

Dam, data collection/display and shoreline protection discussion issues

Rob Montgomery
Professor Chin Wu, UW-Madison
Presentation to RKLD Board
June 12, 2014

Status on several projects

- Experimental project: monitor vegetation growth as water comes down
- Carp gate: need DNR approval, final grant funding pending
- Indianford Dam inspection-

Indianford Dam Inspection

1. Good shape structurally
2. Need attention to gate actuators and debris removal
3. Need updated Emergency and Operation-Inspection-Maintenance plans
4. Need a plan for trashrack clearing and then complete work
5. RKLD needs to propose a response timeframe to DNR- we have similar ideas on timeframe: plans Dec 2014, trashrack action Dec 2016
6. Action: approve or modify proposed response to DNR

Objectives of Website and monitoring enhancement

- Firepoint Media looking at website upgrades
- Public education & promotion of recreational activities
- Public safety
- Environmental management
- Building RKLD to be resource
- Example of monitoring and web-based display: Yahara infos

INFOS

Integrated Nowcast/Forecast Operation System for Yahara Lakes

[Home](#) | [About INFOS](#)

OBSERVATIONS

Surface Water

Weather

Rainfall

Groundwater

Beaches

Water Levels

MODELS

Nowcast

Hydrologic

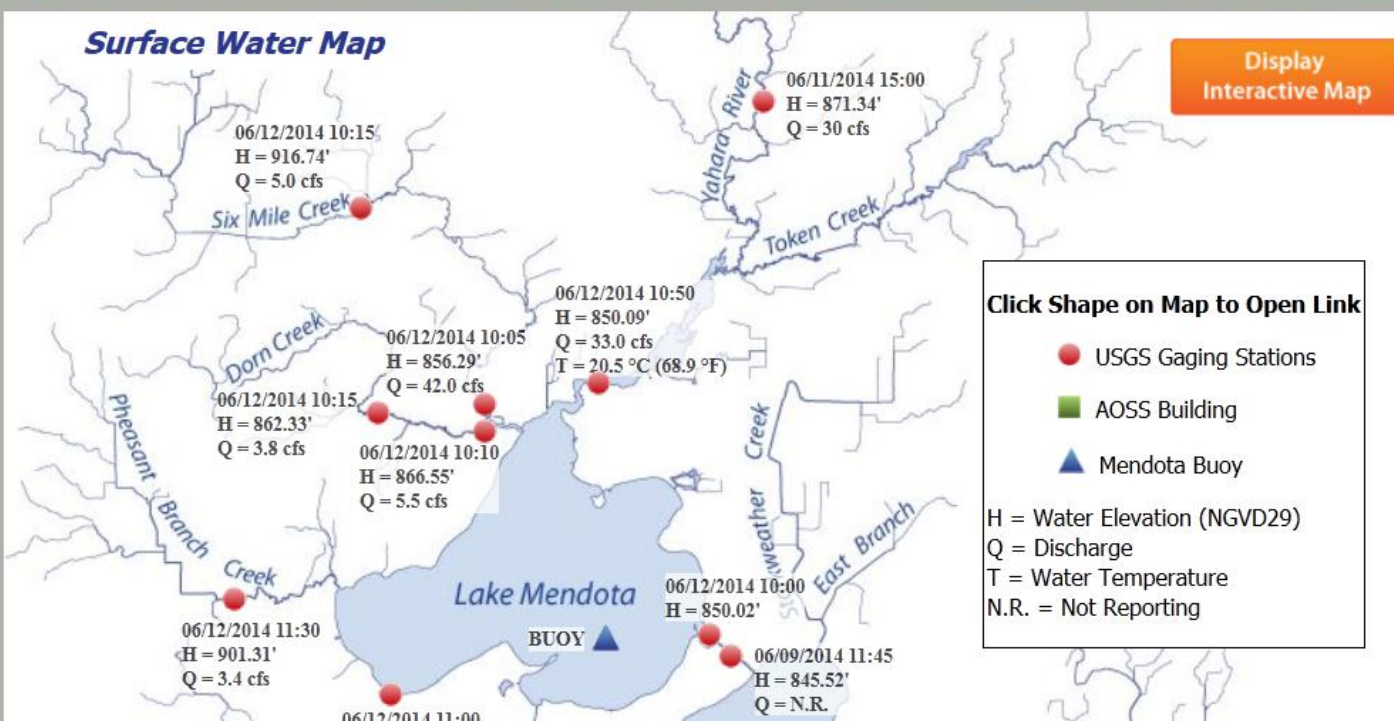
Hydraulic

Hydrodynamic

Forecast

Water Level & Discharge

Surface Water Map



Current Conditions

Air Temperature
21.9°C (71.5°F)

Humidity
54.0%

Wind Direction

WNW
282.0°

Wind Speed
10.4 m/s (23.3 mph)

Pressure
969.0 hPa

All Data Updated
06/12/2014

Partnership

Dragon's microphone is off; you can press its hotkey or click its icon to turn it on.

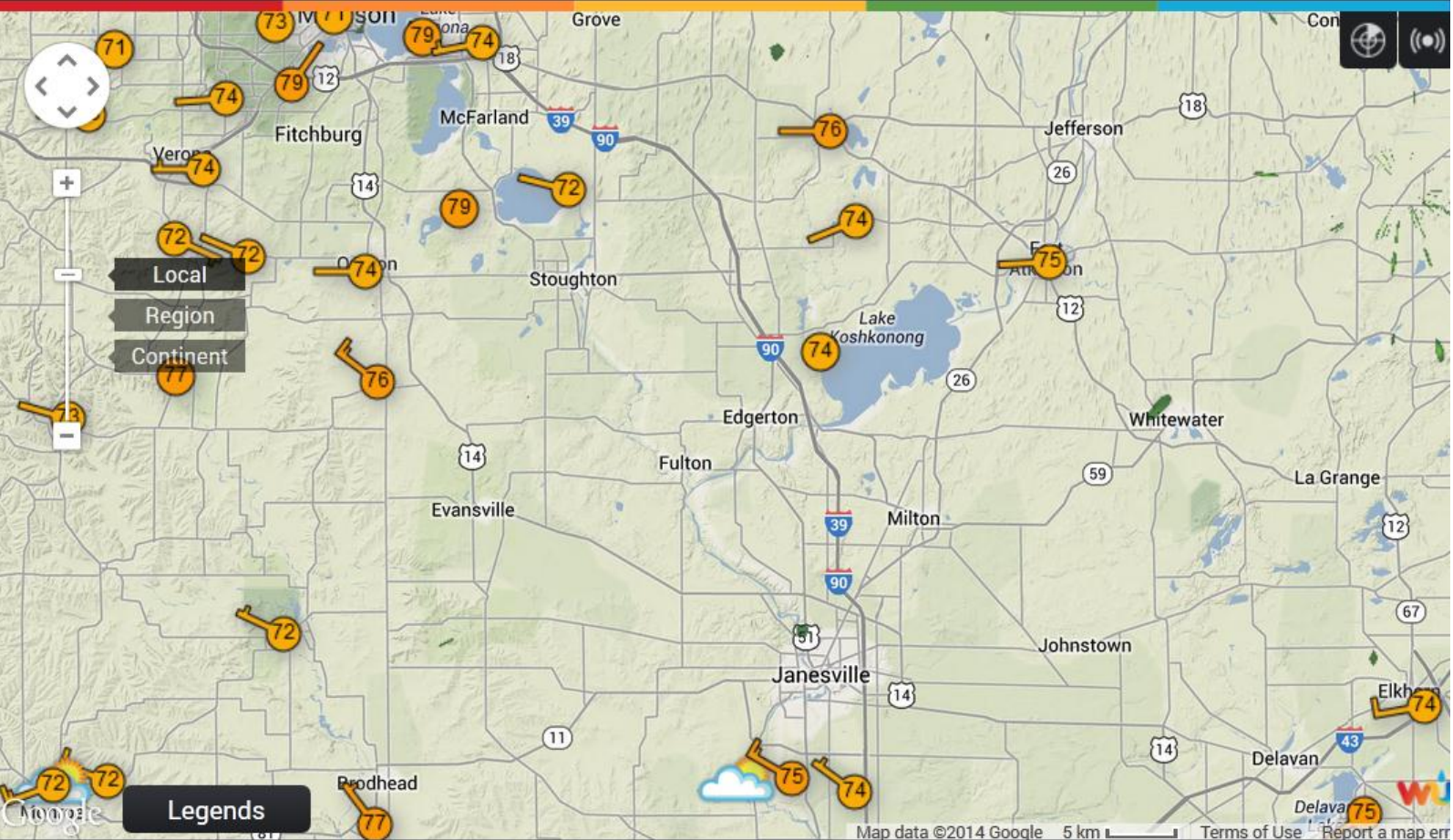
File Edit View History Bookmarks Tools Help

Business & Financial... NOAA Graphical For... Rock Koshkonong ... June 12, 2014 INFOS Yahara - We...

www.wunderground.com/wundermap/ dnr staff

Most Visited WIPE RSMeanOnline: Cons... Wetlands Mapper Status of Map Change... SnapPlus Ancient FM - Commer... Basecar

WunderMap Search & Recent Cities New Updates



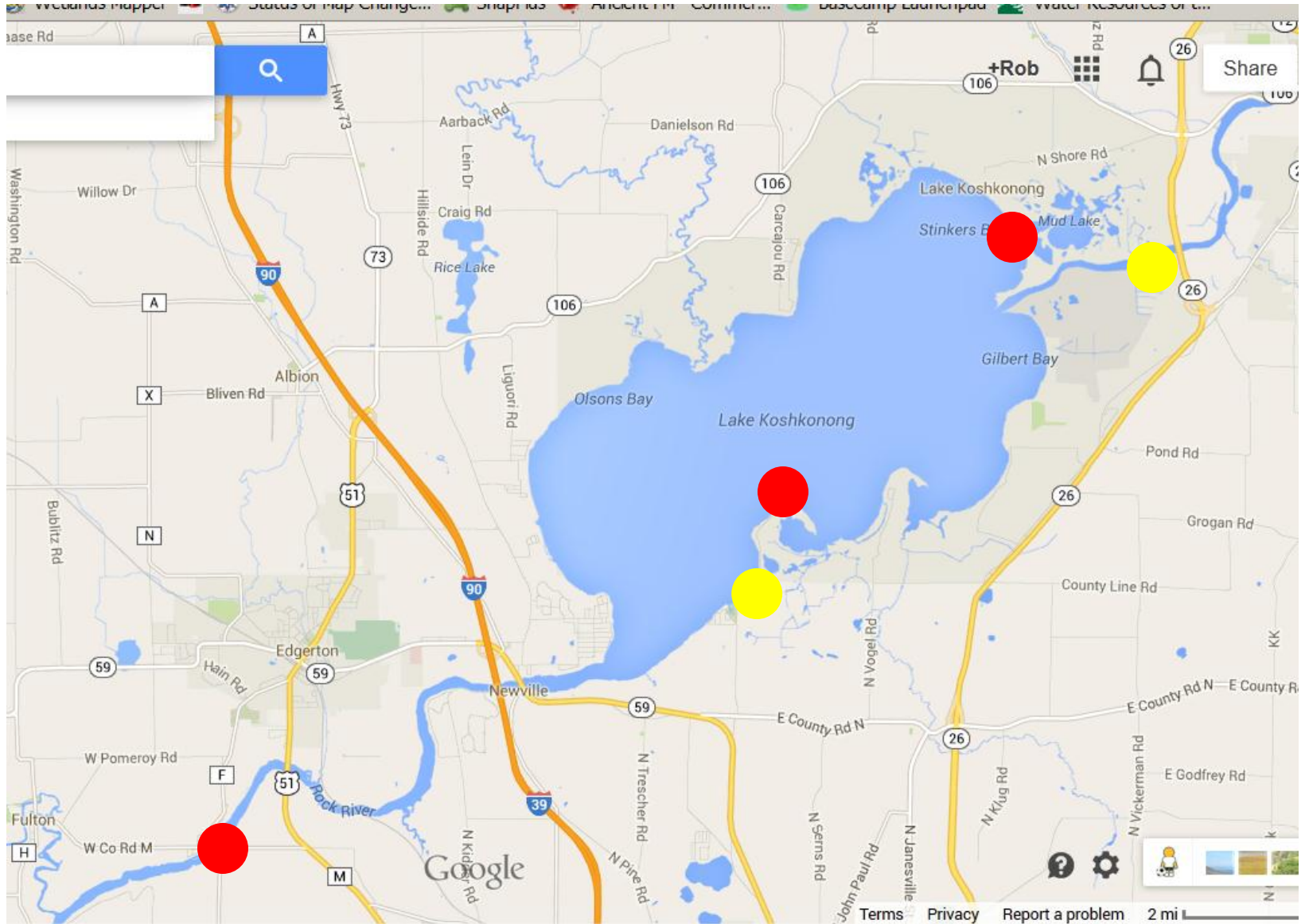
Map data ©2014 Google 5 km Terms of Use Report a map error

Play 1x Thu, 12 Jun 2014, 4:00 Current

Options for Data collection and display

- Improved water and weather data displays – map-based
- WebCams at critical points of interest
- Additional automated water resource data collection

Possible Webcam Locations



Webcams

AXIS Q60-E PTZ Dome Network Cameras

Outdoor, high-speed PTZ domes: AXIS Q6042-E/Q6044-E/Q6045-E



- > Up to HDTV 1080p
- > Up to 36x optical zoom
- > Outdoor-ready and Arctic Temperature Control
- > Vandal-resistant and shock detection
- > Automatic defog (AXIS Q6044-E)
- > High PoE

AXIS Q60-E cameras are top-of-the-line, outdoor-ready pan/tilt/zoom (PTZ) domes that provide

The images above show the field of view and level of detail provided by the three AXIS Q60-E PTZ domes.



Snapshots of HDTV 1080p views from AXIS Q6045-E: at left, wide view; at right, 20x zoomed-in view where the license plate of a car 275 m (900 ft.) away can be read.

Webcam implementation

- **WebCam at Indianford dam:** the purpose of this WebCam would be to show the status of flow over the dam and discharge through the gates. It would be educational in the sense that folks could see "flat water" at high flows and could note gate operations. It would also provide a visual cue on fishing activity. The best location would probably be in the open area several hundred yards downstream of the Slide Gates, with a wide-angle lens viewing the entire dam from powerhouse to slide Gates. With power and Internet access available via cable, assuming an agreement for mounting on a pole could be obtained, installing a camera and start up to have a link to a website would likely cost \$3000-\$5000.

- **"Koshkonong View " WebCam:** this WebCam would be best located on a high point on either the North or South shore of the Lake (maybe Stony Point or Carcajou Point) probably on a pole-mounted location where most of the Lake could be viewed by panning and zooming the camera. The purpose of this installation would be to display Lake activity – both summer and winter – and also provide a high resolution telephoto lens so that Lake users could directly observe wave conditions and boating activity across the lake. For this application, assuming that power and cable Internet was available, a high-resolution camera equipped with pan, tilt and zoom capabilities would provide for periodic "fixed" views of various portions the Lake, and could also allow users to steer the camera to view a desired location. Cost of getting this type of system setup would be from \$5000 to \$8000, plus the cost of mounting, power and Internet.

- **"Experimental Project" WebCam:** this would be a pole-mounted WebCam on the experimental project fill where users could view Mud Lake, the carp gate, Mud Creek, the wetland shoreline and possibly "Pelican Island". This location would be "remote" meaning that probably only still images (not live feed video) could be available via cell phone modem or regional Wi-Fi from a pan tilt zoom camera, pole mounted with a solar cell and battery. Planning-level costs for this system would probably be from \$10,000-\$15,000 to set up, due to the remote power and communication requirements

Webcam Implementation approaches

- Need to consider all web-based displays planned
- Commercial providers or possibly integrated with UW support
- Need detailed logistical support
- Suggest meeting with web, technical & Board reps to select implementation method
- Direction from RKLD Board?

Water Resource Data Collection

- Useful parameters: Turbidity, wave height, nutrients (?)
- Methods:
 - at USGS monitoring stations Newville & Ft. Atkinson (not on Lake)
 - Lake buoy (problems)
 - Submerged sensors
- Can be integrated with real-time and web-based display
- Suggest work group to develop specific options
- Direction from Board

Discussion of shoreline protection options

- Unique Lake & River conditions
- Options being evaluated at UW
- Possible grant funding & test installations
- Coordinate with County Zoning & DNR to identify standard options
- Suggest proposal from UW & MARS for action
- Direction from Board

Other topics

- RKLD RFP and select “on-call” contractors for small projects
- DNR wetland protection – expensive – explore options?
- Plan for removal of navigation obstructions
- Ecological data collection
 - Volunteer Lake monitoring program- Secchi Disk & others
 - Ecological monitoring
 - Water quality technical data

Questions?