

Green Stormwater Infrastructure

What is Urban Greening?

Urban greening refers to the incorporation of vegetation and natural elements into the built environment.

When integrated into stormwater systems, urban greening is also referred to as green stormwater infrastructure (GSI) or urban green infrastructure. Examples of green infrastructure include rain gardens, bioswales, green roofs, and planter boxes.



Why is Green Infrastructure Important?

Over the past few years, Bay Area residents have felt the impacts of our rapidly warming climate: smoky skies, poor air quality, and intense heat. Soon, increased flooding from storms and sea level rise will become the norm. Urban greening has a number of benefits, including building resilience to many of these climate hazards. Replacing impermeable pavement and concrete with trees, planter boxes, and other nature-based elements can mitigate flooding by allowing stormwater to absorb and filter through the soil. Green infrastructure can also reduce urban heat, improve air quality, support mental health, and reduce pollution runoff into the Bay.

These climate impacts disproportionately affect low-income communities and communities of color, who are the least financially resourced to deal with them. Green infrastructure needs to be implemented equitably, with a focus on these communities. Urban greening efforts must be community-led to ensure they do not lead to gentrification and displacement.

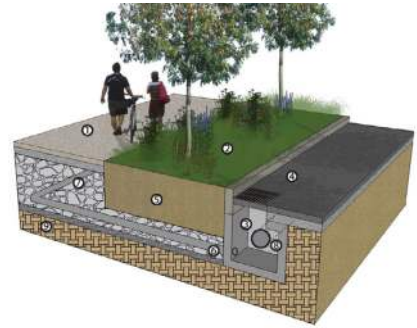
While green spaces have a number of benefits on their own, integrating them into the surrounding stormwater system helps keep the Bay clean. The plants and soil in green stormwater infrastructure act as natural filters, trapping as much as 90% of certain toxins and trash before stormwater drains into our waterways and the Bay.



Gray vs. Green Stormwater Infrastructure

"Gray" stormwater infrastructure uses traditional building materials like metal and concrete to build gutters, drains, pipes, and retention basins. GSI, however, maximizes permeable surfaces, uses natural materials, and mimics natural hydrological systems. While gray infrastructure is still necessary at times, GSI provides multiple benefits and is often more cost effective.

An EPA study found that capital costs for green infrastructure are 15-80% lower than gray infrastructure, and maintenance costs are about 25% lower¹. Additionally, GSI often requires less land and can be incorporated into and enhance smaller spaces in dense cities (for example, converting a vacant lot into a rain garden or a median strip into a bioswale)².



How can we Increase Green Stormwater Infrastructure?

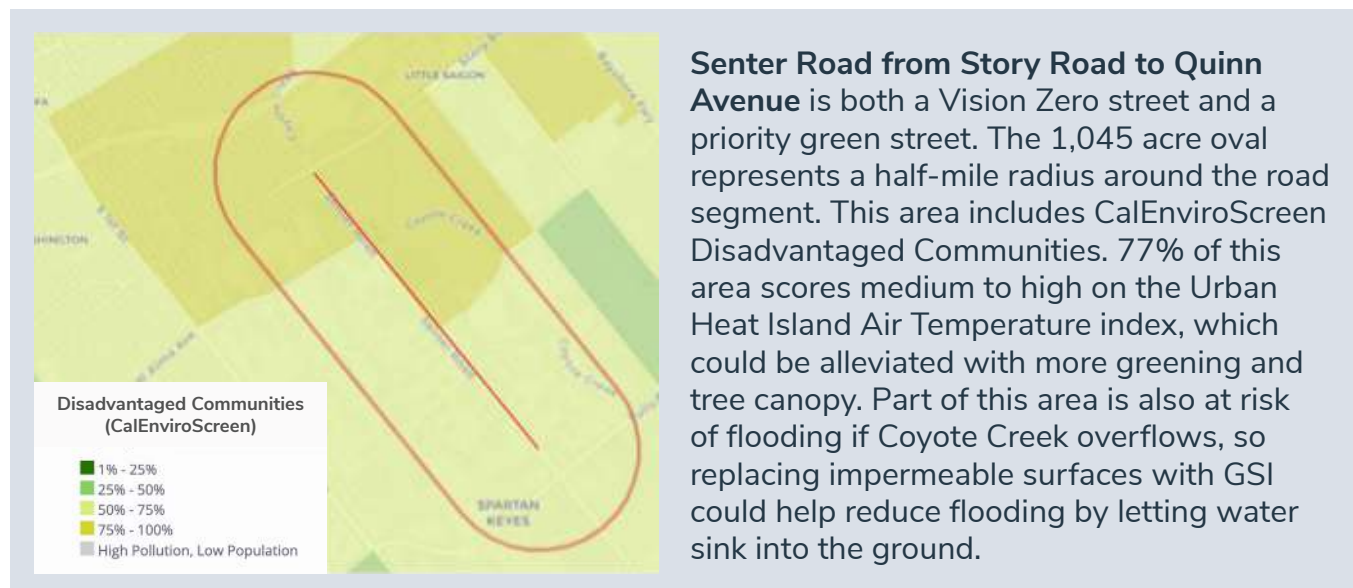
Save The Bay is working with Bay Area cities to increase funding for GSI and accelerate implementation of GSI by incorporating it into existing city planning processes. As cities make upgrades to their transportation or storm drain systems, there are opportunities to also incorporate GSI.

San José Vision Zero and Green Stormwater Infrastructure Plans

Vision Zero is San José's plan to reduce and eliminate traffic injuries and deaths. It identified high-accident transportation corridors to prioritize for safety improvements.

The **San José Green Stormwater Infrastructure Plan** guides the implementation of GSI in the city. It identifies priority streets to convert to green streets, streets planted with vegetation that can capture and filter stormwater runoff along the roadway.

There are numerous street segments that are prioritized both for safety upgrades as well as green infrastructure. We are advocating for San José to prioritize these segments for incorporating GSI elements like bioswales, tree wells, and green curb extensions.



¹ U.S. Environmental Protection Agency, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices*, December 2007, 27; U.S. Environmental Protection Agency, *The Importance of Operations and Maintenance for the Long-Term Success of Green Infrastructure*, March 2013, 7.

² Laane 30, *Liquid Assets: How Stormwater Infrastructure Builds Resilience, Health, Jobs, & Equity*, 2018, 14.