

A map of the Lake Koshkongong area in Massachusetts. The map shows the lake's shoreline in light blue, with a darker blue shaded area representing the lake's extent. Surrounding areas are shown in a light blue grid pattern. Major roads are visible, including Interstate 39 (I-39) in the bottom left and Route 106 in the top center. Other labeled features include Rice Lake, Sweet Lake, and Tyme Lake to the west, and Lake Koshkongong to the east. The text "Water Resources Report RKLD Annual Meeting 2015" is overlaid in a large, dark blue serif font, and "August 8, 2015" is overlaid in a smaller, dark blue serif font below it. In the bottom right corner, there is a scale bar and the website address "www.ma-rs.org".

Water Resources Report RKLD Annual Meeting 2015

August 8, 2015

Topics

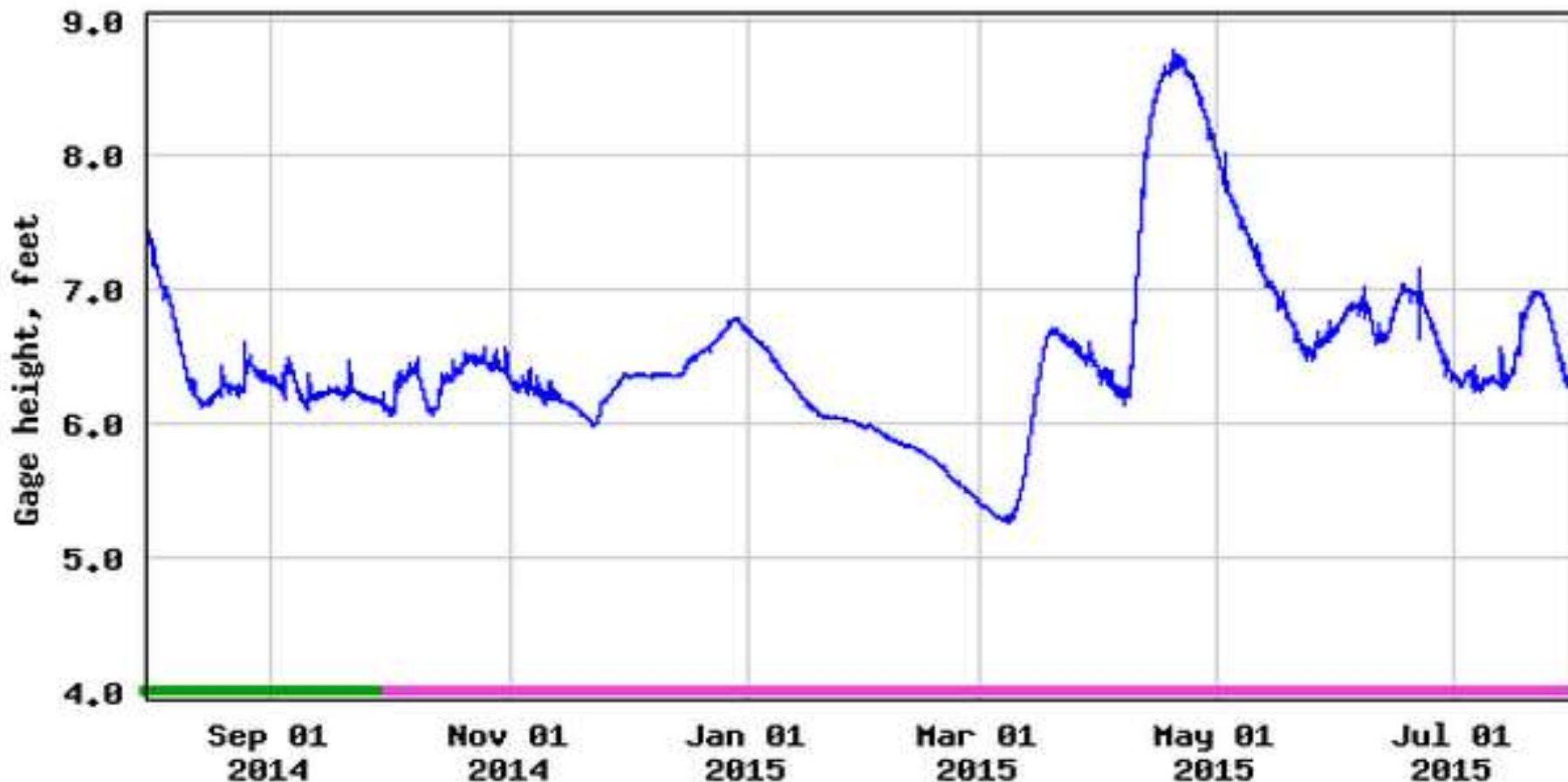
- Hydrology Report
- Experimental Project update
- Flood Inundation Mapping
- Gilbert's Bay/Koshkonong Natural Area Project



Low flow late last Winter followed by spring Melt



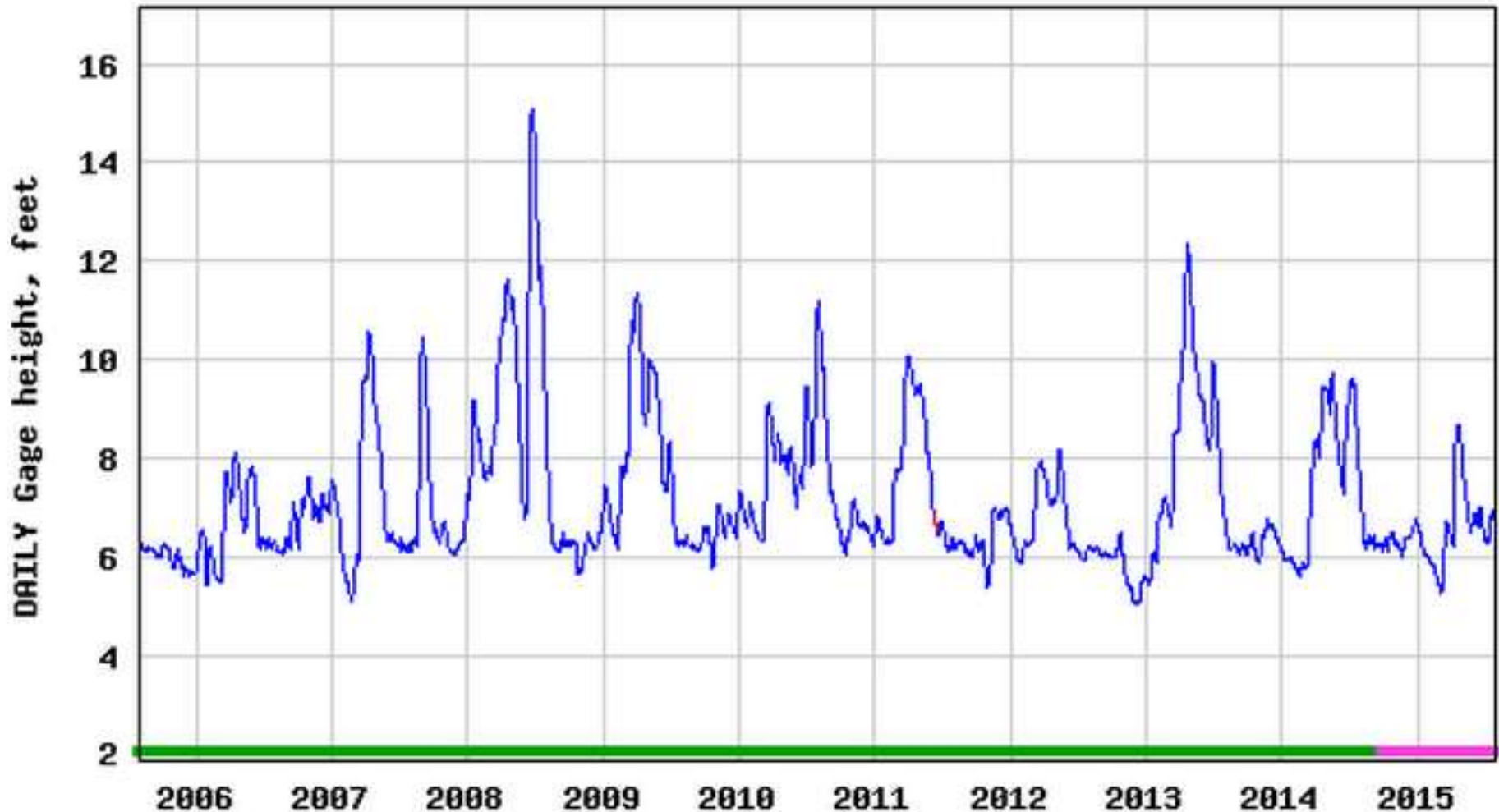
USGS 05427235 LAKE KOSHKONONG NEAR NEWVILLE, WI



2015 flood was below normal, short duration

2014 flood was ~typical in height, longer duration

2013 flood was highest since 2008



Experimental Project update

- Wetland Restoration Fill area
 - Heavily flooded 2013 and 2014
 - Re-seeded in June
 - Riprap containment stable
- Dredge area:
 - The experiment
 - Surveys 2013 & 2015
- Monitoring ongoing per permit

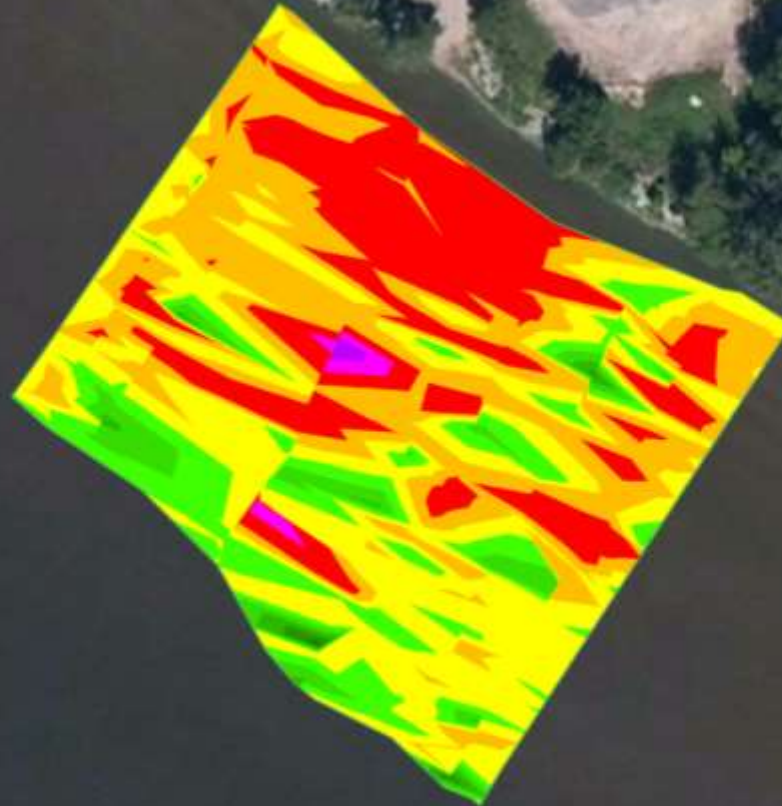


Reseeding Wetland Restoration Area



Post Dredge Survey

TOTAL DREDGE VOLUME:
2200 C.Y.

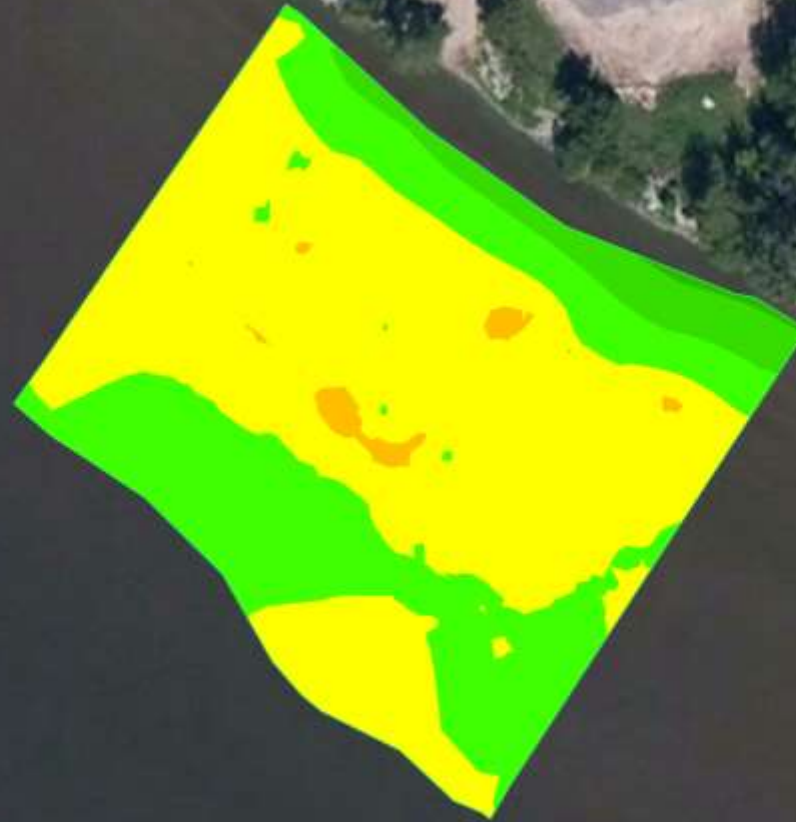


Min. Elev. Diff	Max. Elev. Diff	Color
-4.5	-3.0	Purple
-3.0	-2.0	Magenta
-2.0	-1.0	Red
-1.0	-0.5	Orange
-0.5	0.0	Yellow
0.0	0.5	Light Green
0.5	1.0	Green
1.0	1.5	Dark Green
1.5	2.5	Black



2015 Survey

SEDIMENT FILLED IN
SINCE DREDGING:
2000 C.Y.



Min. Elev. Diff	Max. Elev. Diff	Color
-1.0	-0.5	Orange
-0.5	0.0	Yellow
0.0	0.5	Light Green
0.5	1.0	Medium Green
1.0	1.5	Dark Green



Observations from Experimental Project

- Wetland area protection is reliably achievable
- Dredge area fill in due to high water & long duration flooding 2013 and 2014
- Depending on shoreline orientation, expect shallow (1 – 2 ft.) dredging to substantially fill in over 3 – 10 years



New data that will be available: Flood Inundation Mapping

- National Weather Service – Advanced Hydrologic Prediction Service
 - Developed from 1-D/2-D flooding models (existing FIS studies) and LiDAR/Photogrammetry
- Available for select USGS gauge locations
 - In Wisconsin: Afton, Fort Atkinson, Jefferson, Lake Koshkonong and Watertown (**Tuesday, August 11**)
- Extent and depth of flooding for stages up through “Major Flooding” events
 - Current/Forecast inundation maps during flood events
 - Click on any point for approximate flooding depth



NWS AHPS Inundation Mapping

water.weather.gov/ahps/inundation.php

National Oceanic and Atmospheric Administration's
National Weather Service

Site Map News

National Observations Inundation Locations

NOAA PARTNERED GUIDELINES FOR THE DEVELOPMENT OF ADVANCED HYDROLOGIC PREDICTION SERVICE FLOOD INUNDATI

Local forecast by "City, St"
City, St Go

RSS Feeds

Warnings
Current
By State/County...
UV Alerts

Observations
Radar
Satellite
Snow Cover
Surface
Weather...
Observed Precip

Forecasts
Local
Graphical
Aviation
Marine
Hurricanes
Severe Weather
Fire Weather

Text Messages
By State
By Message Type
National

Forecast Models
Numerical Models
Statistical Models...
MOS Prod
GFS-LAMP Prod

Climate
Past Weather Predictions

Weather Safety
Weather Radio
Hazard Assmt...
StormReady / TsunamiReady
Skywarn™

Education/Outreach
Information Center
Tsunamis

Map showing inundation locations (blue dots) across the United States, including major cities like San Francisco, Los Angeles, Dallas, Houston, Chicago, Detroit, Philadelphia, New York, and Washington. The map also shows major geographical features like the Great Plains and Appalachian Mountains.

Flood Inundation Mapping

Cedar River at Cedar Rapids, IA (C104)

Data Type

- Inundation Levels
- Flood Categories
- Current Forecast

Inundation Levels

734.4"	34.0
733.4"	33.0
732.4"	32.0
Nearest Creek: 31.13 ft	
731.4	31.0
730.4	30.0
729.4	29.0
728.4	28.0
727.4	27.0
726.4	26.0
725.4	25.0
724.4	24.0
723.4	23.0
722.4	22.0
721.4	21.0
720.4	20.0
719.4	19.0
718.4	18.0
717.4	17.0
716.4	16.0
Main Flooding Begins	
715.4	15.0
714.4	14.0
Maximum Flooding Begins	
713.4	13.0
712.4	12.0
River Flooding Begins	
711.4	11.0
710.4	10.0
* = Extended rating	

Marker Info

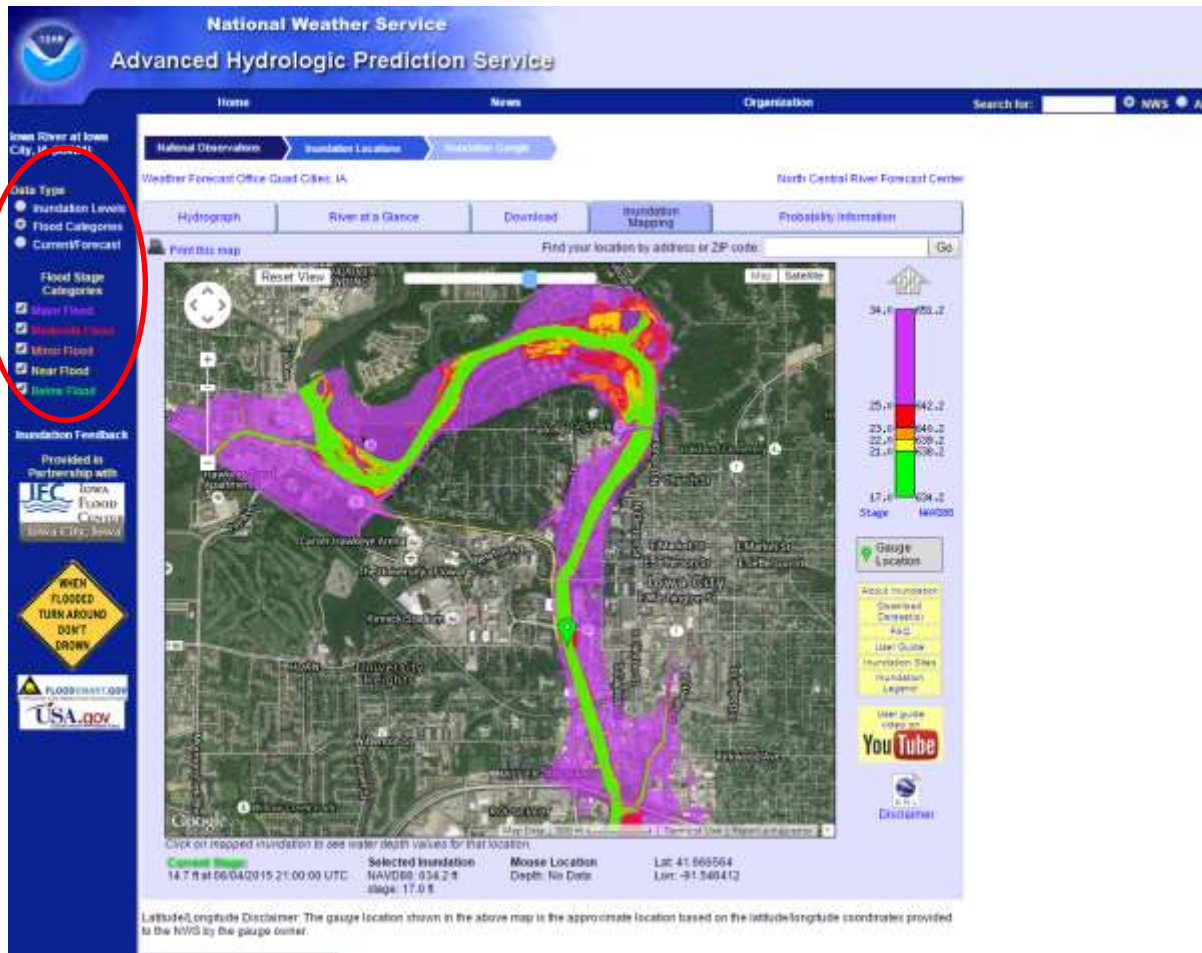
Depth: 10.9 - 12.9 ft
 Lat: 41.970020
 Lon: -91.657906

Nearest geolocated address:
 1202 3rd Street Southeast,
 Cedar Rapids, IA 52401, USA

Remove this marker.

Current Stage: 5.1 ft at 08:05:2015 16:00:00 UTC
Selected Inundation: NAVD88: 731.4 ft stage: 31.0 ft
Mouse Location: Depth: 0 ft
 Lat: 41.904947
 Lon: -91.648335

Flood Stage Categories



<http://water.weather.gov/ahps/inundation.php>

Gilbert's Bay/Koshkonong Natural Area Project

- Meeting with DNR in February
- Building on PAS process
- Get the public into a unique public area adjacent to the lake
- Enhance use of current DNR-owned lands
- Add to value of Lake Koshkonong



Possible project elements



Shoreline recession analysis – 2008 -2005 – 1937 - 1836

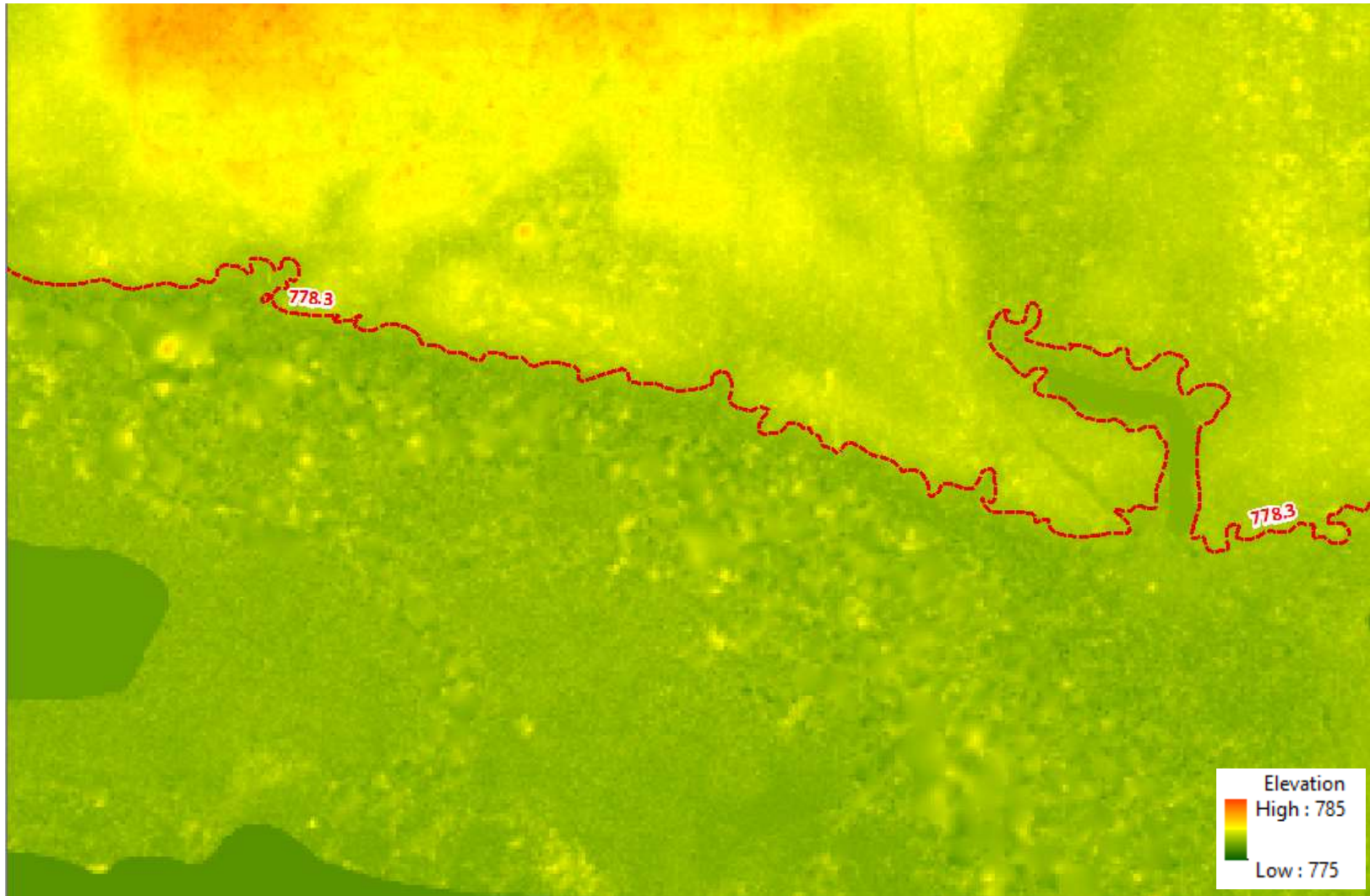


OHWM Determination in Fringe Wetland Areas

- Difficult to OHWM in wetland fringe areas
- RKLD requested DNR guidance on OHWM determination to aid in planning projects
- Remotely sensed LiDAR (± 0.5 ft. vertical) correlated with OHWM from adjacent hard shorelines
- Ongoing



LiDAR Estimated OHWM



Questions?

