

Stormwater Management Oversight Committee Meeting

August 16, 2018

Agenda

1. Introduction
2. FY 2020 budget brainstorm
3. Matadero Pump Station Update
4. GSI plan progress update
5. Q&A





Follow ups

- Storm Drainage Fund debt obligation
 - Last payment in FY 2024 (\$947K)
- PAUSD pays storm water management fee as part of the utilities bill
- Quantifying stormwater treatment (need clarifications...)
 - 2 year storm vs. 10 year storm
 - First few storms of the rainy season
 - Hard to quantify environmental benefits or community benefits

FY 2020 budget brainstorm

- What are your priorities for FY2020?
- Operating
 - Base program (water quality, flood control)
 - Maintenance
 - GSI & Innovative project
- Capital
 - Planned CIPs

GSI Short Term Proposed Plan

	FY 2018 Adopted Budget	FY 2018 Projection	FY 2019 Proposed Budget	FY 2020 Projection
Green Stormwater Infrastructure	380	380	380	380
GSI - CIP Design/Construction	330 ^[1]	330 ^[1]	330 ^[1]	300
GSI - Consulting Services	35 ^[2]	35 ^[2]	50 ^[3]	40 ^[3]
GSI - Other unassigned tasks	15	15	0	40
Innovative Project	125	103	125	125
Innovative Project - GSI	0	0	30 ^[4]	35 ^[4]
Innovative Project - Rebates	125	3	95	90
Innovative Project - Other unassigned tasks		100		

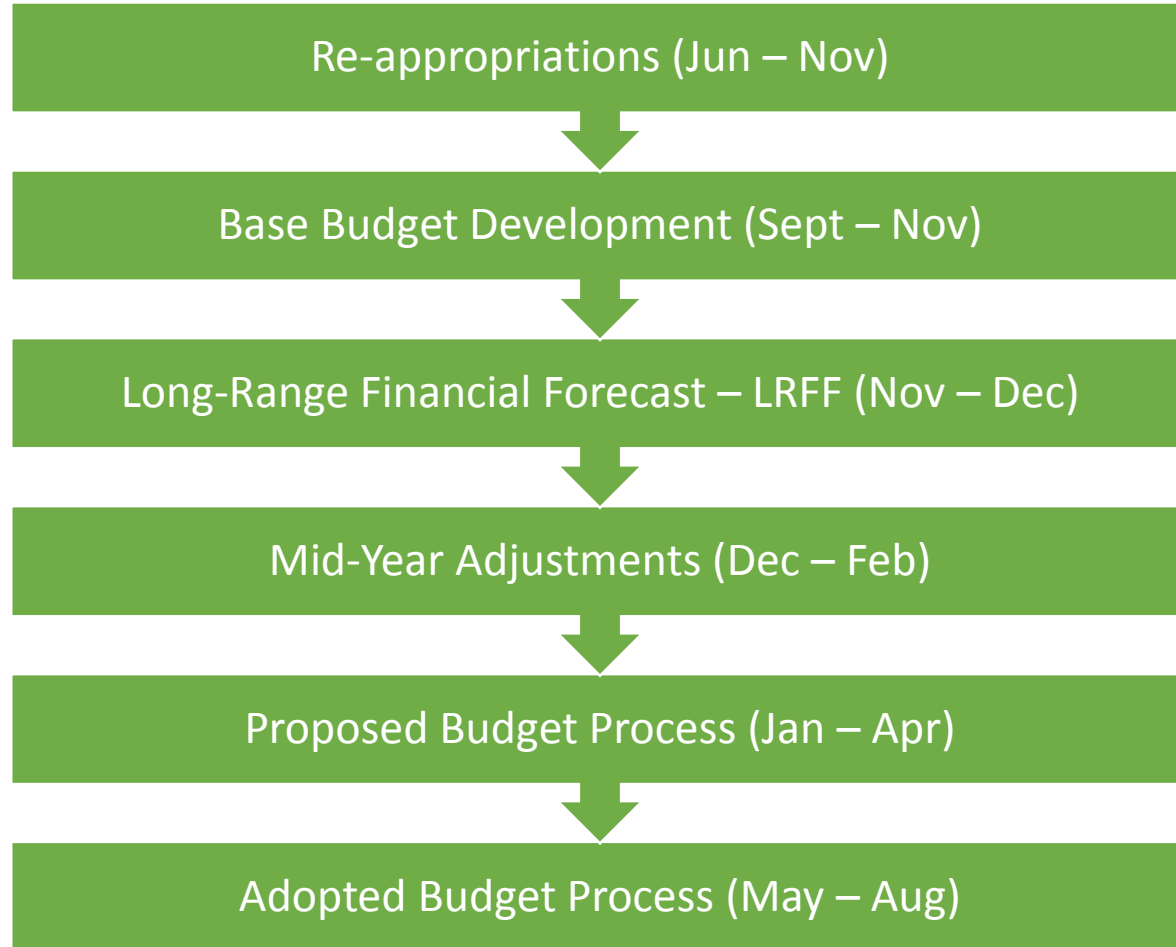
^[1]Charleston / Arastradero CIP project GSI elements

^[2]Contract with EOA on development of GSI Plan

^[3]Contract service to develop GSI engineering spec document

^[4]Contract service to develop GSI maintenance and monitoring manual

Budget Process - Timeline



Matadero Pump Station – Existing Pump Column



New pump, column, and motor



New Electric Building



Matadero Pump Station

Play Video

New pump and column



City of Palo Alto Green Stormwater Infrastructure Plan



Agenda

GSI Plan Progress

SWRP Update & Concept Project

50% GSI Plan: Current

85% Plan: Future

GSI Project Leveraging

Feedback & Next Steps

GSI Plan Progress

- 50% Plan
- Staff meetings: Jan 2018 – present
- Stormwater Oversight Committee mtgs.:
December 2018
- Muni Code update: Draft in September
- GSI UBI: July
- PAUSD coordination



GSI Plan 50%: Table of Contents

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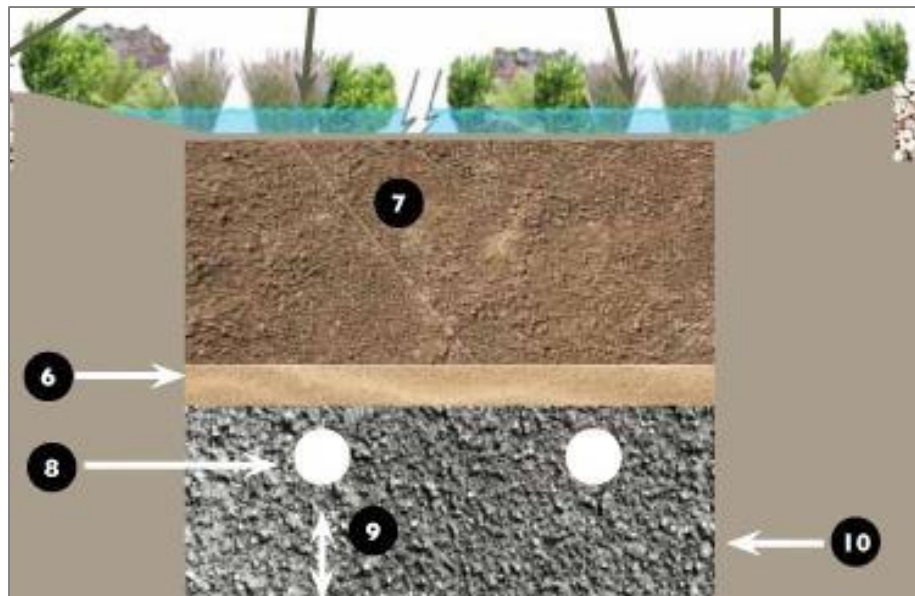
GSI

vs.

Open Space Parks

- Reduces, slows runoff
- Promotes infiltration
- Collects runoff
- Treats runoff

- Reduces, slows runoff
- Promotes infiltration



GSI Plan 85% Components

- Implementation Plan, including outreach
- Project/pollutant reduction tracking system
- Funding options (alternative compliance)
- Impervious surface targets
- Internal processes
- Leveraging CIPs



GREEN STREETS IMPROVE COMMUNITIES

"Green Streets" slow, absorb and filter pollution in stormwater runoff and improve pedestrian and bicycle safety. Learn more about Green Streets and the City's Green Stormwater Infrastructure Plan at cityofpaloalto.org/GSI or call 650-329-2122.

Stormwater Planters

capture, filter, and slow roof runoff from disconnected downspouts.



Permeable Pavement

reduces runoff by permeating rain into the soil below.

Tree Well Filters

utilize suspended pavement systems so that roots can extend further; this allows trees to grow taller, provide more shade, and absorb more runoff.



Bioretention Areas

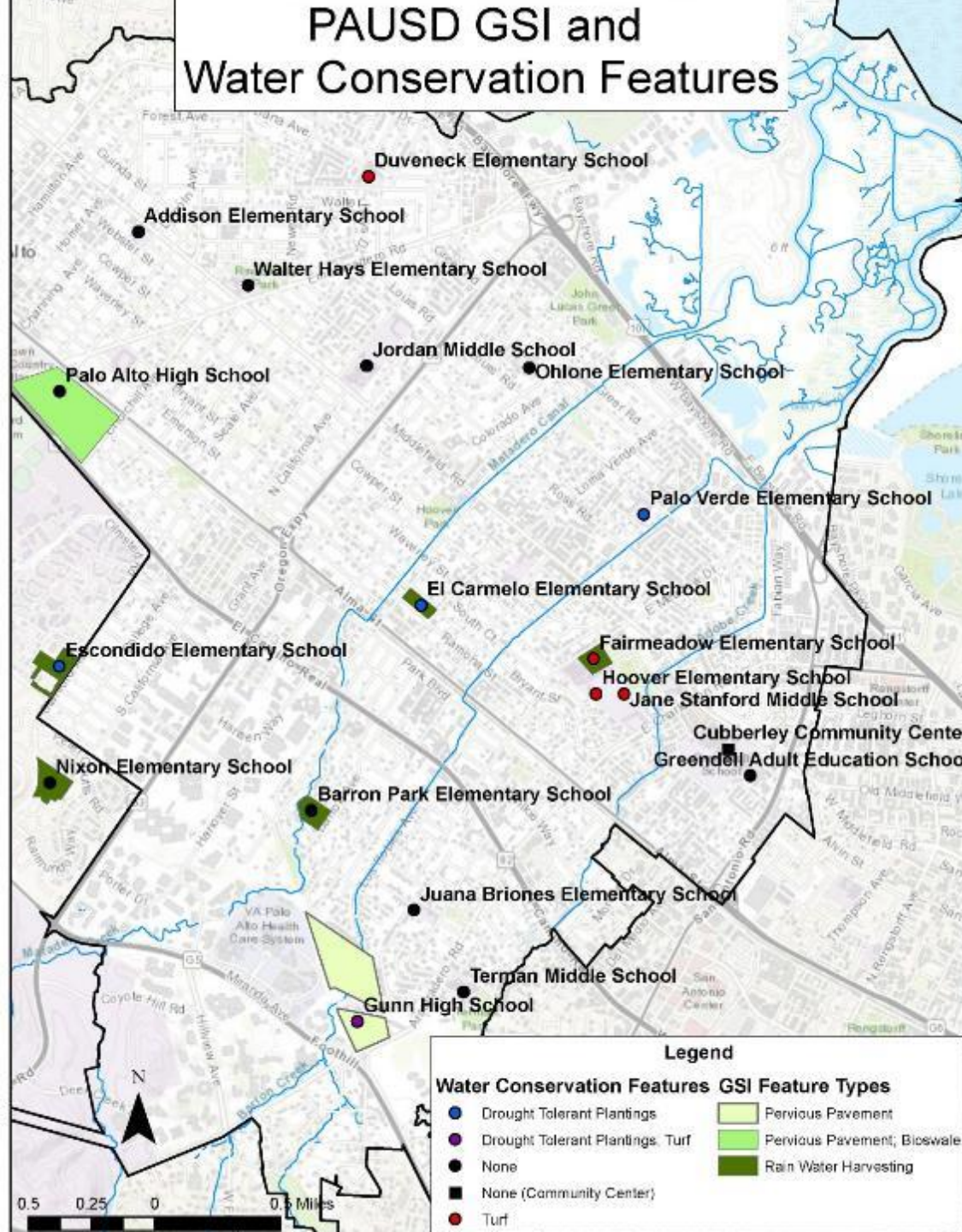
filter runoff collected from hardscapes through drought-tolerant plants and well-draining soils. They can also provide traffic calming features.



Funded by your monthly
Stormwater Management Fee.



PAUSD GSI and Water Conservation Features

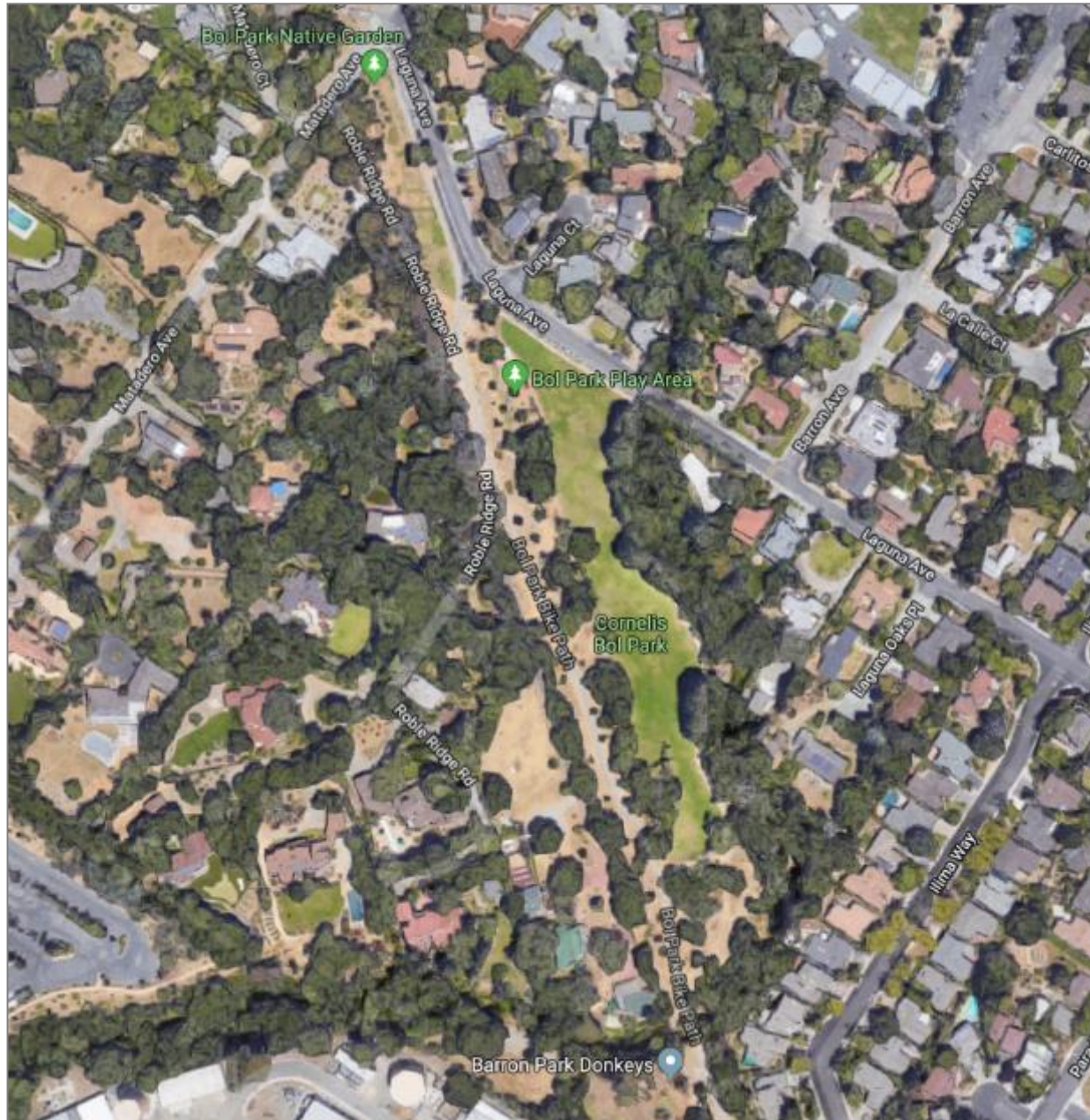


SWRP Progress

- Administrative Draft SWRP – comments due Sept. 14
- Public Meetings – Aug. 28 & Sept. 6
- Concept projects
- Updated metrics for CPA projects (85% Plan)



SWRP Concept Project: Cornelis Bol Park



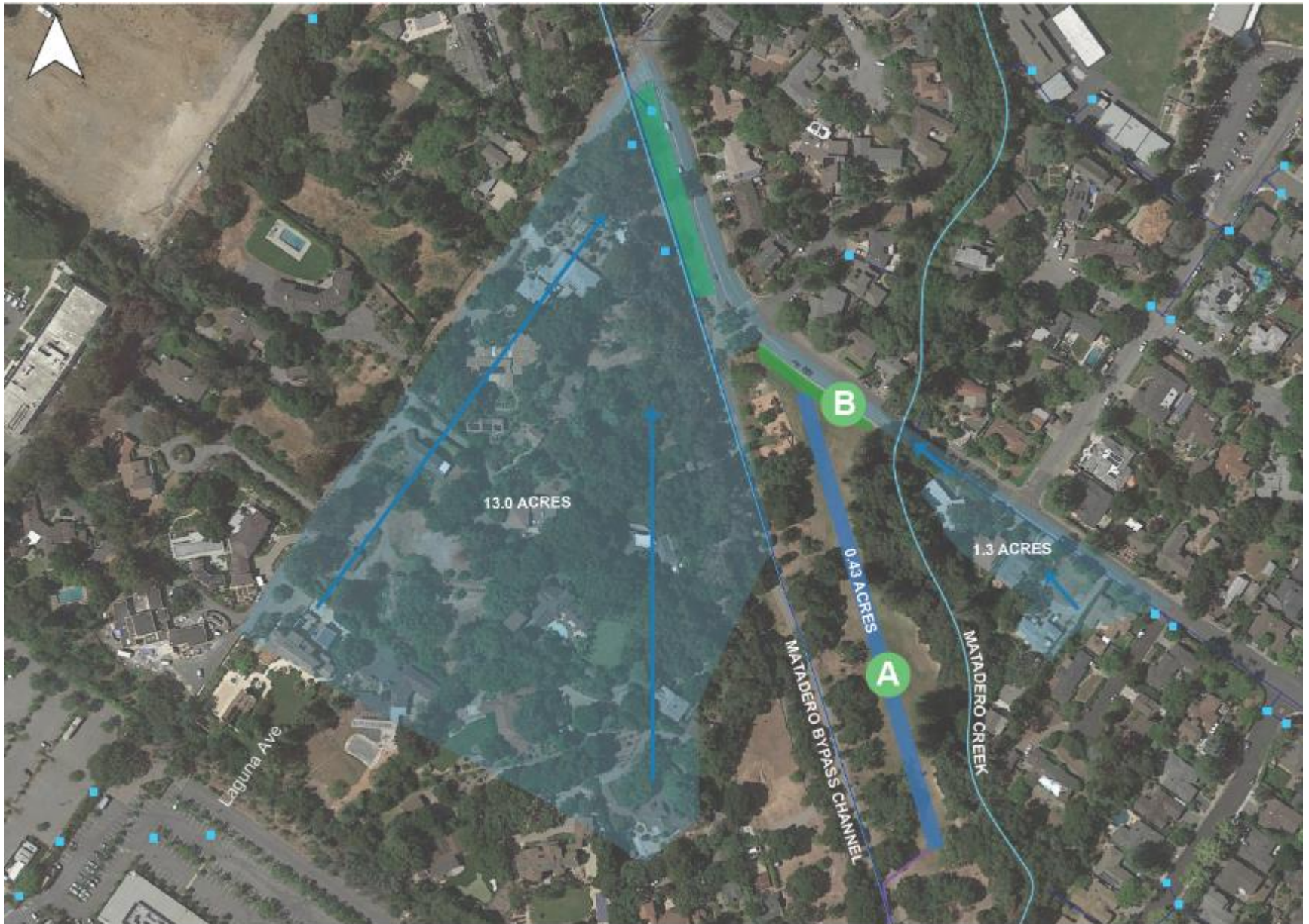
Storm Drain Diversion



- LEGEND**
- Site Parcel
 - Potential Drainage Area
 - Creek / Channel
 - Diversion Pipe



Bioretention Areas



LEGEND

- Creek / Channel
- Storm Drain Network
- Flow Direction
- Cistern
- ⓐ See Precedent Image on Next Page
- Catch Basins
- Potential Drainage Area
- Bioretention*
- Diversion Pipe

Treatment Examples



R. Dusenbury

Linear Filtration Chamber and Cistern Will Run up the Spine of the Park under the Open Grassy Space



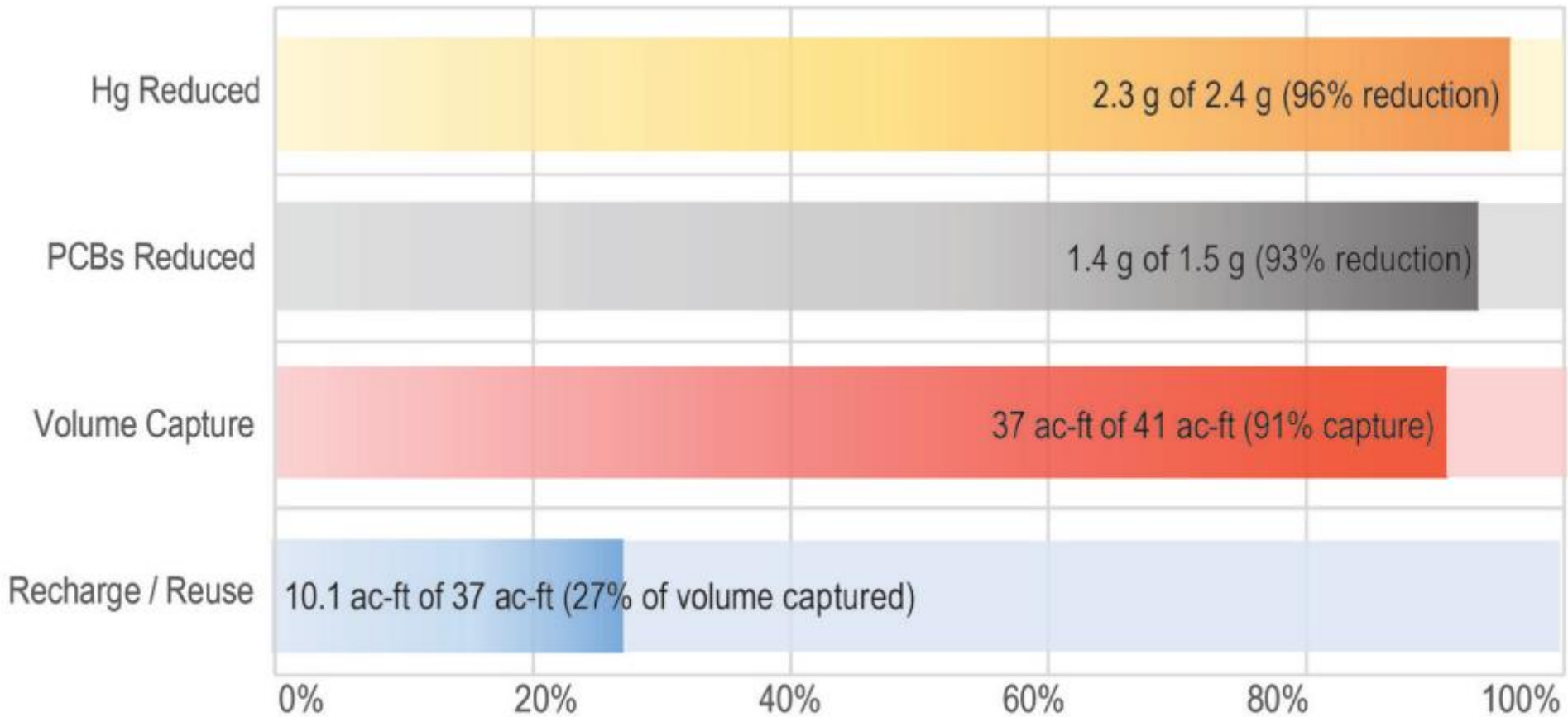
Midwest Block & Brick, Inc.

Example of Demonstration Bioretention Facility at Edge of Parking Area

Planning-Level Cost Estimate

DESCRIPTION	UNIT COST	UNIT	QUANTITY	SUBTOTAL
Utilities Protection/Relocation	\$50,000	LS	1	\$50,000
Diversion Pipe (24" RCP)	\$350	LF	2,500	\$875,000
Hydrodynamic Separator	\$150,000	EA	1	\$150,000
Excavation & Offhaul	\$70	CY	8,400	\$588,000
Subsurface Detention Tanks	\$1.50	GAL	1,402,500	\$2,103,800
Bio-soil Media	\$200	CY	100	\$20,000
Bioswale Plantings & Mulch	\$22	SF	2,600	\$57,200
Underdrain	\$5	SF	2,600	\$13,000
Surface Restoration & Planting	\$3	SF	22,500	\$67,500
Cartridge Filtration Units	\$200,000	EA	1	\$200,000
Water Reuse System & Housing	\$350,000	LS	1	\$350,000
Overflow to Creek	\$50,000	EA	1	\$50,000
CONSTRUCTION SUBTOTAL				\$4,525,000
Mobilization (10% Construction)				\$453,000
Contingency (30% Construction)				\$1,358,000
Design (12% total)				\$760,000
TOTAL PROJECT COST (DESIGN + CONSTRUCTION)				\$7,096,000

BMP Effectiveness (Annual Avg.)



GSI Potential Project List: 201

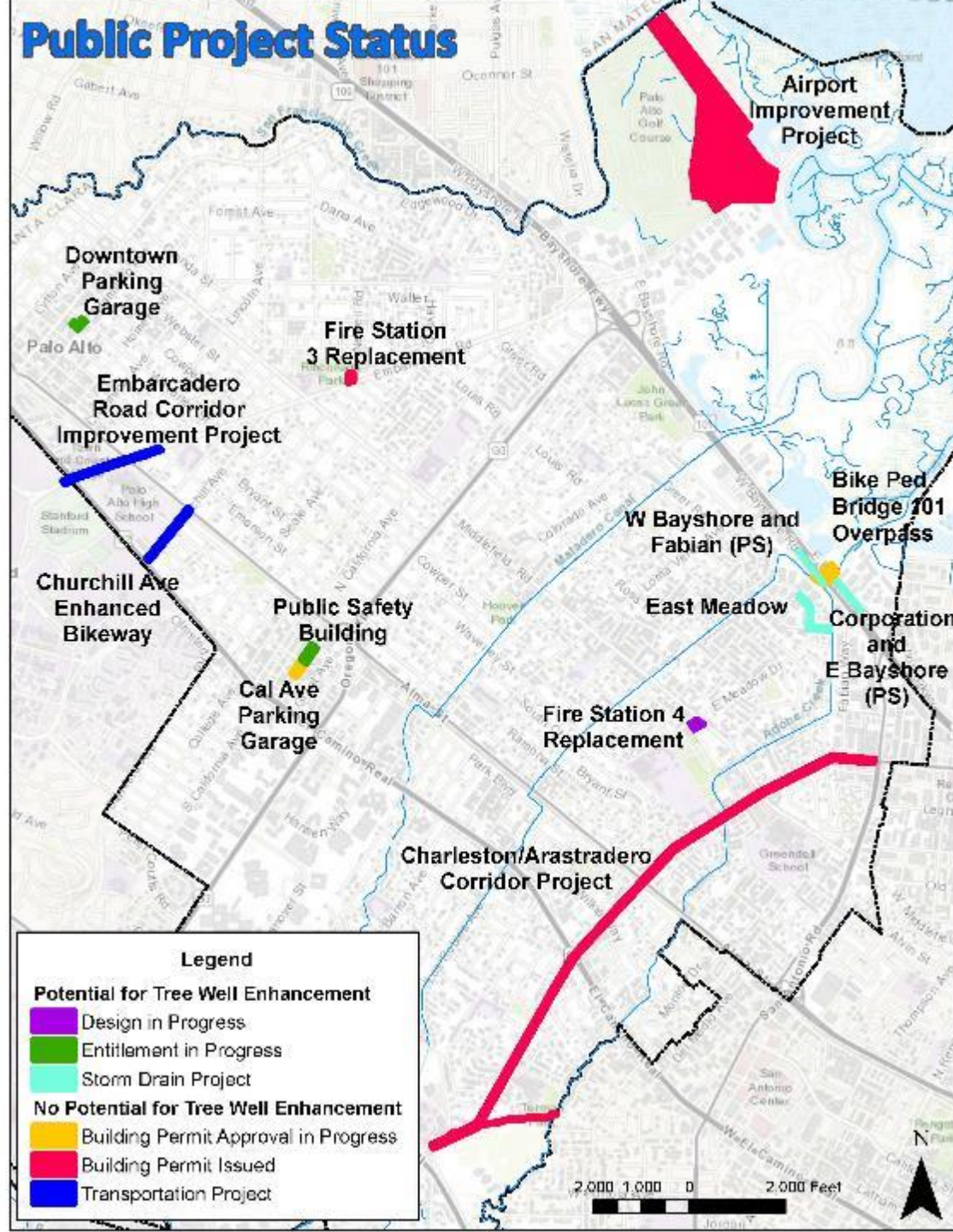


Leveraging Municipal Projects

- Planned CIPs
 - Tree wells with suspended pavement systems
- Small maintenance/project improvements
 - Sidewalk/ADA
 - Curb & gutter
 - Facility renovations
- Transportation
 - Street improvements
 - Pedestrian & bike safety



Public Project Status



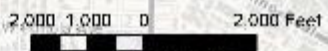
Legend

Potential for Tree Well Enhancement

- Design in Progress (Purple)
- Entitlement in Progress (Green)
- Storm Drain Project (Cyan)

No Potential for Tree Well Enhancement

- Building Permit Approval in Progress (Yellow)
- Building Permit Issued (Red)
- Transportation Project (Blue)



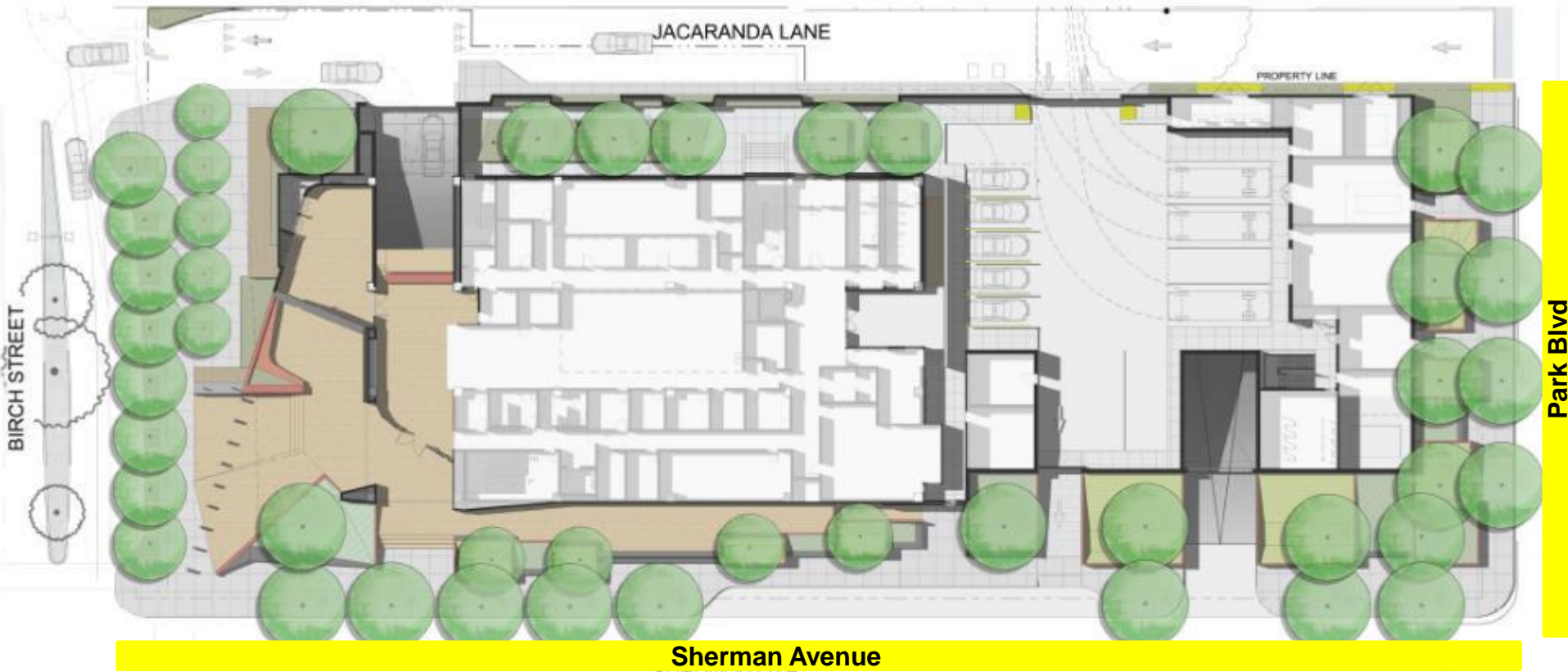
Leveraging CIPs: PSB Example



Leveraging CIPs: PSB Example



Leveraging CIPs: PSB Example



Suspended Pavement Systems



Additional
Impervious Area:
.27ac = 11,764 ft²
Treatment Needed
353 ft²

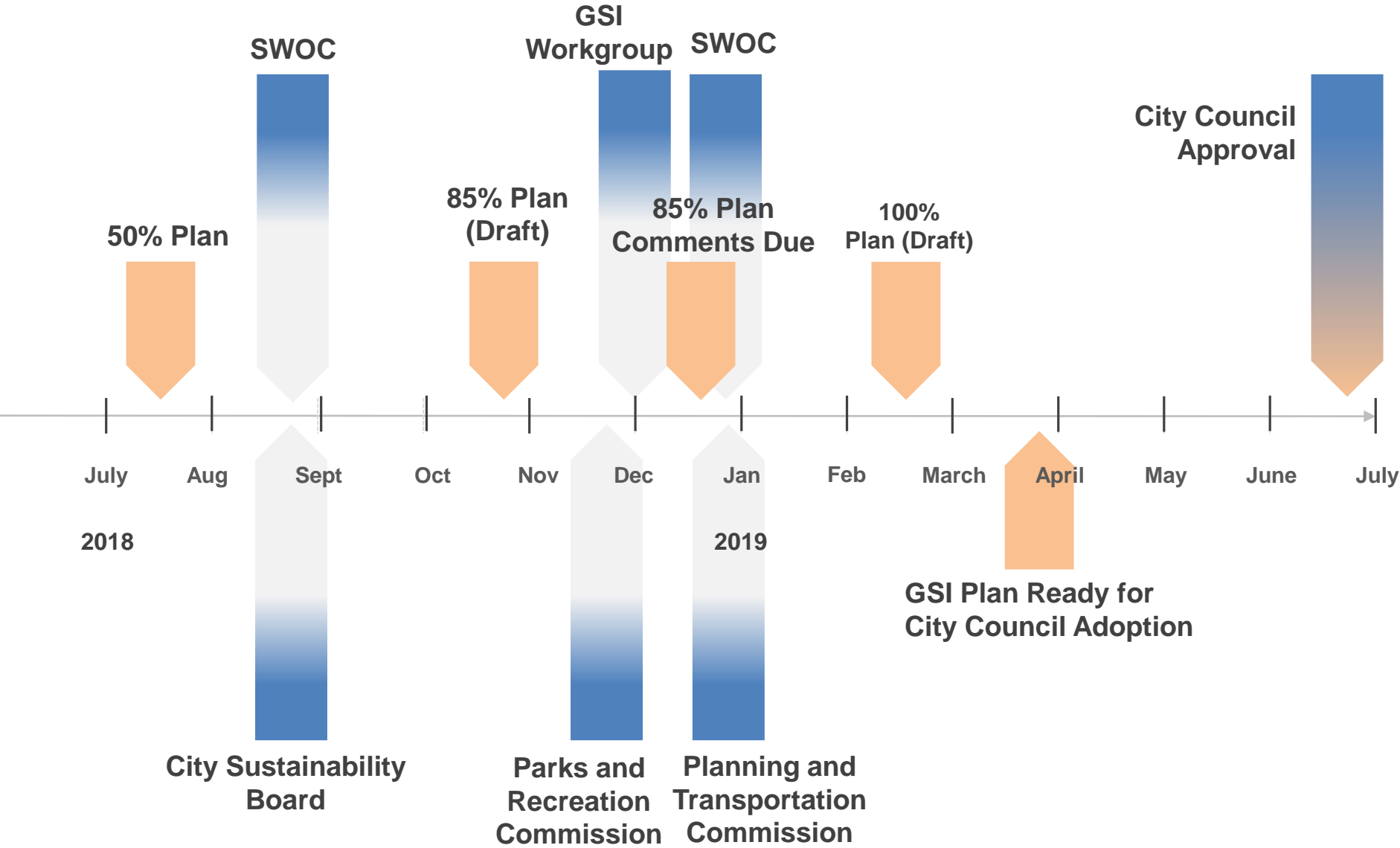


GSI Cost Example

Description	Unit Cost	Unit	Quantity	Subtotal
Biotreatment Soil	\$200	CY	20	\$4,000
Plantings & mulch	\$22	SF	353	\$7,766
Underdrain	\$5	SF	353	\$1,765
CONSTRUCTION TOTAL				\$13,531
Contingency (30% construction)				\$4,059
Design (12% total)				\$2,111
TOTAL (w/out maint.)				\$19,701
Maintenance (CPA est.)	\$4,000	Year	20	\$80,000
TOTAL (with maint.)				\$99,701

Long-term Funding Need	Est. Cost
Grant writing consulting services	\$
On-going maint. at City facilities/green streets (currently ~ \$100k/yr)	\$
Collaborating with requirements in other plans (e.g. Comp plan, Urban forestry plan)	\$
GSI Concept ideas/designs	\$-\$\$
CIP GSI design	\$\$
New MRP requirements: GSI implementation-related	\$\$-\$\$\$
Pilot projects (e.g. Ventura - creek restoration)	\$\$\$
CIP GSI construction	\$\$\$\$

GSI Plan Timeline



Next Steps

- Final prioritization
- Additional GSI leveraging opportunities
- Commission meetings
- Website improvements
- Scope of Work
(upcoming projects)





Wrap up

- Questions & Answers
- Planning for upcoming meetings
- 2018 Board & Commission Member Recognition Event & Evening Reception
 - Wednesday, October 24
 - 6:00pm
 - Lucie Stern Patio and Community Room
 - Immediate family members are encouraged to join in attendance.