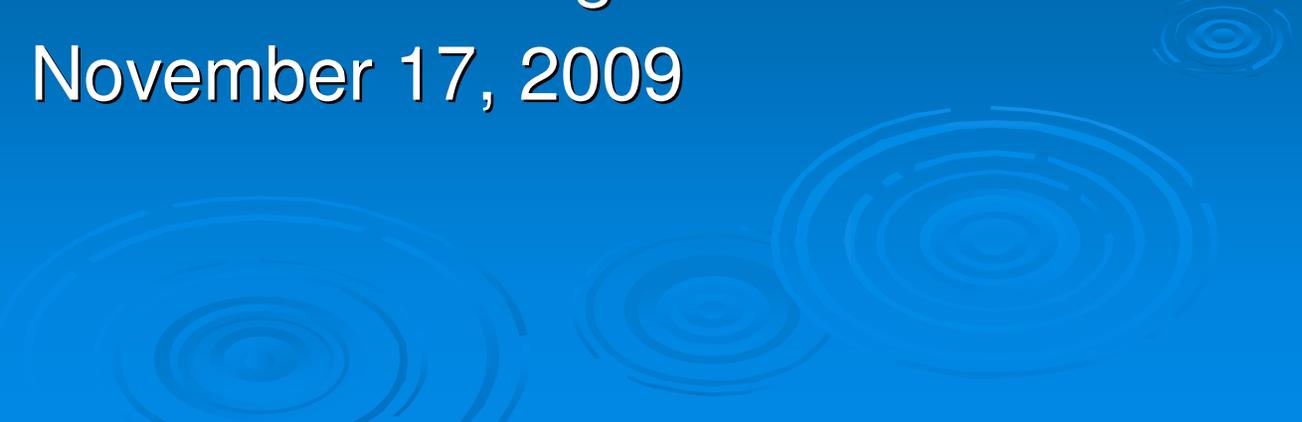


# Bare Hill Pond Stormwater Collection and Treatment Project

Bill Johnson

Bare Hill Pond Watershed Management Committee

November 17, 2009

The background of the slide is a solid blue color. In the lower right quadrant, there are several faint, concentric white circles that resemble ripples on water, creating a decorative effect.

# Long-term Protection Strategy for Bare Hill Pond

- Address the issues that place the Pond on the State's list of endangered water bodies
  - Invasive weeds
  - Excessive levels of phosphorus
- Use education and enforcement to ensure overall watershed protection
  - Water quality
  - Native flora and fauna populations
- Do the above within level-spending limits, supplemented by grants and CPC funding

# Implementation Plans

## ➤ Invasive weeds

- ❑ Annual deep drawdowns to kill milfoil/fanwort
- ❑ Mechanical & manual harvesting to kill waterchestnuts

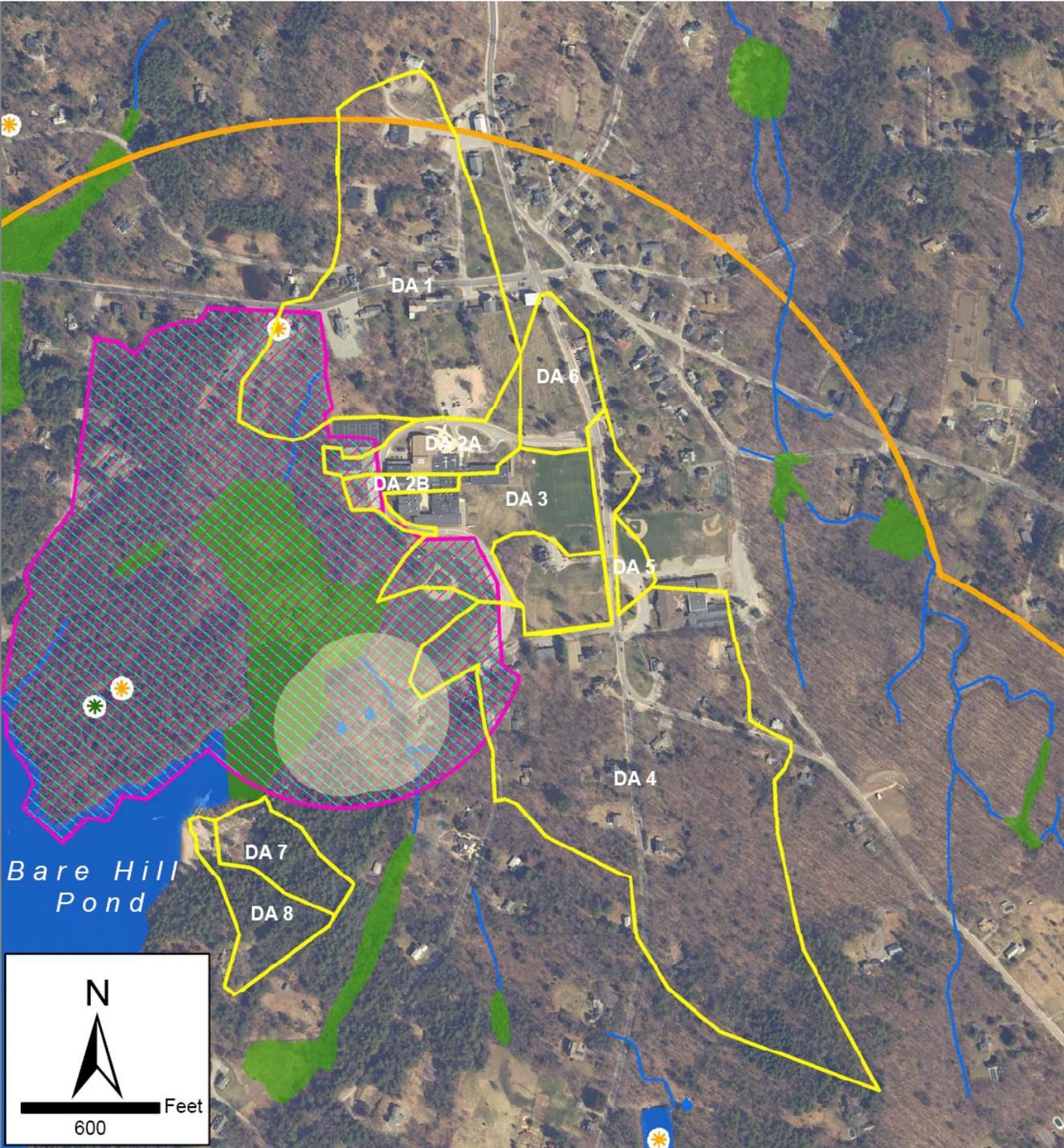
## ➤ Excess Phosphorus

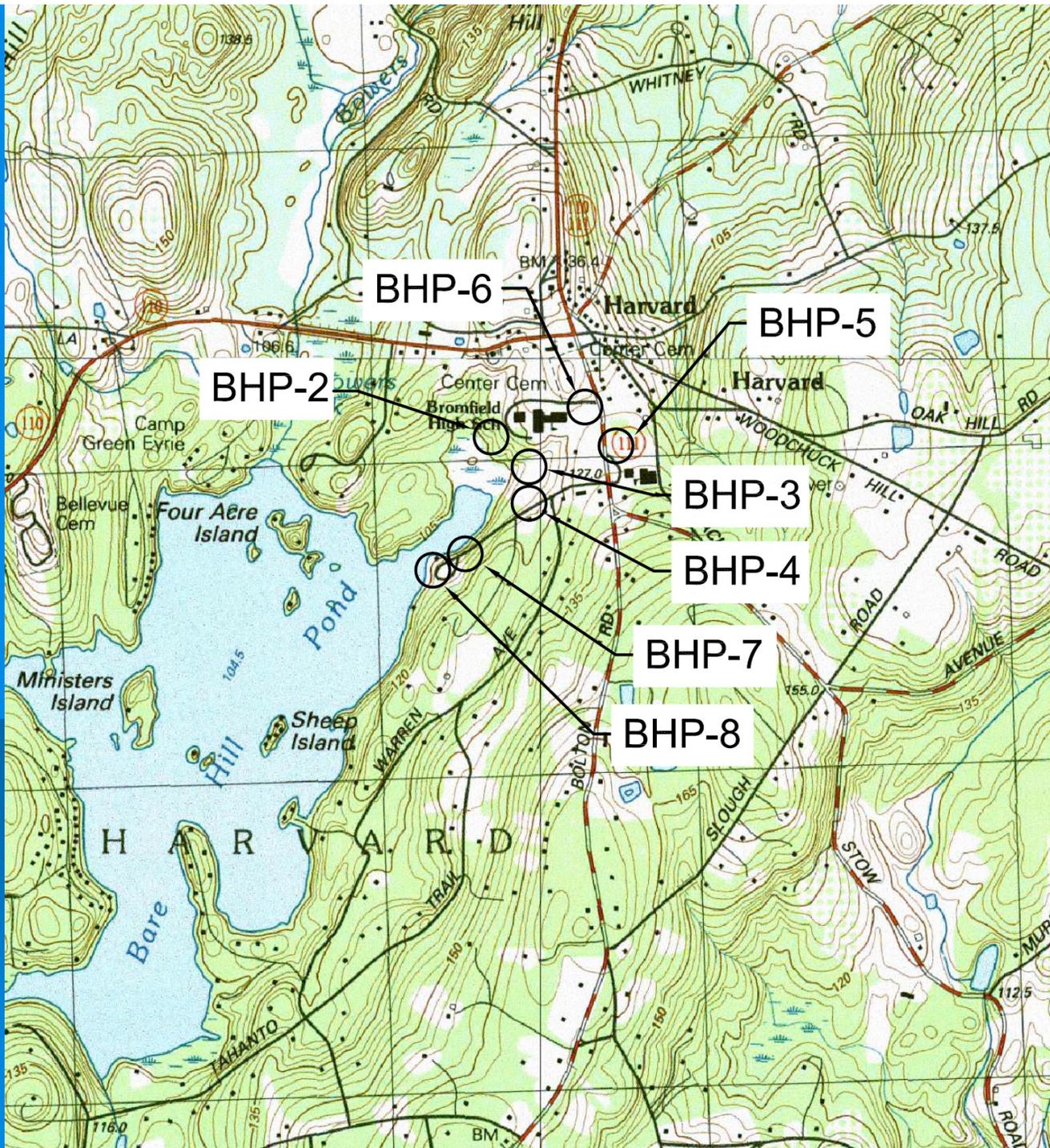
**NEW** Stormwater collection/treatment and abutter education/buy-in to limit phosphorus inflows

**NEW** Excavation of Pond bottom to remove entrapped phosphorus

# New Bare Hill Pond Project

- Capture and treat stormwater runoff entering the north end of Pond to limit further external contamination
- Excavate phosphorus-enriched sediment from pond bottom exposed by drawdown
- Continue drawdowns and manual/mechanical harvesting to kill invasive weeds
- Street sweepings/low-salt road treatment/etc.
- Education and outreach





# Collection/Treatment Locations

- BHP2: Bromfield School detention pond
  - BHP3: Bromfield School field (Pond Road)
  - BHP4: Pond Road drainage
  - BHP5: Elementary School ball field
  - BHP6: Bromfield School entrance
  - BHP7/8: Town beach area
- 

# Low Impact Design (LID) Solutions

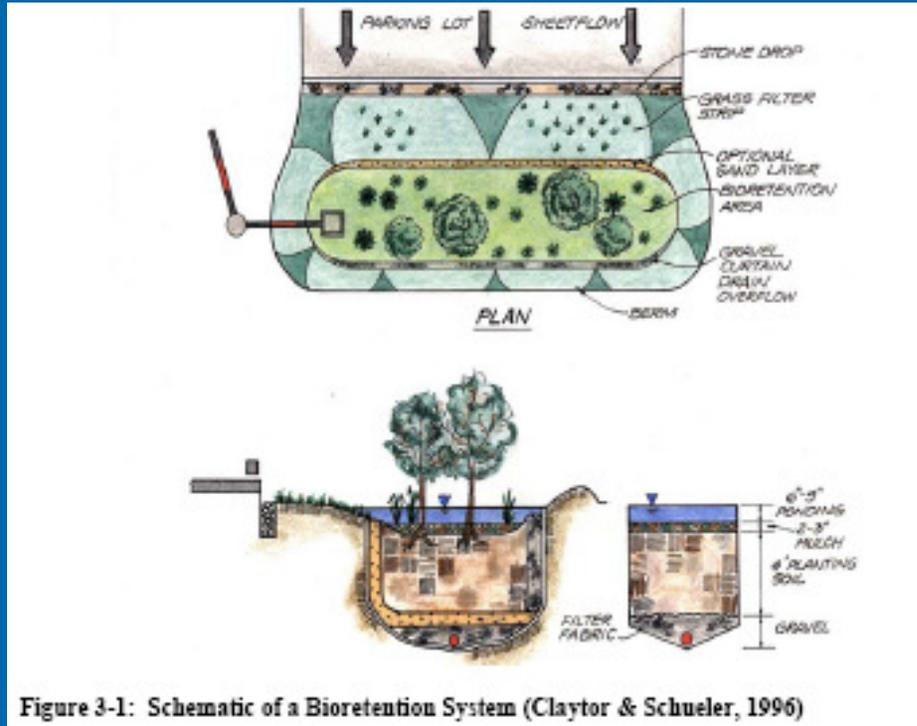


Figure 3-1: Schematic of a Bioretention System (Claytor & Schueler, 1996)

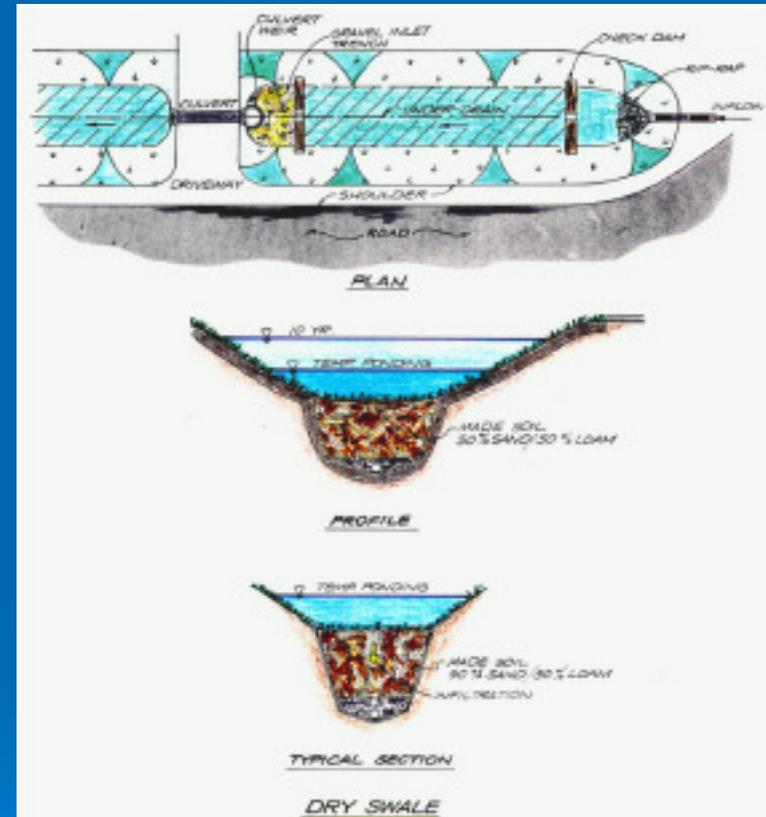


Figure 3-3: Schematic of a Dry Swale (Claytor & Schueler, 1996)

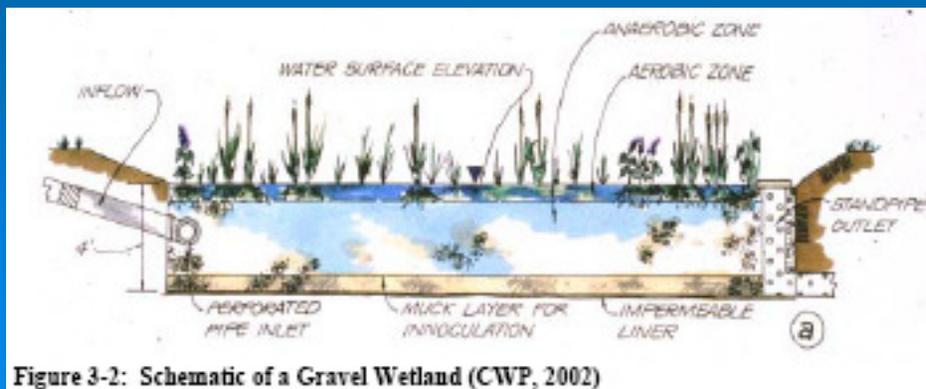
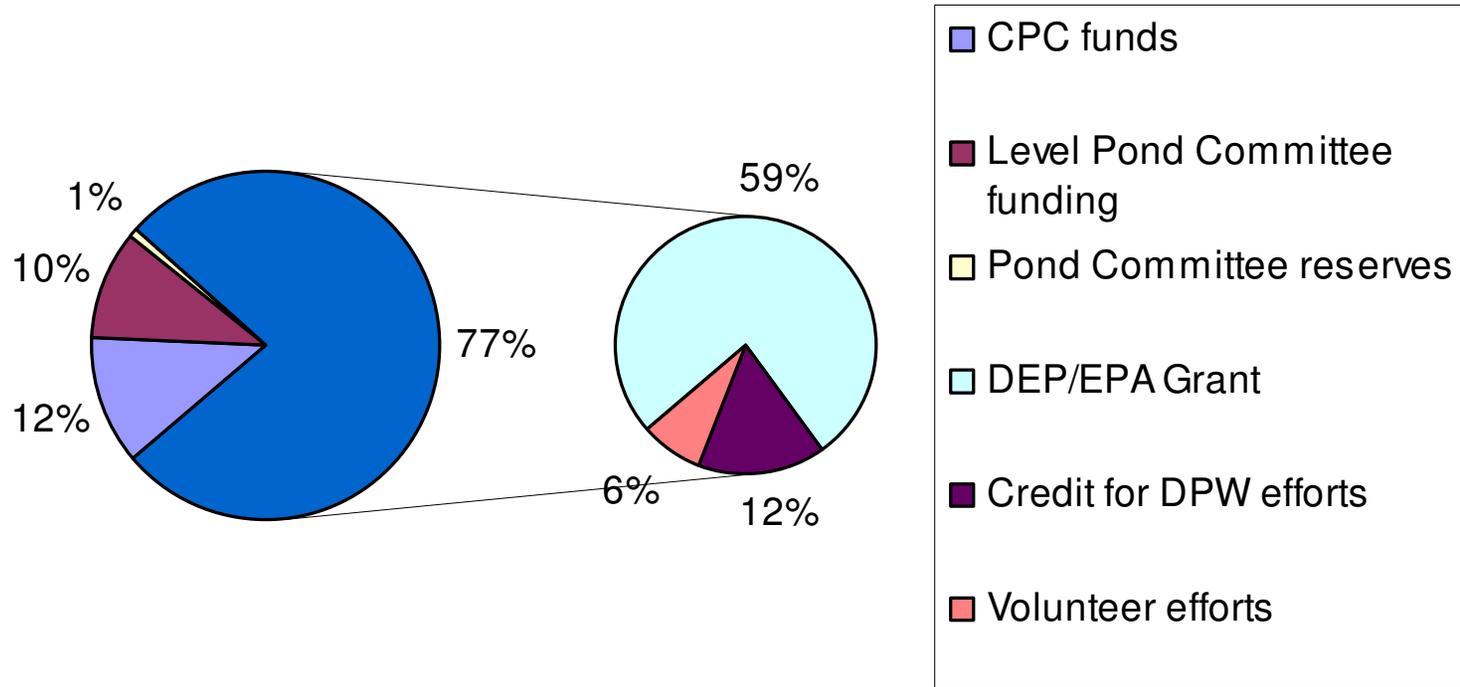


Figure 3-2: Schematic of a Gravel Wetland (CWP, 2002)

# Proposed Schedule

BHP2	Bromfield School detention pond	9/1-10/1	2010
BHP3	Bromfield School field (Pond Road)	6/15-8/15	2010
BHP4	Pond Road drainage	6/15-8/15	2010
BHP5	Elementary School ball field	6/15-8/15	2010
BHP6	Bromfield School entrance	7/5-8/15	2010
BHP7/8	Town beach area	10/15-11/15	2010

# Funding Sources – 3 years



DEP/EPA grant	\$584,950
DPW credits	\$117,452
Volunteer credits	\$ 60,000

CPC funds	\$119,100
Pond Committee budget	\$100,500
Pond Committee reserves	\$ 8,806