



# **Financing Watershed Conservation:**

***Using Incentives to Connect Forests, Water & Communities***

**Ecosystem Restoration Conference**

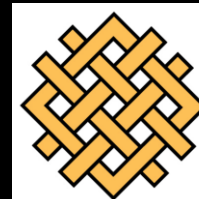
**August 4, 2011**

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**WORLD  
RESOURCES  
INSTITUTE**

***Help Me Impress Them!***



# The World Resources Institute has four programs



# *Future of US Forests Rests in the Hands of Private Landowners*



# Remembering Aldo Leopold

**“Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest.”**

**“Emerging markets....will provide landowners with expanded economic incentive to maintain and restore our forests”**



# Payments for Nature's Benefits...

Arrangements for placing economic value on natural assets normally “outside the market”

Environmental services not properly valued → systems become degraded

Forests becoming recognized as an asset (monetarily);  
*provide clean air, water, habitat*

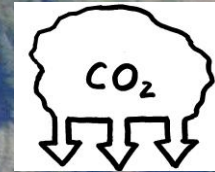
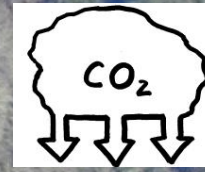
Financial systems that enable people who produce products and services to be compensated by those who benefit



Recreation  
leases



Cost Share



Carbon sequestration



Sustainable  
forestry/agriculture



Wetland restoration and  
Water quality trading



Species recovery



Conservation easement

Imagine...

The portfolio approach to  
forest management:  
multiple income streams

***“The water we drink and utilize may be our most important connection to the forest.”***





# Vision of a Watershed Services Marketplace

**Sellers**



**Products**



- Restoration
- Improved Practices
- Preservation

**Users**

- Water District/Utility
- Rate Payers
- Industry
- Recreation

**Government**

- EQIP
- Dedicated Pool

**Land Use Planning**

- Current Use Tax
- Zoning/TDR
- Easements

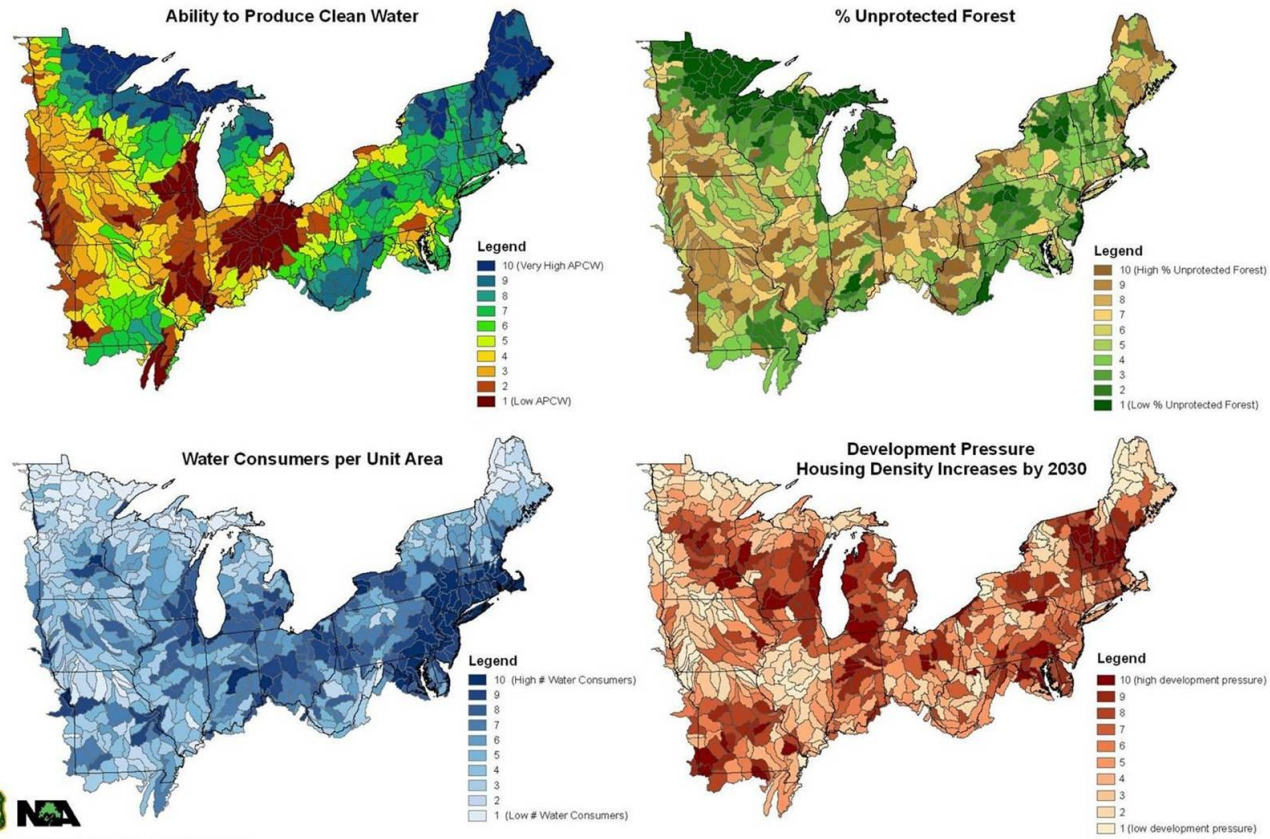
**Philanthropy**

- Program related investment
- Grants
- Revolving Loans

**Buyers/  
\$ Sources**

# GIS Threat Assessment Watershed Prioritization

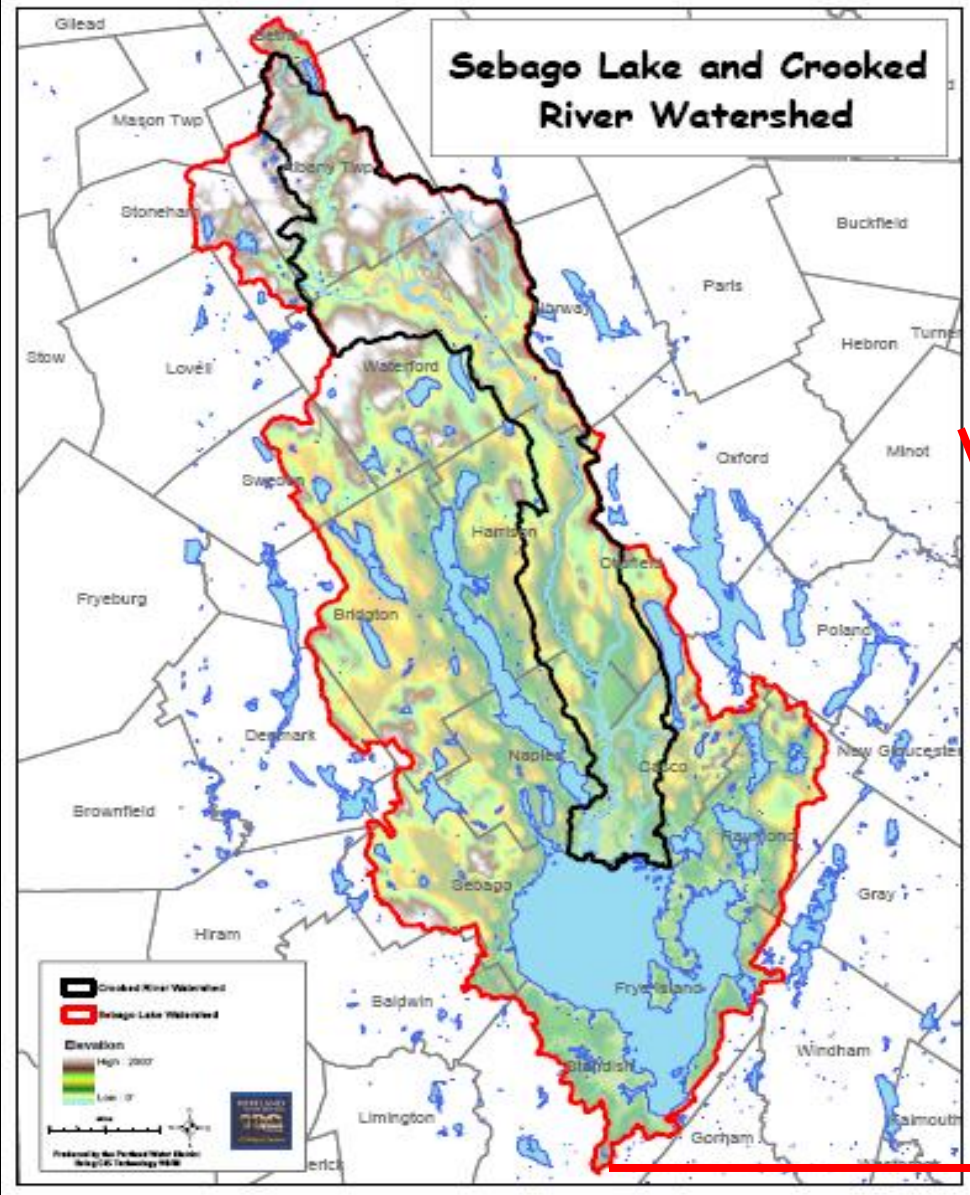
## Step 3: Quantifying the Connections between Forests, Water, and People in the Northeastern Area Future Conditions (2030)





  
 Map Produced by the USDA Forest Service Northeastern Area  
 State and Private Forestry, Durham, NH.  
 The USDA is an equal opportunity provider and employer.

# Crooked River Watershed, Portland, ME



THE WESTERN  
FOOTHILLS LAND TRUST



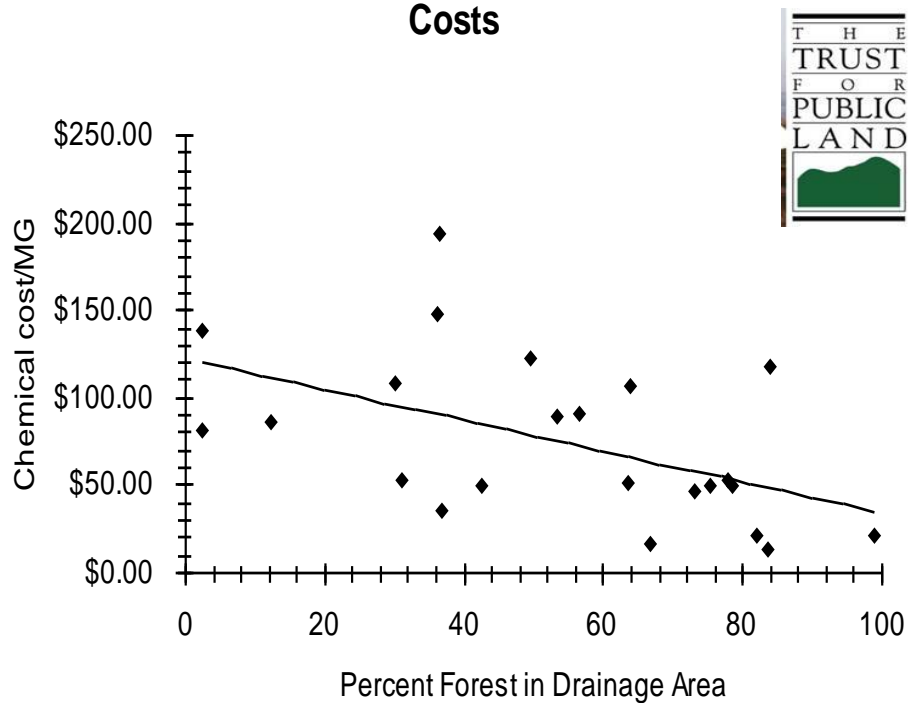
American Forest Foundation



University of  
Massachusetts  
Amherst

# Less Forest Cover = Higher Treatment Costs

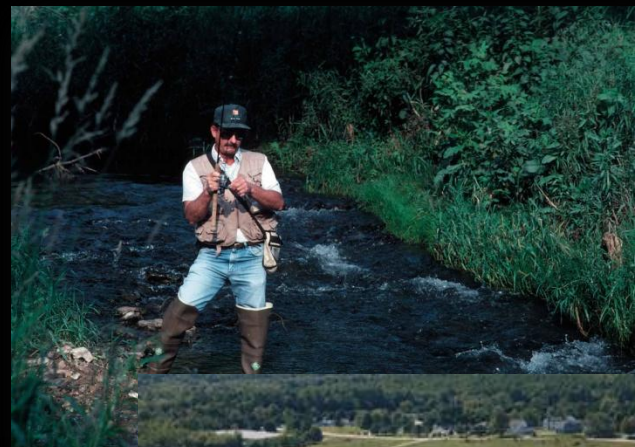
Impact of Forest Cover on Chemical Treatment  
Costs



# Beneficiaries

## Making the Business Case

- Demand
  - created by law/regulation
  - voluntary drivers (business case)
- ID Beneficiaries
  - Who uses the water
  - How they use it
  - How they benefit from “clean” water
  - Opportunities & Risks
- Green vs. Grey Infrastructure Analysis
- Engage Beneficiaries



First PMBus System Power Management and Protection IC

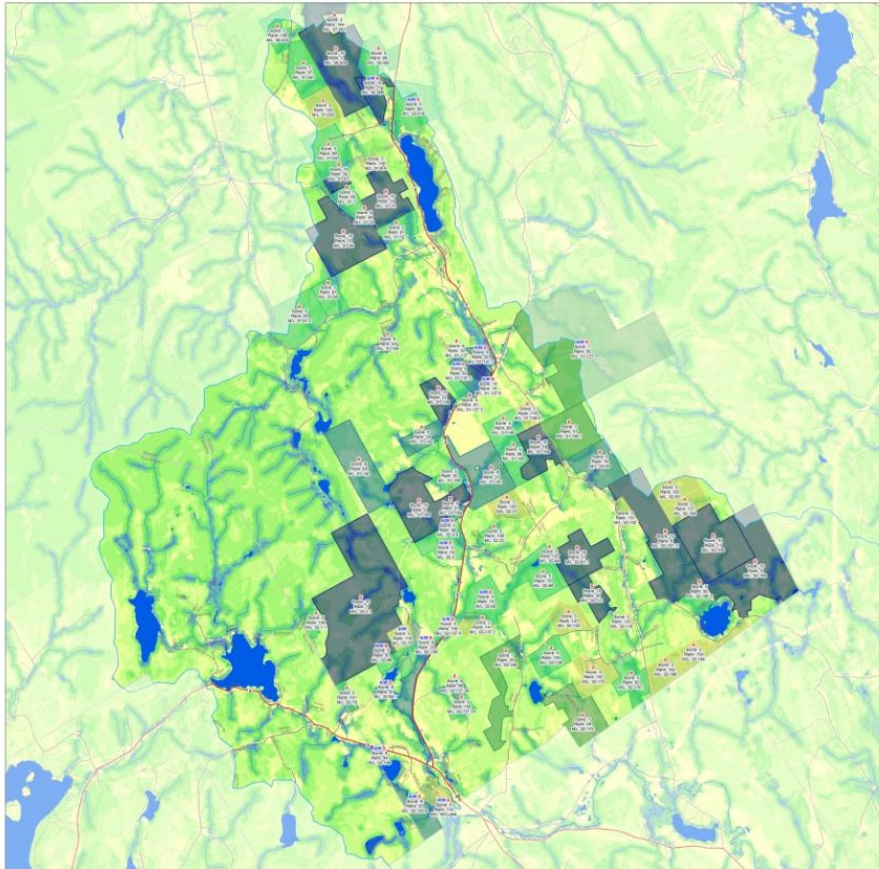


- Improves reliability
- Reduces power consumption

# Where should we focus our \$ and effort?

## Priority Parcels for Source Water Protection

Part of the  
Northern Forest Watershed Project  
Albany and parts of Bethel, Mason and Stoneham



### Landscape characteristic

Land use

Distance to streams (feet)

Distance to ponds/wetlands (feet)

Soils  
(1/2 weight)

Depth to water table

Permeability

Slope

Water – Forest – Roads

## Conservation Priority Index (CPI) - Prioritization of parcels

Conducted By -

- Bill VanDoren, Craig Nicolson, and Paul Barten, Umass
- AMC

Increasing importance

3

2

1

0

Decreasing importance



# What can we do on the ground?

Riparian Buffer

Culverts and Drainage Improvements

Vegetative Cover

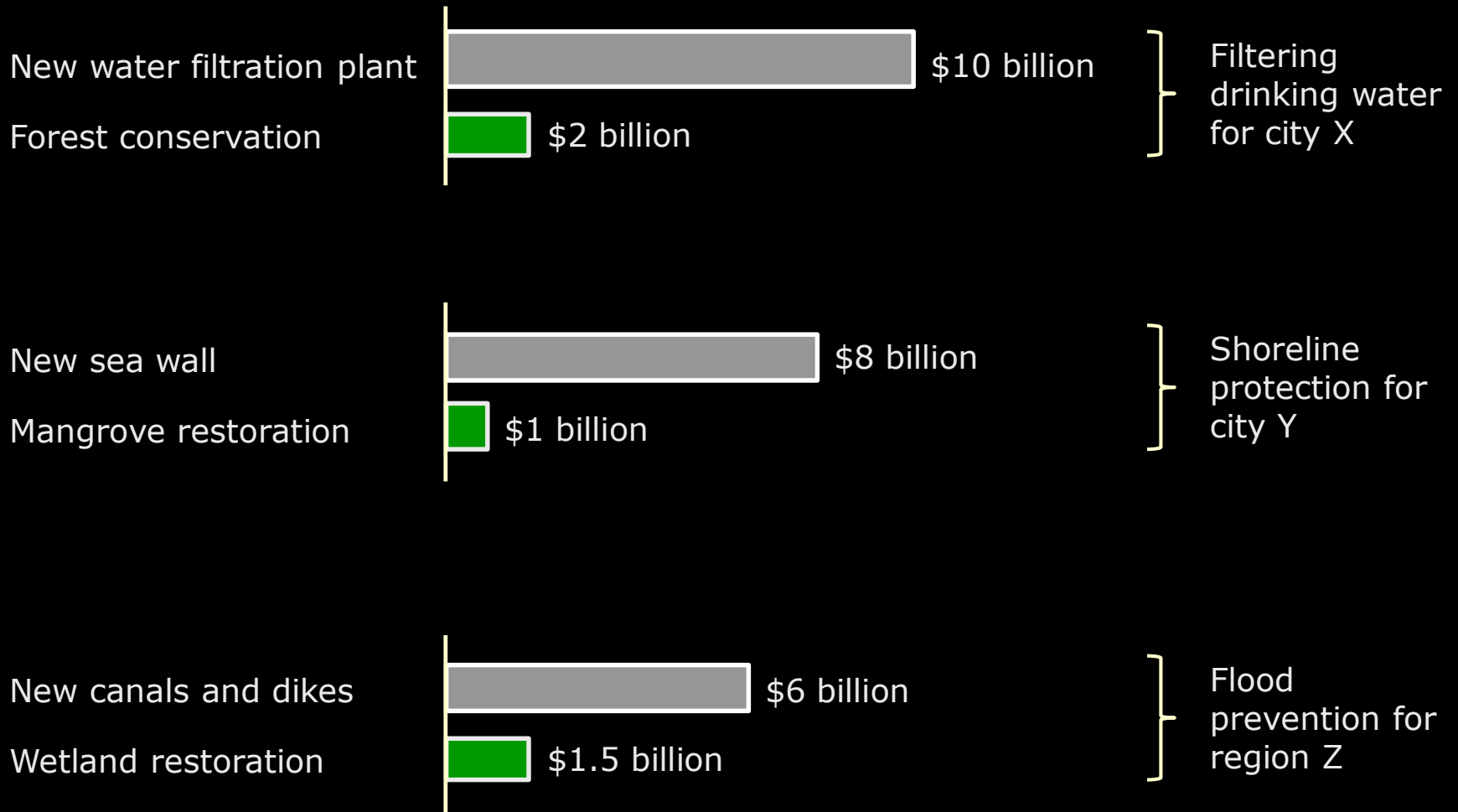
Road Retirement

Silvicultural Practices

Road Network



# Figure 1. Illustrative example of green vs. gray







Plant Trees.  
Protect Water.  
Buy local.

*Strengthen your community  
and offset your CO<sub>2</sub> >>*

[Individuals](#)[Businesses](#)[Schools](#)[> HOUSEHOLD](#)[> WEDDINGS](#)[> TRAVEL](#)[> COMMUTE](#)[> GIFTS](#)

Clear Water Carbon Fund brings you offset options in the form of local reforestation and water restoration projects. Our [local projects](#) allow you to [offset your activities](#) in a way that benefits your [local community](#) and economy, giving you the ability to buy local and reduce your carbon footprint. We have offset options for [individuals](#), [businesses](#) and [schools](#), as well as [calculators](#) to help you determine the emissions you want to offset.

Sponsored By



# \$1 for Tap Water?



# Online Marketplace & Landscape Auction



ioby brings environmental projects to life, block by block.

see our progress  
get started >

STATUS: UNDERWAY

## Urban Meadow Compost Project

Purchase composters to recycle garden waste into compost, reduce waste we throw out from the Meadow, pilot a household waste composting program

SHARE THIS PROJECT

Sponsored by Partnership for Parks! Gifts up to \$200 will be matched dollar-for-dollar until June 1, 2011 or \$1,120 is paid out, whichever comes first.

OVERVIEW BUDGET UPDATES DONORS

NEARBY PROJECTS

TOTAL FUNDING NEEDED: \$862



project leader  
location  
latest update

\$862 RAISED SO FAR  
\$0 STILL NEEDED

**funded!**

This project has been fully funded and is no longer collecting donations.

where it's at



### the project

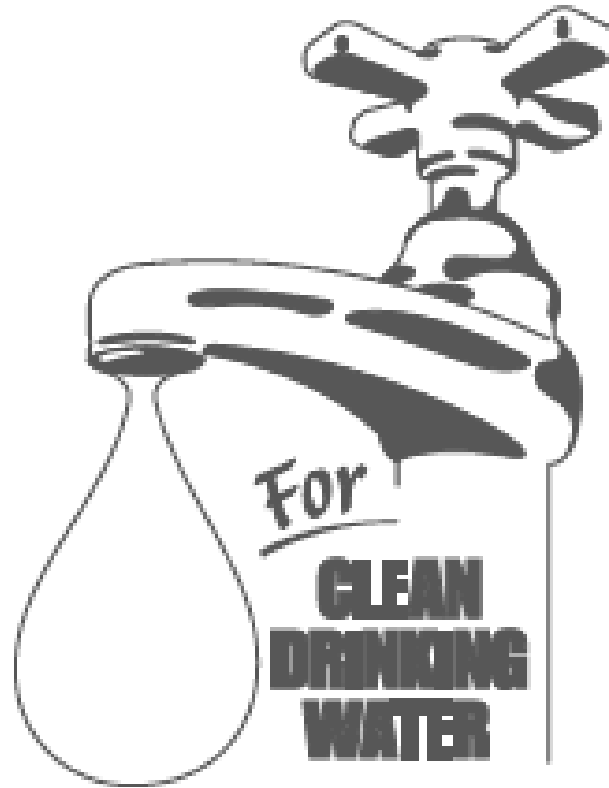
From many years of neglect and dumping, the soil in the Urban Meadow is poor. The most natural way to improve the soil is by using compost, rich organic matter that provides the right nutrients for plants. Currently we throw out bags of garden scraps and end up buying mulch to improve the poor soil in the Meadow. In addition, as in most communities, too much household waste is dumped into the garbage.

### the steps

We would begin our project by composting garden waste including weeds, leaves, debris from the winter, etc. After a learning period using garden waste, we will begin a pilot program with 10 households who can recycle their household food scraps (fruit and vegetable waste mainly) in the composters. This would reduce the waste thrown out by households in the community and reuse organic materials for the garden. We will install the composters and begin using them this spring. We will have sessions where members learn to use the composters properly, and we will begin educating



Orange County  
Headwaters



COMMITTEE FOR  
CLEAN WATER

VOTE **Yes** on  
Ballot Question 2A!



# Watershed Protection Revenues: Raleigh

**Target Spending Year 1**  
\$20,000,000

### Water Bill

**Base Charge Increase**  
\$0.00 to \$2.00 | **\$0.00**

**Rate per CCF Increase**  
\$0.00 to \$0.50 | **\$0.05**

**Percent Annual Account Growth**  
1.0%

**Percent Annual Water Use Growth**  
-1.0%

Residential Bill Increase		Commercial Bill Increase	
Number of accounts	146,689	Number of accounts	11,376
Average Use (CCF/month)	7.20	Average Use (CCF/month)	35.2

Units:  CCF  kgal

1.8%

2.0%

**Watershed Protection Revenues Year 1** | \$865,218

### Leveraging

**Term (Years)**  
0 to 40 | **20**

**Interest Rate**  
0.00%

**Total Financing**  
\$14,296,320

**Source of Amount Borrowed**

- Watershed Protection Revenue
- Continuing Cost Share

### Watershed Protection Resources

**Available for Up-front Investments**

One-Time Cost Share | Financed

**\$16,496,320** | **82.5% of Target**

**Surplus Revenues After Debt Service**

Year	Surplus Revenue
1	\$0
2	\$240,000
3	\$230,000
4	\$220,000
5	\$210,000

### Cost Share

**One-time Cost Share**  
\$2,200,000

**Recurring Annual Cost Share**  
\$100,000

**Annual Growth in Recurring Cost Share**  
0% to 10% | **0%**

# Thanks!



# Questions and Discussion



**To contact me after my presentation,  
text GON to INTRO (46876)**

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