and lg paved areas, binder course, 4" thick	9,104.0	sqyd	1.03	18.00		0.62		19.6	178,824
0070	Asphaltic conc pavement, and lg paved areas, wearing course, 2" thick	3,680.0	sqyd	0.75	9.00		0.44		10.2	37,501
0070	Asphaltic conc pavement, and lg paved areas, wearing course, 2" thick	9,104.0	sqyd	0.75	9.00		0.44		10.2	92,775
0070	Asphaltic conc pavement, and lg paved areas, wearing course, 2" thick	8,949.0	sqyd	0.75	9.00		0.44		10.2	91,195
0070	Asphaltic conc pavement, and lg paved areas, wearing course, 2" thick	4,212.0	sqyd	0.75	9.00		0.44		10.2	42,923
0100	Asphaltic conc pavement, pavement replacement over trench, 2" thick	3,964.0	sqyd	24.27	9.00		1.56		34.8	138,076
	02640 - Lines on pav't									
0120	Painting lines, thermoplastic, letters	2,756.0	sqft	2.72	1.64		1.82		6.2	17,054
	Pavement Centerline Markers, thermoplastic, reflective	3,125.0	ea	0.50	5.00				5.5	17,193

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	02650 - Curbs									
0070	Curb & gutter, str, valley gutter, wd forms, 24"W, 0.055CY/LF	100.0	lnft	6.98	15.31				22.3	2,229
0080	Curb & gutter, str, w/ 6"H curb & 6"T gutter, wd forms, 30"W, 0.066CY/LF	260.0	lnft	7.70	16.76				24.5	6,359
0080	Curb & gutter, str, w/ 6"H curb & 6"T gutter, wd forms, 30"W, 0.066CY/LF	367.0	lnft	7.70	16.76				24.5	8,977
	02660 - Sidwks, drivwys, & patios									
0010	Sidewalks, conc, 3000 PSI, CIP w/ 6x6 mesh, broom fin, no base, 4" T	780.0	sqft	2.01	1.45				3.5	2,702
	02670 - Surface treatment									
	Vehicle Loop Detector	240.0	lf			10.00			10.0	2,400
	SITE CONSTRUCTION Total									1,985,134
	15 - MECHANICAL									
	15090 - Pipe, drng&sewage, concret									
0010	Piping, drainage & sewage, RCP, class 3, no gaskets, 12" dia	720.0	lnft	10.40	12.16		1.47		24.0	17,303
0030	Piping, drainage & sewage, RCP, class 3, no gaskets, 18" dia	568.0	lnft	16.80	16.38		2.37		35.6	20,196
0040	Piping, drainage & sewage, RCP, class 3, no gaskets, 21" dia	32.0	lnft	18.20	21.10		2.57		41.9	1,340
0060	Piping, drainage & sewage, RCP, class 3, no gaskets, 27" dia	2,632.0	lnft	30.18	30.65		9.24		70.1	184,428
0080	Piping, drainage & sewage, RCP, class 3, no gaskets, 33" dia	1,000.0	lnft	35.32	41.71		11.26		88.3	88,289
0170	Piping, water dist, conc pipe, gasket, 12" dia	90.0	each		3.41				3.4	307
0180	Piping, water dist, conc pipe, gasket, 18" dia	71.0	each		4.83				4.8	343
0180	Piping, water dist, conc pipe, gasket, 21" dia	4.0	each		5.54				5.5	22
0180	Piping, water dist, conc pipe, gasket, 27" dia	329.0	each		6.96				7.0	2,290
0190	Piping, water dist, conc pipe, gasket, 33" dia	125.0	each		8.00				8.0	1,000
	15095 - Pipe, drng&sewg, plyn chird									
	Relocate SS Laterals	4.0	lsum	700.00	400.00		900.00		2,000.0	8,000
	15715 - Piping, testing									
0100	Nondestructive hydraulic pressure test, 12" pipe, 1000 - 2000 LF	1.0	each	2,635.84					2,635.8	2,636
0100	Nondestructive hydraulic pressure test, 18" pipe, 1000 - 2000 LF	1.0	each	2,635.84					2,635.8	2,636
0100	Nondestructive hydraulic pressure test, 21" pipe, 1000 - 2000 LF	1.0	each	1,317.92					1,317.9	1,318
	Pipe Joint Testing, 5 psi air, 27" dia	329.0	ea			18.75			18.8	6,169
	Pipe Joint Testing, 5 psi air, 33" dia	125.0	ea			22.00			22.0	2,750
	MECHANICAL Total									339,026

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	Area 03									47,821
	01 - GENERAL REQUIREMENTS									
	01120 - Barricades									
	Traffic Control	4.0	day	334.40	125.00				459.4	1,838
	Traffic Control	10.0	day	334.40	125.00				459.4	4,594
	02 - SITE CONSTRUCTION									6,432
	02060 - Site demolition									
0030	Site dml, no hauling, remove existing catch basin or manhole	5.0	each	286.88			77.13		364.0	1,820
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	35.2	sqyd	4.83			2.58		7.4	261
	02080 - Cutout demolition									
0030	Cutout demo, conc, slab on GR to 6" thick, bar reinf, under 8 s.f	11.3	sqft	22.74			5.18		27.9	314
	02160 - Rubbish handling									
9999	Dump Charge, typical urban city, fees only, bldg constr mat'l's	2.0	ton					33.00	33.0	66
9999	Dump Charge, typical urban city, fees only, bldg constr mat'l's	5.0	ton					33.00	33.0	165
	02170 - Saw cutting									
0010	Saw cutting, asphalt, up to 3" deep	320.0	lnft	0.86	0.30		0.39		1.6	496
0030	Saw cutting, conc slabs, mesh reinforcing, up to 3" deep	30.0	lnft	0.92	0.41		0.42		1.8	53
0040	Saw cutting, conc slabs, each addit inch of depth over 3"	150.0	lnft	0.57	0.14		0.26		1.0	144
	02320 - Backfill									
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	62.4	cuyd	0.76	27.00		1.29		29.0	1,812
	02340 - Bedding									
0010	Bedding, crushed stone 3/4" to 1/2"	25.6	cuyd	7.65	46.52		2.06		56.2	1,439
	02360 - Compaction									
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	88.0	cuyd	2.39			0.47		2.9	251
	02380 - Drilling only									
	Drill Caisson, 18" dia, no casing	25.0	vlf			20.00		50.00	70.0	1,750
	02430 - Fill									
0080	Granular fill	2.0	cuyd		14.51				14.5	29
	02450 - Excavating, trench									
0020	Excavate trench, common earth curb, 6'-10' deep, 1-1/2 CY hyd backhoe	107.0	cuyd	1.79			1.16		2.9	316

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	Existing utilities protection allowance	160.0	lf	1.50		1.50		3.0	480
	02460 - Hauling								
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	2.0	cuyd	5.66		7.00		12.7	25
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	107.0	cuyd	5.66		7.00		12.7	1,354
0900	Loading Trucks, F.E. Loader, 3 C.Y.	2.0	cuyd	0.70		0.43		1.1	2
0900	Loading Trucks, F.E. Loader, 3 C.Y.	107.0	cuyd	0.70		0.43		1.1	121
	02470 - Soil stabilization								
0010	Soil stabilization, geotextile fabric, woven, 200 lb. tensil strength	14.0	sqyd	0.27	2.07			2.3	33
	02570 - Catch basins or manholes								
0020	CB or manholes, conc, precast, 4' ID, 6' deep	6.0	each	547.29	850.42	93.69		1,491.4	8,948
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	6.0	each	143.44	201.00	38.56		383.0	2,298
0260	Catch basns or manholes, frs and covs, hvy traffic, 36" diam, 1150 lb.	6.0	each	382.51	690.34	102.84		1,175.7	7,054
	02610 - Asphaltic concrete pavement								
0040	Asphaltic conc pavement, and lg paved areas, binder course, 4" thick	35.2	sqyd	1.03	18.00	0.62		19.6	691
0070	Asphaltic conc pavement, and lg paved areas, wearing course, 2" thick	35.2	sqyd	0.75	9.00	0.44		10.2	359
	02650 - Curbs								
0080	Curb & gutter, str, w/ 6"H curb & 6" T gutter, wd forms, 30"W, 0.066CY/LF	36.0	lnft	7.70	16.76			24.5	881
	15 - MECHANICAL								31,164
	15090 - Pipe, drng & sewage, concret								
0030	Piping, drainage & sewage, RCP, class 3, no gaskets, 18" dia	160.0	lnft	16.80	16.38	2.37		35.6	5,689
0180	Piping, water dist, conc pipe, gasket, 18" dia	20.0	each		4.83			4.8	97
	15715 - Piping, testing								
	Pipe Joint Testing, 5 psi air, 18" dia	20.0	ea		22.00			22.0	440
	15295 - Wastewater Valves								6,226
	15295 - Wastewater Valves								
	Duckbill check valve placeholder	1.0	ea				4,000.00	4,000.0	4,000
	MECHANICAL Total								4,000
	Wastewater Valves Total								4,000

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
Area 04									
01 - GENERAL REQUIREMENTS									
01120 - Barricades									
	Traffic Control	24.0	day	334.40	125.00			459.4	11,026
0330	Rent trench box, 3000 lbs 6'x 8'	9.0	day			58.30		58.3	525
GENERAL REQUIREMENTS Total									
11,550									
02 - SITE CONSTRUCTION									
02060 - Site demolition									
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	307.0	sqyd	4.83		2.58		7.4	2,276
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	45.0	sqyd	4.83		2.58		7.4	334
0260	Site dml, curbs, conc, reinforced	50.0	lnft	4.17		1.12		5.3	265
	Utility Relocate Allowance	1.0	lsum	4,440.00		4,440.00		8,880.0	8,880
9999	Dump Charge, typical urban city, fees only, bldg constr mat'l's	3.0	ton				33.00	33.0	99
02170 - Saw cutting									
0010	Saw cutting, asphalt, up to 3" deep	1,300.0	lnft	0.86	0.30	0.39		1.6	2,017
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	3,900.0	lnft	0.50	0.07	0.23		0.8	3,117
0030	Saw cutting, conc slabs, mesh reinforcing, up to 3" deep	25.0	lnft	0.92	0.41	0.42		1.8	44
02320 - Backfill									
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	312.0	cuyd	0.76	27.00	1.29		29.0	9,062
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	89.0	cuyd	0.76	27.00	1.29		29.0	2,585
02340 - Bedding									
0010	Bedding, crushed stone 3/4" to 1/2"	130.0	cuyd	7.65	46.52	2.06		56.2	7,310
0010	Bedding, crushed stone 3/4" to 1/2"	9.0	cuyd	7.65	46.52	2.06		56.2	506
02360 - Compaction									
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	56.0	cuyd	2.39		0.47		2.9	160
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	112.0	cuyd	2.39		0.47		2.9	320
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	281.0	cuyd	2.39		0.47		2.9	802
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	8.0	cuyd	2.39		0.47		2.9	23
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	8.0	cuyd	2.39		0.47		2.9	23

146,889

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	80.0	cuyd	2.39			0.47		2.9	228
	02400 - Excavating, bulk, dozer									
0020	Excavating, bulk, dozer, open site, 75 HP, 50' haul, common earth	593.0	cuyd	1.70			1.03		2.7	1,619
	02420 - Excavating, structural									
0040	Excavating, structural, mach excav, com earth, hyd backhoe, 1-1/2 CY b	116.0	cuyd	7.44			4.85		12.3	1,426
	02450 - Excavating, trench									
0020	Excavate trench, common earth curb, 6'-10' deep, 1-1/2 CY hyd backhoe	450.0	cuyd	1.79			1.16		2.9	1,327
	02460 - Hauling									
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	562.0	cuyd	5.66			7.00		12.7	7,114
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	144.0	cuyd	5.66			7.00		12.7	1,823
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	62.0	cuyd	5.66			7.00		12.7	785
0900	Loading Trucks, F.E. Loader, 3 C.Y.	562.0	cuyd	0.70			0.43		1.1	634
0900	Loading Trucks, F.E. Loader, 3 C.Y.	144.0	cuyd	0.70			0.43		1.1	163
0900	Loading Trucks, F.E. Loader, 3 C.Y.	62.0	cuyd	0.70			0.43		1.1	70
	02480 - Rip-rap									
0030	Rip-rap, mach placed for slip protec, 18" min thick, not grouted	8.0	sqyd	52.39	16.66		16.03		85.1	681
	02570 - Catch basins or manholes									
0020	CB or manholes, conc, precast, 4' ID, 6' deep	5.0	each	547.29	850.42		93.69		1,491.4	7,457
0030	CB or manholes, conc, precast, 4' ID, 8' deep	1.0	each	820.93	1,025.51		140.53		1,987.0	1,987
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	5.0	each	143.44	201.00		38.56		383.0	1,915
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	1.0	each	143.44	201.00		38.56		383.0	383
0180	Catch basns or manholes, curb inlet FR, grate, large 24"x36" heavy dty	5.0	each	604.00	440.22		102.84		1,044.2	5,221
0260	Catch basns or manholes, frs and covs, hvy traffic, 36" diam, 1150 lb.	1.0	each	382.51	690.35				1,175.7	1,176
0310	CB or manholes, inverts, single channel brick, concrete	6.0	each	186.16	100.00				286.2	1,717
0350	Catch basins or manholes, steps, standard sizes, aluminum	12.0	each	13.43	26.50				39.9	479
	02610 - Asphaltic concrete pavement									
0120	Asphaltic conc pavement, pavement replacement over trench, 6" thick	352.0	sqyd	39.71	27.00		2.56		69.3	24,383
	02650 - Curbs									
0080	Curb & gutter, str, w/ 6"H curb & 6" T gutter, wd forms, 30"W, 0.066CY/LF	50.0	lnft	7.70	16.76				24.5	1,223
	02840 - Landscaping									
0330	Seeding, hydro or air seeding for lg areas, incl seed and fertilizer	1,613.0	sqyd	0.14	0.16		0.07		0.4	601

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
15 - MECHANICAL										
15090 - Pipe, drng&sewage,concret										
0030	Piping, drainage & sewage, RCP, class 3, no gaskets, 18" dia	888.0	lnft	16.80	16.38		2.37		35.6	31,574
0180	Piping, water dist,conc pipe, gasket, 18" dia	111.0	each		4.83				4.8	536
	Piping, drainage & sewage, RCP, flared end section, 18" dia	1.0	ea	113.76	150.00		96.41		360.2	360
15715 - Piping, testing										
0100	Nondestructive hydraulic pressure test, 18" pipe, 1000 - 2000 LF	1.0	each	2,635.84					2,635.8	2,636
MECHANICAL Total										
										35,106
SITE CONSTRUCTION Total										
										100,233

City of Seaside
Stormwater Master Plan

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	Area 05-Option 1								17,199,535
	11 - EQUIPMENT								
	11100 - Pumps miscellaneous								
	Pump Station allowance, 500cfs, (3) 160cfs, eng driven, VAF	1.0	lsum			15,000,000.00		15,000,000.00	15,000,000
	EQUIPMENT Total								15,000,000
	15 - MECHANICAL								
	15090 - Pipe, drng&sewage,concret								
	Retrofit existing 90" pipe for pressure rating	1.0	lsum			2,199,535.00		2,199,535.00	2,199,535
	MECHANICAL Total								2,199,535

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
Area 05-Option 2										
01 - GENERAL REQUIREMENTS										
01200 - General equipment rental										
0330	Rent trench box, 3000 lbs 6'x 8'	21.0	day				58.30		58.3	1,224
02 - SITE CONSTRUCTION										
02320 - Backfill										
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	7,726.0	cuyd	0.76			1.29		2.0	15,793
02340 - Bedding										
0010	Bedding, crushed stone 3/4" to 1/2"	2,218.0	cuyd	7.65	46.52		2.06		56.2	124,717
02360 - Compaction										
0030	Compaction, vibratory plate, 8" lifts, common fill	429.0	cuyd	1.67			0.33		2.0	857
0030	Compaction, vibratory plate, 8" lifts, common fill	6,954.0	cuyd	1.67			0.33		2.0	13,897
0040	Compaction, vibratory plate, 8" lifts, select fill	1,908.0	cuyd	1.55			0.30		1.9	3,531
02450 - Excavating, trench										
0020	Excavate trench, common earth curb, 6'-10' deep, 1-1/2 CY hyd backhoe	9,517.0	cuyd	1.79			1.16		2.9	28,072
02460 - Hauling										
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	4,171.0	cuyd	5.66			7.00		12.7	52,800
0900	Loading Trucks, F.E. Loader, 3 C.Y.	4,171.0	cuyd	0.70			0.43		1.1	4,707
02570 - Catch basins or manholes										
0110	Catch basins or manholes, concrete, precast, 6' I.D., 8' deep	6.0	each	1,147.52	1,825.91		308.52		3,281.9	19,692
0140	Catch basns or manholes, conc, precast, 6' I.D., for DS over 8', add	6.0	vlf	143.44	300.00		38.56		482.0	2,892
0170	CB or manholes, conc, slab tops, precast, 8" thick, 6' dia	6.0	each	163.93	575.00		44.07		783.0	4,698
0240	Catch basns or manholes, frs and covs, lt traffic, 36" diam, 900 lb.	6.0	each	197.85	430.21		53.19		681.3	4,088
0310	CB or manholes, inverts, single channel brick, concrete	6.0	each	186.16	100.00				286.2	1,717
0350	Catch basins or manholes, steps, standard sizes, aluminum	48.0	each	13.43	26.50				39.9	1,917
SITE CONSTRUCTION Total										
279,378										
11 - EQUIPMENT										
11100 - Pumps miscellaneous										
	Pump Station allowance, 250cfs, (3) 85cfs, eng driven, VAF	2.0	lsum						9,900,000.00	19,800,000
EQUIPMENT Total										
19,800,000										

20,680,637

GENERAL REQUIREMENTS Total

SITE CONSTRUCTION Total

11 - EQUIPMENT

11100 - Pumps miscellaneous

Pump Station allowance, 250cfs, (3) 85cfs, eng driven, VAF

EQUIPMENT Total

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
15 - MECHANICAL										
15090 - Pipe, drng&sewage,concret										
0110	Piping, drainage & sewage, RCP, class 3, no gaskets, 60" dia	2,770.0	lnft	57.85	127.63		25.20		210.7	583,600
0210	Piping, water dist,conc pipe, gasket, 60" dia	346.0	each		20.50				20.5	7,093
	Retrofit existing 90" pipe for pressure rating		lsum					3,000,000.00	3,000,000.0	
15715 - Piping, testing										
	Pipe Joint Testing, 5 psi air, 60" dia	346.0	ea			27.00			27.0	9,342
MECHANICAL Total										
										600,035

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
Area 05-Option 3									
01280 - Design development									
01280 - Design development									
	Property buyout, Colton, APN 011-177-011	1.0	Isum					317,817.0	317,817
	Property buyout, Sullivan, APN 011-177-023	1.0	Isum					826,646.0	826,646
	Property buyout, Bella Mare Invest. LLC, APN 011-177-026	1.0	Isum					577,083.0	577,083
	Property buyout, Bella Mare Invest. LLC, APN 011-177-002	1.0	Isum					912,637.0	912,637
Design development Total									2,634,183
0180	02060 - Site demolition								
	02060 - Site demolition								
	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	489.0	sqyd	5.86		2.69		8.5	4,180
Site demolition Total									4,180
9999	02160 - Rubbish handling								
	02160 - Rubbish handling								
	Dump Charge, typical urban city, fees only, bldg constr mat'l's	36.2	ton				33.00	33.0	1,195
	Dump Charge, typical urban city, fees only, bldg constr mat'l's	400.0	ton				33.00	33.0	13,200
Rubbish handling Total									14,395
0080	02200 - Site Preparation								
	02200 - Site Preparation								
	Building demolition, large urban projects, masonry, includes 20 mile haul, excludes foundation demolition, dump fees	93,750.0	CF	0.20		0.15		0.4	33,001
1450	02220310 - Selective Demolition, Cutout								
	02220310 - Selective Demolition, Cutout								
	Selective demolition, cutout, concrete, walls, bar reinforced, 6-12 C.F., excludes loading and disposal	482.0	CF	31.76		2.96		34.7	16,736
0200	02220320 - Selective Demolition, Disposal Only								
	02220320 - Selective Demolition, Disposal Only								
	Selective demolition, disposal only, urban buildings with salvage value allowed, steel frame, includes loading and 5 mile haul to dump	17.9	CY	6.72		5.17		11.9	213
Site Preparation Total									49,949
0012	02300 - Earthwork								
	02300 - Earthwork								
	02310100 - Finish Grading								
	02310100 - Finish Grading								
	Fine grading, finish grading, small area, to be paved with grader	489.0	SY	2.53		1.49		4.0	1,966
0060	02315610 - Excavating, Trench								
	02315610 - Excavating, Trench								
	Excavating, trench or continuous footing, common earth, 1/2 C.Y. excavator, 1' to 4' deep, excludes sheeting or dewatering	217.0	B.C.Y.	5.06		1.86		6.9	1,501
Earthwork Total									3,466

2,772,436

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	02420 - Excavating, structural								
	02420 - Excavating, structural								
0040	Excavating, structural, mach excav, com earth, hyd backhoe, 1-1/2 CY b	695.0	cuyd	7.35		6.50		13.8	9,622
	02460 - Hauling								9,622
	02460 - Hauling								
0040	Hauling, LCY, no loading, 12 c.y dump truck, 20 MI RT, 1 lds/hr	17.9	cuyd	10.85		12.97		23.8	426
0040	Hauling, LCY, no loading, 12 c.y dump truck, 20 MI RT, 1 lds/hr	81.5	cuyd	10.85		12.97		23.8	1,941
	02570 - Catch basins or manholes								2,367
	02570 - Catch basins or manholes								
	Miscellaneous structures for Infiltration Basin	1.0	lsum				12,800.00	12,800.00	12,800
	02700 - Bases, Ballasts, Pavements & Appurtenances								12,800
	02710100 - Aggregate-Bituminous Base Course								
0500	Asphalt Paving, plant mixed asphaltic base courses for roadways and large paved areas, bituminous concrete, 4" thick	489.0	SY	1.16		0.59		14.6	7,142
	02800 - Site Improvements And Amenities								7,142
	02820130 - Fence, Chain Link Industrial								
0940	Fence, chain link industrial, aluminized steel, 6 ga. wire, 2-1/2" posts @ 10' OC, 8' high, includes excavation, in concrete, excludes barbed wire	250.0	LF	7.43		1.21		54.1	13,536
	03300 - Cast-In-Place Concrete								13,536
	03310240 - Concrete In Place								
3940	Structural concrete, in place, continuous strip footing, 24" x 12", reinforced, includes forms(4 uses), and finishing	18.4	CY	154.75		0.58		302.3	5,563
4000	Structural concrete, in place, foundation mat, under 10 C.Y., includes forms(4 uses), reinforcing steel, and finishing	5.8	CY	191.92		0.72		447.6	2,596
4260	Structural concrete, in place, free-standing wall, 12" thick x 8' high, includes forms(4 uses), reinforcing steel, and finishing	12.6	CY	218.07		12.86		405.9	5,115
5210	Structural concrete, in place, lift slab above the foundation, minimum, includes forms(4 uses), reinforcing steel, columns and finishing	252.0	SF	6.83		0.39		14.7	3,697
	05010 - Misc Metals								16,971
	05010 - Misc Metals								
	Stainless steel screening, 3/8" galv. bars @ 6" O.C.	22.5	sf	70.00				170.00	3,825

City of Seaside
Stormwater Master Plan

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
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Misc Metals Total

3,825

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
Area 06									
01 - GENERAL REQUIREMENTS									
01120 - Barricades									
	Traffic Control	15.0	day	334.40	125.00			459.4	6,891
02 - SITE CONSTRUCTION									
02060 - Site demolition									
0030	Site dml, no hauling, remove existing catch basin or manhole	6.0	each	286.88		77.13		364.0	2,184
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	394.0	sqyd	4.83		2.58		7.4	2,921
0430	Site dml, pipe removal, sewer/water, no excavation, 27" dia	523.0	lnft	11.95		3.09		15.0	7,865
02160 - Rubbish handling									
9999	Dump Charge, typical urban city, fees only, bldg constr mat'ls	20.3	ton				33.00	33.0	670
02170 - Saw cutting									
0010	Saw cutting, asphalt, up to 3" deep	788.0	lnft	0.86	0.30	0.39		1.6	1,223
02320 - Backfill									
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	291.0	cuyd	0.76	27.00	1.29		29.0	8,452
02340 - Bedding									
0010	Bedding, crushed stone 3/4" to 1/2"	161.0	cuyd	7.65	46.52	2.06		56.2	9,053
02360 - Compaction									
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	291.0	cuyd	2.39		0.47		2.9	831
02450 - Excavating, trench									
0020	Excavate trench, common earth curb, 6'-10' deep, 1-1/2 CY hyd backhoe	451.0	cuyd	1.79		1.16		2.9	1,330
0040	Existing utilities protection allowance	523.0	lf	1.50		1.50		3.0	1,569
02460 - Hauling									
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	502.0	cuyd	5.66		7.00		12.7	6,355
0900	Loading Trucks, F.E. Loader, 3 C.Y.	502.0	cuyd	0.70		0.43		1.1	567
02570 - Catch basins or manholes									
0020	CB or manholes, conc, precast, 4' ID, 6' deep	6.0	each	547.29	850.42	93.69		1,491.4	8,948
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	6.0	each	143.44	201.00	38.56		383.0	2,298
0260	Catch basns or manholes, frs and covs, hvy traffic, 36" diam, 1150 lb.	6.0	each	382.51	690.34	102.84		1,175.7	7,054
0310	CB or manholes, inverts, single channel brick, concrete	6.0	each	186.16	100.00			286.2	1,717
									119,804
GENERAL REQUIREMENTS Total									

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	02610 - Asphaltic concrete pavement									
0040	Asphaltic conc pavement, and lg paved areas, binder course, 4" thick	34.0	sqyd	1.03	18.00		0.62		19.6	668
0070	Asphaltic conc pavement, and lg paved areas, wearing course, 2" thick	17.0	sqyd	0.75	9.00		0.44		10.2	173
	02650 - Curbs									
0080	Curb & gutter, str, w/ 6"H curb & 6" T gutter, wd forms, 30"W, 0.066CY/LF	36.0	lnft	7.70	16.76				24.5	881
	15 - MECHANICAL									64,758
	15090 - Pipe, drng & sewage, concrete									
0080	Piping, drainage & sewage, RCP, class 3, no gaskets, 33" dia	523.0	lnft	35.32	41.71		11.26		88.3	46,175
0190	Piping, water dist, conc pipe, gasket, 33" dia	66.0	each		8.00				8.0	528
	15715 - Piping, testing									
	Pipe Joint Testing, 5 psi air, 33" dia	66.0	ea			22.00			22.0	1,452
	MECHANICAL Total									48,155
	SITE CONSTRUCTION Total									64,758

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	Area 07								1,108,844
	01 - GENERAL REQUIREMENTS								
	01120 - Barricades								
	Traffic Control	130.0	day	334.40	125.00			459.4	59,722
	01200 - General equipment rental								
0330	Rent trench box, 3000 lbs 6'x 8'	48.0	day			58.30		58.3	2,798
	02 - SITE CONSTRUCTION								62,520
	02060 - Site demolition								
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	2,071.0	sqyd	4.83		2.58		7.4	15,353
0260	Site dml, curbs, conc. reinforced	1,564.0	lnft	4.17		1.12		5.3	8,281
0420	Site dml, pipe removal, sewer/water, no excavation, 24" dia	1,864.0	lnft	9.56		2.57		12.1	22,618
0540	Site dml, sidewalk removal, concrete, mesh reinforced, 4"	861.0	sqyd	7.65		2.06		9.7	8,357
	Utility Relocate Allowance	1.0	lsum	9,320.00		9,320.00		18,640.0	18,640
	02160 - Rubbish handling								
9999	Dump Charge, typical urban city, fees only, bldg constr mat'is	521.0	ton				33.00	33.0	17,193
	02170 - Saw cutting								
0010	Saw cutting, asphalt, up to 3" deep	3,728.0	lnft	0.86	0.30	0.39		1.6	5,784
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	11,184.0	lnft	0.50	0.07	0.23		0.8	8,999
	02320 - Backfill								
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	3,185.0	cuyd	0.76	27.00	1.29		29.0	92,506
	02340 - Bedding								
0010	Bedding, crushed stone 3/4" to 1/2"	1,121.0	cuyd	7.65	46.52	2.06		56.2	63,033
	02360 - Compaction								
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	272.0	cuyd	2.39		0.47		2.9	777
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	964.0	cuyd	2.39		0.47		2.9	2,752
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	2,867.0	cuyd	2.39		0.47		2.9	8,185
	02450 - Excavating, trench								
0020	Excavate trench, common earth curb, 6'-10' deep, 1-1/2 CY hyd backhoe	5,165.0	cuyd	1.79		1.16		2.9	15,235
	02460 - Hauling								
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	6,456.0	cuyd	5.66		7.00		12.7	81,725

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	866.0	cuyd	5.66		7.00		12.7	10,963
0900	Loading Trucks, F.E. Loader, 3 C.Y.	6,456.0	cuyd	0.70		0.43		1.1	7,286
0900	Loading Trucks, F.E. Loader, 3 C.Y.	866.0	cuyd	0.70		0.43		1.1	977
	02570 - Catch basins or manholes								
0020	CB or manholes, conc, precast, 4' ID, 6' deep	6.0	each	547.29	850.42	93.69		1,491.4	8,948
0030	CB or manholes, conc, precast, 4' ID, 8' deep	4.0	each	820.93	1,025.51	140.53		1,987.0	7,948
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	6.0	each	143.44	201.00	38.56		383.0	2,298
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	4.0	each	143.44	201.00	38.56		383.0	1,532
0180	Catch basins or manholes, curb inlet FR, grate, large 24"x36" heavy dty	6.0	each	604.00	440.22			1,044.2	6,265
0260	Catch basins or manholes, frs and covs, hvy traffic, 36" diam, 1150 lb.	4.0	each	382.51	690.35	102.84		1,175.7	4,703
0310	CB or manholes, inverts, single channel brick, concrete	10.0	each	186.16	100.00			286.2	2,862
0350	Catch basins or manholes, steps, standard sizes, aluminum	40.0	each	13.43	26.50			39.9	1,597
	02610 - Asphaltic concrete pavement								
0120	Asphaltic conc pavement, pavement replacement over trench, 6" thick	2,071.0	sqyd	39.71	27.00	2.56		69.3	143,458
	02650 - Curbs								
0080	Curb & gutter, str, w/ 6"H curb & 6"T gutter, wd forms,30"W,0.066CY/LF	1,564.0	lnft	7.70	16.76			24.5	38,255
	02660 - Sidwks, drivwys, & patios								
0010	Sidewalks, conc, 3000 PSI, CIP w/ 6x6 mesh, broom fin, no base, 4" T	7,750.0	sqft	2.01	1.45			3.5	26,848
	03 - CONCRETE								633,317
	03160 - Concrete in place								
	Riser collar, 36" dia	4.0	ea	100.67	50.00			150.7	603
	05 - METALS								603
	05120 - Grating frame								
	Riser safety cage, 12" dia, galv	6.0	ea	104.50	150.00			254.5	1,527
	05260 - Ladder								
0020	Ladder, steel, 20" wide, bolted to concrete, w/o cage	26.0	vlf	25.26	43.75	1.68		70.7	1,838
	15 - MECHANICAL								3,365
	15090 - Pipe, drng & sewage, concret								
	METALS Total								
	CONCRETE Total								
	SITE CONSTRUCTION Total								

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
0020	Piping, conc, reinf culvert, class 3, no gaskets, 15" diameter	8.0	lnft	12.48	15.58		1.76		29.8	239
0080	Piping, drainage & sewage, RCP, class 3, no gaskets, 36" dia	16.0	lnft	38.57	47.23		11.80		97.6	1,562
0110	Piping, drainage & sewage, RCP, class 3, no gaskets, 60" dia	1,864.0	lnft	57.85	127.63		25.20		210.7	392,718
0210	Piping, water dist,conc pipe, gasket, 60" dia	233.0	each		20.50				20.5	4,777
	Piping, drainage & sewage, RCP, class3, 60" X 36" riser special	4.0	ea	68.25	694.00		57.85		820.1	3,280
	15095 - Pipe,drng&sewg,plyv chlr									
0060	Piping, drainage & sewage, PVC, 10' lengths, s.d.r. 35, 12" diam	10.0	lnft	4.70	11.67		0.88		17.2	172
	15715 - Piping, testing									
	Pipe Joint Testing, 5 psi air, 60" dia	233.0	ea			27.00			27.0	6,291
	MECHANICAL Total									409,039

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
Area 08									
01 - GENERAL REQUIREMENTS									
01120 - Barricades									
	Traffic Control								
	01200 - General equipment rental								
0330	Rent trench box, 3000 lbs 6'x 8'	15.0	day	334.40	125.00			459.4	6,891
GENERAL REQUIREMENTS Total									
						58.30		58.3	233
									7,124
02 - SITE CONSTRUCTION									
02060 - Site demolition									
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	222.0	sqyd	4.83		2.58		7.4	1,646
0180	Site dml, no hauling, pavement removal, bit, 4" to 6" thick	64.0	sqyd	4.83		2.58		7.4	474
0260	Site dml, curbs, conc, reinforced	56.0	lnft	4.17		1.12		5.3	296
0420	Site dml, pipe removal, sewer/water, no excavation, 24" dia	400.0	lnft	9.56		2.57		12.1	4,854
0540	Site dml, sidewalk removal, concrete, mesh reinforced, 4"	28.0	sqyd	7.65		2.06		9.7	272
	Utility Relocate Allowance	1.0	lsum	2,000.00		2,000.00		4,000.0	4,000
							33.00	33.0	891
9999	Dump Charge, typical urban city, fees only, bldg constr mat'l's	27.0	ton						
02170 - Saw cutting									
0010	Saw cutting, asphalt, up to 3" deep	800.0	lnft	0.86	0.30	0.39		1.6	1,241
0020	Saw cutting, asphalt, after 3" deep; each addl inch of depth	2,400.0	lnft	0.50	0.07	0.23		0.8	1,918
02320 - Backfill									
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	141.0	cuyd	0.76	27.00	1.29		29.0	4,095
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	68.0	cuyd	0.76	27.00	1.29		29.0	1,975
02340 - Bedding									
0010	Bedding, crushed stone 3/4" to 1/2"	59.0	cuyd	7.65	46.52	2.06		56.2	3,318
0010	Bedding, crushed stone 3/4" to 1/2"	6.0	cuyd	7.65	46.52	2.06		56.2	337
02360 - Compaction									
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	26.0	cuyd	2.39		0.47		2.9	74
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	51.0	cuyd	2.39		0.47		2.9	146
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	127.0	cuyd	2.39		0.47		2.9	363
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	5.0	cuyd	2.39		0.47		2.9	14

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	5.0	cuyd	2.39			0.47		2.9	14
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	61.0	cuyd	2.39			0.47		2.9	174
	02420 - Excavating, structural									
0040	Excavating, structural, mach excav, com earth, hyd backhoe, 1-1/2 CY b	90.0	cuyd	7.44			4.85		12.3	1,106
	02450 - Excavating, trench									
0020	Excavate trench, common earth curb, 6'-10' deep, 1-1/2 CY hyd backhoe	204.0	cuyd	1.79			1.16		2.9	602
	02460 - Hauling									
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	254.0	cuyd	5.66			7.00		12.7	3,215
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	112.0	cuyd	5.66			7.00		12.7	1,418
0050	Hauling, LCY, no loading, 20 c.y dump truck, 20 MI RT, 0.4 lds/hr	75.0	cuyd	5.66			7.00		12.7	949
0900	Loading Trucks, F.E. Loader, 3 C.Y.	254.0	cuyd	0.70			0.43		1.1	287
0900	Loading Trucks, F.E. Loader, 3 C.Y.	112.0	cuyd	0.70			0.43		1.1	126
0900	Loading Trucks, F.E. Loader, 3 C.Y.	75.0	cuyd	0.70			0.43		1.1	85
	02570 - Catch basins or manholes									
0020	CB or manholes, conc, precast, 4' ID, 6' deep	2.0	each	547.29	850.42		93.69		1,491.4	2,983
0020	CB or manholes, conc, precast, 4' ID, 6' deep	1.0	each	547.29	850.42		93.69		1,491.4	1,491
0030	CB or manholes, conc, precast, 4' ID, 8' deep	2.0	each	820.93	1,025.51		140.53		1,987.0	3,974
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	2.0	each	143.44	201.00		38.56		383.0	766
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	2.0	each	143.44	201.00		38.56		383.0	766
0150	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	1.0	each	143.44	201.00		38.56		383.0	383
0180	Catch basns or manholes, curb inlet FR, grate, large 24"x36" heavy dty	2.0	each	604.00	440.22				1,044.2	2,088
0190	Catch basns or manholes, curb inl FR, grate, small 10"x21" medium dty	1.0	each	604.00	310.15				914.2	914
0260	Catch basns or manholes, frs and covs, hvy traffic, 36" diam, 1,150 lb.	2.0	each	382.51	690.35		102.84		1,175.7	2,351
0310	CB or manholes, inverts, single channel brick, concrete	4.0	each	186.16	100.00				286.2	1,145
0310	CB or manholes, inverts, single channel brick, concrete	1.0	each	186.16	100.00				286.2	286
0350	Catch basins or manholes, steps, standard sizes, aluminum	8.0	each	13.43	26.50				39.9	319
	02610 - Asphaltic concrete pavement									
0120	Asphaltic conc pavement, pavement replacement over trench, 6" thick	286.0	sqyd	39.71	27.00		2.56		69.3	19,811
	02650 - Curbs									
0080	Curb & gutter, str, w/ 6"H curb & 6" T gutter, wd forms.30"W.0.066CY/LF	56.0	lnft	7.70	16.76				24.5	1,370
	02660 - Sidwks, drivwys, & patios									
0010	Sidewalks, conc, 3000 PSI, CIP w/ 6x6 mesh, broom fin, no base, 4" T	250.0	sqft	2.01	1.45				3.5	866

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
15 - MECHANICAL										
15090 - Pipe, drng&sewage,concret										
0030	Piping, drainage & sewage, RCP, class 3, no gaskets, 18" dia	400.0	lnft	16.80	16.38		2.37		35.6	14,223
0180	Piping, water dist,conc pipe, gasket, 18" dia	50.0	each		4.83				4.8	242
15715 - Piping, testing										
0100	Nondestructive hydraulic pressure test, 18" pipe, 1000 - 2000 LF	1.0	each	1,317.92					1,317.9	1,318
SITE CONSTRUCTION Total										
MECHANICAL Total										
										73,406
										15,782

City of Seaside
Stormwater Master Plan

Item	Item Description	Qty	Unit	Labor \$/Unit	Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	Area 09									10,664,791
	02 - SITE CONSTRUCTION									
	02040 - Drilling, core									
0030	Drilling, core, including bit, 8" diam. core	34.0	each			315.00			315.0	10,710
	02270 - Grouting, pressure									
0050	Grouting, pressure, Type III	12,250.0	cuft	2.54	13.00		1.20		16.7	205,055
	02330 - Backfill, structural									
0050	Backfill, structural, 200 H.P., 50' haul, common earth	113.0	cuyd	0.31			0.53		0.8	95
	02360 - Compaction									
0130	Compaction, walk behind, vibrating plate 18" wide, 6" lifts, 4 passes	102.0	cuyd	2.39			0.47		2.9	291
	02420 - Excavating, structural									
0040	Excavating, structural, mach excav, com earth, hyd backhoe, 1-1/2 CY b	102.0	cuyd	7.44			4.85		12.3	1,254
	02520 - Horizontal boring									
B0048	Jack 60" OD, incl mobilzn/demob	1,000.0	lnft			208.00			208.0	208,000
	Jacking backstop for 60"	1.0				8,000.00			8,000.0	8,000
	SITE CONSTRUCTION Total							9,900,000.00	9,900,000.0	9,900,000
	11 - EQUIPMENT									
	11100 - Pumps miscellaneous									
	Pump Station allowance, 250cfs, (3) 85cfs, eng driven, VAF	1.0	lsum							
	15 - MECHANICAL									
	15245 - Pipe, hgh dns ply hdpe									
0200	Pipe, Weholite RSC 250, 60" dia, incl welded joints	1,000.0	lnft		320.00				328.8	328,750
	15715 - Piping, testing									
0100	Nondestructive hydraulic pressure test, 60" pipe, 1000 LF	1.0	each	2,635.84					2,635.8	2,636
	MECHANICAL Total									331,386

Item	Item Description	Qty	Unit	Labor Materials \$/Unit	Subs \$/Unit	Equip \$/Unit	Other \$/Unit	Total \$/Unit	Total Net Cost \$
	Area 11								2,641
	02 - SITE CONSTRUCTION								
	02570 - Catch basins or manholes								
	Field Riser Outlet,	1.0	ea	547.29	2,000.00	93.70		2,641.0	2,641
	SITE CONSTRUCTION Total								2,641

City of Seaside
Stormwater Master Plan

Category	Percent	Amount	Hours
--- Base Estimate --- Totals			
Labor	3.22 %	1,785,319	35,513.6
Material	5.58 %	3,095,041	
Subcontractor	0.48 %	266,623	
Equipment	1.30 %	722,793	13,788.4
Other	84.67 %	46,961,360	
User	4.75 %	2,634,183	
Net Costs			
Labor Mark-up	18.00 %	321,357	
Material Mark-up	15.00 %	464,256	
Subcontractor Mark-up	5.00 %	13,331	
Equipment Mark-up	15.00 %	108,419	
Sales tax	8.25 %	314,971	
Material Shipping & Handling	2.00 %	61,901	
Subtotal		56,749,554	
Contractor General Conditions	10.00 %	715,401	
Subtotal		57,464,955	
Construction Contingency	30.00 %	16,449,232	
Subtotal		73,914,187	
Bldg Risk, Liability Auto Ins.	2.85 %	2,031,480	
Subtotal		75,945,667	
Performance Bond	1.00 %	733,115	
Subtotal		76,678,782	
Payment Bond	1.00 %	740,446	
Total --- Base Estimate ---		77,419,228	

Category	Percent	Amount	Hours
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Appendix C: Stormwater Fee Calculation Tables

Alternative 1. CIP All Projects with Grants

Table C-1. Estimated Baseline O&M Expenses by Functional Cost Category

Table C-2. Other Required O&M Expenses by Functional Cost Category

Table C-3. Total O&M Expenses by Functional Cost Category

Table C-4. Recommended Capital Improvement Program, 2013 Dollars

Table C-5. Recommended Capital Improvement Program, Escalated Dollars

Table C-6. Projected Grant Funds

Table C-7. Projected Debt Service

Table C-8. Projected CIP Funded By Rates and Annual Debt Service Payments

Table C-9. Projected Revenue Requirements

Table C-10. Stormwater Enterprise Debt Coverage

Table C-11. Stormwater Enterprise Cash Flow

Table C-12. Allocation of Revenue Requirements

Table C-13. Parcel/Land Use Characteristics, 2013

Table C-14. Projected Parcels, Acres and ESFRUs

Table C-15. Projected Average Fees by Customer Category

Table C-16. Projected Revenue per Acre by Customer Category

Table C-17. Projected Revenue by Customer Category

Table C-18. Projected Revenue for ESFRU by Customer Category

Table C-19. Projected Average Monthly Fee by Customer Category

Table C-20. Projected Revenue by Customer Category

Figure C-1. Single Family Monthly Fees

Figure C-2. Expenditures, Fund Balances and Single Family Monthly Fees

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Table C-1

Estimated Baseline O&M Expenses by Functional Cost Category

Cost Category	Notes	Base	Projected [1]							
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
NPDES Activities										
Labor	[2]	\$16,605	\$17,103	\$17,616	\$18,145	\$18,689	\$19,250	\$19,827	\$20,422	\$21,035
Other	[3]	\$74,000	\$76,220	\$78,507	\$80,862	\$83,288	\$85,786	\$88,360	\$91,011	\$93,741
Ocean Outfall										
Labor	[2][4]	\$59,924	\$61,722	\$63,573	\$65,481	\$67,445	\$69,468	\$71,552	\$73,699	\$75,910
Other		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Catch Basin/Pipeline										
Labor	[2][4]	\$155,227	\$159,884	\$164,680	\$169,621	\$174,709	\$179,951	\$185,349	\$190,910	\$196,637
Other	[7]	\$25,000	\$25,750	\$26,523	\$27,318	\$28,138	\$28,982	\$29,851	\$30,747	\$31,669
Street Sweeping										
Labor	[2][5]	\$103,742	\$106,854	\$110,060	\$113,362	\$116,763	\$120,265	\$123,873	\$127,590	\$131,417
Other	[7]	\$37,500	\$38,625	\$39,784	\$40,977	\$42,207	\$43,473	\$44,777	\$46,120	\$47,504
Repair/Inspections/Other										
Labor	[4][6]	\$33,928	\$34,946	\$35,994	\$37,074	\$38,186	\$39,332	\$40,512	\$41,727	\$42,979
Other	[7]	\$12,500	\$12,875	\$13,261	\$13,659	\$14,069	\$14,491	\$14,926	\$15,373	\$15,835
Total										
Labor		\$369,426	\$380,509	\$391,924	\$403,682	\$415,792	\$428,266	\$441,114	\$454,347	\$467,978
Other		\$149,000	\$153,470	\$158,074	\$162,816	\$167,701	\$172,732	\$177,914	\$183,251	\$188,749
Total		\$518,426	\$533,979	\$549,998	\$566,498	\$583,493	\$600,998	\$619,028	\$637,599	\$656,727

Notes:

1 Projected values are escalated as shown below:

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

Escalation percentages are based on the average increase in the *Engineering News Record* 20-City Construction Cost Index for 2011-2012.

2 City Engineer, Associate Civil Engineer and Junior Engineer costs for 2014/15 are from Table 2-1 and are allocated as shown below:

	Category	Total	Category
	Alloc %	Engineers	Allocation
NPDES Activities >	25.0%	\$66,419	\$16,605
Ocean Outfall >	25.0%	\$66,419	\$16,605
Catch Basin/Pipeline >	25.0%	\$66,419	\$16,605
Street Sweeping >	25.0%	\$66,419	\$16,605

3 NPDES other costs for 2014/15 are shown in Table 2-3.

4 PW Maintenance Workers (I and II) labor cost for 2014/15 are from Table 2-1 and are allocated among categories as shown below:

	Hours		Costs		
	Category	Total PW	Category	Total PW	Category
	Allocation	Mtc Worker	Alloc %	Mtc Worker	Allocation
Ocean Outfall >	260	1,192	21.8%	\$198,603	\$43,319
Catch Basin/Pipeline >	832	1,192	69.8%	\$198,603	\$138,622
Repair/Inspections/Other >	100	1,192	8.4%	\$198,603	\$16,661

5 Street Sweeper Operator labor cost of \$87,137 for 2014/15 is from Table 2-1 and is included in Street Sweeping labor costs.

6 Building Inspector labor cost of \$17,267 for 2014/15 is from Table 2-1 and is included in Repair/Inspections/Other labor costs.

7 The total consumables cost for 2014/15 is from Table 2-3 and is allocated among categories (as "Other") as shown below:

	Category	Total	Category
	Alloc %	Consum.	Allocation
Catch Basin/Pipeline >	33.3%	\$75,000	\$25,000
Street Sweeping >	50.0%	\$75,000	\$37,500
Repair/Inspections/Other >	16.7%	\$75,000	\$12,500

Table C-2

Additional Required O&M Expenses by Functional Cost Category

Cost Category	Notes	Base	Projected [1]							
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
NPDES Activities										
Labor	[2]	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	[3]	\$11,000	\$11,330	\$11,670	\$12,020	\$12,381	\$12,752	\$13,135	\$13,529	\$13,934
Ocean Outfall										
Labor	[2]	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Catch Basin/Pipeline										
Labor	[2]	\$183,966	\$189,485	\$195,169	\$201,024	\$207,055	\$213,267	\$219,665	\$226,255	\$233,042
Other		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Street Sweeping										
Labor	[2]	\$57,489	\$59,214	\$60,990	\$62,820	\$64,705	\$66,646	\$68,645	\$70,705	\$72,826
Other		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Repair/Inspections/Other										
Labor	[2]	\$11,498	\$11,843	\$12,198	\$12,564	\$12,941	\$13,329	\$13,729	\$14,141	\$14,565
Other	[3]	\$14,000	\$14,420	\$14,853	\$15,298	\$15,757	\$16,230	\$16,717	\$17,218	\$17,735
Total										
Labor		\$252,953	\$260,542	\$268,358	\$276,409	\$284,701	\$293,242	\$302,039	\$311,100	\$320,433
Other		\$25,000	\$25,750	\$26,523	\$27,318	\$28,138	\$28,982	\$29,851	\$30,747	\$31,669
Total		\$277,953	\$286,292	\$294,880	\$303,727	\$312,839	\$322,224	\$331,890	\$341,847	\$352,103

Notes:

1 Projected values are escalated as shown below:

	<u>2015/16</u>	<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>	<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>
	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

Escalation percentages are based on the average increase in the *Engineering News Record* 20-City Construction Cost Index for 2011-2012.

2 Labor costs for new staff are from Table 2-4 and are allocated as shown below:

Item	Associate	Street	PW		Total	% of	2014/15	
	Civil	Sweeper	Engineering	Maintenance				
	Engineer	Operator	Technicians	Worker I	Worker II	FTEs	Total FTEs	Cost
NPDES Activities						0.0	0.0%	\$0
Ocean Outfall						0.0	0.0%	\$0
Catch Basin/Pipeline		0.2	0.4	0.5	0.5	1.6	72.7%	\$183,966
Street Sweeping		0.5				0.5	22.7%	\$57,489
Repair/Inspections/Other			0.1			0.1	4.5%	\$11,498
Total FTEs		0.2	0.5	0.5	0.5	2.2	100%	\$252,953
% of Total		9.1%	22.7%	22.7%	22.7%	100%		

3 Annual maintenance costs are from Table 2-5 are allocated the "Other", non-labor, category and are summarized below:

Annual Maintenance Item	2014/15 Amount	Cost Category
CCTV Inspection Rig	\$8,000	Repair/Inspections/Other
NPDES Permit Training	\$11,000	NPDES Activities
CMMS Implementation	\$6,000	Repair/Inspections/Other

Table C-3

Total O&M Expenses by Functional Cost Category

Cost Category	Base	Projected [1]							
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
NPDES Activities									
Labor	\$16,605	\$17,103	\$17,616	\$18,145	\$18,689	\$19,250	\$19,827	\$20,422	\$21,035
Other	\$85,000	\$87,550	\$90,177	\$92,882	\$95,668	\$98,538	\$101,494	\$104,539	\$107,675
Ocean Outfall									
Labor	\$59,924	\$61,722	\$63,573	\$65,481	\$67,445	\$69,468	\$71,552	\$73,699	\$75,910
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Catch Basin/Pipeline									
Labor	\$339,193	\$349,369	\$359,850	\$370,645	\$381,765	\$393,217	\$405,014	\$417,164	\$429,679
Other	\$25,000	\$25,750	\$26,523	\$27,318	\$28,138	\$28,982	\$29,851	\$30,747	\$31,669
Street Sweeping									
Labor	\$161,231	\$166,068	\$171,050	\$176,182	\$181,467	\$186,911	\$192,519	\$198,294	\$204,243
Other	\$37,500	\$38,625	\$39,784	\$40,977	\$42,207	\$43,473	\$44,777	\$46,120	\$47,504
Repair/Inspections/Other									
Labor	\$45,426	\$46,789	\$48,192	\$49,638	\$51,127	\$52,661	\$54,241	\$55,868	\$57,544
Other	\$26,500	\$27,295	\$28,114	\$28,957	\$29,826	\$30,721	\$31,642	\$32,592	\$33,569
Total									
Labor	\$622,379	\$641,050	\$660,282	\$680,090	\$700,493	\$721,508	\$743,153	\$765,448	\$788,411
Other	\$174,000	\$179,220	\$184,597	\$190,134	\$195,839	\$201,714	\$207,765	\$213,998	\$220,418
Total	\$796,379	\$820,270	\$844,878	\$870,225	\$896,332	\$923,222	\$950,918	\$979,446	\$1,008,829

Notes:

1 Expenditures are the sum of Base and Additional expenses from Table C-1 (Base) and Table C-2 (Additional).

Table C-4
Recommended Capital Improvement Program, 2014 Dollars

Hydraulic Projects	Total	Projected, 2014 Dollars [1]								
	Amount	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
P3-A3 John/Rdwd	\$105,000	\$41,000	\$64,000							
P5A-A5 90" Ph1 [2]	\$4,784,000	\$1,232,000	\$1,048,000	\$2,504,000						
P5B-A5 90" Ph2 [2]	\$28,700,000	\$616,000	\$681,000	\$616,000	\$616,000	\$616,000	\$25,555,000			
P1-A1 Del Monte/Auto	\$452,000				\$70,000	\$105,000	\$277,000			
P11-A11 Military/Mend	\$36,000				\$5,000	\$8,000	\$23,000			
P2-A2 Hilby	\$6,130,000					\$943,000	\$1,415,000	\$3,772,000		
P7-A7 Hamilton/Fmmt	\$2,764,000					\$425,000	\$638,000	\$1,701,000		
P6-A6 Bdwy/Fmmt	\$355,000						\$55,000	\$82,000	\$218,000	
P8-A8 CDRay/Hmlton	\$239,000						\$45,000	\$53,000	\$141,000	
P9-A9 Roberts Lk [2]	\$2,020,000				\$89,000	\$89,000	\$89,000	\$89,000	\$446,000	\$1,218,000
P4-A4 Olym/Catalina	\$372,000							\$69,000	\$83,000	\$220,000
P12-In Situ Tmt	\$5,461,000	\$5,000	\$469,000	\$2,289,000	\$2,398,000	\$300,000				
P10-A10 West Bdwy	\$2,227,000		\$1,113,000					\$1,114,000		
Total	\$53,645,000	\$1,894,000	\$3,375,000	\$5,409,000	\$3,178,000	\$2,486,000	\$28,097,000	\$6,880,000	\$888,000	\$1,438,000

Other Expenditures	Total	Projected, 2014 Dollars [1]								
	Amount	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
SW Plan PR	\$109,000	\$109,000								
Master Plan	\$327,000	\$327,000								
CCTV Inspection Rig	\$11,000		\$11,000							
Quickview Camera	\$6,000		\$6,000							
Service Truck	\$33,000		\$33,000							
CMMS Software	\$55,000		\$55,000							
Street Sweeper 2	\$270,000								\$270,000	
Master Plan Update	\$545,000						\$545,000			
Vactor Truck	\$327,000							\$327,000		
Street Sweeper 1	\$270,000	\$270,000								
Backhoe	\$160,000								\$160,000	
Total	\$2,113,000	\$706,000	\$105,000	\$0	\$0	\$0	\$545,000	\$327,000	\$430,000	\$0

Total										
Hydraulic Projects	\$53,645,000	\$1,894,000	\$3,375,000	\$5,409,000	\$3,178,000	\$2,486,000	\$28,097,000	\$6,880,000	\$888,000	\$1,438,000
Other Expenditures	\$2,113,000	\$706,000	\$105,000	\$0	\$0	\$0	\$545,000	\$327,000	\$430,000	\$0
Total	\$55,758,000	\$2,600,000	\$3,480,000	\$5,409,000	\$3,178,000	\$2,486,000	\$28,642,000	\$7,207,000	\$1,318,000	\$1,438,000

Notes:

- All expenditures are from Table 4-1.
- Projects P5 (A and B) and P9 are only partially allocated to the City of Seaside.

Table C-5
Recommended Capital Improvement Program, Escalated Dollars

Hydraulic Projects	Total	Projected, Escalated Dollars [1]								
	Amount	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
P3-A3 John/Rdwd	\$106,920	\$41,000	\$65,920							
P5A-A5 90" Ph1	\$4,967,934	\$1,232,000	\$1,079,440	\$2,656,494						
P5B-A5 90" Ph2	\$32,962,627	\$616,000	\$701,430	\$653,514	\$673,120	\$693,313	\$29,625,249			
P1-A1 Del Monte/Auto	\$515,788				\$76,491	\$118,178	\$321,119			
P11-A11 Military/Mend	\$41,131				\$5,464	\$9,004	\$26,663			
P2-A2 Hilby	\$7,205,693					\$1,061,355	\$1,640,373	\$4,503,965		
P7-A7 Hamilton/Frmnt	\$3,249,041					\$478,341	\$739,617	\$2,031,083		
P6-A6 Bdwy/Frmnt	\$429,785						\$63,760	\$97,912	\$268,113	
P8-A8 CDRay/Hmlton	\$288,864						\$52,167	\$63,285	\$173,412	
P9-A9 Roberts Lk [2]	\$2,498,319				\$97,253	\$100,170	\$103,175	\$106,271	\$548,524	\$1,542,926
P4-A4 Olym/Catalina	\$463,159							\$82,390	\$102,080	\$278,689
P12-In Situ Tmt	\$5,874,482	\$5,000	\$483,070	\$2,428,400	\$2,620,359	\$337,653				
P10-A10 West Bdwy	\$2,476,564		\$1,146,390					\$1,330,174		
Total	\$61,080,306	\$1,894,000	\$3,476,250	\$5,738,408	\$3,472,686	\$2,798,015	\$32,572,124	\$8,215,080	\$1,092,128	\$1,821,615

Other Expenditures	Total	Projected, Escalated Dollars [1]								
	Amount	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
SW Plan PR	\$109,000	\$109,000								
Master Plan	\$327,000	\$327,000								
CCTV Inspection Rig	\$11,000		\$11,000							
Quickview Camera	\$6,000		\$6,000							
Service Truck	\$33,000		\$33,000							
CMMS Software	\$55,000		\$55,000							
Street Sweeper 2	\$332,066								\$332,066	
Master Plan Update	\$631,804						\$631,804			
Vactor Truck	\$390,455							\$390,455		
Street Sweeper 1	\$270,000	\$270,000								
Backhoe	\$160,000								\$160,000	
Total	\$2,325,325	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0

Total										
Hydraulic Projects	\$61,080,306	\$1,894,000	\$3,476,250	\$5,738,408	\$3,472,686	\$2,798,015	\$32,572,124	\$8,215,080	\$1,092,128	\$1,821,615
Other Expenditures	\$2,325,325	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0
Total	\$63,405,632	\$2,600,000	\$3,581,250	\$5,738,408	\$3,472,686	\$2,798,015	\$33,203,928	\$8,605,535	\$1,584,194	\$1,821,615

Notes:

1 Projected values are escalated as shown below:

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
annual >	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
cumulative >	3.0%	6.1%	9.3%	12.6%	15.9%	19.4%	23.0%	26.7%

Escalation percentages are based on the average increase in the *Engineering News Record* 20-City Construction Cost Index for 2011-2012.

Table C-6
 Projected Grant Funds
 Alt 1 All Projects / With Grants

Hydraulic Projects	Total Amount	Projected, Escalated Dollars									
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
P3-A3 John/Rdwd	\$106,920	\$41,000	\$65,920								
P5A-A5 90" Ph1	\$4,967,934	\$1,232,000	\$1,079,440	\$2,656,494							
P5B-A5 90" Ph2	\$32,962,627	\$616,000	\$701,430	\$653,514	\$673,120	\$693,313	\$29,625,249				
P1-A1 Del Monte/Auto	\$515,788				\$76,491	\$118,178	\$321,119				
P11-A11 Military/Mend	\$41,131				\$5,464	\$9,004	\$26,663				
P2-A2 Hilby	\$7,205,693					\$1,061,355	\$1,640,373	\$4,503,965			
P7-A7 Hamilton	\$3,249,041					\$478,341	\$739,617	\$2,031,083			
P6-A6 Bdwy/Fremont	\$429,785						\$63,760	\$97,912	\$268,113		
P8-A8 CDRay/Hmiton	\$288,864						\$52,167	\$63,285	\$173,412		
P9-A9 Roberts Lk	\$2,498,319				\$97,253	\$100,170	\$103,175	\$106,271	\$548,524	\$1,542,926	
P4-A4 Olym/Catalina	\$463,159							\$82,390	\$102,080	\$278,689	
P12-In Situ Tmt	\$5,874,482	\$5,000	\$483,070	\$2,428,400	\$2,620,359	\$337,653					
P10-A10 West Bdwy	\$2,476,564		\$1,146,390					\$1,330,174			
Total	\$61,080,306	\$1,894,000	\$3,476,250	\$5,738,408	\$3,472,686	\$2,798,015	\$32,572,124	\$8,215,080	\$1,092,128	\$1,821,615	

Hydraulic Projects	Total Amount	% Grant Funds									
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
P3-A3 John/Rdwd	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
P5A-A5 90" Ph1	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
P5B-A5 90" Ph2	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
P1-A1 Del Monte/Auto	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
P11-A11 Military/Mend	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
P2-A2 Hilby	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
P7-A7 Hamilton	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
P6-A6 Bdwy/Fremont	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
P8-A8 CDRay/Hmiton	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
P9-A9 Roberts Lk	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
P4-A4 Olym/Catalina	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
P12-In Situ Tmt	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
P10-A10 West Bdwy	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	47.1%	49.0%	36.0%	60.6%	66.3%	49.9%	49.3%	41.1%	0.0%	0.0%	

Hydraulic Projects	Total Amount	\$ Grant Funds									
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
P3-A3 John/Rdwd	\$0	\$0	\$0								
P5A-A5 90" Ph1	\$2,483,967	\$616,000	\$539,720	\$1,328,247							
P5B-A5 90" Ph2	\$16,481,313	\$308,000	\$350,715	\$326,757	\$336,560	\$346,657	\$14,812,624				
P1-A1 Del Monte/Auto	\$0				\$0	\$0	\$0				
P11-A11 Military/Mend	\$0				\$0	\$0	\$0				
P2-A2 Hilby	\$5,404,270					\$796,016	\$1,230,280	\$3,377,974			
P7-A7 Hamilton	\$0					\$0	\$0	\$0			
P6-A6 Bdwy/Fremont	\$0						\$0	\$0	\$0		
P8-A8 CDRay/Hmiton	\$0						\$0	\$0	\$0		
P9-A9 Roberts Lk	\$0				\$0	\$0	\$0	\$0	\$0	\$0	
P4-A4 Olym/Catalina	\$0							\$0	\$0	\$0	
P12-In Situ Tmt	\$4,405,862	\$3,750	\$362,303	\$1,821,300	\$1,965,270	\$253,239					
P10-A10 West Bdwy	\$0		\$0					\$0			
Total	\$28,775,411	\$927,750	\$1,252,738	\$3,476,304	\$2,301,829	\$1,395,912	\$16,042,904	\$3,377,974	\$0	\$0	

Hydraulic Projects	Total Amount	\$ Fees, Loan or General Fund									
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
P3-A3 John/Rdwd	\$106,920	\$41,000	\$65,920								
P5A-A5 90" Ph1	\$2,483,967	\$616,000	\$539,720	\$1,328,247							
P5B-A5 90" Ph2	\$16,481,313	\$308,000	\$350,715	\$326,757	\$336,560	\$346,657	\$14,812,624				
P1-A1 Del Monte/Auto	\$515,788				\$76,491	\$118,178	\$321,119				
P11-A11 Military/Mend	\$41,131				\$5,464	\$9,004	\$26,663				
P2-A2 Hilby	\$1,801,423					\$265,339	\$410,093	\$1,125,991			
P7-A7 Hamilton	\$3,249,041					\$478,341	\$739,617	\$2,031,083			
P6-A6 Bdwy/Fremont	\$429,785						\$63,760	\$97,912	\$268,113		
P8-A8 CDRay/Hmiton	\$288,864						\$52,167	\$63,285	\$173,412		
P9-A9 Roberts Lk	\$2,498,319				\$97,253	\$100,170	\$103,175	\$106,271	\$548,524	\$1,542,926	
P4-A4 Olym/Catalina	\$463,159							\$82,390	\$102,080	\$278,689	
P12-In Situ Tmt	\$1,468,621	\$1,250	\$120,768	\$607,100	\$655,090	\$84,413					
P10-A10 West Bdwy	\$2,476,564		\$1,146,390					\$1,330,174			
Total	\$32,304,895	\$966,250	\$2,223,513	\$2,262,104	\$1,170,857	\$1,402,103	\$16,529,220	\$4,837,106	\$1,092,128	\$1,821,615	

Table C-7
 Projected Debt Service
 Alt 1 All Projects / With Grants

Item	Total Amount	Projected, Escalated Dollars								
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Total CIP Expenditures [1]										
Hydraulic Projects	\$61,080,306	\$1,894,000	\$3,476,250	\$5,738,408	\$3,472,686	\$2,798,015	\$32,572,124	\$8,215,080	\$1,092,128	\$1,821,615
Other Expenditures	\$2,325,325	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0
Total	\$63,405,632	\$2,600,000	\$3,581,250	\$5,738,408	\$3,472,686	\$2,798,015	\$33,203,928	\$8,605,535	\$1,584,194	\$1,821,615
Less:										
Grant Funds	\$28,775,411	\$927,750	\$1,252,738	\$3,476,304	\$2,301,829	\$1,395,912	\$16,042,904	\$3,377,974	\$0	\$0
General Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$28,775,411	\$927,750	\$1,252,738	\$3,476,304	\$2,301,829	\$1,395,912	\$16,042,904	\$3,377,974	\$0	\$0
Net CIP Expenditures										
Hydraulic Projects	\$32,304,895	\$966,250	\$2,223,513	\$2,262,104	\$1,170,857	\$1,402,103	\$16,529,220	\$4,837,106	\$1,092,128	\$1,821,615
Other Expenditures	\$2,325,325	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0
Total	\$34,630,220	\$1,672,250	\$2,328,513	\$2,262,104	\$1,170,857	\$1,402,103	\$17,161,024	\$5,227,561	\$1,584,194	\$1,821,615
Debt Funding										
Percent	39%	0%	0%	0%	0%	0%	66%	44%	0%	0%
Dollars	\$13,626,403	\$0	\$0	\$0	\$0	\$0	\$11,326,276	\$2,300,127	\$0	\$0
Cash (SW Fees)	\$21,003,818	\$1,672,250	\$2,328,513	\$2,262,104	\$1,170,857	\$1,402,103	\$5,834,748	\$2,927,434	\$1,584,194	\$1,821,615

Projected Debt Service

	<u>Total</u>	<u>2014/15</u>	<u>2015/16</u>	<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>	<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>
<u>2015/16 Issue</u>										
CIP Funded by Debt	\$0	\$0	\$0	\$0	\$0					
Issue Costs										
%	3.0%									
\$ Cost	\$0									
Debt Reserve	\$0									
Issue Amount	\$0									
Term	20 years									
Annual Rate	6.00%									
Annual Payment	\$0									
1st Payment	2016/17									
Total Payments	\$0									
<u>2018/19 Issue</u>										
CIP Funded by Debt	\$13,626,403					\$0	\$11,326,276	\$2,300,127	\$0	\$0
Issue Costs										
%	3.0%									
\$ Cost	\$408,792									
Debt Reserve	\$1,362,640									
Issue Amount	\$15,397,835									
Term	20 years									
Annual Rate	6.00%									
Annual Payment	\$1,332,294									
1st Payment	2019/20									
Total Payments	\$26,645,878									

Notes:

1 Projected escalated CIP expenditures are from Table C-5.

Table C-8
 Projected CIP Funded By Rates and Annual Debt Service Payments
 Alt 1 All Projects / With Grants

Item	Projected, Escalated Dollars [1]									Totals
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
Total CIP Costs										
Hydraulic Projects	\$1,894,000	\$3,476,250	\$5,738,408	\$3,472,686	\$2,798,015	\$32,572,124	\$8,215,080	\$1,092,128	\$1,821,615	\$61,080,306
Other Expenditures	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0	\$2,325,325
Total CIP Costs	\$2,600,000	\$3,581,250	\$5,738,408	\$3,472,686	\$2,798,015	\$33,203,928	\$8,605,535	\$1,584,194	\$1,821,615	\$63,405,632
CIP Funded by Grants	\$927,750	\$1,252,738	\$3,476,304	\$2,301,829	\$1,395,912	\$16,042,904	\$3,377,974	\$0	\$0	\$28,775,411
CIP Funded by Rates	\$1,672,250	\$2,328,513	\$2,262,104	\$1,170,857	\$1,402,103	\$5,834,748	\$2,927,434	\$1,584,194	\$1,821,615	\$21,003,818
CIP Funded by Debt	\$0	\$0	\$0	\$0	\$0	\$11,326,276	\$2,300,127	\$0	\$0	\$13,626,403
Debt Service Payments										
2015/16 Issue			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2018/19 Issue						\$1,332,294	\$1,332,294	\$1,332,294	\$1,332,294	\$5,329,176
Subtotal			\$0	\$0	\$0	\$1,332,294	\$1,332,294	\$1,332,294	\$1,332,294	\$5,329,176
Totals	\$1,672,250	\$2,328,513	\$2,262,104	\$1,170,857	\$1,402,103	\$7,167,042	\$4,259,728	\$2,916,488	\$3,153,909	\$26,332,993

Notes:

1 CIP expenditures funded by rates and debt service are shown in Table C-7.

Table C-9
 Projected Revenue Requirements
 Alt 1 All Projects / With Grants

Item	NO FEES				Projected					
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
O&M Expenditures [1]										
NPDES Activities	\$101,605	\$104,653	\$107,793	\$111,027	\$114,357	\$117,788	\$121,322	\$124,961	\$128,710	
Ocean Outfall	\$59,924	\$61,722	\$63,573	\$65,481	\$67,445	\$69,468	\$71,552	\$73,699	\$75,910	
Catch Basin/Pipeline	\$364,193	\$375,119	\$386,372	\$397,963	\$409,902	\$422,199	\$434,865	\$447,911	\$461,349	
Street Sweeping	\$198,731	\$204,693	\$210,834	\$217,159	\$223,674	\$230,384	\$237,296	\$244,414	\$251,747	
Repair/Insp/Other	\$71,926	\$74,084	\$76,306	\$78,595	\$80,953	\$83,382	\$85,883	\$88,460	\$91,114	
CIP Costs in Rates [2]	\$1,672,250	\$2,328,513	\$2,262,104	\$1,170,857	\$1,402,103	\$5,834,748	\$2,927,434	\$1,584,194	\$1,821,615	
Debt Service [3]	\$0	\$0	\$0	\$0	\$0	\$1,332,294	\$1,332,294	\$1,332,294	\$1,332,294	
Revenue Requirements										
Total	\$2,468,629	\$3,148,783	\$3,106,983	\$2,041,082	\$2,298,434	\$8,090,264	\$5,210,646	\$3,895,934	\$4,162,738	
Cumulative		\$3,148,783	\$6,255,765	\$8,296,847	\$10,595,281	\$18,685,545	\$23,896,191	\$27,792,125	\$31,954,863	
Add / (Use) Fund Balance	\$0	\$1,200,000	\$1,300,000	\$2,400,000	\$2,200,000	(\$3,500,000)	(\$600,000)	\$730,000	\$480,000	
O&M Expenditures [1]										
NPDES Activities	\$101,605	\$104,653	\$107,793	\$111,027	\$114,357	\$117,788	\$121,322	\$124,961	\$128,710	
Ocean Outfall	\$59,924	\$61,722	\$63,573	\$65,481	\$67,445	\$69,468	\$71,552	\$73,699	\$75,910	
Catch Basin/Pipeline	\$364,193	\$375,119	\$386,372	\$397,963	\$409,902	\$422,199	\$434,865	\$447,911	\$461,349	
Street Sweeping	\$198,731	\$204,693	\$210,834	\$217,159	\$223,674	\$230,384	\$237,296	\$244,414	\$251,747	
Repair/Insp/Other	\$71,926	\$74,084	\$76,306	\$78,595	\$80,953	\$83,382	\$85,883	\$88,460	\$91,114	
CIP Costs in Rates [2]	\$1,672,250	\$3,528,513	\$3,562,104	\$3,570,857	\$3,602,103	\$2,334,748	\$2,327,434	\$2,314,194	\$2,301,615	
Debt Service [3]	\$0	\$0	\$0	\$0	\$0	\$1,332,294	\$1,332,294	\$1,332,294	\$1,332,294	
Revenue Requirements										
Total	\$2,468,629	\$4,348,783	\$4,406,983	\$4,441,082	\$4,498,434	\$4,590,264	\$4,610,646	\$4,625,934	\$4,642,738	
Cumulative		\$4,348,783	\$8,755,765	\$13,196,847	\$17,695,281	\$22,285,545	\$26,896,191	\$31,522,125	\$36,164,863	

- Notes:
 1 From Table C-3.
 2 From Table C-7.
 3 From Table C-7.

Table C-10
Stormwater Enterprise Debt Coverage
Alt 1 All Projects / With Grants

Item	Projected							
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Net Revenue Required *								
Principal and Interest Payments								
2015/16 Issue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2018/19 Issue	\$0	\$0	\$0	\$0	\$1,332,294	\$1,332,294	\$1,332,294	\$1,332,294
Total	\$0	\$0	\$0	\$0	\$1,332,294	\$1,332,294	\$1,332,294	\$1,332,294
Coverage Ratio in Covenant	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Net Revenue Required	\$0	\$0	\$0	\$0	\$1,665,367	\$1,665,367	\$1,665,367	\$1,665,367
<i>* Net revenue required equals 1.25 times the principal and interest due and payable in the next fiscal year.</i>								
Gross Revenue **								
Stormwater Fees	\$4,348,783	\$4,406,983	\$4,441,082	\$4,498,434	\$4,590,264	\$4,610,646	\$4,625,934	\$4,642,738
Interest	\$78	\$1,595	\$4,724	\$10,865	\$19,278	\$14,541	\$4,376	\$4,748
Total Gross Revenue	\$4,348,861	\$4,408,577	\$4,445,806	\$4,509,299	\$4,609,542	\$4,625,188	\$4,630,309	\$4,647,487
<i>** Gross revenue equals revenue from "charges for services and facilities of the Enterprise"</i>								
Net Revenue ***								
Gross Revenue	\$4,348,861	\$4,408,577	\$4,445,806	\$4,509,299	\$4,609,542	\$4,625,188	\$4,630,309	\$4,647,487
Less								
O&M Expenditures	\$820,270	\$844,878	\$870,225	\$896,332	\$923,222	\$950,918	\$979,446	\$1,008,829
Total Net Revenue	\$3,528,591	\$3,563,699	\$3,575,581	\$3,612,967	\$3,686,321	\$3,674,269	\$3,650,864	\$3,638,657
<i>** Net revenue equals gross revenue less O&M expenditures.</i>								
Evaluation of Covenant Performance								
Net Revenue	\$3,528,591	\$3,563,699	\$3,575,581	\$3,612,967	\$3,686,321	\$3,674,269	\$3,650,864	\$3,638,657
Net Revenue Required	\$0	\$0	\$0	\$0	\$1,665,367	\$1,665,367	\$1,665,367	\$1,665,367
Over/(Under) Requirement	\$3,528,591	\$3,563,699	\$3,575,581	\$3,612,967	\$2,020,953	\$2,008,902	\$1,985,496	\$1,973,290
Calculated Coverage Ratio		#DIV/0!	#DIV/0!	#DIV/0!	2.77	2.76	2.74	2.73
Covenant Coverage Ratio		1.25	1.25	1.25	1.25	1.25	1.25	1.25
		OVER	OVER	OVER	OVER	OVER	OVER	OVER

Table C-11
Stormwater Enterprise Cash Flow
Alt 1 All Projects / With Grants

Item	Projected									Totals
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
Beginning Balance	\$0	\$31,371	\$606,449	\$1,283,044	\$3,062,768	\$4,648,632	\$1,167,911	\$582,452	\$1,316,828	
Expenditures										
O&M [1]	\$796,379	\$820,270	\$844,878	\$870,225	\$896,332	\$923,222	\$950,918	\$979,446	\$1,008,829	\$8,090,499
CIP Hydraulic Projects	\$1,894,000	\$3,476,250	\$5,738,408	\$3,472,686	\$2,798,015	\$32,572,124	\$8,215,080	\$1,092,128	\$1,821,615	\$61,080,306
CIP Other	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0	\$2,325,325
Debt Service	\$0	\$0	\$0	\$0	\$0	\$1,332,294	\$1,332,294	\$1,332,294	\$1,332,294	\$5,329,176
Reimb General Fund		\$625,000	\$625,000	\$625,000	\$625,000					\$2,500,000
Total Expenditures	\$3,396,379	\$5,026,520	\$7,208,287	\$4,967,911	\$4,319,346	\$35,459,443	\$10,888,747	\$3,895,934	\$4,162,738	\$79,325,306
Revenues										
General Fund [1]	\$2,500,000									\$2,500,000
Stormwater Fees	\$0	\$4,348,783	\$4,406,983	\$4,441,082	\$4,498,434	\$4,590,264	\$4,610,646	\$4,625,934	\$4,642,738	\$36,164,863
Loan Disbursement	\$0	\$0	\$0	\$0	\$0	\$11,326,276	\$2,300,127	\$0	\$0	\$13,626,403
Grant Funds	\$927,750	\$1,252,738	\$3,476,304	\$2,301,829	\$1,395,912	\$16,042,904	\$3,377,974	\$0	\$0	\$28,775,411
Interest [2]		\$78	\$1,595	\$4,724	\$10,865	\$19,278	\$14,541	\$4,376	\$4,748	\$60,205
Total Revenues	\$3,427,750	\$5,601,599	\$7,884,881	\$6,747,635	\$5,905,211	\$31,978,722	\$10,303,288	\$4,630,309	\$4,647,487	\$81,126,882
Net Revenues	\$31,371	\$575,078	\$676,595	\$1,779,724	\$1,585,865	(\$3,480,722)	(\$585,459)	\$734,376	\$484,748	
Ending Balance	\$31,371	\$606,449	\$1,283,044	\$3,062,768	\$4,648,632	\$1,167,911	\$582,452	\$1,316,828	\$1,801,576	

Notes:

1 Expenditures to be paid from the General Fund.

2 Interest is the previous years' average balance times the interest rates shown below:

	<u>2015/16</u>	<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>	<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>
annual >	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%

Table C-12
Allocation of Revenue Requirements
Alt 1 All Projects / With Grants

Item	Projected							
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Revenue Requirements								
O&M Expenditures								
NPDES Activities	\$104,653	\$107,793	\$111,027	\$114,357	\$117,788	\$121,322	\$124,961	\$128,710
Ocean Outfall	\$61,722	\$63,573	\$65,481	\$67,445	\$69,468	\$71,552	\$73,699	\$75,910
Catch Basin/Pipeline	\$375,119	\$386,372	\$397,963	\$409,902	\$422,199	\$434,865	\$447,911	\$461,349
Street Sweeping	\$204,693	\$210,834	\$217,159	\$223,674	\$230,384	\$237,296	\$244,414	\$251,747
Repair/Insp/Other	\$74,084	\$76,306	\$78,595	\$80,953	\$83,382	\$85,883	\$88,460	\$91,114
CIP Costs in Rates	\$3,528,513	\$3,562,104	\$3,570,857	\$3,602,103	\$2,334,748	\$2,327,434	\$2,314,194	\$2,301,615
Hydraulic Projects								
Other Expenditures								
Debt Service	\$0	\$0	\$0	\$0	\$1,332,294	\$1,332,294	\$1,332,294	\$1,332,294
Hydraulic Projects								
Other Expenditures								
Total	\$4,348,783	\$4,406,983	\$4,441,082	\$4,498,434	\$4,590,264	\$4,610,646	\$4,625,934	\$4,642,738
Allocation to Per Acre								
O&M Expenditures								
NPDES Activities	100%	100%	100%	100%	100%	100%	100%	100%
Ocean Outfall	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
Catch Basin/Pipeline	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
Street Sweeping	100%	100%	100%	100%	100%	100%	100%	100%
Repair/Insp/Other	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
CIP Costs in Rates								
Hydraulic Projects	87%	87%	87%	87%	87%	87%	87%	87%
Other Expenditures	13%	13%	13%	13%	13%	13%	13%	13%
Debt Service								
Hydraulic Projects	87%	87%	87%	87%	87%	87%	87%	87%
Other Expenditures	13%	13%	13%	13%	13%	13%	13%	13%
Revenue Requirements Allocated to Acres								
O&M Expenditures								
NPDES Activities	\$104,653	\$107,793	\$111,027	\$114,357	\$117,788	\$121,322	\$124,961	\$128,710
Ocean Outfall	\$4,197	\$4,323	\$4,453	\$4,586	\$4,724	\$4,866	\$5,012	\$5,162
Catch Basin/Pipeline	\$25,508	\$26,273	\$27,062	\$27,873	\$28,710	\$29,571	\$30,458	\$31,372
Street Sweeping	\$204,693	\$210,834	\$217,159	\$223,674	\$230,384	\$237,296	\$244,414	\$251,747
Repair/Insp/Other	\$5,038	\$5,189	\$5,344	\$5,505	\$5,670	\$5,840	\$6,015	\$6,196
CIP Costs in Rates								
Hydraulic Projects								
Other Expenditures	\$460,758	\$465,144	\$466,287	\$470,367	\$304,874	\$303,919	\$302,190	\$300,548
Debt Service								
Hydraulic Projects								
Other Expenditures	\$0	\$0	\$0	\$0	\$173,973	\$173,973	\$173,973	\$173,973
Total	\$804,847	\$819,556	\$831,331	\$846,363	\$866,122	\$876,786	\$887,024	\$897,707
Revenue Requirements Allocated to ESFRUs								
O&M Expenditures								
NPDES Activities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ocean Outfall	\$57,525	\$59,250	\$61,028	\$62,859	\$64,744	\$66,687	\$68,687	\$70,748
Catch Basin/Pipeline	\$349,611	\$360,099	\$370,902	\$382,029	\$393,490	\$405,294	\$417,453	\$429,977
Street Sweeping	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Repair/Insp/Other	\$69,046	\$71,117	\$73,251	\$75,448	\$77,712	\$80,043	\$82,444	\$84,918
CIP Costs in Rates								
Hydraulic Projects	\$3,067,755	\$3,096,960	\$3,104,570	\$3,131,735	\$2,029,874	\$2,023,515	\$2,012,004	\$2,001,068
Other Expenditures								
Debt Service								
Hydraulic Projects	\$0	\$0	\$0	\$0	\$1,158,321	\$1,158,321	\$1,158,321	\$1,158,321
Other Expenditures								
Total	\$3,543,936	\$3,587,427	\$3,609,750	\$3,652,071	\$3,724,141	\$3,733,861	\$3,738,910	\$3,745,032
Allocation Summary								
Acres	\$804,847	\$819,556	\$831,331	\$846,363	\$866,122	\$876,786	\$887,024	\$897,707
ESFRUs	\$3,543,936	\$3,587,427	\$3,609,750	\$3,652,071	\$3,724,141	\$3,733,861	\$3,738,910	\$3,745,032
Total	\$4,348,783	\$4,406,983	\$4,441,082	\$4,498,434	\$4,590,264	\$4,610,646	\$4,625,934	\$4,642,738

Table C-13

Parcel / Land Use Characteristics, December 2013

Customer / Land Use Description [1]	Run-off Coeff [2]	Number of Parcels	Parcel Area Acres	Acres per Parcel	Run-off per Parcel [3]	ESFRU Multiplier	Number of ESFRU [4]
Single Family	0.6170	5,902	1,293	0.219	0.135	1.000	5,902
Multiple Family	0.7624	564	190	0.337	0.257	1.900	1,072
Commercial	0.8380	401	222	0.554	0.464	3.432	1,376
Public / Institutional	0.4290	41	1,161	28.317	12.148	89.874	3,685
Military	0.1874	6	836	139.333	26.111	193.176	1,159
Park / Open Space	0.1248	75	148	1.973	0.246	1.822	137
Habitat Management	0.0000	2	935	467.500	0.000	0.000	0
Recreational Commercial	0.1465	65	487	7.492	1.098	8.120	528
Mixed Use	0.7269	219	142	0.648	0.471	3.487	764
Total		7,275	5,414	0.744			14,622

Less: Parcels Exempt from Runoff Related Fees [5]

Customer / Land Use Description	Run-off Coeff [2]	Number of Parcels	Parcel Area Acres	Acres per Parcel	Run-off per Parcel [3]	ESFRU Multiplier	Number of ESFRU [4]
Single Family	0.6170	5,843	1,280	0.219	0.135	1.000	5,843
Multiple Family	0.7624	558	188	0.337	0.257	1.900	1,061
Commercial	0.8380	361	200	0.554	0.464	3.432	1,239
Public / Institutional	0.4290	40	647	16.094	6.905	51.081	2,052
Military	0.1874	0	0	0.000	0.000	0.000	0
Park / Open Space	0.1248	75	148	1.973	0.246	1.822	137
Habitat Management	0.0000	2	935	467.500	0.000	0.000	0
Recreational Commercial	0.1465	65	487	7.492	1.098	8.120	528
Mixed Use	0.7269	219	142	0.648	0.471	3.487	764
Total		7,163	4,027	0.562			11,623

Notes:

1 Single Family, Multiple Family and Commercial customer classes were based on the following combinations:

Customer / Land Use Description	Run-off Coeff (a)	Number of Parcels	Parcel Area Acres	Acres per Parcel	Run-off per Parcel (b)
Single Family					
Low-density	0.5835	2,691	898	0.334	0.195
Medium-density	0.6931	3,211	395	0.123	0.085
Combined	0.6170	5,902	1,293	0.219	0.135
Multiple Family					
Medium-density	0.8610	392	108	0.276	0.237
High-density	0.6325	172	82	0.477	0.302
Combined	0.7624	564	190	0.337	0.257
Commercial					
Community	0.8833	183	58	0.317	0.280
Regional	0.8234	189	157	0.831	0.684
Heavy	0.7916	29	7	0.241	0.191
Combined	0.8380	401	222	0.554	0.464

2 The run-off coefficient is the ratio of impervious parcel area to total parcel area.

3 Run-off / parcel = [acres / parcel] x [run-off coefficient]

4 ESFRU = Equivalent Single Family Run-off Unit. Number of ESFRU = ((run-off / parcel) / [run-off SF parcel]) x Number of Parcels

5 Parcels and parcel area projected to be exempt from runoff related fees are based on a percent of existing parcels.

	Parcels	% Reduction	Adjusted	Acres	% Reduction	Adjusted
Single Family	5,902	1%	5,843	1,293	1%	1,280
Multiple Family	564	1%	558	190	1%	188
Commercial	401	10%	361	222	10%	200
Public / Institutional	41	2%	40	1,161	44%	647
Military	6	100%	0	836	100%	0
Park / Open Space	75	0%	75	148	0%	148
Habitat Management	2	0%	2	935	0%	935
Recreational Commercial	65	0%	65	487	0%	487
Mixed Use	219	0%	219	142	0%	142

Table C-14
 Projected Parcels, Acres and ESRUs

Item	Projected [1]							
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Parcels								
Single Family	5,843	5,843	5,843	5,843	5,843	5,843	5,843	5,843
Multiple Family	558	558	558	558	558	558	558	558
Commercial	361	361	361	361	361	361	361	361
Public / Institutional	40	40	40	40	40	40	40	40
Park / Open Space	75	75	75	75	75	75	75	75
Habitat Management	2	2	2	2	2	2	2	2
Recreational Commercial	65	65	65	65	65	65	65	65
Mixed Use	219	219	219	219	219	219	219	219
Total	7,163	7,163	7,163	7,163	7,163	7,163	7,163	7,163
Acres								
Single Family	1,280	1,280	1,280	1,280	1,280	1,280	1,280	1,280
Multiple Family	188	188	188	188	188	188	188	188
Commercial	200	200	200	200	200	200	200	200
Public / Institutional	647	647	647	647	647	647	647	647
Park / Open Space	148	148	148	148	148	148	148	148
Habitat Management	935	935	935	935	935	935	935	935
Recreational Commercial	487	487	487	487	487	487	487	487
Mixed Use	142	142	142	142	142	142	142	142
Total	4,027	4,027	4,027	4,027	4,027	4,027	4,027	4,027
ESFRU								
	<i>Run-off Coefficient</i>							
Single Family	0.6170	5,843	5,843	5,843	5,843	5,843	5,843	5,843
Multiple Family	0.7624	1,061	1,061	1,061	1,061	1,061	1,061	1,061
Commercial	0.8380	1,239	1,239	1,239	1,239	1,239	1,239	1,239
Public / Institutional	0.4290	2,052	2,052	2,052	2,052	2,052	2,052	2,052
Park / Open Space	0.1248	137	137	137	137	137	137	137
Habitat Management	0.0000	0	0	0	0	0	0	0
Recreational Commercial	0.1465	528	528	528	528	528	528	528
Mixed Use	0.7269	764	764	764	764	764	764	764
Total		11,623	11,623	11,623	11,623	11,623	11,623	11,623

Notes:

1 Parcels and ESRUs shown are from Table C-13 and do not include those projected to be exempt from runoff related fees.

Table C-15
 Projected \$/Acre Fees and Average Monthly Fee
 Alt 1 All Projects / With Grants

Item		Projected							
		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Revenue Requirements		\$804,847	\$819,556	\$831,331	\$846,363	\$866,122	\$876,786	\$887,024	\$897,707
Acres		4,027	4,027	4,027	4,027	4,027	4,027	4,027	4,027
Fee, \$/Acre									
Annual		\$200	\$204	\$206	\$210	\$215	\$218	\$220	\$223
Monthly		\$16.66	\$16.96	\$17.20	\$17.52	\$17.92	\$18.15	\$18.36	\$18.58
Average Monthly Fee	<i>Acres</i>								
Single Family	<i>0.219</i>	\$3.65	\$3.72	\$3.77	\$3.84	\$3.93	\$3.98	\$4.02	\$4.07
Multiple Family	<i>0.337</i>	\$5.61	\$5.71	\$5.80	\$5.90	\$6.04	\$6.11	\$6.18	\$6.26
Commercial	<i>0.554</i>	\$9.22	\$9.39	\$9.52	\$9.70	\$9.92	\$10.05	\$10.16	\$10.29
Public / Institutional	<i>16.094</i>	\$268.08	\$272.98	\$276.90	\$281.91	\$288.49	\$292.04	\$295.45	\$299.01
Park / Open Space	<i>1.973</i>	\$32.87	\$33.47	\$33.95	\$34.56	\$35.37	\$35.81	\$36.23	\$36.66
Habitat Management	<i>467.500</i>	\$7,787.00	\$7,929.31	\$8,043.24	\$8,188.67	\$8,379.85	\$8,483.02	\$8,582.07	\$8,685.43
Recreational Commercial	<i>7.492</i>	\$124.80	\$127.08	\$128.90	\$131.23	\$134.30	\$135.95	\$137.54	\$139.20
Mixed Use	<i>0.648</i>	\$10.80	\$11.00	\$11.16	\$11.36	\$11.62	\$11.77	\$11.90	\$12.05

Table C-16

Projected Revenue per Acre by Customer Category

Alt 1 All Projects / With Grants

Item	Projected							
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Fee per Acre								
Single Family	\$16.66	\$16.96	\$17.20	\$17.52	\$17.92	\$18.15	\$18.36	\$18.58
Multiple Family	\$16.66	\$16.96	\$17.20	\$17.52	\$17.92	\$18.15	\$18.36	\$18.58
Commercial	\$16.66	\$16.96	\$17.20	\$17.52	\$17.92	\$18.15	\$18.36	\$18.58
Public / Institutional	\$16.66	\$16.96	\$17.20	\$17.52	\$17.92	\$18.15	\$18.36	\$18.58
Park / Open Space	\$16.66	\$16.96	\$17.20	\$17.52	\$17.92	\$18.15	\$18.36	\$18.58
Habitat Management	\$16.66	\$16.96	\$17.20	\$17.52	\$17.92	\$18.15	\$18.36	\$18.58
Recreational Commercial	\$16.66	\$16.96	\$17.20	\$17.52	\$17.92	\$18.15	\$18.36	\$18.58
Mixed Use	\$16.66	\$16.96	\$17.20	\$17.52	\$17.92	\$18.15	\$18.36	\$18.58
Acres								
Single Family	1,280	1,280	1,280	1,280	1,280	1,280	1,280	1,280
Multiple Family	188	188	188	188	188	188	188	188
Commercial	200	200	200	200	200	200	200	200
Public / Institutional	647	647	647	647	647	647	647	647
Park / Open Space	148	148	148	148	148	148	148	148
Habitat Management	935	935	935	935	935	935	935	935
Recreational Commercial	487	487	487	487	487	487	487	487
Mixed Use	142	142	142	142	142	142	142	142
Total	4,027	4,027	4,027	4,027	4,027	4,027	4,027	4,027
Revenue								
Single Family	\$255,861	\$260,537	\$264,280	\$269,058	\$275,340	\$278,730	\$281,985	\$285,381
Multiple Family	\$37,597	\$38,285	\$38,835	\$39,537	\$40,460	\$40,958	\$41,436	\$41,935
Commercial	\$39,936	\$40,666	\$41,250	\$41,996	\$42,977	\$43,506	\$44,014	\$44,544
Public / Institutional	\$129,258	\$131,620	\$133,511	\$135,925	\$139,099	\$140,811	\$142,455	\$144,171
Military								
Park / Open Space	\$29,582	\$30,123	\$30,556	\$31,108	\$31,834	\$32,226	\$32,603	\$32,995
Habitat Management	\$186,888	\$190,303	\$193,038	\$196,528	\$201,116	\$203,592	\$205,970	\$208,450
Recreational Commercial	\$97,342	\$99,121	\$100,545	\$102,363	\$104,753	\$106,042	\$107,280	\$108,573
Mixed Use	\$28,383	\$28,902	\$29,317	\$29,847	\$30,544	\$30,920	\$31,281	\$31,658
Total	\$804,847	\$819,556	\$831,331	\$846,363	\$866,122	\$876,786	\$887,024	\$897,707

Table C-17
 Projected \$/ESFRU Fees and Average Monthly Fee
 Alt 1 All Projects / With Grants

Item	Projected								
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
Revenue Requirements	\$3,543,936	\$3,587,427	\$3,609,750	\$3,652,071	\$3,724,141	\$3,733,861	\$3,738,910	\$3,745,032	
ESFRU	11,623	11,623	11,623	11,623	11,623	11,623	11,623	11,623	
Fee, \$/ESFRU									
Annual	\$305	\$309	\$311	\$314	\$320	\$321	\$322	\$322	
Monthly	\$25.41	\$25.72	\$25.88	\$26.18	\$26.70	\$26.77	\$26.81	\$26.85	
Average Monthly Fee									
	<i>ESFRU Multiplier</i>								
Single Family	<i>1.0000</i>	\$25.41	\$25.72	\$25.88	\$26.18	\$26.70	\$26.77	\$26.81	\$26.85
Multiple Family	<i>1.9001</i>	\$48.28	\$48.87	\$49.17	\$49.75	\$50.73	\$50.87	\$50.93	\$51.02
Commercial	<i>3.4325</i>	\$87.21	\$88.28	\$88.83	\$89.87	\$91.65	\$91.89	\$92.01	\$92.16
Public / Institutional	<i>51.0814</i>	\$1,297.89	\$1,313.82	\$1,322.00	\$1,337.50	\$1,363.89	\$1,367.45	\$1,369.30	\$1,371.54
Park / Open Space	<i>1.8220</i>	\$46.29	\$46.86	\$47.15	\$47.71	\$48.65	\$48.77	\$48.84	\$48.92
Habitat Management	<i>0.0000</i>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Recreational Commercial	<i>8.1205</i>	\$206.33	\$208.86	\$210.16	\$212.62	\$216.82	\$217.39	\$217.68	\$218.04
Mixed Use	<i>3.4870</i>	\$88.60	\$89.69	\$90.24	\$91.30	\$93.10	\$93.35	\$93.47	\$93.63

Table C-18

Projected Revenue for ESFRU by Customer Category

Alt 1 All Projects / With Grants

Item	Projected							
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Fee per ESFRU								
Single Family	\$25.41	\$25.72	\$25.88	\$26.18	\$26.70	\$26.77	\$26.81	\$26.85
Multiple Family	\$48.28	\$48.87	\$49.17	\$49.75	\$50.73	\$50.87	\$50.93	\$51.02
Commercial	\$87.21	\$88.28	\$88.83	\$89.87	\$91.65	\$91.89	\$92.01	\$92.16
Public / Institutional	\$1,297.89	\$1,313.82	\$1,322.00	\$1,337.50	\$1,363.89	\$1,367.45	\$1,369.30	\$1,371.54
Park / Open Space	\$46.29	\$46.86	\$47.15	\$47.71	\$48.65	\$48.77	\$48.84	\$48.92
Habitat Management	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Recreational Commercial	\$206.33	\$208.86	\$210.16	\$212.62	\$216.82	\$217.39	\$217.68	\$218.04
Mixed Use	\$88.60	\$89.69	\$90.24	\$91.30	\$93.10	\$93.35	\$93.47	\$93.63
Parcels								
Single Family	5,843	5,843	5,843	5,843	5,843	5,843	5,843	5,843
Multiple Family	558	558	558	558	558	558	558	558
Commercial	361	361	361	361	361	361	361	361
Public / Institutional	40	40	40	40	40	40	40	40
Park / Open Space	75	75	75	75	75	75	75	75
Habitat Management	2	2	2	2	2	2	2	2
Recreational Commercial	65	65	65	65	65	65	65	65
Mixed Use	219	219	219	219	219	219	219	219
Total	7,163	7,163	7,163	7,163	7,163	7,163	7,163	7,163
Revenue								
Single Family	\$1,781,525	\$1,803,388	\$1,814,610	\$1,835,884	\$1,872,114	\$1,876,999	\$1,879,538	\$1,882,615
Multiple Family	\$323,481	\$327,451	\$329,488	\$333,351	\$339,929	\$340,817	\$341,278	\$341,836
Commercial	\$377,702	\$382,337	\$384,717	\$389,227	\$396,908	\$397,944	\$398,482	\$399,134
Public / Institutional	\$625,793	\$633,472	\$637,414	\$644,887	\$657,614	\$659,330	\$660,222	\$661,302
Park / Open Space	\$41,664	\$42,175	\$42,438	\$42,935	\$43,783	\$43,897	\$43,956	\$44,028
Habitat Management	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Recreational Commercial	\$160,936	\$162,911	\$163,924	\$165,846	\$169,119	\$169,560	\$169,790	\$170,068
Mixed Use	\$232,835	\$235,693	\$237,159	\$239,940	\$244,675	\$245,313	\$245,645	\$246,047
Total	\$3,543,936	\$3,587,427	\$3,609,750	\$3,652,071	\$3,724,141	\$3,733,861	\$3,738,910	\$3,745,032

Table C-19

Projected Average Monthly Fees by Customer Category

Alt 1 All Projects / With Grants

Item	Projected							
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Average Fee per Acre								
Single Family	\$3.65	\$3.72	\$3.77	\$3.84	\$3.93	\$3.98	\$4.02	\$4.07
Multiple Family	\$5.61	\$5.71	\$5.80	\$5.90	\$6.04	\$6.11	\$6.18	\$6.26
Commercial	\$9.22	\$9.39	\$9.52	\$9.70	\$9.92	\$10.05	\$10.16	\$10.29
Public / Institutional	\$471.67	\$480.29	\$487.19	\$496.00	\$507.58	\$513.83	\$519.83	\$526.09
Park / Open Space	\$32.87	\$33.47	\$33.95	\$34.56	\$35.37	\$35.81	\$36.23	\$36.66
Habitat Management	\$7,787.00	\$7,929.31	\$8,043.24	\$8,188.67	\$8,379.85	\$8,483.02	\$8,582.07	\$8,685.43
Recreational Commercial	\$124.80	\$127.08	\$128.90	\$131.23	\$134.30	\$135.95	\$137.54	\$139.20
Mixed Use	\$10.80	\$11.00	\$11.16	\$11.36	\$11.62	\$11.77	\$11.90	\$12.05
Average Fee per ESRU								
Single Family	\$25.41	\$25.72	\$25.88	\$26.18	\$26.70	\$26.77	\$26.81	\$26.85
Multiple Family	\$48.28	\$48.87	\$49.17	\$49.75	\$50.73	\$50.87	\$50.93	\$51.02
Commercial	\$87.21	\$88.28	\$88.83	\$89.87	\$91.65	\$91.89	\$92.01	\$92.16
Public / Institutional	\$1,297.89	\$1,313.82	\$1,322.00	\$1,337.50	\$1,363.89	\$1,367.45	\$1,369.30	\$1,371.54
Park / Open Space	\$46.29	\$46.86	\$47.15	\$47.71	\$48.65	\$48.77	\$48.84	\$48.92
Habitat Management	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Recreational Commercial	\$206.33	\$208.86	\$210.16	\$212.62	\$216.82	\$217.39	\$217.68	\$218.04
Mixed Use	\$88.60	\$89.69	\$90.24	\$91.30	\$93.10	\$93.35	\$93.47	\$93.63
Average Total Fee								
Single Family	\$29.06	\$29.44	\$29.65	\$30.02	\$30.63	\$30.75	\$30.83	\$30.92
Multiple Family	\$53.89	\$54.58	\$54.97	\$55.65	\$56.77	\$56.98	\$57.12	\$57.28
Commercial	\$96.43	\$97.67	\$98.36	\$99.57	\$101.57	\$101.93	\$102.17	\$102.45
Public / Institutional	\$1,769.56	\$1,794.11	\$1,809.19	\$1,833.50	\$1,871.47	\$1,881.28	\$1,889.13	\$1,897.63
Park / Open Space	\$79.16	\$80.33	\$81.10	\$82.27	\$84.02	\$84.58	\$85.07	\$85.58
Habitat Management	\$7,787.00	\$7,929.31	\$8,043.24	\$8,188.67	\$8,379.85	\$8,483.02	\$8,582.07	\$8,685.43
Recreational Commercial	\$331.12	\$335.94	\$339.06	\$343.86	\$351.12	\$353.34	\$355.22	\$357.23
Mixed Use	\$99.40	\$100.68	\$101.40	\$102.66	\$104.73	\$105.11	\$105.38	\$105.67

Table C-20
 Projected Revenue by Customer Category
 Alt 1 All Projects / With Grants

Item	Projected							
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Fee per Acre								
Single Family	\$255,861	\$260,537	\$264,280	\$269,058	\$275,340	\$278,730	\$281,985	\$285,381
Multiple Family	\$37,597	\$38,285	\$38,835	\$39,537	\$40,460	\$40,958	\$41,436	\$41,935
Commercial	\$39,936	\$40,666	\$41,250	\$41,996	\$42,977	\$43,506	\$44,014	\$44,544
Public / Institutional	\$129,258	\$131,620	\$133,511	\$135,925	\$139,099	\$140,811	\$142,455	\$144,171
Park / Open Space	\$29,582	\$30,123	\$30,556	\$31,108	\$31,834	\$32,226	\$32,603	\$32,995
Habitat Management	\$186,888	\$190,303	\$193,038	\$196,528	\$201,116	\$203,592	\$205,970	\$208,450
Recreational Commercial	\$97,342	\$99,121	\$100,545	\$102,363	\$104,753	\$106,042	\$107,280	\$108,573
Mixed Use	\$28,383	\$28,902	\$29,317	\$29,847	\$30,544	\$30,920	\$31,281	\$31,658
	\$804,847	\$819,556	\$831,331	\$846,363	\$866,122	\$876,786	\$887,024	\$897,707
Fee per ESFRU								
Single Family	\$1,781,525	\$1,803,388	\$1,814,610	\$1,835,884	\$1,872,114	\$1,876,999	\$1,879,538	\$1,882,615
Multiple Family	\$323,481	\$327,451	\$329,488	\$333,351	\$339,929	\$340,817	\$341,278	\$341,836
Commercial	\$377,702	\$382,337	\$384,717	\$389,227	\$396,908	\$397,944	\$398,482	\$399,134
Public / Institutional	\$625,793	\$633,472	\$637,414	\$644,887	\$657,614	\$659,330	\$660,222	\$661,302
Park / Open Space	\$41,664	\$42,175	\$42,438	\$42,935	\$43,783	\$43,897	\$43,956	\$44,028
Habitat Management	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Recreational Commercial	\$160,936	\$162,911	\$163,924	\$165,846	\$169,119	\$169,560	\$169,790	\$170,068
Mixed Use	\$232,835	\$235,693	\$237,159	\$239,940	\$244,675	\$245,313	\$245,645	\$246,047
	\$3,543,936	\$3,587,427	\$3,609,750	\$3,652,071	\$3,724,141	\$3,733,861	\$3,738,910	\$3,745,032
Total Fee (Average)								
Single Family	\$2,037,386	\$2,063,924	\$2,078,890	\$2,104,943	\$2,147,454	\$2,155,729	\$2,161,522	\$2,167,996
Multiple Family	\$361,078	\$365,735	\$368,323	\$372,888	\$380,389	\$381,775	\$382,714	\$383,772
Commercial	\$417,638	\$423,003	\$425,967	\$431,223	\$439,885	\$441,450	\$442,496	\$443,678
Public / Institutional	\$755,051	\$765,093	\$770,926	\$780,813	\$796,712	\$800,141	\$802,677	\$805,474
Park / Open Space	\$71,246	\$72,298	\$72,994	\$74,044	\$75,617	\$76,123	\$76,559	\$77,024
Habitat Management	\$186,888	\$190,303	\$193,038	\$196,528	\$201,116	\$203,592	\$205,970	\$208,450
Recreational Commercial	\$258,277	\$262,031	\$264,469	\$268,209	\$273,872	\$275,603	\$277,070	\$278,640
Mixed Use	\$261,218	\$264,594	\$266,476	\$269,787	\$275,219	\$276,233	\$276,926	\$277,705
Total	\$4,348,783	\$4,406,983	\$4,441,082	\$4,498,434	\$4,590,264	\$4,610,646	\$4,625,934	\$4,642,738

Figure C-1

Alt 1 All Projects / With Grants

Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Single Family, \$/Acre		\$3.65	\$3.72	\$3.77	\$3.84	\$3.93	\$3.98	\$4.02	\$4.07
Single Family, \$/ESFRU		\$25.41	\$25.72	\$25.88	\$26.18	\$26.70	\$26.77	\$26.81	\$26.85
Single Family, Total		\$29.06	\$29.44	\$29.65	\$30.02	\$30.63	\$30.75	\$30.83	\$30.92

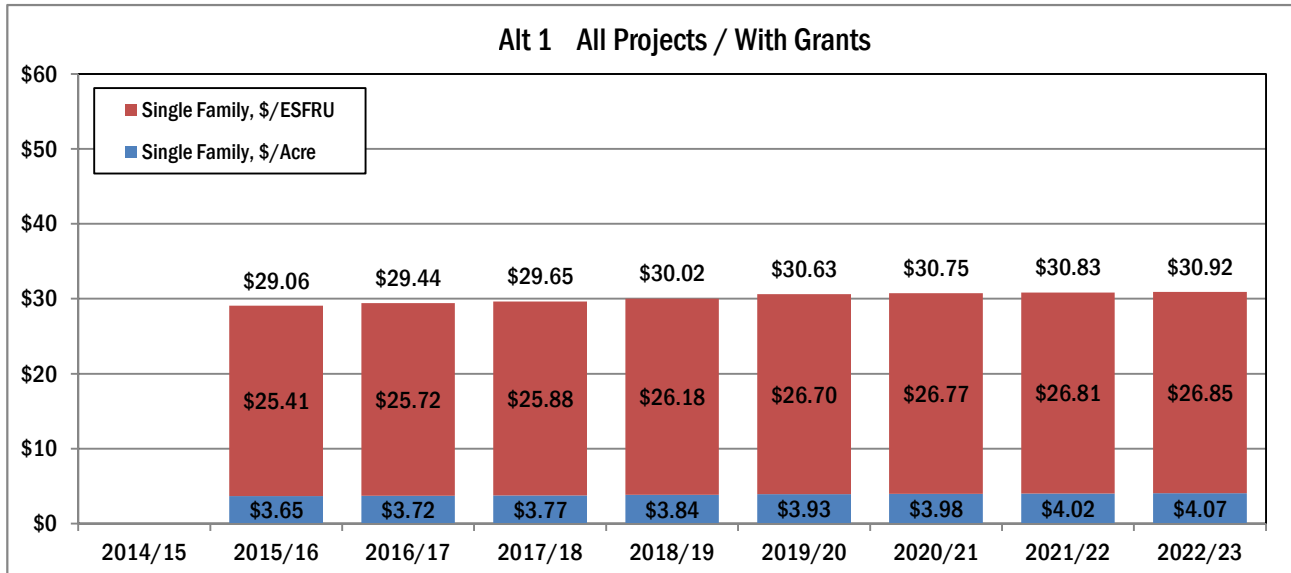
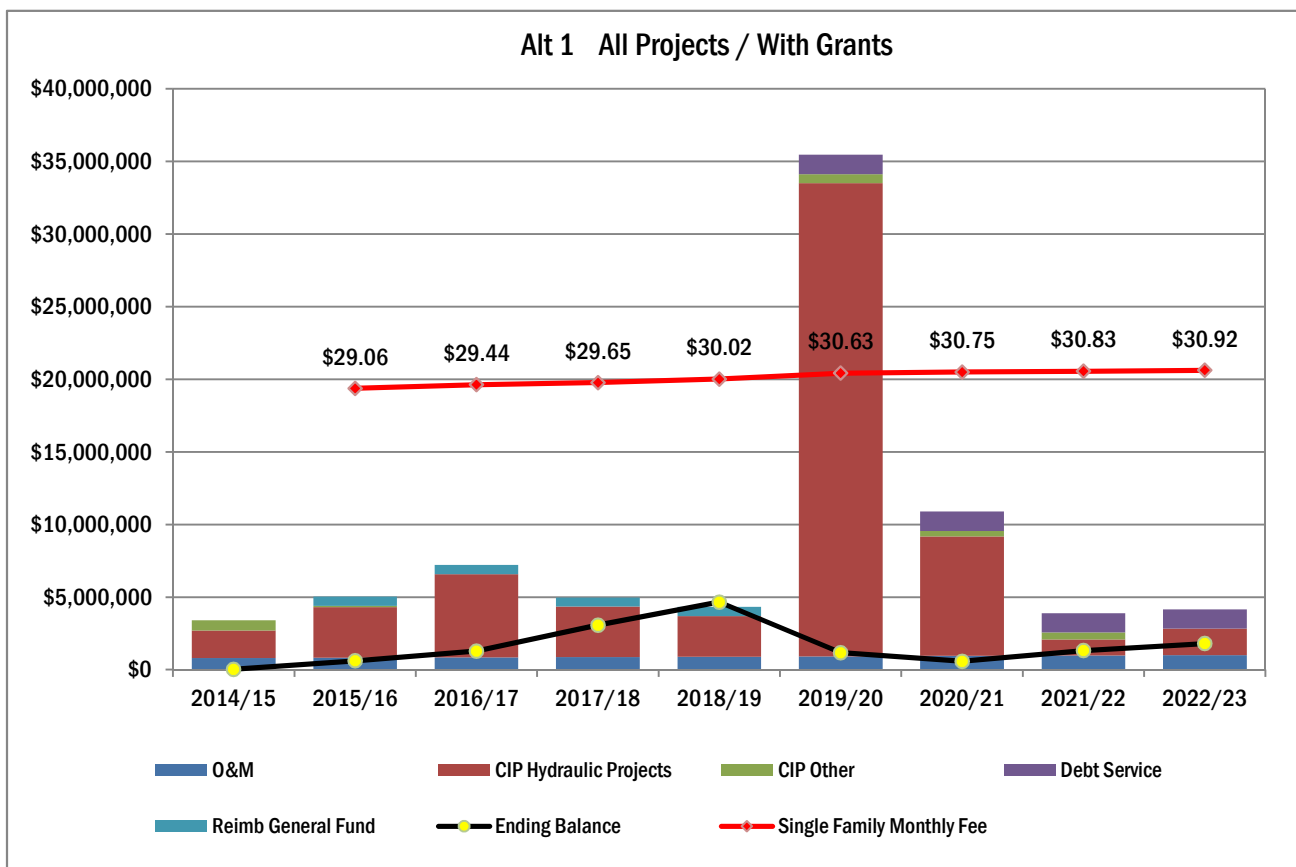


Figure C-2

Alt 1 All Projects / With Grants

Expenditures, Fund Balances and Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
O&M	\$796,379	\$820,270	\$844,878	\$870,225	\$896,332	\$923,222	\$950,918	\$979,446	\$1,008,829
CIP Hydraulic Projects	\$1,894,000	\$3,476,250	\$5,738,408	\$3,472,686	\$2,798,015	\$32,572,124	\$8,215,080	\$1,092,128	\$1,821,615
CIP Other	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0
Debt Service	\$0	\$0	\$0	\$0	\$0	\$1,332,294	\$1,332,294	\$1,332,294	\$1,332,294
Reimb General Fund	\$0	\$625,000	\$625,000	\$625,000	\$625,000	\$0	\$0	\$0	\$0
Ending Balance	\$31,371	\$606,449	\$1,283,044	\$3,062,768	\$4,648,632	\$1,167,911	\$582,452	\$1,316,828	\$1,801,576
Single Family Monthly Fee		\$29.06	\$29.44	\$29.65	\$30.02	\$30.63	\$30.75	\$30.83	\$30.92



Appendix D: Figure C-2. Expenditures, Funds, Balances and Single Family Monthly Fees Stormwater Fee Alternatives

Alternative 2a. CIP- No Projects/No Debt

Table D-2a.15. Projected Average Fees by Customer Category-Alternative 2a

Table D-2a.17. Projected Revenue by Customer Category-Alternative 2a

Figure D-2a.1. Single Family Monthly Fees-Alternative 2a

Figure D-2a.2. Expenditures, Funds, Balances and Single Family Monthly Fees-Alternative 2a

Alternative 2b. No Projects/Gradual Fee/No Debt

Table D-2b.15. Projected Average Fees by Customer Category-Alternative 2b

Table D-2b.17. Projected Revenue by Customer Category-Alternative 2b

Figure D-2b.1. Single Family Monthly Fees-Alternative 2b

Figure D-2b.2. Expenditures, Funds, Balances and Single Family Monthly Fees-Alternative 2b

Alternative 3. CIP- All Projects/No Grants

Table D-3.15. Projected Average Fees by Customer Category-Alternative 3

Table D-3.17. Projected Revenue by Customer Category-Alternative 3

Figure D-3.1. Single Family Monthly Fees-Alternative 3

Figure D-3.2. Expenditures, Funds, Balances and Single Family Monthly Fees-Alternative 3

Alternative 4. CIP- All Projects except P5B/No Grants

Table D-4.15. Projected Average Fees by Customer Category-Alternative 4

Table D-4.17. Projected Revenue by Customer Category-Alternative 4

Figure D-4.1. Single Family Monthly Fees-Alternative 4

Figure D-4.2. Expenditures, Funds, Balances and Single Family Monthly Fees-Alternative 4

Alternative 5. CIP- All Projects except P5B/With Grants

Table D-5.15. Projected Average Fees by Customer Category-Alternative 5

Table D-5.17. Projected Revenue by Customer Category-Alternative 5

Figure D-5.1. Single Family Monthly Fees-Alternative 5

Figure D-5.2. Expenditures, Funds, Balances and Single Family Monthly Fees-Alternative 5

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Table D-2a.15

Projected \$/Acre Fees and Average Monthly Fee
 Alt 2a No Hydraulic Projects

Item		Projected							
		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Revenue Requirements		\$344,089	\$354,412	\$365,044	\$375,996	\$387,275	\$398,894	\$410,861	\$423,186
Acres		4,027	4,027	4,027	4,027	4,027	4,027	4,027	4,027
Fee, \$/Acre									
Annual		\$85	\$88	\$91	\$93	\$96	\$99	\$102	\$105
Monthly		\$7.12	\$7.33	\$7.55	\$7.78	\$8.01	\$8.26	\$8.50	\$8.76
Average Monthly Fee	<i>Acres</i>								
Single Family	<i>0.219</i>	\$1.56	\$1.61	\$1.66	\$1.70	\$1.76	\$1.81	\$1.86	\$1.92
Multiple Family	<i>0.337</i>	\$2.40	\$2.47	\$2.55	\$2.62	\$2.70	\$2.78	\$2.86	\$2.95
Commercial	<i>0.554</i>	\$3.94	\$4.06	\$4.18	\$4.31	\$4.44	\$4.57	\$4.71	\$4.85
Public / Institutional	<i>16.094</i>	\$114.61	\$118.05	\$121.59	\$125.24	\$128.99	\$132.86	\$136.85	\$140.96
Park / Open Space	<i>1.973</i>	\$14.05	\$14.47	\$14.91	\$15.36	\$15.82	\$16.29	\$16.78	\$17.28
Habitat Management	<i>467.500</i>	\$3,329.11	\$3,428.98	\$3,531.85	\$3,637.81	\$3,746.94	\$3,859.35	\$3,975.13	\$4,094.38
Recreational Commercial	<i>7.492</i>	\$53.35	\$54.95	\$56.60	\$58.30	\$60.05	\$61.85	\$63.71	\$65.62
Mixed Use	<i>0.648</i>	\$4.62	\$4.76	\$4.90	\$5.05	\$5.20	\$5.35	\$5.51	\$5.68

Table D-2a.17

Projected \$/ESFRU Fees and Average Monthly Fee
 Alt 2a No Hydraulic Projects

Item	Projected								
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
Revenue Requirements	\$881,181	\$890,467	\$1,005,181	\$1,120,336	\$1,147,750	\$1,162,480	\$1,190,651	\$1,213,643	
ESFRU	11,623	11,623	11,623	11,623	11,623	11,623	11,623	11,623	
Fee, \$/ESFRU									
Annual	\$76	\$77	\$86	\$96	\$99	\$100	\$102	\$104	
Monthly	\$6.32	\$6.38	\$7.21	\$8.03	\$8.23	\$8.33	\$8.54	\$8.70	
Average Monthly Fee									
	<i>ESFRU Multiplier</i>								
Single Family	<i>1.0000</i>	\$6.32	\$6.38	\$7.21	\$8.03	\$8.23	\$8.33	\$8.54	\$8.70
Multiple Family	<i>1.9001</i>	\$12.00	\$12.13	\$13.69	\$15.26	\$15.64	\$15.84	\$16.22	\$16.53
Commercial	<i>3.4325</i>	\$21.69	\$21.91	\$24.74	\$27.57	\$28.25	\$28.61	\$29.30	\$29.87
Public / Institutional	<i>51.0814</i>	\$322.71	\$326.12	\$368.13	\$410.30	\$420.34	\$425.73	\$436.05	\$444.47
Park / Open Space	<i>1.8220</i>	\$11.51	\$11.63	\$13.13	\$14.63	\$14.99	\$15.19	\$15.55	\$15.85
Habitat Management	<i>0.0000</i>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Recreational Commercial	<i>8.1205</i>	\$51.30	\$51.84	\$58.52	\$65.23	\$66.82	\$67.68	\$69.32	\$70.66
Mixed Use	<i>3.4870</i>	\$22.03	\$22.26	\$25.13	\$28.01	\$28.69	\$29.06	\$29.77	\$30.34

Figure D-2a.1
 Alt 2a No Hydraulic Projects
 Single Family Monthly Fees

	<u>2014/15</u>	<u>2015/16</u>	<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>	<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>
Single Family, \$/Acre		\$1.56	\$1.61	\$1.66	\$1.70	\$1.76	\$1.81	\$1.86	\$1.92
Single Family, \$/ESFRU		\$6.32	\$6.38	\$7.21	\$8.03	\$8.23	\$8.33	\$8.54	\$8.70
Single Family, Total		\$7.88	\$7.99	\$8.86	\$9.74	\$9.98	\$10.14	\$10.40	\$10.62

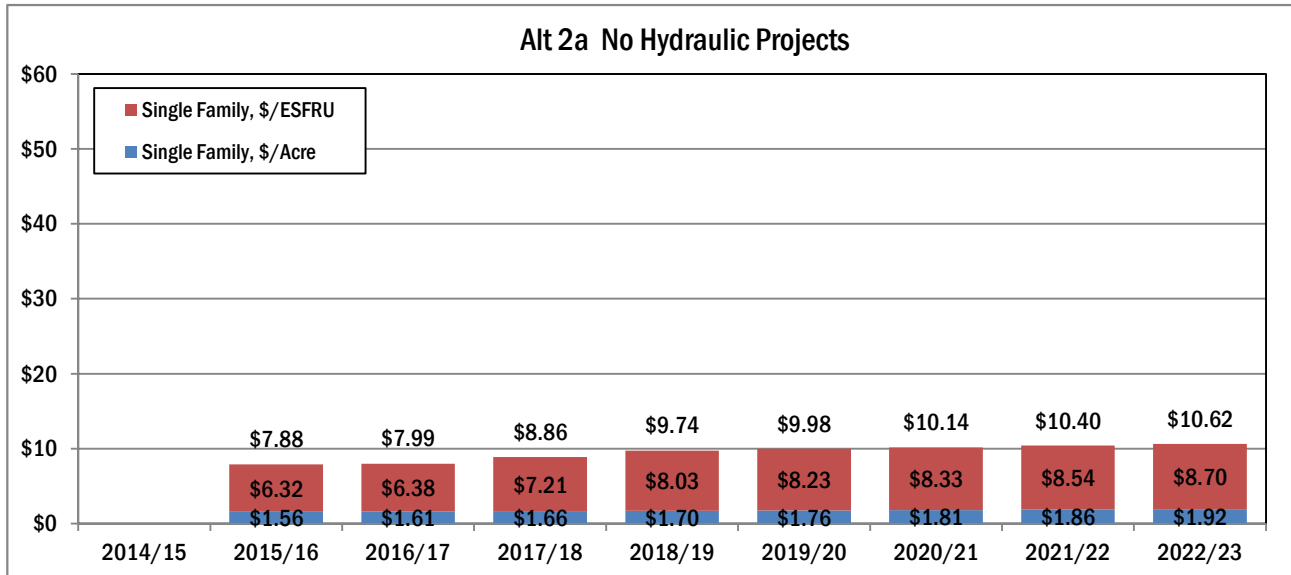


Figure D-2a.2

Alt 2a No Hydraulic Projects

Expenditures, Fund Balances and Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
O&M	\$796,379	\$820,270	\$844,878	\$870,225	\$896,332	\$923,222	\$950,918	\$979,446	\$1,008,829
CIP Hydraulic Projects	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CIP Other	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0
Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reimb General Fund	\$0	\$425,000	\$425,000	\$425,000	\$425,000	\$0	\$0	\$0	\$0
Ending Balance	\$197,621	\$73,115	\$48,792	\$124,097	\$299,529	\$280,588	\$502,038	\$633,995	\$1,264,835
Single Family Monthly Fee		\$7.88	\$7.99	\$8.86	\$9.74	\$9.98	\$10.14	\$10.40	\$10.62

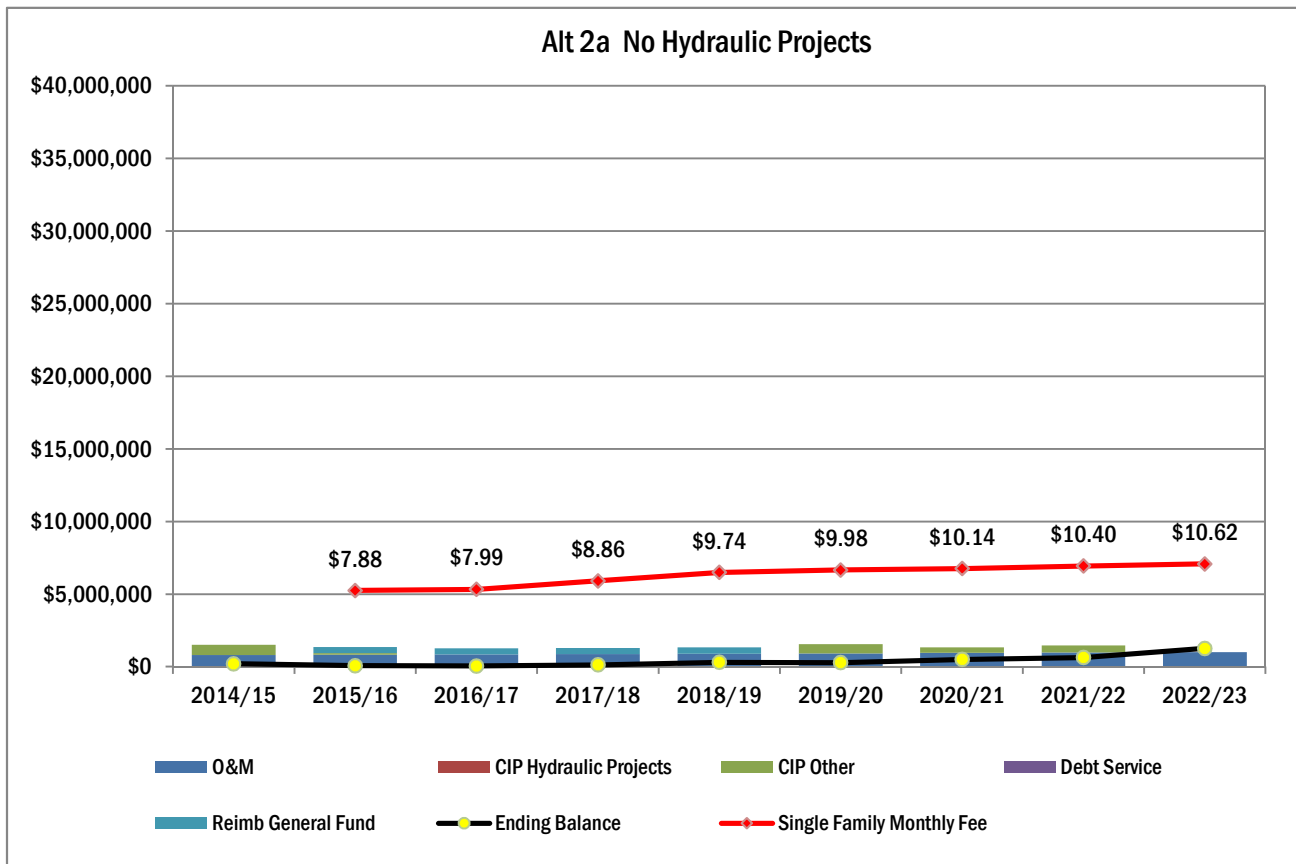


Table D-2b.15

Projected \$/Acre Fees and Average Monthly Fee
 Alt 2b No Hydraulic Projects / Mod Fee Incr

Item		Projected							
		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Revenue Requirements		\$344,089	\$354,412	\$365,044	\$375,996	\$387,275	\$398,894	\$410,861	\$423,186
Acres		4,027	4,027	4,027	4,027	4,027	4,027	4,027	4,027
Fee, \$/Acre									
Annual		\$85	\$88	\$91	\$93	\$96	\$99	\$102	\$105
Monthly		\$7.12	\$7.33	\$7.55	\$7.78	\$8.01	\$8.26	\$8.50	\$8.76
Average Monthly Fee	<i>Acres</i>								
Single Family	<i>0.219</i>	\$1.56	\$1.61	\$1.66	\$1.70	\$1.76	\$1.81	\$1.86	\$1.92
Multiple Family	<i>0.337</i>	\$2.40	\$2.47	\$2.55	\$2.62	\$2.70	\$2.78	\$2.86	\$2.95
Commercial	<i>0.554</i>	\$3.94	\$4.06	\$4.18	\$4.31	\$4.44	\$4.57	\$4.71	\$4.85
Public / Institutional	<i>16.094</i>	\$114.61	\$118.05	\$121.59	\$125.24	\$128.99	\$132.86	\$136.85	\$140.96
Park / Open Space	<i>1.973</i>	\$14.05	\$14.47	\$14.91	\$15.36	\$15.82	\$16.29	\$16.78	\$17.28
Habitat Management	<i>467.500</i>	\$3,329.11	\$3,428.98	\$3,531.85	\$3,637.81	\$3,746.94	\$3,859.35	\$3,975.13	\$4,094.38
Recreational Commercial	<i>7.492</i>	\$53.35	\$54.95	\$56.60	\$58.30	\$60.05	\$61.85	\$63.71	\$65.62
Mixed Use	<i>0.648</i>	\$4.62	\$4.76	\$4.90	\$5.05	\$5.20	\$5.35	\$5.51	\$5.68

Table D-2b.17

Projected \$/ESFRU Fees and Average Monthly Fee
 Alt 2b No Hydraulic Projects / Mod Fee Incr

Item	Projected								
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
Revenue Requirements	\$881,181	\$942,467	\$1,003,181	\$1,064,336	\$1,124,750	\$1,159,480	\$1,194,651	\$1,239,643	
ESFRU	11,623	11,623	11,623	11,623	11,623	11,623	11,623	11,623	
Fee, \$/ESFRU									
Annual	\$76	\$81	\$86	\$92	\$97	\$100	\$103	\$107	
Monthly	\$6.32	\$6.76	\$7.19	\$7.63	\$8.06	\$8.31	\$8.57	\$8.89	
Average Monthly Fee									
	<i>ESFRU Multiplier</i>								
Single Family	<i>1.0000</i>	\$6.32	\$6.76	\$7.19	\$7.63	\$8.06	\$8.31	\$8.57	\$8.89
Multiple Family	<i>1.9001</i>	\$12.00	\$12.84	\$13.67	\$14.50	\$15.32	\$15.80	\$16.27	\$16.89
Commercial	<i>3.4325</i>	\$21.69	\$23.19	\$24.69	\$26.19	\$27.68	\$28.53	\$29.40	\$30.51
Public / Institutional	<i>51.0814</i>	\$322.71	\$345.16	\$367.39	\$389.79	\$411.92	\$424.64	\$437.52	\$453.99
Park / Open Space	<i>1.8220</i>	\$11.51	\$12.31	\$13.10	\$13.90	\$14.69	\$15.15	\$15.61	\$16.19
Habitat Management	<i>0.0000</i>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Recreational Commercial	<i>8.1205</i>	\$51.30	\$54.87	\$58.41	\$61.97	\$65.48	\$67.50	\$69.55	\$72.17
Mixed Use	<i>3.4870</i>	\$22.03	\$23.56	\$25.08	\$26.61	\$28.12	\$28.99	\$29.87	\$30.99

Figure D-2b.1

Alt 2b No Hydraulic Projects / Mod Fee Incr

Single Family Monthly Fees

	<u>2014/15</u>	<u>2015/16</u>	<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>	<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>
Single Family, \$/Acre		\$1.56	\$1.61	\$1.66	\$1.70	\$1.76	\$1.81	\$1.86	\$1.92
Single Family, \$/ESFRU		\$6.32	\$6.76	\$7.19	\$7.63	\$8.06	\$8.31	\$8.57	\$8.89
Single Family, Total		\$7.88	\$8.36	\$8.85	\$9.34	\$9.82	\$10.12	\$10.43	\$10.81

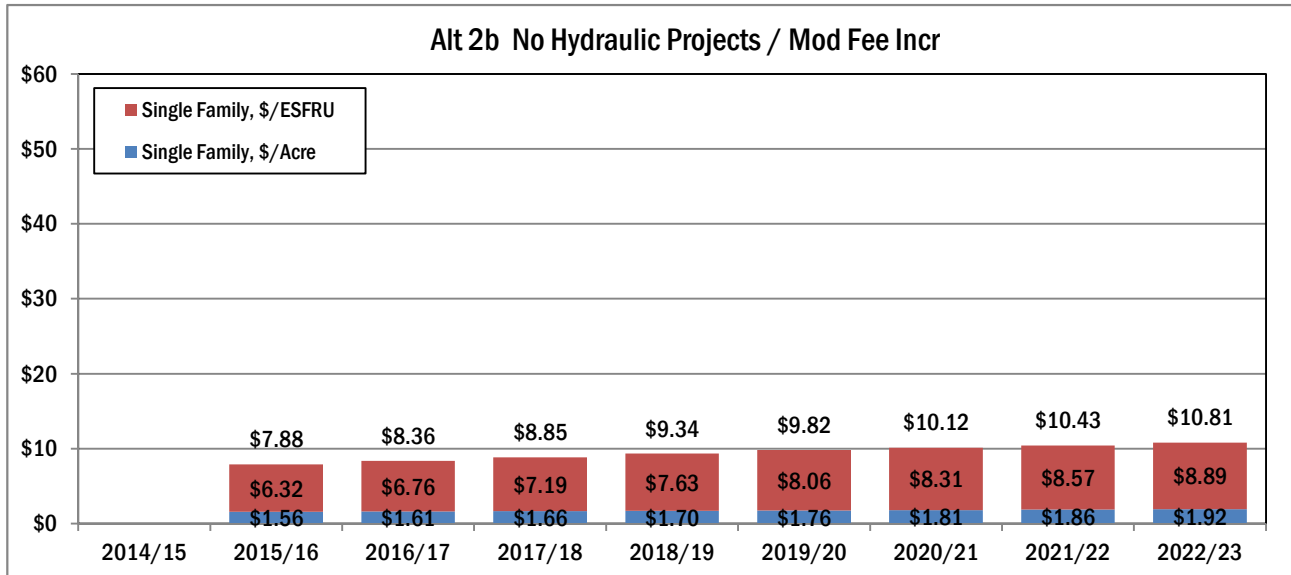


Figure D-2b.2

Alt 2b No Hydraulic Projects / Mod Fee Incr

Expenditures, Fund Balances and Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
O&M	\$796,379	\$820,270	\$844,878	\$870,225	\$896,332	\$923,222	\$950,918	\$979,446	\$1,008,829
CIP Hydraulic Projects	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CIP Other	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0
Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reimb General Fund	\$0	\$425,000	\$425,000	\$425,000	\$425,000	\$0	\$0	\$0	\$0
Ending Balance	\$197,621	\$73,115	\$100,792	\$174,227	\$293,914	\$252,085	\$470,450	\$606,256	\$1,262,948
Single Family Monthly Fee		\$7.88	\$8.36	\$8.85	\$9.34	\$9.82	\$10.12	\$10.43	\$10.81

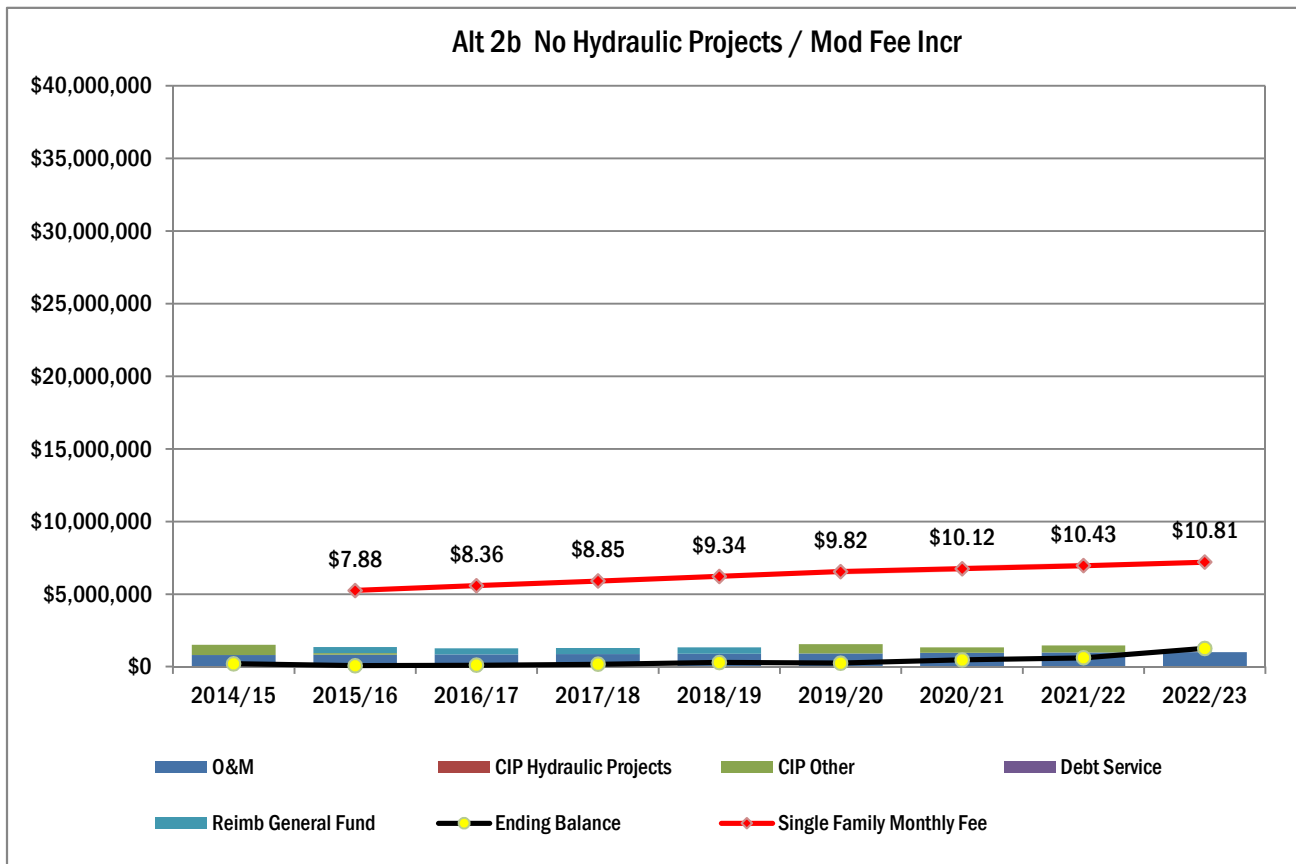


Table D-3.15
 Projected \$/Acre Fees and Average Monthly Fee
 Alt 3 All Projects / No Grants

Item		Projected							
		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Revenue Requirements		\$936,733	\$946,588	\$955,451	\$966,947	\$977,546	\$987,583	\$999,395	\$1,009,414
Acres		4,027	4,027	4,027	4,027	4,027	4,027	4,027	4,027
Fee, \$/Acre									
Annual		\$233	\$235	\$237	\$240	\$243	\$245	\$248	\$251
Monthly		\$19.39	\$19.59	\$19.77	\$20.01	\$20.23	\$20.44	\$20.68	\$20.89
Average Monthly Fee	<i>Acres</i>								
Single Family	<i>0.219</i>	\$4.25	\$4.29	\$4.33	\$4.38	\$4.43	\$4.48	\$4.53	\$4.58
Multiple Family	<i>0.337</i>	\$6.53	\$6.60	\$6.66	\$6.74	\$6.82	\$6.89	\$6.97	\$7.04
Commercial	<i>0.554</i>	\$10.73	\$10.85	\$10.95	\$11.08	\$11.20	\$11.32	\$11.45	\$11.57
Public / Institutional	<i>16.094</i>	\$312.01	\$315.29	\$318.24	\$322.07	\$325.60	\$328.95	\$332.88	\$336.22
Park / Open Space	<i>1.973</i>	\$38.26	\$38.66	\$39.02	\$39.49	\$39.92	\$40.33	\$40.81	\$41.22
Habitat Management	<i>467.500</i>	\$9,063.01	\$9,158.36	\$9,244.11	\$9,355.34	\$9,457.88	\$9,555.00	\$9,669.28	\$9,766.21
Recreational Commercial	<i>7.492</i>	\$145.25	\$146.77	\$148.15	\$149.93	\$151.58	\$153.13	\$154.96	\$156.52
Mixed Use	<i>0.648</i>	\$12.57	\$12.70	\$12.82	\$12.98	\$13.12	\$13.25	\$13.41	\$13.55

Table D-3.17
 Projected \$/ESFRU Fees and Average Monthly Fee
 Alt 3 All Projects / No Grants

Item	Projected								
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
Revenue Requirements	\$5,683,537	\$5,693,711	\$5,692,881	\$5,712,820	\$5,722,446	\$5,724,635	\$5,739,836	\$5,736,622	
ESFRU	11,623	11,623	11,623	11,623	11,623	11,623	11,623	11,623	
Fee, \$/ESFRU									
Annual	\$489	\$490	\$490	\$491	\$492	\$493	\$494	\$494	
Monthly	\$40.75	\$40.82	\$40.82	\$40.96	\$41.03	\$41.04	\$41.15	\$41.13	
Average Monthly Fee									
	<i>ESFRU Multiplier</i>								
Single Family	<i>1.0000</i>	\$40.75	\$40.82	\$40.82	\$40.96	\$41.03	\$41.04	\$41.15	\$41.13
Multiple Family	<i>1.9001</i>	\$77.43	\$77.56	\$77.55	\$77.82	\$77.96	\$77.99	\$78.19	\$78.15
Commercial	<i>3.4325</i>	\$139.87	\$140.12	\$140.10	\$140.59	\$140.82	\$140.88	\$141.25	\$141.17
Public / Institutional	<i>51.0814</i>	\$2,081.48	\$2,085.21	\$2,084.90	\$2,092.20	\$2,095.73	\$2,096.53	\$2,102.10	\$2,100.92
Park / Open Space	<i>1.8220</i>	\$74.24	\$74.38	\$74.36	\$74.62	\$74.75	\$74.78	\$74.98	\$74.94
Habitat Management	<i>0.0000</i>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Recreational Commercial	<i>8.1205</i>	\$330.90	\$331.49	\$331.44	\$332.60	\$333.16	\$333.29	\$334.17	\$333.99
Mixed Use	<i>3.4870</i>	\$142.09	\$142.34	\$142.32	\$142.82	\$143.06	\$143.12	\$143.50	\$143.41

Figure D-3.1
 Alt 3 All Projects / No Grants
 Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Single Family, \$/Acre		\$4.25	\$4.29	\$4.33	\$4.38	\$4.43	\$4.48	\$4.53	\$4.58
Single Family, \$/ESFRU		\$40.75	\$40.82	\$40.82	\$40.96	\$41.03	\$41.04	\$41.15	\$41.13
Single Family, Total		\$45.00	\$45.11	\$45.15	\$45.34	\$45.46	\$45.52	\$45.68	\$45.71

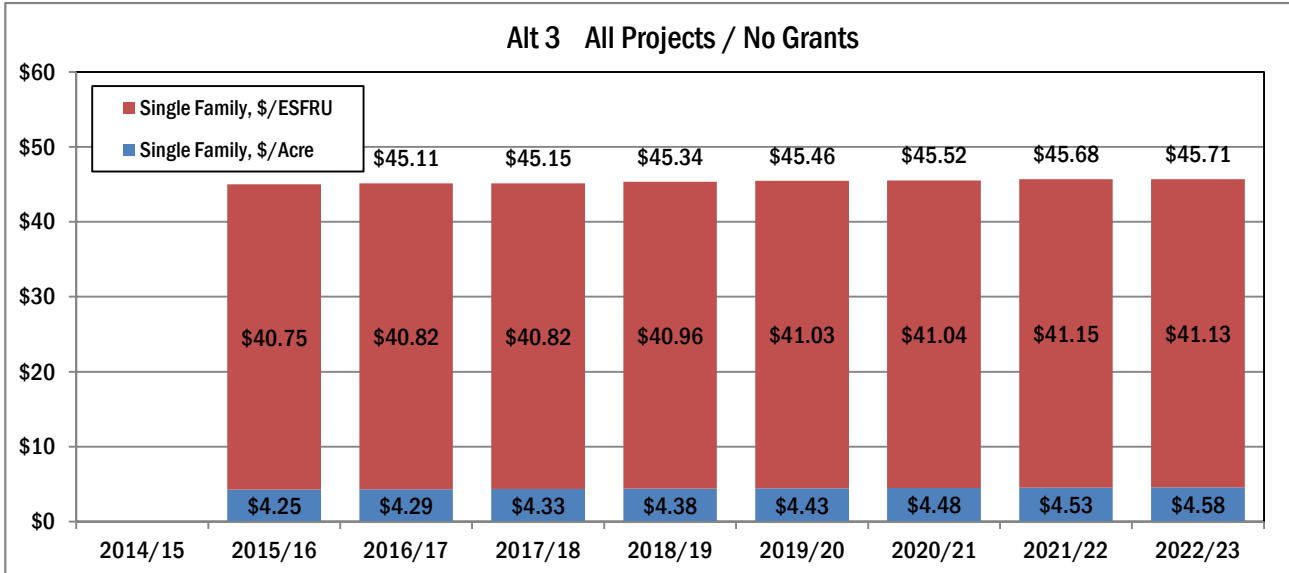


Figure D-3.2

Alt 3 All Projects / No Grants

Expenditures, Fund Balances and Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
O&M	\$796,379	\$820,270	\$844,878	\$870,225	\$896,332	\$923,222	\$950,918	\$979,446	\$1,008,829	
CIP Hydraulic Projects	\$1,894,000	\$3,476,250	\$5,738,408	\$3,472,686	\$2,798,015	\$32,572,124	\$8,215,080	\$1,092,128	\$1,821,615	
CIP Other	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0	
Debt Service	\$0	\$0	\$1,165,420	\$1,165,420	\$1,165,420	\$3,715,591	\$3,715,591	\$3,715,591	\$3,715,591	
Reimb General Fund	\$0	\$325,000	\$325,000	\$325,000	\$325,000	\$0	\$0	\$0	\$0	
Ending Balance	\$503,621	\$5,979,880	\$10,301,089	\$11,156,791	\$12,705,436	\$4,865,091	\$1,189,018	\$1,664,153	\$1,871,286	
Single Family Monthly Fee		\$45.00	\$45.11	\$45.15	\$45.15	\$45.34	\$45.46	\$45.52	\$45.68	\$45.71

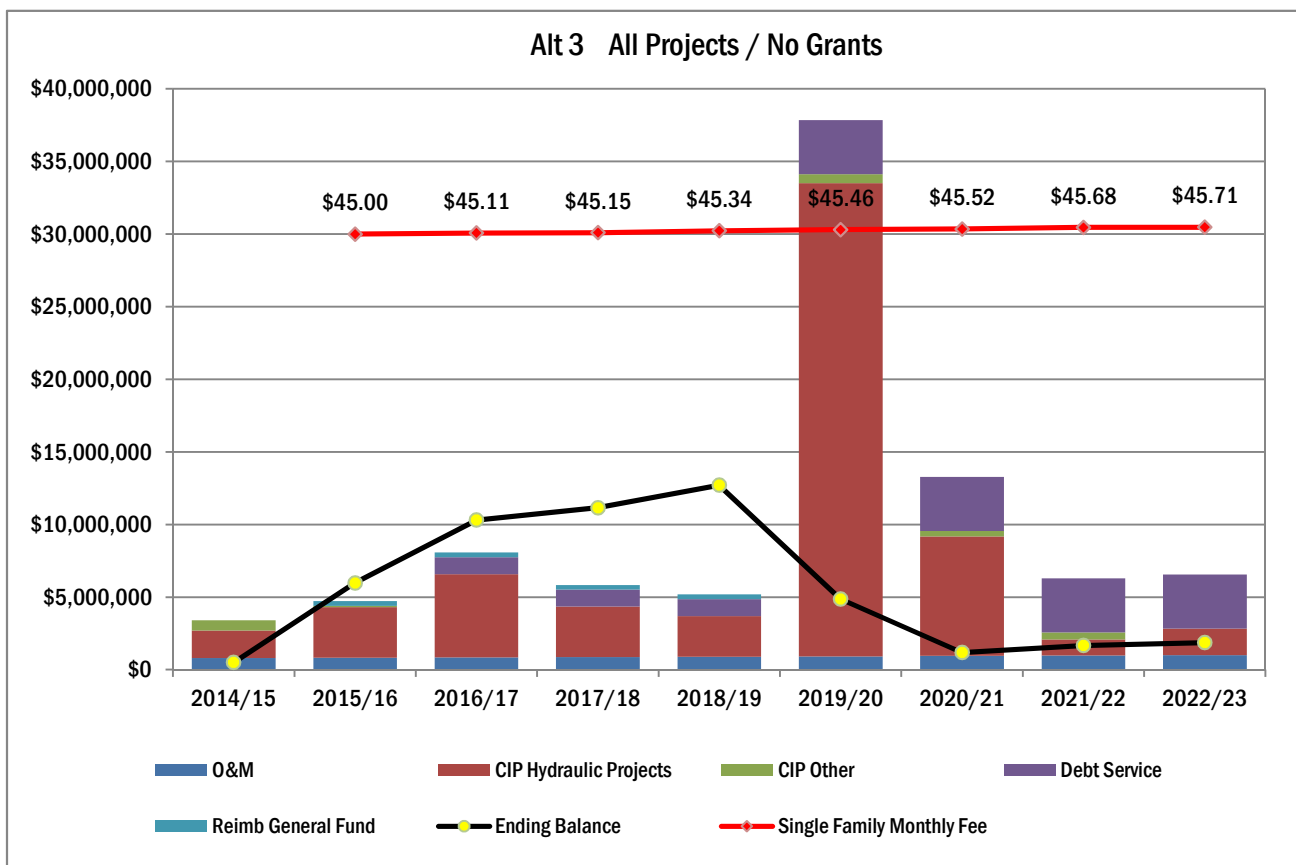


Table D-4.15
 Projected \$/Acre Fees and Average Monthly Fee
 Alt 4 All Projects xP5B / No Grants

Item		Projected							
		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Revenue Requirements		\$734,857	\$751,827	\$763,974	\$772,701	\$785,583	\$798,709	\$816,497	\$830,148
Acres		4,027	4,027	4,027	4,027	4,027	4,027	4,027	4,027
Fee, \$/Acre									
Annual		\$182	\$187	\$190	\$192	\$195	\$198	\$203	\$206
Monthly		\$15.21	\$15.56	\$15.81	\$15.99	\$16.26	\$16.53	\$16.90	\$17.18
Average Monthly Fee	<i>Acres</i>								
Single Family	<i>0.219</i>	\$3.33	\$3.41	\$3.46	\$3.50	\$3.56	\$3.62	\$3.70	\$3.76
Multiple Family	<i>0.337</i>	\$5.12	\$5.24	\$5.33	\$5.39	\$5.48	\$5.57	\$5.69	\$5.79
Commercial	<i>0.554</i>	\$8.42	\$8.61	\$8.75	\$8.85	\$9.00	\$9.15	\$9.35	\$9.51
Public / Institutional	<i>16.094</i>	\$244.77	\$250.42	\$254.47	\$257.37	\$261.66	\$266.04	\$271.96	\$276.51
Park / Open Space	<i>1.973</i>	\$30.01	\$30.70	\$31.20	\$31.56	\$32.08	\$32.62	\$33.34	\$33.90
Habitat Management	<i>467.500</i>	\$7,109.83	\$7,274.03	\$7,391.54	\$7,475.98	\$7,600.62	\$7,727.62	\$7,899.72	\$8,031.79
Recreational Commercial	<i>7.492</i>	\$113.94	\$116.58	\$118.46	\$119.81	\$121.81	\$123.85	\$126.60	\$128.72
Mixed Use	<i>0.648</i>	\$9.86	\$10.09	\$10.25	\$10.37	\$10.54	\$10.72	\$10.96	\$11.14

Table D-4.17
 Projected \$/ESFRU Fees and Average Monthly Fee
 Alt 4 All Projects xP5B / No Grants

Item	Projected								
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
Revenue Requirements	\$2,892,875	\$2,948,275	\$2,972,351	\$2,973,752	\$2,999,272	\$3,024,678	\$3,077,238	\$3,102,489	
ESFRU	11,623	11,623	11,623	11,623	11,623	11,623	11,623	11,623	
Fee, \$/ESFRU									
Annual	\$249	\$254	\$256	\$256	\$258	\$260	\$265	\$267	
Monthly	\$20.74	\$21.14	\$21.31	\$21.32	\$21.50	\$21.69	\$22.06	\$22.24	
Average Monthly Fee									
	<i>ESFRU Multiplier</i>								
Single Family	<i>1.0000</i>	\$20.74	\$21.14	\$21.31	\$21.32	\$21.50	\$21.69	\$22.06	\$22.24
Multiple Family	<i>1.9001</i>	\$39.41	\$40.16	\$40.49	\$40.51	\$40.86	\$41.20	\$41.92	\$42.26
Commercial	<i>3.4325</i>	\$71.19	\$72.55	\$73.15	\$73.18	\$73.81	\$74.43	\$75.73	\$76.35
Public / Institutional	<i>51.0814</i>	\$1,059.46	\$1,079.75	\$1,088.56	\$1,089.08	\$1,098.42	\$1,107.73	\$1,126.98	\$1,136.22
Park / Open Space	<i>1.8220</i>	\$37.79	\$38.51	\$38.83	\$38.85	\$39.18	\$39.51	\$40.20	\$40.53
Habitat Management	<i>0.0000</i>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Recreational Commercial	<i>8.1205</i>	\$168.42	\$171.65	\$173.05	\$173.13	\$174.62	\$176.10	\$179.16	\$180.63
Mixed Use	<i>3.4870</i>	\$72.32	\$73.71	\$74.31	\$74.34	\$74.98	\$75.62	\$76.93	\$77.56

Figure D-4.1

Alt 4 All Projects xP5B / No Grants

Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Single Family, \$/Acre		\$3.33	\$3.41	\$3.46	\$3.50	\$3.56	\$3.62	\$3.70	\$3.76
Single Family, \$/ESFRU		\$20.74	\$21.14	\$21.31	\$21.32	\$21.50	\$21.69	\$22.06	\$22.24
Single Family, Total		\$24.07	\$24.55	\$24.77	\$24.82	\$25.07	\$25.31	\$25.76	\$26.01

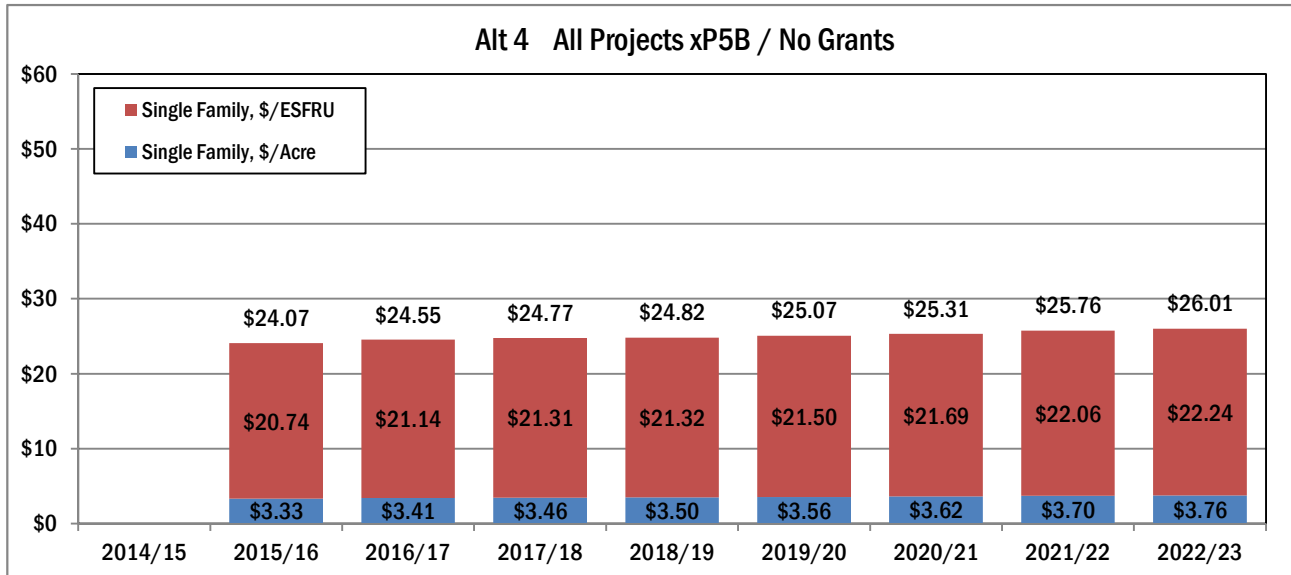


Figure D-4.2

Alt 4 All Projects xP5B / No Grants

Expenditures, Fund Balances and Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
O&M	\$796,379	\$820,270	\$844,878	\$870,225	\$896,332	\$923,222	\$950,918	\$979,446	\$1,008,829
CIP Hydraulic Projects	\$1,278,000	\$2,774,820	\$5,084,894	\$2,799,567	\$2,104,701	\$2,946,875	\$8,215,080	\$1,092,128	\$1,821,615
CIP Other	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0
Debt Service	\$0	\$0	\$696,360	\$696,360	\$696,360	\$1,922,192	\$1,922,192	\$1,922,192	\$1,922,192
Reimb General Fund	\$0	\$500,000	\$500,000	\$500,000	\$500,000	\$0	\$0	\$0	\$0
Ending Balance	\$1,203,621	\$1,296,630	\$1,232,881	\$1,229,204	\$1,205,360	\$1,721,446	\$2,248,763	\$2,458,689	\$1,650,457
Single Family Monthly Fee		\$24.07	\$24.55	\$24.77	\$24.82	\$25.07	\$25.31	\$25.76	\$26.01

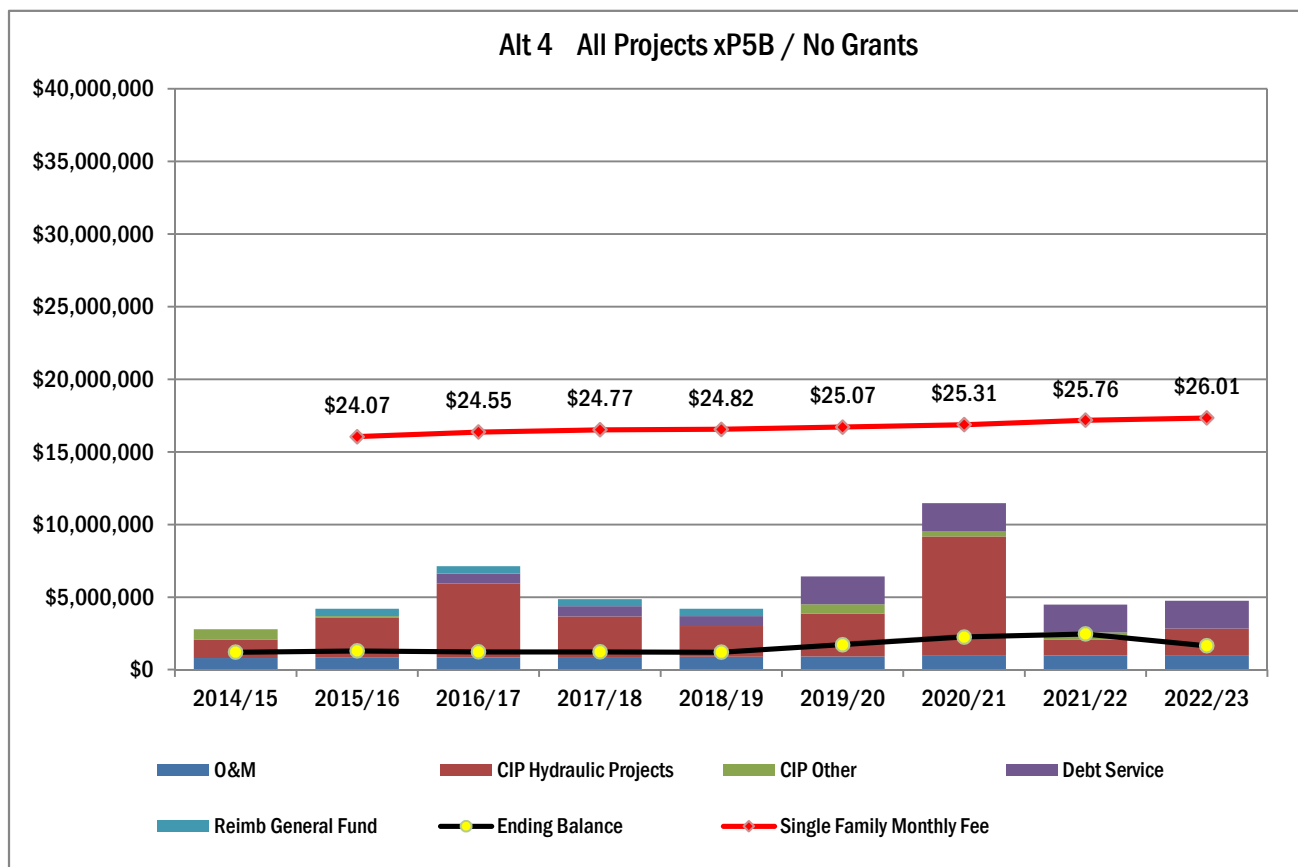


Table D-5.15
 Projected \$/Acre Fees and Average Monthly Fee
 Alt 5 All Projects xP5B / With Grants

Item		Projected							
		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Revenue Requirements		\$679,351	\$694,129	\$705,033	\$714,326	\$722,460	\$731,702	\$742,876	\$752,459
Acres		4,027	4,027	4,027	4,027	4,027	4,027	4,027	4,027
Fee, \$/Acre									
Annual		\$169	\$172	\$175	\$177	\$179	\$182	\$184	\$187
Monthly		\$14.06	\$14.37	\$14.59	\$14.78	\$14.95	\$15.14	\$15.37	\$15.57
Average Monthly Fee	<i>Acres</i>								
Single Family	<i>0.219</i>	\$3.08	\$3.15	\$3.20	\$3.24	\$3.28	\$3.32	\$3.37	\$3.41
Multiple Family	<i>0.337</i>	\$4.74	\$4.84	\$4.92	\$4.98	\$5.04	\$5.10	\$5.18	\$5.25
Commercial	<i>0.554</i>	\$7.78	\$7.95	\$8.08	\$8.18	\$8.28	\$8.38	\$8.51	\$8.62
Public / Institutional	<i>16.094</i>	\$226.28	\$231.20	\$234.83	\$237.93	\$240.64	\$243.72	\$247.44	\$250.63
Park / Open Space	<i>1.973</i>	\$27.74	\$28.35	\$28.79	\$29.17	\$29.50	\$29.88	\$30.34	\$30.73
Habitat Management	<i>467.500</i>	\$6,572.81	\$6,715.79	\$6,821.29	\$6,911.19	\$6,989.90	\$7,079.31	\$7,187.43	\$7,280.14
Recreational Commercial	<i>7.492</i>	\$105.34	\$107.63	\$109.32	\$110.76	\$112.02	\$113.46	\$115.19	\$116.67
Mixed Use	<i>0.648</i>	\$9.12	\$9.31	\$9.46	\$9.59	\$9.69	\$9.82	\$9.97	\$10.10

Table D-5.17
 Projected \$/ESFRU Fees and Average Monthly Fee
 Alt 5 All Projects xP5B / With Grants

Item	Projected								
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
Revenue Requirements	\$1,929,818	\$1,963,420	\$1,979,313	\$1,987,277	\$1,989,250	\$1,995,022	\$2,008,149	\$2,013,311	
ESFRU	11,623	11,623	11,623	11,623	11,623	11,623	11,623	11,623	
Fee, \$/ESFRU									
Annual	\$166	\$169	\$170	\$171	\$171	\$172	\$173	\$173	
Monthly	\$13.84	\$14.08	\$14.19	\$14.25	\$14.26	\$14.30	\$14.40	\$14.43	
Average Monthly Fee									
	<i>ESFRU Multiplier</i>								
Single Family	<i>1.0000</i>	\$13.84	\$14.08	\$14.19	\$14.25	\$14.26	\$14.30	\$14.40	\$14.43
Multiple Family	<i>1.9001</i>	\$26.29	\$26.75	\$26.96	\$27.07	\$27.10	\$27.18	\$27.36	\$27.43
Commercial	<i>3.4325</i>	\$47.49	\$48.32	\$48.71	\$48.91	\$48.95	\$49.10	\$49.42	\$49.55
Public / Institutional	<i>51.0814</i>	\$706.76	\$719.06	\$724.88	\$727.80	\$728.52	\$730.64	\$735.44	\$737.33
Park / Open Space	<i>1.8220</i>	\$25.21	\$25.65	\$25.86	\$25.96	\$25.99	\$26.06	\$26.23	\$26.30
Habitat Management	<i>0.0000</i>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Recreational Commercial	<i>8.1205</i>	\$112.35	\$114.31	\$115.24	\$115.70	\$115.81	\$116.15	\$116.91	\$117.21
Mixed Use	<i>3.4870</i>	\$48.25	\$49.09	\$49.48	\$49.68	\$49.73	\$49.88	\$50.20	\$50.33

Figure D-5.1

Alt 5 All Projects xP5B / With Grants

Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Single Family, \$/Acre		\$3.08	\$3.15	\$3.20	\$3.24	\$3.28	\$3.32	\$3.37	\$3.41
Single Family, \$/ESFRU		\$13.84	\$14.08	\$14.19	\$14.25	\$14.26	\$14.30	\$14.40	\$14.43
Single Family, Total		\$16.92	\$17.22	\$17.39	\$17.49	\$17.54	\$17.62	\$17.77	\$17.85

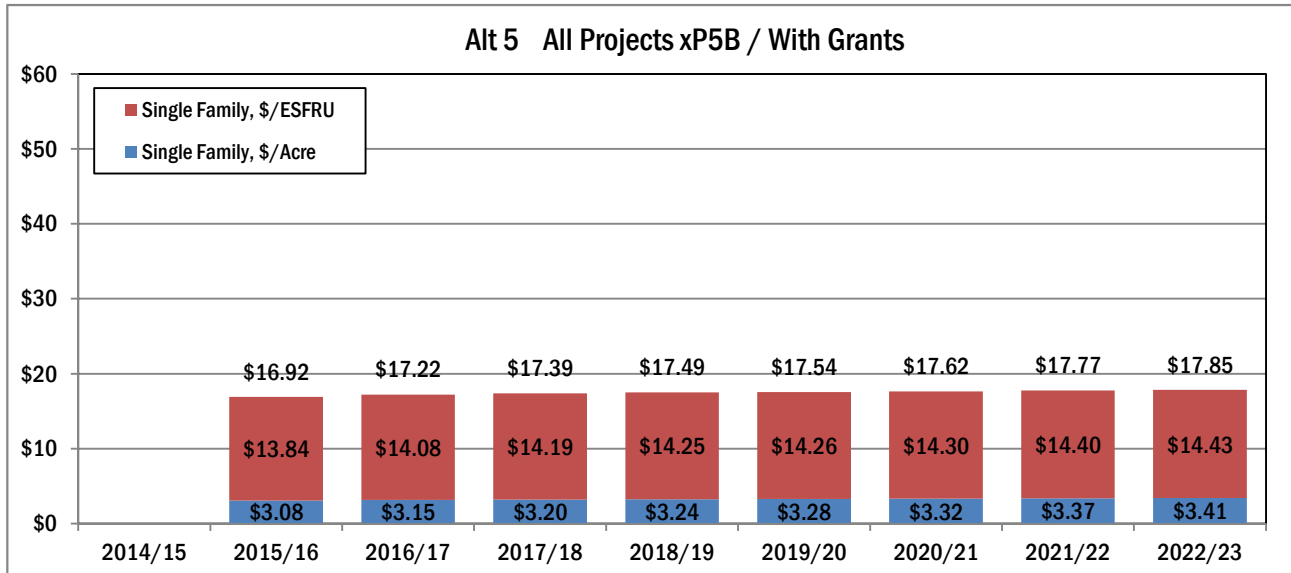
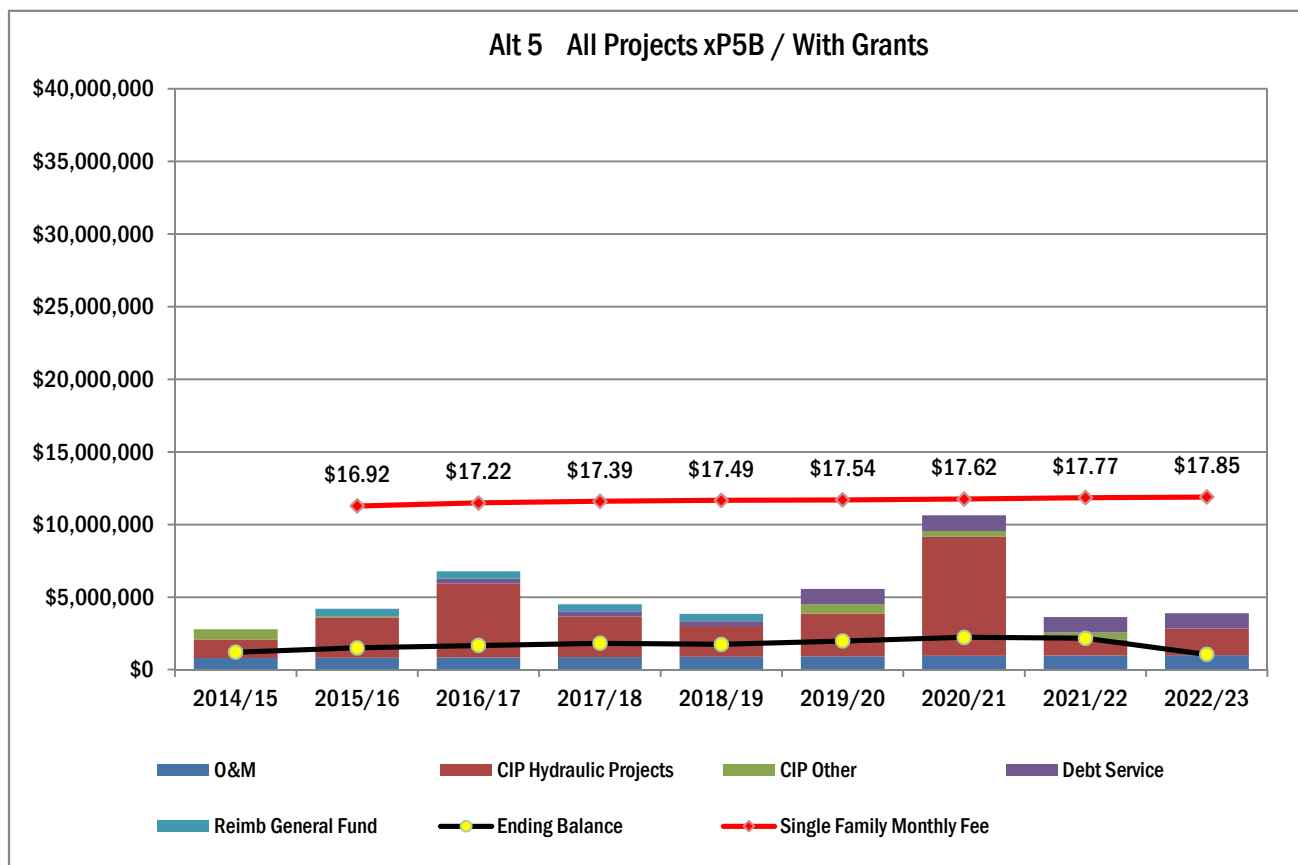


Figure D-5.2

Alt 5 All Projects xP5B / With Grants

Expenditures, Fund Balances and Single Family Monthly Fees

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
O&M	\$796,379	\$820,270	\$844,878	\$870,225	\$896,332	\$923,222	\$950,918	\$979,446	\$1,008,829
CIP Hydraulic Projects	\$1,278,000	\$2,774,820	\$5,084,894	\$2,799,567	\$2,104,701	\$2,946,875	\$8,215,080	\$1,092,128	\$1,821,615
CIP Other	\$706,000	\$105,000	\$0	\$0	\$0	\$631,804	\$390,455	\$492,066	\$0
Debt Service	\$0	\$0	\$339,825	\$339,825	\$339,825	\$1,065,325	\$1,065,325	\$1,065,325	\$1,065,325
Reimb General Fund	\$0	\$500,000	\$500,000	\$500,000	\$500,000	\$0	\$0	\$0	\$0
Ending Balance	\$1,203,621	\$1,506,630	\$1,673,406	\$1,821,356	\$1,740,093	\$1,978,996	\$2,228,294	\$2,168,812	\$1,049,805
Single Family Monthly Fee		\$16.92	\$17.22	\$17.39	\$17.49	\$17.54	\$17.62	\$17.77	\$17.85



Appendix E: March 29, 1966 Agreement with Sand City

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A G R E E M E N T

THIS AGREEMENT between the City of Seaside, a Municipal corporation, corporate and politic, organized under the laws of the State of California, hereinafter referred to as "SEASIDE" and the City of Sand City, a Municipal corporation, corporate and politic, organized under the laws of the State of California, hereinafter referred to as "SAND CITY".

W I T N E S S E T H:

WHEREAS, SEASIDE desires to install a storm drain line and appurtenant facilities within the City of SAND CITY in accordance with City of Seaside Clementina Storm Drain Plans; and

WHEREAS, SAND CITY is desirous of allowing such installation with provision for protection of the right of SAND CITY to later improve that street known as Front Street for vehicular use.

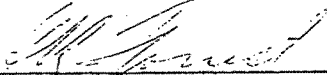
NOW, THEREFORE, THE PARTIES AGREE:

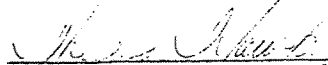
1. That SEASIDE may install a storm drain line and appurtenant facilities within the City of SAND CITY.
2. That all street excavations for storm drain line purposes shall be properly backfilled and surfacing replaced in kind or better.
3. That in the event that Front Street is constructed for vehicular traffic use, SEASIDE will at its own expense and upon request by SAND CITY provide the necessary structure to allow vehicular traffic over the storm drain line.
4. That SEASIDE assumes responsibility for the proper maintenance, repair and legal obligations of the storm drain line.
5. That SAND CITY has the right to connect drains from side streets adjacent to the storm drain line.

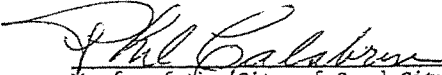
IN WITNESS WHEREOF, the parties have affixed their signatures this

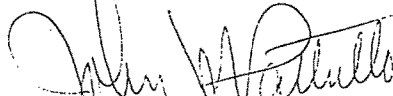
29th day of March, 1966.

ATTEST:


City Clerk of the City of Seaside

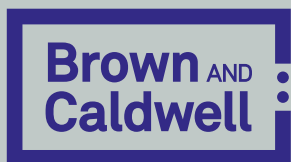

City Clerk of the City of Sand City


Mayor of the City of Sand City


Mayor of the City of Seaside

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Prepared by



Walnut Creek

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