



Piloting Recreational Boating on NYC Reservoirs

Success in Public and Private Cooperation

Watershed Science and Technical
Conference

September 14, 2012

- ❖ Introductions
- ❖ NYC Water Supply System
- ❖ Background and Overview
- ❖ Program Development
- ❖ Program Implementation
- ❖ Program Evaluation
- ❖ Conclusions
- ❖ Questions/Discussion



NYC Water Supply System



- ❖ 3 systems – Delaware, Catskill, and Croton
- ❖ 19 reservoirs & 3 controlled lakes
- ❖ 2,000 square mile watershed in parts of 8 upstate counties
- ❖ Serves 9 million people (~ 1/2 the population of New York State)
- ❖ Delivers ~ 1.2 billion gal per day
- ❖ Unfiltered supply (Cat/Del)

Background

- ❖ Previously – only metal rowboats were allowed and only for the purpose of fishing
- ❖ 2007 Delaware County requested consideration for other boating opportunities
- ❖ Spring 2008 DEP Commissioner approved pursuit of a pilot program for recreational boating



Recreational Boating Program Overview



- ❖ **Program Purpose:** improve regional recreational opportunities for watershed residents and visitors and promote environmentally sound economic development.
- ❖ **Pilot program completed at Cannonsville 2009-2011**
 - **Who** – any person with a valid NYCDEP Access Permit/Guest Pass
 - **What** – conduct recreational boating using rowboats, canoes, kayaks, sculls and small sailboats. Recreational boating includes but does not require fishing with valid NYS Fishing License.
 - **Where** – Cannonsville Reservoir launching from one of 8 designated sites. Sailboats restricted to between Trout Creek Bridge, Cannonsville Bridge and Cannonsville Dam. No boating within 500 feet of the West Delaware Intakes, Cannonsville Dam and within 660 feet of Eagle Nest sites.
 - **When** – sunrise to sunset, 7 days per week, from the Friday of Memorial Day Weekend through the Monday of Columbus Day Weekend each year 2009 - 2011.



- ❖ Key stakeholders assembled 25 June 2008 to initiate planning
- ❖ Stakeholders included Delaware County and Town Officials, USEPA, NYSDEC, NYSDOH, Catskill Watershed Corporation, Coalition of Watershed Towns, Catskill Center for Conservation and Development
- ❖ DEP and Stakeholders met every 2-4 weeks from July through May:
 - Formed a steering committee that established program goals, planned critical components, developed necessary infrastructure
 - **Used a collaborative consensus building process to guide decision making**
- ❖ **Used a modified version of the US Army Deliberate Decision Making Process to objectively select the most promising program components**

Deliberate Decision Making Process

1. Mission
2. Facts
3. Assumptions
4. Constraints
5. Restrictions
6. Specified Tasks
7. Implied Tasks
8. Definition of Success
9. Program Metrics
10. Screening Criteria
11. Evaluation Criteria
12. Develop Alternatives
13. Screen Alternatives
14. Evaluate Alternatives
15. Compare Alternatives
16. Develop Recommendation
17. Receive Approval
18. Implement Recommendation

Original Mission Statement

Mission – The NYCDEP in partnership with local watershed community officials, stakeholders and regulatory agencies develops and implements through a collaborative process an expanded boating pilot program at the Cannonsville Reservoir that is compatible with water quality protection no later than Memorial Day Weekend (22 May) 2009 in order to improve regional recreational opportunities for watershed residents and visitors and promote environmentally sound economic development by allowing certain new types of reservoir recreational boating.

Overriding Principles

- ❖ Water Quality Protection
- ❖ Water Supply Security
- ❖ Public Safety

9. Program Metrics

- a. Program participation – defined as number of participants or users obtained through steam cleaning records/day use passes/surveys and observations
- b. Economic stimulus – obtained potentially through surveys of users and selected business sectors (study consultant)
- c. Aesthetic degradation – obtained through numbers of complaints and pounds of refuse collected outside of program provided garbage receptacles
- d. Number of interferences with Water Supply Operations example – interference with forestry operations vs. recreational boating

10. Screening Criteria

- a. Water Quality Protection A– any alternative that allows watercraft to enter the reservoir without being cleaned beforehand is screened from further consideration.
- b. Water Quality Protection B– any alternative that allows watercraft which requires continuous or deliberately repetitive full bodily contact with the water (such as a float tube or sailboard) is screened from further consideration.
- c. Water Supply Security Protection – any alternative, as determined by the DEP Police, that poses a significant security risk to the WDIC or the Dam is screened from further consideration.

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munity)

11. Evaluation Criteria

- a. Recreation Enhancement – alternatives that provide better recreation enhancement above current regulations are better – for example – alternatives that allow more variety of watercraft and/or are less restrictive or burdensome on the public to use are better than programs that have less variety and/or are more restrictive
- b. Water Quality Protection – alternatives that provide better water quality protection are better than alternatives that pose more risk to water quality
- c. Public Safety Protection – alternatives that pose less risk to the participating public are better than alternatives that pose more risk
- d. Liability Protection – alternatives that expose the City and/or the partners in this program to relatively the same level of liability risk as is the current level are better than alternatives that expose the City and/or the partners to more unmitigated risk
- e. Infrastructure, personnel and other resources – alternatives that require less infrastructure and personnel and other resources to administer the program are better than alternatives that require more of these.
- f. Cost – alternatives that are less expensive are better than alternatives that are more expensive
- g. Economic Development – alternatives that have the potential for more economic development are better than alternatives that have less potential.
- h. Partnerships and Planning – alternatives that build more partnerships and consider regional planning efforts are better than alternatives that do not.
- i. Public Sanitation – alternatives that improve the public sanitation around the reservoir are better than alternatives that do not.

Alternative Descriptions

- ❖ **Alternative A – Boating Light** - Very minimal infrastructure/personnel/resource requirements – treat similar to existing boating for fishing program, Hand Carry launching only (from Vehicle or Trailer), no direct vendor involvement, steam cleaning services provided through support by the DEP and other supporting entities and funding, all vehicles prohibited below the mean high water line, all watercraft that passed the screening criteria and meet safety requirements are allowed except sailboats are only allowed between Trout Creek Bridge down to the northern abutment of the Cannonsville Bridge.
- ❖ **Alternative B – Boating Medium** - Some infrastructure improvements and personnel/resource requirements, Hand Carry launching only (from Vehicle or Trailer), includes some direct vendor involvement in particular regarding potential steam cleaning services, includes some additional parking area/boat launch site improvements and amenities, all watercraft that passed the screening criteria and meet safety requirements are allowed except sailboats are only allowed between Trout Creek Bridge down to the northern abutment of the Cannonsville Bridge.
- ❖ **Alternative C – Boating Heavy** - Includes significant infrastructure/personnel/resource requirements, Hand Carry Launching Only (from Vehicle or Trailer) except trailers are allowed at the Area 1 - Dry Brook and potentially at Area 5 Patterson, includes direct vendor involvement with steam cleaning and other services at various sites and vendor with rentals at Dry Brook, includes significant parking area/boat launch site improvements and amenities, all watercraft that passed the screening criteria and meet safety requirements are allowed except sailboats are only allowed between Trout Creek Bridge down to the northern abutment of the Cannonsville Bridge.

Program Selection

The group applied evaluation criteria and scored the three alternatives – the winning alternative, Boating Medium, also matched the secret ballot.

| Criteria | | Alternatives | | | | | |
|---|------------------|-----------------------------|----------------|--------------------------------|-------------------|-------------------------------|----------------|
| | | Alternative A Boating Light | | Alternative B - Boating Medium | | Alternative C - Boating Heavy | |
| Low=1, Med=2, High=3, High-High=6, High-High-High=9 | Criteria Weights | Raw Score | Weighted Score | Raw Score | Weighted Score | Raw Score | Weighted Score |
| Water Quality Protection – High-High-High | 34.6% | 4 | 1.38461538 | 3 | 1.03846154 | 2 | 0.69230769 |
| Recreation Enhancement – High-High | 23.1% | 3 | 0.69230769 | 4 | 0.92307692 | 5 | 1.15384615 |
| Public Safety Protection – High | 11.5% | 4 | 0.46153846 | 4 | 0.46153846 | 4 | 0.46153846 |
| Liability Protection – High | 11.5% | 4 | 0.46153846 | 4 | 0.46153846 | 2 | 0.23076923 |
| Infrastructure, resources – Medium | 7.7% | 5 | 0.38461538 | 5 | 0.38461538 | 1 | 0.07692308 |
| Economic Development – Medium | 7.7% | 3 | 0.23076923 | 4 | 0.30769231 | 5 | 0.38461538 |
| Partnerships and Planning - Low | 3.8% | 2 | 0.07692308 | 4 | 0.15384615 | 5 | 0.19230769 |
| Totals | | 25 | 3.69230769 | 28 | 3.73076923 | 24 | 3.19230769 |

Secret Ballot Results

3

8

2

Types of Watercraft

- ❖ Non-motorized watercraft only (includes no trolling motors)
- ❖ Rowboats/Jonboats
- ❖ Canoes/Kayaks
- ❖ Skiffs
- ❖ Small sailboats (removable center/dagger boards)



- ❖ Watercraft Cleaning/Steam cleaning vendors
- ❖ Site development
- ❖ Advertising
- ❖ Feedback
- ❖ Mid-course Changes

Watercraft Cleaning

- ❖ Very important to help eliminate the threat of introducing Zebra Mussels & other invasive species (IS) to City-owned reservoirs
- ❖ IS could impact water-supply infrastructure & water quality & cost the City \$Millions in annual maintenance
- ❖ Steam cleaning is continued in expansion to new reservoirs
- ❖ In addition to steam-cleaning,
- ❖ vessels will be inspected for
- ❖ other aquatic nuisance species



Steam Cleaning Vendors

- ❖ **Completed by local vendors certified by DEP**
 - Vendors charge a fee for steam cleaning services
 - Fees are set by vendors, no price fixing
- ❖ Must meet NYCDEP steam-cleaning requirements
- ❖ Vendors can rent their watercraft – needs to be cleaned in same manner
- ❖ **Incentives were offered to assist new steam cleaning vendors**

Permit System

- ❖ Administered by DEP through local vendors
- ❖ Steps (for 1 to 7 day Temporary or Seasonal Boat Tags)
 - Check/Obtain DEP Access Permit – online
 - Go to an approved vendor
 - Complete Application and Sign Release of Liability
 - Vendor Steam Cleans Boat and affixes Boat Tag
 - Boat tag serves as the permit
 - Vendor provides briefing and copies of rules
- ❖ Must obtain a new tag if remove boat from the reservoir



Launch Site Selection Process

- ❖ Eagle nesting restrictions, stormwater and erosion controls, SEQRA review
- ❖ Road access and water access
- ❖ Vehicle parking and portable latrines
- ❖ Carry in only – no trailers/vehicles in water
- ❖ Some sites will have handicap parking designated and handicap accessible portable latrines.
- ❖ No overnight camping, garbage “carry in = carry out”
- ❖ Information kiosks at each site
- ❖ **Construction used staff, materials, equipment and project management from DEP, Delaware County and Town of Tompkins**



Typical Launch Site



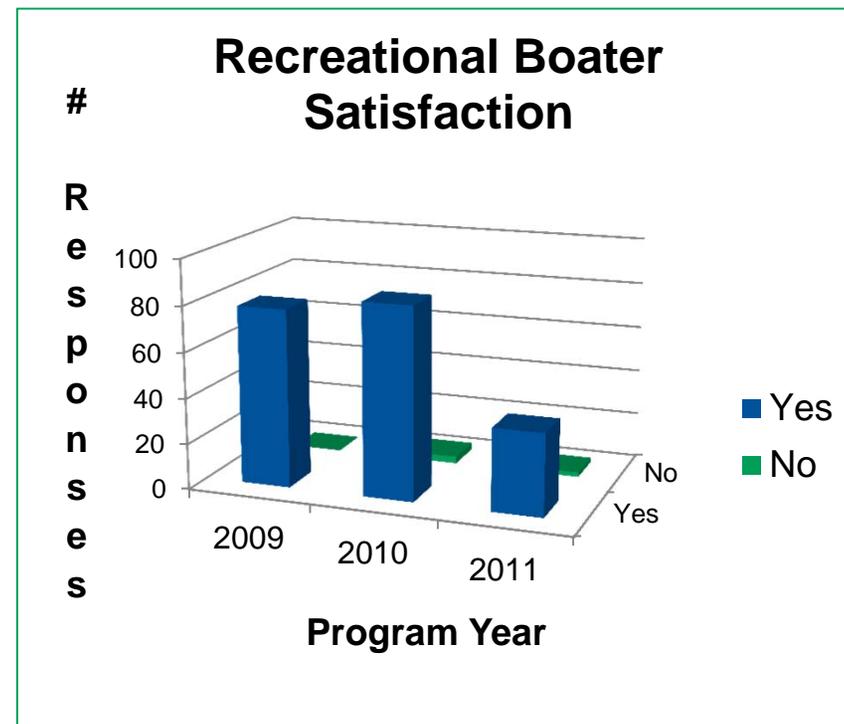
Program Safety

- The DEP Police enforced safety and security of the boaters & reservoir
 - Confirm boaters are following Rec. Rules
 - Assure that boaters have PFD's
 - Verify boaters have required access permit & boat tag
- County Emergency Management & Local Fire Departments
 - Stored boats strategically around reservoir to expedite possible water rescues
 - Worked with DEP on water rescue scenarios
 - 911 addresses obtained for boat launch areas
 - Compiled updated emergency contact info



Pilot Program Evaluation

- ❖ **Pilot program overall success** – Final Report by Mathew D. Rudikoff and Associates, February 2012
 - ❖ “First and foremost is the conclusion that the CRRBPP was a resounding success...”
 - ❖ “The CRRBPP was a highly creative demonstration of innovative public sector functioning. In which, an alternative use of a crucial, highly sensitive and carefully regulated component of public infrastructure...was made available, under carefully drawn rules and regulations, for expanded public use as an enriching recreational, educational and economic stimulating activity for the benefit of the public and the community in which the asset is located.”
 - ❖ “Opinions expressed in the participant surveys were overwhelmingly positive in nature.”
 - ❖ “Most importantly, there were no detectable negative impacts to water quality and no indication of invasive species...”



❖ Water Quality Monitoring

- ❖ Reservoir surveys conducted monthly
- ❖ Monitoring performed at 6 reservoir sites
- ❖ Samples collected at multiple depths per site
- ❖ Water column profiles for temperature, conductivity, DO, and pH
- ❖ Samples analyzed for:
 - ❖ Physicals – turbidity, color
 - ❖ Chemistry – total nitrogen, total phosphorus
 - ❖ Biology – total and fecal coliforms, zebra mussels
- ❖ Special studies conducted before and after holiday weekends

❖ Results

- ❖ Results for these parameters were within the limits of the SWTR and historical observations.
- ❖ No detected reservoir-wide changes in WQ from the boating program at the current intensity.
- ❖ No introduction of zebra mussels.
- ❖ Special studies were inconclusive due to confounding factors (e.g., rain, wind).

Conclusions

- ❖ NYC Water Supply is a complex system serving 9 million people
- ❖ The NYC Recreational Boating Pilot Program was a success in Public and Private Cooperation
- ❖ 3 key factors enabled program success
 - ❖ Early commitment of resources
 - ❖ Continuous stakeholder involvement with periodic public feedback
 - ❖ Collaborative consensus building facilitated by a deliberate decision making process



Cannonsville Recreational Boating Program



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