Webcast sponsored by EPA's Watershed Academy

Smart Growth and Green Infrastructure

November 28, 2007

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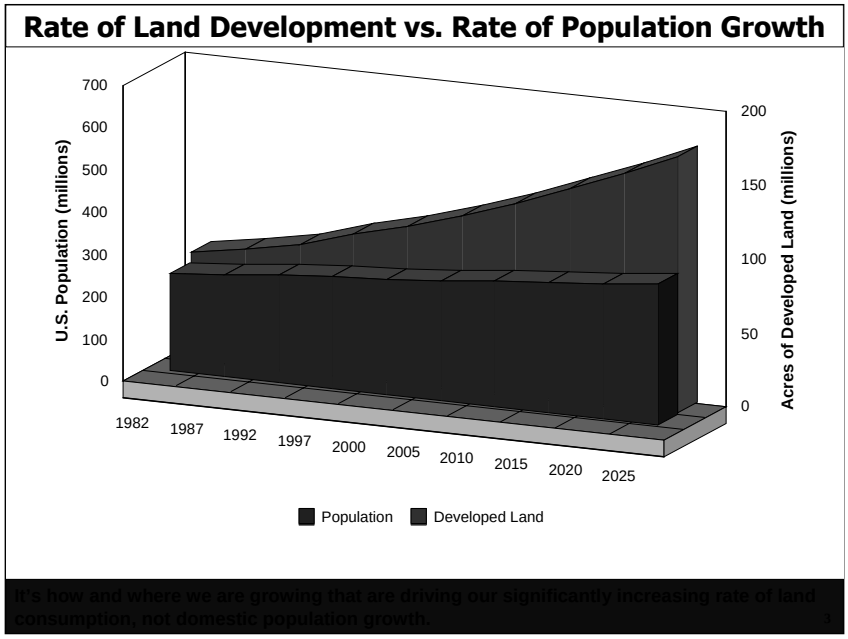
Smart Growth:
Protecting Water at the Region, Neighborhood and Site Level

Geoffrey Anderson
US EPA Smart Growth Program



Rate of Land Development vs. Rate of Population Growth Graph

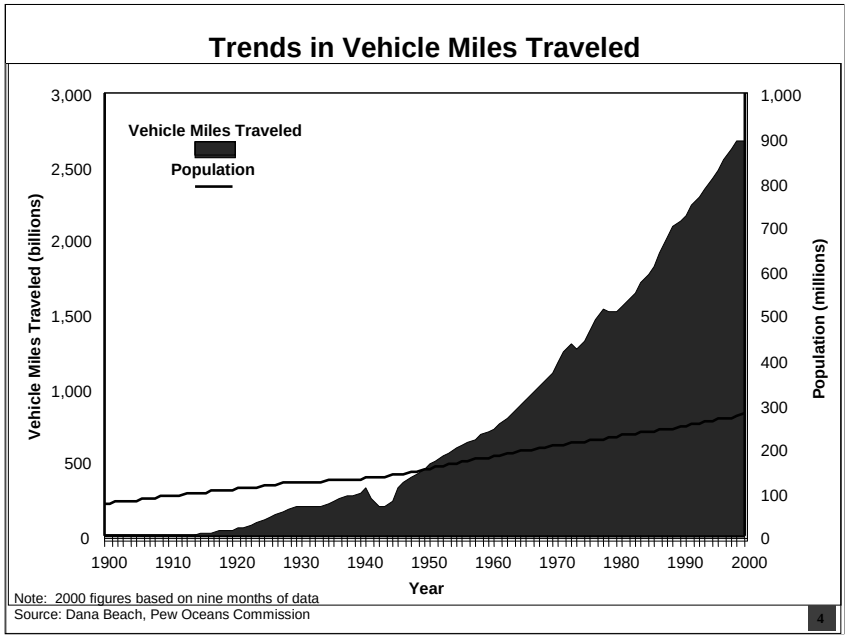
The rate of land conversion to urban uses is due more to modern settlement patterns than to population growth. According to the U.S. Department of Agriculture's National Resources Inventory, developed land in the contiguous United States increased 34 percent between 1982 and 1997. During the same 15-year period, population grew by about 15 percent; thus land consumption occurred at more than twice the rate of population growth.

More than a quarter of all the land converted from rural to urban and suburban uses since European settlement occurred between 1982 and 1997 – a period of only 15 years. This graphic demonstrates the potential for more than 68 million additional acres of land to be developed by 2025 if current trends continue.

The next slide is a growth animation that illustrates how the growth trend of urban land expansion outpacing population growth. If it works, you should see time-lapse progressions of satellite imagery showing urban growth pushing the urban fringe outward.

This growth trend is correlated with a consistent decline in development densities over recent decades.

Dana Beach, Pew Oceans Commission or Data and extrapolations from National Resources Inventory 2001; U.S. Census Bureau 2000.



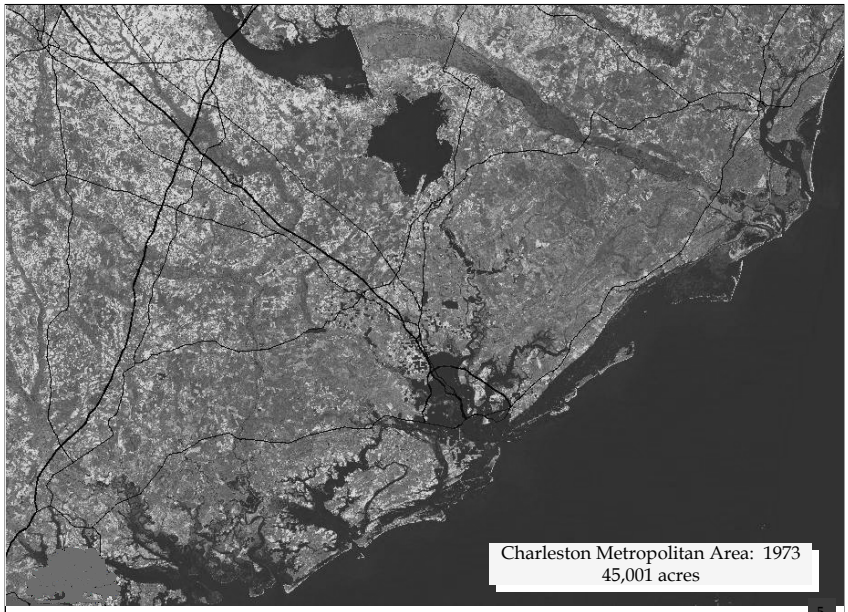
Trends in Vehicle Miles Traveled

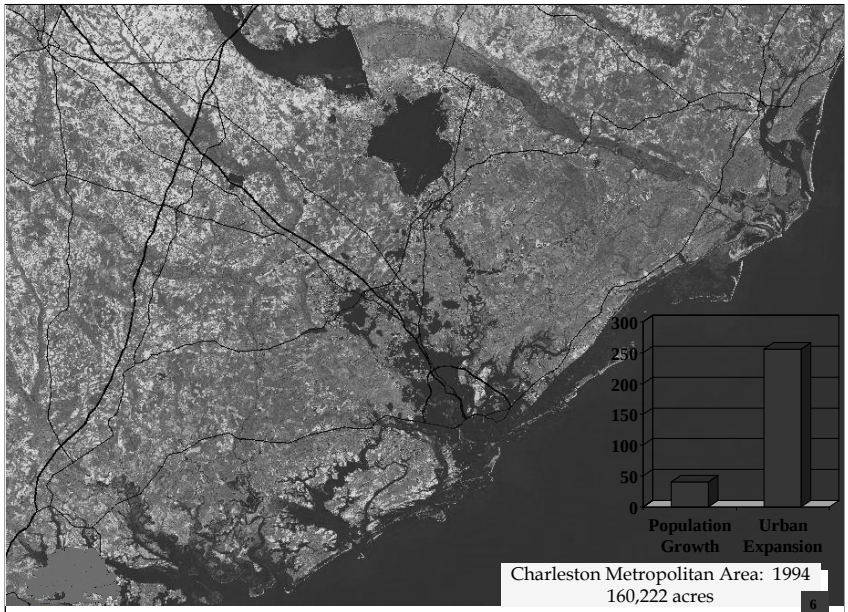
The rate of vehicle miles traveled increased after the second world war, but over the past 20 years, the number of miles Americans drive every year has increased at four times the rate of population growth. Pollutants associated with atmospheric deposition from automobile emissions and runoff from roads are recognized as an increasingly significant source of water pollution.

As this pattern of development eliminated transportation options for many Americans, related impacts to quality of life such as time lost in traffic congestion, longer commuting times, more aggressive driving, and more accidents have worsened.

One study concludes that the number of miles traveled per household falls by 35% when residential densities move from two units per acre to ten units per acre. (Holtzclaw, 1994) * Studies of transit usage establish seven to eight residential units per acre as the minimum housing density necessary to support regular transit service. (Pushkarev and Zupan, 1977)

Source: Holtzclaw, J. 1994. Using residential patterns and transit to decrease auto dependence and costs. Natural Resources Defense Council, San Francisco, California. http://www.smartgrowth.org/library/cheers.html


Charleston Metropolitan Area: 1973
45,001 acres
5


300
250
200
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50
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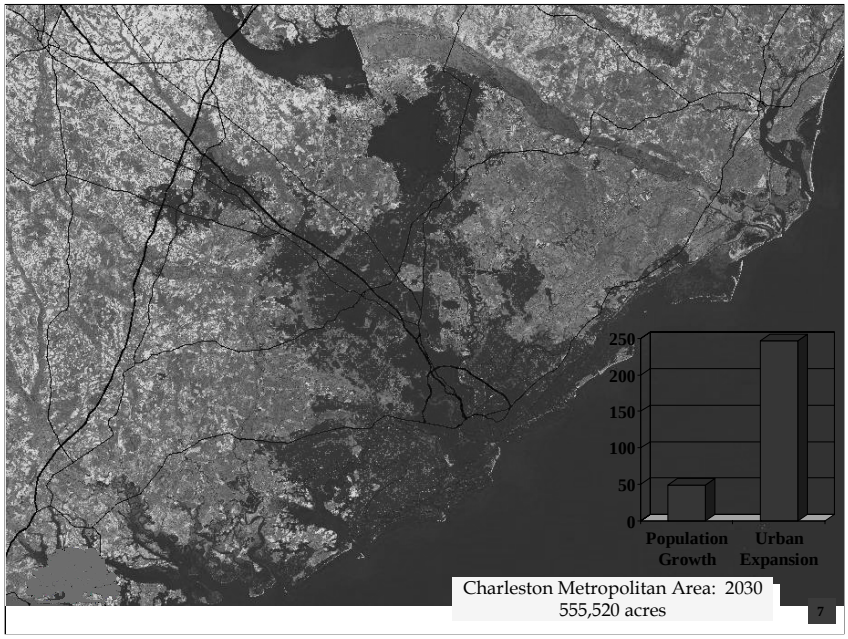
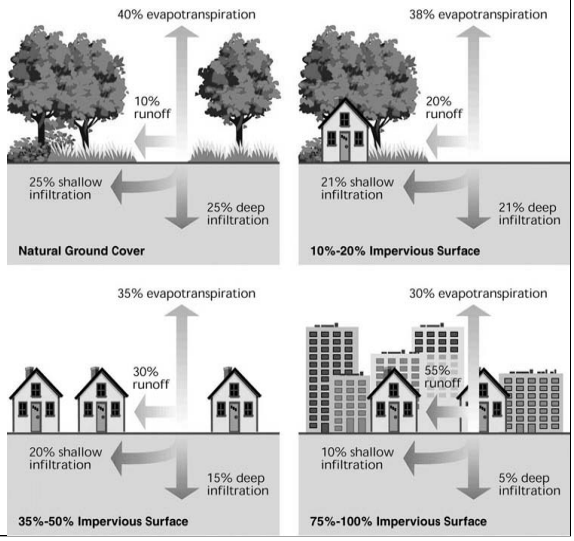
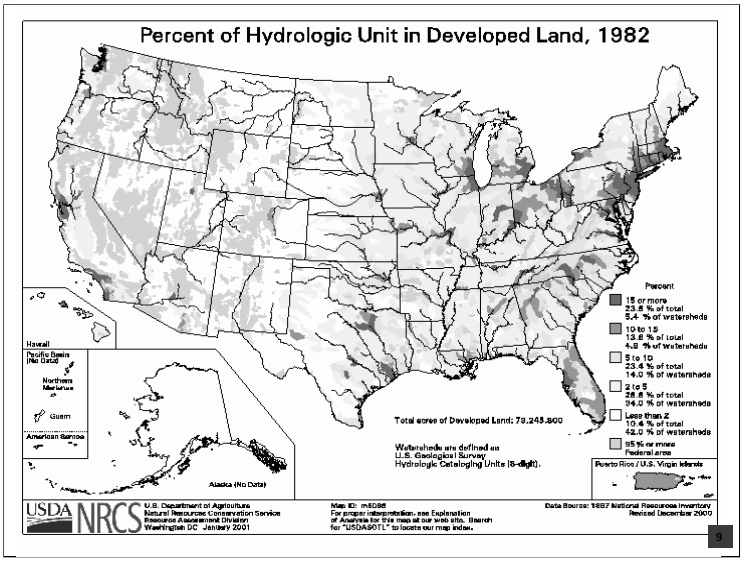
Population Growth
Urban Expansion
Charleston Metropolitan Area: 1994
160,222 acres
6


250
200
150
100
50
0
Population Growth
Urban Expansion
Charleston Metropolitan Area: 2030
555,520 acres
7

Water Quality Impact from Development

- Impact of Trends
  - 1 acre parking lot has 16 times greater runoff
  - Water quality impairment due to urban runoff:
    - Estuaries: 32 percent
    - Rivers: 13 percent
    - Lakes: 18 percent
    - Ocean shorelines: 56 percent



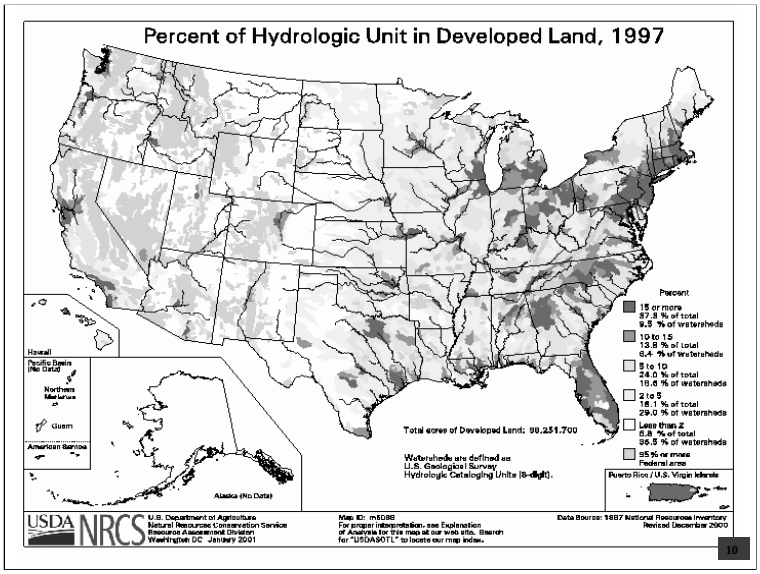


Watersheds Under Development

The hydrologic change in watersheds at the national scale is illustrated in terms of percentage of watersheds in developed (or urbanized) land cover across the nation.

In 1982, 5.4% of watersheds (at the 8-digit USGS Hydrologic Cataloging Unit) had 15% or more of their area developed to urban land cover.

Watch the change in the next slide -- By 1997, that percentage had nearly doubled: 9.5 % of the watersheds in the U.S had 15% or more of their area developed to urban land cover.



2nd part of animation of development in watersheds between 1982 and 1997.

Meeting the Nation's Water Quality Goals

Since 1972, the Clean Water Act has had considerable success in controlling water pollution from point sources (municipal wastewater treatment plants and industrial discharges).

Today, pollutants generated by nonpoint sources are the largest cause of impairments to State Water Quality Standards

This map shows watersheds at the 8 digit HUC code, and the percentage of water bodies that do not meet water quality standards. Only around 10% of these impairments can be resolved by addressing point sources alone.

In the National Water Quality Inventory 2000 Report, States reported to EPA that the leading sources of impairments across all waterbody types (including streams and rivers, lakes, ponds and estuaries) are from non point sources such as agriculture and land-based activities in urban areas.

NOTE: SOURCE: http://www.epa.gov/iwi/1999sept/iv22_usmap.html. More recent map? Contact: Tod Dabolt (E-mail: dabolt.thomas@epa.gov)

What is smart growth?

Smart growth is development that revitalizes neighborhoods, protects farmland and open space, keeps housing affordable, and provides more transportation choices.

It is development that is good for the economy, community, and the environment.

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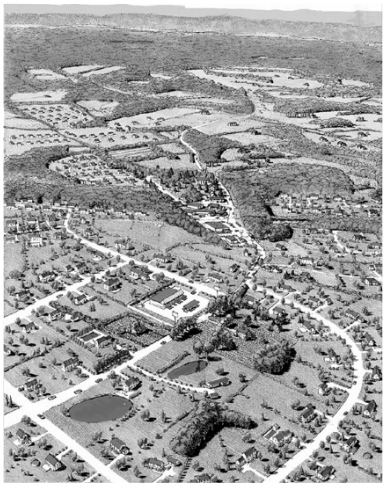
In many ways, smart growth strategies are like a chinese menu. On this menu are numerous approaches to development that many successful communities have implemented. And all of these strategies serve multiple objectives. For example, transit options can reduce air emissions and create a healthier community as more people walk to and from transit stops.

Comparing Regional Development Patterns -- Current



- Land is consumed at a faster rate
- Large lot zoning -- less efficient use of land
- Auto-dependent development -- more pollution and impervious surface per person

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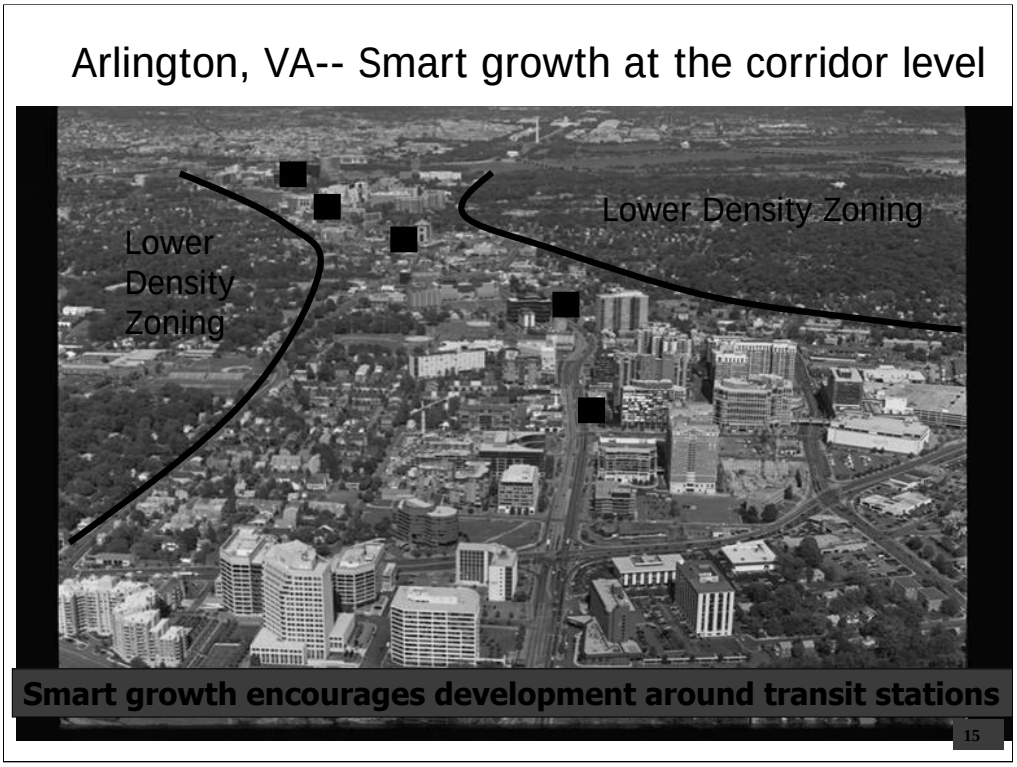
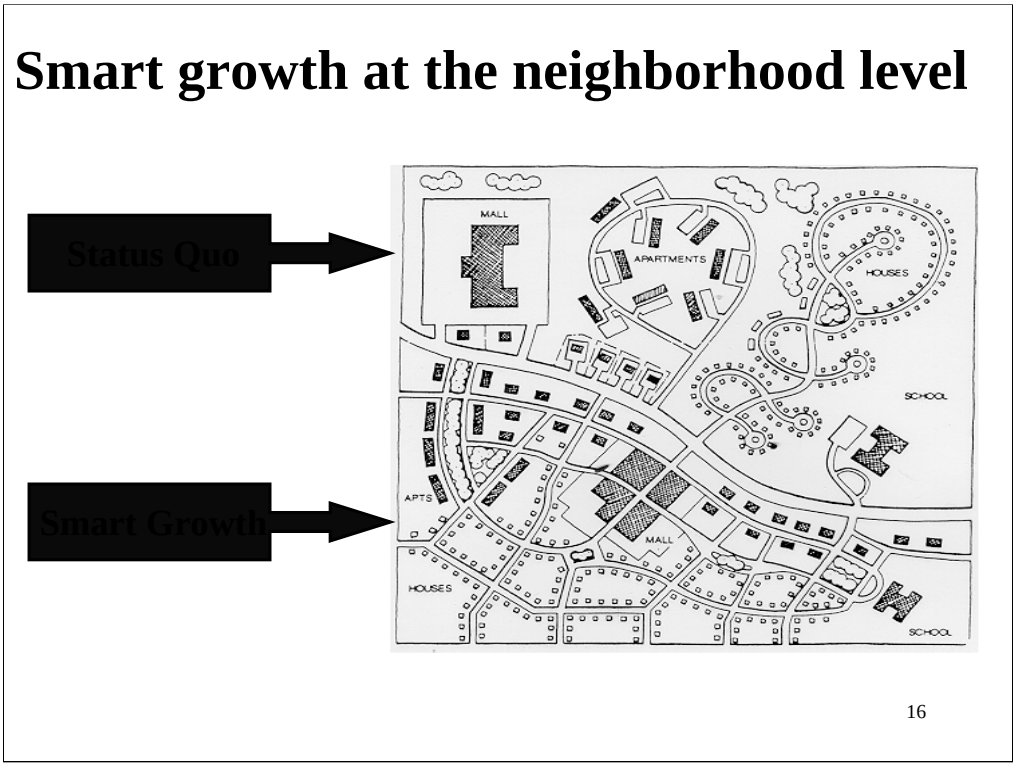
Comparing Regional Development Patterns – Smart Growth

- Infill opportunities accommodate growth
- Concentrate development and leave more open space
- Mix uses to create transportation choices
- Minimize air and water pollution

14



SG on the ground.



Please excuse the subtle imperfections in this rendering; however, I need to use it to emphasize an important point.

Land is a limited resource. Although it may not be obvious, nationally when looking at a map of the U.S., land consumption and conversion are critical issues locally.

Here are our options. Continue applying development patterns that perpetuate the status quo:

•separate land uses, auto oriented development, increased VMT, thus more air pollution;

•wide street design that encourages speeding and makes crossing the street treacherous for the elderly and children; and

•dispersed development that continues to the fringe and beyond.

The alternative options is a development pattern that espouses:

•investment in existing communities;

•mixing land uses in order to create a built environment that is walkable; engaging for the consumer; and makes running errands more convenient; and

•modifying street networks so that they are safe for bicyclists and pedestrians while enabling traffic to flow.

Smart growth at the street level

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Source: www.urban-advantage.com

Many studies, polls, even voting results for ballot measures indicate that citizens have a preference for development that embodies smart growth.

While Arlington, VA, Seaside, FL, and Charleston, SC are desirable by the public, as places to live, the style of development and amenities that make these places unique are not common throughout the nation. Outdated LDRs preclude them from being built.

Outdated LDRs can lead to unintended consequences. They may preclude:

•provision of bike lanes along street arterials;

•medians for light rail in downtown areas;

•creation of Transit Oriented Development (TOD) districts;

•wide sidewalks and street level retail that are characteristic of pedestrian friendly areas;

•mixed-uses that are complementary;

•higher density development;

•aesthetic improvements like placing utilities below ground or aligning a corridor with trees.

Smart Growth Protects Water Resources

- Compact Design
- Transportation Alternatives
- Re-use of Brownfields
- Investing in/Maintaining Existing Communities
- Preservation of Key Open Space and Critical Environmental Areas

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Sprawl has been the dominant growth pattern for nearly all metropolitan regions in the United States for the past five decades. In communities across the nation, there is a growing concern that current development patterns— dominated by what some call "sprawl"—are no longer in the long-term interest of our cities, existing suburbs, small towns, rural communities, or wilderness areas. Though supportive of growth, communities are questioning the economic costs of abandoning infrastructure in the city, only to rebuild it further out.

They are questioning the wisdom of abandoning "brownfields" in older communities, eating up open space and prime agricultural lands at the suburban fringe, and polluting the air of an entire region by driving farther to get places. The result is both a new demand and a new opportunity for smart growth.

Which is Better for Water Quality?

OR

Low Density

Higher Density

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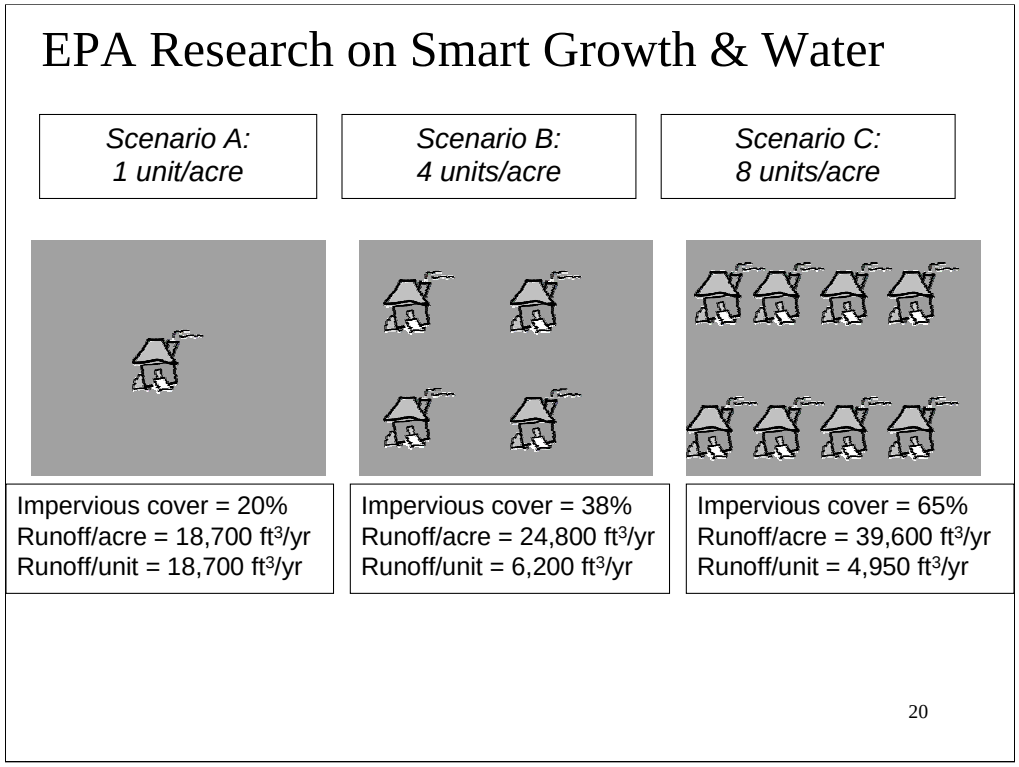
Premise is that a significant number of people in any audience would vote for the lower density option when asked whether low (1/4 – ½ acre lots) density single use (residential) or higher density, mixed use (looks like a shot of downtown Charleston) is better for water quality.

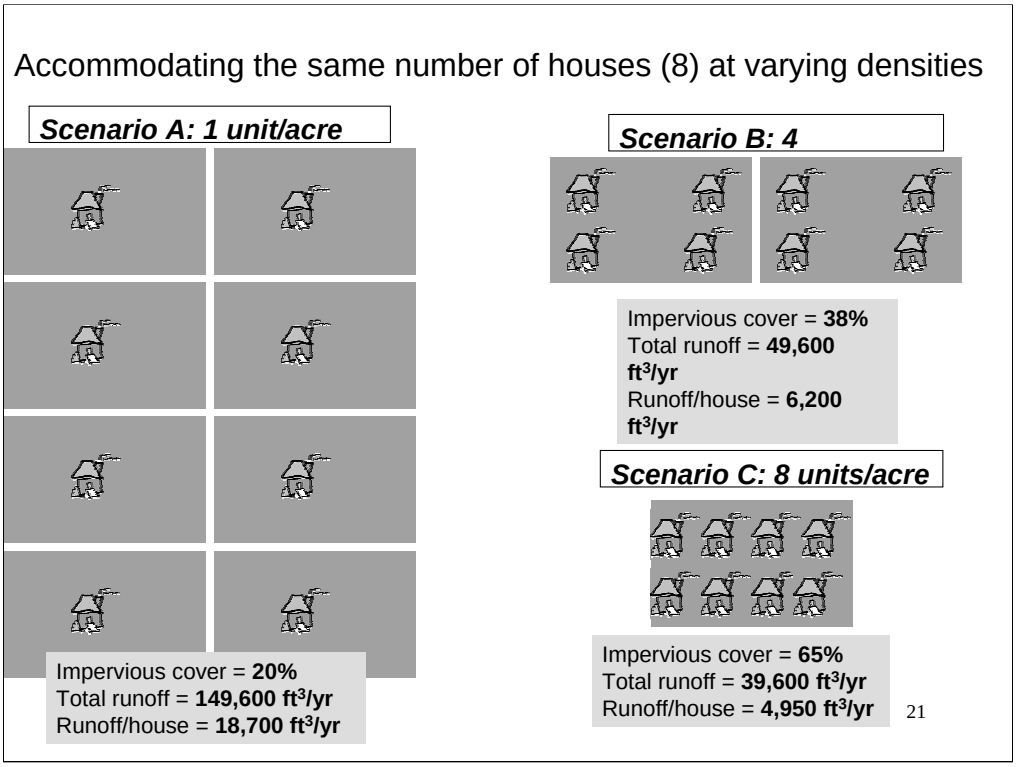


The table shows total SW Runoff PER ACRE for two communities

Community B, with more housing units, has a greater amount of IC and generates more SW runoff than Community A

The table shows total SW Runoff PER HOUSING UNIT for two communities

When examined at the individual housing unit, each house in Community B produces 33 percent less runoff than housing units in Community A.



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8-10 Units an Acre

Eugene Single family home, Sunnyside Village, Clackamas CountySingle

Single family homes, Fairview Village, Fairview

Images courtesy of 1000 Friends of Oregon

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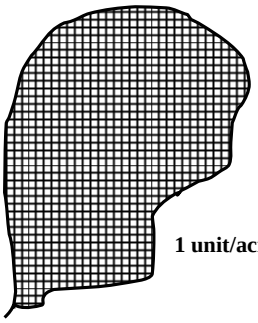
EPA Research on SG and Water

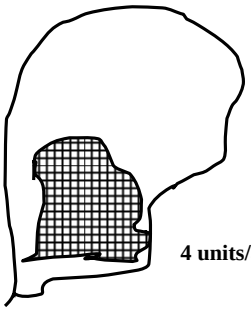
Accommodating 10,000 units on a 10,000 acre watershed at different densities



1 unit/acre

10,000 houses on 10,000 acres produce <u>187 million ft³ /yr</u> stormwater runoff

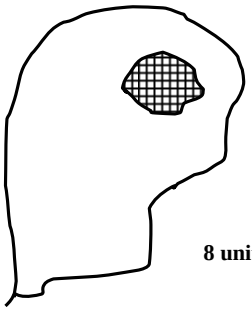
Site: 20% impervious
Watershed: 20% impervious



4 units/acre

10,000 houses on 2,500 acres produce 62 million ft³ /yr stormwater runoff

Site: 38% impervious
Watershed: 9.5% impervious



8 units/acre

10,000 houses on 1,250 acres produce <u>49.5 million ft³ /yr</u> stormwater runoff

Site: : 65% impervious
Watershed: 8.1% impervious

The lower density scenario creates more run-off and consumes 2/3 more land that the higher density scenario.

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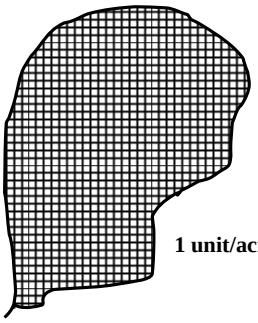
What Happens If The Whole Watershed is Built Out?

EPA Research on SG and Water

Accommodating 10,000 units on a 10,000 acre watershed at different densities



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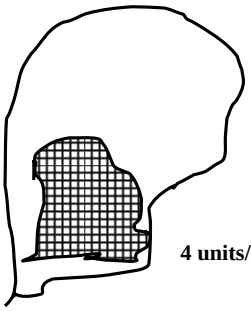

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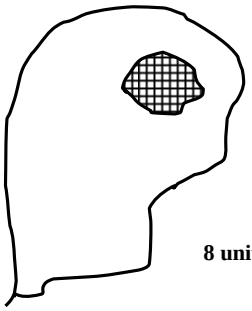

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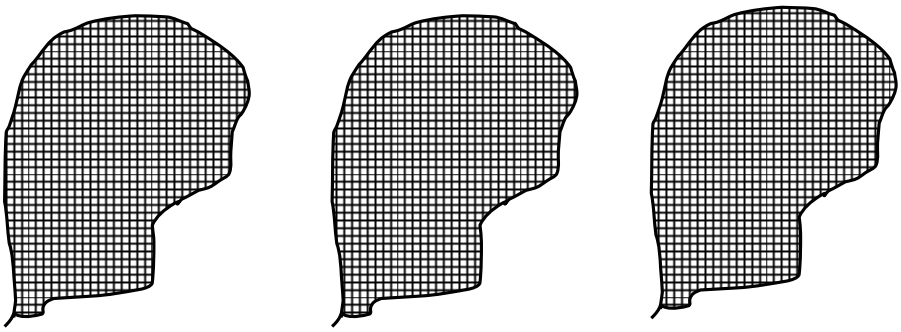
25

And if that remaining space was built out? We'd have…



10,000 houses
on 10,000 acres

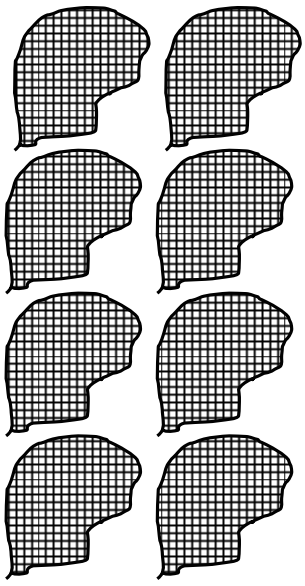
40,000 houses
on 10,000 acres

80,000 houses
on 10,000 acres

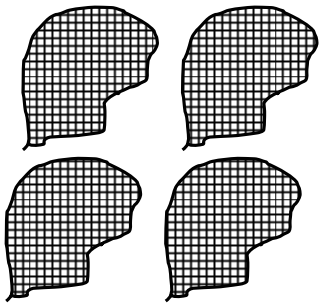
But wait, that's not a fair comparison because the number of units are not kept the same…

26

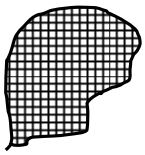
Keeping apples to apples, we'd get…



80,000 houses on 80,000 acres
or fully building out 8 watersheds



80,000 houses
on 40,000 acres
or fully building
out 4 watersheds



80,000 houses
on 10,000 acres
or fully building
out 1 watershed

So, which is better? Fully building out 8 watersheds or just one watershed?

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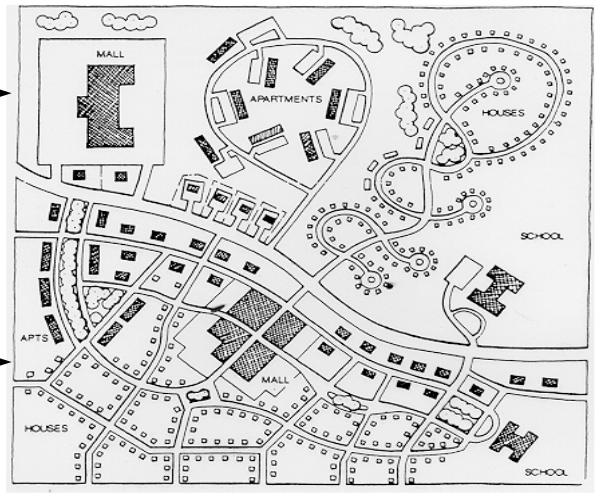
Neighborhood Design

Status Quo

Smart Growth



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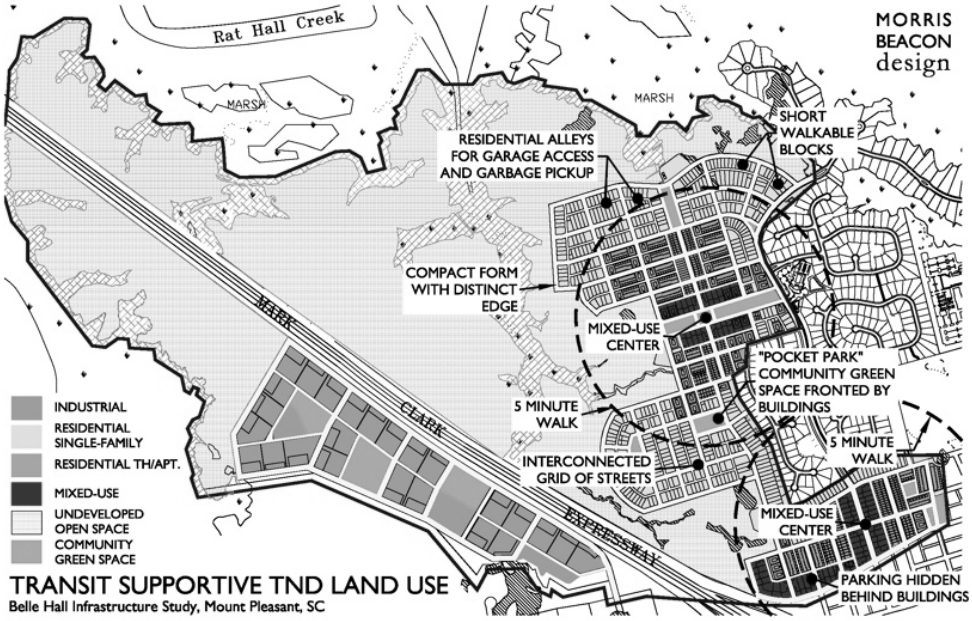

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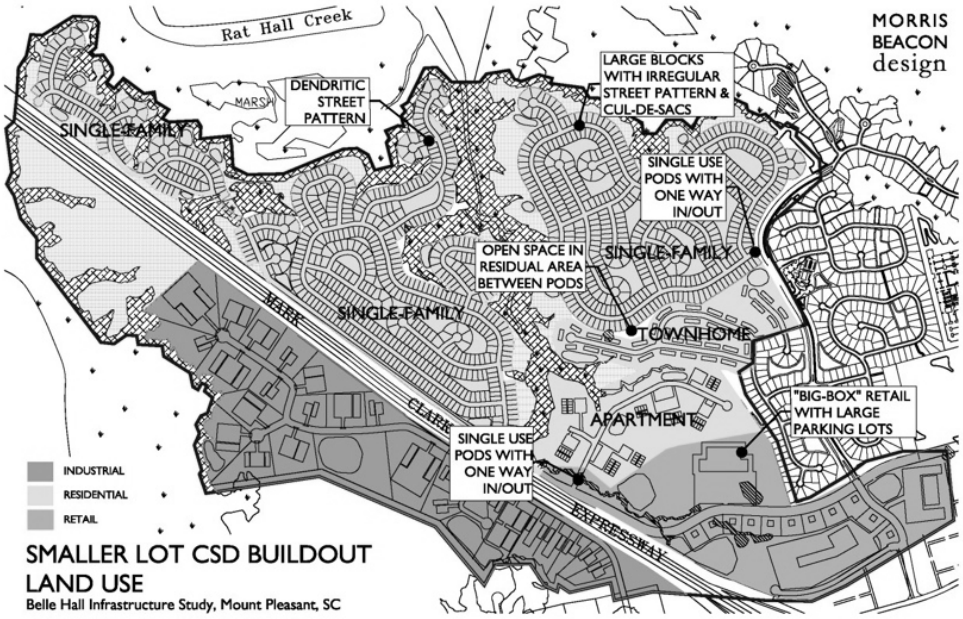
CIVIL ENGINEERING. PLANNING. URBAN DESIGN. www.morrisbeacon.com



30

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Will Transportation Look Like This?

31

Or This?

32

Will Retail Look Like This?

33

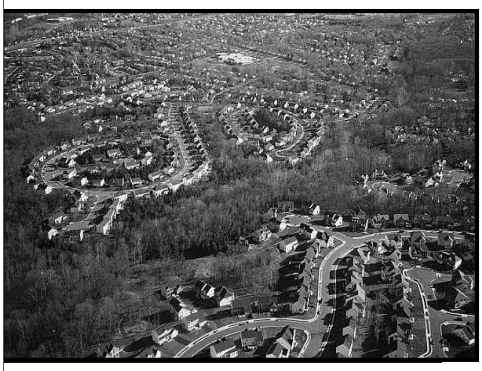
Or This?

Will Residential Look Like This?

35

•Photo: Whittaker Homes

Higher Density...



Housing like this....

...is often served by retail and roads like this

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Site Design

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Redeveloping a dead mall: Mizner Park

- Abandoned mall in Boca Raton, FL
- 29 acres
- 100% IC
- Value: $26.8 M
- Redeveloped into:
  - 272 apartments
  - 103K sq ft office
  - 156K sq ft retail
  - decreased IC by 15%
- Value: $68 M

Communities can enjoy a further reduction in runoff if they take advantage of vacant or underused properties.

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Salishan, Washington...

- Currently a public housing project with 855 units
- Redesigned as a mixed use development with 1200 units, including market rate housing, local retail, senior housing facility, daycare

- Narrower streets, some streets replaced with walkways
- Site plan will restore 65 % of the land to forest and pervious landscape
- Remaining streets bordered by rain gardens

Redevelopment of Salishan will result in less runoff despite a 50% increase in housing density

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Portland, Oregon

- Portland, OR created "Green Streets," design guidelines for managing the nexus between roads and water
- The City has installed vegetated landscaped SW systems as integral elements of streets, parking lots, playgrounds, and buildings.

These site level approaches save the City, and property owners, money.

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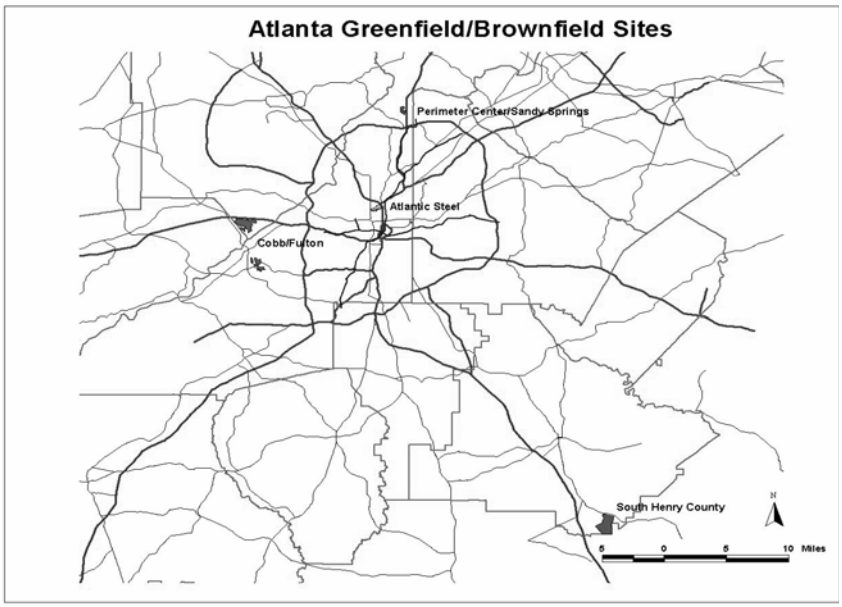
- Narrower roads mean less impervious surface
- Allowing on-street parking to count towards parking requirements means a better car-parking balance

Institute of Transportation Engineers released new guidance, "Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities"

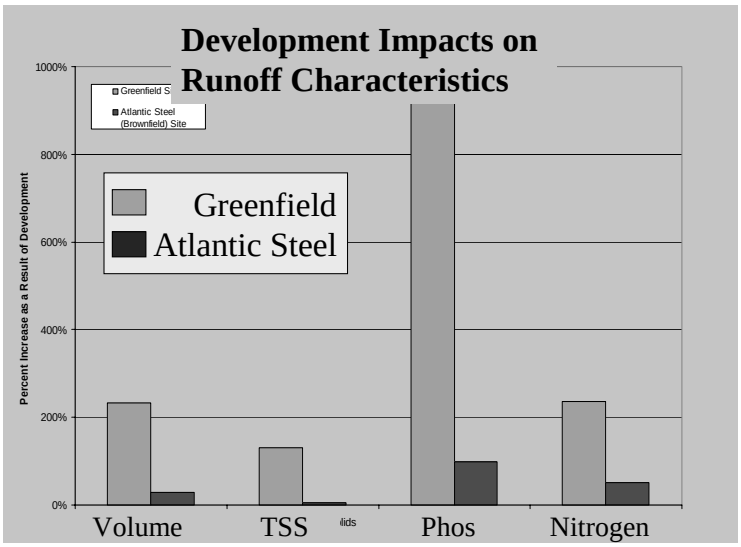
Comparative Environmental Impacts

- Two sites- greenfield and brownfield site
- Before development:
  - Greenfield site -- forests and meadows
  - Brownfield site -- industrial, disturbed soil, some existing cover


Atlanta Greenfield/Brownfield Sites
Perimeter Center/Sandy Springs
Atlantic Steel
Cobb/Fulton
South Henry County
N
5 0 5 10 Miles

44

Atlantic Station Water Impacts



45

Atlantic Station

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- Need to create an outline (who is our audience). Broad overview – what is the connection between land use and water (ICMA presentation). Then move on to the scale issue. Facts and myths. Site specific best practices (LID, etc.). Do this with a series of fact sheets, from broad overview to "I'm a planner and I'm fighting with my council because all they want is low density development. Give me some ammunition."
- Outline all the arguments we want to make from broad to specific, figure out what factsheets we want to do on what issues for what audiences.
- Also organize the factsheets in a hierarchical – how they nest under each other like an org chart. Or think about it like a GIS datalayer presentation for a novice – put all the issues on one slide like data layers, then Geoff can say, I'm going to talk about density today.
- Geoff's vision for Jan forum: do our best to avoid inviting people who don't know what we're talking about. Want a group like this one who have worked on these issues. Another think to consider (Kathy) is the integration issue – want the change agents there (who are already thinking about this) and want to link the change agents in all the different subdisciplines who have started thinking about this stuff so they see themselves on the same team instead of being in their separate boxes. Need to make very big effort to get certain people there. Who do we need to focus on in the local government arena, and should we bring them into the fold for the January meeting/factsheet development.

Questions?

Geoffrey Anderson, USEPA
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- anderson.geoffrey@epa.gov

Original Green Infrastructure

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Costa Rica

Photo: C. English

Functions at Risk

Flood control

Water quality

Water supply

Habitat

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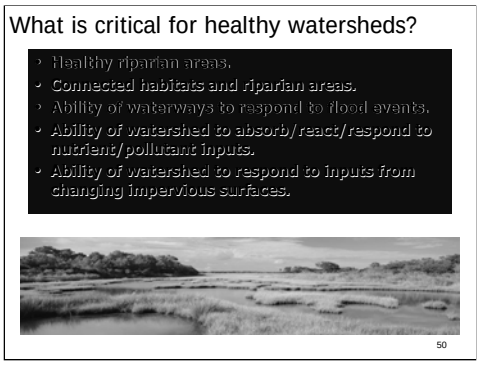

AS FOR WATERSHEDS, THESE ELEMENTS CAN BE CONSIDERED CRITICAL FOR THEIR FUNCTION OVER TIME. SHELLFISH AND OTHER FRESHWATER INVERTEBRATES TELL US MUCH ABOUT HOW THESE ELEMENTS ARE INTERACTING, AND PROVIDE A USEFUL MEASURE OF WATERSHED HEALTH.

Green Infrastructure

- Green infrastructure uses trees and other vegetation in urban areas to manage and treat precipitation naturally rather than collecting it in pipes.
- It uses engineered systems such as green roofs, rain gardens, and vegetated swales to mimic natural functions.
- Green infrastructure often accompanies approaches that capture and re-use stormwater and wastewater.

2nd Avenue SEA Street
Photo courtesy of Seattle Public Utilities

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Benefits of Green Infrastructure

Maplewood, MN. *Photo Courtesy of Bob Newport, US EPA, Region 5*

- Captures sewer overflows
- Filters polluted stormwater
- Recharges groundwater
- Reduces heat island effect
- Improves air quality
- Provides wildlife habitat and recreational space
- Protects stream banks
- Conserves energy
- Prevents flooding
- Improves urban aesthetics
- Increases property values
- Often less expensive than conventional approaches

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Green infrastructure – it works on several levels

- Regional scale – ensures that there is a functioning watershed and ecosystem; green corridors surrounding development core
- Neighborhood/subwatershed – can be used to restore impaired streams; replenish groundwater and protect source waters; reduce combined sewer overflows, etc; compact development
- Site level – maintain pre-development hydrology; retain and filter pollutants of concern on site; use every inch to perform multiple functions; not lower density

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Cook County, IL – Regional level

- Cook County Estimate: Apply Various Green Infrastructure →
  - 40% runoff reduction
  - Aquifer & lake recharge equivalent to additional supply for >1 million people

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Chicago, Illinois –site and community levels

- More than 80 green roofs totaling over 1 million square feet.
- A 2003 study found green roof runoff volume was less than half that of conventional roofs.
- Subsidized rain barrel program used to reduce basement flooding and CSO volume.
- Downspout disconnection projected to reduce CSO peak flow in target area by 20%.

Chicago City Hall Green Roof. *Photo courtesy of Roofscapes, Inc.*

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Chicago, Illinois – site level

- Temperatures above the Chicago City Hall green roof average 10° to 15°F lower than a nearby black tar roof. August temperature difference can be as much as 50°F. Estimated annual energy savings of $3,500.
- Green bungalow initiative to retrofit four historic bungalows with green technologies. Average energy savings of 15% - 49%.

Green Bungalows. *Photo courtesy of the Chicago Department of the Environment.*

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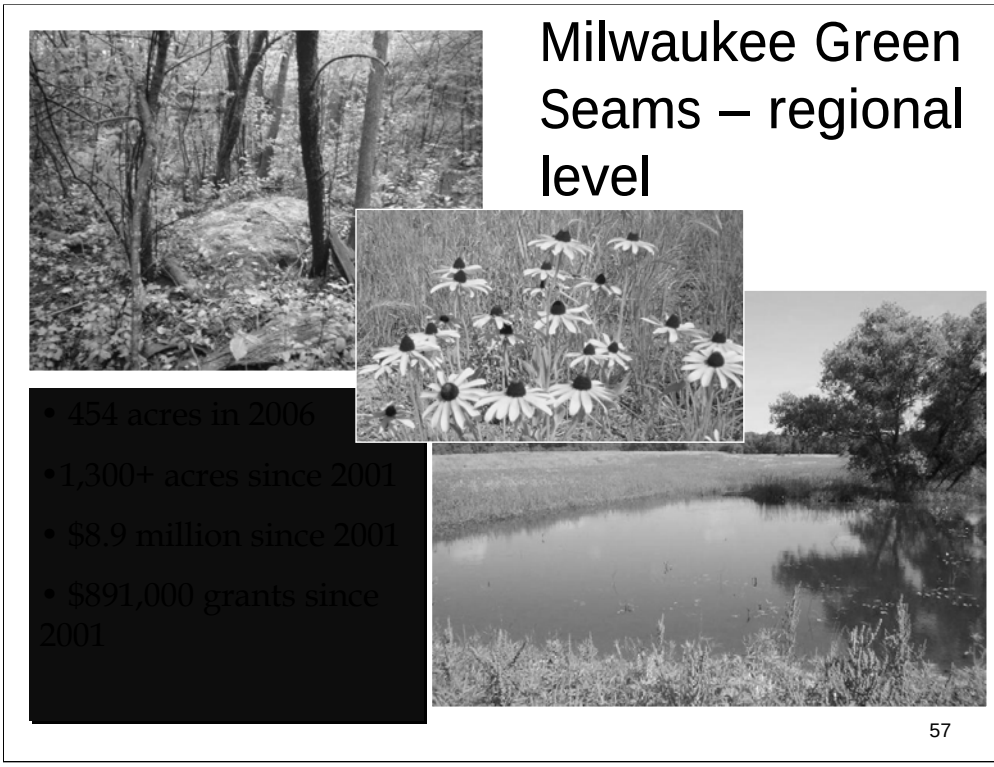

Bold land acquisition strategy, partnered with the Conservation Foundation, working upstream to protect urban water quality and open space

Portland, Oregon – community level

Vegetated Planter at Portland State University. *Photo courtesy of Martina Keefe.*

- City code requires on-site stormwater management for new and re-development.
- Subsidized downspout disconnection program.
  - 45,000 participating households.
  - Infiltrates 1 billion gallons of rainwater annually.

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Portland, Oregon – neighborhood levels

Vegetated Curb Extensions

- Flow testing demonstrated 88% reduction in peak flow and 85% reduction in CSS inflow for 25-year storm event.
- Sufficient to protect local basements from flooding.
- Project cost $15,000 and required two weeks to install.

Vegetated Curb Extensions. Photo courtesy of the Portland Bureau of Environmental Services.

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Portland, Oregon – site and neighborhood levels

Green Roofs

- Zoning bonus allows additional building square footage for buildings with a green roof.
- Two years of monitoring demonstrated that 58% of annual and nearly 100% of warm season rainfall was retained.
- Modeling of 300 block downtown area showed that the greatest benefit was to human health because of heat island mitigation.

Hamilton Apartments Ecoroof. *Photo courtesy of the Portland Bureau of Environmental Services.*

60

Seattle, Washington -- neighborhood level

Bioretention Swales

- Stormwater source control.
- Monitoring has demonstrated 99% reduction in stormwater runoff.
- No measured runoff since December 2002.

2nd Avenue SEA Street. *Photo courtesy of Seattle Public Utilities.*

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Seattle, WA – site level

Rainwater Harvesting

- Over 16,000 gallons of storage at 327,000 ft² King Street Center used for toilets and irrigation. Provides 60% (1.4 million gallons) of toilet flushing water annually.

King Street Center.

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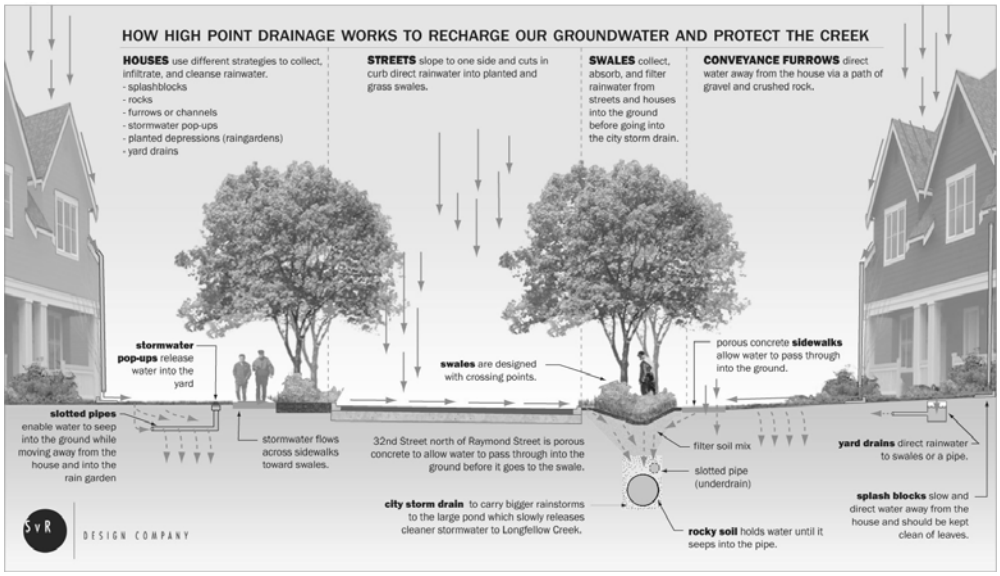
High Point, Seattle – neighborhood level

- Hope VI Project
- 120 acres of urban infill
- 1,600 housing units
- Neighborhood center, library & mixed uses
- Density ranges: 16 units/acre – 25 units/acre
- 65% reduction of storm-water into Longfellow Creek
- Integrated natural drainage system (NDS) distributed over 34 blocks
- Each block uses site-specific drainage strategies

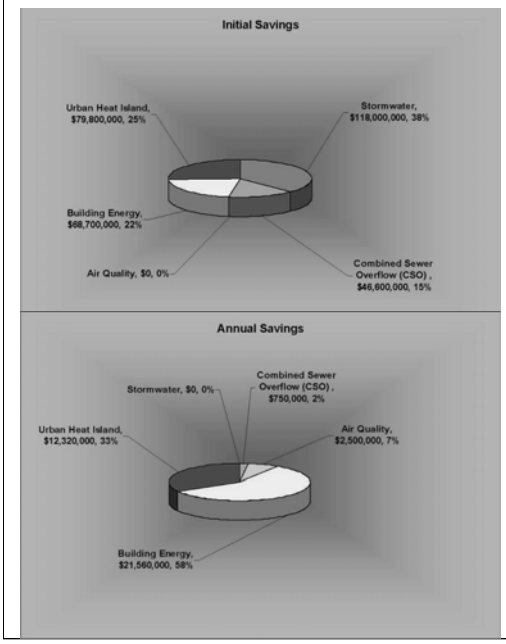
63

High Point, Seattle



64

Toronto, Ontario – community level



- Ryerson University study modeled impacts of installing green roofs on all city roofs >3,750 ft^2.
  - Would result in 12,000 acres of green roofs – 8% of total city land area.
  - Estimated nearly $270 million in municipal capital cost savings and more than $30 million of annual savings.

Source: *Report on the Environmental Benefits and Costs of Green Roof Technology for the City of Toronto*

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Washington, D.C. – Casey Trees study April 2007 – community level

- Green roofs of 103 million sq. ft., tree coverage of 57% of the city, and tree boxes of at least 6 X 20 ft. together would:
  - Reduce discharges of untreated sewage and stormwater into DC waterways by 1.1 billion gallons (10%)
  - Reduce CSO volume by 22% and frequency by 6.7%
  - Reduce discharge volumes by up to 27% for most impervious sewer sheds

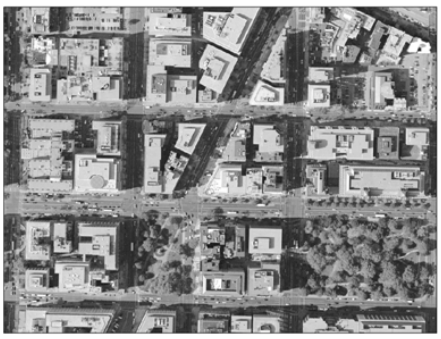

Photo courtesy of Casey Trees, Washington, D.C.

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Hudson Riverkeeper Study: *Sustainable Raindrops* March 2007 – community level

- Redirecting 50% of $2.1 billion projected costs for hard infrastructure to control 5.1 billion gallons of CSO to rain gardens, street trees, green roofs, and rain barrels would:
  - capture an additional billion gallons of CSO
  - reduce annual stormwater treatment costs by 50%
  - reduce air pollution, including 3,000 tons of carbon dioxide

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The Solaire, NYC – site level

- 27-story, 293-unit, LEED Gold building
- Resident-use rooftop garden
- Rainwater storage for roof irrigation
- In-building wastewater treatment → toilets & AC
- 50% less potable water
- Alleviates heat island effect
- Prices: 4-5% above market

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Potential Water Resource Impacts from Global Warming -- *In Hot Water* (NRDC, 2007)

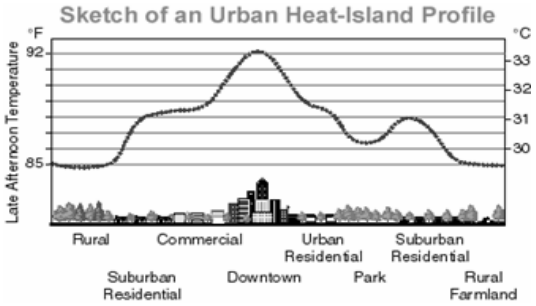
- Reduction in snowpack (75% of western water supplies)
- Sea level rise from 1 to 3 feet by 2100
- More frequent large storm events
- More frequent droughts
- Loss of cold water fisheries

Cascades, WA

69

Barry on this

Prevention
Water-Climate Links



Courtesy of Casey Trees Foundation, Washington, DC

- What's good for water is good for climate
  - Protection and restoration of wetlands, headwaters, forests, open space
  - Use of green roofs, rain gardens, and other green infrastructure in urban/suburban areas
  - Protection for expanded floodplains, stream buffers, coastal dunes

70

Cool temperatures, increase evapotranspiration, and capture carbon

Post had an article on Sunday about ways to reduce temp other than a carbon cap that said that use of trees, water features, and reduced pavement could decrease peak temperatures in some cities by 20 degrees. (bjorn lomborg)

EPA Endorsement of Green Infrastructure Approaches

Navy Yard Bioretention.
Photo courtesy of LID Center

- Statement of Intent to Promote Use of Green Infrastructure to Control Sewer Overflows and Stormwater Pollution (April 2007) – US EPA, NRDC, NACWA, ASIWPCA, and LID Center
- Green Infrastructure Strategy now under development
- We need your help in integrating green infrastructure into existing EPA programs

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Questions?

Nancy Stoner, NRDC
- 202-289-2394
- nstoner@nrdc.org

Happy Holidays!

See you in January- We're taking a break!

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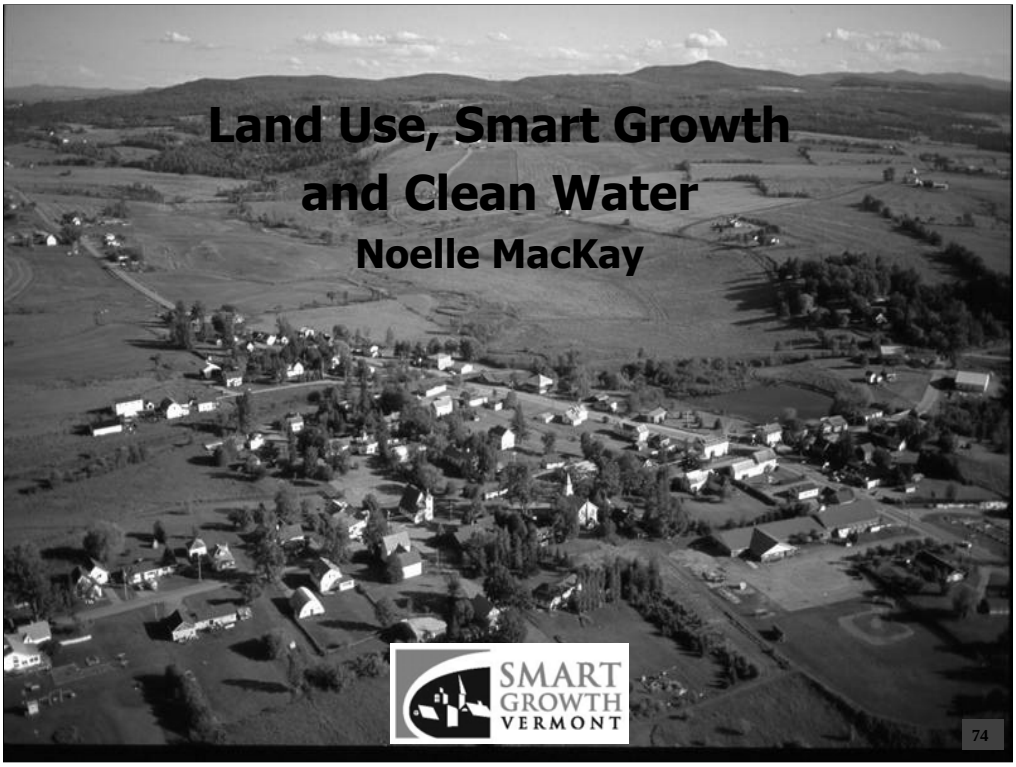
Land Use, Smart Growth
and Clean Water
Noelle MacKay
SMART
GROWTH
VERMONT
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In Case You Thought Vermont Was All Green Pastures...

Fast Facts on Vermont

Population: 623,050

Largest City: 38,531

Land Area: 9,250 sq mi

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Shelburne Road, South Burlington: 1930's… and 1995 [76]

Shelburne Road, South Burlington: 1930's… and 1995 [77]

Quick Recap

- Land use is connected to water quality and quantity
- Where we grow and develop is critical
- How we develop, steward and conserve our land is critical to other factors as well:
  - Land available for food production
  - Air quality
  - Climate change
  - Human health and obesity
  - Historic preservation
  - Economic benefits – cost savings

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Smart Growth Saves...$$$$$$$$$

Under a Smart Growth vs. Sprawl Scenario, between 2000 and 2025, the United States will need:

- $12.6 billion more dollars for sewer and water infrastructure;
- $109.6 billion more dollars for local road infrastructure, and;
- $423 billion more dollars for property development costs.

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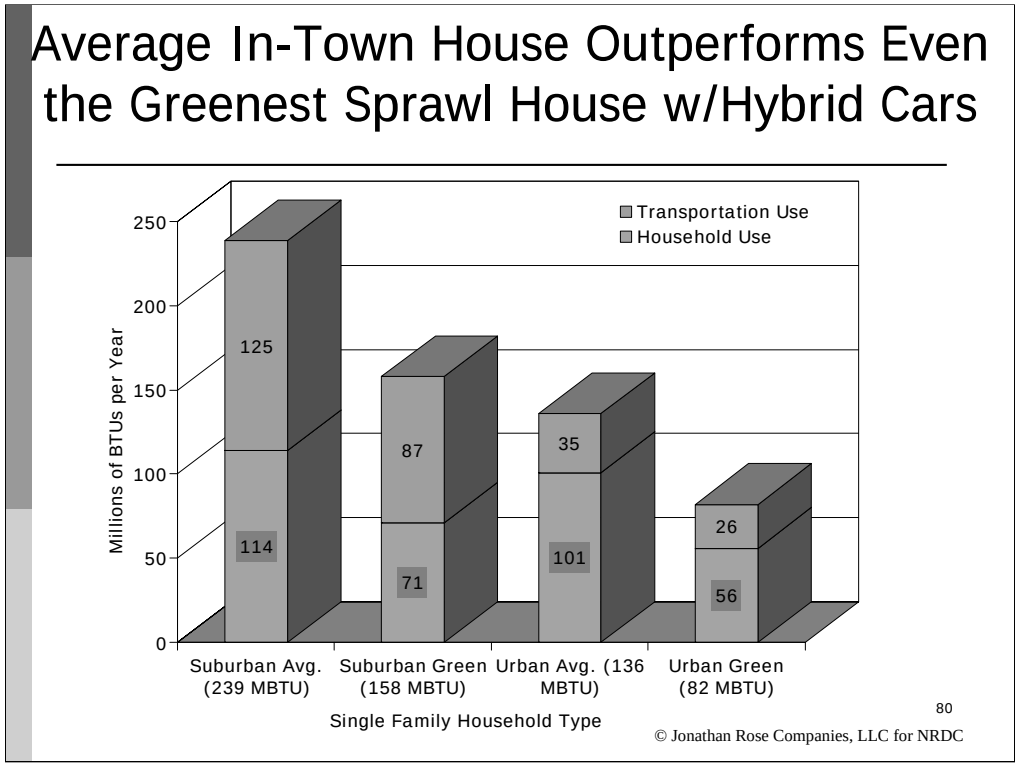

Please credit NRDC for creating this slide.

So, what to do with all this great information

Developing programs, partnerships and messaging that resonates with decision-makers

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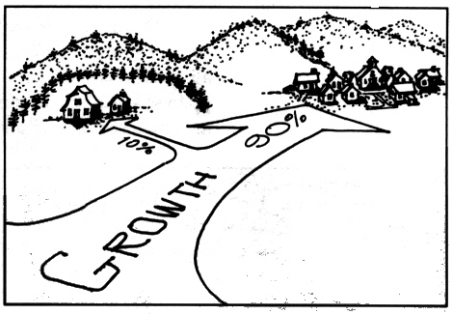
Determine Where Decisions Are Being Made

- At the State Level
  - In Vermont, the new Growth Center Legislation grew from an existing Downtown and Village Center Program
  - Tied to goals of historic preservation, incorporating new growth, and protecting the working landscape
  - Partnered with housing, preservation and business organizations



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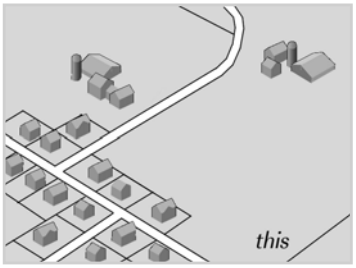
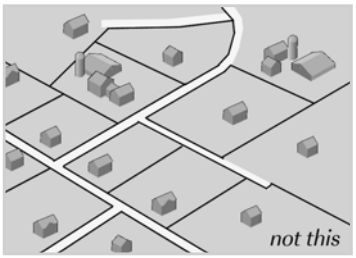
Vermont Growth Centers Program

- Creates a clear *definition* of growth centers
- Develops a streamlined *designation process*
- Provides *incentives* for development within designated growth centers
- Builds on existing downtowns and village centers
- Supports the construction of new homes





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Determine Where Decisions Are Being Made

- At the local level
  - Providing resources and assistance
    - Trainings and workshops
    - On-line Toolbox
    - Long-term assistance
  - Traditional Planning Vehicles:
    - Master Plans
    - Zoning
    - By-law amendments
  - Around an Issue
    - Historic Preservation
    - Scenic Roadways
    - Water-ways

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Historic Preservation is one smart growth tool to ensure Vermont's unique landscape continues




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Historic Preservation is Smart Growth

- Generally historic buildings are where public infrastructure already exists
- Vacant and underused buildings are brought back to life – saving land and generating tax assets
- Pedestrian rather than vehicular orientation
- Historic neighborhoods were built with a mix of uses in close proximity

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Historic Preservation is Smart Growth

- Rehab provides more local labor than new construction (60-70% vs 50%)
- Preservation vs demolition reduces construction waste
- No new land is consumed

Source: Donovan D. Rypkema

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Determine Your Approach

- What's worked for me
  - Respect the local process
    - Ask your local officials (many are volunteer and not trained in these issues) what are their community goals.
    - Determine how they are implementing their goals
    - Suggest some options for ensuring their community vision becomes a reality
  - Provide assistance and examples
  - Visuals really help
  - Partner with the likely and unlikely

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Rivers, Lakes and Streams

- Take your Select Board and Planning Commission on a tour of your rivers, lakes and streams

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Current

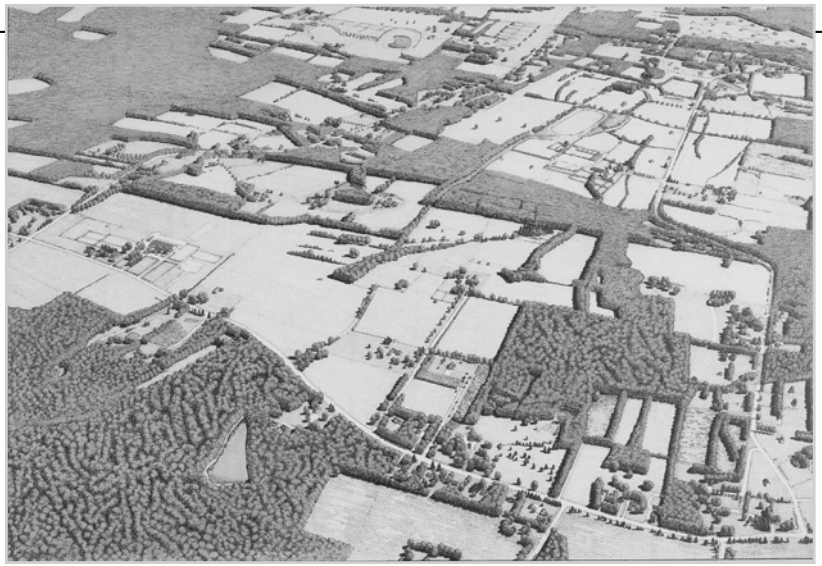

Image courtesy of Hopewell Township N.J. & Dodson Associates, Ashfield MA

Conventional

Image courtesy of Hopewell Township N.J. & Dodson Associates, Ashfield MA [91]

Cluster

Image courtesy of Hopewell Township N.J. & Dodson Associates, Ashfield MA

Village

Image courtesy of Hopewell Township N.J. & Dodson Associates, Ashfield MA

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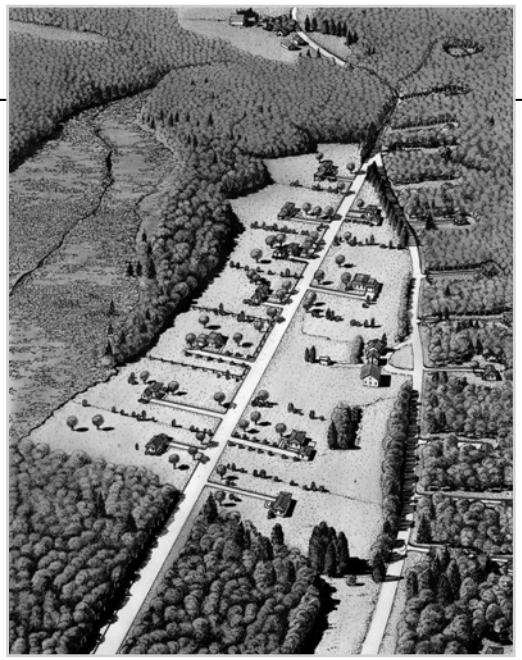
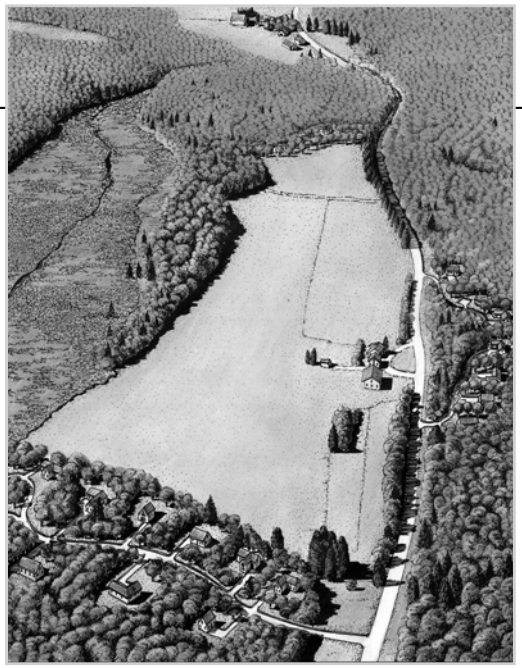


Source: Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development.

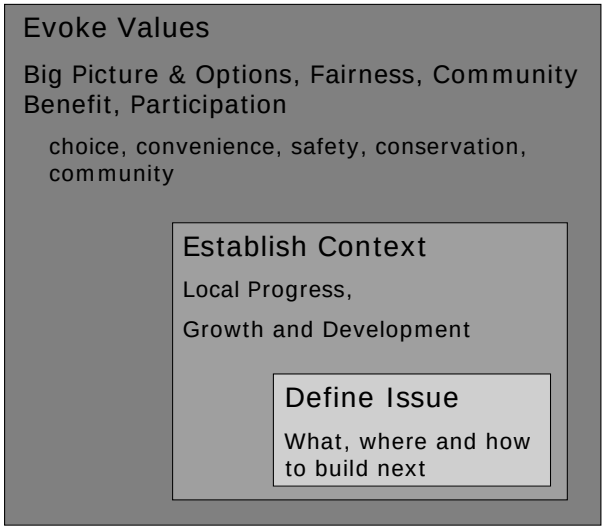
94



Source: Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development.

95

Creating a Message



Source: Action Media

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Creating a Message

- The values the audience applies are directly referenced and evoked
- The context cues the audience about the category of ideas
- The issue is defined and presented

Using values and concept that the audience already knows and applies to an issue increases the power and clarity of communications

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Partnerships

- Federal Agencies
- State Agencies
- Other non-profits
  - Work with a group with an alternative approach
  - Work with a group with a different mission
    - Historic preservation, affordable housing, green building
- Business leaders
- Farmers
- Realtors

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Tips

- Be clear about your goals and your role so that expectations are clear
- Know when to walk away if your goals and your partner's goals are not lining up
- Give credit and praise
- Have patience

SMART GROWTH VERMONT

Mission: Forging growth and conservation solutions for Vermont's communties and rural countryside

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Questions?

Geoffrey Anderson, USEPA

Nancy Stoner, Natural Resources Defense Council

Noelle Mackay , Smart Growth Vermont

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Check Out Our Additional Resources…

http://www.clu-in.org/conf/tio/owsggi/resource.cfm

Let Us Know What You Thought! Fill Out an Evaluation Form…

http://www.clu-in.org/conf/tio/owsggi/feedback.cfm

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