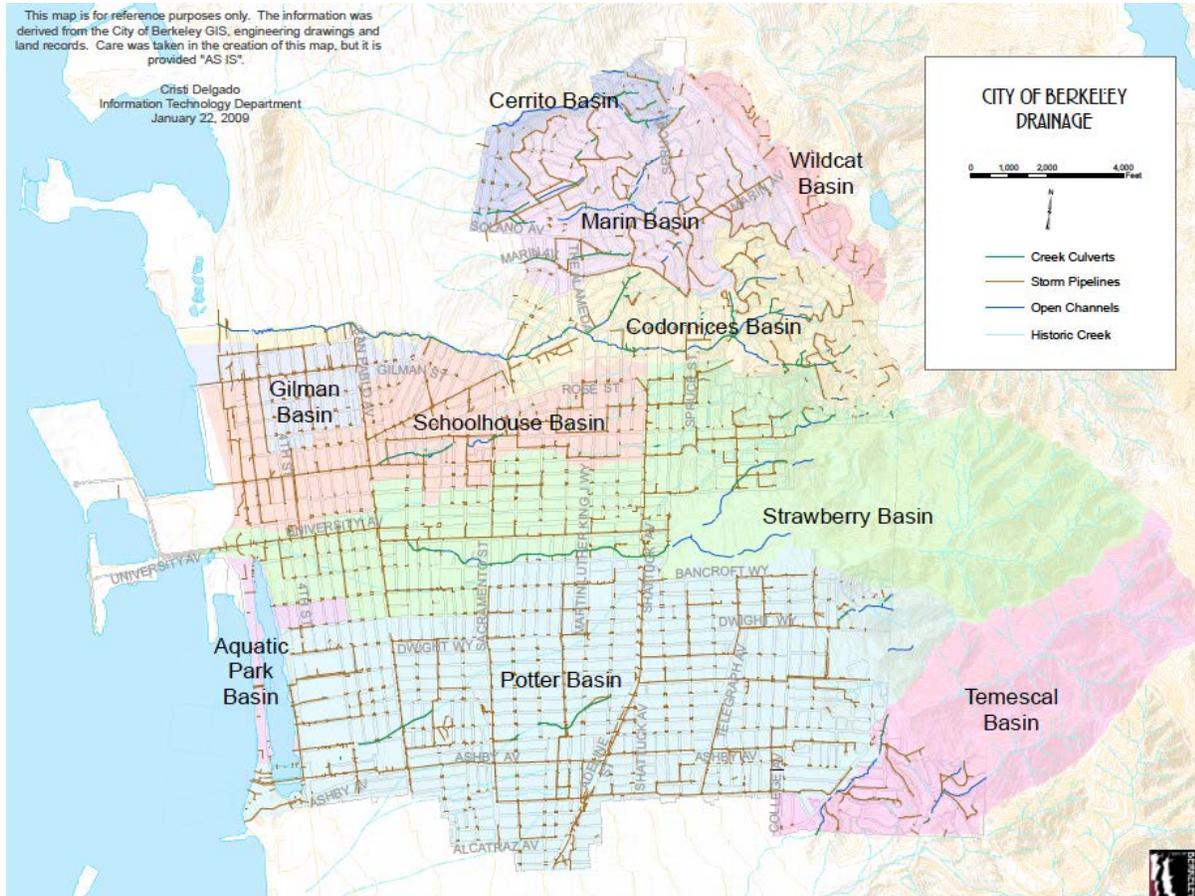


# MEASURE M Streets and Watershed Improvements

## ***Watershed Management Plan***



### **Purpose:**

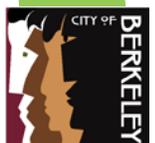
The Watershed Management Plan (WMP) is meant to guide future City efforts in promoting a healthier balance between the urban environment and the natural ecosystem.

### **Summary:**

The WMP looks at addressing water quality, flooding, and the preservation of creeks and habitats using multi-objective approaches where possible. This entails supplementing the existing engineered storm drain infrastructure with greener developments that mimic natural hydrologic processes including filtration and infiltration by soils and plants.

To view the full Watershed Management Plan, see:

[http://www.cityofberkeley.info/Public\\_Works/Sewers - Storm/Watershed Management Plan.aspx](http://www.cityofberkeley.info/Public_Works/Sewers_-_Storm/Watershed_Management_Plan.aspx)





## MEASURE M Streets and Watershed Improvements

### ***Green Infrastructure***

Green infrastructure (GI) and low impact development (LID) projects mimic the natural environment by allowing rainwater to collect and infiltrate through porous media. This can serve numerous purposes including: (1) removing pollutants, (2) decreasing stormwater flow and flooding, and (3) replenishing groundwater supplies. GI and LID can be a cost effective solution for improving water quality and reducing flooding. Examples of such projects include rain gardens, permeable pavement, green roofs, and infiltration basins.

### ***Where are Green Infrastructure Projects Underway or Complete?***

The San Pablo Stormwater Spine Project is a grant-funded multi-City demonstration project installing LID retrofits on San Pablo Avenue sites from Oakland to Richmond.

(Source: Watershed Management Plan, p. 27)

Examples of City projects that have LID measures include the new Animal Shelter (green roof, permeable pavement, etc.) and the Fire Station Warehouse on Folger (rainwater harvesting cistern).

(Source: Watershed Management Plan, p. 28)



Berkeley Animal Shelter (Source: Ray Yep)

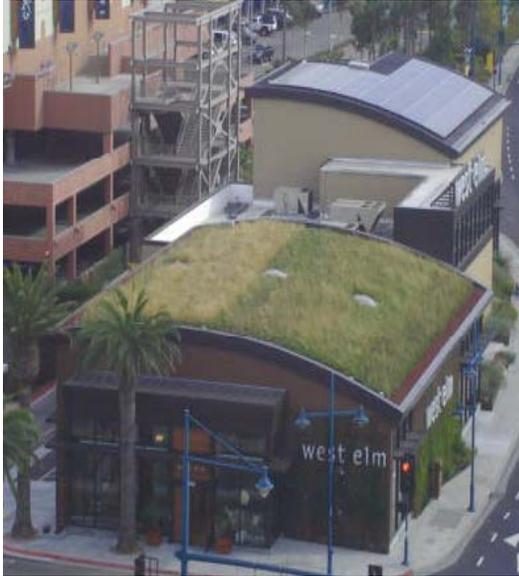
### ***Benefits of Green Infrastructure***

1. Pollution Abatement
2. Protection of Natural Waterways
3. Groundwater Recharge
4. Water Quality Improvements
5. Reduced Sanitary Sewer Overflows
6. Habitat Improvements
7. Reduced Flooding and Property Damage
8. Aesthetic Value
9. Public Spaces and Public Participation

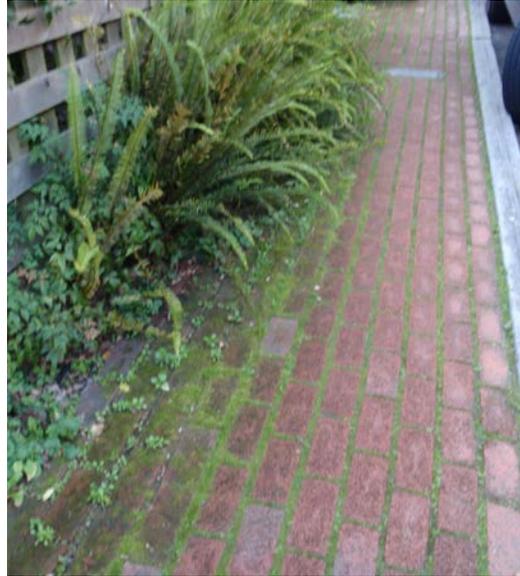


# MEASURE M Streets and Watershed Improvements

## *Examples of Green Infrastructure Options*



**Green roofs** are roofs covered with vegetation and soils, which improve water quality and reduce runoff through filtration, absorption, and detention.



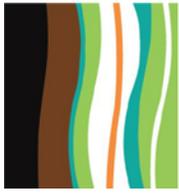
**Permeable paving** refers to paving materials that allow stormwater to filter through to the soil below.



**Vegetated swales (bioswales)** are broad, shallow channels designed to convey and filtrate stormwater runoff.



**Raingardens, or Bioretention Cells** are vegetated depressions that can resemble miniature ponds or long strips.



## MEASURE M Streets and Watershed Improvements

### ***Creek Restoration under Measure M***

#### **What Creek Restoration Activities Could Be Potentially Funded from Measure M Funds?**

- Assessment and rehabilitation of creek culverts: The City would assess creek culvert characteristics such as pipe shape, invert elevations, length, and construction materials and, based on results of hydraulic modeling and closed-circuit television investigations, the City would develop a Creek Culvert Rehabilitation Plan to identify and prioritize any needed repairs.  
(Source: Watershed Management Plan, p. 52)
- The Community Environmental Advisory Commission's initial assessment is that creek culvert rehabilitation could be funded through Measure M if the culverts are on or adjacent to a street that is being repaved.

#### **What Watershed Management Needs Cannot Be Completed with Measure M funds?**

- Operations and Maintenance needs such as street sweeping and cleaning of storm drain catch basins.
- Stormwater infiltration and creek restoration projects in City parks.