



Land Use Designations and Planning Approaches

Reining in the rain

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Oakland, California

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ABAG's History with LID

- ▶ **DUST Marsh** 55 acres receives urban runoff from 4.6 sq. mile area, City of Fremont
- ▶ ABAG Sec. 208 (1980's) demonstration project w/ EBRPD
- ▶ ABAG SF Bay Area-wide Water Qlty Man. Program
- ▶ ABAG Water/Land Use Studies
- ▶ 2006 Regional Planning Comm. -- Ahwahnee Water Principles
- ▶ MOU - Caltrans/ABAG/SFEP/ Regional Board
- ▶ Recent EPA demonstration project funding (SFEP)



[Catalog: Natural Resource Projects Inventory \(NRPI\) Catalog](#)

Dataset: Coyote Hill March Urban Storm water Treatment (3-085-225)

Managing Wet Weather with "Green Infrastructure"

- ▶ **Green Infrastructure Action Strategy, 2008**
- ▶ **Projected benefits:**
 - Cleaner water
 - Enhanced water supplies
 - Cleaner air
 - Moderate the impacts of climate change
 - Increased energy efficiency
 - Source water protection
 - Community benefits
 - Cost savings
 - Reduced urban temperatures

Action Strategy

- ▶ Focuses on reducing runoff and mitigating overflows from combined and separate sewers
- ▶ Practical and comprehensive:
 - “The most beautifully designed site (with green infrastructure)...may actually result in an overall increase in impervious surfaces...if new or expanded roads, parking lots and commercial development are needed to serve it.”
- ▶ Technical assistance objectives.

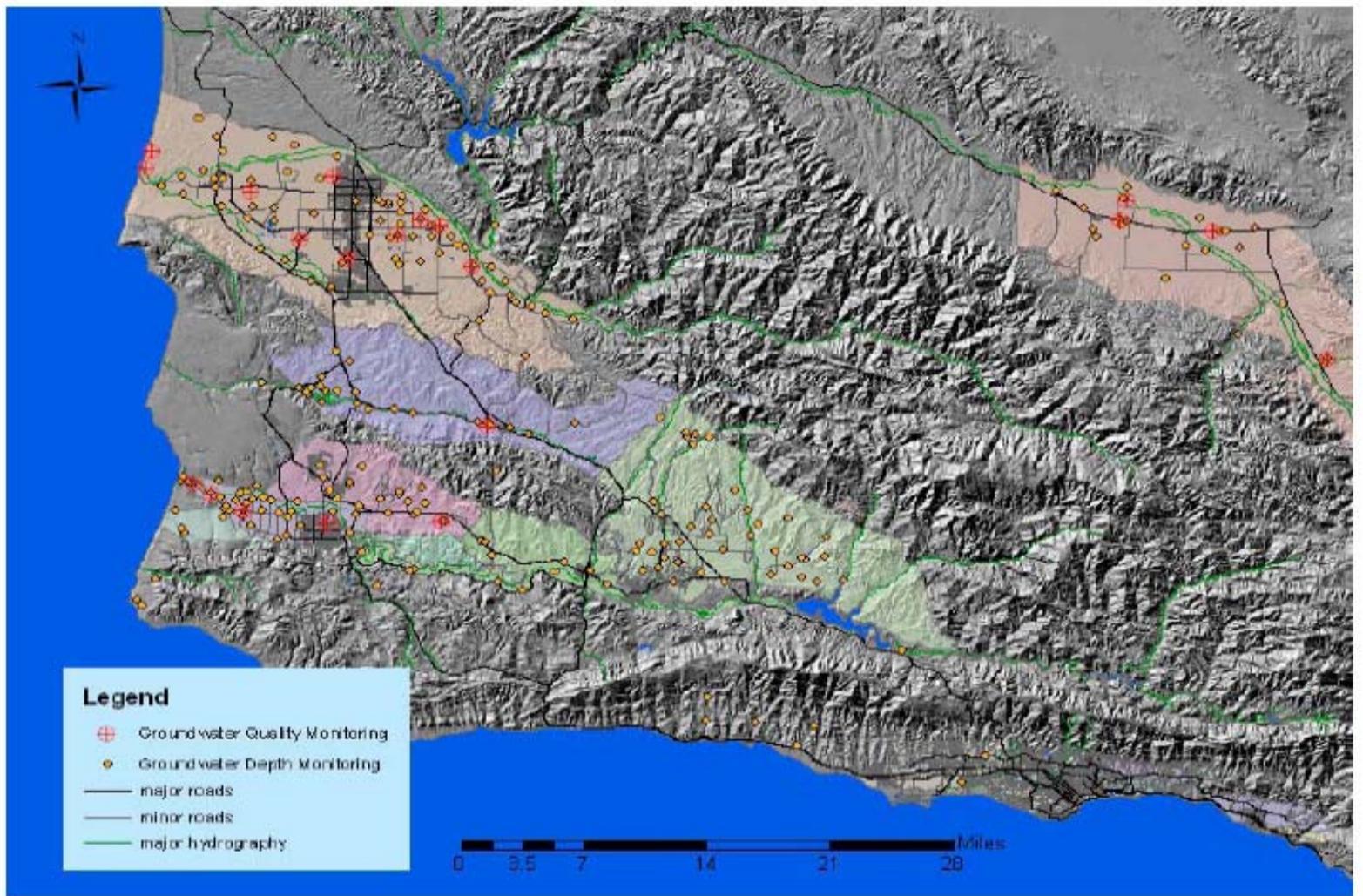
Regional Scope

- ▶ Local projects – inventory needed
 - Minor effects currently
- ▶ Imagine the region's land uses with LID
 - Project by project
 - Greenfield development
 - Neighborhood scale conversions
 - Roadway networks
 - All infrastructure



Imagine the Planning Needs

- ▶ Relationship to watershed resources
- ▶ Relative contributions to regional goals
- ▶ Consistency among design standards?
- ▶ Pollutant load reduction.
- ▶ Constrained areas.
- ▶ Calculating your "storm water footprint"
- ▶ Land use (zoning) designations for LID
- ▶ Predictability for builders
- ▶ Predictability for regulators
- ▶ Offsets? Credits?
- ▶ Maintenance programs.
- ▶ Transfer of discharge from surface waters to sub-surface waters
 - Implications? Controls?



LID for All Types of Land Uses

- ▶ Rural
- ▶ Urban
- ▶ Urbanizing



















Selected Bay Area Green Infrastructure Programs

(Source: ABAG Survey, 2008)

- ▶ Emeryville
- ▶ San Jose
- ▶ Contra Costa County
- ▶ Marin County

City of Emeryville

- ▶ **Storm water Guidelines for Green, Dense Redevelopment** (Source: Cal APA Awards, 2006)
- ▶ Geared specifically to developers and designers, will integrate green storm water treatment into site planning and building design of new development.
- ▶ The guidelines document will enable City staff, planners, designers, and developers to implement sustainable design on many scales throughout Emeryville.

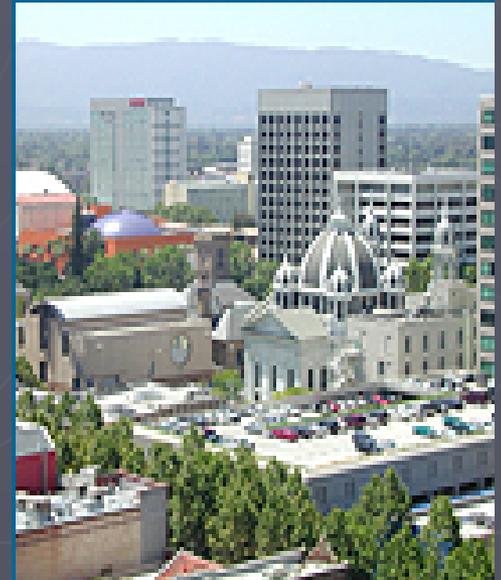
City and Co. of San Francisco

- ▶ LID ordinance and guidebook under development (PUC-Wastewater Environmental Planning and Regulatory Compliance Group)
- ▶ Cooperation on Mint Plaza project development: DPW and CWP and landscape architects
- ▶ Site development and design standards -- under discussion with SF Planning Dept. and PUC



City of San Jose` LID Process

- ▶ Integrated development review process – all affected agencies involved.
- ▶ General Plan is unifying element – update coming.
- ▶ Planners play lead coordinating role.
- ▶ Planners: site design
- ▶ Engineers: hydro-modification
- ▶ Numerous Council policies



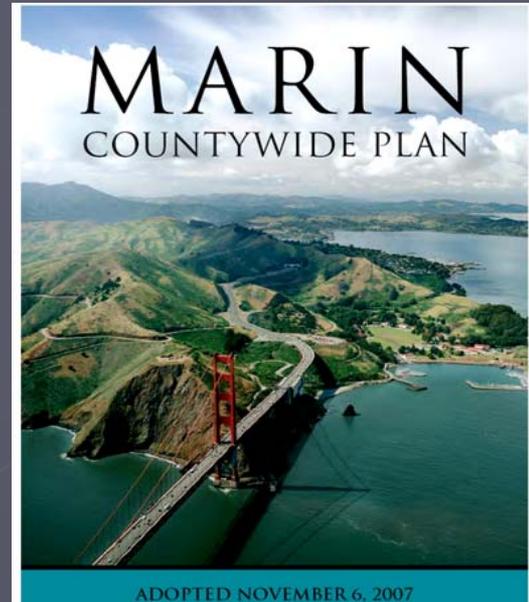
County of Contra Costa

- ▶ Clean Water Program* and Dept. of Public Works are in the lead
- ▶ CWP assists Community Development by funding staff, creating essential guidance documents [Storm water C.3 Guidebook](#)
- ▶ Room for improvement in zoning code – they currently rely on variance process for non-standard pavement
- ▶ Project conditions are employed on a case-by-case basis (discretionary)
- ▶ No LID design standards ala City of Salinas – diverse county – one size doesn't fit all
 - Contra Costa County, nineteen of its incorporated cities and the Contra Costa Flood Control & Water Conservation District .
Illustration: Pleasant Hill BART Transit Village



County of Marin

- ▶ Reinforcing the critical role of watershed planning is an overarching concern.

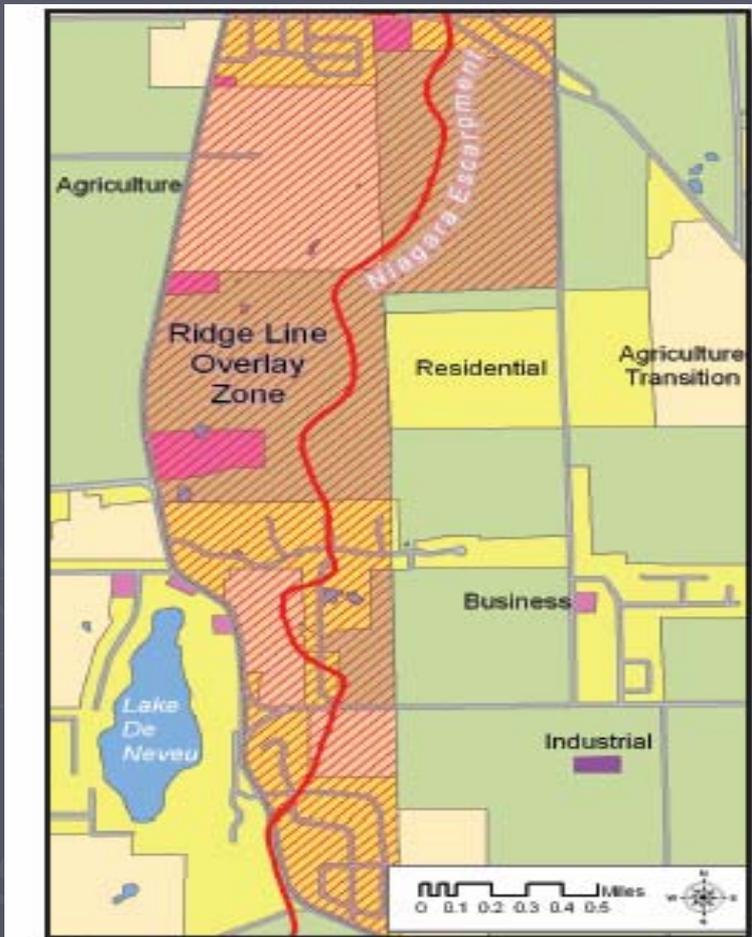


All project improvements should be designed to minimize flood hydrograph peak flow or flood volume increases into drainage courses. To this end, design features such as porous pavement, pavers, maximizing overall permeability, drainage infiltration, disconnected impervious surfaces, swales, bioretention, green roofs, etc., should be integrated into projects as appropriate.

Zoning Opportunities

- ▶ Overlay zoning
- ▶ Loosen up existing zoning policy
- ▶ Floodplain zoning

Overlay Zoning



- ▶ **Overlay zoning** is a regulatory tool that creates a special **zoning** district, placed over an existing base zone(s), which identifies special provisions in addition to those in the underlying base zone.
- ▶ The **overlay** district can share common boundaries with the base zone or cut across base zone boundaries.
- ▶ Regulations or incentives are attached to the **overlay** district to protect a specific resource or guide development within a special area.
- ▶ Source: Center for Land Use Education, Nov. 2005

Michigan: LID Strategy

- ▶ Allow more flexibility in zoning policy to accommodate low-impact development principles. For example, zoning rules with strict requirements for wide streets or traditional storm water infrastructure should be modified to allow equally effective low-impact strategies.

Waterways at Risk, How Low Impact Development Can Reduce Runoff
Pollution in Michigan, 2005

Floodplain Zoning

- ▶ With sufficient planning and engineering, LID elements can be incorporated into traditional floodplain zoning.
- ▶ Some engineers caution that LID may exacerbate flooding.
- ▶ Most Bay Area communities are either built on or near floodplains.

Create Happy Campers

- ▶ Coastal dwellers





