



# **CITY OF ALAMEDA**

## **FEE REPORT**

### **WATER QUALITY AND FLOOD PROTECTION FEE**

JULY 2019

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

ENGINEER OF WORK:  
**SCI Consulting Group**  
4745 MANGELS BOULEVARD  
FAIRFIELD, CALIFORNIA 94534  
PHONE 707.430.4300  
FAX 707.430.4319  
[WWW.SCI-CG.COM](http://WWW.SCI-CG.COM)

## **CITY OF ALAMEDA**

---

### **CITY COUNCIL**

Marilyn Ezzy Ashcraft, Mayor  
John Knox White, Vice Mayor  
Tony Daysog, Councilmember  
Jim Oddie, Councilmember  
Malia Vella, Councilmember

### **CITY MANAGER**

Eric Levitt

### **PUBLIC WORKS DEPARTMENT**

Liam Garland, Director

### **ENGINEER OF WORK**

Jerry Bradshaw, SCI Consulting Group

## TABLE OF CONTENTS

---

|                                                                |           |
|----------------------------------------------------------------|-----------|
| <b>INTRODUCTION.....</b>                                       | <b>1</b>  |
| OVERVIEW .....                                                 | 1         |
| CITY’S FACILITIES .....                                        | 2         |
| STORMWATER FUNDING BACKGROUND .....                            | 2         |
| LEGAL REQUIREMENTS OF STORMWATER FEE .....                     | 3         |
| FACILITIES AND SERVICES .....                                  | 4         |
| <b>FINANCIAL NEEDS AND REVENUE REQUIREMENTS.....</b>           | <b>5</b>  |
| SUMMARY OF CLEAN WATER AND STORM PROTECTION SYSTEM NEEDS ..... | 5         |
| ANNUAL REVENUE REQUIREMENT .....                               | 7         |
| <b>RATE STRUCTURE ANALYSIS .....</b>                           | <b>9</b>  |
| SINGLE-FAMILY RESIDENTIAL PARCELS AS BENCHMARK .....           | 9         |
| NON-RESIDENTIAL PARCELS .....                                  | 11        |
| RATE CREDITS .....                                             | 13        |
| STORMWATER FEE CALCULATION .....                               | 15        |
| ANNUAL COST INDEXING .....                                     | 17        |
| MANAGEMENT AND USE OF STORMWATER FUNDS .....                   | 17        |
| <b>APPENDICES .....</b>                                        | <b>18</b> |
| APPENDIX A – FULL LIST OF CAPITAL PROJECT NEEDS.....           | 18        |
| APPENDIX B –PERCENTAGE OF IMPERVIOUS AREA ESTIMATIONS .....    | 21        |
| APPENDIX C – LOW IMPACT DEVELOPMENT RATE CREDIT ANALYSIS ..... | 22        |
| APPENDIX D – STORMWATER RATES FROM OTHER MUNICIPALITIES .....  | 27        |
| APPENDIX E - LIST OF ACRONYMS AND ABBREVIATIONS.....           | 30        |

## LIST OF TABLES

---

|                                                                             |    |
|-----------------------------------------------------------------------------|----|
| TABLE 1 – SUMMARY OF PROGRAM REVENUES .....                                 | 5  |
| TABLE 2 – SUMMARY OF OPERATIONS & MAINTENANCE COSTS .....                   | 6  |
| TABLE 3 – SUMMARY OF HIGH-PRIORITY CAPITAL IMPROVEMENT PROJECTS .....       | 7  |
| TABLE 4 – ESTIMATE OF ANNUAL REVENUE REQUIREMENT .....                      | 8  |
| TABLE 5 – SUMMARY OF RESIDENTIAL PARCELS.....                               | 11 |
| TABLE 6 – SUMMARY OF NON-RESIDENTIAL PARCELS .....                          | 12 |
| TABLE 7 – SUMMARY OF SINGLE-FAMILY RESIDENTIAL PARCELS .....                | 15 |
| TABLE 8 – PROPOSED 2019 WATER QUALITY & FLOOD PROTECTION FEE SCHEDULE ..... | 16 |
| TABLE 9 – LIST OF CAPITAL IMPROVEMENT PROJECTS – ALL PRIORITIES.....        | 18 |
| TABLE 10 – PERCENT OF IMPERVIOUS AREA FROM SAMPLING RESULTS .....           | 21 |
| TABLE 11 – RECENT STORM DRAIN BALLOT MEASURES.....                          | 28 |
| TABLE 12 – SAMPLE OF RATES FROM OTHER MUNICIPALITIES.....                   | 29 |

## INTRODUCTION

---

### OVERVIEW

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

Since 2008 the City’s Public Works Department has developed several planning documents pertaining to its Storm Drainage Program (“Program”). These include the Storm Drain Master Plan (2008), Storm Drain Pump Station Study (2011), Storm Drain Outfall Assessment (2013), Long-Term Trash Load Reduction Plan (2014), South Shore and Bay Farm Island Lagoon Operations Studies (2015), 18-Inch and 55-Inch Sea Level Rise Studies (2008 and 2016), and the Storm Drain Master Plan Update Memorandum (2017). Other planning documents currently in development include the Green Infrastructure Plan and the Climate Action and Resiliency Plan. These plans made it clear that the Program would need to expand its levels of service to achieve the goals of responsible environmental stewardship and smart investment in the City’s aging infrastructure.

In 2018, the City embarked on a two-phase project to determine the feasibility of implementing an increase to the City’s storm drain fees to fund the City’s Clean Water and Flood Protection needs. The first phase evaluated the feasibility of increasing the City’s storm drainage fees and included exploring potential funding sources, estimating user rate ranges for various budget scenarios, and conducting a public opinion survey of Alameda residents and property owners to determine storm drain-related priorities and willingness to support a fee increase for these services. The results of the feasibility evaluation showed that the community valued the storm drainage system and was willing to invest in improvements to service and pursuing projects that would ensure environmental stewardship and protection from flooding.

The City Council has now embarked on the second phase: implementation of a funding mechanism. This Fee Report, the first step in that process, incorporates information from the feasibility phase, establishes needs and associated revenues required, and presents a fee structure that is fair and meets all legal requirements. Subsequent steps in this implementation phase include a public hearing and a ballot proceeding over the coming months.

---

<sup>1</sup> In this report, the terms “storm sewer,” “storm drainage,” “storm protection,” and “stormwater” are used interchangeably, and are considered to be synonymous.

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

## **CITY'S FACILITIES**

The City operates and maintains a storm drainage system, as it is empowered to do per Government Code Sections 38900 and 38901. This complex system is comprised of integrated storm drainage pipes, inlets, outfalls, culverts, pump stations, lagoons and sea walls and perimeter levees to prevent flooding. As the community grew and neighborhoods and business districts expanded, the City's storm drainage system was developed. Parts of the system may date back nearly 100 years.

When the first NPDES permit was issued in the early 1990s, the City recognized the fiscal burden these new clean water requirements would bring and established a property fee on most parcels to fund this activity. Since that time the City has worked diligently and efficiently to continue meeting the ever-increasing requirements of the NPDES permit, while the State's clean water requirements have evolved into a comprehensive environmental stewardship program.

The operations and maintenance ("O&M") side of the Program has also developed many activities that support clean water goals and maintain the City's aging infrastructure to protect the neighborhoods and businesses from local flooding. On average, the industry-standard life expectancy of a storm drain system is approximately 60 years. The majority of the City's storm drainage pipes were installed more than 50 years ago, leaving the City with a system that is approaching the end of its useful life. Moreover, as noted in the storm drainage planning documents, some of the drainage system does not have adequate capacity.

The City's complex storm drainage system has evolved to meet the unique needs dictated by the City's flat topography and location along the tidal waters of San Francisco Bay. The system's balance has historically protected the City from flooding from storm runoff as well as tidal influences. Climate change is bringing about new challenges with a predicted rise in sea level of more than two feet of elevation as well as more frequent and more intense storms. These challenges were summarized in the 2017 Storm Drain Master Plan Update Memorandum and are also being incorporated into the Climate Action and Resiliency Plan being drafted this year. While the City's storm drainage system (designed primarily to convey storm runoff to the Bay) must adapt to these changes, it alone cannot supply the full scope of remedies to meet these climate change challenges. Therefore, the fee recommendations in this Report will not fully address climate change.

## **STORMWATER FUNDING BACKGROUND**

The City historically has funded its storm drainage program primarily through two sources: The General Fund and the Storm Water Utility Fee established in 1992. Although it was increased over the years, the last inflation adjustment, authorized in 2001, was implemented in 2005. Due to changes in the law the City can no longer increase the fee without the approval of property owners through a ballot measure.<sup>3</sup> For that reason, the storm drain

---

<sup>3</sup> This "freeze" on the stormwater fees is due primarily to the stringent requirements of Proposition 218 for a ballot measure to increase fees. See next section for more details.

fees have not been increased in nearly 15 years. As a result, the City has needed to limit capital expenditures and keep operations and maintenance activities to a less than desirable level of service, mostly responding to storm-related emergencies and basic regulatory compliance.

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

### **LEGAL REQUIREMENTS OF STORMWATER FEE**

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

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

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

The procedural requirements of Proposition 218 require that new or increased property-related fees submit to a two-step process: 1) a 45-day public protest period culminating in a public hearing, and 2) a ballot proceeding whereby it must be approved by a 50% simple majority of property owners (or a two-thirds supermajority of registered voters) before new or increased fees could be authorized. However, fees for water, sewer and refuse collection were exempt from the second step. In the years following the passage of Proposition 218, there was uncertainty whether stormwater fees qualified as a type of sewer fee and therefore

were not subject to the ballot proceeding requirement. The California Sixth Appellate District Court clarified the question in a 2002 ruling<sup>4</sup> that found stormwater fees did not qualify as a type of sewer fee, and new or increased fees must be approved through a ballot proceeding. Subsequent to that date, the City Alameda did not authorize any further inflation adjustments.

## **FACILITIES AND SERVICES**

The City operates and maintains a municipal separate storm sewer system within the City's boundaries. The system is made up of man-made drainage systems including, but not limited to, curbs and gutters, ditches, culverts, pipelines, manholes, catch basins (inlets), outfall structures, pump stations, lagoons, and sea walls and perimeter levies. The system serves the entire City.

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

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

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

---

<sup>4</sup> Howard Jarvis Taxpayers Association v. City of Salinas, No. H022665.Sixth Dist. June 3, 2002.

## FINANCIAL NEEDS AND REVENUE REQUIREMENTS

### SUMMARY OF CLEAN WATER AND STORM PROTECTION SYSTEM NEEDS

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

### PROGRAM REVENUES

The first step of the analysis was to review the revenues available to the City's Program. Based on information provided by in the City's draft 2019-21 budget, the existing revenues are projected through Fiscal Year 2020-21 as shown in Table 1 below. Revenues are projected to not increase with the exception of the existing Storm Water Utility Fee, which will experience growth only through the addition of new properties to the rate base.

**TABLE 1 – SUMMARY OF PROGRAM REVENUES**

| Revenue Source                 | <i>Shown in thousands</i> |                 |
|--------------------------------|---------------------------|-----------------|
|                                | FY 2019-20                | FY 2020-21      |
| Storm Water Utility Fees       | \$ 2,197                  | \$ 2,237        |
| Base Reuse Properties          | 238                       | 238             |
| Lagoon Service Agreement       | 50                        | 50              |
| Interest & Other               | 8                         | 8               |
| Transer In - General Fund      | 67                        | 67              |
| Transer In - Re-Use            | -                         | -               |
| <b>Total Budgeted Revenues</b> | <b>\$ 2,559</b>           | <b>\$ 2,599</b> |

### PROGRAM COSTS

The City's Program is influenced primarily by the requirements to prevent local flooding and to comply with the Municipal Regional Permit ("MRP 2.0").<sup>5</sup> Cost estimates were based on budgetary and supplemental information provided by the City as well as the following storm drainage planning documents:

- Storm Drain Master Plan (2008)
- Storm Drain Pump Station Study (2011)
- Storm Rain Outfall Assessment (2013)
- Long-Term Trash Load Reduction Plan (2014)

<sup>5</sup> NPDES permits for most Bay Area cities are administered by the Bay Area Water Quality Control Board. In 2009, they brought all those cities in this region under a single permit called the Municipal Regional Permit. The renewed MRP, 2015, is referred to as MRP 2.0.

- South Shore and Bay Farm Island Lagoon Operations Studies (2015)
- 18-Inch and 55-Inch Sea Level Rise Studies (2008 and 2016)
- Storm Drain Master Plan Update Memorandum (2017)

In broadly assessing the Program's costs and following the City's current Budget structure, two main categories were used: Operations and Maintenance ("O&M") Costs, which include compliance with the MRP 2.0, and Capital Improvement Program ("CIP") costs. These categories reflect how the City generally allocates funds to implement its day-to-day storm drainage-related programs.

In addition, SCI worked closely with City staff from both the Engineering Division and the Storm Drain Maintenance Division to develop priorities for a sustainable Water Quality and Flood Protection program. These documents and additional input from City staff resulted in the following needs recommendations.

O&M costs are relatively stable from year to year and present a firm basis for a fee structure. Table 2 below shows the budgeted O&M expenditures contained in the City's draft 2019-21 budget.

**TABLE 2 – SUMMARY OF OPERATIONS & MAINTENANCE COSTS**

| Element                                         | <i>Shown in thousands</i> |                 |
|-------------------------------------------------|---------------------------|-----------------|
|                                                 | FY 2019-20                | FY 2020-21      |
| <b>Operations &amp; Maintenance</b>             |                           |                 |
| Storm Drainage O & M                            | \$ 2,920                  | \$ 3,066        |
| Street Sweeping                                 | 1,326                     | 1,383           |
| <b>Total Operations &amp; Maintenance Costs</b> | <u>\$ 4,246</u>           | <u>\$ 4,449</u> |

The CIP costs shown in Table 3 below are a compilation of high-priority capital improvement projects derived from all sources totaling approximately \$30 million. Costs are shown as one-time project expenses and include all phases such as environmental, permitting, design, and construction. Costs are expressed in 2019 dollars. These projects are taken from a larger list of project needs including 87 high-, moderate- and low-priority projects totaling approximately \$170 million. A full listing of all projects is shown in Appendix A.

**TABLE 3 – SUMMARY OF HIGH-PRIORITY CAPITAL IMPROVEMENT PROJECTS**

| <i>Shown in thousands</i>    |           | <i>Shown in thousands</i>       |                  |
|------------------------------|-----------|---------------------------------|------------------|
| Category / Project           | 2019 Cost | Category / Project              | 2019 Cost        |
| <b>Pipes / Lagoons</b>       |           | <b>Environmental</b>            |                  |
| Shoreline Culvert            | \$ 400    | Green Infrastructure            | \$ 2,100         |
| BFI Gate Opener              | 400       | Trash Capture                   | 1,025            |
| Bayview Weir Rehab           | 200       | Environmental Subtotal          | \$ 3,125         |
| Tidal Protection of Outfalls | 1,800     |                                 |                  |
| Veterans Court               | 1,910     | <b>Operational Enhancements</b> |                  |
| Lagoon Walls                 | 7,500     | Outfall Upgrades                | \$ 197           |
| Seawall @ BFI Gate           | 500       | Intersection Culverts           | 2,100            |
| Dredge Lagoon - South        | 600       | Ponding Improvements            | 1,500            |
| Dredge Lagoon - BF           | 600       | Line Clean & Video              | 788              |
| Pipes / Lagoons Subtotal     | \$ 13,910 | Lagoon                          | 1,082            |
|                              |           |                                 |                  |
| <b>Pump Stations</b>         |           | Ops Enhancement Subtotal        | \$ 5,667         |
| Arbor                        | \$ 3,570  |                                 |                  |
| Webster                      | 1,050     |                                 |                  |
| Central/Eastshore            | 2,700     |                                 |                  |
| Pump Stations Subtotal       | \$ 7,320  | <b>TOTAL High-Priority CIP</b>  |                  |
|                              |           |                                 | <b>\$ 30,022</b> |

### ANNUAL REVENUE REQUIREMENT

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

While the O&M costs are shown in Table 2 as annual costs, the CIP costs in Table 3 are shown as lump-sum, one-time costs. Therefore, the CIP costs must be annualized. Further, the \$30 million CIP costs are more than can be paid for through a reasonable fee amount. As a result, portions of the CIP are identified for funding from other sources such as General Fund, other City funds, grants or future bond funds. Finally, the revenue needs shown below in Table 4 convert the CIP costs to annual amounts based on an assumed 15-year, pay-as-you-go expenditure plan.

**TABLE 4 – ESTIMATE OF ANNUAL REVENUE REQUIREMENT**

| <i>Shown in thousands</i>                      |                               |                                             |                         |                                                    |
|------------------------------------------------|-------------------------------|---------------------------------------------|-------------------------|----------------------------------------------------|
| Element                                        | Estimated<br>Current<br>Costs | Less Costs<br>Funded<br>By Other<br>Sources | Net<br>Program<br>Costs | Net<br>Program<br>Annualized<br>Costs <sup>A</sup> |
| <b>Operations &amp; Maintenance</b>            |                               |                                             |                         |                                                    |
| Storm Drainage O & M                           | \$ 2,920                      | \$ -                                        | \$ 2,920                | \$ 2,920                                           |
| Street Sweeping                                | 1,326                         | -                                           | 1,326                   | 1,326                                              |
| O & M Subtotal                                 | <u>\$ 4,246</u>               | <u>\$ -</u>                                 | <u>\$ 4,246</u>         | <u>\$ 4,246</u>                                    |
| <b>Capital Improvement Program</b>             |                               |                                             |                         |                                                    |
| CIP Pipes & Lagoons                            | \$ 13,910                     | \$ (4,692)                                  | \$ 9,218                | \$ 615                                             |
| CIP Pumps Stations                             | 7,320                         | (3,750)                                     | 3,570                   | 238                                                |
| CIP - G.I. & Trash Capture                     | 3,125                         | (1,000)                                     | 2,125                   | 142                                                |
| CIP - Operational Enhancements                 | 5,667                         | (2,500)                                     | 3,167                   | 211                                                |
| Capital Improvement Subtotal                   | <u>\$ 30,022</u>              | <u>\$ (11,942)</u>                          | <u>\$ 18,080</u>        | <u>\$ 1,205</u>                                    |
| <b>Total Annual Rev Req't</b>                  |                               |                                             |                         | <u><b>\$ 5,451</b></u>                             |
| <b>Less Existing Revenue</b>                   |                               |                                             |                         |                                                    |
| Total Budgeted Revenues (Existing Fees + misc) |                               |                                             |                         | (2,559)                                            |
| <b>Net Revenue Requirement</b>                 |                               |                                             |                         | <u><b>\$ 2,892</b></u>                             |

A - Capital costs are amortized over a 15-year pay-as-you-go period

## RATE STRUCTURE ANALYSIS

---

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

### SINGLE-FAMILY RESIDENTIAL PARCELS AS BENCHMARK

The most widely used method of establishing storm drainage rates<sup>6</sup> is to use the average or median single-family residential parcel<sup>7</sup> ("SFR") as the basic unit of measure, or benchmark, which is called the single-family equivalent, or "SFE." Since the metric for this fee structure is impervious surface area, a benchmark amount of impervious surface area ("ISA") must be established.

Alameda has a wide range of sizes of SFR parcels, which have varying percentages of impervious area ("%IA"). Generally, smaller, denser parcels tend to have a higher proportion of impervious area than larger, less dense parcels, which tend to have a lower percentage of impervious area. (This can be best visualized by the fact that larger residential properties tend to have a larger *proportion of pervious* landscaping, and therefore a smaller *proportion of impervious* area.) A random sample of 279 SFR parcels was selected, and the ISA of each sample parcel was measured using aerial photographs. This sample data forms the basis for determining the median ISA, which will then be the basis for determining the SFE.

The range of SFR parcels was grouped into three size categories based on trends that emerged in the %IA. The median sized SFR parcel is 0.11 acre (approximately 4,792 square feet), which is also the median parcel size for the medium SFR rate category. The average %IA for the medium size group was found to be 59.33%. Therefore, the median parcel in Alameda contains 2,843 square feet of impervious surface area ("ISA") as shown in the calculation below. This will be used as the benchmark (1 SFE) for all other size categories and other non-residential land uses.

---

<sup>6</sup> *Stormwater Utility Survey*, 2017, page 2, Western Kentucky University. Other common names for this benchmark unit are Equivalent Runoff Unit (ERU) and Equivalent Drainage Unit (EDU).

<sup>7</sup> The SFR category also includes multiplex parcels of two, three or four units, since the lot development characteristics do not vary significantly from the SFR parcels of similar size. In all, this includes the approximately 1,783 multiplex parcels in the City, which were distributed to the same three parcel size categories as the other SFRs. Any residential parcel with five or more units is categorized as apartments, which is calculated separately.

$$\begin{aligned}
 1 \text{ SFE} &= \%IA \times \text{Median Parcel Size} \\
 &= 59.33\% \times 4,792 \text{ sf} \\
 &= 2,843 \text{ sf}
 \end{aligned}$$

This becomes the basis for calculating the SFEs for all other types of land uses. The %IA for each size category was applied to the median size parcel in that category to calculate its median ISA. The SFE per parcel for each size category is a simple ratio of the median ISA for each category to the ISA (2,843 sf) for the benchmark category of medium-sized parcels as shown in the following formula:

$$SFE \text{ per Parcel} = \frac{\text{Median ISA}}{2,843}$$

### CONDOMINIUMS

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

Condominiums can be grouped into two categories: Medium density where there is only one level of residential units (e.g., townhomes) and high density where there are multiple levels of residential units (similar to apartment buildings). For the medium-density condominium units, the presence of common areas with landscape features make them very similar to the small-lot SFR parcels, and therefore they are assigned the same ISA (1,739 sf) and SFE (0.6118) per parcel as a small-lot SFR parcel.

For the high-density condominium units, further analysis was done. Twelve condominium complexes with 1,246 units were sampled throughout the City. Using aerial photographs, measurements were made of the impermeable areas. The average ISA per unit was 895 square feet. Therefore, the high-density condominiums are assigned an ISA of 895 square feet. This is 31.48% of the ISA for the median SFR, resulting in an SFE of 0.3148 per parcel.

Table 5 below shows a summary of the SFEs for residential parcels.

**TABLE 5 – SUMMARY OF RESIDENTIAL PARCELS**

| Lot Type                               | Parcel Size Range |                | # of                 |                    | Median<br>ISA (sf) <sup>B</sup> | SFE per<br>Parcel |
|----------------------------------------|-------------------|----------------|----------------------|--------------------|---------------------------------|-------------------|
|                                        | Acres             | Square Footage | Parcels <sup>A</sup> | Acres <sup>A</sup> |                                 |                   |
| <b>Small</b>                           | under 0.08        | under 3,266    | 2,171                | 133.74             | 1,739                           | <b>0.6118</b>     |
| <b>Medium</b>                          | 0.08 to 0.14      | 3,266 to 6,316 | 9,899                | 1,052.35           | 2,843                           | <b>1.0000</b>     |
| <b>Large</b>                           | over 0.14         | over 6,316     | 2,164                | 394.08             | 3,100                           | <b>1.0906</b>     |
| <b>Condo - Med Density<sup>C</sup></b> |                   | na             | 2,899                | 665.68             | na                              | <b>0.6118</b>     |
| <b>Condo - Hi Density</b>              |                   | na             | 1,419                | 497.98             | na                              | <b>0.3148</b>     |
| <b>TOTAL</b>                           |                   |                | <b>18,552</b>        | <b>2,743.83</b>    |                                 |                   |

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

B From Table 12, Appendix B.

C Medium-density condominiums are assumed to be similar to Small category of SFR

## NON-RESIDENTIAL PARCELS

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

$$\frac{(43,560 \text{ sf} / \text{acre}) \times \% IA}{2,843 \text{ sf} / \text{SFE}} = \text{SFE per Acre}$$

where 2,843 square feet is the amount of ISA in one SFE.

Table 6 below shows a summary of resulting parcel SFEs for each non-residential land use category.

**TABLE 6 – SUMMARY OF NON-RESIDENTIAL PARCELS**

| Land Use Category                | # of<br>Parcels <sup>A</sup> | Acres <sup>A</sup> | % Imperv<br>Area <sup>B</sup> | SFE per<br>Acre |
|----------------------------------|------------------------------|--------------------|-------------------------------|-----------------|
| Apartments                       | 719                          | 295.42             | 76.0%                         | 11.643          |
| Commercial / Retail / Industrial | 662                          | 1,093.01           | 90.7%                         | 13.894          |
| Office                           | 131                          | 211.06             | 64.0%                         | 9.808           |
| Church / Institutional           | 146                          | 127.81             | 72.5%                         | 11.110          |
| School w/Playfield               | 20                           | 384.84             | 51.8%                         | 7.938           |
| Park                             | 163                          | 336.39             | 5.0%                          | 0.766           |
| Vacant (developed)               | 185                          | 224.96             | 5.0%                          | 0.766           |
| Open Space / Agricultural        | 691                          | 1,701.61           | not charged                   |                 |
| <b>TOTAL</b>                     | <b>2717</b>                  | <b>4,375.10</b>    |                               |                 |

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

B %IA is from Table 12, Appendix B.

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

$$\text{Parcel Size (acres)} \times \text{SFE per Acre} = \text{SFE}$$

#### NON-RESIDENTIAL CONDOMINIUMS

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

#### DEVELOPED VACANT<sup>8</sup> PARCELS

Developed vacant parcels are devoid of obvious structures or improvements but are distinguished from natural open space by one of several characteristics. Typically, a developed vacant parcel has been graded to be ready for building construction (possibly as part of the original subdivision or adjacent street grading). In some cases, the parcel previously contained a structure or improvement that has been removed, but its fundamental alteration from a natural state remains. Although developed vacant parcels may have significant vegetative cover, the underlying soil conditions resulting from grading work or previous improvements usually cause some rainfall to runoff into the storm drainage system.

<sup>8</sup> "Vacant" in this Report refers to land that is devoid of improvements. It does not refer to land with vacant buildings or improvements, which would continue to shed water to the MS4 the same as if they were occupied.

The %IA for developed vacant parcels is reasonably assumed to be 5%, which is also used as a minimum value of imperviousness for any land use type (excluding open space and agricultural land – see next section). Vacant parcels that have significant impervious paving remaining from prior improvements may be classified as Commercial or some other classification best representing the %IA of the parcel.

#### **OPEN SPACE AND AGRICULTURAL PARCELS ARE NOT CHARGED**

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

#### **HYBRID PARCELS**

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

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

#### **OTHER PARCELS**

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

### **RATE CREDITS**

#### **LOW IMPACT DEVELOPMENT RATE CREDIT**

The MRP 2.0 (as well as previous permits) requires certain properties to construct stormwater treatment and attenuation facilities, also known as low impact development ("LID"). These facilities are typically designed to capture a portion of the storm flows, retain them, and enable them to filter through a landscape, be used as an alternative water supply, or infiltrate into the ground. While this is intended to help filter pollutants from the water, it also can reduce the parcel's stormwater runoff quantity to some extent, which in turn can reduce a parcel's impact on the system. In addition to MRP 2.0-required LID, other parcel owners may elect to follow LID guidelines voluntarily.

The section of the MRP 2.0 that requires LID facilities is Provision C.3 (New Development and Redevelopment). Compliance with C.3 is a well-established and convenient metric on which to base customer activities that further Program goals and affect Program costs. C.3 compliance can have impacts to many of the Program elements. Based on a detailed study

done for a similar city in the Bay Area<sup>9</sup> (operating under the same MRP 2.0), it has been determined that compliance with Provision C.3 equates to a reduction of Program impacts of approximately 25% based on the overall Program costs. Based on that analysis, C.3-compliant parcels shall receive a credit of 25% of their otherwise-calculated fee.

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

#### **DIRECT DRAIN RATE CREDIT**

Some parcels along or near the shoreline drain directly into the Bay and do not contribute flows to the City's storm drain system. Those parcels do not place additional burden on the physical storm drainage infrastructure, but the City does provide a certain level of storm drainage system service in two significant ways:

- **NPDES Compliance:** Compliance with the MRP 2.0 applies to all parcels within the City limits including those that drain directly to the Bay. The City's Program must continue to perform task such as monitoring compliance with pollutant and trash generation, illicit discharges and Provision C.3 regulation. In addition, certain activities such as beach clean-ups provide a direct benefit to shoreline parcels. The impact to this Program element is not reduced due to a direct-drain status.
- **Shared Facilities:** All parcels in the City benefit from a well-maintained storm drainage system that keeps roads clear of flooding and infrastructure failures that could impede the movement of people, goods and emergency vehicles. These parcels also benefit from a reduced chance of flooding and the damage to private property that can accompany such instances.

An estimate of the costs of the various O&M Program elements determined that approximately 33% of the costs are related to NPDES compliance as shown in Table 7 below. CIP costs were not included in this analysis due to the variability of the funding and project impacts on the NPDES program.

In addition, it is conservatively estimated that an additional 10% of the costs can be linked to the shared facilities element. Therefore, it is determined that direct-drain parcels shall receive a credit of  $(100\% - 33\% - 10\% =) 57\%$  of their otherwise-calculated fee.

---

<sup>9</sup> City of Cupertino, CA, *2019 Clean Water and Storm Protection Fee Report*, February 2019, pages 11 and 12, as reproduced in Appendix C of this Report.

TABLE 7 – SUMMARY OF SINGLE-FAMILY RESIDENTIAL PARCELS

| Element                                                  | Net<br>Program<br>Annualized<br>Costs | % NPDES<br>Compliance | NPDES<br>Costs |
|----------------------------------------------------------|---------------------------------------|-----------------------|----------------|
| <b>Operations &amp; Maintenance</b>                      |                                       |                       |                |
| Storm Drainage O & M                                     | \$ 2,920                              | 25%                   | \$ 730         |
| Street Sweeping                                          | 1,326                                 | 50%                   | 663            |
| Operations & Maintenance Subtotal                        | \$ 4,246                              |                       | \$ 1,393       |
| <b>Portion of Costs Attributable to NPDES Compliance</b> |                                       |                       | <b>33%</b>     |

**ALAMEDA POINT RATE CREDIT**

The City's existing storm drainage infrastructure does not serve some parcels on Alameda Point similar to the direct-drain situation discussed above. While the reach of City storm drainage infrastructure may be extended in the future, it is determined that such parcels be treated as direct-drain parcels until such time as they are served by City storm drainage infrastructure. This type of reclassification of a parcel's landuse shall not require further balloting under Proposition 218.<sup>10</sup>

**CUMULATIVE CREDITS**

There are two independent types of credits available under this rate structure: LID and direct drain (including both shoreline parcels and certain Alameda Point parcels). Accordingly, a parcel may qualify for both credits. In such cases, the credit multipliers are compounded in the following manner:

$$\begin{aligned}
 \text{LID Multiplier} &= 0.75 \\
 \text{Direct Drain Multiplier} &= 0.43 \\
 \text{Multiplier for dual credit} &= 0.75 \times 0.43 = 0.32
 \end{aligned}$$

This equates to a credit of (100% - 32% =) 68% for parcels qualifying for both credits.

**STORMWATER FEE CALCULATION**

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

<sup>10</sup> California Government Code Section 53750(h)(3).

$$\begin{aligned}
 \text{SFE Rate} &= \frac{\text{Annual Revenue Req't}}{\text{Total SFEs}} \\
 &= \frac{\$2,892,100}{37,079.320} \\
 &= \text{\textbf{\$78.00 per SFE}}
 \end{aligned}$$

This SFE rate amount is then multiplied by the SFEs per parcel or per acre for the various land use categories to arrive at the Stormwater Fee Rate Schedule shown in Table 8 below. It should also be noted that the proposed rates shown below **are in addition to** the existing storm water utility fees charged by the City.

Appendix D has information about stormwater rate initiatives done by other municipalities and rates adopted by other municipalities.

**TABLE 8 – PROPOSED 2019 WATER QUALITY & FLOOD PROTECTION FEE SCHEDULE**

| Land Use Category                                  |                        | SFE Rate | Proposed Fee<br>FY 2019-20 |            |
|----------------------------------------------------|------------------------|----------|----------------------------|------------|
| Residential <sup>A</sup>                           |                        |          |                            |            |
| Small                                              | <i>Under 0.08 ac</i>   | 0.6118   | \$ 47.72                   | per parcel |
| Medium                                             | <i>0.08 to 0.14 ac</i> | 1.0000   | \$ 78.00                   | per parcel |
| Large                                              | <i>over 0.14 ac</i>    | 1.0906   | \$ 85.06                   | per parcel |
| Condo - Med Density                                |                        | 0.6118   | \$ 47.72                   | per parcel |
| Condo - Hi Density                                 |                        | 0.3148   | \$ 24.55                   | per parcel |
| Multiple SFR on single parcel pays 16% higher rate |                        |          |                            |            |
| Non-Residential <sup>B</sup>                       |                        |          |                            |            |
| Apartment                                          |                        | 11.6429  | \$ 908.12                  | per acre   |
| Commercial / Retail / Industrial                   |                        | 13.8945  | \$1,083.74                 | per acre   |
| Office                                             |                        | 9.8081   | \$ 765.01                  | per acre   |
| Church / Institutional                             |                        | 11.1096  | \$ 866.52                  | per acre   |
| Institutional w/Playfield                          |                        | 7.9385   | \$ 619.18                  | per acre   |
| Park                                               |                        | 0.7662   | \$ 59.76                   | per acre   |
| Vacant (developed)                                 |                        | 0.7662   | \$ 59.76                   | per acre   |
| Open Space / Agricultural                          |                        | no fee   |                            |            |

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

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

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

### **ANNUAL COST INDEXING**

The 2019 Water Quality and Flood Protection Fee is subject to an annual adjustment tied to the Consumer Price Index-U for the San Francisco Bay Area as of December of each succeeding year (the "CPI"), with a maximum annual adjustment not to exceed 3%. Any change in the CPI in excess of 3% shall be cumulatively reserved as the "Unused CPI" and shall be used to increase the maximum authorized rate in years in which the CPI is less than 3%. The maximum authorized rate is equal to the maximum rate in the first fiscal year the Fee was approved adjusted annually by the lower of either 3% or the change in the CPI plus any Unused CPI as described above. NOTE: In order for the City's dedicated storm drainage revenue sources to satisfy cost requirements into the future, the annual adjustment for each property may be calculated based upon the sum of the Water Quality and Flood Protection Fee and the existing Storm Water Utility Fee.

### **MANAGEMENT AND USE OF STORMWATER FUNDS**

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

Dated: July 03, 2019

Engineer of Work

By   
 Jerry Bradshaw, License No. C48845

## APPENDICES

### APPENDIX A – FULL LIST OF CAPITAL PROJECT NEEDS

All figures are shown in thousands

**TABLE 9 – LIST OF CAPITAL IMPROVEMENT PROJECTS – ALL PRIORITIES**

| Category / Project             | Area            | 2019 Cost | Priority Levels |          |       |
|--------------------------------|-----------------|-----------|-----------------|----------|-------|
| Pipes / Lagoons                |                 |           | High            | Moderate | Low   |
| 1 Shoreline Culvert            |                 | 400       | 400             |          |       |
| 2 Bay Farm Island Gate Opener  | Bay Farm        | 400       | 400             |          |       |
| 3 Bayview Weir Rehab           | Bayview         | 200       | 200             |          |       |
| 4 Tidal Protection of Outfalls | Citywide        | 1,800     | 1,800           |          |       |
| 5 Veterans Court               | Bay Farm Island | 1,910     | 1,910           |          |       |
| 6 Lagoon Walls                 | South Shore     | 15,000    | 7,500           | 7,500    |       |
| 7 Seawall @ BFI Gate           | Bay Farm Island | 500       | 500             |          |       |
| 8 Dredge Lagoon - South Shore  | South Shore     | 600       | 600             |          |       |
| 9 Dredge Lagoon - BFI          | Bay Farm Island | 600       | 600             |          |       |
| 10 Bayview Weir                | Bay Farm Island | 12,000    |                 | 12,000   |       |
| 11 Gibbons                     | Eastside        | 3,180     |                 | 3,180    |       |
| 12 Thompson                    | Eastside        | 1,170     |                 |          | 1,170 |
| 13 High                        | Eastside        | 3,390     |                 | 3,390    |       |
| 14 Fernside                    | Eastside        | 1,910     |                 |          | 1,910 |
| 15 Washington                  | Eastside        | 850       |                 |          | 850   |
| 16 Calhoun                     | Eastside        | 320       |                 |          | 320   |
| 17 Grand                       | North Central   | 3,500     |                 | 3,500    |       |
| 18 Willow                      | North Central   | 3,070     |                 | 3,070    |       |
| 19 Walnut                      | North Central   | 2,440     |                 |          | 2,440 |
| 20 Oak Ave                     | North Central   | 2,120     |                 |          | 2,120 |
| 21 Park                        | North Central   | 640       |                 |          | 640   |
| 22 Everett                     | North Central   | 950       |                 |          | 950   |
| 23 Broadway                    | North Central   | 640       |                 | 640      |       |
| 24 Pearl                       | North Central   | 850       |                 | 850      |       |
| 25 Tilden                      | North Central   | 530       |                 |          | 530   |
| 26 Cambridge                   | North Central   | 950       |                 |          | 950   |
| 27 Constitution                | Northside       | 4,660     |                 | 4,660    |       |
| 28 West Atlantic               | Northside       | 4,130     |                 |          | 4,130 |
| 29 East Atlantic (1)           | Northside       | 850       |                 |          | 850   |
| 30 East Atlantic (2)           | Northside       | 640       |                 |          | 640   |
| 31 New Outfall                 | Northside       | 4,980     |                 | 4,980    |       |
| 32 Main St                     | Northside       | 530       |                 |          | 530   |
| 33 Webster (2)                 | Northside       | 150       |                 |          | 150   |
| 34 3rd Street                  | Northside       | 850       |                 |          | 850   |
| 35 Webster (3)                 | Northside       | 1,170     |                 |          | 1,170 |

| Category / Project          | Area            | 2019 Cost | Priority Levels |          |        |        |        |
|-----------------------------|-----------------|-----------|-----------------|----------|--------|--------|--------|
| Pipes / Lagoons (continued) |                 |           | High            | Moderate | Low    |        |        |
| 36 Chapin                   | Northside       | 320       |                 |          | 320    |        |        |
| 37 Paru                     | Northside       | 1,800     |                 |          | 1,800  |        |        |
| 38 Bay Sherman              | Northside       | 1,910     |                 |          | 1,910  |        |        |
| 39 Main St (2)              | Northside       | 850       |                 |          | 850    |        |        |
| 40 5th Street               | Northside       | 1,480     |                 |          | 1,480  |        |        |
| 41 Pacific St               | Northside       | 1,170     |                 |          | 1,170  |        |        |
| 42 Fountain                 | South Shore     | 1,590     |                 |          | 1,590  |        |        |
| 43 Mound                    | South Shore     | 530       |                 |          | 530    |        |        |
| 44 Franciscan               | South Shore     | 1,590     |                 |          | 1,590  |        |        |
| 45 Harbor Light             | South Shore     | 2,440     |                 |          | 2,440  |        |        |
| 46 Rosewood                 | South Shore     | 1,170     |                 | 1,170    |        |        |        |
| 47 Pearl                    | South Shore     | 950       |                 | 950      |        |        |        |
| 48 Alameda Park             | South Shore     | 1,800     |                 | 1,800    |        |        |        |
| 49 3rd                      | South Shore     | 530       |                 |          | 530    |        |        |
| 50 Willow                   | South Shore     | 50        |                 |          | 50     |        |        |
| 51 S Shore Center W         | South Shore     | 1,170     |                 |          | 1,170  |        |        |
| 52 Regent                   | South Shore     | 530       |                 |          | 530    |        |        |
| 53 Park                     | South Shore     | 530       |                 |          | 530    |        |        |
| 54 Page                     | South Shore     | 1,590     |                 |          | 1,590  |        |        |
| 55 Webster                  | South Shore     | 950       |                 |          | 950    |        |        |
| 56 Ballena                  | South Shore     | 850       |                 |          | 850    |        |        |
| 57 Paru                     | South Shore     | 100       |                 |          | 100    |        |        |
| 58 Shoreline                | South Shore     | 640       |                 |          | 640    |        |        |
| 59 Dublin Way               | Bay Farm Island | 950       |                 |          | 950    |        |        |
| 60 Island Drive             | Bay Farm Island | 80        |                 |          | 80     |        |        |
| 61 Verdemar Drive           | Bay Farm Island | 1,170     |                 |          | 1,170  |        |        |
| 62 Robert Davey Jr Dr       | Bay Farm Island | 210       |                 |          | 210    |        |        |
| 63 Mecartney Road           | Bay Farm Island | 1,270     |                 |          | 1,270  |        |        |
| 64 Arvington                | Bay Farm Island | 950       |                 |          | 950    |        |        |
| 65 Camelia                  | Bay Farm Island | 1,270     |                 |          | 1,270  |        |        |
| 66 Fitchburg                | Bay Farm Island | 640       |                 |          | 640    |        |        |
| 67 Holly                    | Bay Farm Island | 1,170     |                 |          | 1,170  |        |        |
| 68 Pipe Extension No        | Northside       | 1,480     |                 |          | 1,480  |        |        |
| 69 Pipe Extension NC        | North Central   | 1,590     |                 |          | 1,590  |        |        |
| 70 Pipe Extension So        | South           | 1,910     |                 |          | 1,910  |        |        |
| 71 Pipe Extension Ea        | Eastside        | 210       |                 |          | 210    |        |        |
| Pipes / Lagoons Subtotal    |                 | 115,320   |                 |          | 13,910 | 49,180 | 52,230 |
| Pump Stations               |                 |           |                 |          |        |        |        |
| 72 Arbor                    | North Central   | 3,570     |                 |          | 3,570  |        |        |
| 73 Webster                  | Westside        | 1,050     |                 |          | 1,050  |        |        |
| 74 Central/Eastshore        | Eastside        | 2,700     | 2,700           |          |        |        |        |
| 75 Golf Course              | Bay Farm Island | 1,170     |                 | 1,170    |        |        |        |

| Category / Project               | Area                          | 2019 Cost | Priority Levels |          |        |
|----------------------------------|-------------------------------|-----------|-----------------|----------|--------|
|                                  |                               |           | High            | Moderate | Low    |
| <b>Pump Stations (continued)</b> |                               |           |                 |          |        |
| 76 Harbor Bay I                  | Bay Farm Island               | 950       |                 | 950      |        |
| 77 Harbor Bay II                 | Bay Farm Island               | 1,170     |                 | 1,170    |        |
| 78 Main Street                   | Westside                      | 320       |                 | 320      |        |
| 79 Northside                     | Westside                      | 2,440     |                 | 2,440    |        |
| 80 Third Street                  | Westside                      | 640       |                 | 640      |        |
| Pump Stations Subtotal           |                               | 14,010    | 7,320           | 6,690    | -      |
| <b>Environmental</b>             |                               |           |                 |          |        |
| 81 Green Infrastructure          | Citywide                      | 2,100     | 2,100           |          |        |
| 82 Trash Capture                 | Citywide                      | 1,025     | 1,025           |          |        |
| Environmental Subtotal           |                               | 3,125     | 3,125           | -        | -      |
| <b>Operational Enhancements</b>  |                               |           |                 |          |        |
| 83 Outfall Upgrades              | Citywide                      | 1,319     | 197             | 363      | 759    |
| 84 Intersection Culverts         | Citywide                      | 16,500    | 2,100           | 5,700    | 8,700  |
| 85 Ponding Improvements          | Citywide                      | 3,500     | 1,500           | 1,500    | 500    |
| 86 Line Clean & Video            | Citywide                      | 3,150     | 788             | 1,103    | 1,260  |
| 87 Lagoon                        | South Shore & Bay Farm Island | 13,376    | 1,082           | 12,294   | -      |
| Ops Enhancements Subtotal        |                               | 37,845    | 5,667           | 20,960   | 11,219 |
| <b>TOTALS</b>                    |                               |           |                 |          |        |
|                                  |                               | 170,300   | 30,022          | 76,830   | 63,449 |

## APPENDIX B –PERCENTAGE OF IMPERVIOUS AREA ESTIMATIONS

For most land use categories, a sample of parcels was analyzed using aerial photography and other data to determine the average percentage of impervious area ("%IA"). Table 10 below shows the results of that analysis.

**TABLE 10 – PERCENT OF IMPERVIOUS AREA FROM SAMPLING RESULTS**

|                                      |                 |                       |                        | Total Acres        |                                 |
|--------------------------------------|-----------------|-----------------------|------------------------|--------------------|---------------------------------|
| Land Use Category                    | # of<br>Parcels | # Parcels<br>Analyzed | Total Acres<br>Sampled | Impervious<br>Area | Impervious<br>Area <sup>A</sup> |
| <b>Single-Family Residential</b>     |                 |                       |                        |                    |                                 |
| Small <i>Under 0.08 ac</i>           | 2,171           | 47                    | 2.84                   | 1.89               | 1,739 sf                        |
| Medium <i>0.08 to 0.14 ac</i>        | 9,899           | 189                   | 19.94                  | 11.83              | 2,843 sf                        |
| Large <i>over 0.14 ac</i>            | 2,164           | 43                    | 8.79                   | 3.68               | 3,100 sf                        |
| Condo Med-Density <sup>B</sup>       | 2,899           | not sampled           |                        |                    |                                 |
| Condo Hi-Density                     | 1,419           | 1,048                 | 27.55                  | 21.53              | 895 sf                          |
| <b>Non-Single-Family Residential</b> |                 |                       |                        |                    |                                 |
| Multi-Family Residential             | 719             | 35                    | 61.83                  | 46.98              | 75.98%                          |
| Commercial / Retail / Industrial     | 662             | 58                    | 16.41                  | 14.88              | 90.68%                          |
| Office                               | 131             | 23                    | 42.26                  | 27.05              | 64.01%                          |
| Church / Institutional               | 146             | 31                    | 24.62                  | 17.85              | 72.50%                          |
| Institutional w/Playfield            | 20              | 9                     | 48.70                  | 25.23              | 51.81%                          |
| Park <sup>C</sup>                    | 163             | not sampled           |                        |                    |                                 |
| Vacant (developed) <sup>C</sup>      | 185             | not sampled           |                        |                    |                                 |
| <b>TOTAL</b>                         | <b>20,578</b>   | <b>1,483</b>          | <b>252.94</b>          | <b>170.92</b>      | <b>na</b>                       |

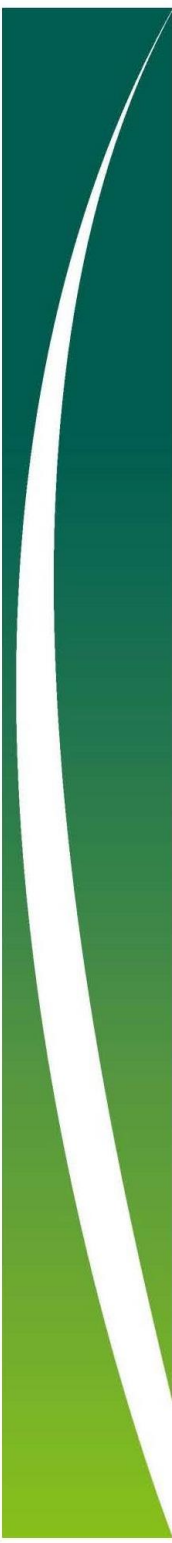
A For Residential, impervious area is the median value of all parcels analyzed. For Non-Residential, impervious area is expressed as a percentage of parcel area (Total IA/Total Acres sampled).

B Condominium – Not sampled as explained on Page 11 of this Report.

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

## **APPENDIX C – LOW IMPACT DEVELOPMENT RATE CREDIT ANALYSIS**

On the following pages is an analysis done for the City of Cupertino in February 2019 that estimated the extent that low impact development (“LID”) reduces the impact on the City’s storm drain system. Cupertino is similar to the City of Alameda in that both are mid-sized cities with similar land use patterns, storm drainage systems, and magnitude of costs and needs. Further, both cities operate under the same MRP 2.0.



## **CITY OF CUPERTINO**

### **FEE REPORT**

### **2019 CLEAN WATER AND STORM PROTECTION FEE**

FEBRUARY 2019

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

ENGINEER OF WORK:  
**SCIConsultingGroup**  
4745 MANGELS BOULEVARD  
FAIRFIELD, CALIFORNIA 94534  
PHONE 707.430.4300  
FAX 707.430.4319  
[WWW.SCI-CG.COM](http://WWW.SCI-CG.COM)

#### **OPEN SPACE AND AGRICULTURAL PARCELS ARE NOT CHARGED**

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

#### **HYBRID PARCELS**

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

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

#### **LOW IMPACT DEVELOPMENT RATE ADJUSTMENT**

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

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

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

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

**TABLE 6 – LOW IMPACT DEVELOPMENT RATE ADJUSTMENT ANALYSIS**

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

#### STORMWATER FEE CALCULATION

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

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

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

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

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

<sup>9</sup> <https://www.cupertino.org/home/showdocument?id=21776>

**APPENDIX D – STORMWATER RATES FROM OTHER MUNICIPALITIES**

There have been relatively few voter-approved local revenue measures in the past 15 years to support stormwater programs in California. A summary of those efforts plus some others in process or being studied is shown in Table 11 on the following page, in roughly chronological order. Amounts are annualized and are for single family residences or the equivalent.

TABLE 11 – RECENT STORM DRAIN BALLOT MEASURES

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

In addition to the agencies listed above in Table 11 that have gone to the ballot for new or increased Stormwater Fees, there are several other municipalities throughout the State that have existing Stormwater Fees in place. Some of these rates are summarized in Table 12 below. Amounts are annualized and are for single family residences or the equivalent.

The City's proposed \$78.00 SFR rate is well within the range of stormwater rates adopted by other municipalities.

**TABLE 12 – SAMPLE OF RATES FROM OTHER MUNICIPALITIES**

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

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

**APPENDIX E - LIST OF ACRONYMS AND ABBREVIATIONS**

|         |                                                              |
|---------|--------------------------------------------------------------|
| %IA     | Percent Impervious Area                                      |
| C.3     | Provision C.3 of the MRP – New Development and Redevelopment |
| CIP     | Capital Improvement Program                                  |
| CPI     | Consumer Price Index (from the Bureau of Labor & Statistics) |
| FY      | Fiscal Year                                                  |
| G.I.    | Green Infrastructure                                         |
| GO Bond | General Obligation Bond                                      |
| ISA     | Impervious surface area                                      |
| LID     | Low impact development                                       |
| MFR     | Multi-family residential                                     |
| MRP     | Municipal Regional Permit (current version is MRP 2.0)       |
| NPDES   | National Pollution Discharge Elimination System (EPA)        |
| O&M     | Operations and maintenance                                   |
| sf      | Square feet                                                  |
| SFE     | Single-family equivalent                                     |
| SFR     | Single-family residential                                    |
|         |                                                              |
|         |                                                              |
|         |                                                              |
|         |                                                              |
|         |                                                              |
|         |                                                              |
|         |                                                              |
|         |                                                              |