



**SUSTAINABLE STREETS**  
CITY OF SAN MATEO



**Sustainable Streets Plan - Re-Engineering the Transportation Network with Green Streets**  
C/CAG Stormwater Committee – October 16, 2014



**Sustainable Streets =  
Complete Streets + Green Streets**



Photo: Dan Burden, Walkable and Livable Communities Institute  
Source: Downloaded from water.epa.gov on 04.09.13

2

**What are Complete Streets?**



A Complete Street is safe, comfortable & convenient for travel via automobile, foot, bicycle, & transit

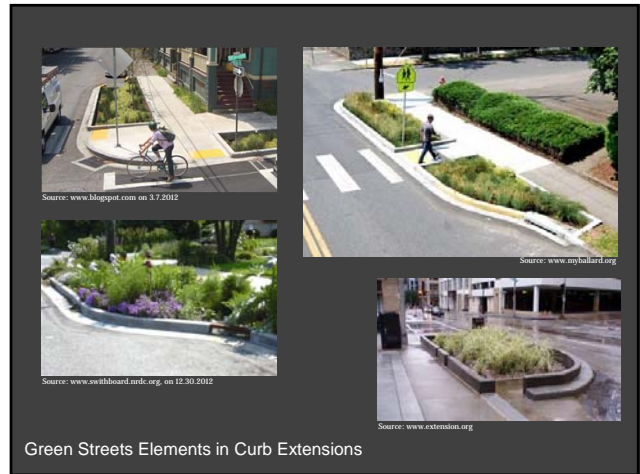
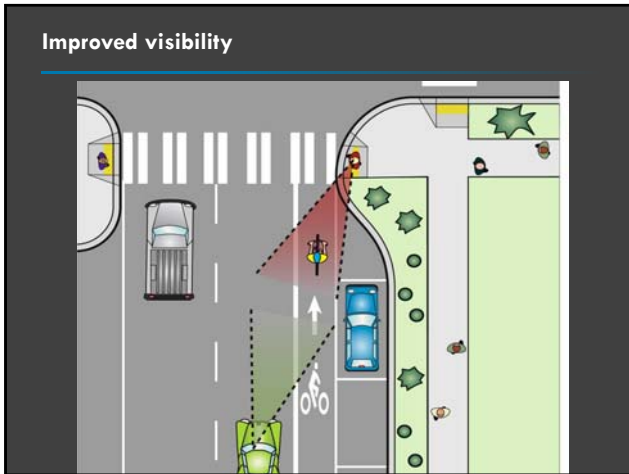
3

**What are Green Streets?**



A green street incorporates green infrastructure to manage stormwater while making the street more walkable and aesthetically appealing.

4



## San Francisco Estuary Partnership's Green Plan-IT

- Approached by and partnered with the San Francisco Estuary Partnership (SFEPP) to develop a Green Streets Opportunity Sites GIS tool.
  - Land Use
  - Street and Sidewalk Width
  - Street Classification
  - Landscaping
  - Property Ownership
  - Topography
  - Storm Drain Locations

Department of Public Works  
Stewards of the Infrastructure and Environment

Page 7

## GreenPlan-It GIS Tool

Department of Public Works  
Stewards of the Infrastructure and Environment

Page 8

### Green Streets Opportunities

#### Designing for Context

- Downtowns
- Mixed Use Corridors
- Residential Neighborhoods
- And others...



Source: CDNA, 2011



Source: www.sbc.org



Source: CDNA, 2013



Source: CDNA, 2013



Source: CDNA, 2011

### Green Streets Design Strategies Applicability

Green Streets Design Strategies	Complete Streets Elements						
	Travel Lane	Parking Lane	Curb Extension	Median / Planter Strip	Curbed or Raised Planter	Sidewalk	Adjacent Area
Rain Garden		☐	☐	☐			☐
Vegetated Swale			☐	☐	☐		☐
Green Gutters	☐			☐	☐	☐	
Linked Tree Wells							
Permeable Pavement	☐	☐		☐		☐	☐
Infiltration Trench/Basin/Well		☐	☐	☐	☐		☐
Detention Basin/Well			☐	☐	☐		☐
Trees		☐	☐	☐	☐		☐
Rainwater Harvesting			☐	☐	☐		☐

### Green Design Elements for Sustainable Streets

Plazas - Rain Gardens



Source: www.ashlandcity.com

Planter Strips - Swales, Rain Gardens, Green Gutters, Trees



Curb Extensions - Rain Gardens



Source: www.ashlandcity.com

Linked Tree Wells/Curbed Planters



Source: www.ashlandcity.com

Parking Lane - Permeable Paving, Rain Gardens



Source: www.ashlandcity.com



Source: www.ashlandcity.com



Source: www.ashlandcity.com



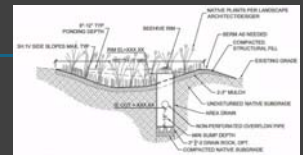
Source: www.ashlandcity.com



Source: www.ashlandcity.com

### Rain Gardens

- Flexible use in open spaces and streets



Source: www.greeninfrastructure.com



Source: www.extension.org/pages/62110/designing-around-drainage-areas



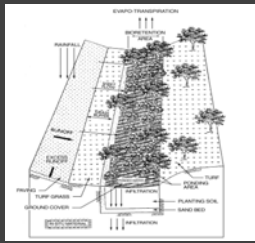
Source: e360.yale.edu



Source: www.ashlandcity.com

### Vegetated Swales

- Linear form for use in streets and parking lots



Source: water.apa.gov



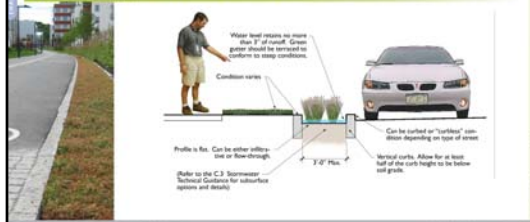
Source: water.apa.gov



Delaware Street Improvements, San Mateo  
Source: CDRA, 2014

### Green Gutters

#### 2.11 Stormwater Facility Strategies



**Why Choose Green Gutters?**

- Reduces runoff volume
- Reduces peak runoff rate
- Reduces sediment and debris
- Reduces stormwater treatment costs
- Reduces stormwater treatment plant capacity requirements

**Potential Limitations?**

- Requires proper installation
- Requires proper maintenance
- Requires proper design
- Requires proper materials
- Requires proper drainage

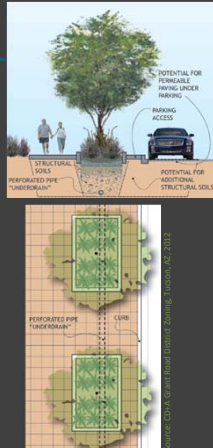
Source: San Mateo Sustainable Green Streets and Parking Lots Design Book

### Linked Tree Wells

- Rain gardens
- Tree trench with under-drain



Source: http://img.gpr.com



### Infiltration Trench, Basin, or Well

- Similar form to vegetated swales or rain gardens
- Function focused on infiltration



Source: www.ucsd.edu



Source: CDRA, 2012

### Permeable Pavement

Source: <http://www.cityofberkeley.info>

Source: Stormwater Source Control Design Guidelines 2005

## City of San Mateo Examples (Existing and Future)

18

### Delaware Streetscape Project

- Reduced travel lanes
- Widened sidewalk
- Added Pedestrian Scale Lighting
- Added Class II bike lane
- Installed decorative bridge railing
- Green Streets

16<sup>th</sup> Avenue Drainage Channel

19

### Reduced Travel Lanes (Road Diet)

Before

After

20



Bay Meadows II Development Green Streets



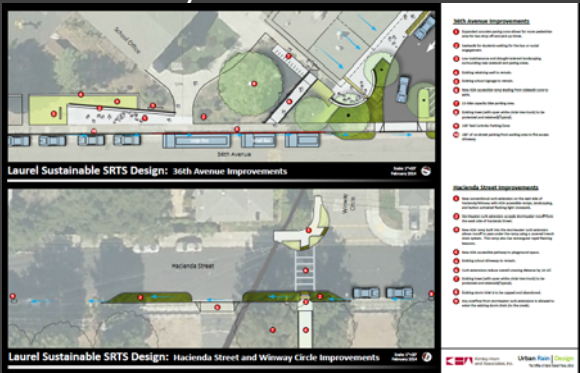
## Laurel Elementary Safe Routes to School and Green Streets

Laurel Elementary School Safe Routes to School



Laurel Sustainable SRTS Design: Overall Project Improvements

Laurel Elementary School Safe Routes to School



Laurel Sustainable SRTS Design: Hacienda Street and Winway Circle Improvements

### Laurel Elementary School Safe Routes to School

Laurel Sustainable SRTS Design: Parking lot Plan and 36th Avenue Intersection

29

### Laurel Elementary School Safe Routes to School

Laurel Sustainable SRTS Design: Precedent Examples

30

### City's Green Infrastructure

31

### Questions and Comments?

**Contact**

Kenneth Chin  
Project Manager

(650) 522-7313  
[kchin@cityofsanmateo.org](mailto:kchin@cityofsanmateo.org)

[www.sustainablestreetsanmateo.com](http://www.sustainablestreetsanmateo.com)

Department of Public Works  
Stewards of the Infrastructure and Environment

Page 32