

Green Stormwater Infrastructure: Description, Regulatory Background, and Planning Efforts in Santa Clara Valley



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EOA / SCVURPPP



Santa Clara Valley Urban Runoff Pollution Prevention Program

- Fifteen Santa Clara Valley agencies work together through SCVURPPP to prevent stormwater pollution
- SCVURPPP agencies are part of the Municipal Regional Stormwater Permit (MRP) that covers urban Bay Area counties
- SCVURPPP and its member agencies implement regulatory, monitoring and outreach measures aimed at reducing pollution in urban runoff



Presentation Content

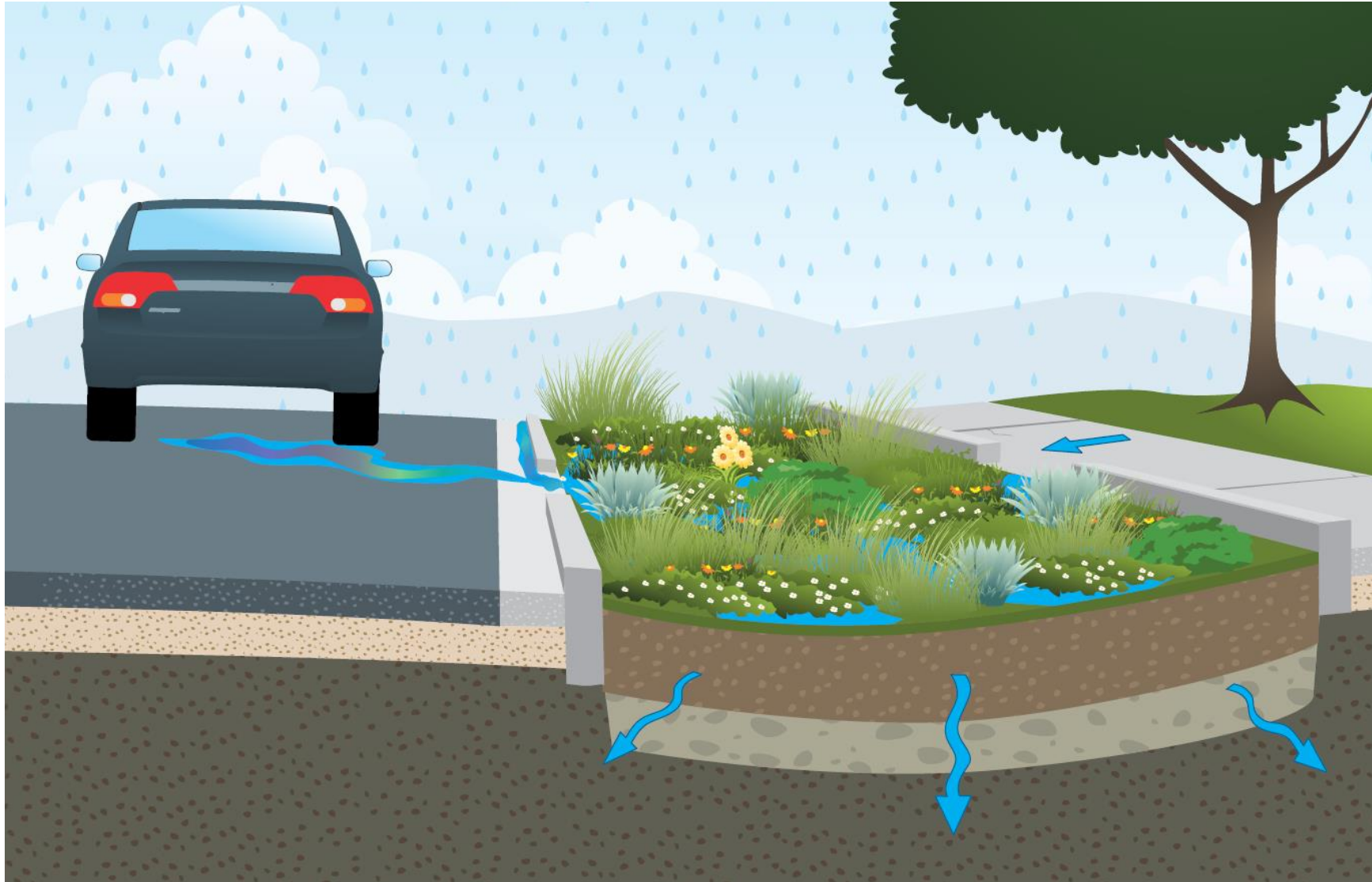
- Overview of Green Stormwater Infrastructure (GSI)
 - Examples
 - Benefits
 - Opportunities
- Regulatory Requirements and Initiatives
 - Federal / State
 - Bay Area MRP
 - GSI Planning Requirements
- Municipal Agency Planning Efforts
- Impacts/Opportunities for the Development Community

Green Stormwater Infrastructure

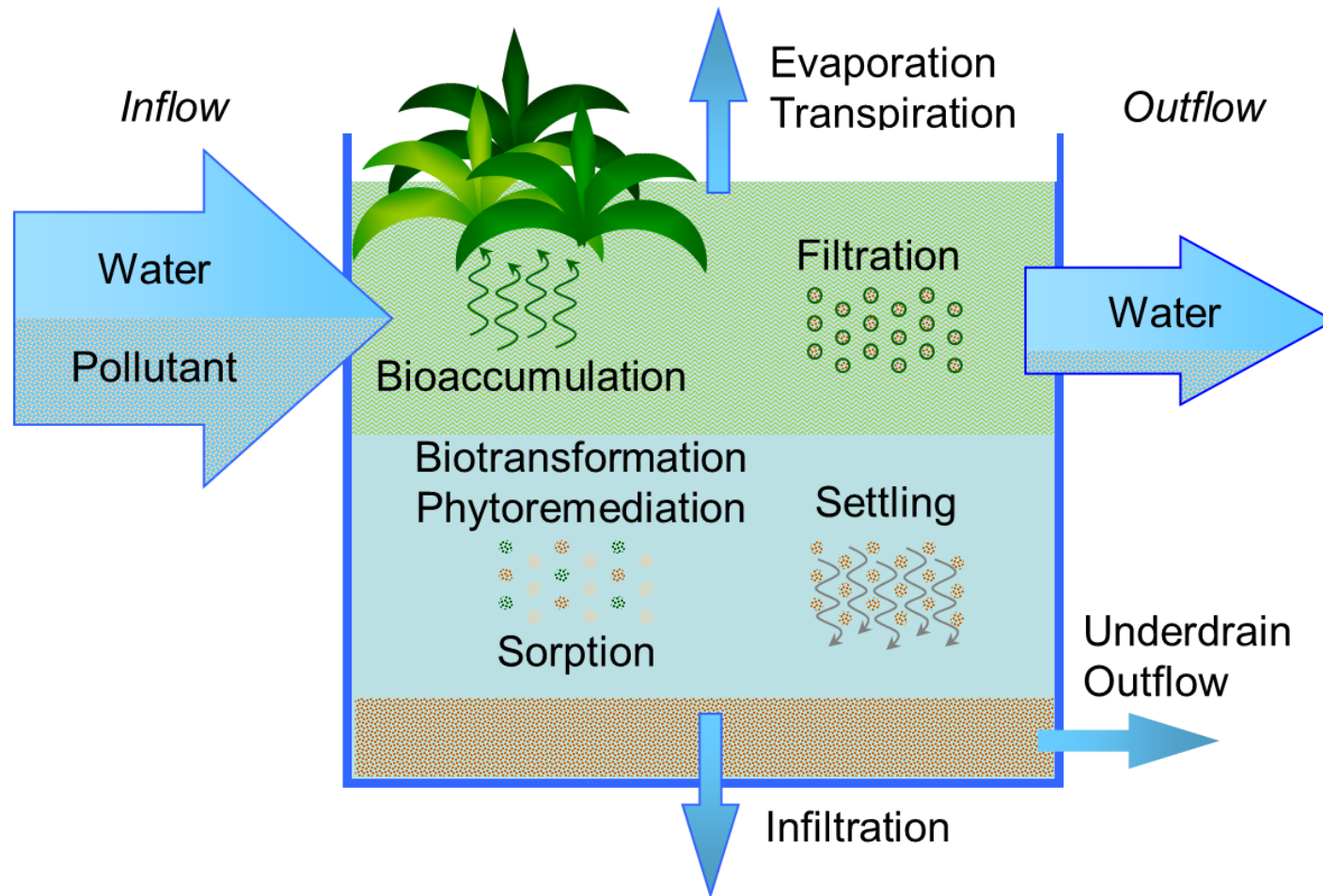
- Systems that use vegetation, soils, and natural processes to capture and treat stormwater
- Most urban GSI involves retrofitting public streets, roofs and parking lots to divert runoff to:
 - Vegetated areas (“stormwater planters” or “stormwater curb extensions”)
 - Pervious pavements
 - Rain gardens (“bioretention areas”)
 - Infiltration systems
 - Cisterns and rain barrels
- These LID measures are similar to those required on regulated projects



Typical Bioretention Design



Pollutant Removal Processes



Examples of Green Stormwater Infrastructure



Bioretention area in a curb bulb-out, Rosita Park Neighborhood, Los Altos

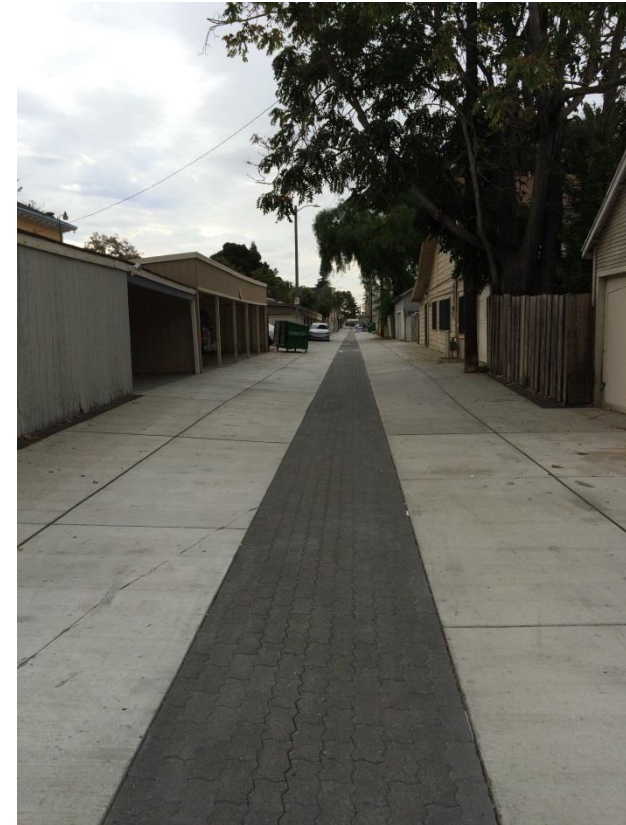


Pervious Pavers, Commodore Park, San Jose

Examples of Green Stormwater Infrastructure



Green Roof
First Community Housing,
San Jose



Pervious Pavers over
Infiltration Trench,
Martha Gardens Green Alley,
San Jose

Green Infrastructure Benefits

- GSI projects can provide multiple benefits:
 - Runoff flow and volume reduction
 - Pollutant load reduction
 - Reduced localized flooding
 - Urban greening
 - Traffic calming
 - Improved bike and pedestrian safety
 - Climate change resiliency
- Promoting benefits helps get public support



Opportunities to Incorporate GSI

- Improvements for active transportation
 - Complete Streets projects
 - Safe Routes to School
 - Bicycle route improvements
- Downtown area revitalization
- Park or athletic field improvements
- Municipal facility upgrades

GSI Opportunities



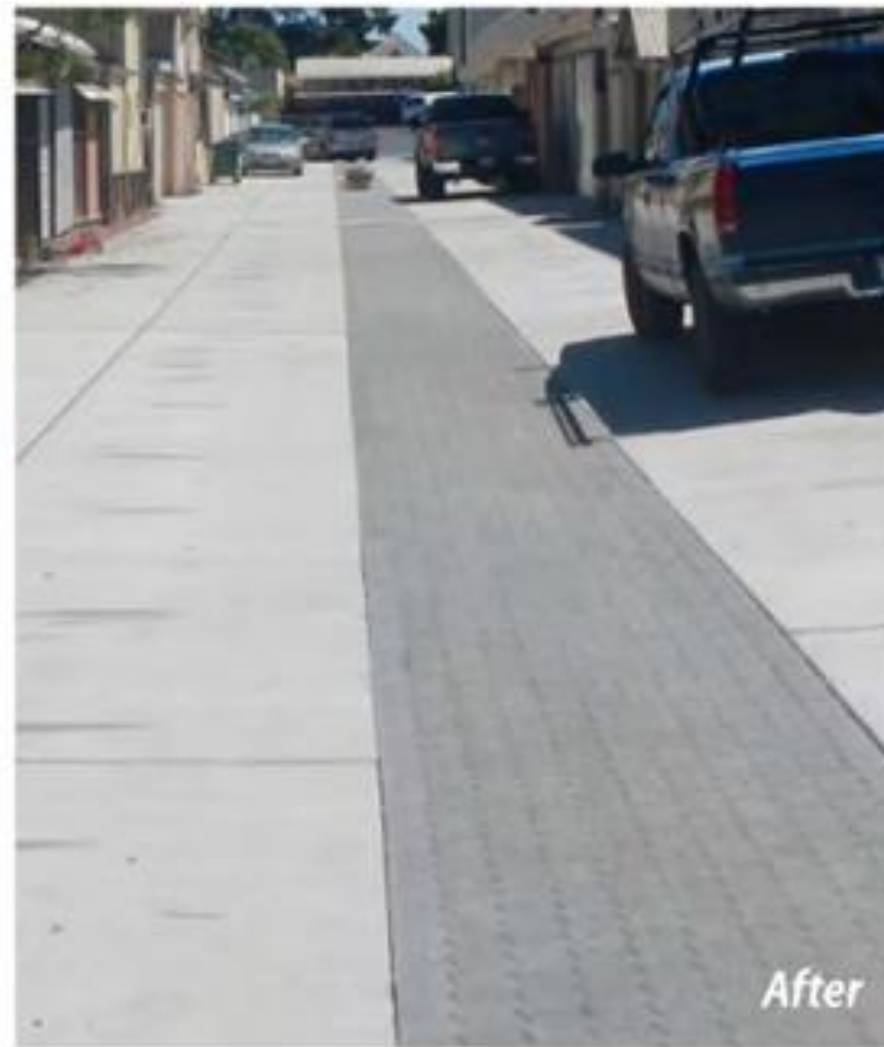
Safe Routes to School Improvements – San Mateo

GSI Opportunities



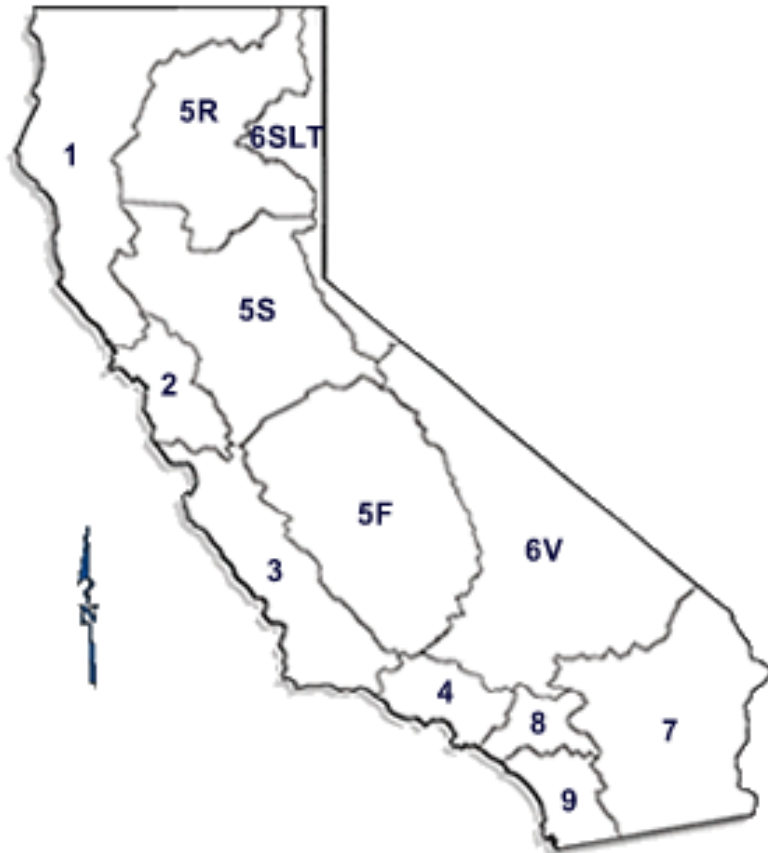
Hacienda Ave, Campbell

GSI Opportunities



Martha Gardens Green Alley, San Jose

Regulatory Background: NPDES Permitting Authority



MS4 = Municipal separate storm sewer system



Regulatory Background: Federal & State Initiatives



- EPA -- promoted benefits of GSI since early 2000s and encouraged use of GSI by municipal agencies as part of MS4 programs.
<https://www.epa.gov/green-infrastructure>
- State and Regional Water Boards -- recognized water quality benefits of GSI and opportunity to augment local water supplies in response to the impacts of drought and climate change
 - 2014 California Water Action Plan
 - “Strategy to Optimize Resource Management of Stormwater” (STORMS)
https://www.waterboards.ca.gov/water_issues/programs/stormwater/storms
 - Supports perspective that stormwater is a valuable resource

Municipal Regional Stormwater Permit

- Large urban areas covered by countywide stormwater permits since 1990
- Six countywide permits combined into one Municipal Regional Permit, effective Dec. 2009, reissued Nov. 2015
- Permit contains private and public land development requirements (C.3) and GSI planning requirements
- Other provisions contains requirements for reducing loads of certain pollutants of concern in stormwater (e.g., mercury, PCBs, pesticides, and trash)

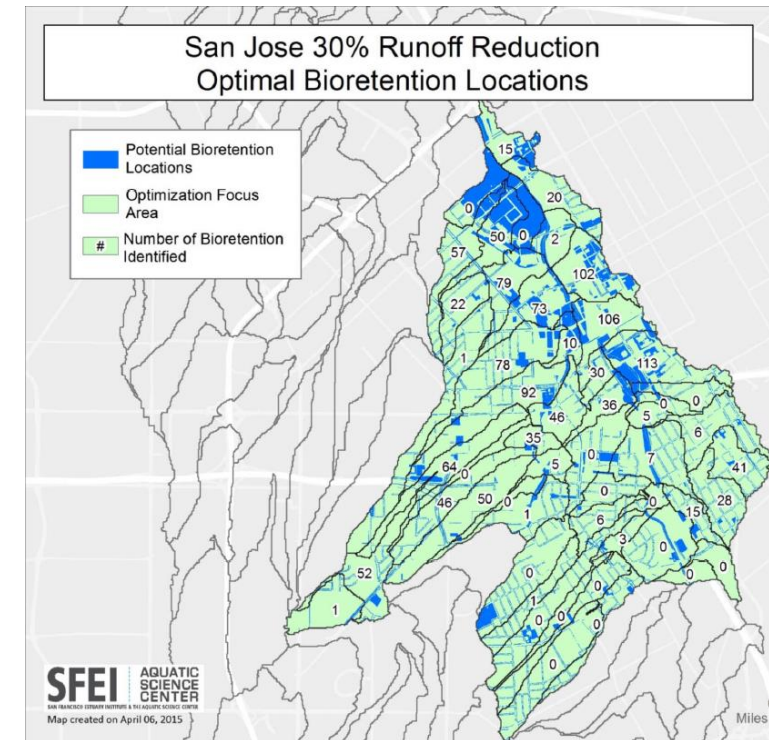


GSI Requirements in the MRP

- Develop a GSI Plan
 - Prioritize and map planned and potential projects
 - Adopt GSI guidelines, details, and specifications
 - Track progress and benefits
- Conduct education and outreach
- Conduct “early implementation”
 - Construct planned and funded projects
 - Review public project lists and assess opportunity for incorporating GSI elements

GSI Plan: Required Elements

- Mechanism to prioritize and map areas for potential and planned projects (to 2040)
- Process for tracking and mapping completed projects
- Design guidelines, details, and specifications
- Updated planning documents
- Implementation mechanisms and funding options



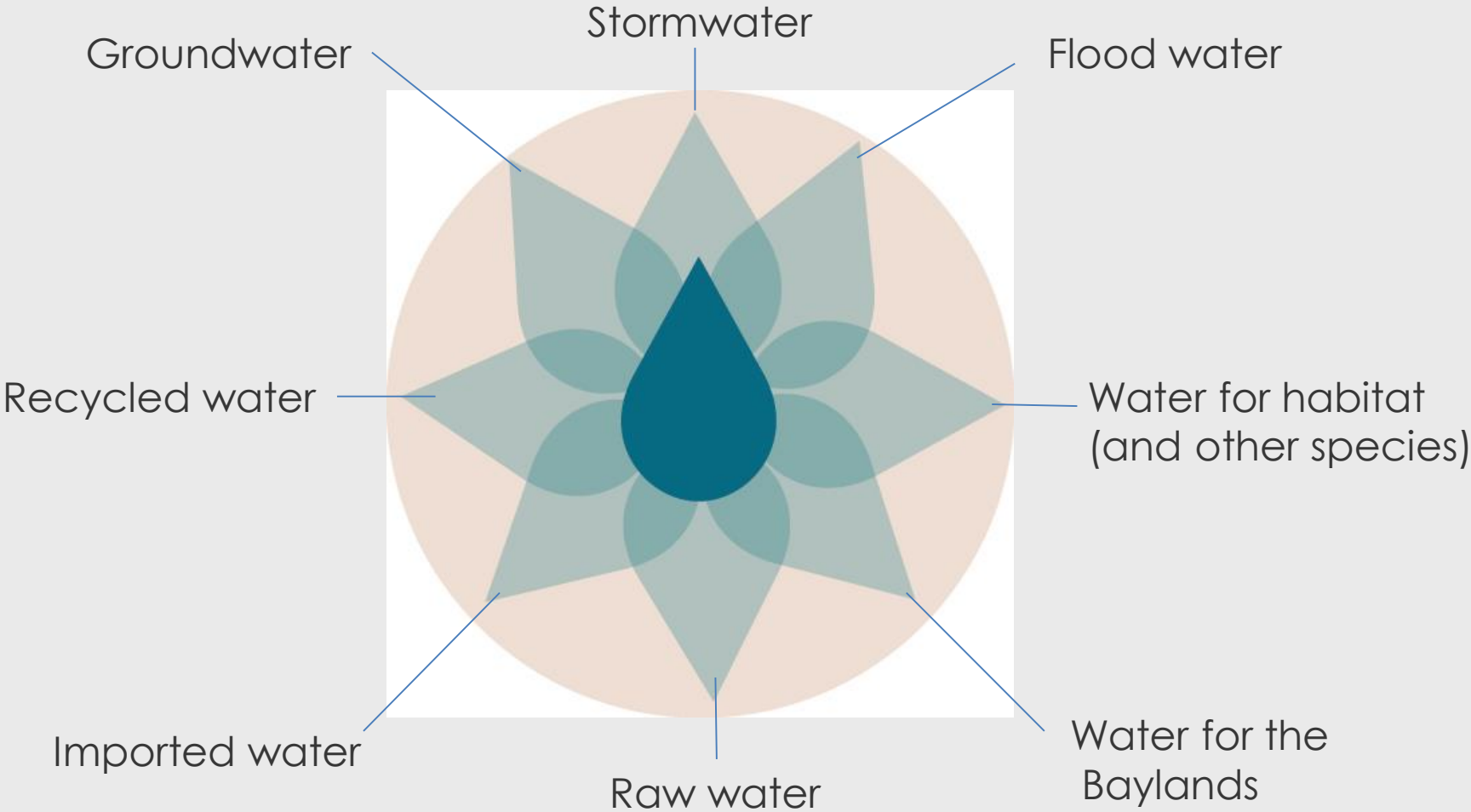
GreenPlan-IT Tool Output

Status of Municipal GSI Planning Efforts



- ✓ Conducting education & outreach
- ✓ Approved GSI Plan Frameworks
- ✓ Begun development of GSI Plans (due Sept. 2019) via local, countywide, and regional efforts
- ✓ Continuing to review CIP project lists for GSI opportunities
- ✓ Some are designing and/or constructing planned and funded projects
- ✓ Some are developing Stormwater Resource Plans to help identify & prioritize projects

One Water: An Integrated Water Resources Master Plan



One Water - Integrated Goals

1. Valued and Respected Rain

Manage rainwater to improve flood protection, water supply, and ecosystem health

2. Healthful & Reliable Water

Enhance the quantity and quality of water to support beneficial uses

3. Ecologically Sustainable Streams & Watersheds

Protect, enhance and sustain healthy and resilient stream ecosystems

4. Resilient Baylands

Protect, enhance and sustain healthy and resilient baylands ecosystems and infrastructure

5. Community Collaboration

Work in partnership with an engaged community to champion wise decisions on water resources

Impacts and Opportunities for the Development Community

- More design and construction of GSI in public rights-of-way
- More requirements on private development to install/maintain GSI along frontage
- More options for meeting C.3 requirements for regulated private projects
 - Alternative Compliance
 - In-lieu fees
 - Water quality credit trading?

Questions?



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