



# Lake Pulaski LID Open House

September 13, 2016

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Responsive partner.  
Exceptional outcomes.

*Presented by*  
Wenck Associates, Inc.

# **Introduction – Team Members**

## **Lake Pulaski Lake Improvement District (LID)**

- **Jon Tank, LID President**
- **Bill Jundt, LID Vice-President**

## **Wenck Associates, Inc. - LID Engineering Consultant**

- **Kent Tolve, PE**

## **Winthrop & Weinstine, P.A. – LID Legal Counsel**

- **Tami Diehm**
- **Ann Steingraeber**

## **Department of Natural Resources (DNR)**

- **Dan Lais, District Manager**
- **Roger Stradal, Area Hydrologist**
- **Joe Stewig, Sauk Rapids Area Fisheries Manager**

# Introductory Questions

## *Why are we here?*

The LID has requested permission to engage in a 3-5 year monitoring program to review the actual impact of pumping on Buffalo Lake and the Deer Lake Outlet.

Tonight's open house is intended to provide information to residents and seek feedback regarding a request made by the Lake Pulaski Lake Improvement District (LID) to the Minnesota Department of Natural Resources (DNR) for a temporary permit modification.

Tonight, we are here to provide details of the request and give residents an opportunity to ask questions and provide feedback to the City, the LID and the DNR.

# Introductory Questions

## *Who received notice of the Open House?*

- All residents on Lake Pulaski
- All residents on Deer Lake
- All residents on Buffalo Lake
- Wright County Commissioner, Wright County Attorney, Buffalo Mayor, City Council Members, Buffalo City Administration

# Introductory Questions

## *Why is the LID pursuing the monitoring plan?*

- The existing permit has been in place for many years.
- The land use conditions have changed during the past 30 years.
- Flooding still occurs (28 homes on Lake Pulaski have basements below 966 feet).
- The LID initiated discussions with the DNR in 2014 to discuss potential modifications to the permit conditions.
- The LID has worked closely with the DNR, Wenck and Winthrop & Weinstine to develop the current proposal.

# Introductory Questions

## *What do we hope to learn from the monitoring?*

- The monitoring plan will allow the LID's consultant to gather scientific data to study the downstream impact of pumping water from Lake Pulaski to Buffalo Lake.
- This data will be shared with the DNR and used to evaluate whether it is appropriate to make any revisions to the Lake Pulaski's existing pumping permit.

# Introductory Questions

## *Who will conduct the monitoring?*

- The LID has hired Wenck to develop the monitoring plan.
- The LID is planning to use Wenck to conduct the monitoring as well.

## *Who will pay for the monitoring?*

- The LID will pay for the monitoring out of dues collected from homeowners on Lake Pulaski.

# Permit History and Proposed Monitoring Plan



# Existing Permit History

- In the 1980s, there was extensive structural damage to properties on Lake Pulaski because the lake is landlocked and there was extensive flooding
- In 1987, Lake Pulaski was issued a permit to pump water into Buffalo Lake (Permit #87-3002)
- The permit was issued after extensive analysis, meetings, and a formal approval process

# Existing Permit Criteria

- Under the existing permit, three (3) criteria must be met in order to pump water from Lake Pulaski to Buffalo Lake:
  - (1) Pumping must commence after June 1st (after fish spawning)
  - (2) Buffalo Lake must be below 915.5 (NOHW)
  - (3) Lake Pulaski must be above 966.0 (964.5 under special circumstances)

# Basic Lake Data

|                  | <u>Lake Area</u> | <u>Drainage Area</u> |
|------------------|------------------|----------------------|
| ▲ Deer + Buffalo | 2,000 acres      | 25,900 acres         |
| ▲ Pulaski        | 800 acres        | 1,840 acres          |

| <u>Elevations</u> | <u>Buffalo</u> | <u>Lake Bounce</u> |
|-------------------|----------------|--------------------|
| ▲ OHW             | 914.7          | --                 |
| ▲ Pump Off        | 915.5          | 0.8                |
| ▲ 10-year         | 918.5          | 3.0                |
| ▲ 50-year         | 921.1          | 6.4                |
| ▲ 100-year        | 922            | 7.3                |

# What is Being Tested?

- The proposed monitoring plan is based on the Army Corps of Engineers Analysis from 1985
  - Water Balance Model
  - Calibrated to the years 1970-1979
  - Simulated 18 CFS from Pulaski
  - Executed daily for 10-years model
  - Maximum impact due to pumping over the 10 years was 0.03 feet

# Proposed Monitoring Plan

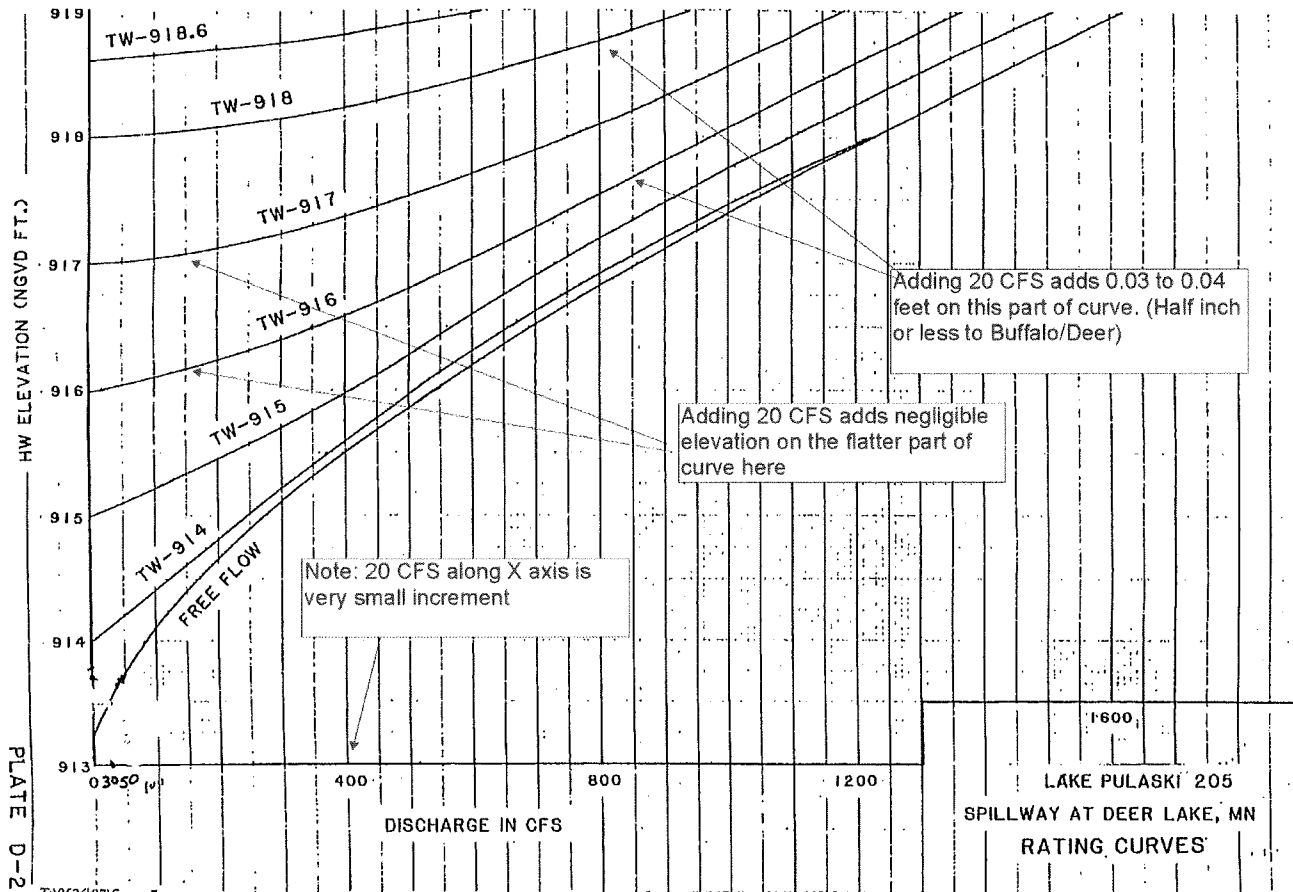
- 3-5 year pumping test period to capture (hopefully) range of lake levels
- During the test period, pumping from Pulaski will be allowed if Buffalo Lake exceeds 915.5 feet but is in "outflow."

## Locations

- Lake elevations at Pulaski and Deer/Buffalo
- Continuous data loggers @ upstream/downstream of Deer Lake outlet
- Surveyed benchmarks for gauge QA/QC
- Flow measurements to verify rating curve

# Rating Curve

LAKE ELEVATION ↑



LAKE PULASKI IMPROVEMENT DISTRICT

Deer Lake Rating Curves



**Wenck**

Wenck Associates, Inc. 1800 Pioneer Creek Center  
Environmental Engineers Maple Plain, MN 55359

OCT 2003

FIGURE 7

FLOW →

# Summary and Questions

## Contacts

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