

# New Brighton/Minneapolis Interconnection

## Background

- 1,4-dioxane found in Prairie du Chien (PDC)/Jordan wells within New Brighton supply in 2014
  - 6 wells treated at Water Treatment Plant 1 (**7.2 MGD** capacity)
- April 2015, New Brighton turned off PDC/Jordan wells and switched to Mt. Simon-Hinckley (MSH) aquifer
  - 4 wells treated at Water Treatments Plants 3, 4, and 5 (**4.5 MGD** capacity)

## Reasons for Minneapolis interconnection

- Short-term contingency supply
- Alternative supply until long-term response complete (additional treatment at WTP1)
- Long-term mutual aid
- Simplification of construction sequencing

# Water quality

<b>Minneapolis</b>	<b>New Brighton</b>
Surface water	Groundwater
Softened	Unsoftened
Chlorine and ammonia for disinfection (chloramines)	Sodium hypochlorite for disinfection (free chlorine)
Orthophosphate for corrosion control	No corrosion control chemicals

## Interconnection evaluation

- Potential to produce incompatible disinfection byproducts
- Taste/odor concerns
- Potential to cause corrosion due to changes in pH, alkalinity, hardness
  - Can lead to increased exposure of lead and copper
- New Brighton decided to purchase water from Minneapolis (up to **6 MGD**)
- Construct permanent booster station and interconnection pipeline
- New Brighton to pre-emptively add phosphate prior to change-over

## Interconnection design/construction

- Spring 2016: pipeline construction and installation of temporary booster pump
- Spring 2016: develop plan to switch to Minneapolis water
  - add phosphate to NB supply before change-over
  - develop flushing plan
  - meet with MDH
- Summer 2016: interconnection online with temporary booster pumps
- November 2016: permanent booster station online
- Interconnection operational between July 2016 and September 2018

# Booster Station

## Temporary Pumps



## Permanent Booster Station



## Initial change-over/system flushing

- July 2016
- NB flush system for five days
- Two types of sampling of flushed water

Parameter	Minneapolis	New Brighton
Free Chlorine (mg/L)	0.1 – 0.4	0.5
Total Chlorine (mg/L)	> 0.5	0.5
pH	8.9	7.6



## Lead and copper sampling

- August 2016: initial lead and copper samples collected
  - No samples exceeded action levels (39 samples)
- June 2017: lead and copper samples collected (30 samples initially)
  - 5 samples exceeded action levels
    - >10% → additional sampling and notification required
  - Collected additional samples (37 additional), 1 exceeded action level
- Increased orthophosphate dose in 2017

## After Minneapolis interconnect

- September 2018: discontinue interconnection use, use New Brighton's MSH wells (WTPs 3, 4, and 5)
- December 2018: PDC/Jordan wells and WTP1 online with additional treatment for 1,4-dioxane
- Continue feeding orthophosphate for corrosion control



Questions?