The Ahwhanee Water Principles for Resource-Efficient Communities

Local Government Commission

Why Are City and County Officials Concerned About Water?

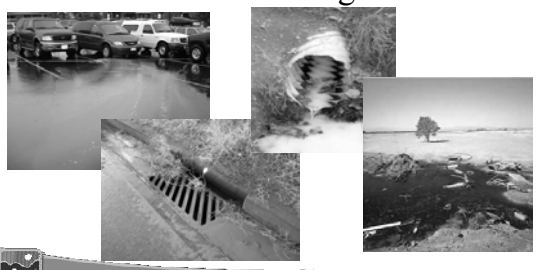
Ignoring threats related to:

- **Water quality**
- **Water supplies**
- **Local flooding**

Is too expensive!

Clean and plentiful water is essential to healthy communities and vibrant economies

With tougher water quality regulations cities and counties are rethinking stormwater management



Local Government Commission

Following Katrina the threat of flooding is on everyone's radar screen!

Local Government Commission

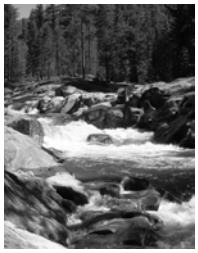
Growing communities need water to accommodate future needs

Local Government Commission

Where do our precious water resources come from?

Local Government Commission

Healthy Watersheds



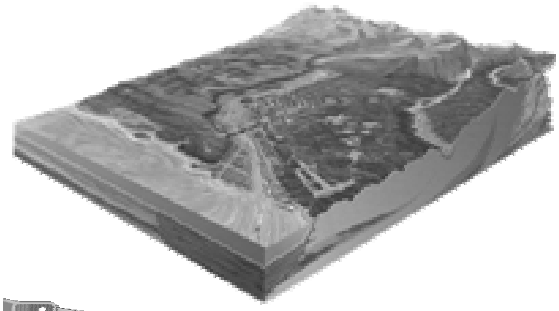
Local Government Commission

What is a Watershed?

It is all the land that drains into a river, stream, lake, or estuary or flows into the groundwater basin.

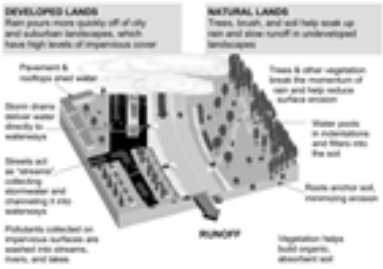
Local Government Commission

All land, developed or not, is in a watershed.



Local Government Commission

What happens to water in a watershed?



Local Government Commission

We need to identify watersheds that are undeveloped, evaluate their value, and maintain the most important ones in an undeveloped state. These are our critical sources of water.

Local Government Commission

Why Land Use and Water? Because it all boils down to *Where* and *How* we grow…

"*The biggest influence on future water supplies and quality in California is local land use planning.*"

Celeste Cantu, Executive Director
CA State Water Resources Control Board

Local Government Commission

A. Where We Grow- Rules of Thumb

DON'T grow in important watersheds.

DO grow in already developed areas.

Local Government Commission

The 10% rule:

When more than 10% of the acreage of a watershed is covered in roads, parking lots, and other "impervious surfaces", the watershed become degraded.

Numerous studies show that by virtually every measure of ecosystem health, the streams, creeks, marshes and rivers in watersheds where over 10% of the land has been hardened (paved over), are less diverse, less stable and less productive than those in natural watersheds. Their banks may become unstable, they may erode, and/or they may collect sedimentation.

Local Government Commission

Covering a Watershed Can Reduce Groundwater Supplies

When impervious coverage in the watershed reaches ten percent, significantly less water filters through the soil to replenish underground aquifers ˆ the sources of much of our nation,s drinking water.

"Growth in Atlanta during the 1980's and 1990's, for example deprived that metropolitan area of 56 to 132 billion gallons every year, enough to supply the annual water needs of roughly 2.5 million people." US EPA

Local Government Commission

Covering a Watershed Can Result in Flooding

"A one-acre parking lot produces about 16 times the volume of runoff that comes from a one-acre meadow."

-Center for Watershed Protection

Local Government Commission

Covering a Watershed Can Result in Water Pollution

"We have known for decades that runoff is responsible for more than half of the water pollution nationwide." -US EPA

On the coast, of the estuaries surveyed by US EPA, more than 5,000 square miles (an area almost the size of the state of New Jersey) failed to meet designated uses because of urban runoff.

Fish and shellfish habitat was damaged, beaches were closed, and drinking water from rivers and streams was contaminated.

Local Government Commission

How We Grow

DON'T Sprawl

DO grow in the form of Compact Walkable Communities

Local Government Commission

For the past 50 years we have been designing the transportation system for the car.

Local Government Commission

Local Government Commission

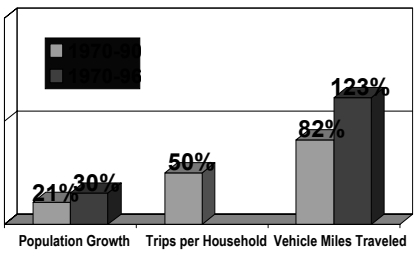
Local Government Commission

Local Government Commission

Local Government Commission

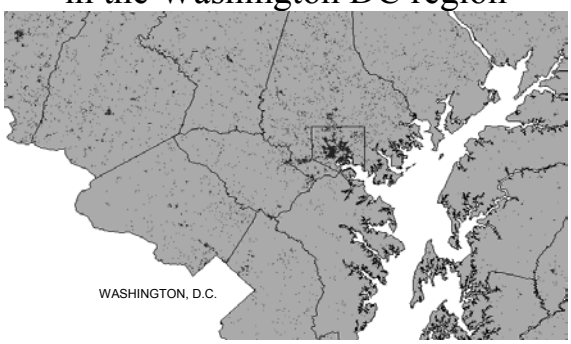
Local Government Commission

U.S. Population Growth and Transportation – 1970-1996

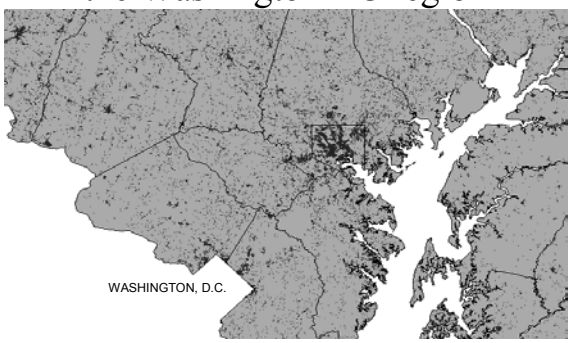


Local Government Commission

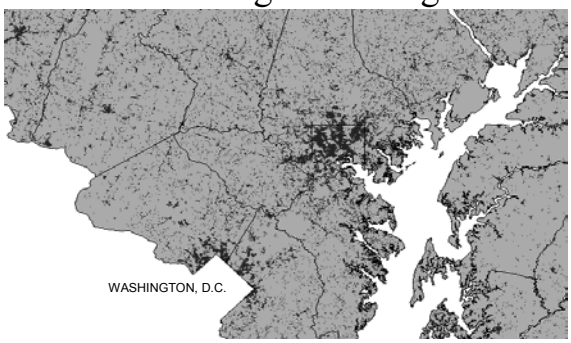
Development Patterns before **1900** in the Washington DC region



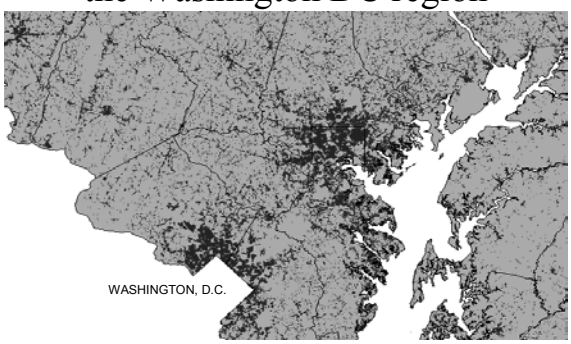
Development Patterns up to **1920** in the Washington DC region



Development Patterns up to **1940** in the Washington DC region



Development Patterns up to **1960** in the Washington DC region

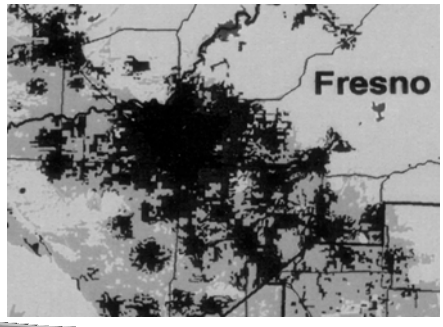


Development Patterns up to **1980** in the Washington DC region

Development Patterns up to **2000** in the Washington DC region

Compacts versus Low Density Development

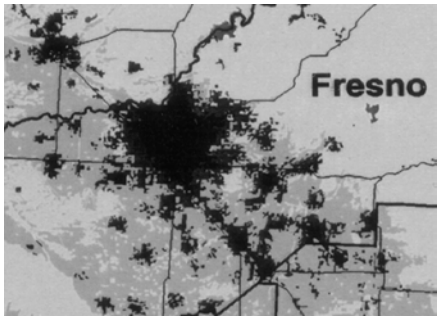
Low Density Development Scenario (3 units/acre)



Local Government Commission

Compacts versus. Low Density Development

…vs. More Compact Development Scenario (6 units/acre)



Local Government Commission

SPRAWL:

THE NUMBER ONE THREAT
TO WATER SUTAINABILITY

"According to the US EPA, damage to water quantity and quality will grow dramatically unless sprawl is brought under control."

Local Government Commission

The Ahwahnee Principles, 1991

- Response to our members' concerns over sprawling, poorly planned development in their communities
- Assembled with assistance from leading architects and planners working on innovative solutions

Local Government Commission

The Ahwahnee Principles, 1991

- Revitalize existing parts of our communities through infill development
- Plan complete and integrated communities with mix of uses
  - Within walking distance of one another
  - Within walking distance of transit stops
  - With a diversity of housing types
  - With a center focus

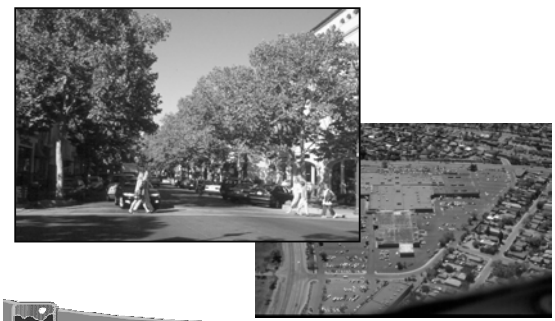
Local Government Commission

"Planning, community design and health behavior studies find that the way communities are built influences whether people drive, take transit, walk, or bicycle to get where they are going."

-Active Living Research, San Diego State University

Local Government Commission

Downtown instead of a mall:



Local Government Commission

Narrow streets instead of wide ones:

Parking structures instead of large surface lots:

Mixed use instead of single use:

Walking & transit instead of car:

Local Government Commission

Sprawling large lot residential versus townhouses or small lot houses:

Local Government Commission

How to fix what we have

How to fix what we have

How to fix what we have

Photo Simulation by Steve Price, Urban Advantage (www.urban-advantage.com)

According to the EPA, “For the sake of our water supplies, new growth is best located in already developed areas.”

The EPA considers land use strategies such as infill development, redevelopment, vacant property initiatives and "Main Street" programs as highly effective policies for stormwater control.

Cities can get credit for these strategies from the EPA when applying for an NPDES stormwater discharge permit.

Section 65352.5 of the Government Code

"Upon receiving, pursuant to Section 65352, notification of a city's or a county's proposed action to adopt or substantially amend a general plan, a public water system . . . . . shall provide the planning agency with the following information . . . . ."

(7) "future implementation of water use reduction measures identified in the water supplier's urban water management plan.

(9) Any additional information that is relevant to determining the adequacy of existing and planned future water supplies to meet existing and planned future demands on these water supplies.

The Ahwahnee Principles for Resource Efficient Water Use

Community Principles

- Community design should be compact, mixed use, walkable and transit-oriented so that automobile-generated urban runoff pollutants are minimized and the open lands that absorb water are preserved to the maximum extent possible.
- Natural resources should be identified, preserved and restored as valued assets for flood protection, water quality improvement, groundwater recharge, habitat, and overall long-term water resource sustainability.
- Water holding areas should be incorporated into the urban landscape.

The Ahwahnee Principles for Resource Efficient Water Use

Community Principles

- All aspects of landscaping should be designed to reduce water demand, retain runoff, decrease flooding, and recharge groundwater.
- Permeable surfaces should be used for hardscape. Impervious surfaces should be minimized so that land is available to absorb storm water, reduce polluted urban runoff, recharge groundwater and reduce flooding.
- Dual plumbing that allows grey water from showers, sinks and washers to be reused for landscape irrigation should be included in the infrastructure of new development.

The Ahwahnee Principles for Resource Efficient Water Use

Community Principles

- Community design should maximize the use of recycled water for appropriate applications including outdoor irrigation, toilet flushing, and commercial and industrial processes.
- Urban water conservation technologies should be incorporated in all new construction and retrofitted in remodeled buildings.
- Ground water treatment and brackish water desalination should be pursued when necessary to maximize locally available, drought-proof water supplies.

For more information:

Web:	www.lgc.org
Phone:	800-290-8202
Phone:	916-448-1198
e-mail:	center@lgc.org

New Partners for Smart Growth Conference
Denver, CO
January 26-28, 2006
www.newpartners.org