

Reducing Spread of Invasive Species through In-Line Screening

Snail Lake Augmentation Screening Facility

Shoreview, Minnesota

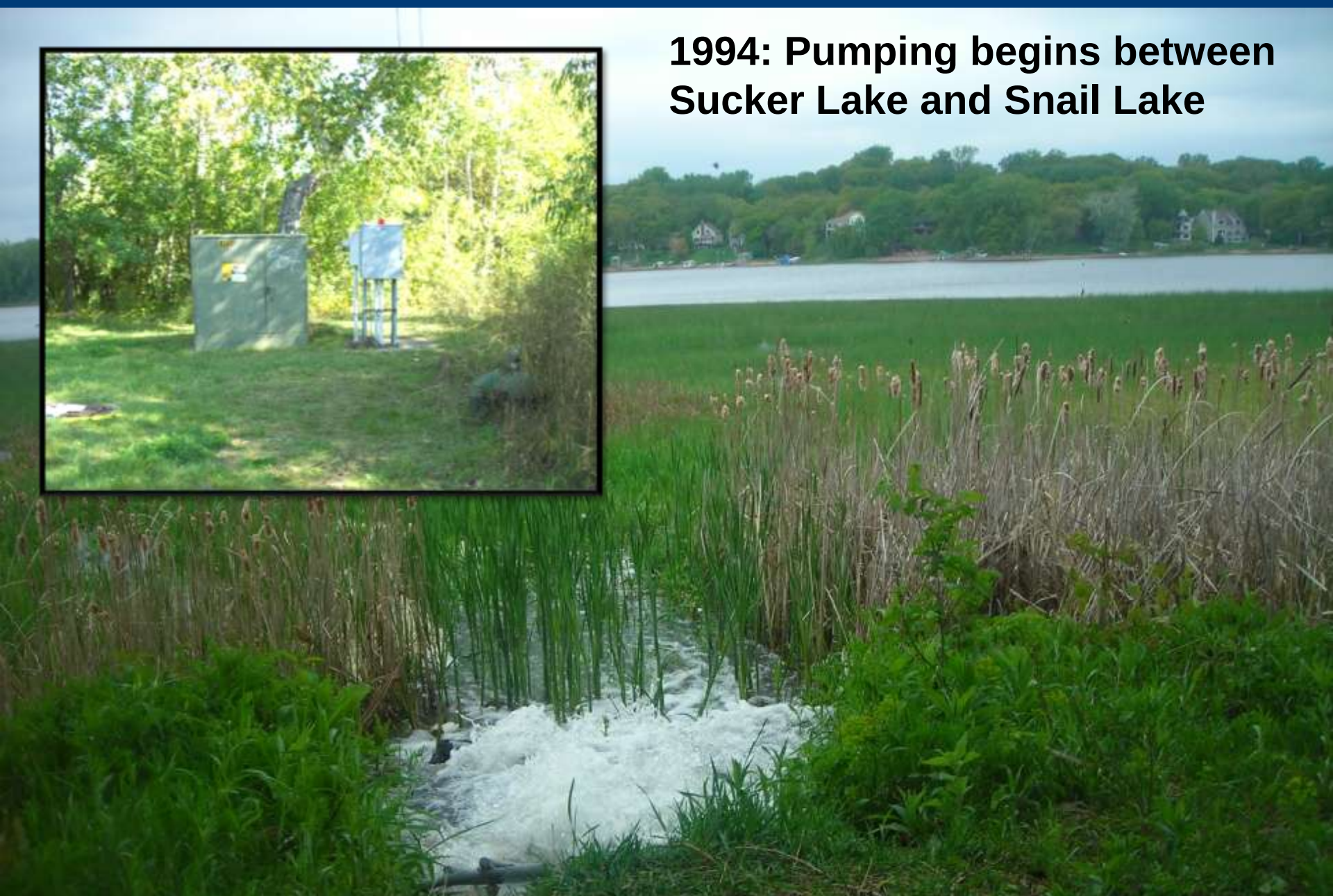


Project Walk-Through

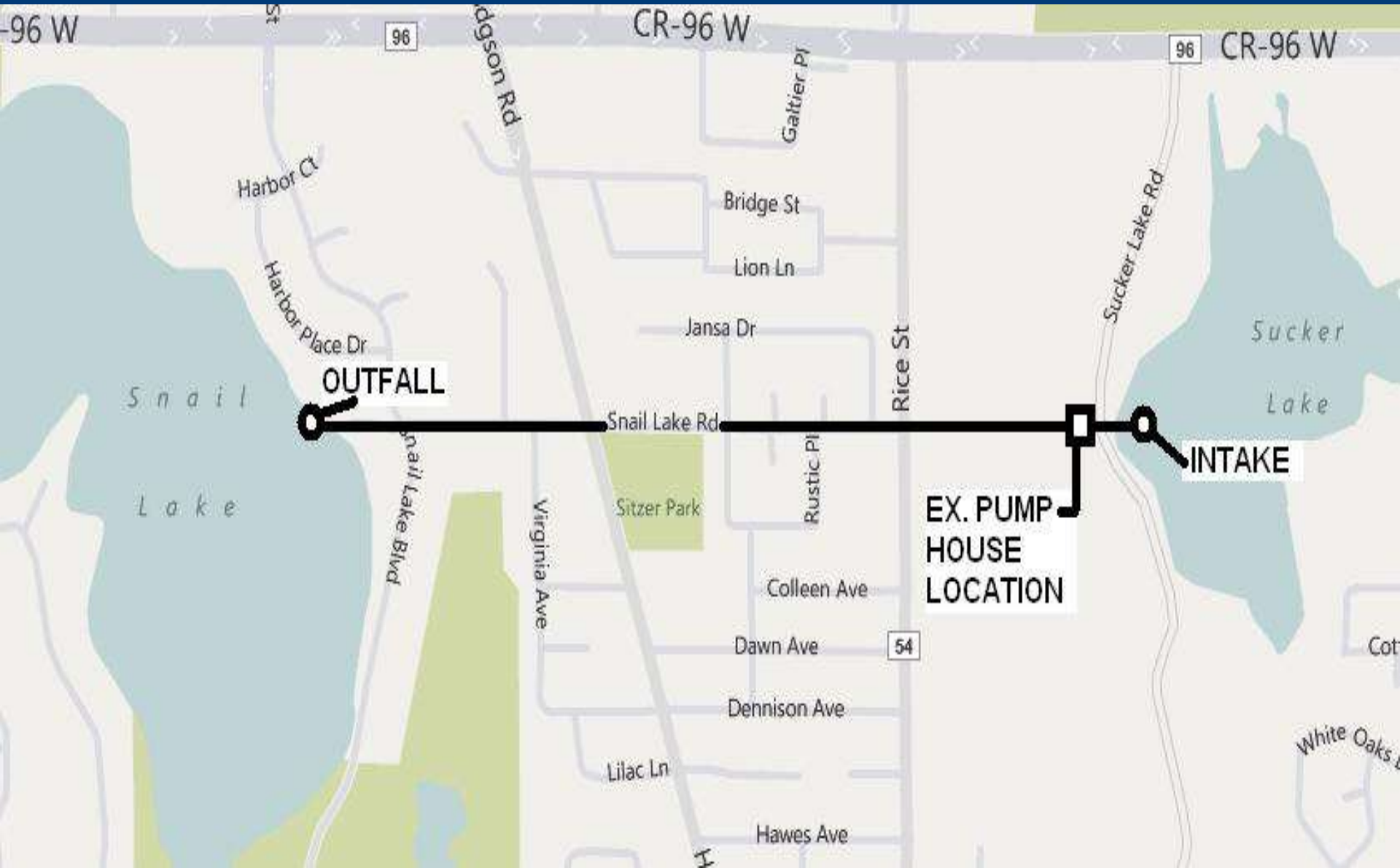
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- Project Background
 - Considerations
 - Evaluation Options
 - Final Design
 - Project Results

Needed to Increase Lake Level

**1994: Pumping begins between
Sucker Lake and Snail Lake**



More Than One Mile of Pipe



Project Timeline

2007: Zebra Mussels found in Sucker Lake

2008: MnDNR requires the shutdown of the augmentation system

2008 - 2010:
Water level in Snail Lake drops 4 feet, revealing hundreds of feet of shoreline and stranding docks and motorized boats

2008 - 2010:
Snail Lake's ecosystem is affected by the shallow pool depths, creating poor water quality conditions and impacting aquatic life.



It Takes a Team



**Snail Lake
Improvement
District**



Considering the Zebra Mussel



Substrate Availability

Water Temperature

Water Velocity

Evaluation Options



High Pressure Water Jetting

Evaluation Options

Clean-Up after
Jetting and Pellet
Blasting Treatments

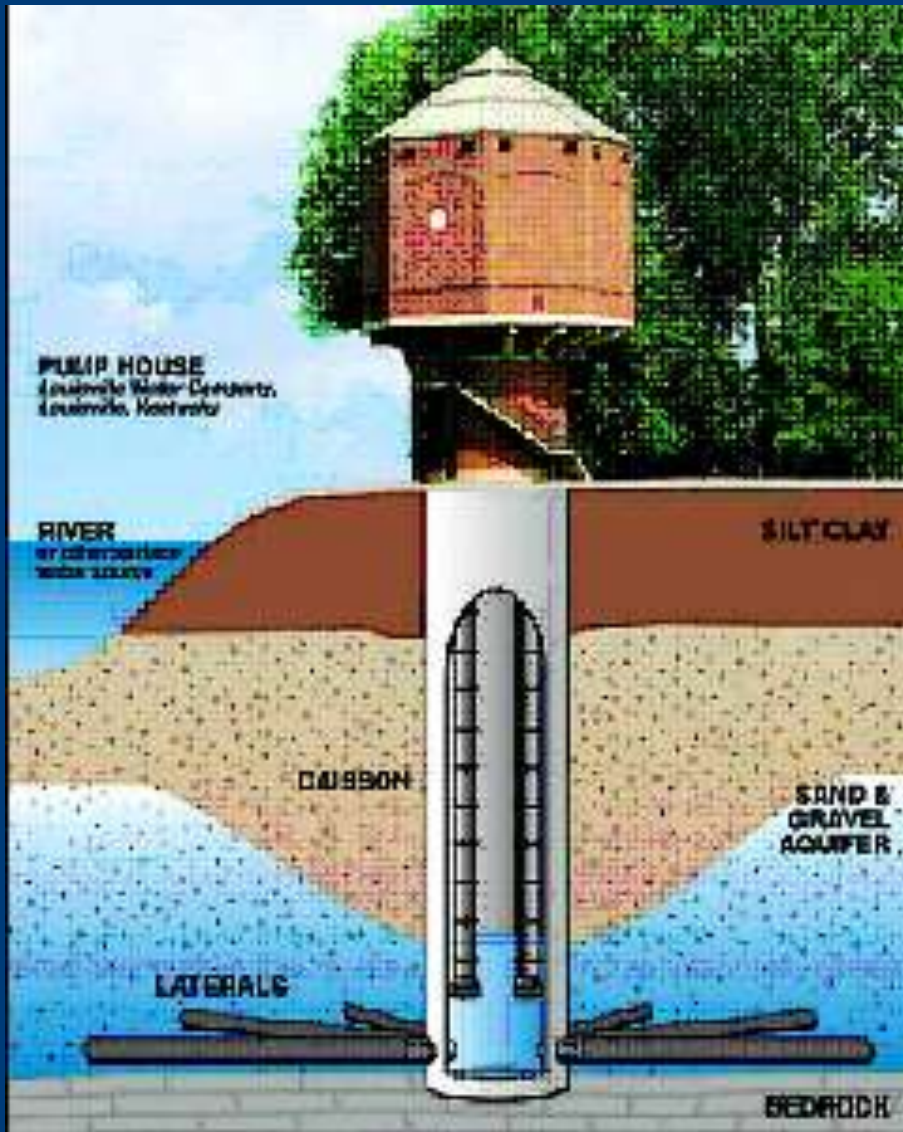


Evaluation Options



Importance of Backwash Systems

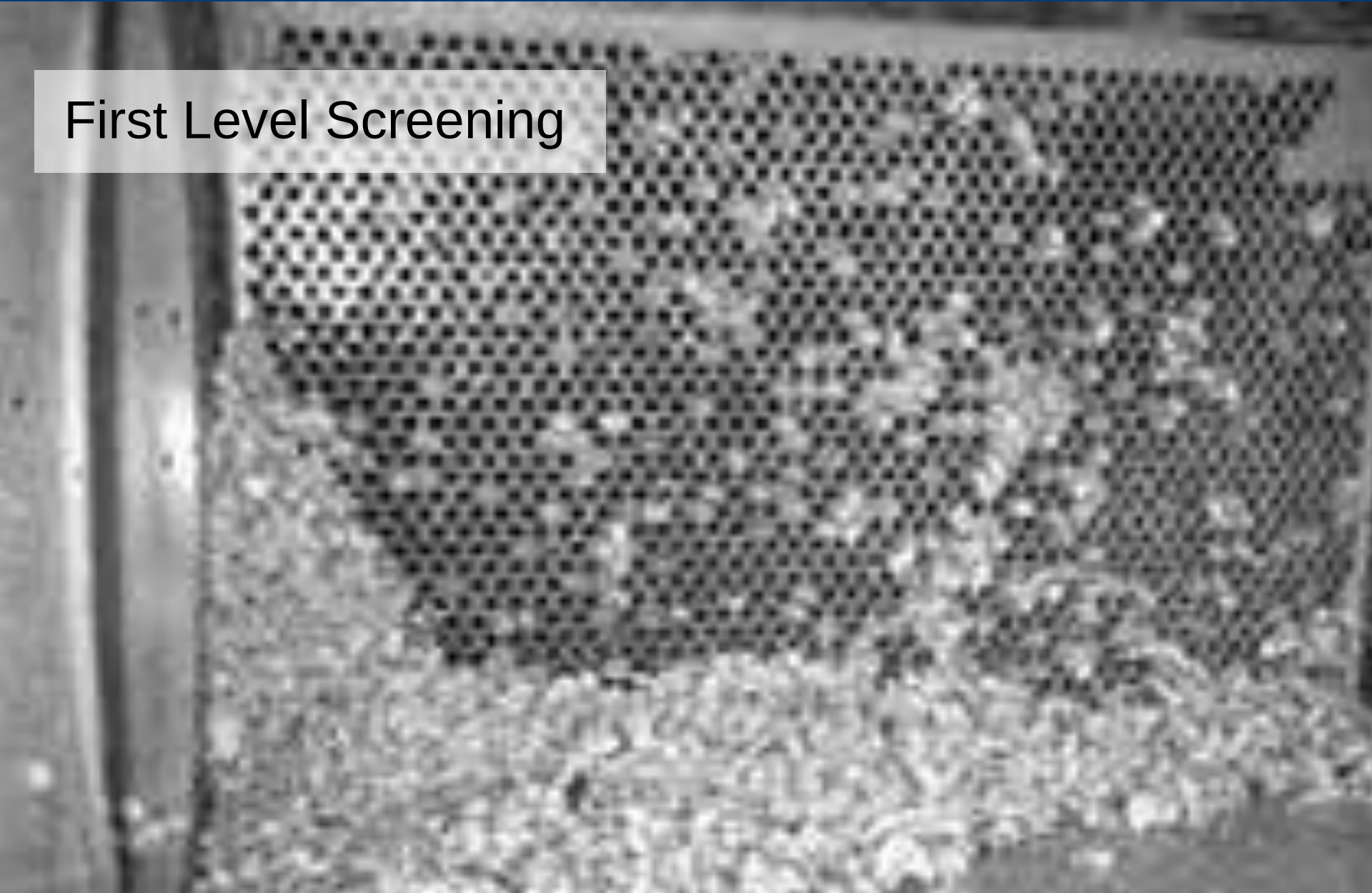
Evaluation Options



Ranney Well System

Evaluation Options

First Level Screening



Preferred Design Alternative: Land-Based Screening



In-Line Screening Facility



Two-Level Filtration System



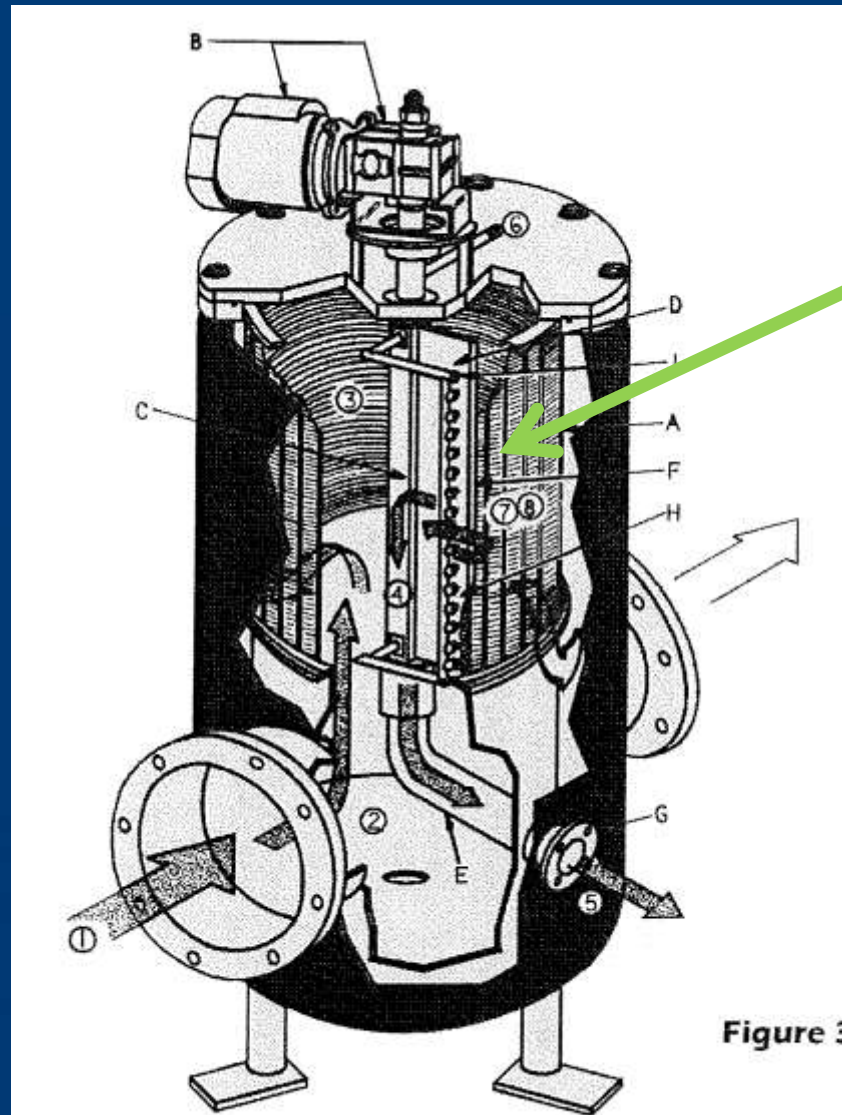
First Level: Single 250-micron Screen



Second Level: Two 25-micron Screens



Interior of Filtering System



Filter

Figure 3

Subsurface Construction

CONCRETE VAULT



Subsurface Construction



**EQUIPMENT
INSTALLATION**

Subsurface Construction



EQUIPMENT IN PLACE

Self-Contained System

**Drains Towards
Sucker Lake**

**Drain Field for
Backwash Water**



Functionality Blended with Nature



Cedar Stained
Woodwork

Stone Face Wall

Existing Park Structure



Construction and Design Implementation



**Spring 2009:
Construction of System**

**Fall 2009:
City Pumps for 1 Month**

**Spring 2010:
First Full Season of
Pumping**

**Fall 2010:
Water Level Restored**

A First for Minnesota



Questions?

