Green Streets and Green Infrastructure Planning
A Tale of Two Cities: San Mateo and Emeryville

SCVURPPP Annual C3 Workshop

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Presentation Overview

- Goals/Incentives for Green Infrastructure
- City of San Mateo Approach
- City of Emeryville Approach
- Lessons Learned
- How Can I do this in my City?
Goals & Incentives for Green Infrastructure

- Create Unique/Attractive Streetscapes
- Improve Walkability
- Replacing Impervious Surfaces with Landscaping
- Improve Water Quality
- Increase Pedestrian Safety

Source: City of Emeryville for all
Pedestrian Safety Curb Extensions

Don’t just reduce crossing distance:

- Other advantages
- Better visibility (both ways)
- Traffic calming
- Room for street furniture
Stormwater Curb Extensions

Source: www.blogspot.com on 3.7.2012

Source: www.myballard.org
City of San Mateo Highlights

- Received Caltrans Planning Grant
- Already working on Complete Streets
- Able to Leverage Countywide Sustainable Streets Guidelines
- Leveraged Redevelopment Activity
- Taste and Talk Series Building Community Support
March 2012 - $300,000
Local Match - $184,000
Total Project Cost = $484,000

February 2013 – February 2015
Sustainable Streets

- Combining two concepts for street design:
  - Complete + Green Streets = Sustainable Streets

- Green Streets support a range of goals beyond stormwater benefits
  - Improve streets for all users
  - Support economic vitality
  - Complement placemaking
  - Reduce carbon footprint
  - Promote public health
  - Complement urban habitats and open spaces
  - Reduce water demand

Source: outdoorchattanooga.com
Source: CD+A
San Mateo County Sustainable Green Streets and Parking Lots

The City is taking advantage of the County’s Design Guidebook.
Promote Public Health

- “Active Transportation”
  health benefits of walking and biking

*An adult needs 150 min. of moderate activity per week to experience health benefits of physical activity*
“Physical Activity Guidelines for Americans”
USHHS, 2008

- Less than 10% of Americans achieve this level of activity

Source: blog.al.com
Delaware Streetscape Project

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

Total Project Cost = $1.4M

- $60K federal CMAQ funds — for design
- $545k MTC Transportation for Livable Communities (TLC) Program funds — for construction
- $627k from Station Park Green Developer
- $168k from City
Green Infrastructure Challenges

Funding and Location

- Green Street Infrastructure is not cheap
  - No real dedicated funding for it
- Where should it go?
  - Can’t put it everywhere, so how do you decide where to install it or incorporate it into streetscape projects
    - Look at Land Uses
    - Major Polluters
    - High Volume Streets
Green Infrastructure Challenges

Operations and Maintenance

- Challenges existing practices
  - Responsibilities can overlap departments
  - Funding to departments may need to be shifted

- Opportunities
  - Examine current practices
  - Establish an O&M strategy and funding plan
  - Monitor and adapt
  - Public/Private partnerships and volunteer/adopt green infrastructure programs

Source: Portlandoregon.gov/bse (City of Portland, Environmental Services Report).
Source: www.portlandoregon.gov
Taste and Talk Series

10-12 open forums in the style of a “Taste and Talk” series

Series topics to include, but are not limited to, pedestrians, bicyclists, transit, trucks, level of service, street classification, green streets, ADA compliance and emergency services.

Department of Public Works
Stewards of the Infrastructure and Environment
City of Emeryville Highlights

- Received EPA Grant for LID Guidelines
- Timing worked well with New General Plan
- Bicycle and Pedestrian Plan Followed
- Urban Design Guidelines Created
- Leveraged Redevelopment Activity and Council/Community support for increased landscaping in the City
Stormwater Guidelines for Green, Dense Redevelopment

Stormwater Quality Solutions for the City of Emeryville
December 2005

Consolidated, structured parking for entire site
Cisterns incorporated into architecture
Bio-retention basin collects roof run-off
On-street parking is maximized
Biofiltration swale in street median
Containerized bio-retention basins (above grade)

Recreational open space on parking structure roof
Preservation of existing mature trees
Extensive green roof
Intensive green roof
Infiltration trenches and permeable paving used for emergency access lane/pedestrian walkway.

Prepared by: Community Design + Architecture with Nelson\Nygard Consulting Associates
Philip Williams Associates

Green Streets Elements
Guiding Principle #3 “Enhanced and Connected Open Space Network and Green Streets” includes Green Streets as “Primary Connections between major open space, activity centers and amenities within the City.”

Required development of streetscape standards & design guidelines that result in Complete, Green and Bay Friendly streets.
1 Enhanced and connected open space network and green streets

The General Plan outlines strategies for an expanded public realm, building on the strength and connectivity of the city's greenways, with a range of new parks, plazas, community commons, and recreational paths. Open space is strategically located to maximize accessibility and building forms are organized to be easily traversed on foot. A fine-grained pattern of blocks and streets is a fundamental prerequisite of a walkable and accessible city; the General Plan promotes walkability through encouragement of active uses, creation of smaller parcels/blocks and inter-connections as large sites are redeveloped and improved sidewalks, pathways, and streetscapes. Where larger buildings may be appropriate, these shall be constructed with smaller footprints to preserve views and ensure pedestrian access. Where appropriate, in people-intensive places—such as retail, office, and residential districts—pedestrians will have priority over automobiles, and buildings shall be articulated and designed to visually engage and offer comfort to pedestrians.

5. A diversity of transportation modes and choices

The General Plan fosters and provides incentives for alternative transportation modes, including transit, car/vanpooling, bicycling, walking, and telecommuting. Residents will be able to access stores, offices, the waterfront, or regional transit networks without needing a car. Land uses capitalize on Amtrak, AC Transit, and Transbay bus lines, and proximity to BART, and are integrated with the Emery Go-Round that extends to within walking distance of most locations. Bicycle paths link housing, activity centers, and recreational amenities, and are buffered where feasible from automobiles to further safety.
Streetscape Goals

- Multi-functional
- Safe for All Users
- Beautify City & Provide High Quality of Life
- Complete and Green
- Manage Stormwater (quality and flooding)
- Bay Friendly Landscaped
- Connectivity: Complete/Green Street Network
- Conserve Water
and pedestrian experience. Regardless of the method of transportation used, visitors, residents and workers must travel on streets. The way these are treated physically has an impact on the perception of the area as a whole. Street design can incorporate a wide variety of elements, ranging from benches to paving to tree grates, or even signage. Many of these detailed elements can be grouped into larger categories such as pavement and sidewalk width, landscaping, stormwater management, parking, medians and sidewalk amenities. An effective street design includes enclosure and street wall, continuity, character, relationship between pedestrians and traffic, shade and light.

Many of Emeryville’s streets already contain the basic elements of good design, and improvements such as those along Park Avenue, and San Pablo Avenue are providing a higher standard for clear, attractive streetscapes. As new development occurs throughout the city, there are several challenges and opportunities for street design:

- **Design for pedestrians.** Currently, walking in Emeryville can be a challenge—while there are areas within the city that are specifically designed for pedestrian movement, such as the Bay Street area, they are often surrounded by vehicle-oriented streets and development. Emeryville is envisioned to greatly increase its population and non-residential development in the next 20 years, with an increase in the number of visitors and employees in the city on a daily basis. The regional retail distinction, and identity. This is especially critical for major streets that traverse the city. Currently, San Pablo Avenue acts as a key gateway and identifier for the City, with its distinct planting and streetscape design. Other key streets in the city would benefit from this—in particular, Hollis Street and 40th/Shellmound Streets; as well as those streets identified as Green Streets. In addition, landscaping will help to fulfill stormwater management goals. Implementing Bay-Friendly Landscaping practices, including planting native and drought-tolerant plants can help to manage stormwater runoff in wet months, while conserving water in dry months.

- **Multi-functionality.** With the increase in population and related traffic, many streets will need to be designed to do more than just handle traffic flow. They must provide for increased on-street parking in the residential areas and neighborhood centers, ensure smooth transit flow, allow safe and convenient pedestrian routes and small public plazas, and accommodate bicycle facilities on selected streets (see Chapter 3: Transportation). Moreover, streets should be accessible to all users, including children, seniors, persons with disabilities, workers and residents.

As streetscape improvements are implemented, Emeryville’s street network will become a realm for public activity with improved sidewalk treatments, seating, distinctive lighting, and public art, as well
FIGURE 1-3
Connectivity

- **Pedestrian Paths**
- **Bicycle/Pedestrian Paths**
- **Bicycle Boulevards and Routes**
- **Pedestrian Priority Zones**
- **Green Streets**
- **Greenway**
- **Overpass**

*San Francisco Bay*
Elements of Street Landscaping

- Green Streets – Define “Desirable”
- Impervious Surface Reduction
- Planter Strip Expansion
- Street Tree Rootable Soil Volume Minimums
- Bay Friendly Landscaped
- Benefits of Environmental Services
- Building “The Network”
SCAPING

SCAPING

Street trees that provide distinction, coherence, and a unified cohesive appearance.

1. Species that enable sunlight to filter through the streets in the winter, while providing shade during summer. (The species should establish a unified planting palette to supports and promote continuity, distinguishing areas of identity.)

2. Various planting strips in the landscape, such as smaller furniture areas, where feasible. Support the inclusion of large healthy trees and tree domes reducing concrete area and other hardscape growth, using City standards for bioretention, mulch, and rootable soil volumes.

The City’s Stormwater Guidelines for Redevelopment, which includes strategies such as bioretention basins, biofiltration, cisterns integrated into the architectural design, and green roofs, to meet stormwater management thresholds.

Bay-Friendly Landscaping guidelines. Bay-Friendly guidelines represent a whole systems approach to the design, construction and maintenance of the landscape in order to support the integrity of the San Francisco Bay Basin. Key components include:

- Reducing waste and using materials that are locally sourced and recycled content.
- Using soil quality, healthy soils with mulch and compost while reducing fertilizer use.
- Improving water, energy, and stormwater systems.
- Addressing the microclimate and microsite to support the overall health of the plant community.
- Using plant species that are well adapted for San Francisco Bay area conditions.

At the north end of Hollis Street, narrow sidewalks and limited street trees create an uninviting street for pedestrians.

**DESIRABLE**

Bay-Friendly landscaping along Doyle Hollis Park delineates the park edge, provides an attractive and safe sidewalk, and helps to manage stormwater through bioswales.

**UNDISIRABLE**

“Street trees are a simple intervention that is almost universally of value to walkability.”

- Kevin Klinkenberg
Green Streets in PB Plan

- The List of Projects in the Ped-Bike plan includes Green Street improvements on specific street segments.
- Describes Specific Measures such as Stormwater Curb Extensions with loss of on-street parking spaces.
- Estimated project costs for a total of $20 million in needed projects City-wide.
Opportunity Site!
Lessons Learned

- In both San Mateo and Emeryville, Complete Streets Policies and Pedestrian Plans were key elements of process.
- Consider Redevelopment Potential and Urban Forestry goals.
- Grant funding for Water Quality was added to Transportation funding.
- What matters most in your City?
Policy/Plan Areas to Consider:

- Green Street/Infrastructure Design Guidelines
- Green Street/Infrastructure Ordinance
- General Plan
- Pedestrian and/or Bicycle Plan
- Capital Improvement Program
- Annual Pavement Work Plan
- Storm/Sewer Master Plan
- Specific/Precise or Neighborhood Plan
Active Transportation Plans – both by Alta
Where to Start in My Jurisdiction?

1. Assemble a Green Infrastructure Team
   A. Get Buy-in from Management
   B. Hold a Study Session for Electeds
2. Add GS/GI to Planning efforts underway
3. Education/Public Outreach - San Mateo’s Taste and Talk Series is a good example.
4. Integrate C.3 with C.10, C.11 and C.12 (Pollutants of Concern: Trash, Mercury and PCBs.)
5. Update Urban Forestry Standards
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