Water Conservation and Reuse in the City of Hugo

Met Council

Environment Committee

March 25, 2014

City Water Conservation policies

- “Reduce, reuse, replenish”
- Water conservation guidelines and incentives for new development
- Convert largest irrigation accounts to stormwater if feasible
- Incentive program for homeowners
- Adjust water conservation rates as necessary to promote good water stewardship practices

Conservation

- Landscaping
  - Shade trees
  - Native landscaping
  - Topsoil requirements
- Water Audits
  - Reduces water usage and water bill
  - Starting with City Properties
    - Buildings/Parks/Parkways
  - Develop template for use with HOA's & large business users
    - Reduce irrigation. Overwatering is common
  - Residential Audits by irrigation contractors

Conservation

- Conservation Water Rates
- Sprinkling restrictions
- Soil monitoring irrigation sensors on city properties
- Incentives for good behavior
  - Initiation of Rebate Program
- Commercial incentives
  - Credits on WAC & SAC fees for innovative reuse, etc

Conservation

- Proposing revisions to development requirements
  - Evaluation of stormwater based irrigation systems
  - Reduction of turf areas
  - Landscaping ordinance
- Industrial Buildings
  - Plumbing codes prohibits gray water reuse
  - Wilson Tool example
  - SAC & REC credits would be an incentive

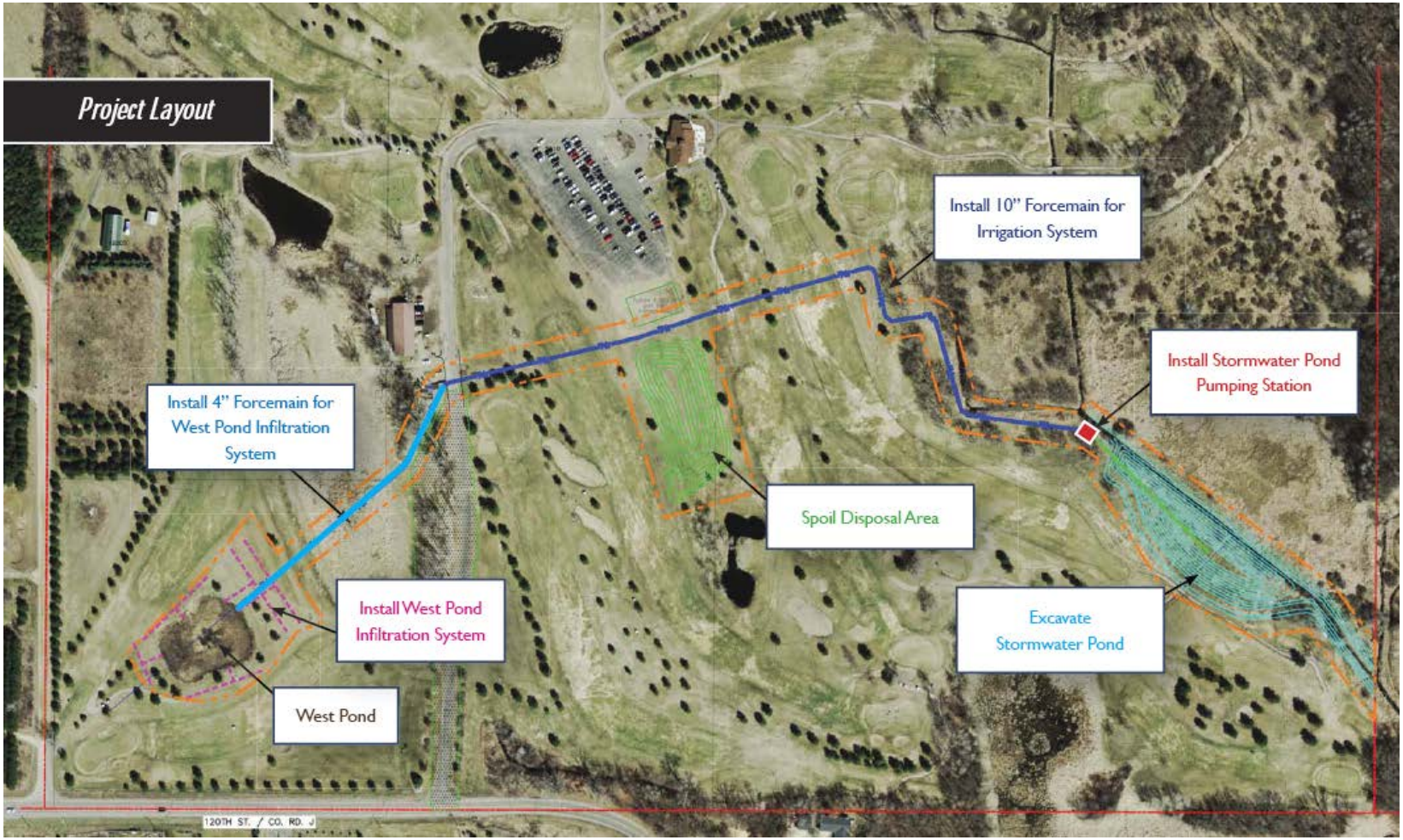
City Water Conservation Plan

- City Stormwater CIP – 2011
  - Collaborative effort with RCWD
  - Reduce dependence on groundwater
  - Effectively treat stormwater
  - 19 regional projects within Hugo
    - Stormwater reuse
    - Infiltration
  - Oneka Ridge Golf Course Project

Oneka Ridge Golf Course

- Joint Project
  - Hugo, RCWD, BWSR, Oneka Ridge Golf Course
- Convert groundwater based irrigation system to stormwater based system
- Reduce groundwater pumping
  - 32MG annually
- Infiltration Trenches
  - 100MG to 300MG of stormwater infiltrated annually
- Under Construction
  - Will be operational this spring

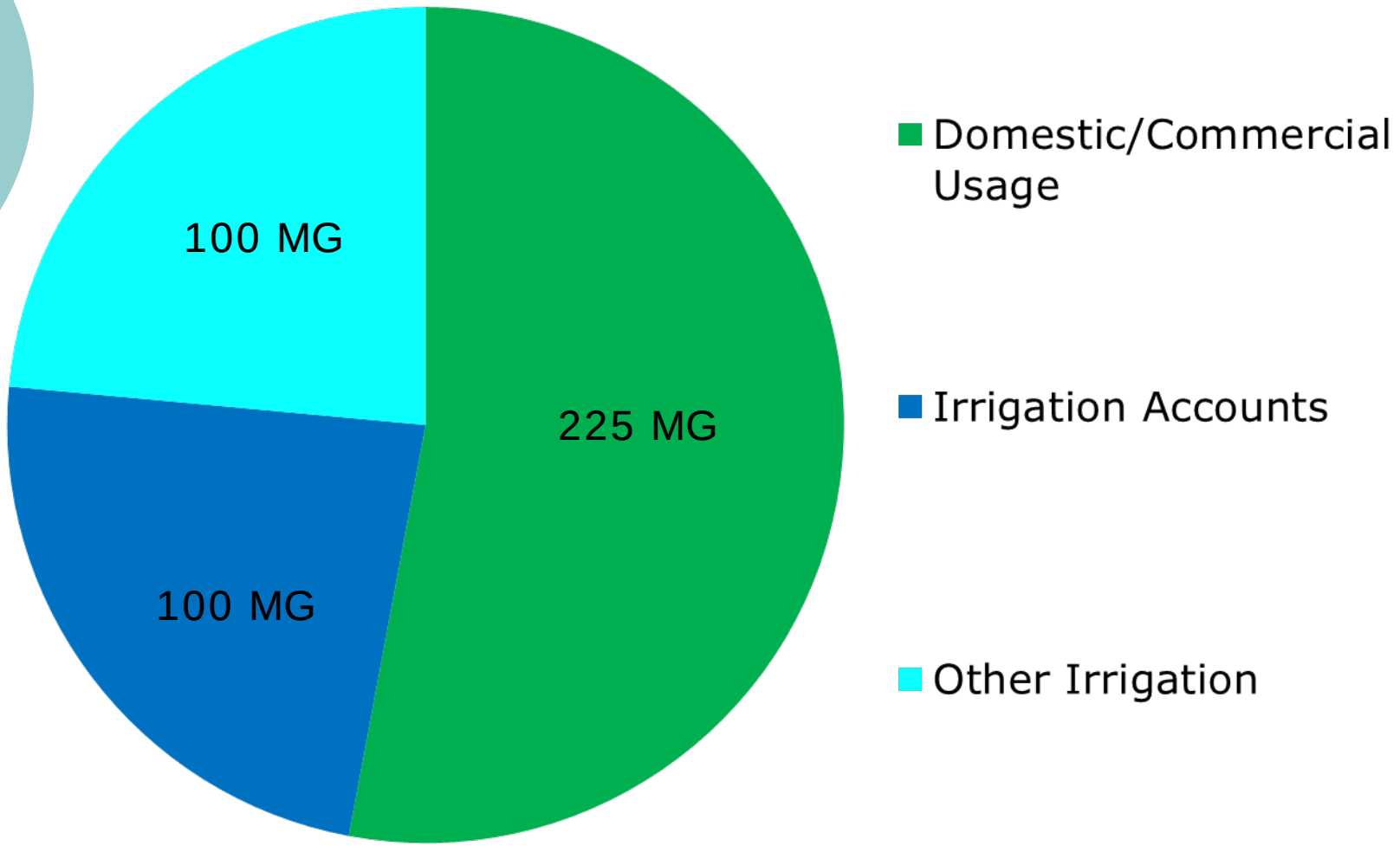
Oneka Ridge Golf Course



Current Regulatory Environment

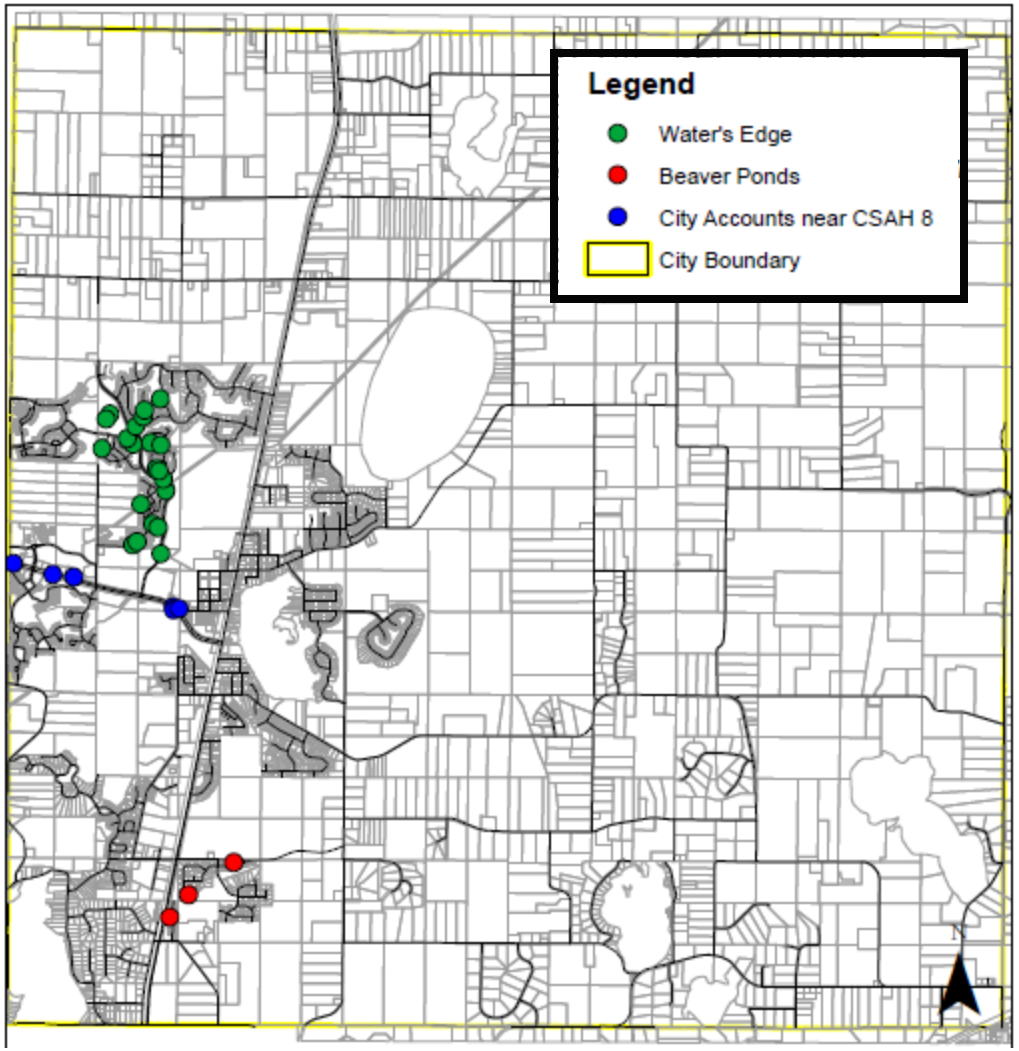
- **RCWD Stormwater Rules**
  - Infiltrate runoff from roads/new impervious surface **(approx. 80% of annual runoff)**
  - Can infiltrate in one location to offset need in another location
  - Irrigation using stormwater is a viable infiltration method
  - Currently working through means of tracking/crediting

Hugo – Water Usage



Storm Water Irrigation – Potential Projects

- 3 Locations:
  - Water's Edge
  - Beaver Ponds
  - CSAH 8 City Accounts
- 50-60 MG/yr

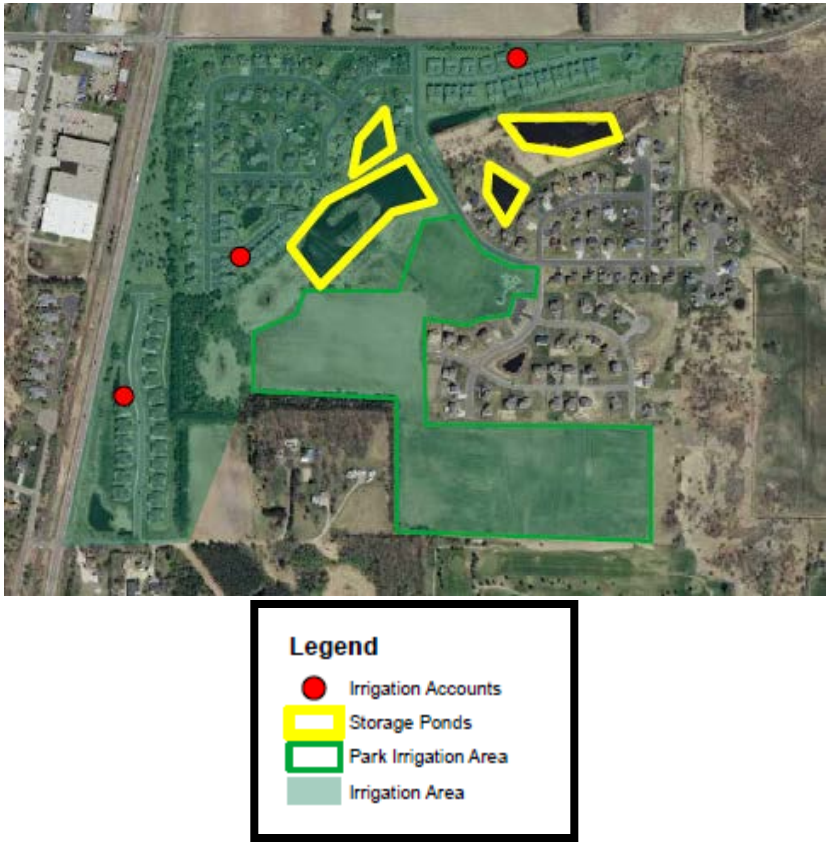


Water's Edge Storm Water Irrigation Project

Tributary Area (Acres)	931
Irrigation Area (Acres)	140
2012 Irrigation Usage (MG)	44.1
Potential RCWD Credit – 1"/wk (MG)	83.6
Est. Storm Water Available (MG)	69.5
Est. % of RCWD Credit Available	83 %
Est. % of 2012 Usage Available	100 %

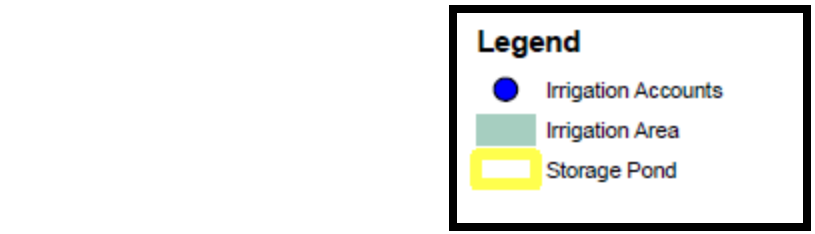
Beaver Ponds Storm Water Irrigation Project

Tributary Area (Acres)	200
Irrigation Area (Acres)	34 (parks) 26 (dev.)
2012 Irrigation Usage (MG)	5.7
Potential RCWD Credit – 1”/wk (MG)	35.8
Est. Storm Water Available (MG)	21.1
Est. % of RCWD Credit Available	59 %
Est. % of 2012 Usage Available	100 %



CSAH 8 City Accounts Storm Water Irrigation Project

Tributary Area (Acres)	2,737
Irrigation Area (Acres)	10
2012 Irrigation Usage (MG)	5.4
Potential RCWD Credit – 1”/wk (MG)	6.0
Est. Storm Water Available (MG)	6.0
Est. % of RCWD Credit Available	100 %
Est. % of 2012 Usage Available	100 %



Storm Water Irrigation Project – Preliminary Estimates

- Capital cost of **$3 million**
- Annual maintenance
- Cost to provide stormwater for irrigation of **$0.50 - $1.00 per 1,000 gallons**

Summary

- **Reduce** pumping by 50–60 MG annually
- **Reuse** 50-60 MG of stormwater
- **Replenish** the aquifer

- Remove up to **800 pounds of phosphorus** annually
- Add capacity for **800 homes**
- **$3 million** in lost revenue

Water Conservation
Why Hugo will be an example

- City Council leadership
  - Issue is important to them
  - Aggressive Goals
    - Re-use up to 100% of stormwater run-off
- Conservation mindset transcends all Departments: Public Works, Engineering, Planning, Parks, Building Dept
- Development Community is ready for it
  - History of creative stormwater practices in a very water-rich city
- Community Support
- Action Oriented