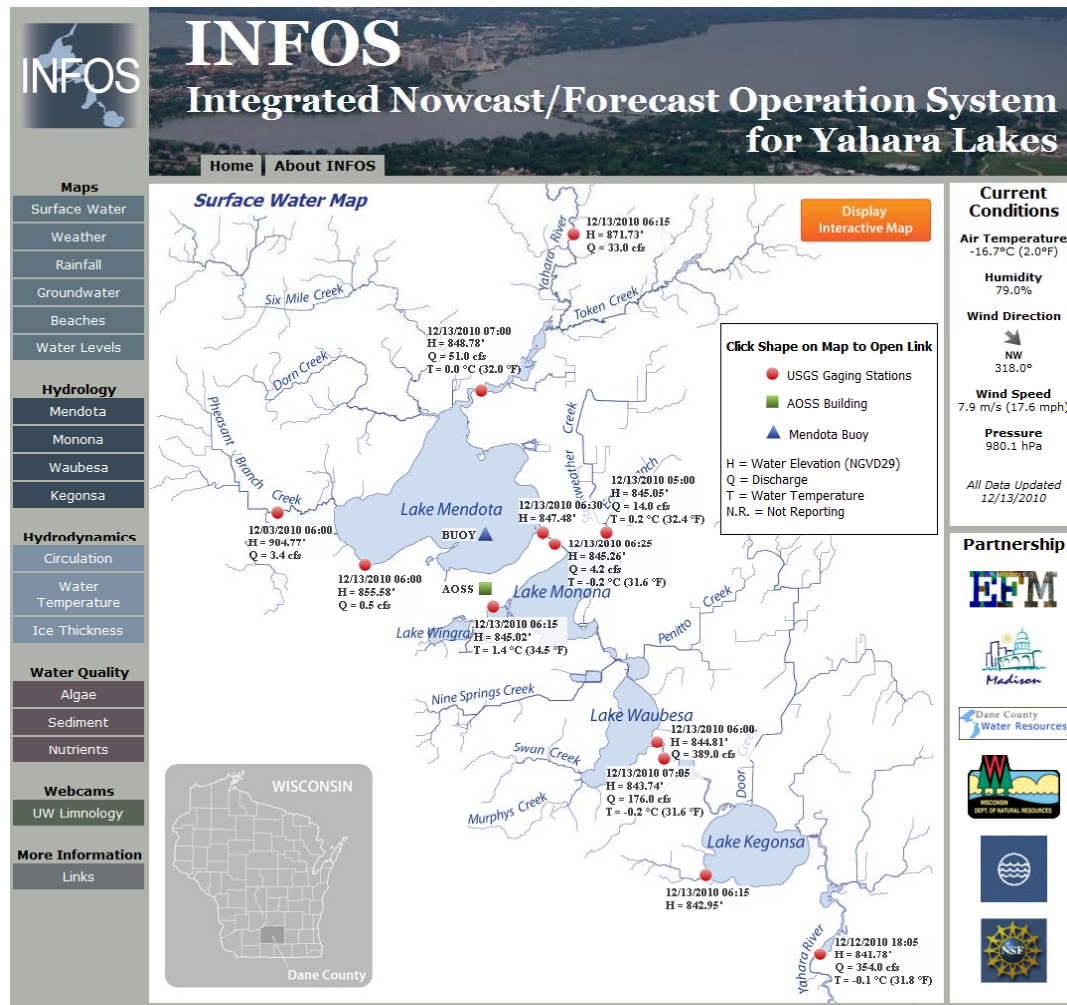


Integrated Nowcast/Forecast Operation System for Yahara Waters



About INFOS


Information



Integration



Models












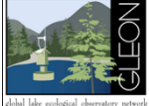

USGS Gauges

Wireless Buoys

AOSS

INFOS Gauges

Web Cam


INFOS
Integrated Nowcast/Forecast Operation System
for Yahara Lakes

Home | About INFOS

Surface Water Map

Display Interactive Map

Click Shape on Map to Open Link

- USGS Gauging Stations
- AOSS Building
- Mendota Buoy

H = Water Elevation (NGVD29)
Q = Discharge
T = Water Temperature
N.R. = Not Reporting

Current Conditions

Air Temperature: -16.7°C (2.0°F)
Humidity: 79.0%
Wind Direction: NW
Wind Speed: 7.9 m/s (17.8 mph)
Pressure: 995.1 hPa

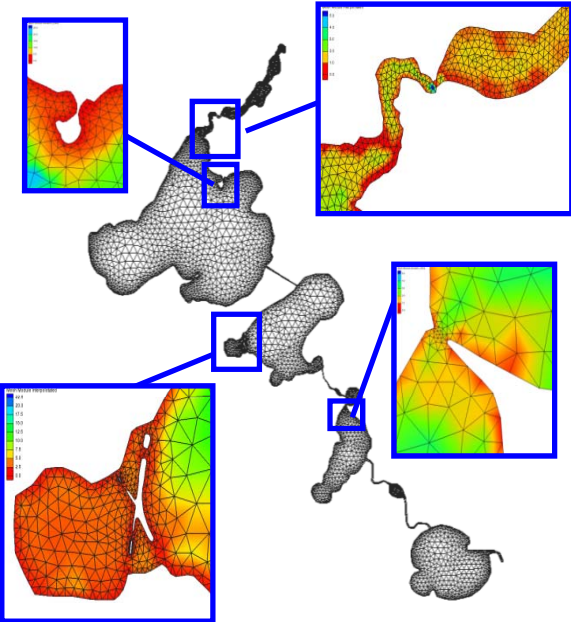
All Data Updated: 12/13/2010

Partnership

EFM
Madison
Dane County Water Resources

www.infosyahara.org

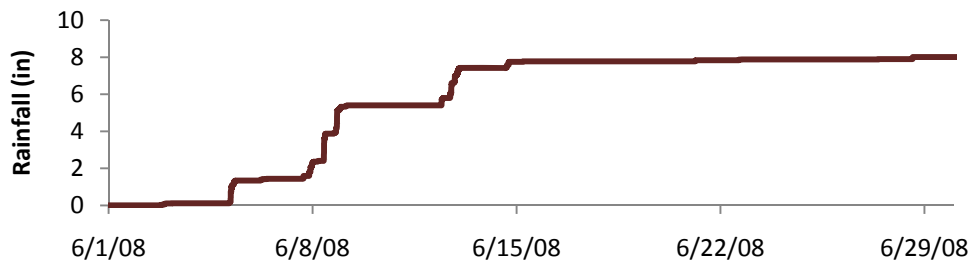
Surface Water



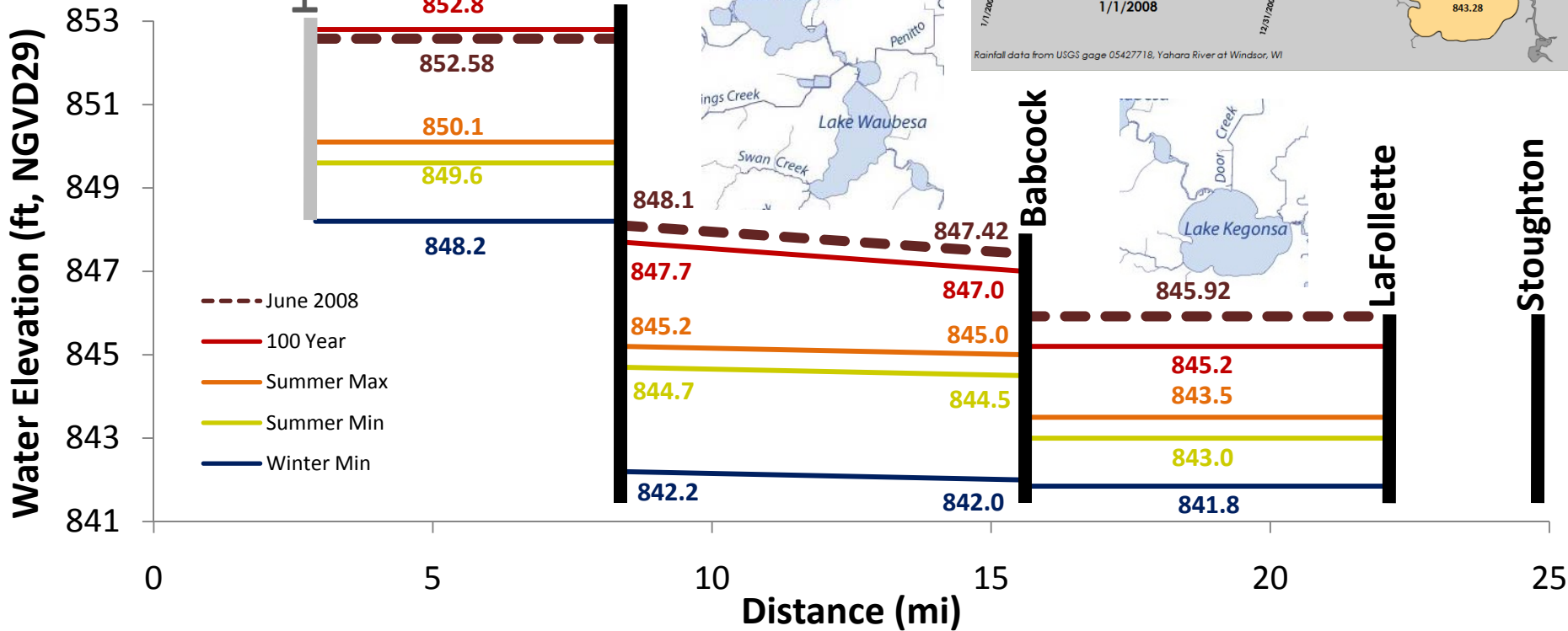
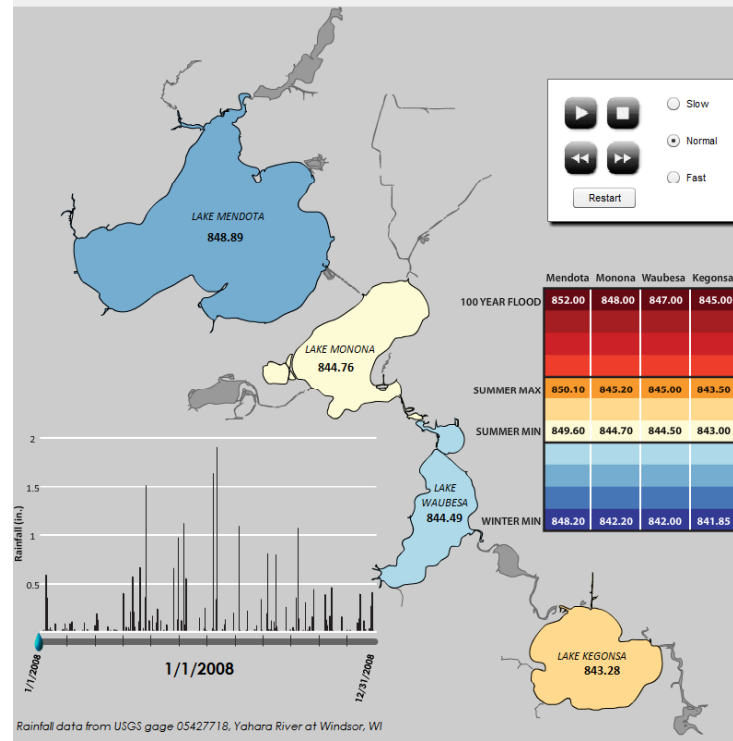
Groundwater

Yahara Water Levels

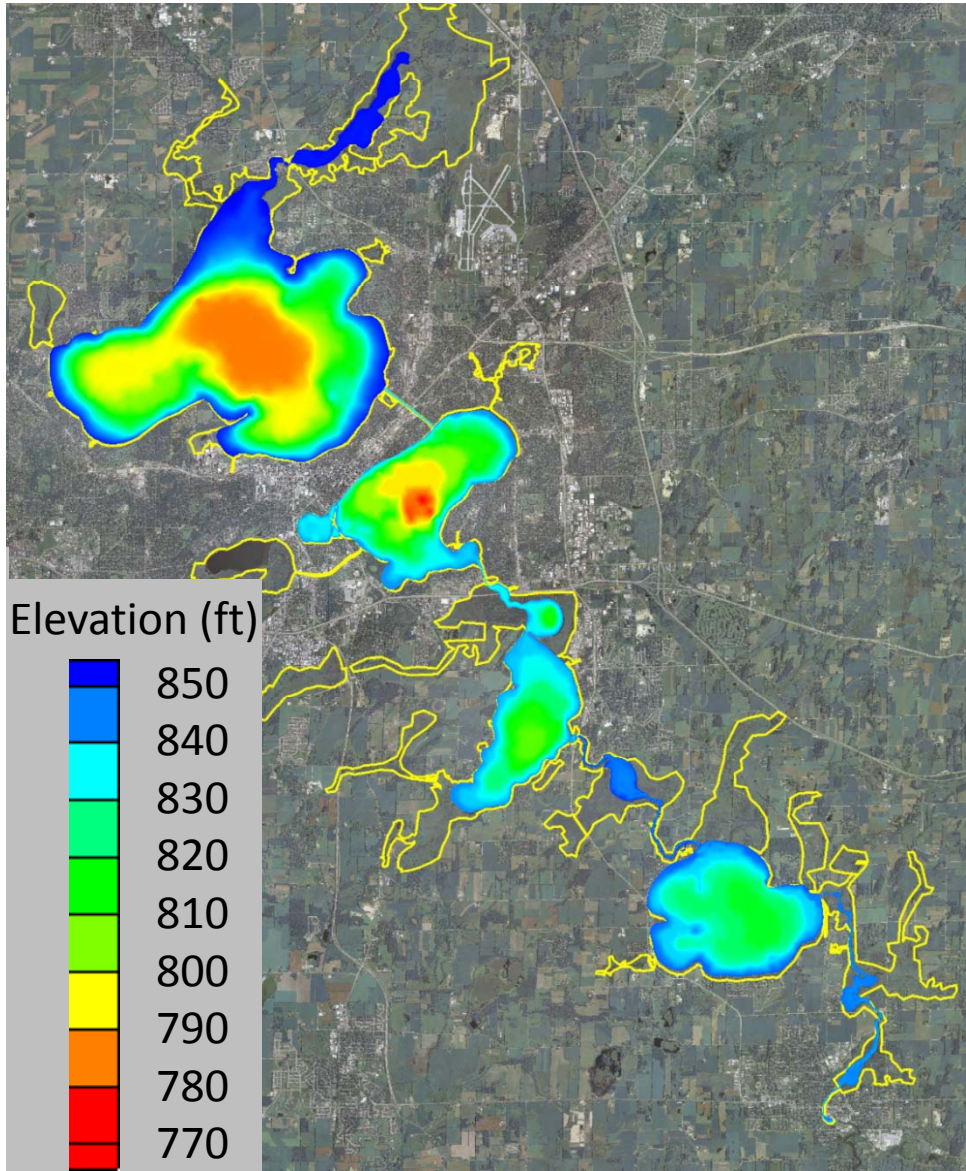
June 2008 Cumulative Rainfall



2008 Lake Level Animation



Yahara Digital Map



100 Year Flood



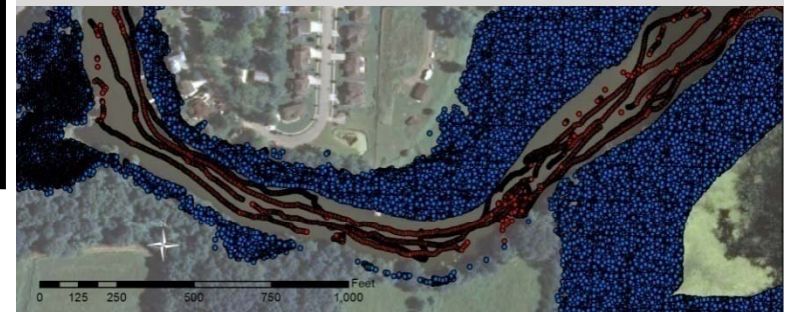
Underwater Topography



LIDAR

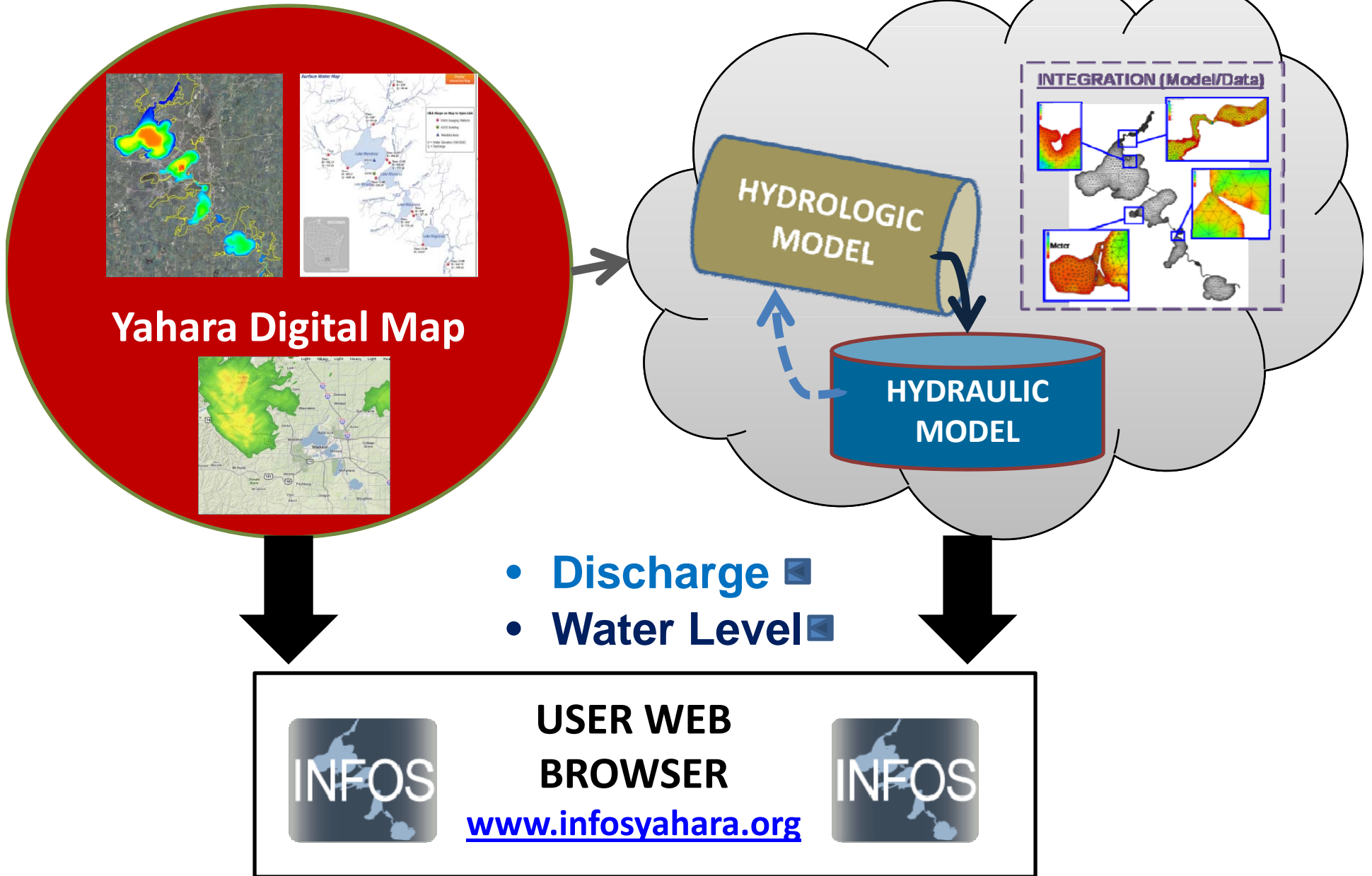


Topography Integration



Data Information

Nowcast & Forecast Models



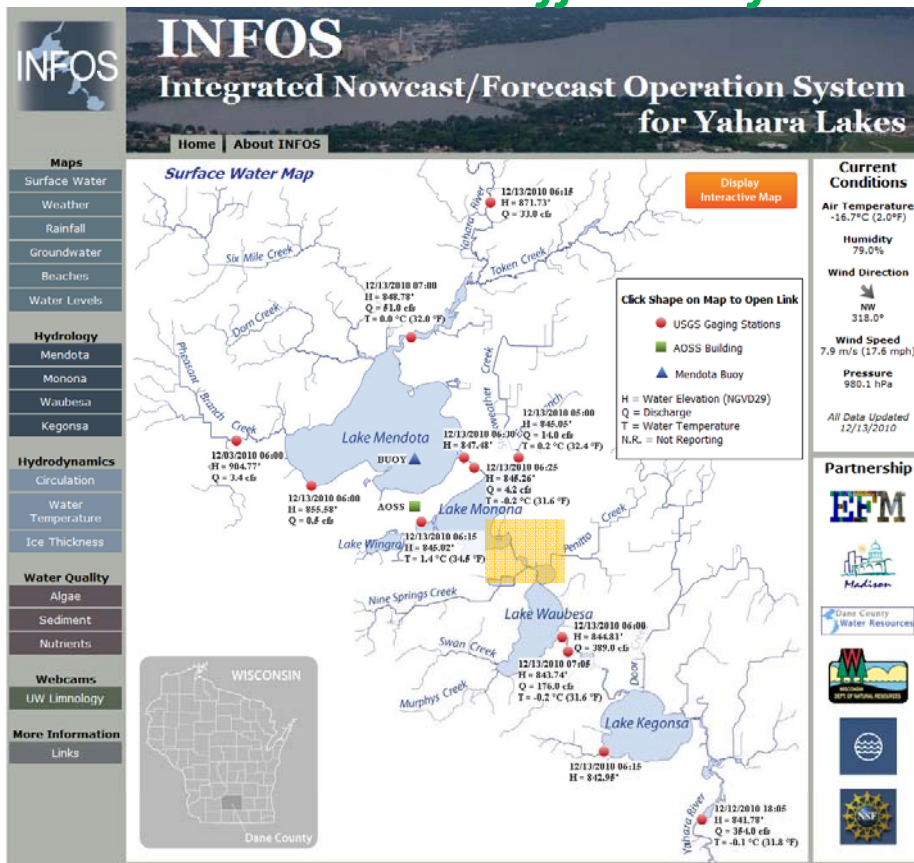
Integrated Nowcast/Forecast Operation System for Yahara Waters

CASE STUDY:

Lake Monona Outlet

OBJECTIVE:

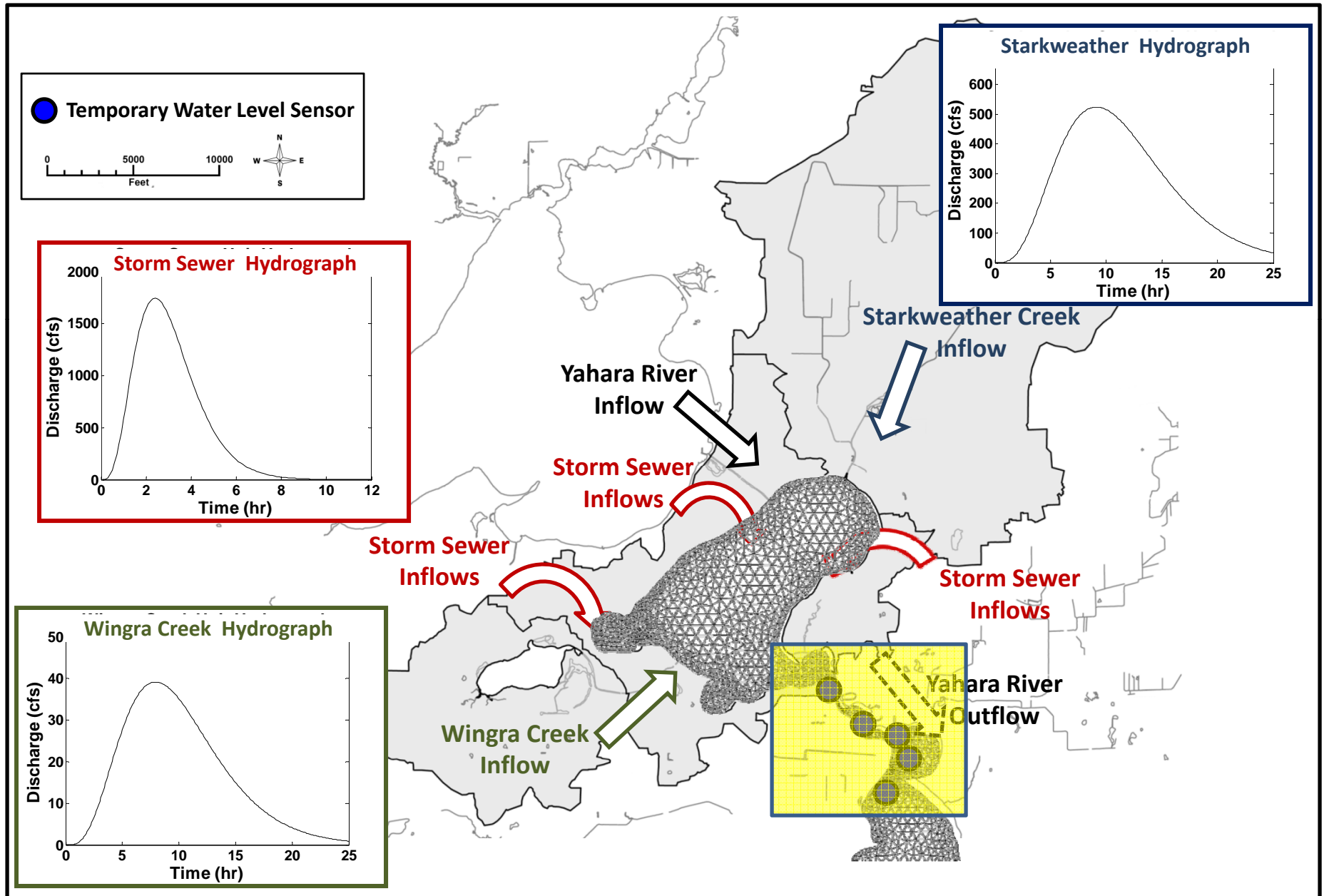
Reduce Lake Monona Water Level to achieve 0.2 foot difference from Lake Waubesa



	Summer Min	Summer Max
Lake Monona	844.7	845.2
Lake Waubesa	844.5	845
Water Level Difference	0.2	0.2



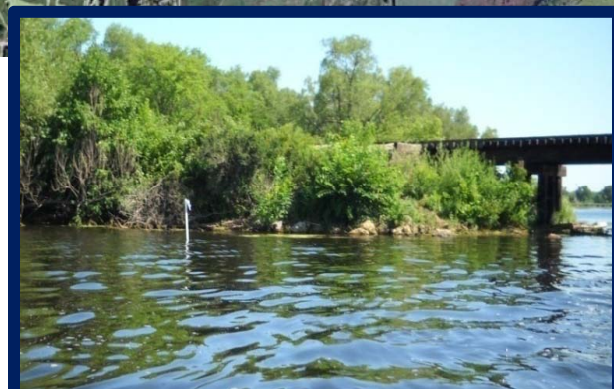
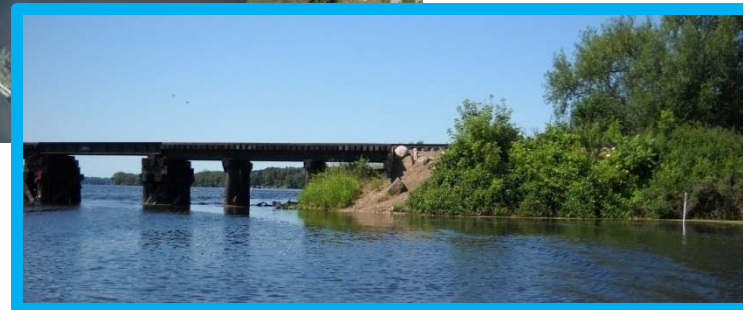
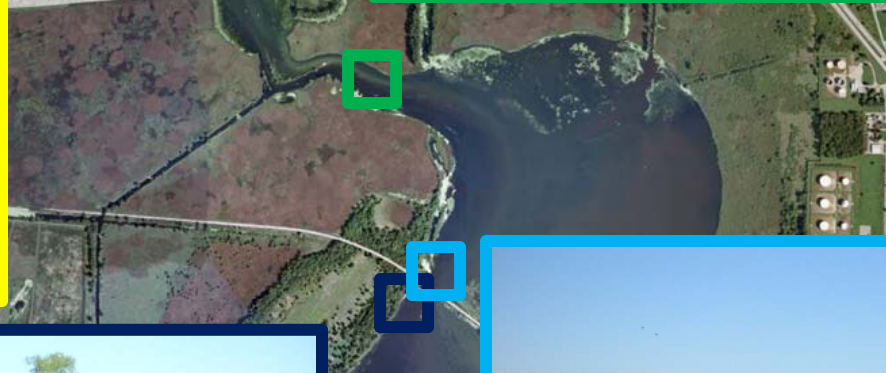
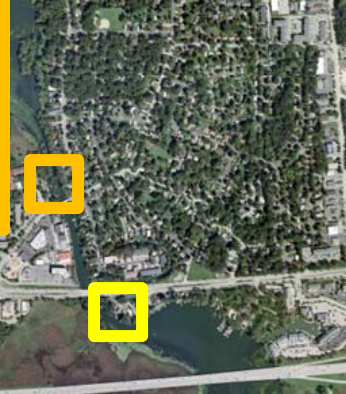
Lake Monona – Water Budget



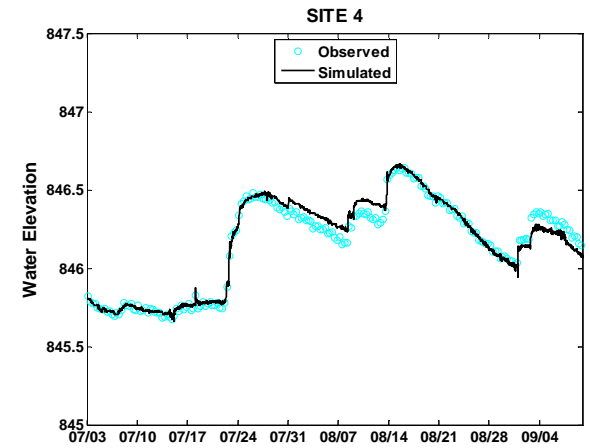
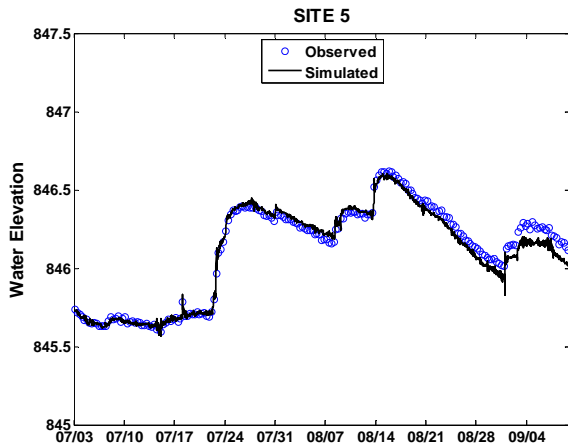
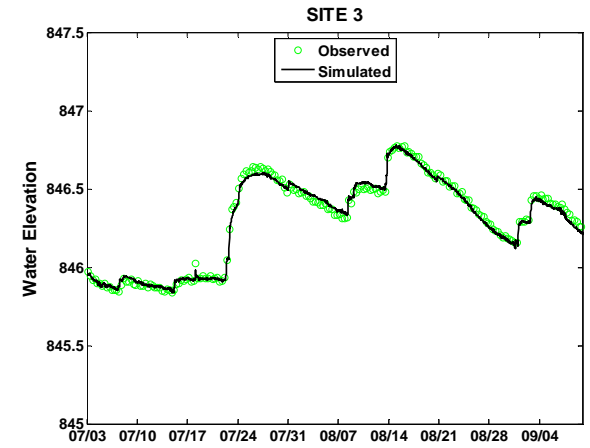
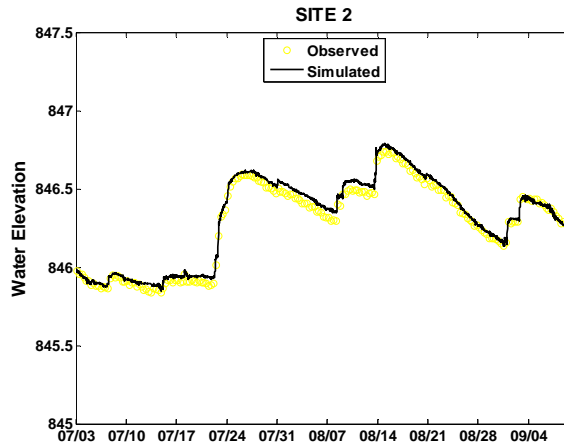
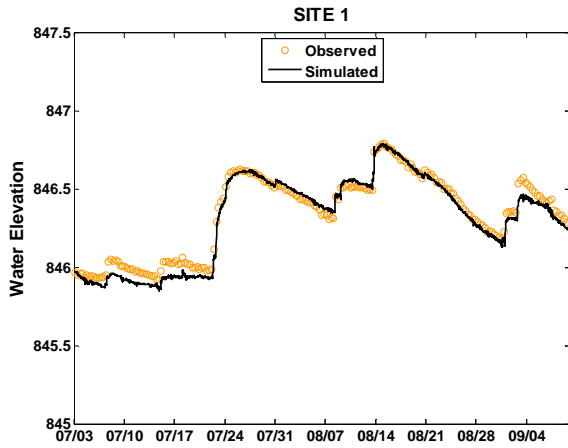


Monona Bay

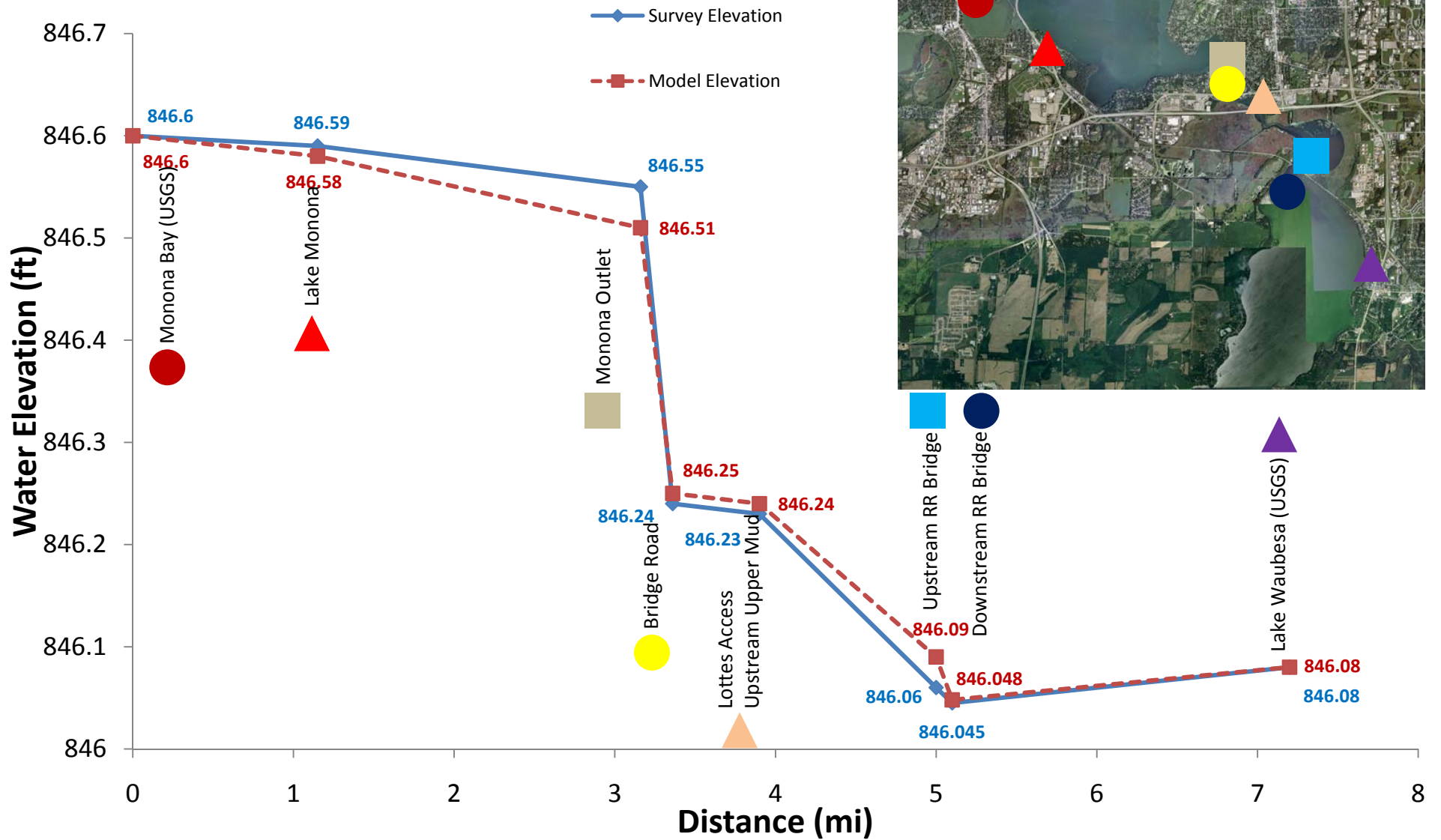
Water Level Measurements (2010)



Model Validation

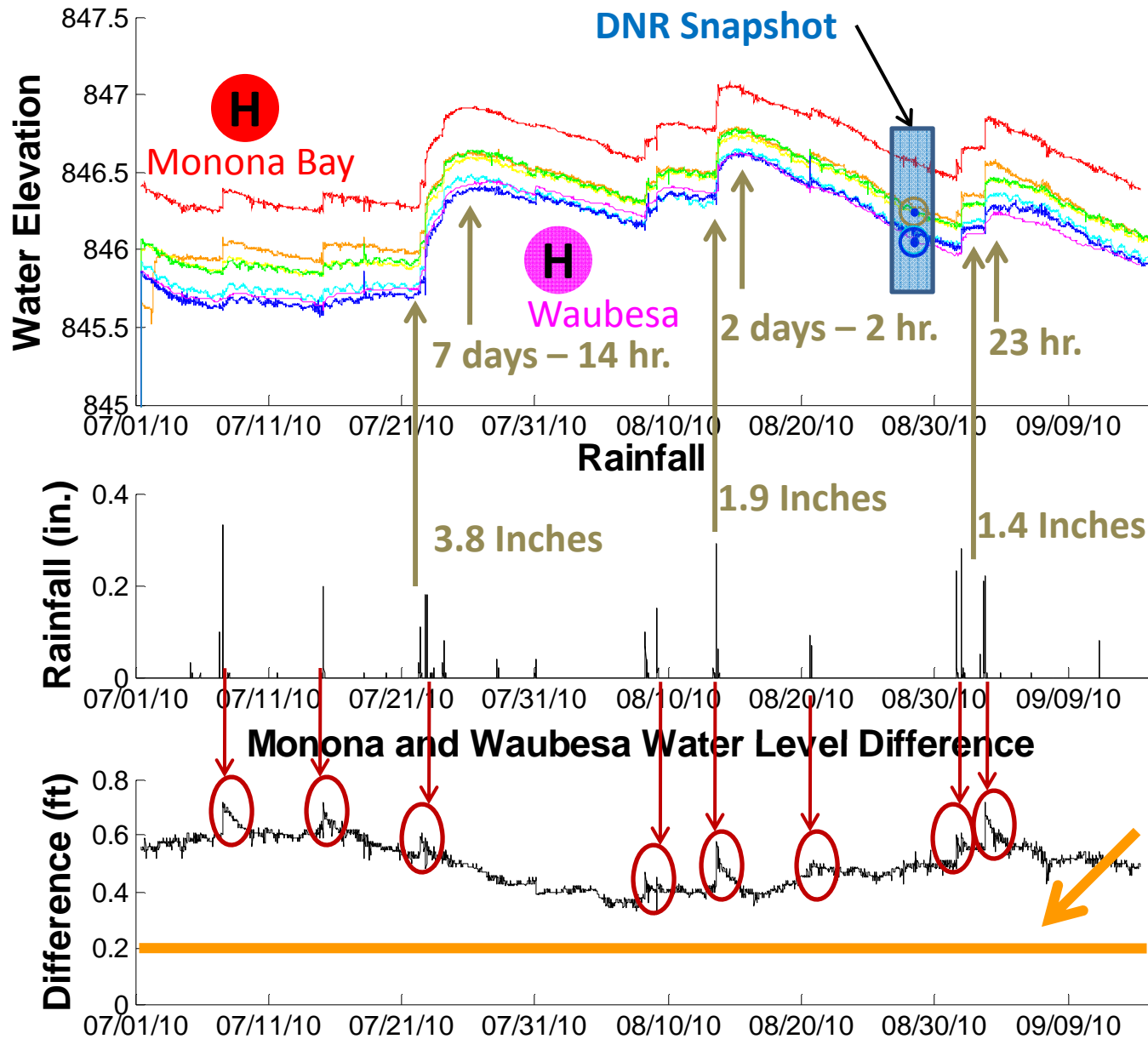


Water Surface Profile at Monona Outlet (8/28/10)



Water level Time Series Sensitivity

Monona Outlet Observed Water Elevations

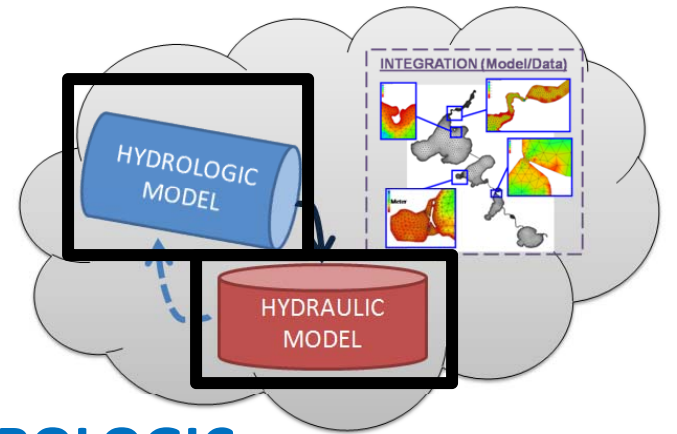
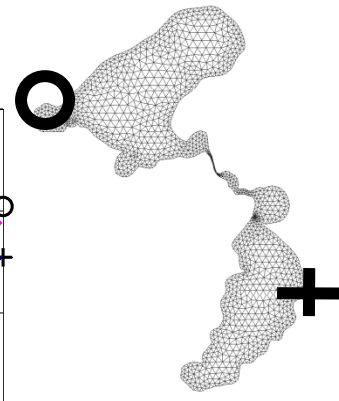
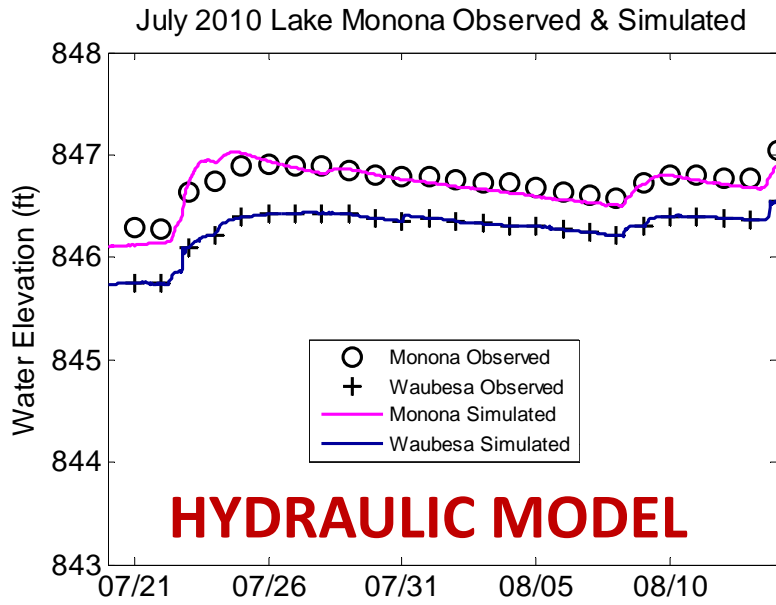


- Lake Monona
- Sensor 1
- Sensor 2
- Sensor 3
- Sensor 4
- Sensor 5
- Lake Waubesa

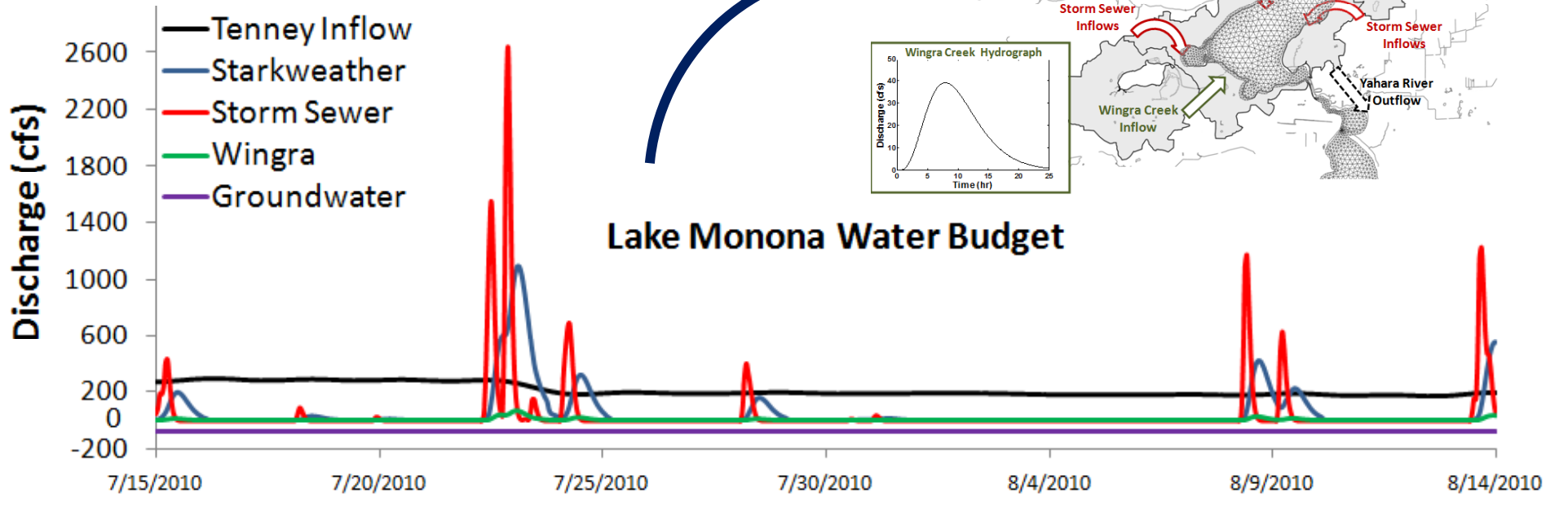
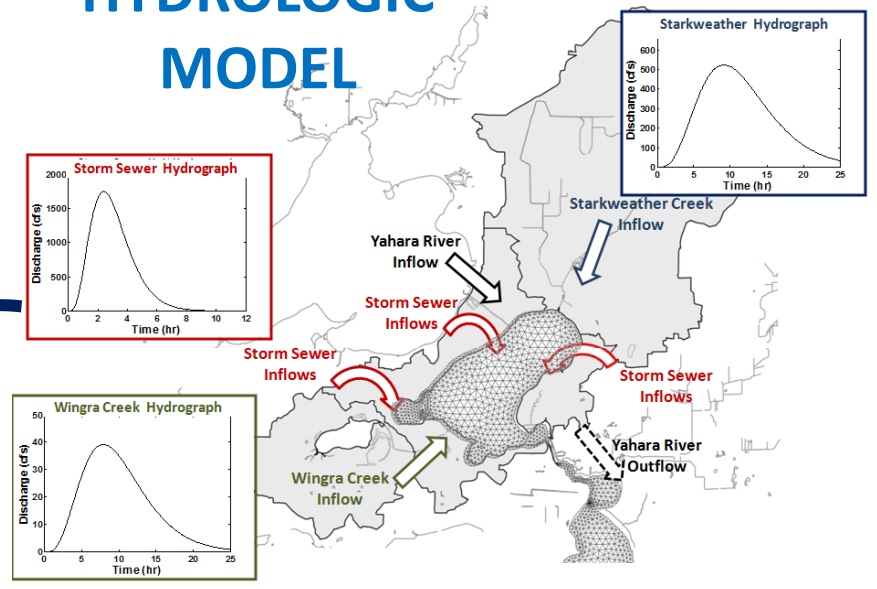
	Summer Max	Summer Min
Monona	845.2	844.7
Waubesa	845.0	844.5
Difference	0.2	0.2

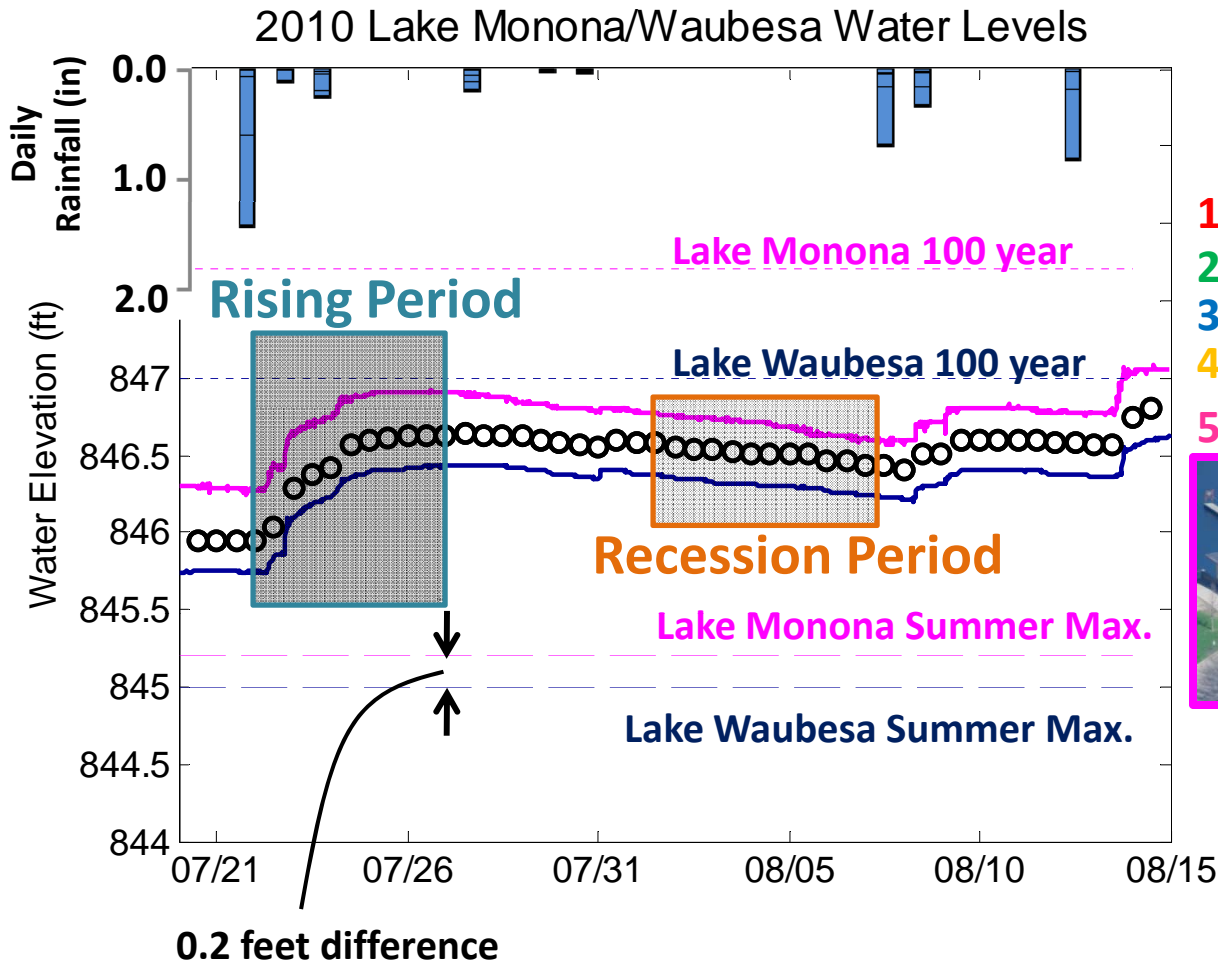


INFOS MODEL INTEGRATION



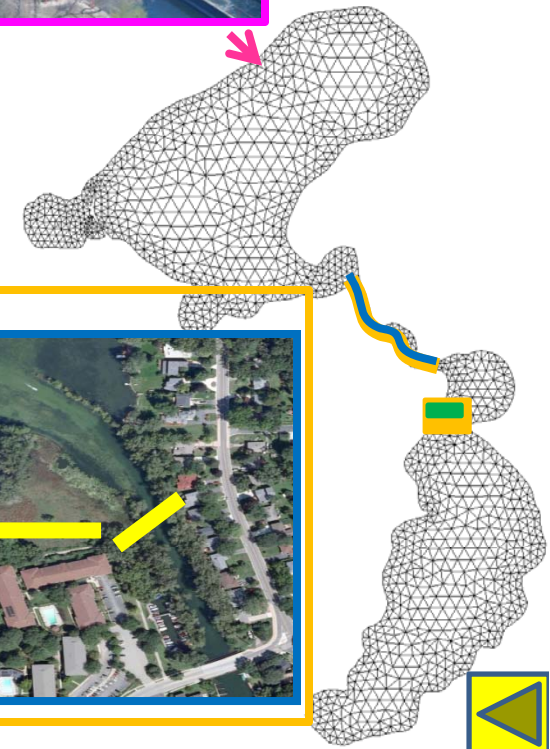
HYDROLOGIC MODEL



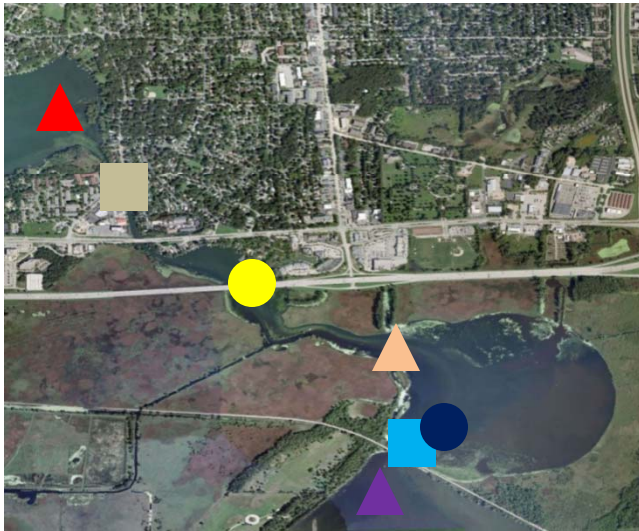


Management Scenarios

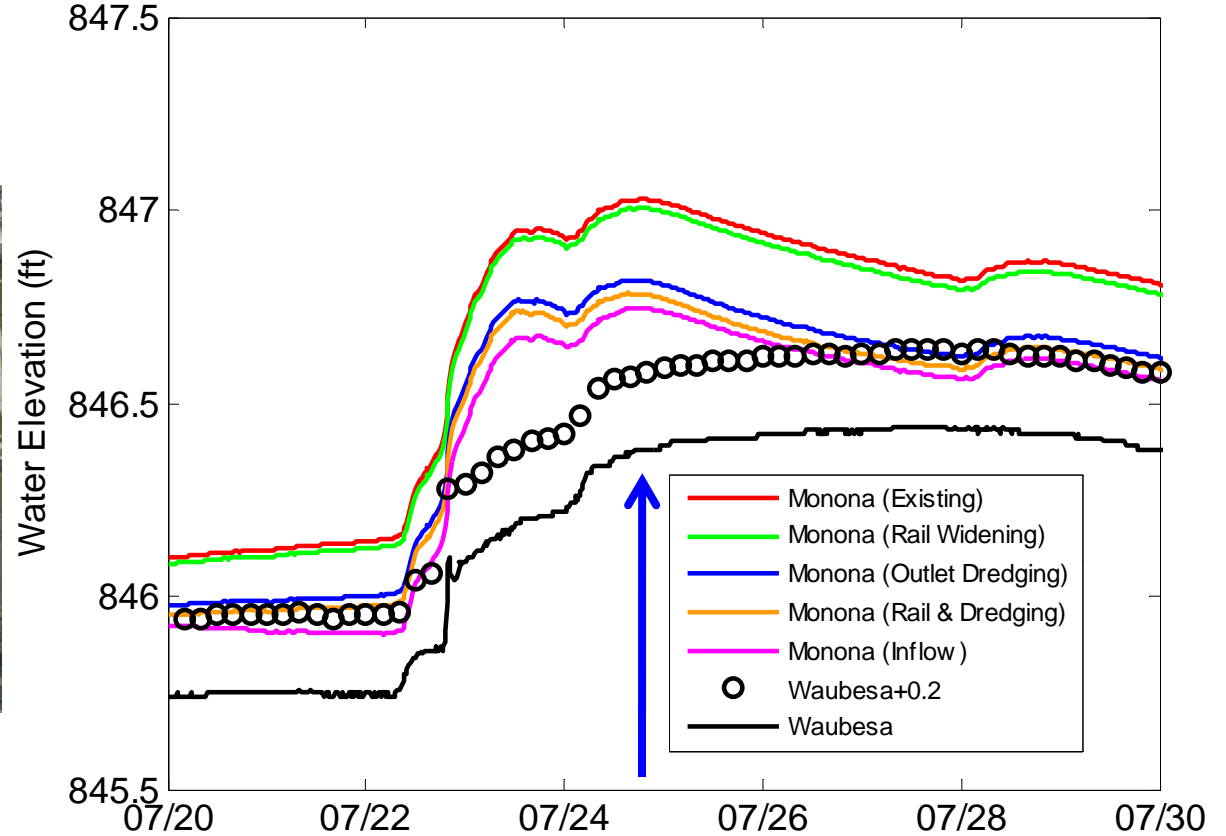
1. Current Conditions (Existing)
2. Rail Widening
3. Outlet Dredging
4. Rail Widening & Dredging
5. Reduce Monona Inflow (0.5x)



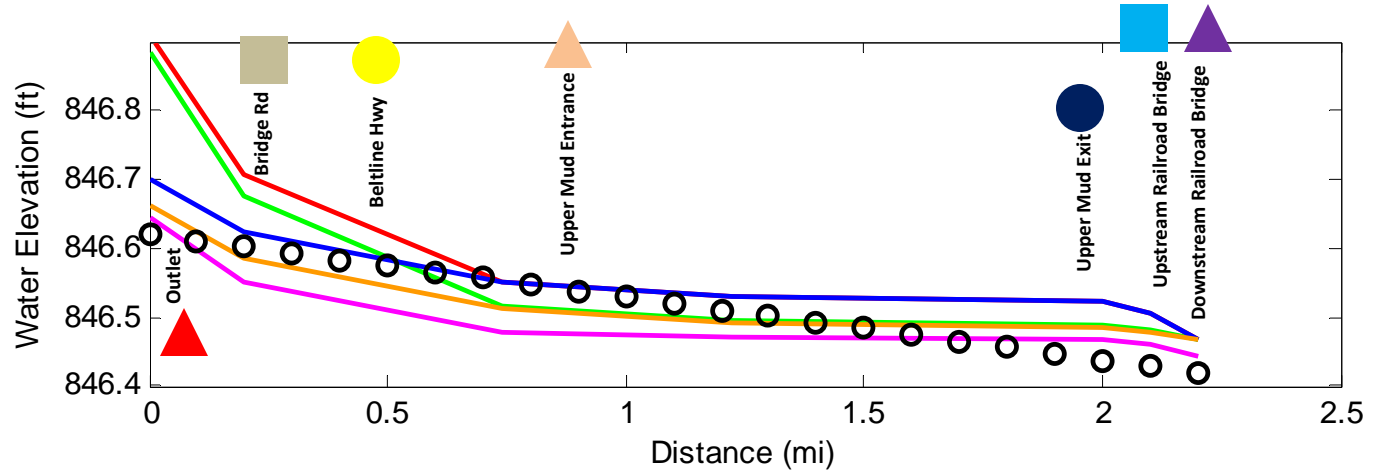
Rising Period Hydrograph



Time Series of Water Level Scenarios



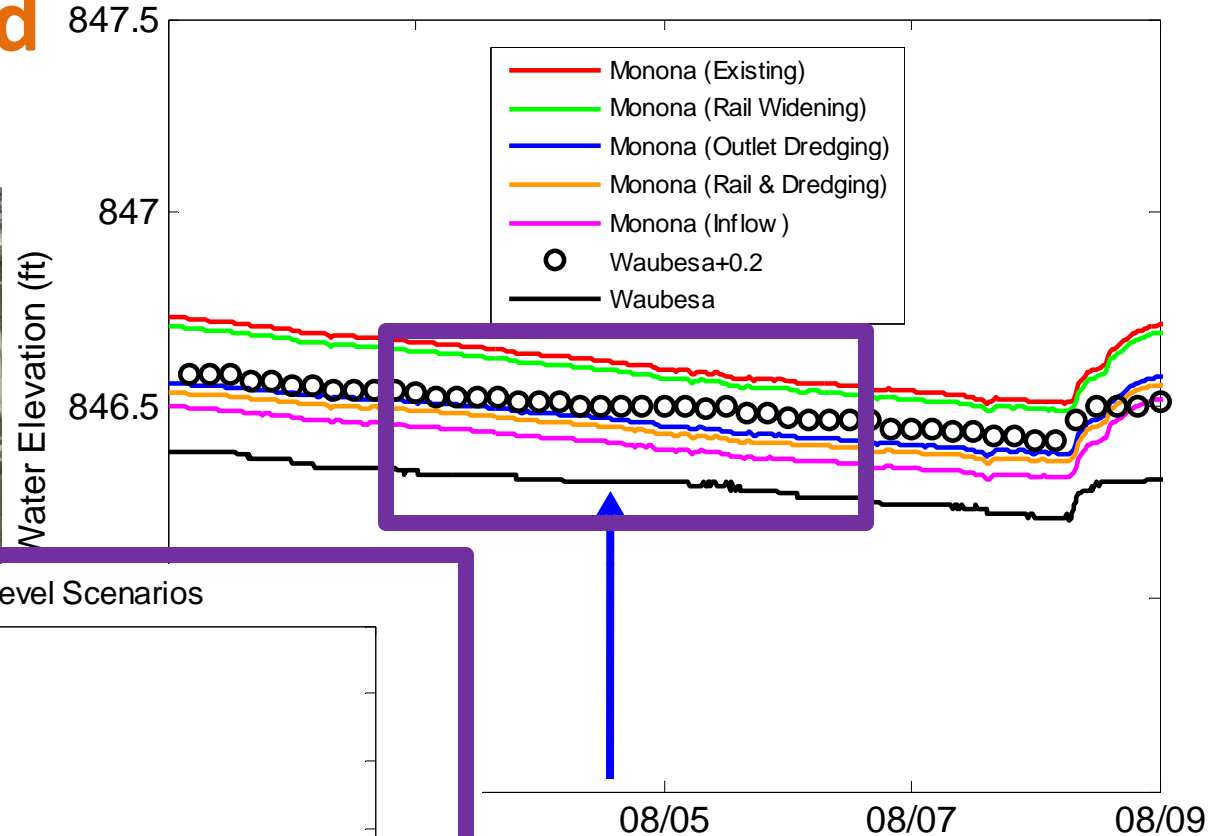
Water Profile



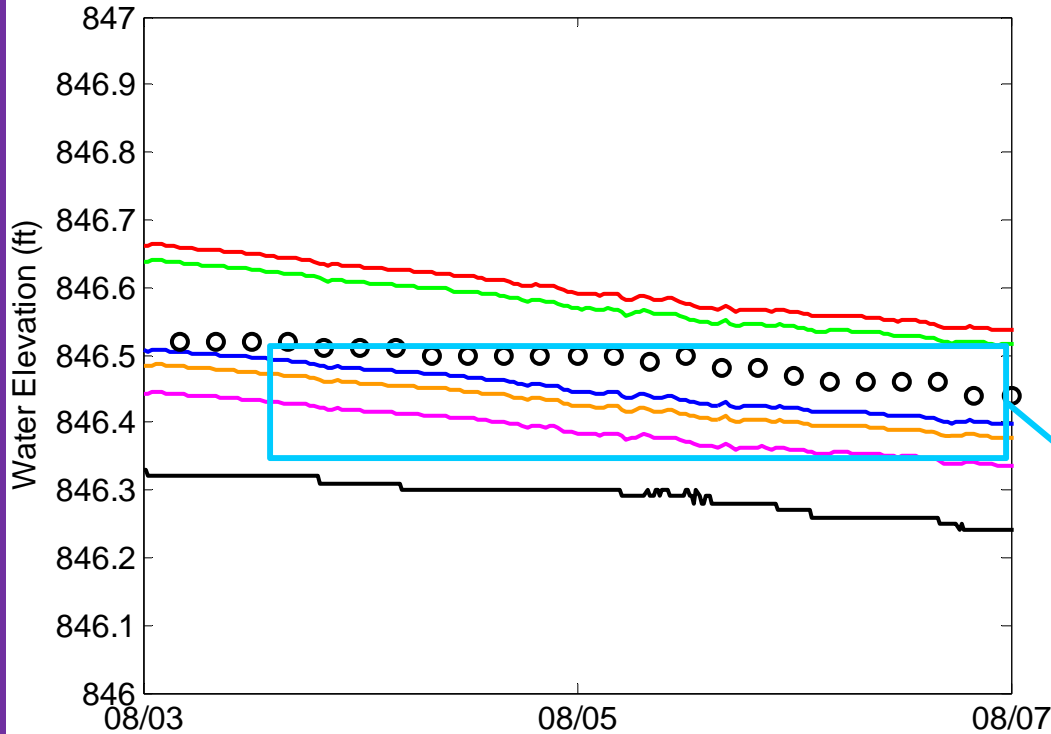
Recession Period Hydrograph



Time Series of Water Level Scenarios

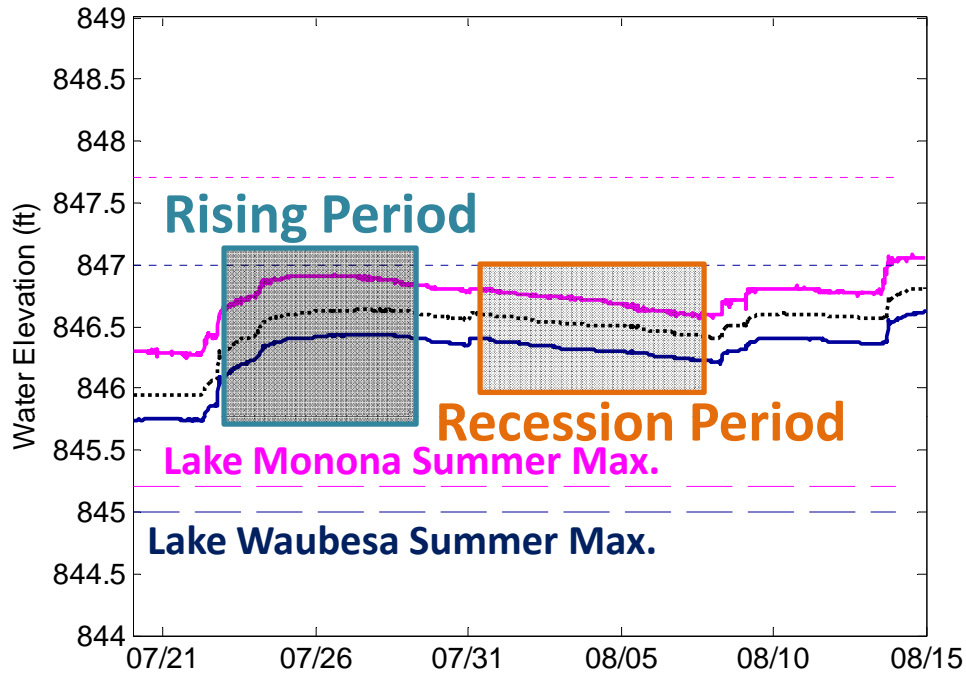


Time Series of Water Level Scenarios

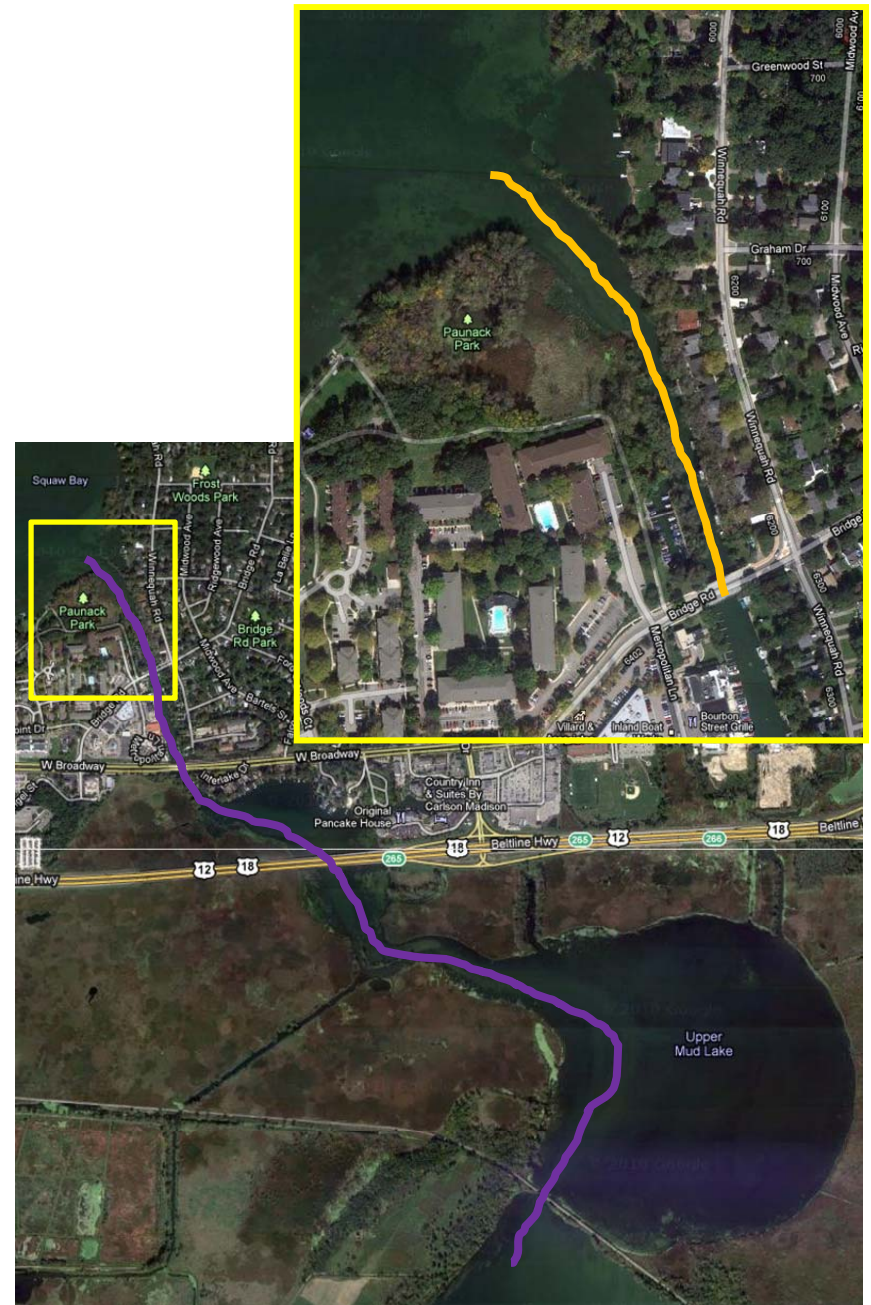
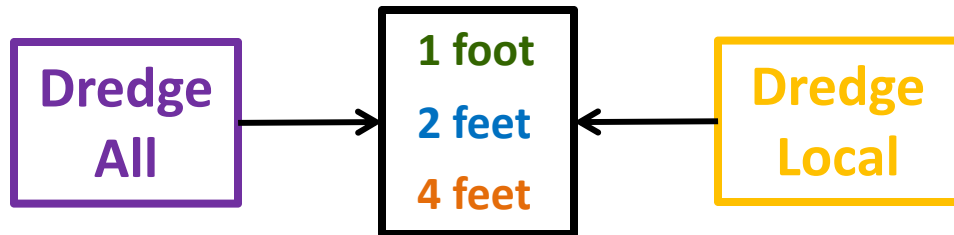


1. Current Conditions (Existing)
2. Rail Widening
3. Outlet Dredging
4. Rail Widening & Dredging
5. Reduce Monona Inflow (0.5x)

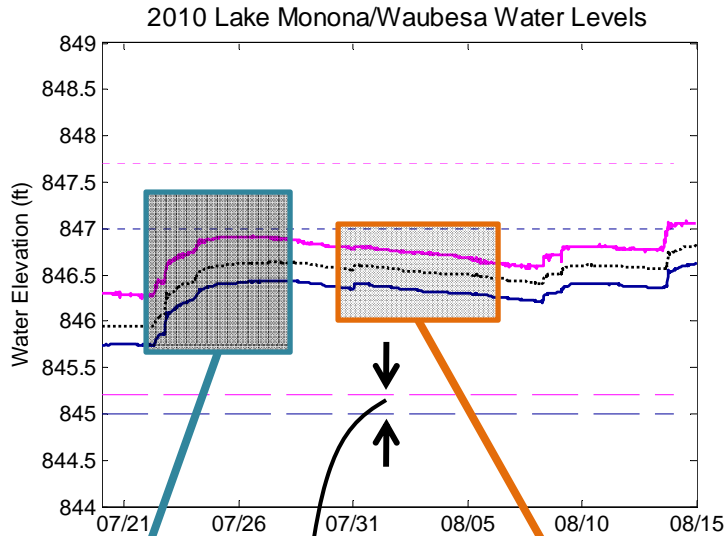
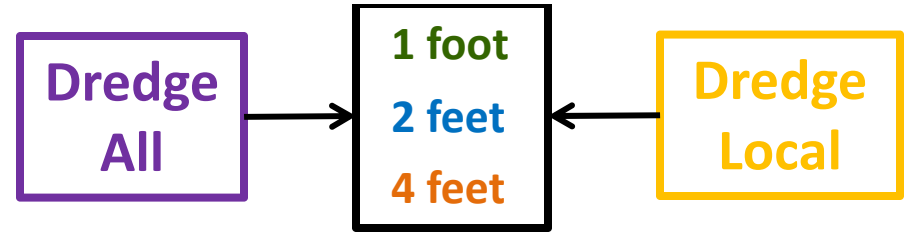
2010 Lake Monona/Waubesa Water Levels



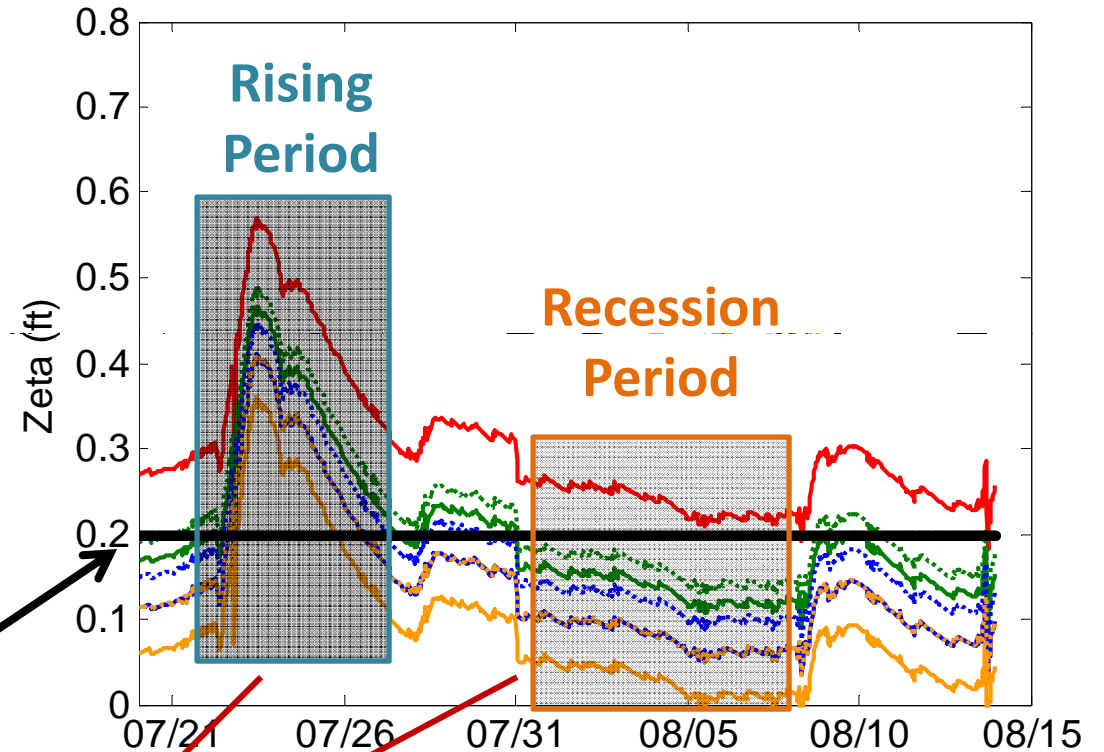
Dredging Options



Water level sensitivity



Water Level Difference from Waubesa to Monona



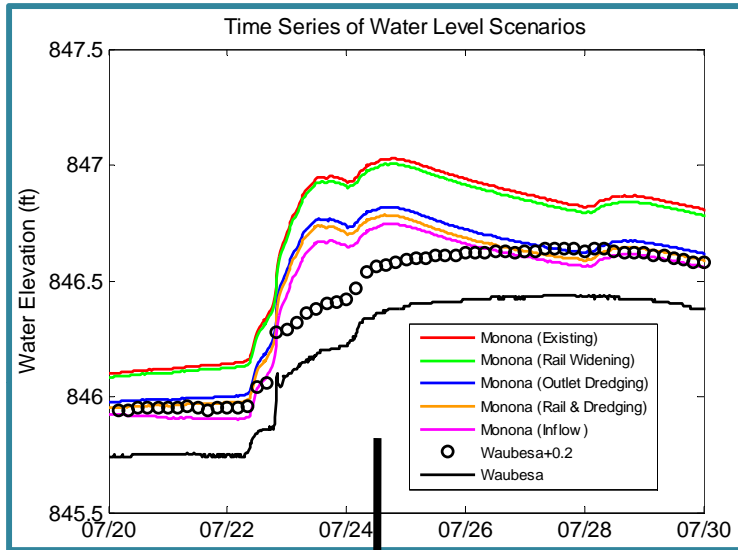
0.2 feet difference

Achieve **0.2** Foot Difference
In **Non-Storm Period**

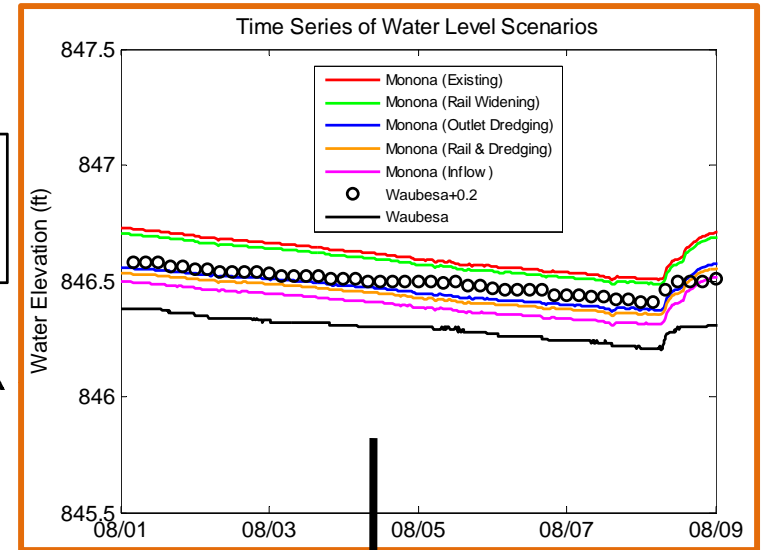
- Existing
- Dredge All 1 ft
- Dredge All 2 ft
- Dredge All 4 ft
- ... Dredge Local 1 ft
- ... Dredge Local 2 ft
- ... Dredge Local 4 ft
- Regulated

Strategy

Rising Period



Recession Period

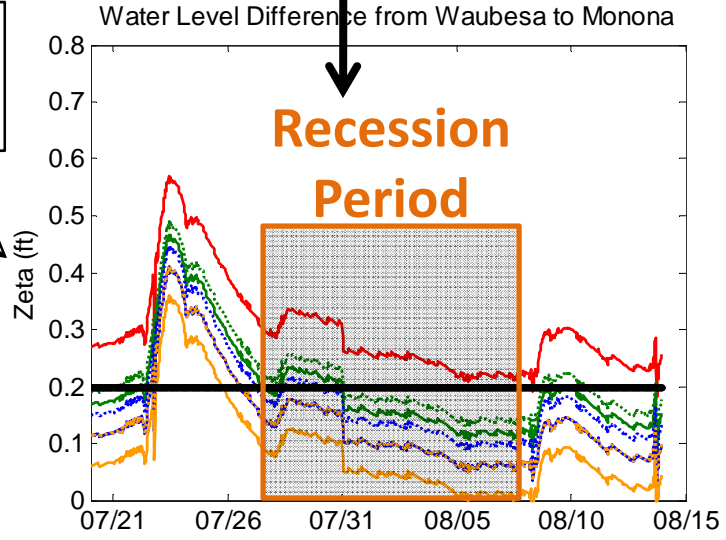


Management Scenarios

Reducing **Monona Inflow** has Largest Impact on **Reducing Monona Water Level**

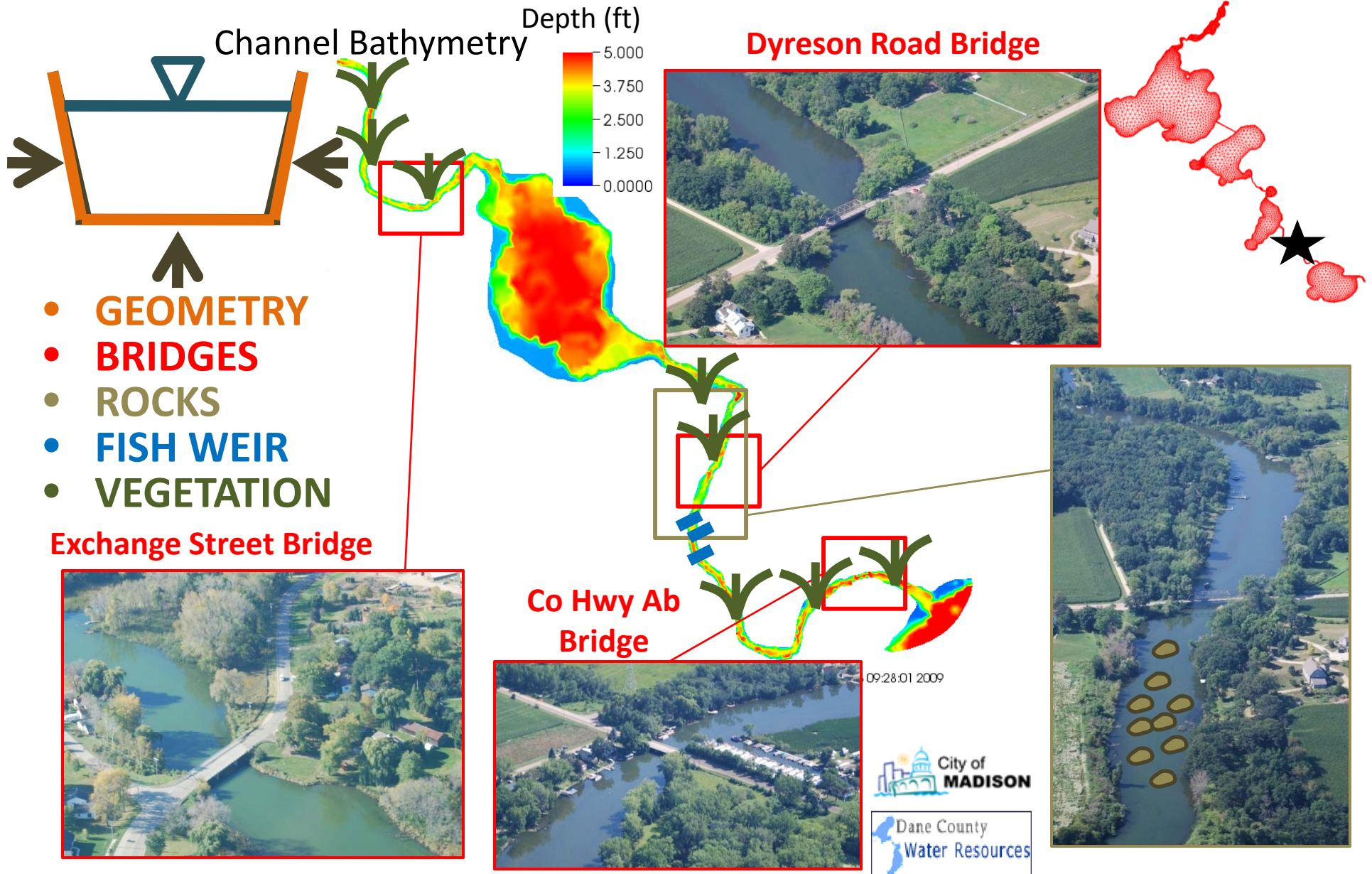
Dredging Sensitivity

Dredging Channel Achieves 0.2 Foot Difference from Monona to Waubesa in Recession Period



Ongoing Project: Lake Waubesa Channel Restrictions

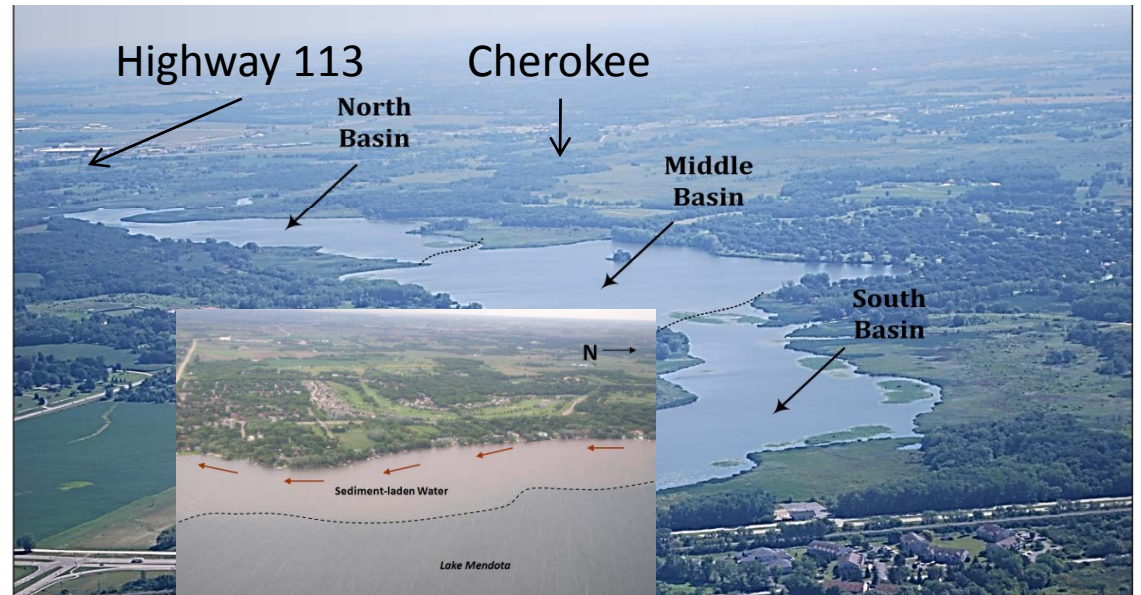
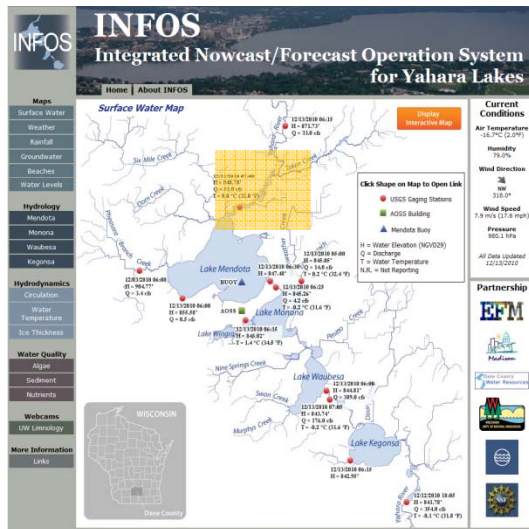
Objective: Assess **Natural** and **Man Made Impediments** to the **Conveyance** System.



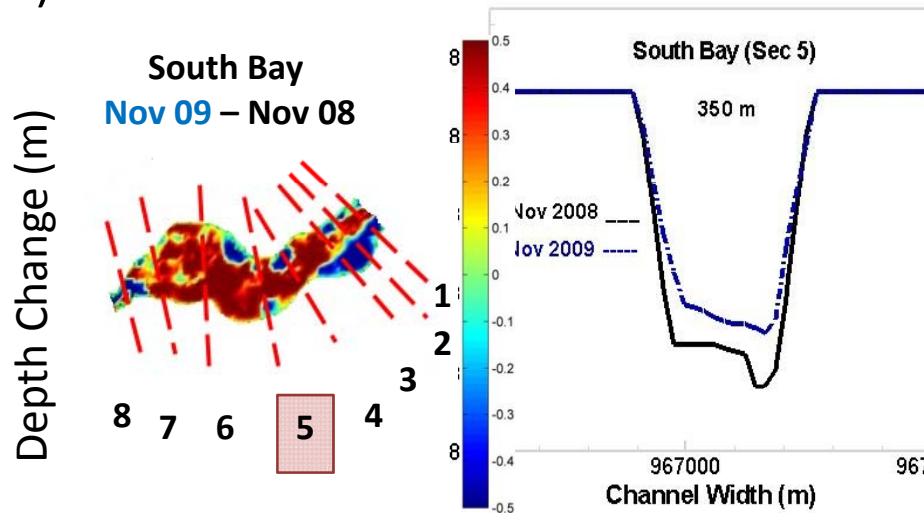
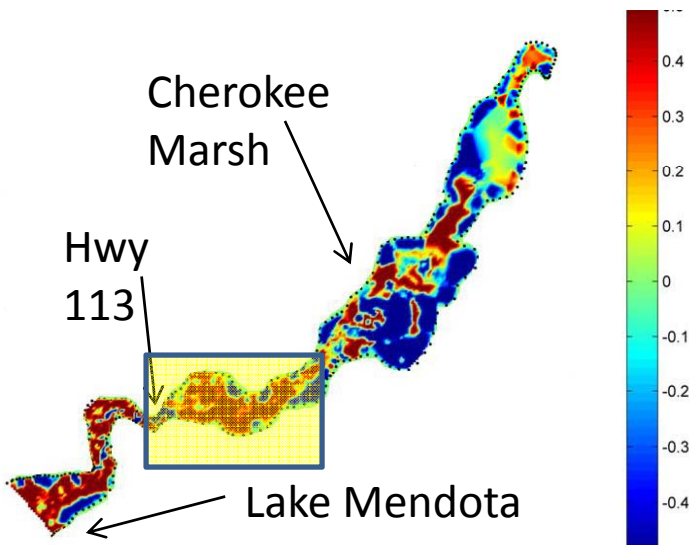
Ongoing Project: Yahara River and Cherokee Marsh Monitoring

Objective: Map **bathymetry** and

Assess **sediment dynamics** due to **hydrological/hydraulic** & **Carp** disturbance



Bathymetry (Nov 2009-Nov 2008)

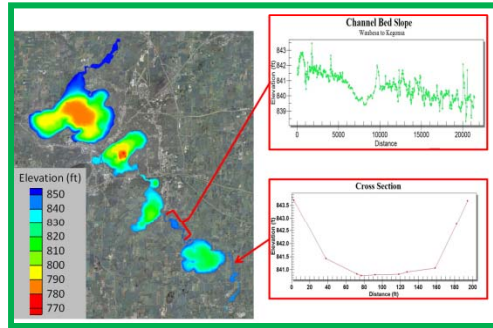


Dynamic Sediment Behavior



SUMMARY

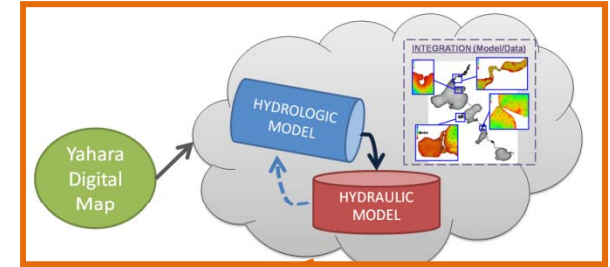
YAHARA DIGITAL MAP



Information → Integration ← Models



NOWCAST/FORECAST MODELS



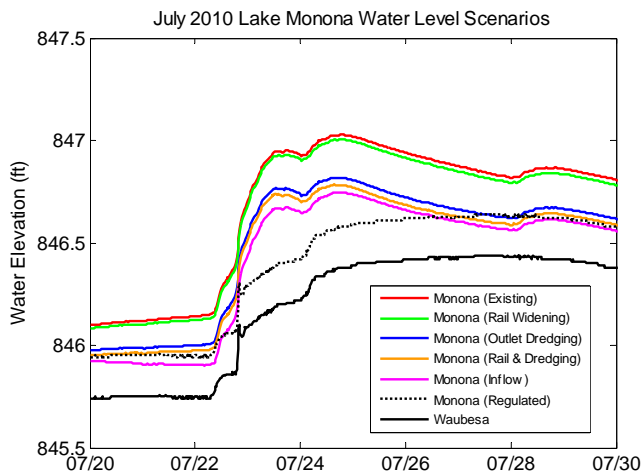
Friends Groups



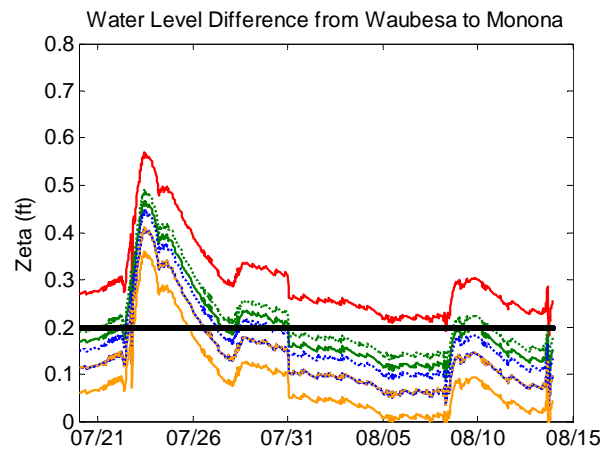
CASE STUDY:

Lake Monona Outlet

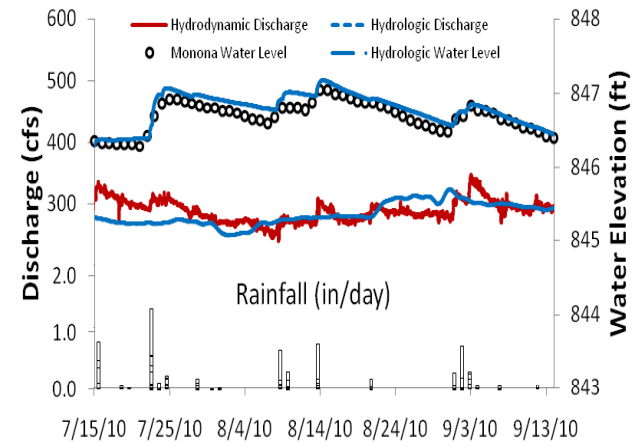
Community Support



Scenarios



Sensitivity



Strategy