

**Onterra LLC**  
 Lake Management Planning  
 815 Prosper Rd  
 De Pere, WI 54115  
 920.338.8860  
 www.onterra-eco.com

Sources:  
 Roads and Hydro: WDNR  
 Map Date: January 26, 2010  
 Filename: Map1\_Antigo\_Location.mxd



Project Location in Wisconsin

- Legend**
- Antigo Lakes ~ 30 acres  
WDNR Definition
  - Point-Intercept Survey Location  
30-meter spacing, 137 total points
  - Water Quality Sampling Location
  - Dam or Culvert Location
  - Carry-In Public Access

Map 1  
 Antigo Lake  
 Langlade County, Wisconsin  
**Project Location  
 & Lake Boundaries**

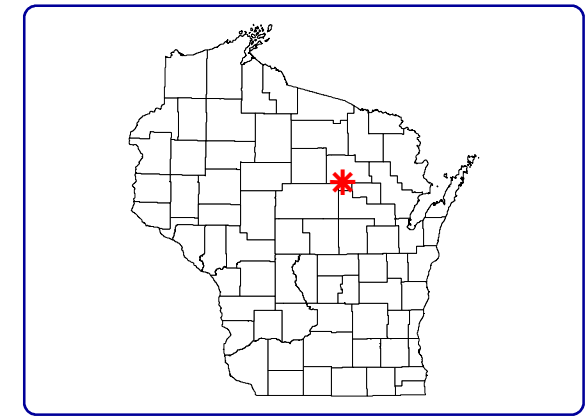


# Map 2

## Antigo Lake



Langlade County, Wisconsin

### Watershed and Land Cover Types











Project Location in Wisconsin

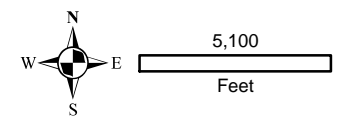
#### Legend

-  Watershed Boundary
-  Antigo Lakes Project Area

#### Land Cover Types

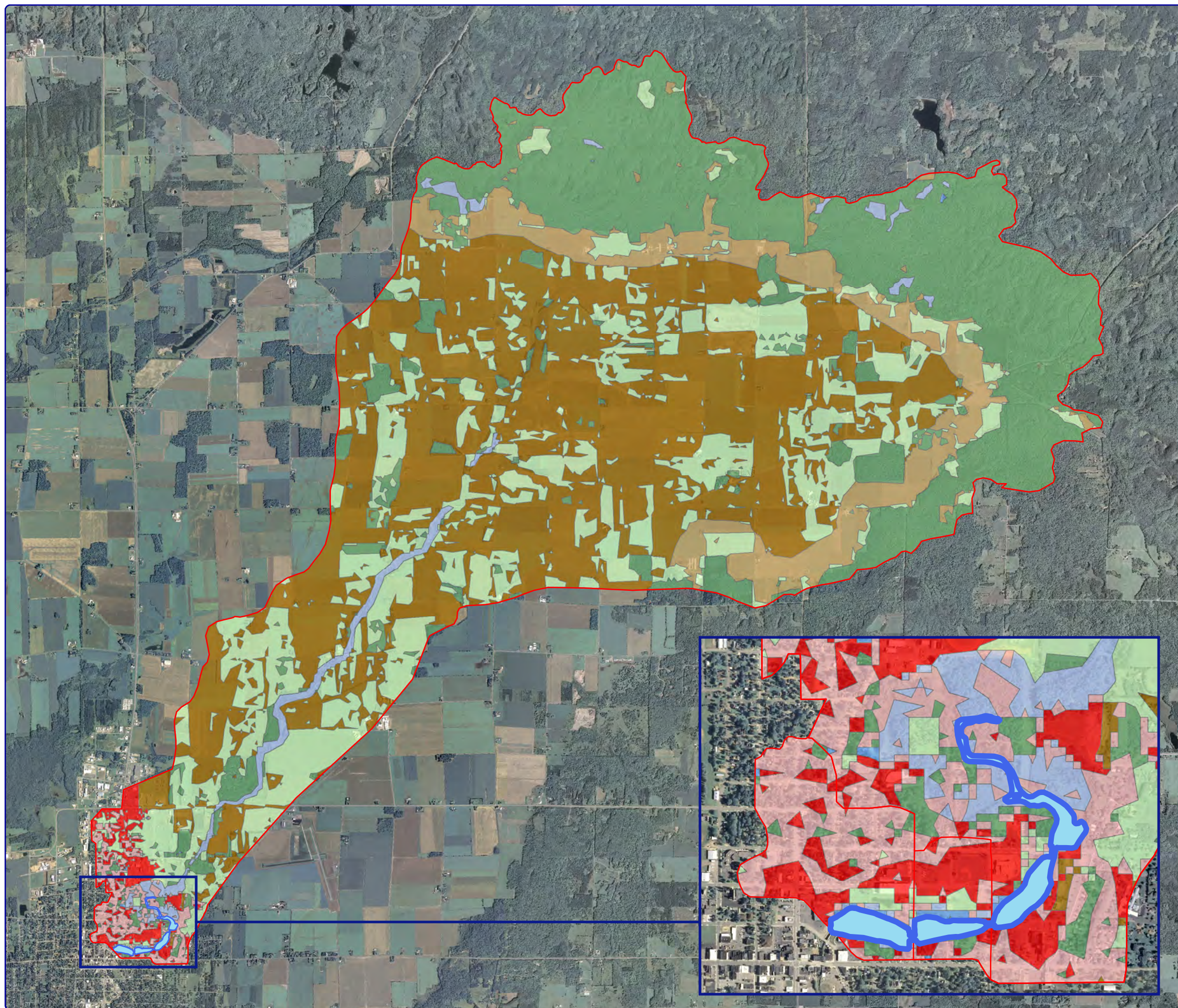
-  Forest
-  Pasture/Grass
-  Wetland
-  Open Water
-  Mixed Agriculture
-  Row Crops
-  Urban - Low Density
-  Urban - High Density

Sources:  
 Watershed: AECOM  
 Land Cover: WISCLAND  
 Hydro: WDNR  
 Orthophotography: NAIP, 2010  
 Map Date: July 8, 2011  
 File Name: Map2\_Antigo\_Watershed.mxd

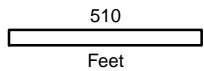
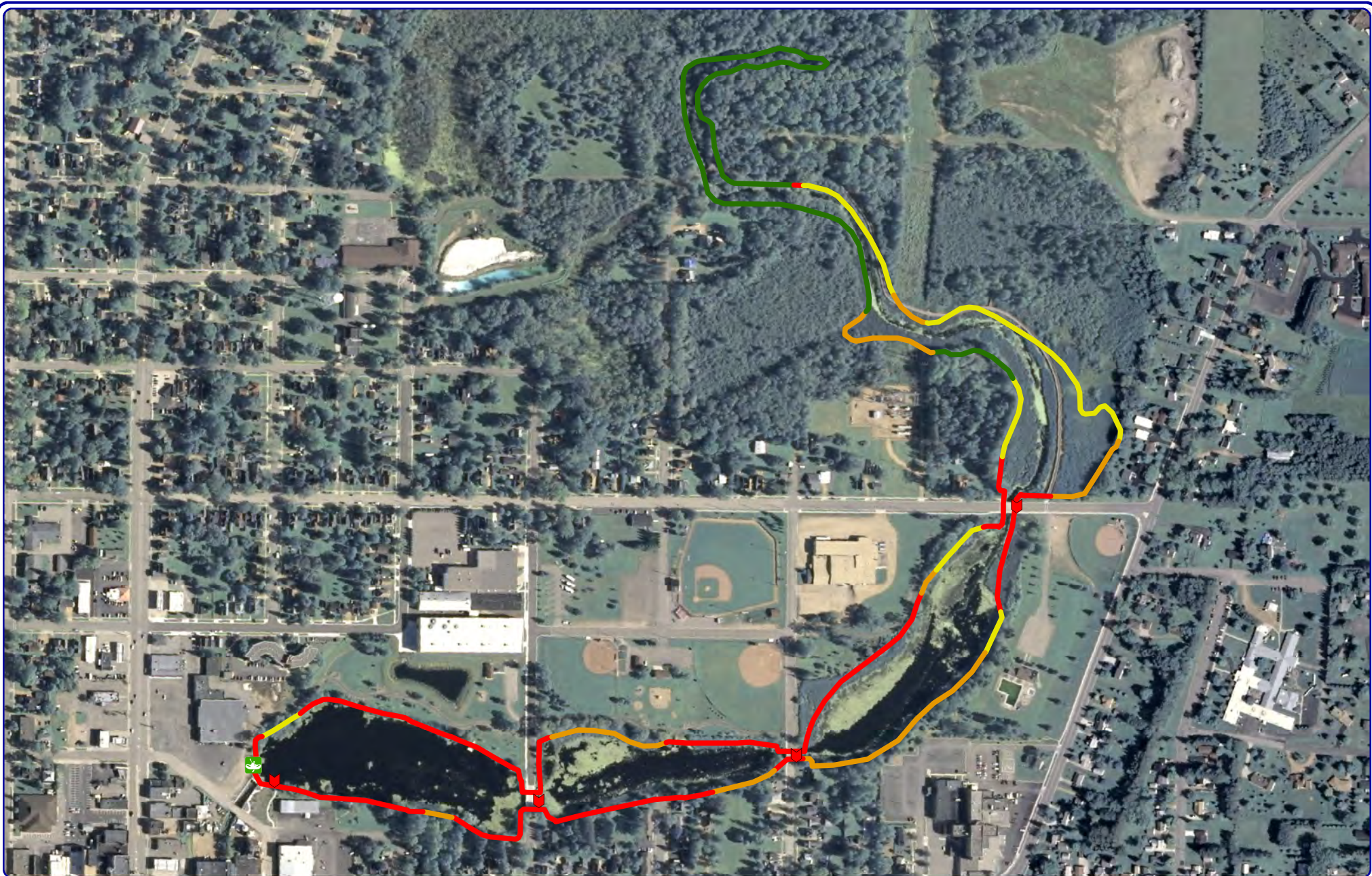


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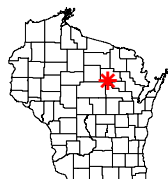






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Sources:  
 Hydro: WDNR  
 Orthophotography: NAIP, 2010  
 Shoreline Assessment: Onterra, 2010  
 Map Date: August 2, 2011  
 Filename: Antigo\_SA\_2010.mxd



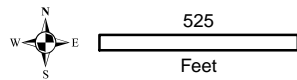
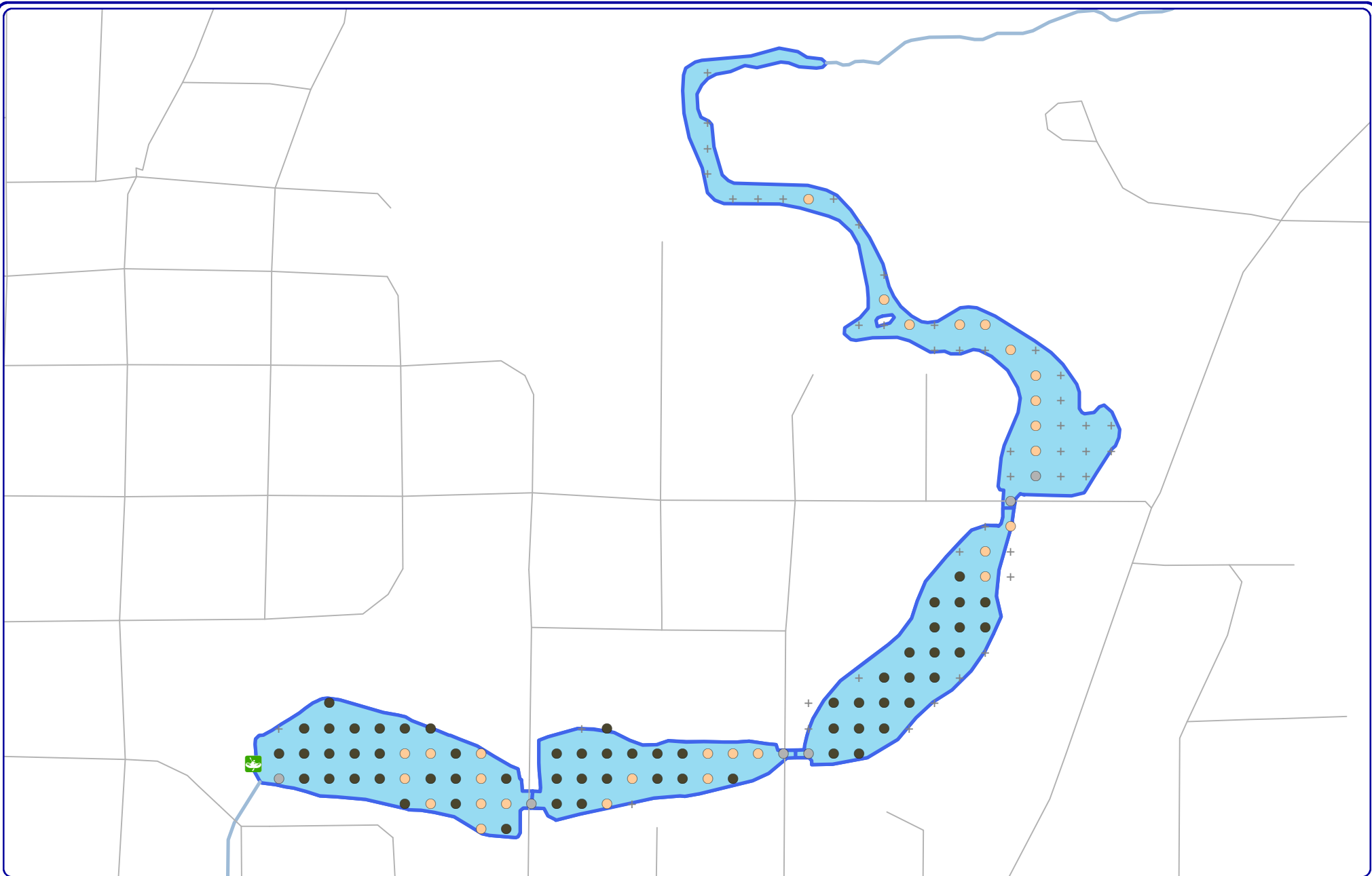
Project Location in Wisconsin

**Legend**

- Natural/Undeveloped (0.7 miles)
- Developed-Natural (None)
- Developed-Semi-Natural (0.5 miles)
- Developed-Unnatural (0.5 miles)
- Urbanized (1.1 miles)
- Dam or Bridge Location
- Public Access - Carry-In

Map 3  
 Antigo Lake  
 Langlade County, Wisconsin  
**2010 Shoreline  
 Condition**





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Sources:  
 Data: Roads and Hydro: WDNR  
 Aquatic Plant Surveys: Onterra 2010  
 Map Date: February 29, 2012  
 Filename: Map4\_Antigo\_SubstratePI.mxd



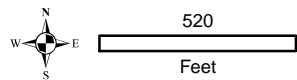
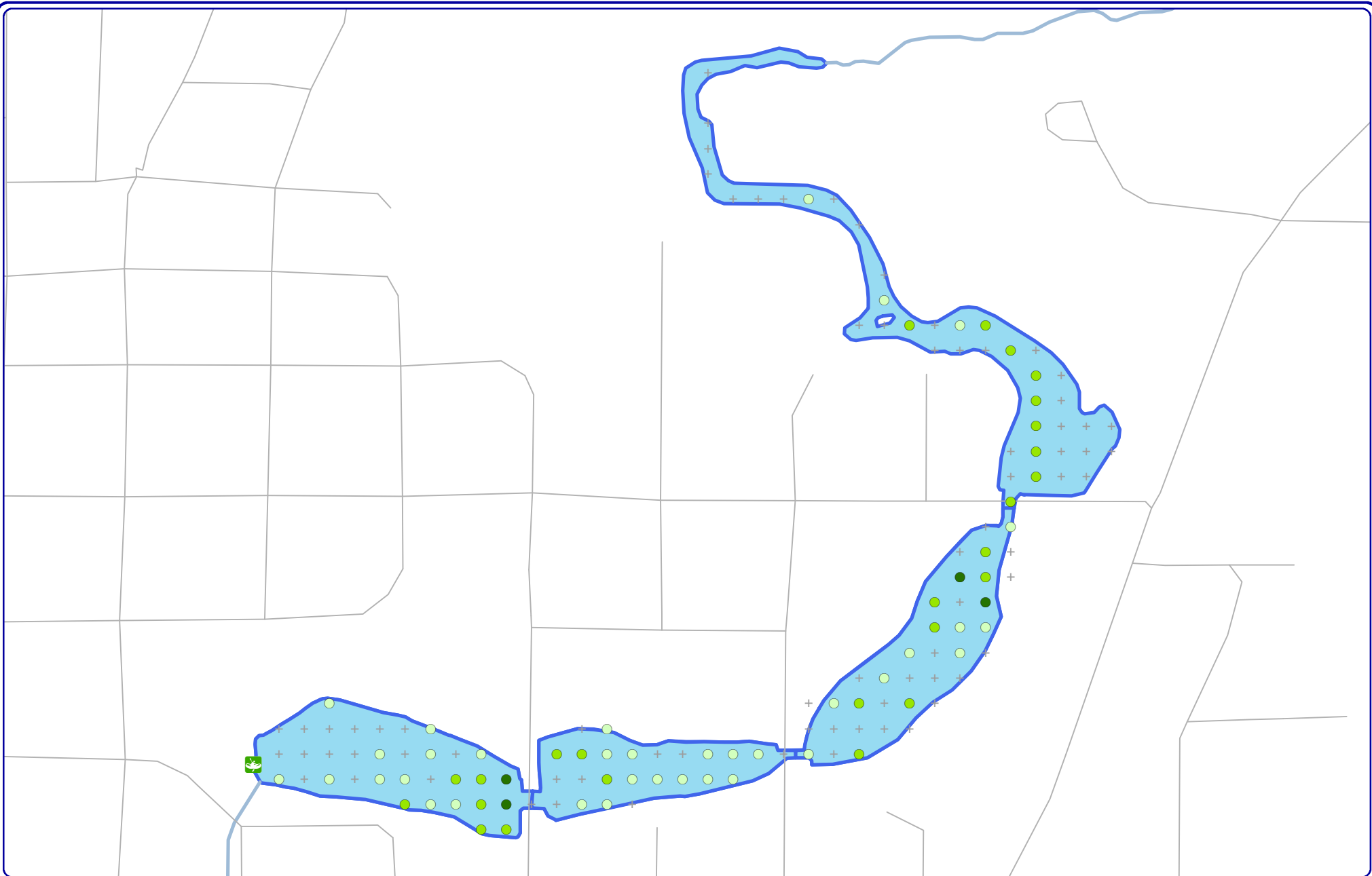
Project Location in Wisconsin

**Legend**

**Point-intercept Sampling Locations**

- + No Data (Non-navigable)
- Muck
- Sand
- Rock

**Map 4**  
**Antigo Lake**  
 Langlade County, Wisconsin  
**PI Survey:**  
**Substrate Types**



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Sources:  
 Data: Roads and Hydro: WDNR  
 Aquatic Plant Surveys: Onterra 2010  
 Map Date: February 29, 2012  
 Filename: Map5\_Antigo\_TREPL.mxd



Project Location in Wisconsin

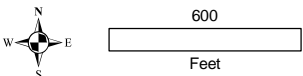
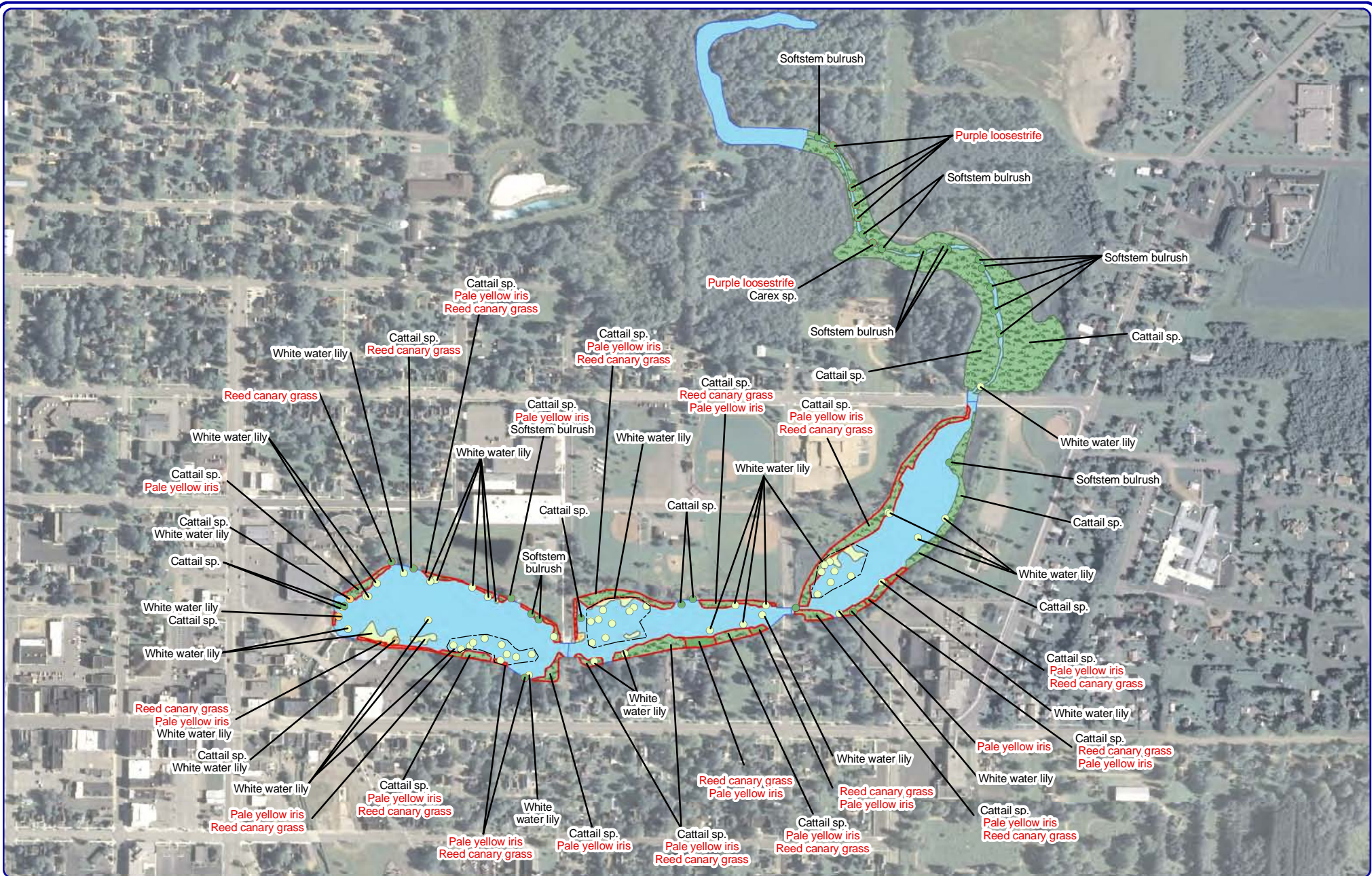
**Legend**

**Point-intercept Sampling Locations**

- + No Vegetation or Non-navigable
- Rake-fullness = 1
- Rake-fullness = 2
- Rake-fullness = 3

**Map 5**  
**Antigo Lake**  
 Langlade County, Wisconsin  
**PI Survey:**  
**Aquatic Plant Distribution**





Project Location in Wisconsin

**Small Plant Communities**

- Emergent
- Floating-leaf
- Mixed Floating-leaf & Emergent

**Exotic Plant Communities\***

- Small Exotic Plant Community
- Large Exotic Plant Community

**Large Plant Communities**

- Emergent
- Floating-leaf
- Mixed Floating-leaf & Emergent
- Cattail Dominated Community

\* Emergent exotic species displayed in red. Curly-leaf pondweed occurrence is displayed on Map 7

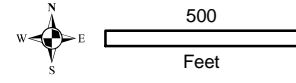
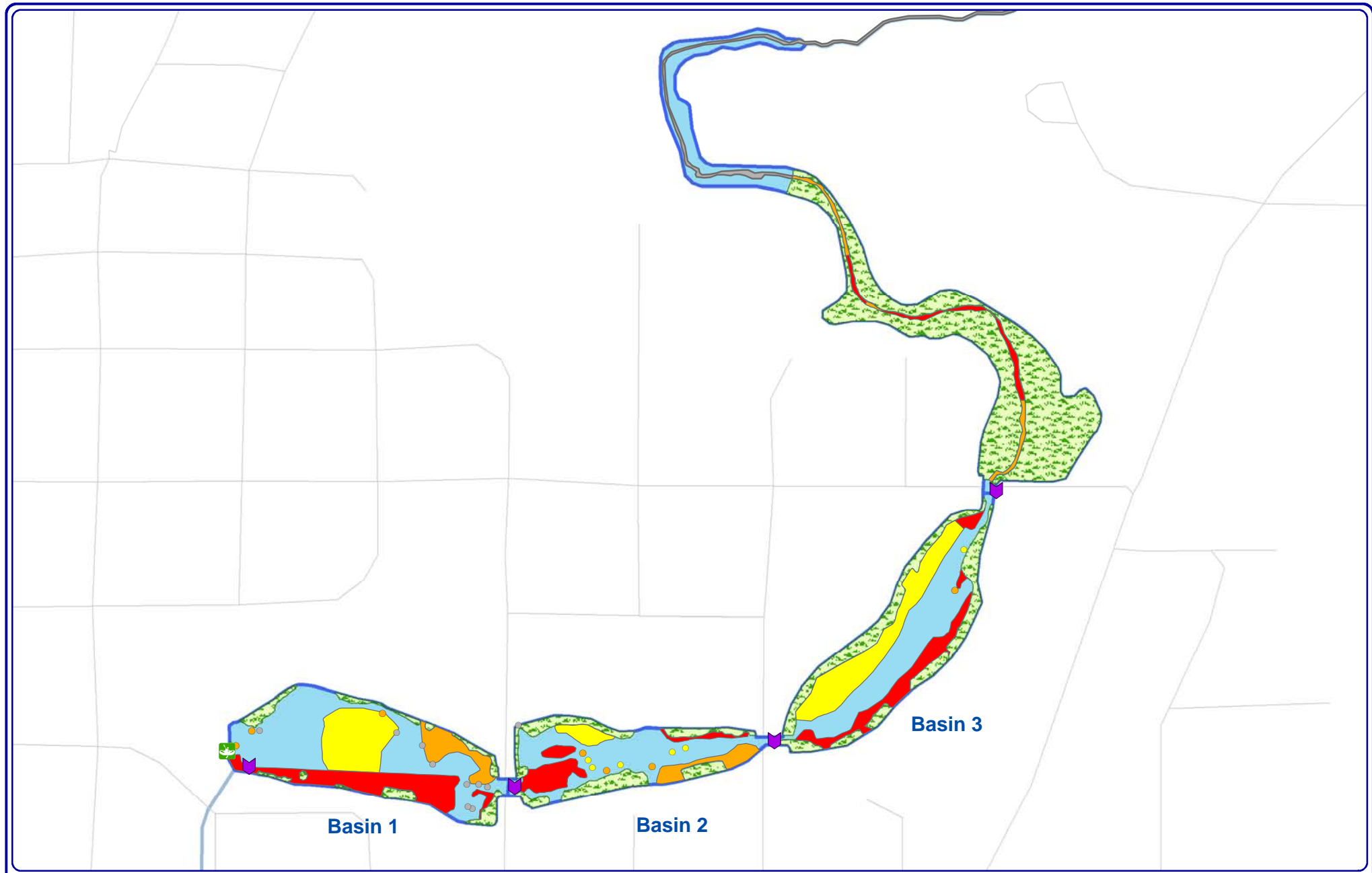
**Map 6**

**Antigo Lake**

Langlade County, Wisconsin

**Floating-leaf & Emergent Aquatic Plant Communities**





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Sources:  
 Data: Roads and Hydro: WDNR  
 Aquatic Plant Surveys: Onterra 2010  
 Map Date: February 22, 2012  
 Filename: Map7\_Antigo\_CLP\_T2012\_Cond1.mxd



- 2010 CLP Survey (June 2010)**
- Highly Scattered (None)
  - Scattered
  - Dominant
  - Highly Dominant
  - Surface Matting
  - Single or Few Plants
  - Clumps of Plants
  - Small Plant Colony
  - Cattail-Dominated Plant Community
  - Carry-in Public Access
  - Dam or Culvert Location

Map 7  
 Antigo Lake  
 Langlade County, Wisconsin  
**June 2010 Curly-leaf  
 Pondweed Survey Results**

**2012 Final CLP Treatment Areas**  
(Liquid Endothall)

**Basin 1: Calculated Basin-wide Concentration 1.02 ppm ai**

Site	Proposed Acres	Final Acres	Average Depth (feet)	Volume (acre-feet)	Treatment Area Dose (ppm a.i.)
A-12	5.7	5.7	7.0	39.9	1.50

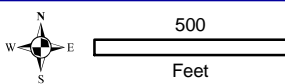
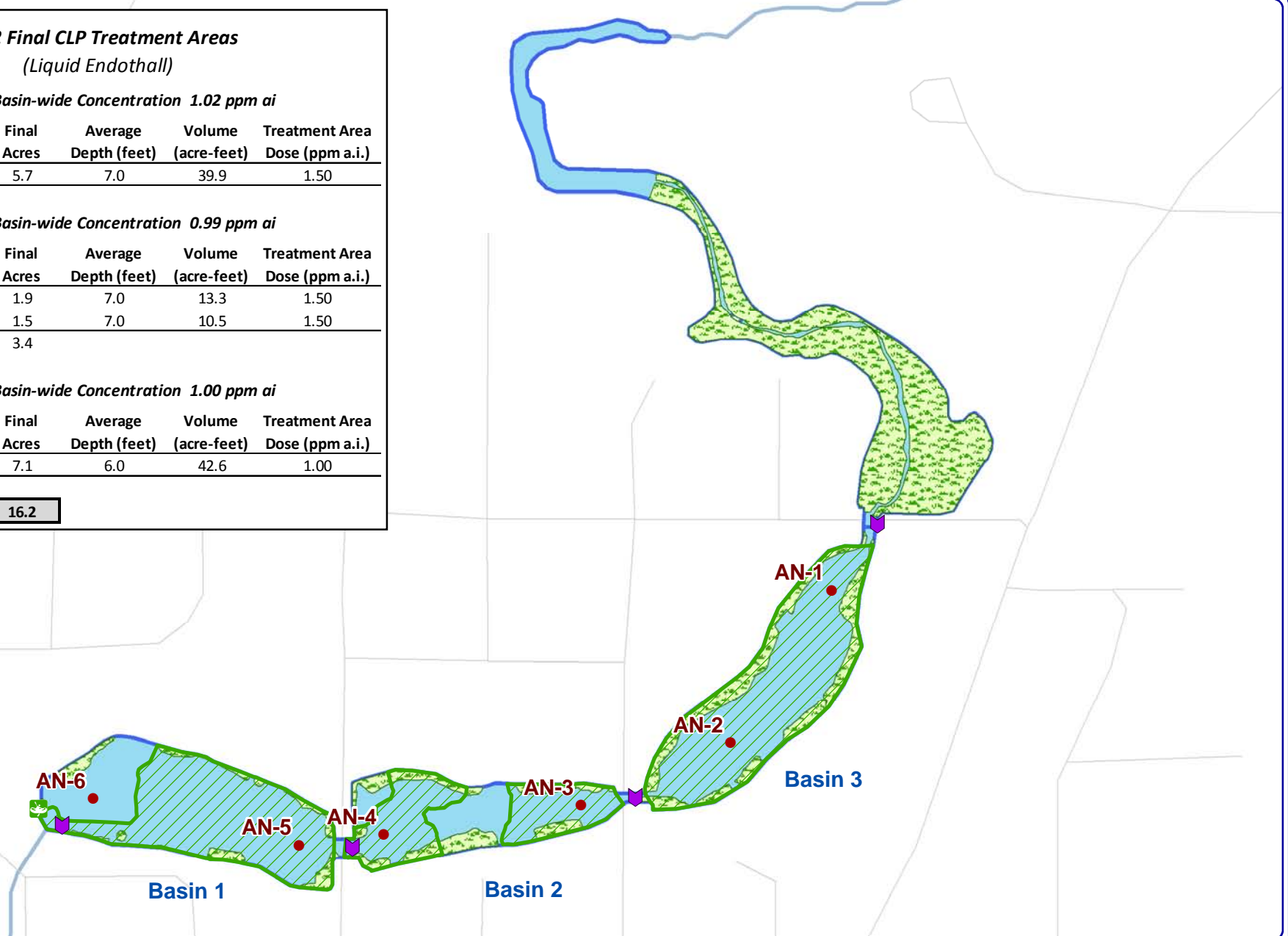
**Basin 2: Calculated Basin-wide Concentration 0.99 ppm ai**

Site	Proposed Acres	Final Acres	Average Depth (feet)	Volume (acre-feet)	Treatment Area Dose (ppm a.i.)
B-12	1.9	1.9	7.0	13.3	1.50
C-12	1.5	1.5	7.0	10.5	1.50
<b>Total</b>	<b>3.4</b>	<b>3.4</b>			

**Basin 3: Calculated Basin-wide Concentration 1.00 ppm ai**

Site	Proposed Acres	Final Acres	Average Depth (feet)	Volume (acre-feet)	Treatment Area Dose (ppm a.i.)
D-12	7.1	7.1	6.0	42.6	1.00

<b>Grand Total</b>	<b>16.2</b>
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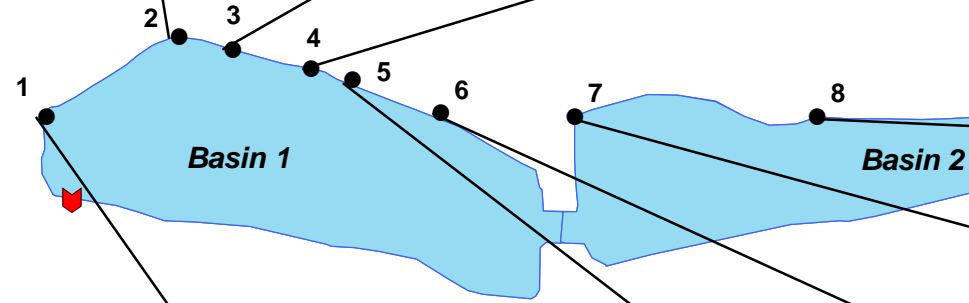
Sources:  
Data: Roads and Hydro: WDNR  
Aquatic Plant Surveys: Onterra 2010  
Map Date: May 7, 2012  
Filename: Antigo\_CLP\_T2012\_Perm1.mxd

**Legend**

- 2012 Final Treatment Area
- Cattail Dominated Plant Community
- Carry-in Public Access
- Dam or Culvert Location
- Chemical Concentration Sample Location

**Map 8**  
**Antigo Lakes**  
Langlade County, Wisconsin  
**Final 2012 CLP**  
**Treatment Areas**





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Sources:  
 Roads and Hydro: WDNR  
 Map Date: January 26, 2010  
 Filename: Map1\_Antigo\_location.mxd



Project Location in Wisconsin

**Legend**

- Cattail Management Site
- ▾ Dam

**Map 9**  
**Antigo Lake**  
 Langlade County, Wisconsin  
**Cattail**  
**Management Areas**