

The background of the slide is a photograph of a calm pond surrounded by a dense forest. The water in the pond is still, reflecting the surrounding trees and the sky. The trees have green and some autumn-colored foliage. A blue header bar is at the top of the slide, and a decorative water splash graphic is on the right side.

Reduce, Reuse, Replenish: The Three R's of Hugo's Stormwater Management Plan

5/2/2016 Freshwater Society.

Bryan Bear

City of Hugo

Why use stormwater?

- **Hugo City Council** directive
 - 3 R's
- **WBL Lawsuit** - Related to USGS report
- **DNR** – GWMA & appropriation permits
- **Met Council** – directs growth
- **Rice Creek Watershed District**
 - Infiltration, flooding, water quality

Stormwater vs Groundwater

- Stormwater is highly regulated by comparison
 - Regulation is to provide a desired outcome
 - May unintentionally discourage the best practices
 - Creativity is usually not rewarded
- Goal is to find the easiest route through regulatory process for project approval
- Existing regs. do not encourage stormwater re-use (yet)
 - Large-scale re-use projects were not anticipated



WBL Lawsuit

- **WBL Restoration Association - vs - DNR**
- **MERA**
- **Claim that DNR mismanaged the resource by allowing too much pumping**
- **Seeking court order for DNR to restore the lake**
 - Stop groundwater pumping
 - Augment the lake
- **Settlement Agreement has been reached...**
- **Main take away – Use less ground water. Use more surface water**

WBL Settlement Agreement

Support for NE Metro surface water supply project

- Requires legislative approval/funding
- New taxing district for operation

Set protective elevation for WBL

- Impacts all appropriation permits in region

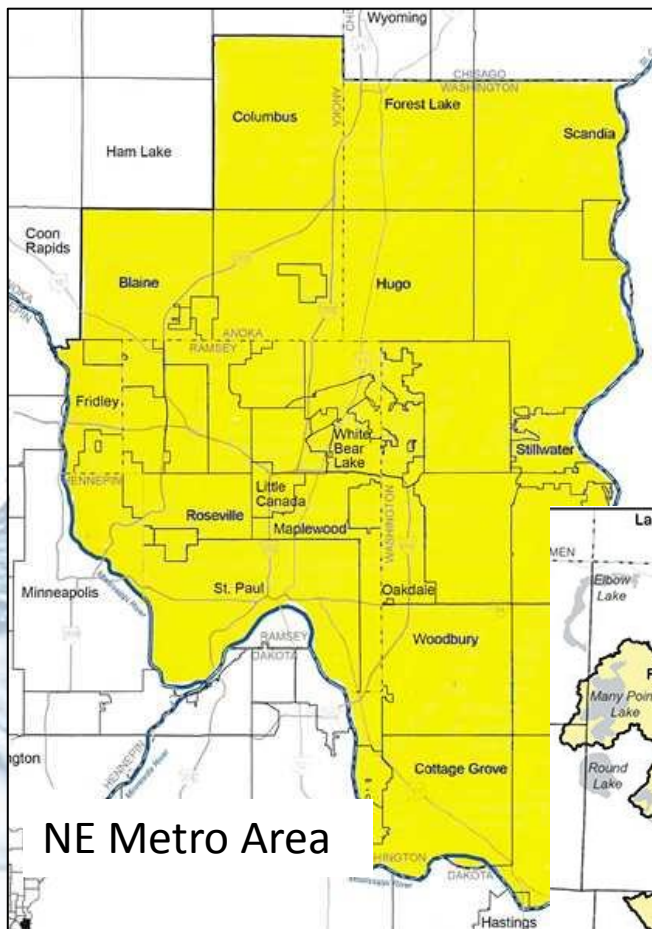
Plaintiffs granted review of all appropriation permits

Conservation

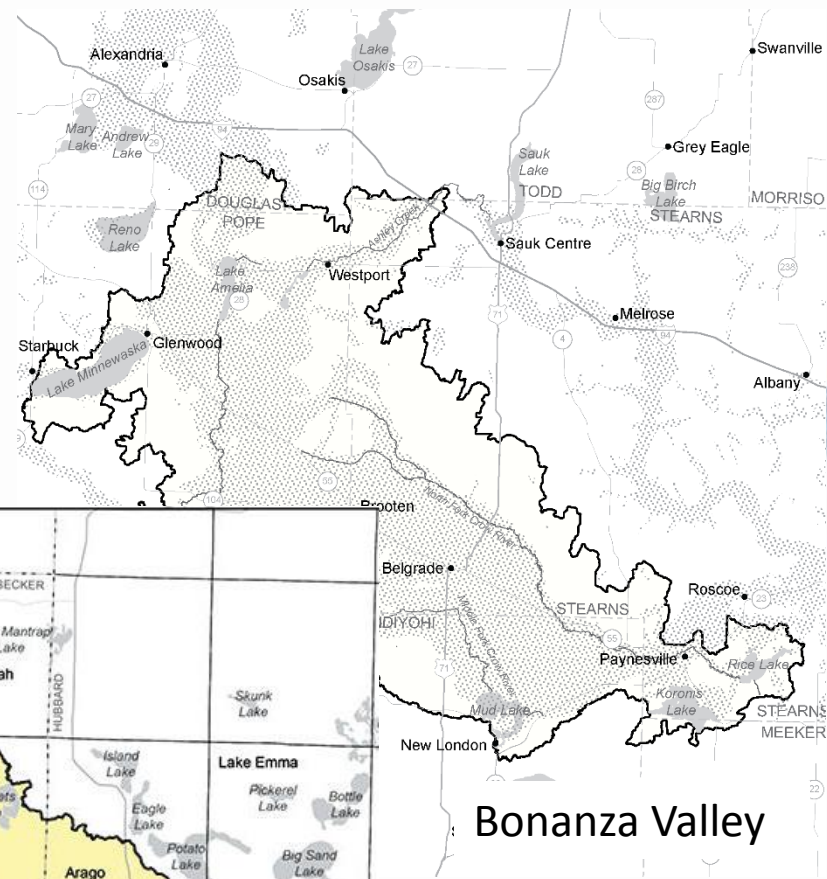
- 17% reduction in water use

Requires NE GWMA Plan to be implemented in 2015

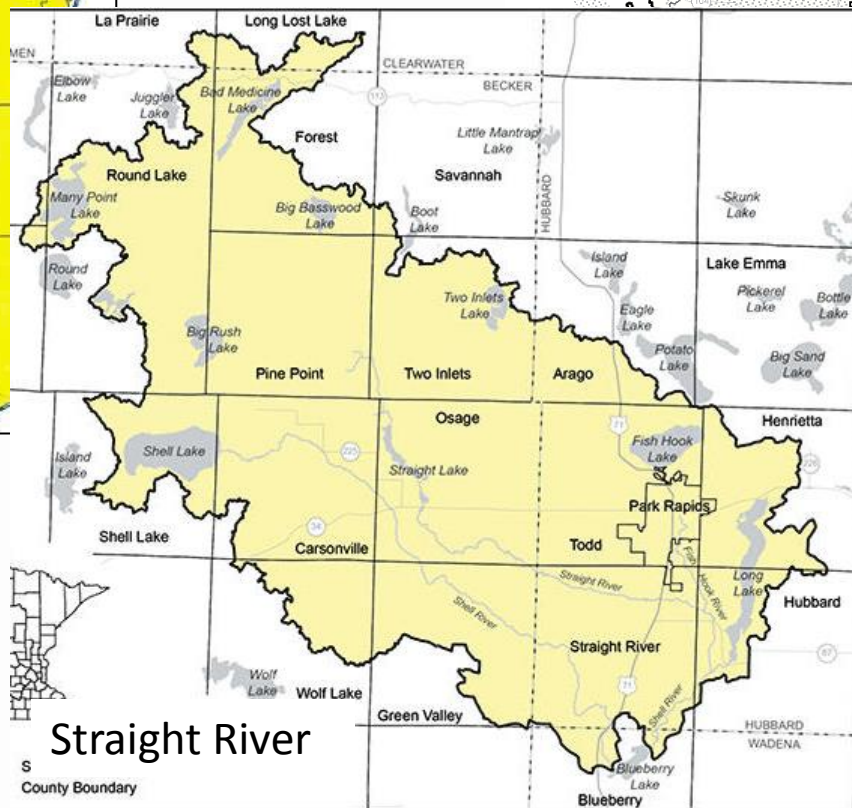
- Vehicle for implementing settlement provisions



NE Metro Area



Bonanza Valley



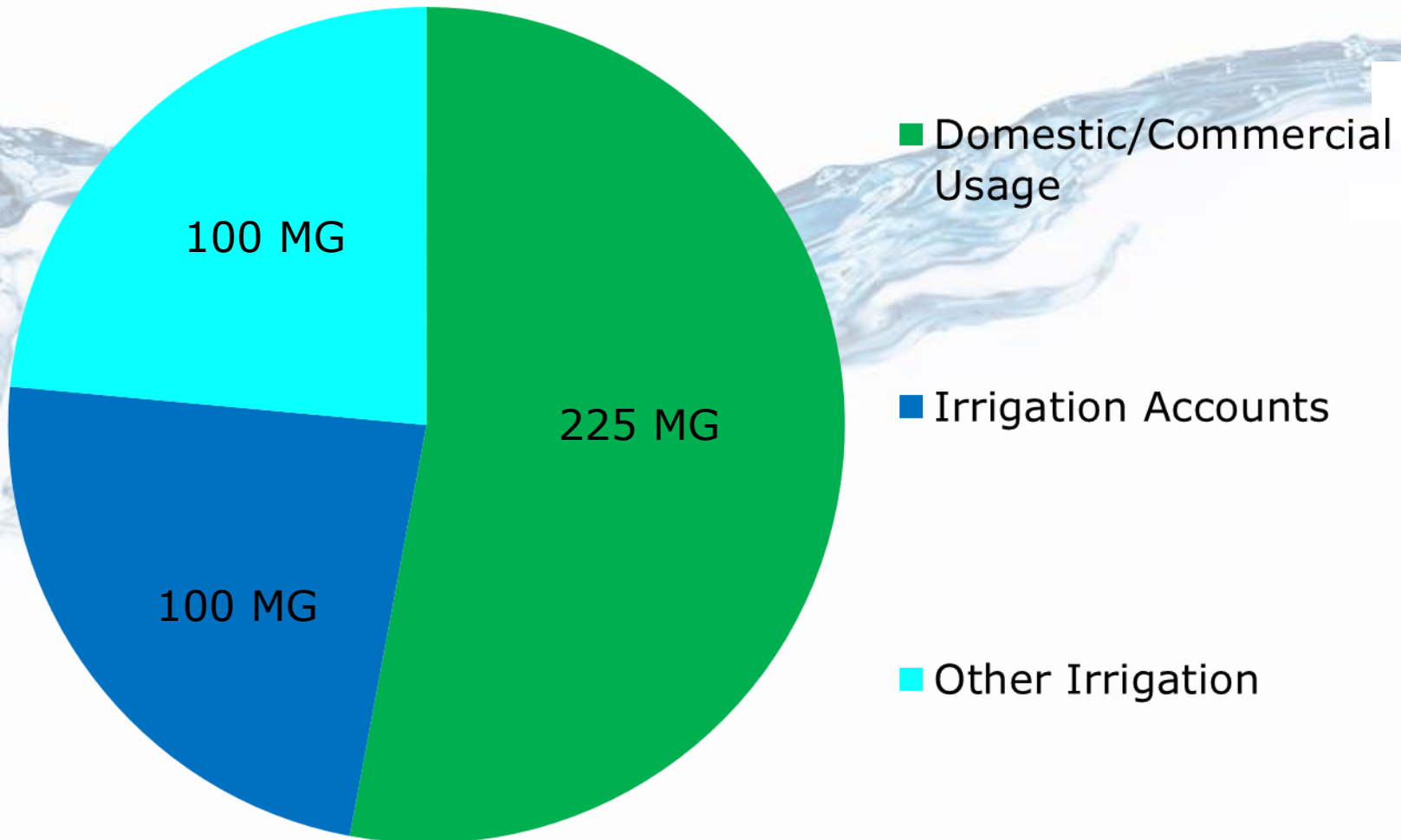
Straight River

S
County Boundary

Integrated Water Management



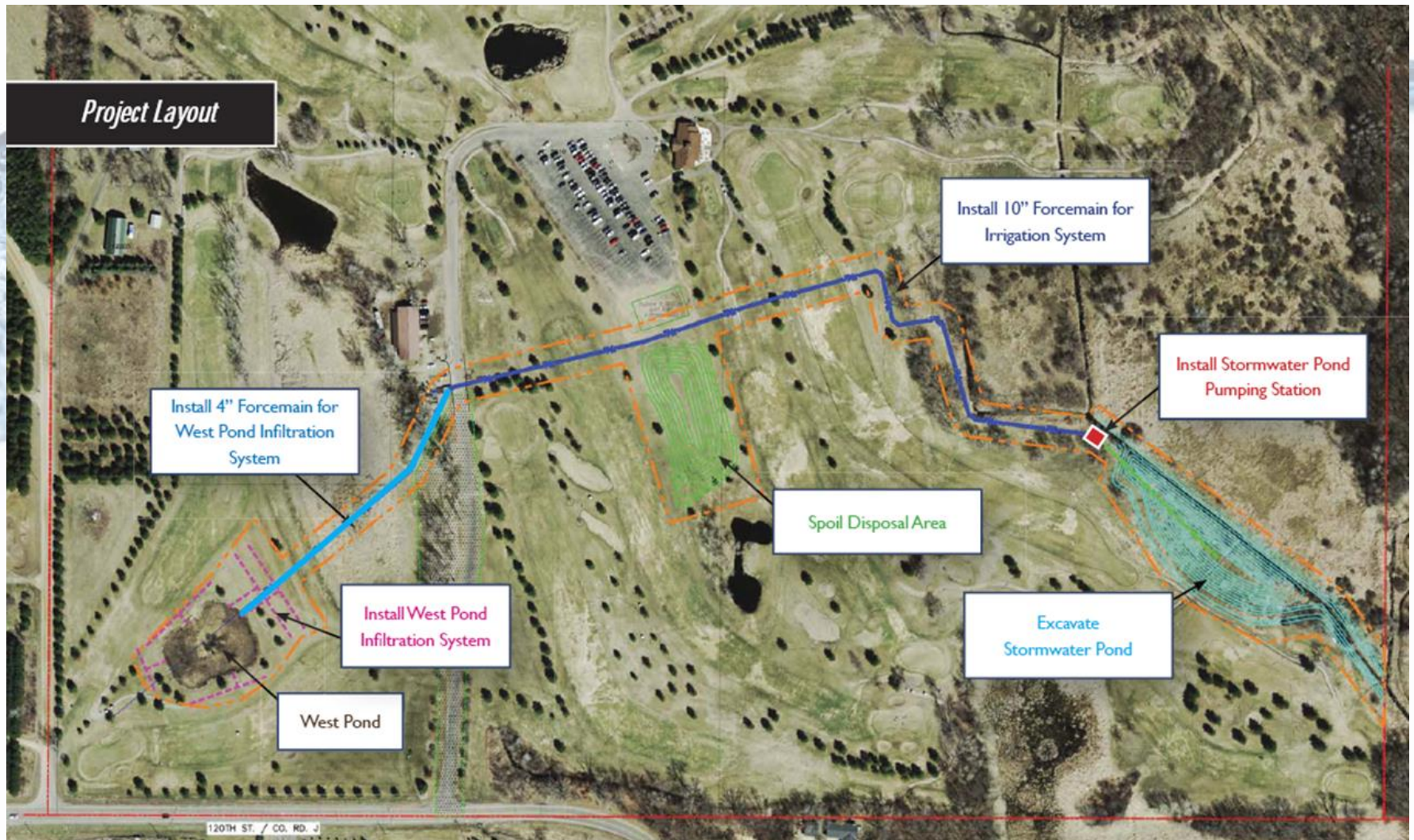
Hugo – Water Usage



Using Stormwater

- Replace drinking water with stormwater
- Irrigation is the main focus
- Start with existing irrigation accounts
- New Development
- Focus on Residential Uses
 - They use the most water

Hugo's Integrated Water Management – Oneka Ridge Golf Course







Hugo's Integrated Water Management – Beaver Ponds Park



Beaver Ponds Park



Hugo's Integrated Water Management – CSAH 8



CSAH 8 Landscaping



Hugo's Integrated Water Management



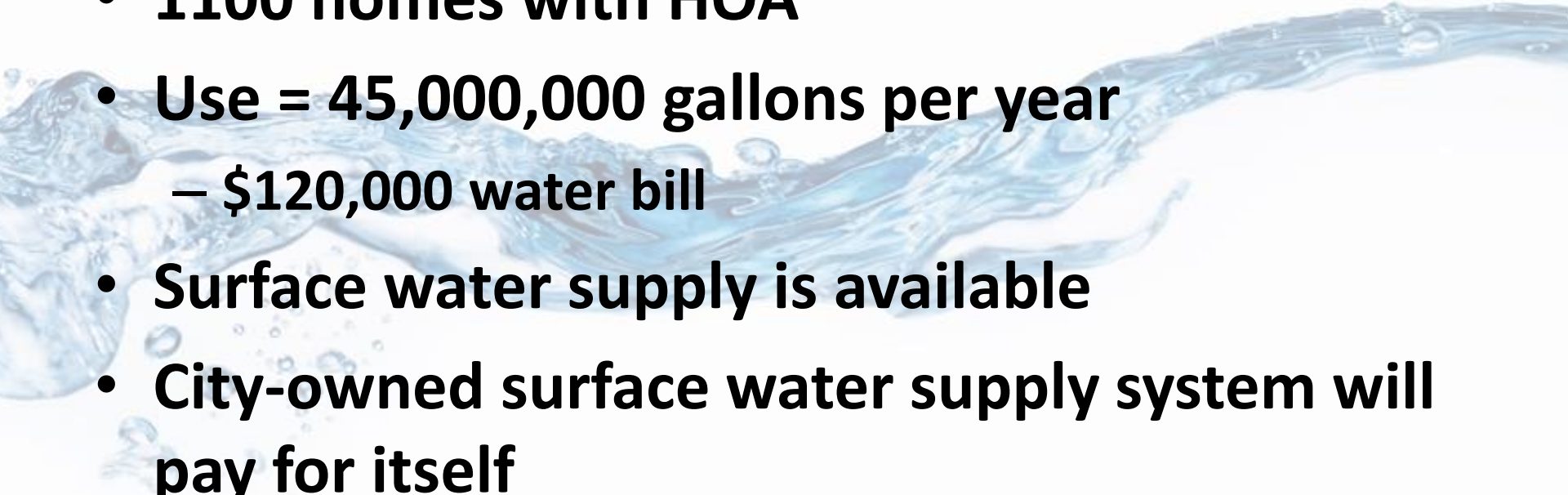
Water's Edge Development



Waters Edge



Waters Edge

- **1100 homes with HOA**
 - **Use = 45,000,000 gallons per year**
 - **\$120,000 water bill**
 - **Surface water supply is available**
 - **City-owned surface water supply system will pay for itself**
 - **Sell them stormwater instead of drinking water**
 - **Reduces peak demand on city water system**
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CONCEPT SKETCH PLAN

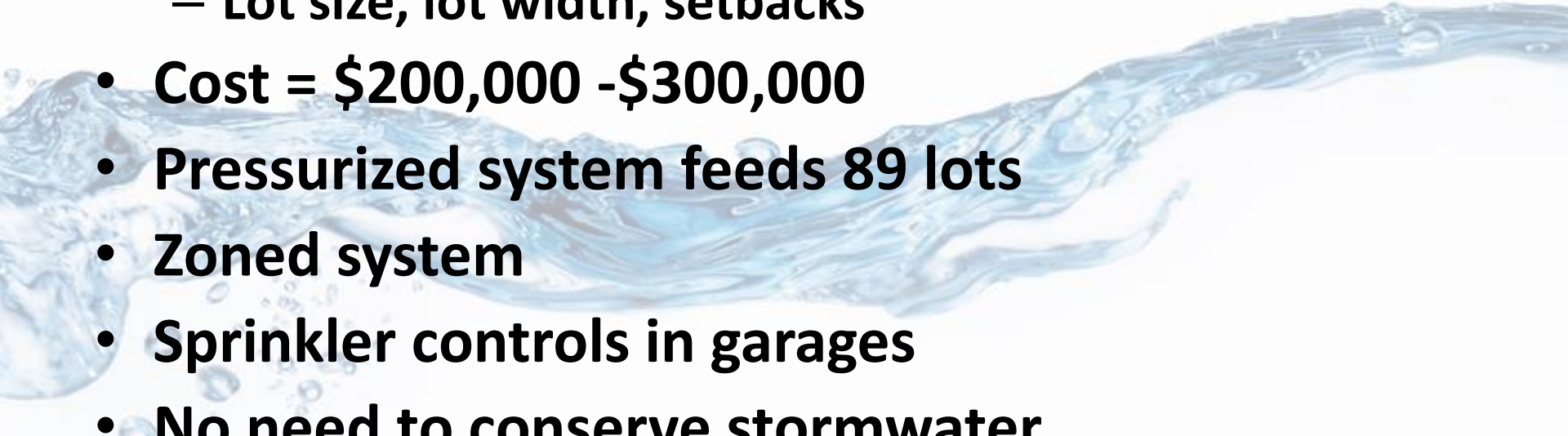


LAVALLE PROPERTY
HUGO, MN



CEAM 2015 Annual Conference

Clearwater Cove water re-use

- **PUD flexibility**
 - Lot size, lot width, setbacks
 - **Cost = \$200,000 - \$300,000**
 - **Pressurized system feeds 89 lots**
 - **Zoned system**
 - **Sprinkler controls in garages**
 - **No need to conserve stormwater...**
 - **Infiltration credits**
 - **SAC/WAC Credits**
 - **City system or HOA?**
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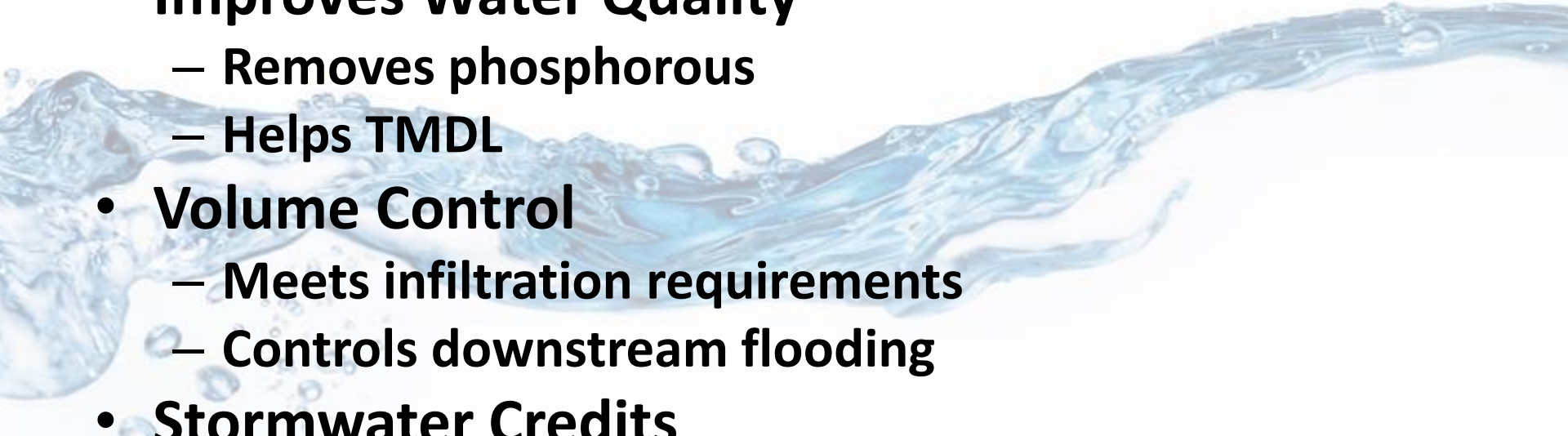
Require it?

- In all new developments????
- Separate set of pipes carrying stormwater serving each home.
- Commercial vs. Residential
- Single-Family is harder than Multi-family.
- Size of the development matters
- Proximity to surface water source
- Controls. Master Control vs individual control
- HOA or no HOA?
- Health Concerns. Who drinks out of the garden hose?

Part of a larger program

- “Reduce, reuse, replenish”
- Water conservation guidelines and incentives for new development
- **Construct storm water distribution system** and convert largest irrigation accounts to use storm water when feasible
- Incentive program for homeowners
- Adjust water conservation rates as necessary to promote good water stewardship practices

Using Surface Water

- **Reduces groundwater use**
 - **Improves Water Quality**
 - Removes phosphorous
 - Helps TMDL
 - **Volume Control**
 - Meets infiltration requirements
 - Controls downstream flooding
 - **Stormwater Credits**
 - RCWD allows trading
 - Allows for regional systems
 - Credits can be sold for \$\$
 - **Surface water can be sold, as long as its cheaper**
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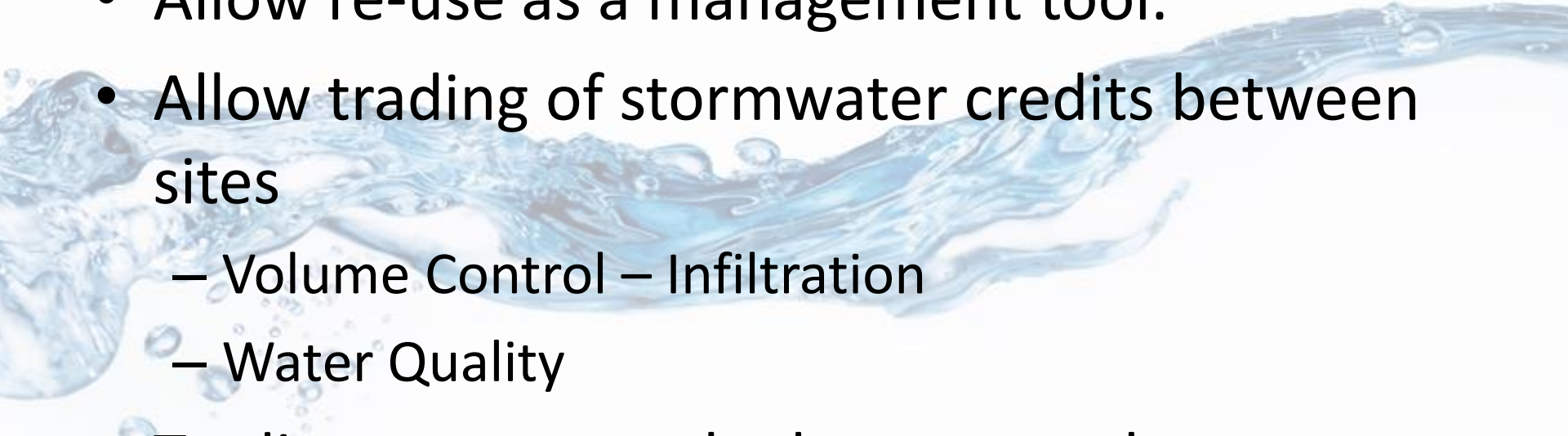


BARRIERS

Watersheds

- Site-by-site drainage regulation
 - Protect water quality
 - Manage water quantity
- Stormwater re-use is a good option
 - Small re-use projects are impractical, expensive
 - Regional projects have high impact & benefit
 - More cost effective
- Results in duplication of efforts and costs
- Infiltration robs water from re-use projects

Watershed Recommendations

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- Allow re-use as a management tool.
 - Allow trading of stormwater credits between sites
 - Volume Control – Infiltration
 - Water Quality
 - Trading areas must be large enough
 - Credits need to have value

(Main objective is to **get rid of stormwater**)

Appropriation Permits

- DNR
 - 10,000 Gallons per Day
 - 1 Million Gallons per Year
 - Up-to 5 month initial review
 - 60 days is typical
 - Public review and comment period
 - Wetlands, Habitat, Interference, etc.
 - Conservation mindset = puzzling requirements

DNR Permits - Recommendations

- Eliminate them, if possible
 - It's easy to use drinking water
- Otherwise....
 - City-wide General Permit
 - Modify process to same-day approval
 - Remove max. pumping limits
 - Remove conservation requirements
- Process encourages use of drinking water
- DNR is working on it...

Grant Funding

- Can't be used to meet rule requirements
 - BWSR, RCWD
 - Volume control is a rule
 - It is better for us **not** to use the grant \$\$
- Stormwater re-use has several benefits beyond the rule

Other Barriers

- WBL Lawsuit & Settlement Agreement
 - 17% Conservation net of new development
- There is only so much surface water to use
 - But it's most available when you don't need it
- Stormwater ponds are beautiful?!?
 - Don't ruin my view by pumping it out
- Best management structure still being worked out. (O&M)
- Dep't of Health – Is the water safe?
 - Will they decide to regulate it?

Other factors

- How to pay for installation, maintenance and replacement
 - Charging for stormwater
 - City ownership?
- Residential land uses have the most potential
 - More complicated
- Optimizing for max. benefit
- Need to balance against alternatives
- Municipal water rates and other measures

Cost

- Expensive to build
 - O&M Costs
- Impacts to City Water Fund
 - Lost revenue
- Establishment of new city utility?
- Could allow us to delay big capital costs
 - Wells and towers
 - Reduces peak demand

Summary

- Focus on irrigation of landscapes with stormwater
- Need for incentives, not regulation
- DNR Appropriation Permits
- Site-by-site water quality and quantity standards discourage good regional projects
- Plumbing Codes
- You can charge \$\$\$ for stormwater
- Other solutions should be studied
 - Aquifer recharge, direct injection
 - Wastewater reclamation