



*Jordan Lake Targeted Watershed Project:
Incorporating Urban Stormwater into an
Incentive-Based Watershed Permitting
Framework*

**Stakeholders Meeting
September 6, 2006**

Today's Agenda

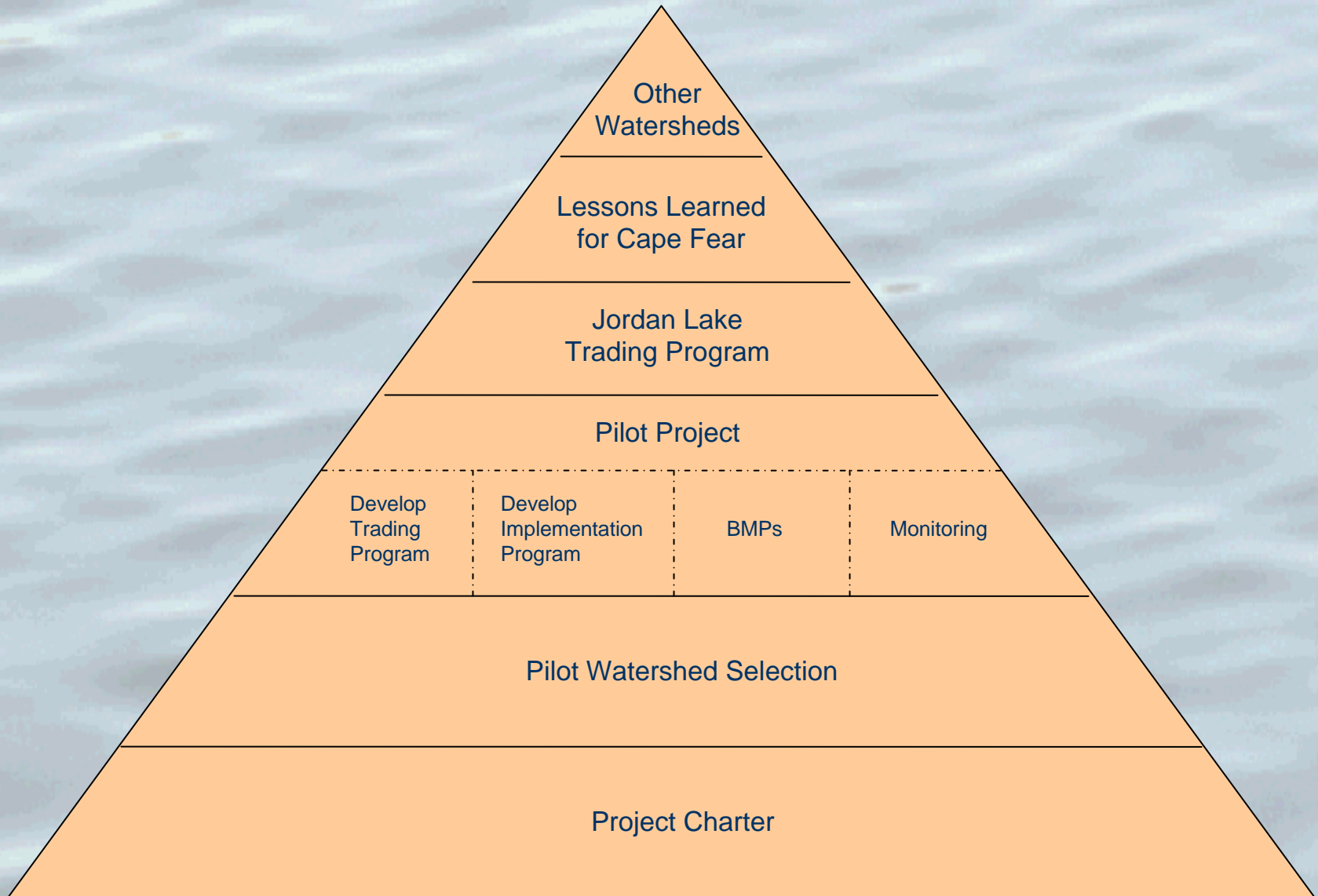
- Introductions
- Selection of Pilot Subwatersheds
- Monitoring
 - Current Monitoring Programs
 - Pilot and Trading Monitoring
- Trading Tool
 - Draft Rule and Trading – Scenarios
 - Tool Flow Chart
- Path Forward

Project Accomplishments

- Project Charter
- Project Website
 - Charter
 - Schedule (including meeting dates)
 - Meeting agendas, summaries, handouts
 - Jordan Lake rules

<http://www.cfra-nc.org/projact.html>

Project Structure



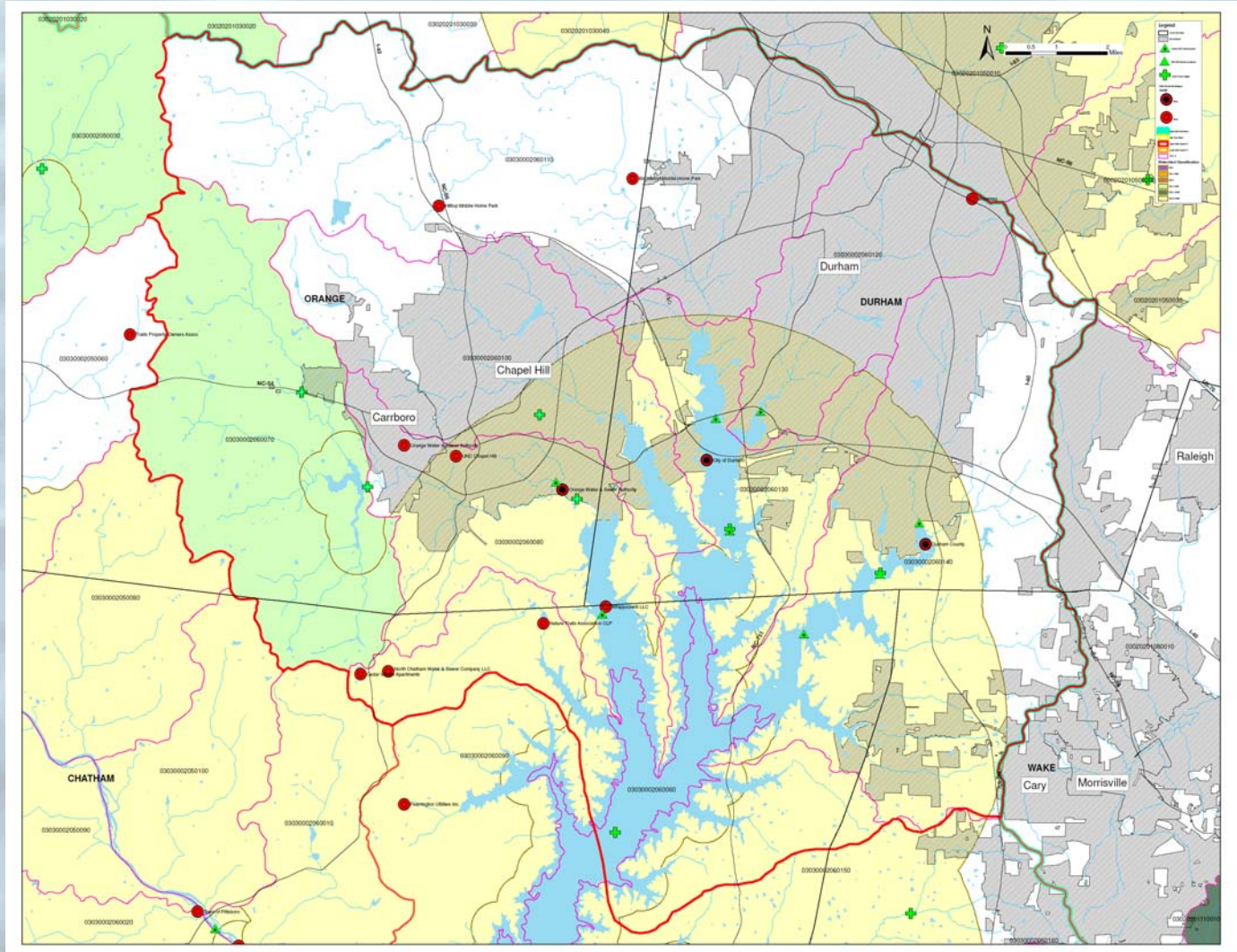
Selection of Pilot Sub-Watersheds

- Project Goals
 - Improve and protect water quality in the Jordan Lake watershed
 - Include all point and nonpoint sources in the trading and watershed permitting framework
 - Demonstrate utility of trading
- Select watersheds which included variety of land uses and regulatory requirements
- Additional water supply watersheds in pilot area
- Evaluate utility of trading in Upper New Hope versus other areas of Jordan Lake watershed

Upper New Hope Creek Pilot Area

- Urbanized watershed
 - Durham is Phase I community
 - Carrboro and Chapel Hill are Phase II
- WS-II in University Lake watershed
- Three major point sources

Upper New Hope Pilot Area



Haw River – Burlington, Graham, and Mebane

- Mix of agriculture, forest and urban land uses
 - Includes three Phase II communities
- Two WS-II areas Lake Burlington and Lake Quaker
- Four major point sources

Existing Monitoring

- Upper Cape Fear River Basin Association
- Division of Water Quality
- USGS
- Other

Quick Monitoring Summary

- Haw River
 - USGS Gage on the Haw River in Burlington
 - Sample at 15-501 (USGS Flow Gage)
- Upper New Hope Arm
 - New Hope, Morgan Creek and Northeast Creek gages and sampling stations

Watershed Monitoring Strategy

- TMDL monitoring subgroup – will coordinate with DWQ
- Dry weather vs. wet weather
- Frequency

Pilot Monitoring

- Pilot project will include up to 6 conceptual designs of BMPs
- Evaluate effectiveness of BMPs at subwatershed scale (will occur post-project)
- Evaluate need for additional monitoring at bottom of subwatershed where BMPs implemented

Trading Scenario 1: Wastewater – Stormwater

- A jurisdiction develops integrated program incorporating wastewater and stormwater nutrient reduction.
- Feasibility plan – determines extent to which required reductions could be achieved
 - Trading tool will help jurisdiction develop the plan
- Two or more jurisdictions could also join together in this scenario
 - Group compliance for stormwater and wastewater

Alternative Options

- WWTP upgrades exceed requirements and generate credits for stormwater
- Require new development to exceed rule requirements to generate credits for existing development or WWTP
- Examine structural and non-structural BMPs
- Acquire offsets
 - Agriculture
 - Septic system hookup

Implementation Options

- Integrated wastewater and stormwater permit
- Individual wastewater and stormwater permits
 - could include an integrated condition for wastewater and stormwater
- Other

Implementation rate and schedule needed for all options

Trading Scenario 2: Stormwater – Stormwater

- Two or more jurisdictions act as one
- Aggregate baseline loads
- Aggregate loading goals
- Jointly develop and implement a program to achieve aggregate goal
 - Trading tool will help evaluate options

Alternative Options

- Examine structural and non-structural BMPs – jointly fund
- Acquire offsets
 - Agriculture
 - Wastewater Treatment Plants

Implementation Options

- Watershed stormwater permit
- Individual stormwater permits
- Other

For all options, would need to develop an implementation rate and schedule

Designing Trading Program

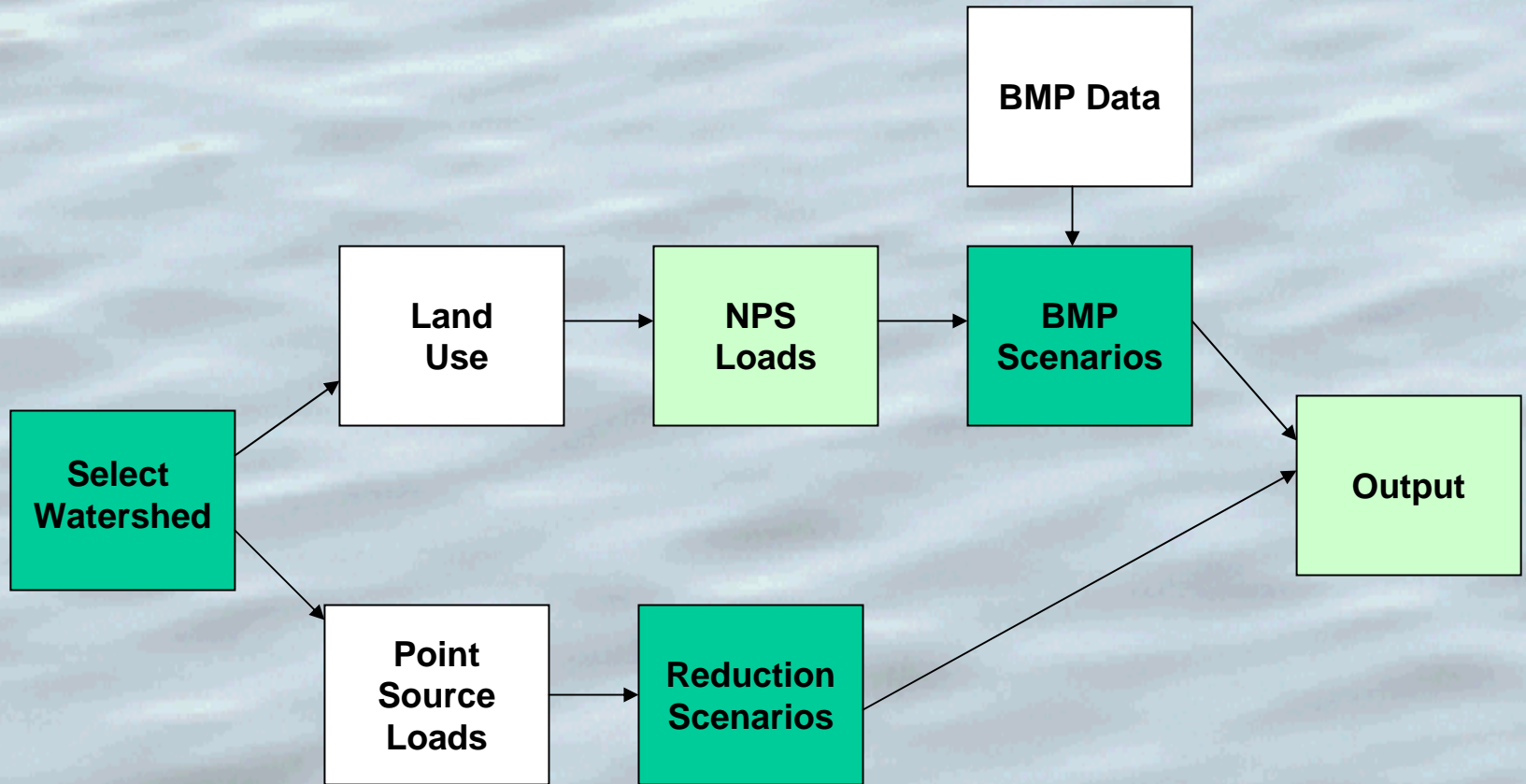
Stakeholder Feedback

- Establish framework so individual source can determine whether to participate in trades or cooperative efforts
- Build flexibility in framework
- Ensure no local water quality problems
- Account for nonpoint source and urban stormwater uncertainty

Trading Program Design

- Develop a credit evaluation tool that can be used to assess the cost of different options
- Build on information and data from TMDL
- ID potential trading partners
- ID acceptable BMPs
- Define unit of credit
 - Identify eligible/ineligible locations
 - Establish trading ratios

Modeling Flow Chart



Land Use

- Current land use – base on data included in existing watershed model
- Future – work with pilot local governments

BMPs

- Develop list of BMPs
- Identify appropriate land uses for each BMP
- Percent land available for BMPs by land use type
- BMP effectiveness (percent TP and TN reduction)
- Cost – capital and O&M
- BMP life

Point Sources

- Current load
- Projected wastewater flows
- Optimization – potential nutrient reduction and cost
- Upgrade cost – capital and O&M
 - Incremental upgrades
 - Ultimate upgrade

Next Steps

- Work with pilot area local governments and DWQ to develop trading tool
 - BMPs
 - Land use
 - Trading ratios
 - Point source upgrades
 - Other
- Identify trading scenarios
- Selection of trading scenarios
- Evaluate implementation options
- Other

Meeting Schedule

- November 29, 2006
- January 31, 2007
- June 20, 2007

All meetings at 1:00 PM at Mebane Arts and Community Center