# PARKS, RECREATION, AND COMMUNITY ENHANCEMENT COMMITTEE

# A G E N D A

**SEPTEMBER 10, 2012 - 12:00 NOON**

**CITY HALL CONFERENCE ROOM**
**15 LOOCKERMAN PLAZA**
**DOVER, DELAWARE**

***Public comments are welcomed on any item and will be permitted at appropriate times. When possible, please notify the City Clerk (736-7008 or e-mail at CityClerk@dover.de.us) should you wish to be recognized.***

AGENDA ADDITIONS/DELETIONS

1. Presentations
   A. Restoration and Remediation of Mirror Lake - Rick Greene, Department of Natural Resources and Environmental Control (DNREC)
   B. Overview of City of Dover Recreation Programs

2. Updates
   A. Planning and Funding for New Library
   B. CDBG Program

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*THE AGENDA ITEMS AS LISTED MAY NOT BE CONSIDERED IN SEQUENCE. THIS AGENDA IS SUBJECT TO CHANGE TO INCLUDE THE ADDITION OR THE DELETION OF ITEMS, INCLUDING EXECUTIVE SESSIONS.*

# Remediation & Restoration of Mirror Lake, Dover



September 10, 2012

# Vision for Mirror Lake

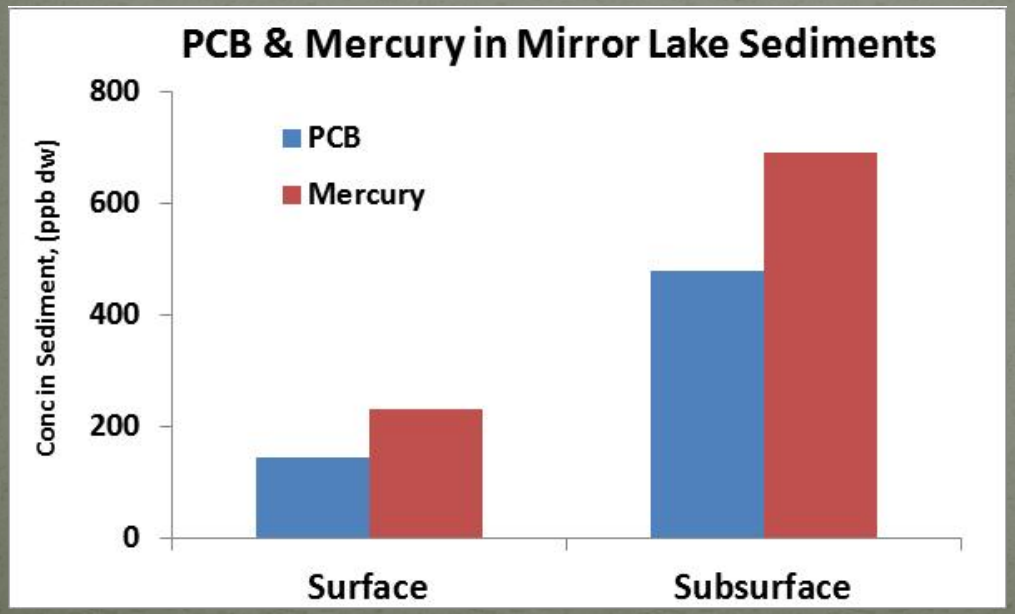
- Remediate contaminated sediments
- Restore/enhance habitat & ecological function
- Provide a comprehensive and long-term solution

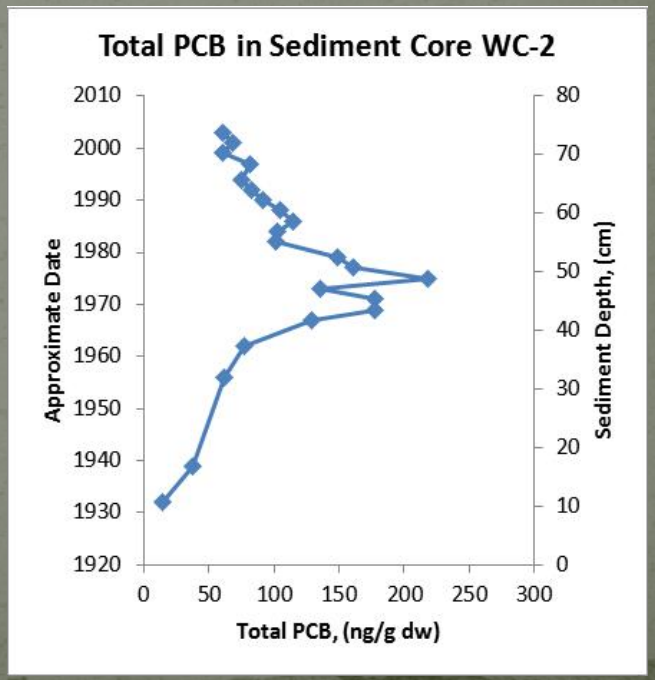
# Ecological/Habitat Issues

- Limited ecological “services and functions”
- Sandbar/sedimentation
- Canada geese
- Invasive plants
- Eroding banks
- Stormwater Impacts (parking lots & other paved areas)

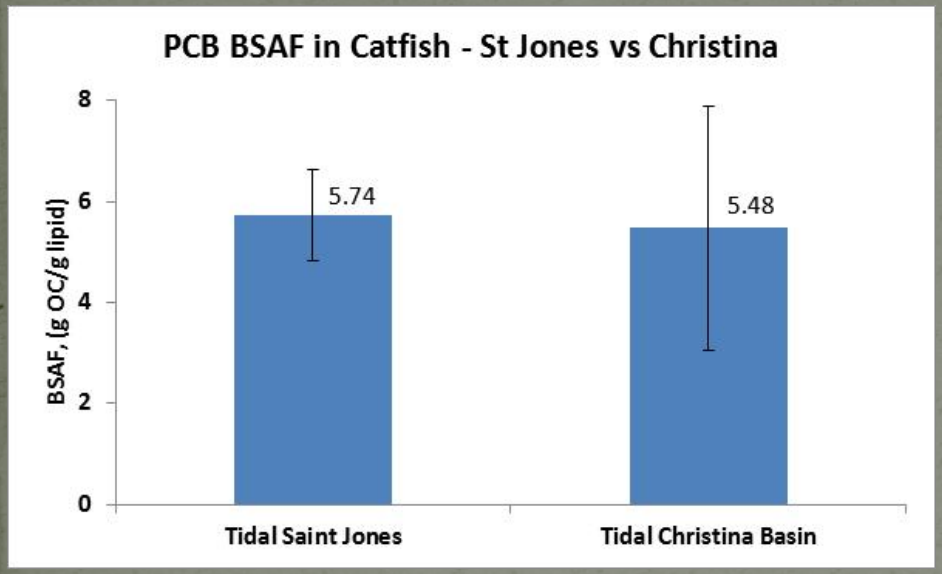
# Contaminant Problem

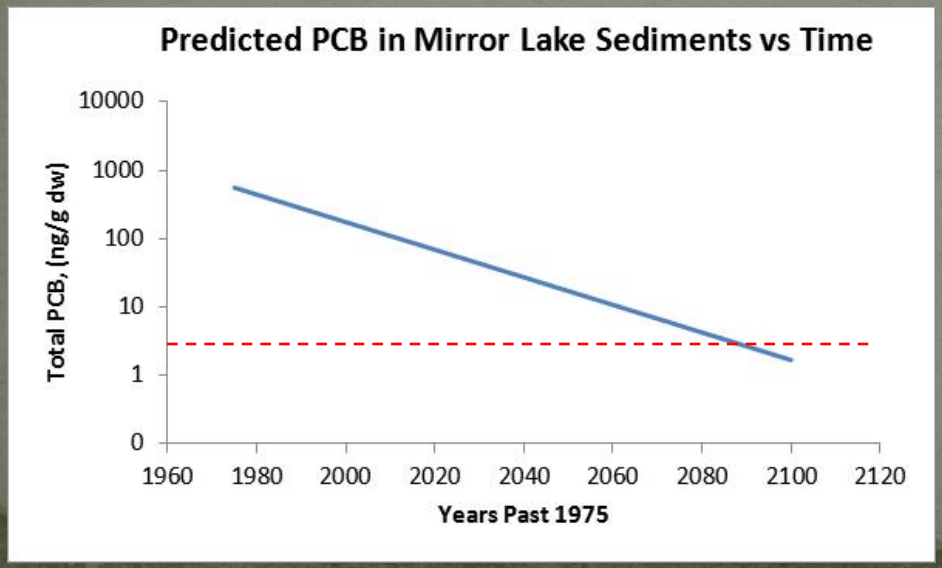
- Fish, sediment and surface water within the St. Jones River and Mirror Lake are contaminated with PCBs, mercury and other pollutants
  - *Fish advisory first issued in 1988 to reduce public exposure*
  - *Concentrations falling, but very slowly. Why?*



# Contaminant Problem (cont.)




- PCB & Hg in fish depend on concentrations in the sediment
- Sediments act like a capacitor which release contamination to water
- PCBs & Hg very persistent
- Decades predicted for conc of PCB in Mirror Lake sediments to drop to point that fish OK to eat

# Options for Remediation & Restoration:

A. Do nothing and wait it out
   - *No cost but fails to address habitat or contaminant problems. Long wait (~74 years) on contaminants .*

B. Dredge
   - *Several downsides for this option.*

C. Cap it
   - *Medium costs, contaminants remain & may still diffuse through cap. Can be integrated with habitat restoration.*

D. "Sequester" it in Place
   - *Contaminants remain but bioavailability & bioaccumulation greatly reduced, hereby cutting eco & human health risks; Half the cost of dredging. Also, this approach can be integrated with habitat restoration. This is DNREC's preferred option.*

# Dredging Mirror Lake

- Not needed to support navigation/commerce, recreation, or education.
- Will not enhance habitat or ecological functions
- Expensive (~$1.5 M). Contaminants in sediments likely to drive up disposal costs even further.
- Worst of contamination is deeper down in sediments. Dredging will release some of that contamination.
- Not a permanent solution to “sand bar” problem. Sandbar will reform over time.
- Very low likelihood of being permitted. Non-starter.

# Proposal

- DNREC staff contacted Dr. Upal Ghosh, UMBC, in summer of 2011 to explore feasibility of carbon treatment of Mirror Lake & downstream channel
- Mirror Lake considered good candidate
- Proposal developed and circulated internally within DNREC with great interest
- Expected Reduction of contaminant bioavailability:
  70 – 90% or better in 5 years or less

# What is activated carbon?

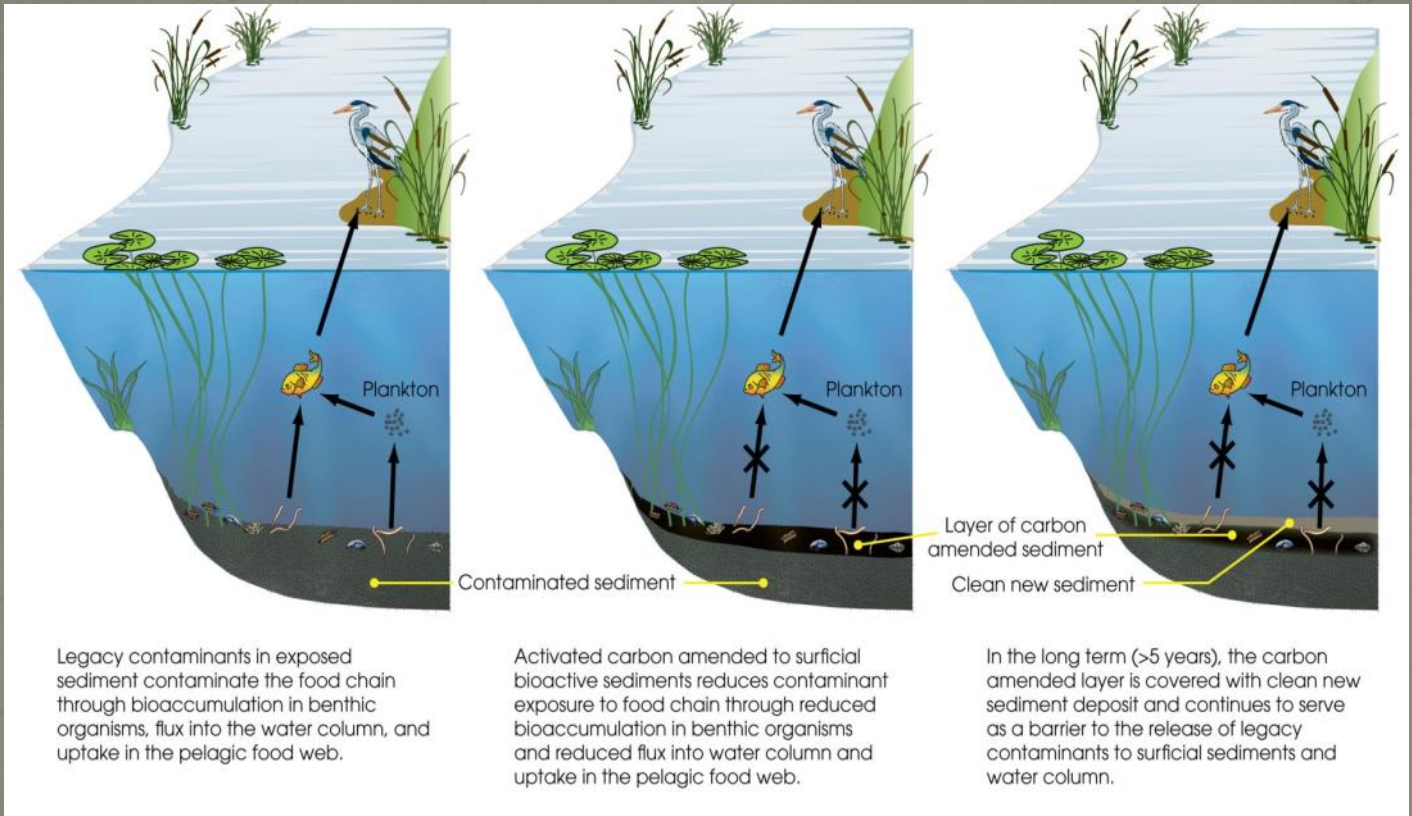


Has strong sorption properties that act to bind contaminants, making them less available to the food chain

# Activated Carbon Sequestration

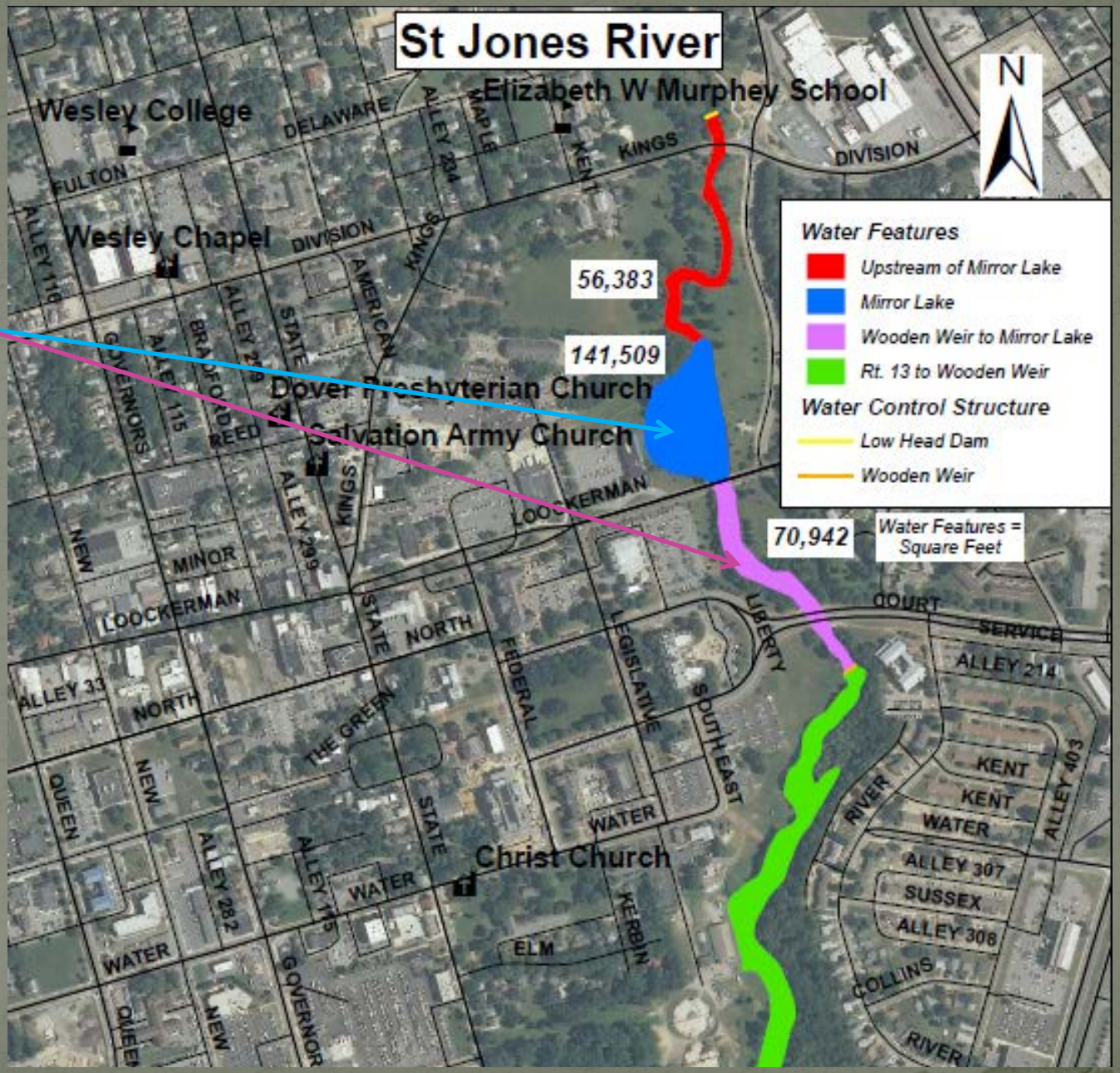
- Involves incorporating activated carbon directly into sediments to bind the contamination and reduce bioavailability.

*How it works:*




bioaccumulation → reduced bioaccumulation → new sediment=barrier

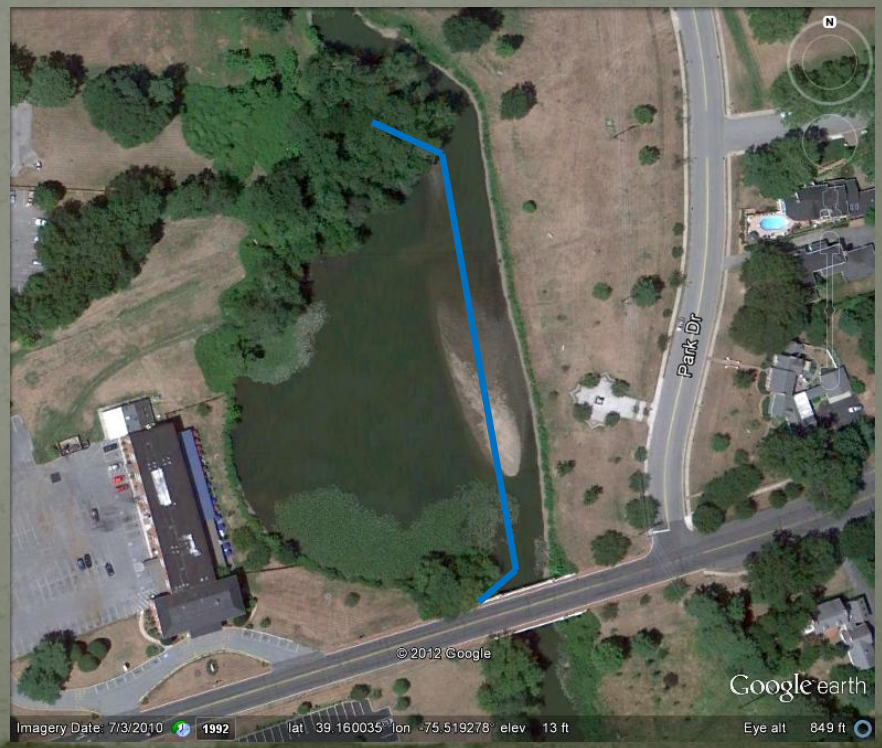
Proposed remediation area for carbon sequestration



# Dewatering Operation

- Optimum time is November
  - *Lower risk of hurricanes and frontal storms; also base flow still low*
  - *Avoids fish spawning runs; also recreational fishing winding down*
- Draw down Silver Lake as temporary buffer
- Install Portadam & dewater Mirror Lake w/ high capacity pumps



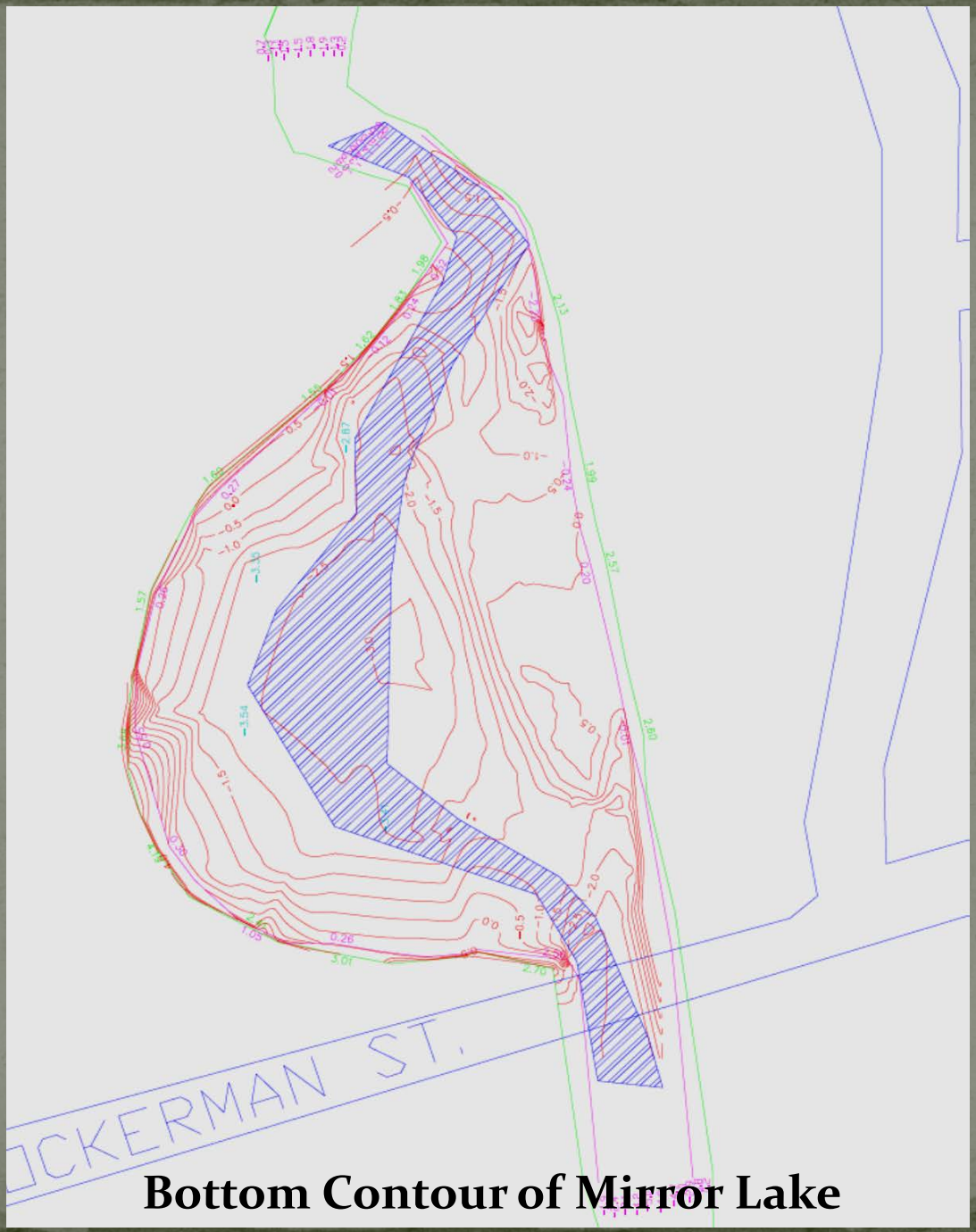


# Methods of Carbon Addition

- For fully dewatered areas:  broadcast and till in immediately
- For wet areas:  shoot in pellets with “hydroseeder”-type device  or potentially apply by helicopter

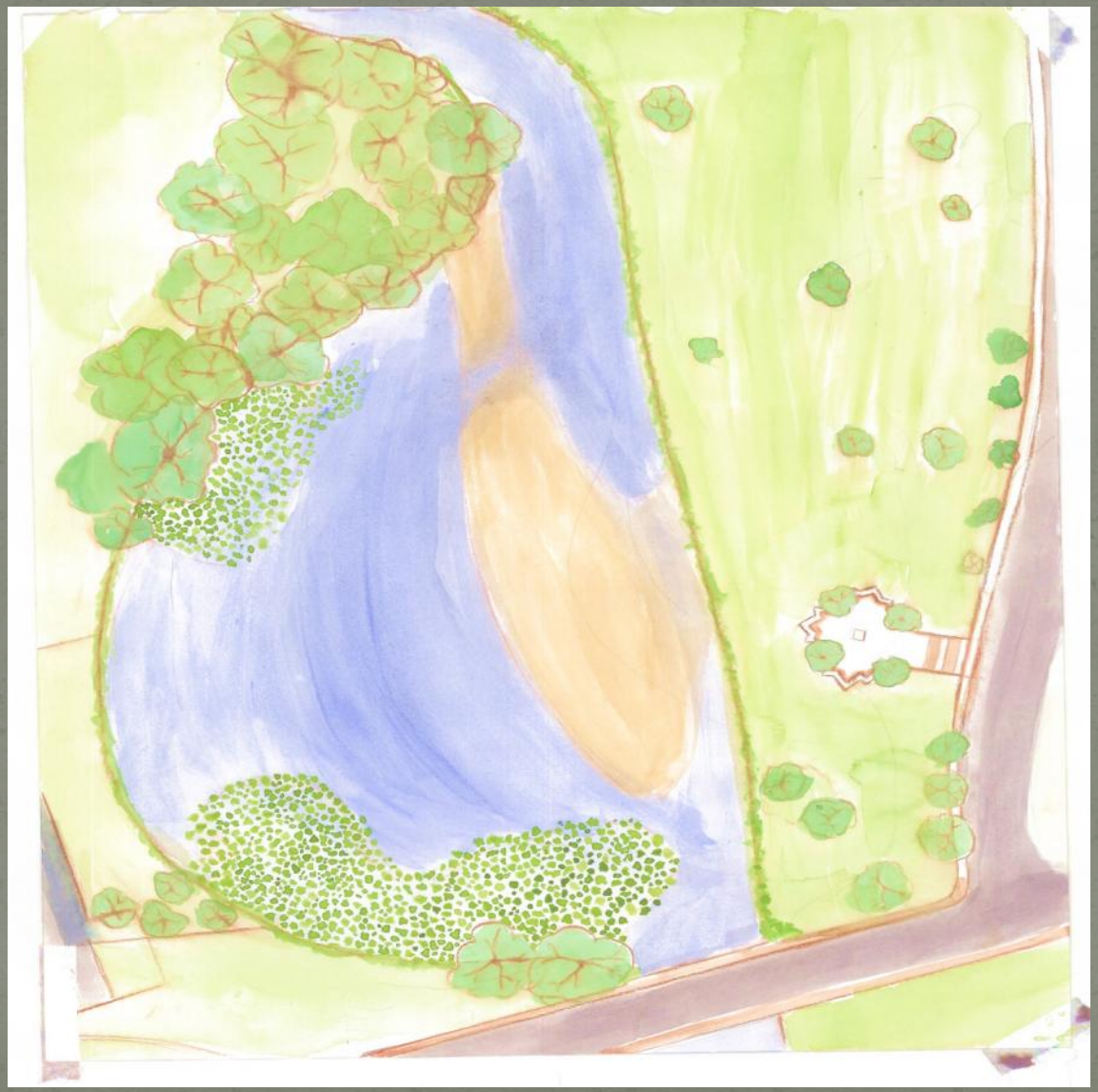




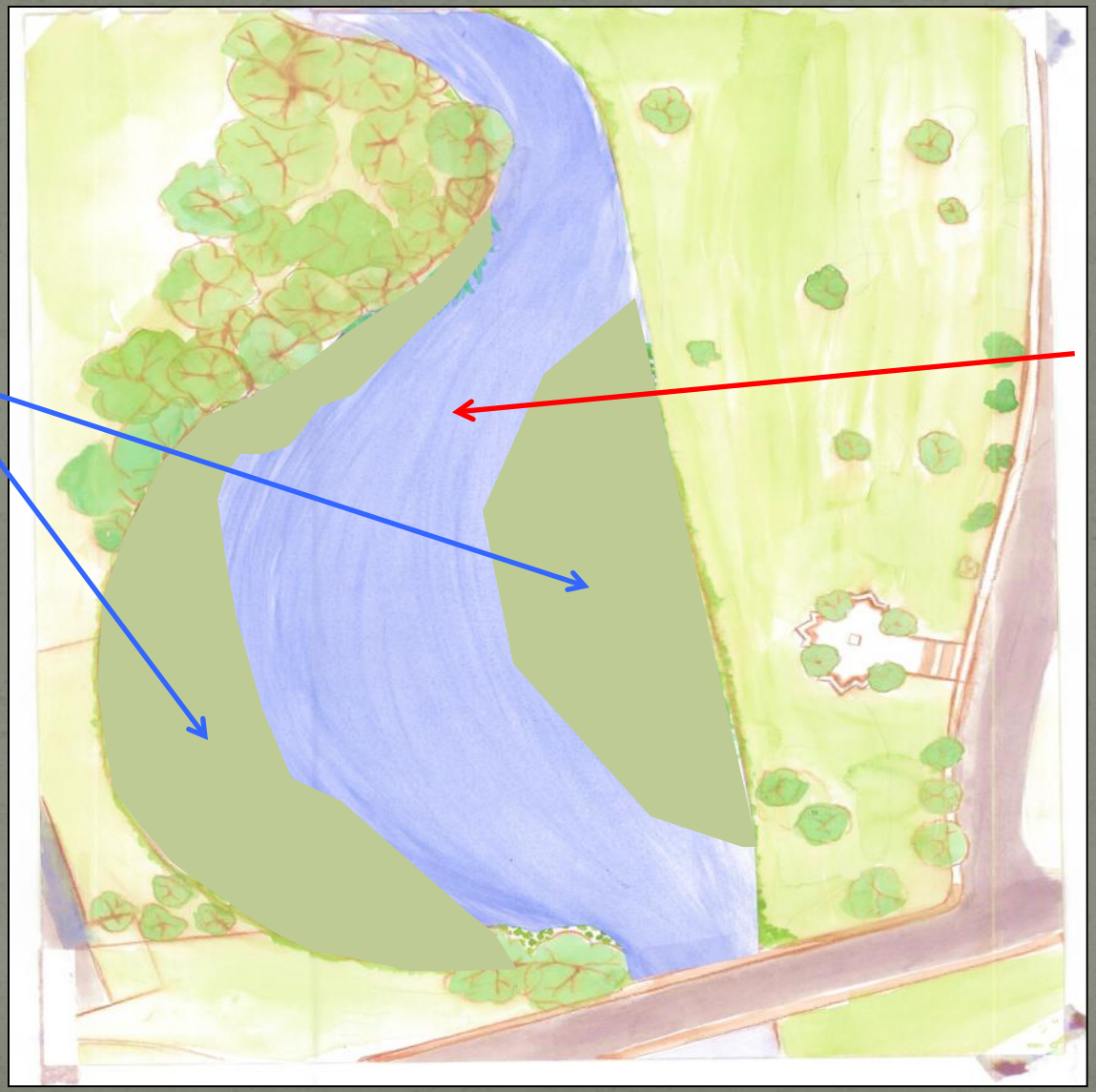

**Bottom Contour of Mirror Lake**

# Sketch of existing conditions



# Sketch of proposed conditions

Emergent wetlands will be increased in size.



Channel will remain

# Artist's rendering looking north



# Artist's rendering looking east



# Artist's rendering looking west



# HERBACEOUS PLANTS




Sweet flag



Water plantain



Fox sedge



Swamp sunflower



Blue flag iris



Soft rush



Arrow arum



Torrey's rush



Black needle rush



Lizards tail



Pickerel weed



Green bulrush



Duck potato



Soft stem bulrush




Common three-square



American white water lilly



Woolgrass

# Benefits

- Fish contamination & toxicity to benthic aquatic life reduced significantly; fish advisories lifted/lessened sooner.
- Unsightly sandbar will be converted to attractive intertidal wetland, beautifying the gateway to historic Dover.
- Wetland plantings will enhance biodiversity & ecological function of Mirror Lake.  They'll also take up nutrients.
- Canada goose & invasive plant problem reduced.
- Increased recreational usage & enjoyment.
- Innovation will be recognized & implemented elsewhere.

# Funding

- Estimated Cost = $0.75 million (includes planning, design, construction, and monitoring)
- $0.68 million secured from State HSCA program
- $63K also secured from DNREC to develop plans & specs
- No costs to prepare Fed & State permit applications (will be done in-house by DNREC)
- Labor for much of construction from DNREC & Conservation District. Some labor from City of Dover would be very helpful.

# In-House Labor to Defray Cost



# How Can City of Dover Help?

- Enthusiasm & overall support for the project
- Access/staging agreement
- Draw down Silver Lake prior to dewatering (careful!)
- Labor:
  - Lift truck to help unload & load Portadam frames
  - 2 people to help set up & tear down the frames
- Plantings

# Milestones

| Task | Timing |
|---|---|
| Project Proposal | Complete – 5/2012 |
| Artist's Renderings | Complete – 5/2012 |
| Community Input & Support | Ongoing – Initiated Spring 2012 |
| Plans & Specs | Target Completion – 1/2013 |
| Secure Permits | Target Completion – 5/2013 |
| Baseline Monitoring (water, sed & fish) | Target Completion – Summer /Fall 2013 |
| Construction | Nov through Dec 2013 |
| Post-construction Monitoring | Nov 2014 and Nov 2015 |
| Reporting | Various |

# Acknowledgements

Scott Koening
Silver Lake Commission, esp. Dean Holden
City of Dover Parks & Rec

- Upal Ghosh, UMBC
- Frank Piorko
- Marj Crofts
- Steve Williams
- Lyle Jones
- Brittany Sturgis
- John Cargill
- Melanie Tymes
- Steve Wright
- Mark Biddle
- Chuck Williams
- Dave McQuaide & Robin Tyler
- Lara Allison
- John Schneider
- Stew Michels & Cathy Martin
- Bob Enright
- Virgil Holmes
- Ed Bonner, USACE

# References

Ghosh, U. and Greene, R. 2012. In-situ Treatment of Mirror Lake Sediments to Reduce Uptake of Pollutants in the Food Chain. Proposal.

Greene, R. Saint Jones & Mirror Lake PCB Time Response without Carbon Treatment. Delaware Department of Natural Resources and Environmental Control, Dover, DE.

Greene, R. 2012. Managing Water During the Mirror Lake Restoration and Remediation Project. Delaware Department of Natural Resources and Environmental Control, Dover, DE.

Status of FY-11 CDBG Projects

Monthly statistics for the month of August 2012

***CDBG FY11 Projects***

***Homeownership Assistance Program***

Eight families have purchased homes using the Dover First Start Program.

***Homeowner Rehabilitation Program***

Three homes have been completed.

***Dover Interfaith Mission to the Homeless***

CDBG funds have been utilized to cover the operations cost for the shelter.

***Emergency Home Repair Project***

Emergency repairs have been completed on 15 properties in the City of Dover.

***Connections Community Support Program***

Motel vouchers have been provided to 18 homeless persons in the City of Dover.

***Neighborhood Stabilization Program (NSP)***

The city was awarded $1,426,740 for the acquisition and rehab of foreclosed properties to be sold to qualifying families. A total of $1,277,993 has been expended on the acquisition and renovations for 9 properties. The remaining balance of $148,747 will be utilized for renovations and acquisition. Six properties have been sold, two are for sale, and one is a rental that serves persons with disabilities. Habitat has purchased a property and is currently under renovation.

**218 Ann Avenue (sold)**

**343 Mimosa Avenue (sold)**

**907 Woodcrest Avenue (sold)**

**1430 S. Hancock (group home rental)**

**1415 S. Hancock (for sale)**

**337 N. Governors Avenue (sold)**

**254 Green Blade Drive (sold)**

**302 Stone Brook Place (for sale)**

**11 Westover Drive (sold)**

**110 Thames Drive (under renovation)**

# Status of FY-11 Program Funds Spent - Fiscal Year 7/1/11- 6/30/12

| 2011 Grant Projects | Project Details | Total Grant | Funds Expended | Unencumbered Balance |
|---|---|---|---|---|
| Homeownership Assistance Program FY10 & 11 | Eight families have purchased homes in the City of Dover | $58,167 | $58,167 | $0 |
| *Housing Rehabilitation Program FY10 | completed | $25,275 | $25,275 | $0 |
| Dover Interfaith Mission to Homeless | Funding for utility and lease cost | $34,479 | $28,502 | $5,977 |
| Connections Comm. Support | 18 motel vouchers for homeless provided | $5,000 | $5,000 | $0 |
| RC & D | Emergency home repairs completed on 15 homes | $38,000 | $38,000 | $0 |
| Housing Rehabilitation Program | 3 homes completed | $38,000 | $36,219 | $1,781 |
| Total | | $198,921 | $191,163 | $7,758 |

*rehab projects - please note that $25,275 has been rolled over to program year FY-11

806 Forest Street completed

122 Davis Circle

839 Paul Street completed