

2016 STORM DRAIN BLUE RIBBON COMMITTEE RECOMMENDATIONS REPORT

To the City Manager:

The Storm Drain Blue Ribbon Committee is pleased to provide this report recommending a package of storm water capital improvement projects, storm drain system maintenance actions, and storm water quality protection programs for the City of Palo Alto (City) to be paid for by a renewal of the Storm Drainage Fee (to be renamed the “Storm Water Management Fee”).

BACKGROUND

The City’s storm drain capital improvement, maintenance and water quality protection programs are funded through the Storm Drainage Fund, an enterprise fund established by Council in 1989. Revenue is generated through a Storm Drainage Fee, which is collected through monthly City utility bills. Before the current Storm Drainage Fee rate structure was approved in 2005 by a majority of property owners in a ballot-by-mail election, the fee was \$4.25 per month per Equivalent Residential Unit (ERU). An ERU is the billing unit for the Storm Drainage Fee and is based on the average amount of impervious surface on a typical single-family residential property (2,500 square feet). Single-family residential (SFR) parcels are billed a flat rate of 0.8 to 1.4 ERUs based on parcel size, while non-SFR parcels are billed the number of ERUs corresponding to the actual measured quantity of impervious surface on the parcel. The 2005 property owner approval increased the fee to \$10.00 per month per ERU, with provisions for an annual adjustment for inflation at the discretion of the City Council. The fee, which is set at \$12.63 per month per ERU for FY 2016, is scheduled to sunset on June 1, 2017. Without renewal of the increased Storm Drainage Fee, the monthly fee would revert back to the base fee of \$4.25 per month, which is insufficient to cover the storm drain program’s base operating costs.

The Storm Drainage Fee is a property-related fee subject to the provisions of Proposition 218, requiring a majority of voting property owners to approve a fee increase. In 2000, the City conducted a property owner election seeking approval to increase the Storm Drainage Fee from \$4.25 per month up to \$9.00 per month to cover needed storm drain improvements. The ballot measure was unsuccessful.

In 2002, the City Manager appointed a Blue Ribbon Committee to work with staff to review storm drain funding needs and identify a funding mechanism for future storm drain operational and capital improvement program expenses. The Committee recommended funding a storm drain program including augmented maintenance activities, expanded storm water quality protection activities, and a specific set of seven prioritized storm drain capital improvement projects on a pay-as-you-go basis by increasing the Storm Drainage Fee to \$10.00 per month. The Committee also endorsed the creation of an oversight committee, the capping of annual inflationary rate increases at 6%, sunseting of the higher fees after a program duration of 12 years, and funding for innovative projects. The Committee’s proposals were approved by the City Council and presented to property owners in a ballot-by-mail election in Spring 2005. The ballot measure passed with an approval rate of 58%.

The 2005 ballot measure provided for funding of the storm drain program through June 1, 2017. The resulting ratepayer revenues have enabled Public Works staff to implement a successful set of operational enhancements and storm drain capital improvements. All seven of the high-priority capital improvements specified in the ballot measure will be substantially completed or under construction by the June 1, 2017 sunset date. The following is a summary of the accomplishments achieved since passage of the 2005 ballot measure. Photos of some of the improvements are shown on pages 3 and 4 of this report.

- Implementation of Storm Drain Capital Improvement Projects
 - San Francisquito Creek Storm Water Pump Station (\$9.1 million)
Completed in 2009
 - Channing Ave/Lincoln Ave Storm Drain Improvements (\$6.4 million)
Completed in 2011 through 2016 (three phases)
 - Matadero Creek Storm Water Pump Station Upgrade (\$6.1 million)
To be completed in 2017¹
 - Southgate Neighborhood Storm Drain Improvements (\$2.0 million)
Completed in 2014
 - Alma Street Storm Drain Improvements (\$785K)
Completed in 2010
 - Clara Drive Storm Drain Improvements (\$750K)
Completed in 2014
 - Gailen Ave/Bibbits Drive Storm Drain Improvements (\$650K)
Completed in 2006

- Operational enhancements implemented over the 12-year funding period
 - \$7 million in storm drain system replacement and rehabilitation projects
 - \$1 million in enhanced storm drain system maintenance (pump and equipment maintenance and replacement)
 - \$1.2 million for increased staffing and expenses for storm water quality protection
 - \$55,000 in incentive rebates to residents and businesses for rain barrels, cisterns, green roofs, and permeable pavement

Storm water discharge regulations designed to protect local creeks and the Bay are stricter than those in place at the time of the 2005 ballot measure. Palo Alto received its first municipal storm water permit from the San Francisco Bay Regional Water Quality Control Board (Water Board) in June 1990. In 2009, the Water Board issued a single Municipal Regional Storm Water NPDES Permit (MRP) to regulate storm water discharges from municipalities and local agencies throughout the Bay Area. The MRP expanded regulatory requirements and included 15 provisions requiring activities to prevent storm water pollution, including business and construction site inspections, control of specific pollutants such as trash, pesticides, copper, PCBs, and mercury, new and redevelopment requirements, potable water discharge practices, public outreach and education. The storm water quality protection regulations were further strengthened with the Water Board's issuance of an updated MRP in November 2015.

¹ excepting the associated pipeline improvement project, which will be deferred to FY2018

Examples of Completed Storm Drain Capital Improvement Projects



San Francisquito Creek Pump Station



Channing Avenue box culvert



Southgate neighborhood bioretention planter



Southgate neighborhood permeable crosswalk



Gailen/Bibbits storm drain pipeline

**Examples of Storm Runoff Reduction Measures Funded
Through the City's Storm Water Rebate Program**



Rain Barrel Installation



Permeable Interlocking Concrete Pavers



Rain Barrel Installation



Pervious Concrete Driveway



Residential Green Roof

THE FUTURE OF STORMWATER MANAGEMENT

Looking to the future, the City's storm water management program will place a growing emphasis on activities and measures that protect and enhance the quality of the storm water entering our local creeks and San Francisco Bay. The updated MRP added a new focus on managing storm water runoff generated by the built environment using "green storm water infrastructure." The following paragraphs provide background information and context for this new concept.

Green Storm Water Infrastructure

A new Municipal Regional Storm Water permit was issued in November 2015 and went into effect on January 1, 2016. The new permit continues all of the requirements from the prior permit and adds several new mandates, including the development of a Green Storm Water Infrastructure Plan. Green storm water infrastructure protects or restores the natural water cycle by collecting and retaining, and/or treating, runoff rather than discharging it directly to storm drains. Green storm water infrastructure practices, also referred to as low impact development measures, include preserving natural landscapes and utilizing infiltration planters, rain gardens, tree wells, green roofs, pervious pavement, and rainwater harvesting to manage storm water runoff. These practices help to limit the discharge of pollutants from streets, parking lots, and roofs by infiltrating storm water into soils. Furthermore, green infrastructure provides amenities with many benefits beyond water quality improvement and groundwater replenishment, including creation of attractive tree-lined streetscapes, wildlife habitat, reduction of heat island effect, bicycle and pedestrian accessibility, and enhanced public health. The recently completed Southgate Neighborhood Storm Drain Improvement and Green Street Project, with its bioretention planters and permeable crosswalks, is a local example of a green storm water infrastructure project.

Green Storm Water Infrastructure Plan

The MRP's green infrastructure requirement includes development of a Council-approved Green Storm Water Infrastructure Plan (Plan) framework by June 2017, and development of a full Plan by June 2019, that includes a mechanism and set of criteria to prioritize projects for inclusion of green infrastructure, a list of prioritized projects and targets for green infrastructure implementation, design guidelines/standard specifications, ordinance changes, and a funding plan. The permit also requires annual review of proposed capital projects for green storm water infrastructure integration.

Other City plans are also incorporating the concept of green storm water infrastructure. For example, the City's draft Sustainability and Climate Action Plan (S/CAP) includes a strategy to create and implement a Green Infrastructure Plan that prioritizes green streets infrastructure (W-2.1):

- Create policies that integrate the design of green infrastructure into City and private sector projects to store, infiltrate, cleanse and evapotranspire storm water.
- Expand permeable paving and reduce impermeable paving.
- Increase rainfall infiltration, replenish groundwater, utilize soil to filter pollutants, increase habitat, retain and detain storm water and meet State and Federal permit requirements.

- Utilize: bioswales, raingardens, infiltration basins, retention basins, rain barrels cisterns, green roofs, vegetation, and permeable blocks, pavement and systems.

Development of a Green Storm Water Infrastructure Plan and implementation of green infrastructure projects is a key new element of the Committee’s recommended storm water program and funding plan.

Storm Drain System Capacity Upgrades

In anticipation of the sunset of the 2005 ballot measure, Public Works Department staff retained an engineering consultant to update the Storm Drain Master Plan in 2015. The consultant updated the digital storm drain system model and identified a prioritized list of storm drain system improvements needed to enable the system to convey the runoff from a 10-year storm without street flooding over the top of the curb. The Master Plan Update lists approximately \$98 million of recommended storm drain pipeline and pump station upgrades, including approximately \$43 million of high- and medium-priority projects, which are those projects that address areas currently subject to street flooding depths over 6 inches over an extended period of time. The Committee sought to provide funding for as many of the projects as possible within the recommended rate structure and revenue stream, starting with the highest-priority projects.

RECOMMENDATIONS

The Storm Drain Blue Ribbon Committee recommends the following:

- 1) A renewed and renamed “Storm Water Management Fee” should be proposed to Palo Alto property owners for their approval in order to generate funding for storm water infrastructure improvements, system maintenance, and storm water quality protection on a pay-as-you-go basis as follows:
 - a) Increase the base Storm Water Management Fee from \$4.25 per month per Equivalent Residential Unit (ERU) to \$6.62/month/ERU to cover ongoing non-capital expenditures for engineering, maintenance, and storm water quality staffing, expenses, and permit compliance. This increase would reflect the true cost of storm water management baseline services. The City Council should have the discretion to increase the base fee by the amount of change in the local Consumer Price Index (CPI) or 6% per year, whichever is less, and the base fee should not sunset.
 - b) Include an additional Capital Improvement Project (CIP), Incentive Project (IP), and Green Storm Water Infrastructure (GSI) Project fee of \$7.03 per month per ERU that would sunset after 15 years. The storm water capital improvement projects listed in Attachment A, totaling \$27.2 million in Year 2015 dollars, should be pursued through renewal of the Storm Water Management Fee over a period of 15 years. These improvements would eliminate street flooding in storms up to the 10-year level in the areas they serve. These improvements also are intended to reduce road/sidewalk/curb/gutter repair costs by reducing subsoil water saturation and to increase traffic safety during storms.

- c) The total monthly fee, including the base fee and CIP/IP/GSI fee, would be \$13.65 per ERU beginning in FY 2018, a 2.3% increase over the current funding model approved in 2005. The City Council should have the discretion to increase the fee by the amount of change in the local Consumer Price Index (CPI) or 6% per year, whichever is less.
 - d) The Storm Water Management Fund should maintain a reserve balance of at least \$1.5 million to cover potential cost overruns on project or operational expenses.
 - e) Further details on the project/program elements to be funded by the \$ 13.65 monthly fee are contained in Attachment A (List of Proposed Storm Drain Capital Improvement Projects) and Attachment B (Recommended Storm Water Management Program and Funding Plan).
 - f) The Storm Water Management Fee rate structure for single-family residential properties should retain its existing three rate categories, based on parcel size (less than 6,000 square feet; between 6,000 and 11,000 square feet; and greater than 11,000 square feet).
 - g) As is currently the case, a fee reduction appeal process to City staff should be in place for those property owners who can demonstrate that the run-off from their properties drains directly to a creek or another city's storm drain system, and that they have complied with all applicable permit and other legal requirements for such drainage. In addition, this appeal process should apply to those property owners who can demonstrate that they have constructed improvements to their properties to retain storm runoff onsite. In keeping with the present policy, the reduction in fees would not apply to that portion of the monthly fee attributable to City-wide programs.
- 2) The City should take all steps necessary to conduct a property owner, ballot-by-mail election in conformance with the provisions of Proposition 218 as early as possible in CY 2017 so that the fee can be implemented on June 1, 2017, when the existing property owner-approved fee sunsets. The election would require a simple majority vote to pass.
 - 3) The fee name should be changed from "Storm Drainage Fee" to "Storm Water Management Fee."
 - 4) The City should develop an Integrated Water Management Plan (Plan) that takes a comprehensive look at how all water-related issues (water supply and demand, storm water, recycled water and groundwater) might be best addressed to achieve multiple benefits. This Plan is intended to complement the Utilities Department's Urban Water Management Plan and Water Integrated Resources Plan.
 - 5) Per the terms of the Municipal Regional Storm Water Discharge Permit, the City should adopt the framework for a Green Storm Water Infrastructure Plan by June 30, 2017. Until the Green Storm Water Infrastructure Plan is completed in 2019, staff should

identify and implement opportunities for green storm water infrastructure projects. The framework should also elucidate goals for green infrastructure and consider the interaction between green infrastructure and shallow groundwater.

- 6) The City should implement pilot projects, such as utilizing pervious pavement materials to test their feasibility and effectiveness (e.g. use permeable materials for parking lane or bicycle lane as part of a scheduled street maintenance project). If the pilot projects are successful, the City should implement policies that make use of permeable pavement materials a standard practice.
- 7) Proposed Green Storm Water Infrastructure (GSI) funding will cover both the cost of the Green Storm Water Infrastructure Plan preparation and GSI projects. GSI projects retain, infiltrate and/or treat storm water and include, but are not limited to, rain gardens, green roofs, tree wells, bioswales, bioretention/infiltration basins, and permeable pavement. Incentive Project (IP) funding (as distinguished from GSI funding) will encourage residents and commercial property owners to incorporate green infrastructure measures into their private property projects.
- 8) A Council-appointed Storm Water Management Oversight Committee should be formed to oversee expenditures for all storm water funding elements, including, but not limited to, Green Storm Water Infrastructure projects, CIP projects, and Incentive Project funding. The Committee should be empowered to consider and recommend consolidation of Green Storm Water Infrastructure and Incentive Project funding for particular projects. The Committee will annually review the Storm Water Management Fund budget and expenditures to ensure they are consistent with the funding plan included in the ballot measure approved by property owners and not used for other purposes.
- 9) Each new City storm drain capital improvement project should incorporate Green Storm Water Infrastructure measures to the extent practicable.
- 10) City staff should consider opportunities to include green infrastructure into all appropriate City capital improvement projects that impact storm water. Although GSI funds from the Storm Water Management Fund can be used to fund pilot projects, all City Departments should rapidly include funding for GSI elements when budgeting for their projects, and not be dependent upon funding from the Storm Water Management Fund.
- 11) The City should develop or participate in the development of green infrastructure design guidelines and standard specifications and drawings that can inform designers of private and public projects as they incorporate these features into their project designs.
- 12) The ongoing Comprehensive Plan Update, the City Parks Master Plan, Urban Forest Master Plan, and other City planning documents should include green infrastructure goals and policies as required by the Municipal Regional Storm Water Permit.

- 13) The City should expand the scope of its storm water rebate program to promote the use of green storm water infrastructure measures to reduce storm water runoff from private property, including, but not limited to, new rebates for rain gardens and increased rebate amounts for rain barrels, cisterns, green roofs, and permeable pavement.
- 14) The City should evaluate the implementation of a user fee for point-source discharges to the storm drain system to reflect their utilization of the system capacity. Exceptions should be provided for artesian well discharges and similar non-discretionary discharges.
- 15) The City should look for opportunities to work with the Santa Clara Valley Water District and others to minimize new concrete channels and replace portions of existing concrete channels with more natural creek channel materials, to the extent that flood protection is not compromised. The purposes of such projects are to increase infiltration, protect creek banks, and create recreational and educational opportunities.

STORM DRAIN BLUE RIBBON COMMITTEE MEMBERS

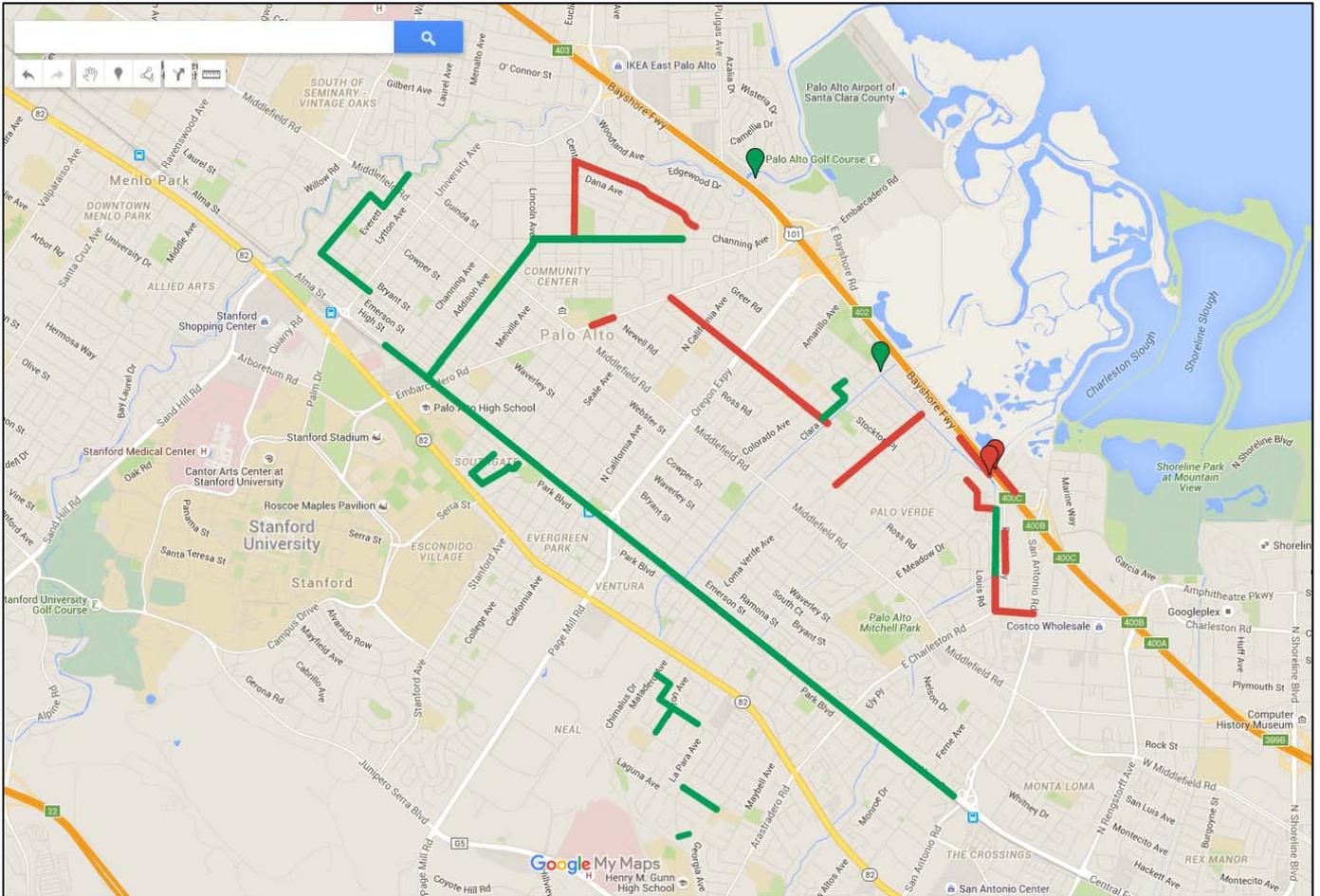
Peter Drekmeier, Co-Chair
Claire Elliott, Co-Chair
Norm Beamer
David Bower
Nancy Clark
Stephany McGraw
Hal Mickelson
Susan Rosenberg
Bob Wenzlau
Richard Whaley

ATTACHMENT A

STORM DRAIN BLUE RIBBON COMMITTEE'S RECOMMENDED LIST OF STORM DRAIN CAPITAL IMPROVEMENT PROJECTS

Project Name	Location	Cost (2016\$K)
1. Loma Verde Ave (Louis to Sterling Canal) capacity upgrade	Midtown	\$2,200
2. Corporation Way/E Bayshore Road Pump Station to Adobe Ck	Baylands	\$2,420
3. W. Bayshore Rd to Adobe Ck capacity upgrade	Palo Verde	\$1,390
4. W. Bayshore Rd Pump Station to Adobe Creek	Palo Verde	\$1,040
5. E. Charleston Rd to Adobe Ck capacity upgrade	Charleston Terrace	\$1,300
6. E. Meadow Cir connection to Adobe Ck PS	E Meadow Circle	\$ 360
7. E. Meadow Dr to Adobe Ck PS capacity upgrade	Ortega	\$ 400
8. Fabian Way capacity upgrade	Fabian Way	\$ 580
9. Hamilton Ave (Center to Rhodes) capacity upgrade	Duveneck-St Francis	\$3,440
10. Louis Rd (Embarcadero to Seale-Wooster Canal) capacity upgrade	Garland/Midtown	\$6,910
11. Louis Rd (Seale-Wooster Canal to Matadero Ck) overflow pipe	Midtown	\$1,560
12. Colorado Pump Station removal	Midtown	\$ 430
13. Loma Verde Ave (Ross to Louis) capacity upgrade	Midtown/Palo Verde	\$1,340
14. Center Drive capacity upgrade	Crescent Park	\$1,620
15. E. Charleston Rd (San Antonio to Fabian) capacity upgrade	Charleston Terrace	\$1,030
16. Embarcadero Road (Fulton to Newell) capacity upgrade	Leland Manor	<u>\$1,200</u>
TOTAL		\$27,200

Map of Completed and Proposed Storm Drain Improvements



= Previously completed storm drain capital improvements



= Proposed storm drain capital improvements

**Examples of Street Flooding to be Addressed by
Proposed Storm Drain Capital Improvements**



Ashby Drive



East Meadow Circle



East Bayshore Road



E. Charleston Road



Fabian Way

ATTACHMENT B

STORM DRAIN BLUE RIBBON COMMITTEE'S RECOMMENDED STORM WATER MANAGEMENT PROGRAM AND FUNDING PLAN

A) Base (Ongoing) Components

- 1) Ongoing storm drain maintenance & water quality programs
- 2) New **Regulatory** Water Quality Protection Requirements (Municipal Regional Permit from State)
- 3) Resulting new Base Fee Amount: starts at **\$ 6.62/month**
- 4) Escalates by Consumer Price Index (CPI) or 6%, whichever is less, each year
- 5) **No Sunset** provision on Base (goes on indefinitely)

B) Project/Green Infrastructure Components

- 1) Funding for listed **Storm Drain Capital Improvement Projects (CIP)**
- 2) Annual **Green Stormwater Infrastructure (GSI)** funding (starting at \$450K/year) (unused funding goes to capital improvement projects, unless it is to be carried forward to an identified GSI project in subsequent years)
- 3) Annual **Incentive Project (IP) funding** component (starting at \$154K/year)
- 4) Annual **Storm Drain Repair/Rehabilitation CIP** funding (starting at \$500K/year)
- 5) Maintain reserve balance of \$1.5M (~15% of annual expenditures) to cover potential cost overruns on project or operational expenses
- 6) Project/Green Infrastructure Fee Amount: starts at **\$ 7.03/month**
- 7) Escalates by CPI or 6%, whichever is less, each year
- 8) **Sunsets after 15 years**

C) Total Fee Amount for All Components

- 1) Resulting new Total Fee Amount (Ongoing + Project/GI Components): starts at **\$ 13.65/month in FY 2018**
- 2) Equates to **2.3% increase** from projected FY 2018 Fee under current funding scenario (which is estimated to be \$ 13.34/month in FY 2018)