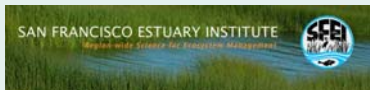
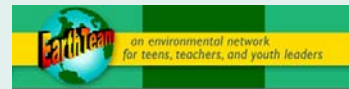
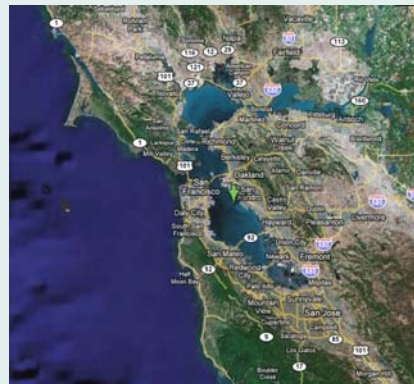


Green Infill - Clean Stormwater



Concept

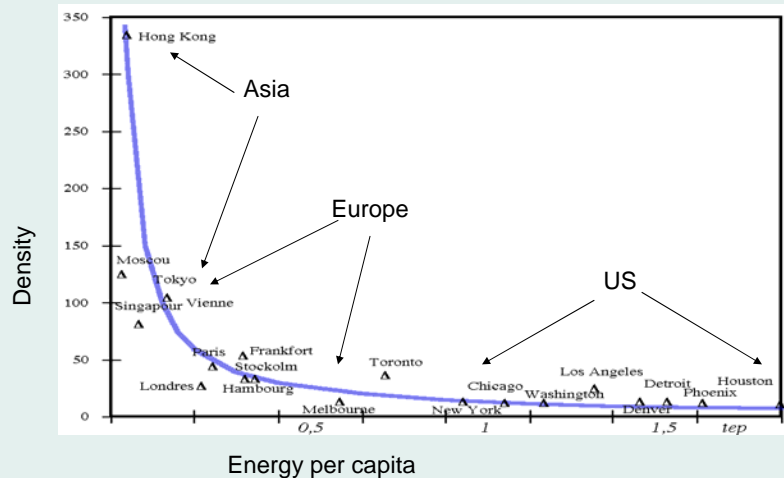
- Infill development that protects stormwater & reduces sprawl will also lower energy footprint of the Bay Area
- Outreach to Bay Area Local Governments on Good Land Use Practices as called out in the Estuary Project's CCMP and integrated with Regional Agencies' FOCUS



Who's Involved

- EPA (funder)
- ABAG/SFEP (grantee)
- SFEI (partner)
- San Mateo County Stormwater Pollution Prevention Program
- City of Hercules (partner)
- City of Pinole (partner)
- Aquateam (partner)
- City/County TBD (partner)
- RWQCB (supporter)
- Coastal Conservancy (supporter)
- BAAQMD (supporter)
- MTC (supporter)

Dense cities consume less energy per person because less energy is needed for transportation



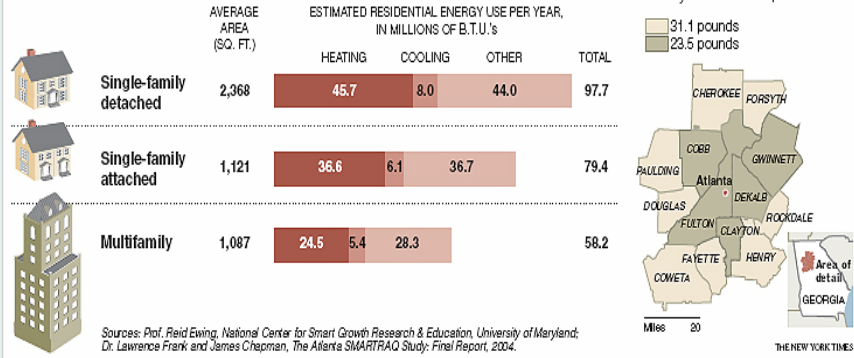
From Newman and Kenworthy, "Cities and automobile dependence", Gower, 1989

Sprawl is Energy Inefficient

Greener Pastures? Studies have shown that suburbanites use more energy and produce more carbon dioxide than city-dwellers.

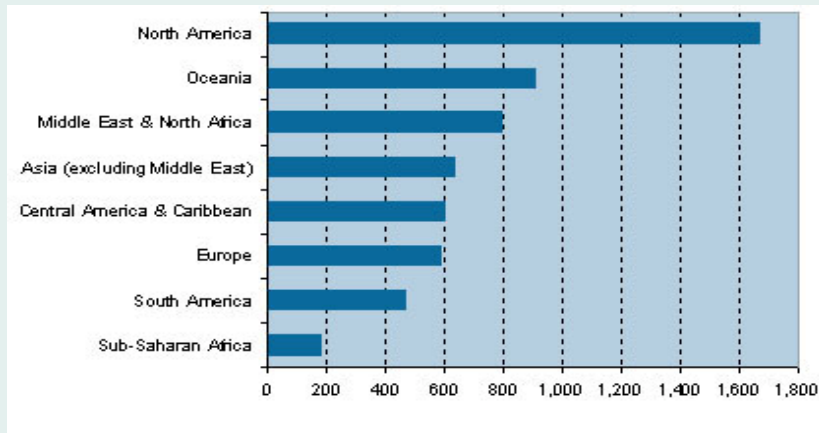
Energy use of the average household — based on family size, income and other factors — in three types of housing in the Atlanta metropolitan area.

Average weekday carbon dioxide emissions per person in the 13-county Atlanta metropolitan area.



NY Times 2/9/08

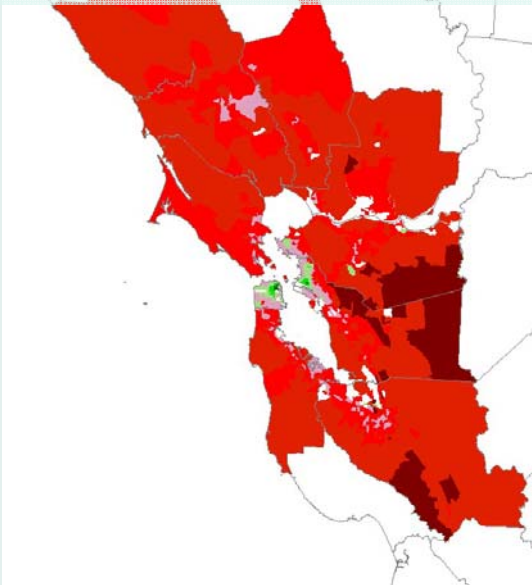
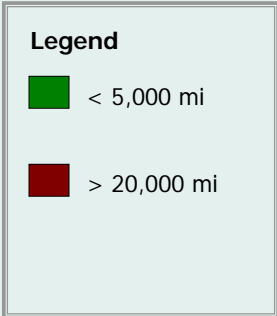
Sprawl also increase per capita Water Use



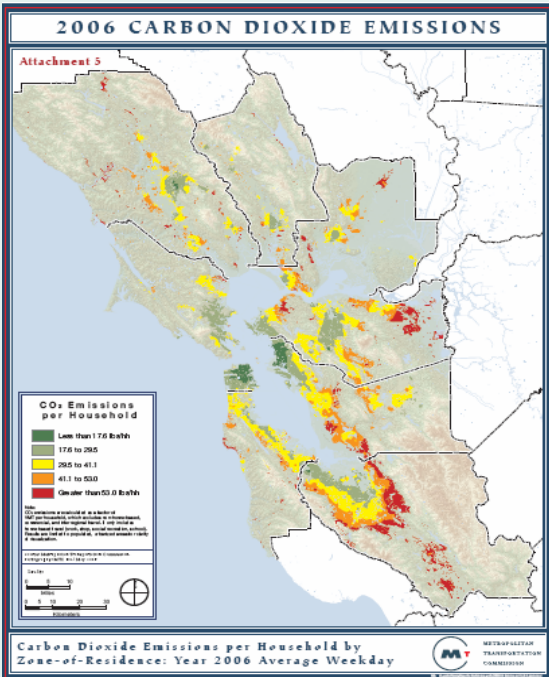
Per Capita Water Use, 2000 (cubic meters per year)

Source: [EarthTrends 2007](#) (from UN data)

More Time in Cars = More Pollution



Vehicle Miles Traveled per Person by Area



How We Grow Matters

“Nearly ½ of What will be built by 2030 doesn’t even exist yet, giving the current generation a vital opportunity to reshape future development.”

Chris Nelson *Toward a new Metropolis: The Opportunity to Rebuild America*

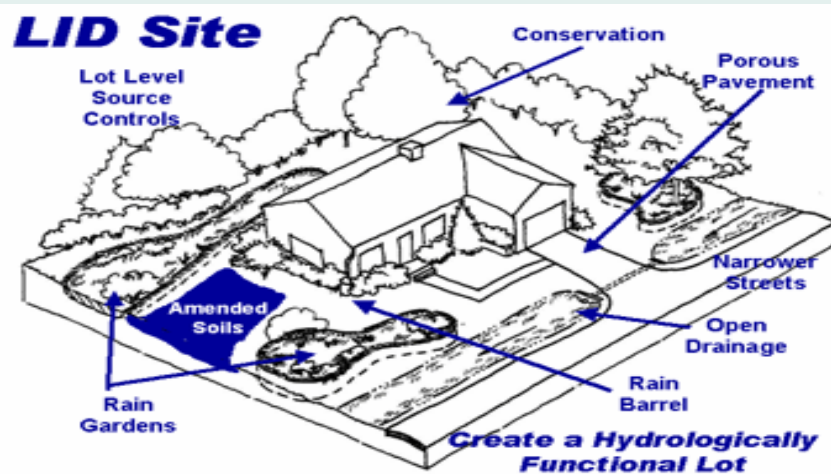
Smart Growth Principles

- Mix land uses
- Take advantage of compact building design
- Create a range of housing opportunities and choices
- Create walk-able neighborhoods
- Foster distinctive, attractive communities with a strong sense of place
- Preserve open space, farmland, natural beauty, and critical environmental areas
- Strengthen and direct development towards existing communities
- Provide a variety of transportation choices
- Make development decisions predictable, fair, and cost effective
- Encourage community and stakeholder collaboration in development decisions

Water and Smart Growth

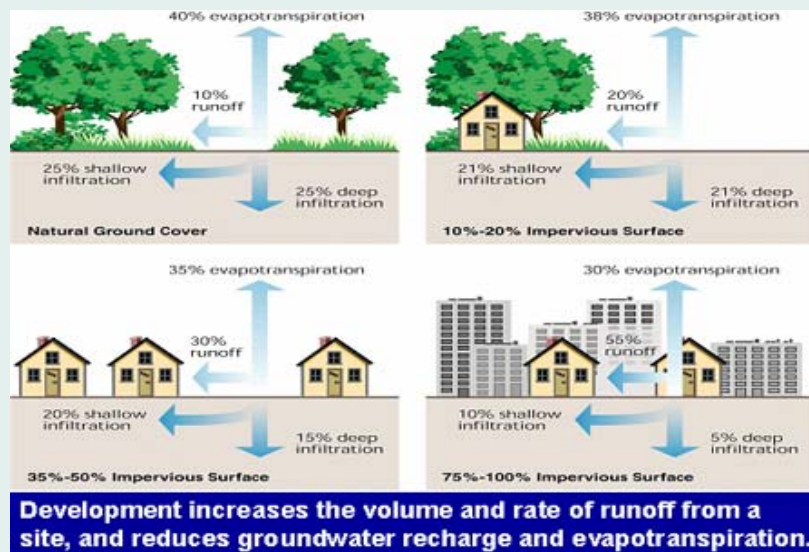
- Low Impact Development – often refers to suburban type developments, less said on urban core
- Green Infrastructure – more holistic – applies to retrofitting the urban core, avoiding putting infrastructure in new areas, using recycled building materials/green building practices

Low Impact Development – Site Specific



More Urban Environments = more impervious surface = more runoff

... Which might lead you to believe that urban environments should shrink



...but Urban Environments can leave more space for the rest of the watershed

Scenario A	Scenario B	Scenario C
10,000 houses built on 10,000 acres produce: 10,000 acres x 1 house x 18,700 ft ³ /yr of runoff = 187 million ft³/yr of stormwater runoff Site: 20% impervious cover Watershed: 20% impervious cover	10,000 houses built on 2,500 acres produce: 2,500 acres x 4 houses x 6,200 ft ³ /yr of runoff = 62 million ft³/yr of stormwater runoff Site: 38% impervious cover Watershed: 9.5% impervious cover	10,000 houses built on 1,250 acres produce: 1,250 acres x 8 houses x 4,950 ft ³ /yr of runoff = 49.5 million ft³/yr of stormwater runoff Site: 65% impervious cover Watershed: 8.1% impervious cover

Source: US EPA Protecting Water Resources with Higher-Density Development

Partner Projects – San Mateo Co.

- SFEI will monitor the effectiveness of San Mateo County's New Sustainable, Green Streets and Parking Lots project
- Matching funds San Mateo County AB1546 funds

Demonstration projects of a variety of pervious pavement projects

Monitoring the environmental benefits & economics of the projects



Project Partners - Contra Costa Co.

- Chelsea Marsh Restoration (Hercules)
- Pinole Creek (Pinole)
- AquaTeam

On the ground creek/wetlands restoration

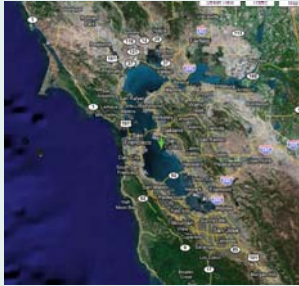
Habitat Monitoring

Training the next generation of environmental stewards



Project Partner - SFEP

- Minigrant program for innovative planning to facilitate green infrastructure
- Subregional and regional outreach on Green Infill – Clean Stormwater



Involve all nine counties and 101 cities in the project to spur others to increase green infrastructure in the Bay Area

Time Frame

- Funding later this year
- Three year time horizon

For More Information:

Jennifer Krebs

Sr. Environmental Planner SFEP/ABAG

510-622-2315

jkrebs@waterboards.ca.gov