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Water Treatment Plant #5

Project Update

December 10, 2018

Agenda

- Background
- Water Supply Plan
- Water Distribution Strategy
- Process to Date
- Options
- Future Needs
- Total Estimated Project Costs
- Schedule
- Recommendation



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Background



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- Goal: Increase filtered water to ~99% of days
(dependent on weather)
- Benefits:
 - Operational Flexibility – maintenance of other plants
 - Increase resiliency of the filtered water supply
 - Reduction in water quality complaints
 - Equitable distribution – complaints from SE area

Background



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- History:
 - 2008 – Scoping
 - 2010-2012 WTP 6
 - 2012 – Easement at Southdale
 - 2014, 2016 Capital Improvement Planning

Water Supply Plan



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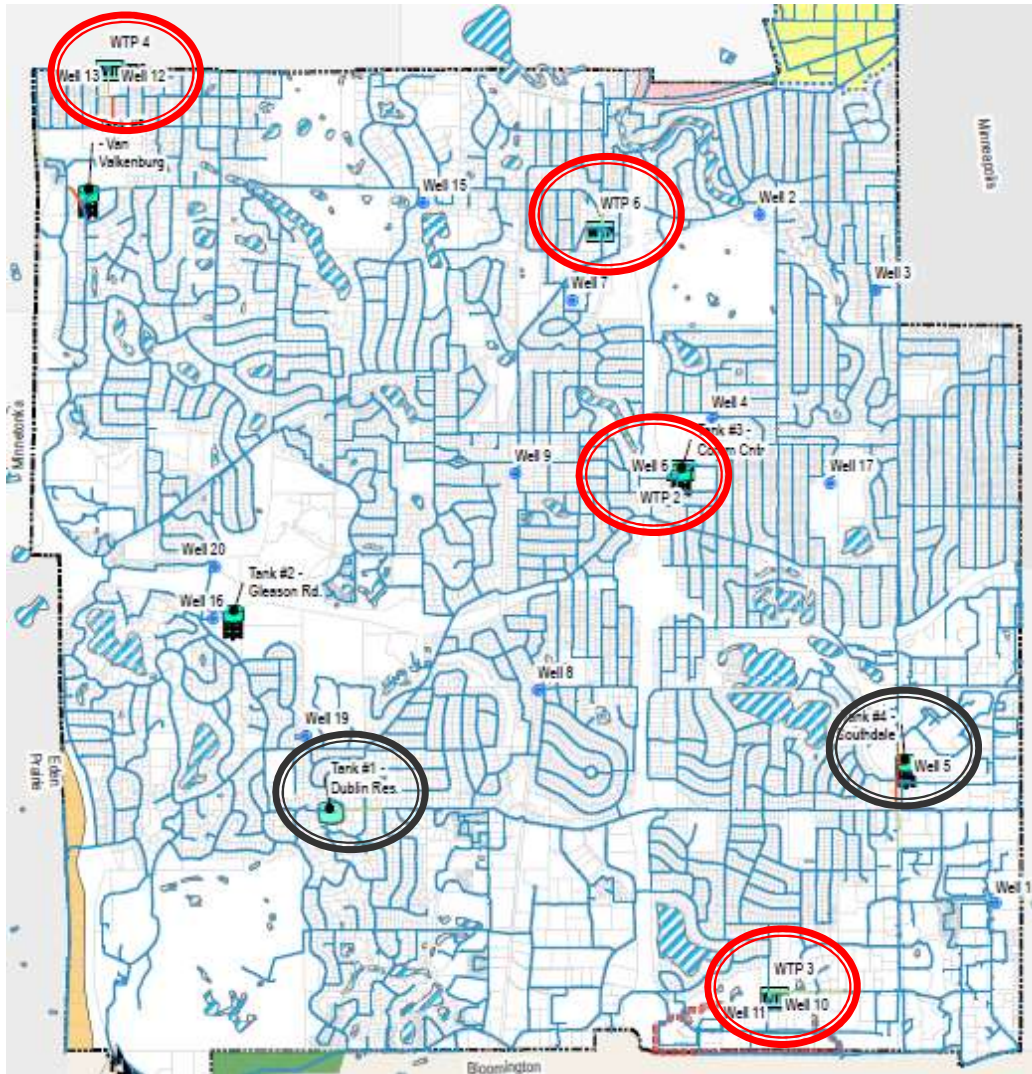
- Tool – identify, plan for, and address utility trends
 - Water supply, treatment, distribution and growth
- Key findings
 - System has capacity for growth
 - Average water demand stable with counter conservation trends
 - Indoor water demand shows a passive conservation trend
 - Outdoor and peak day varies widely with climate

Water Supply Plan



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- System Needs
 - Trunk capacity improvements – NE and Grandview
 - E-W capacity flow
 - Tapping available storage at Dublin Reservoir (2.88 of 4.0 MG (70%))
 - Water age concerns in western portions
 - Additional storage



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Water Distribution Strategy



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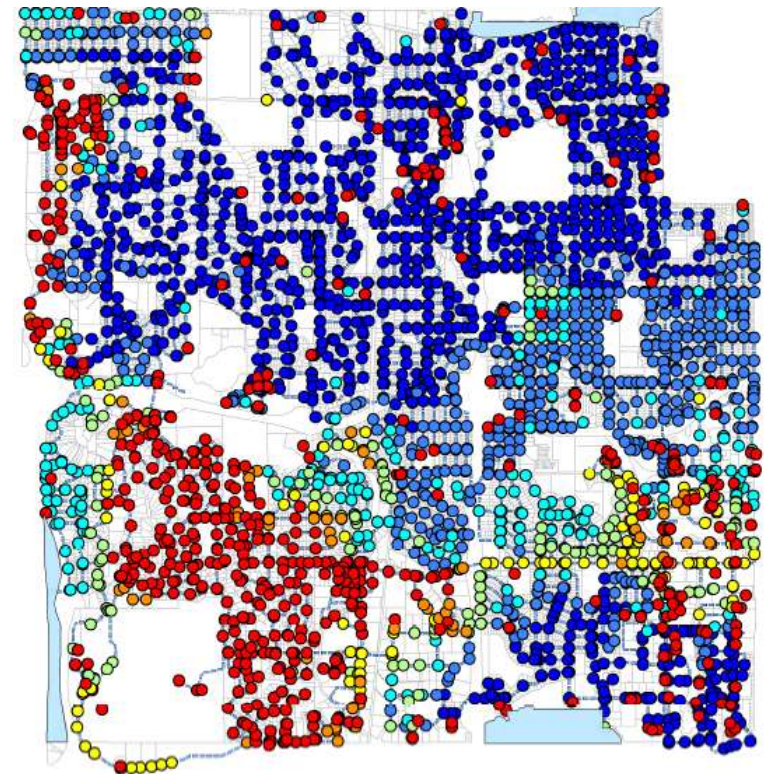


Water Distribution Strategy



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- Dublin Reservoir On

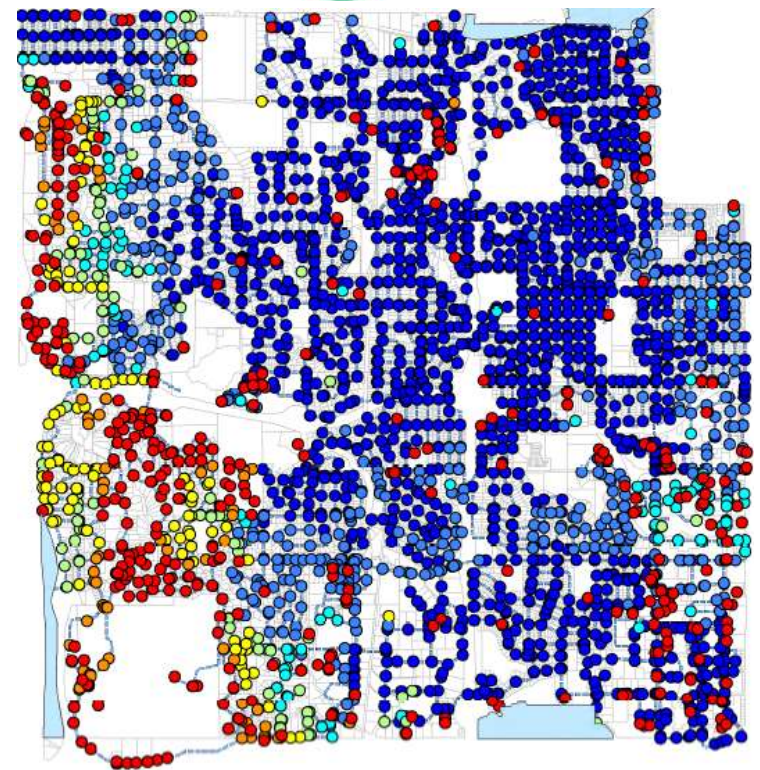


Water Distribution Strategy

- Dublin Reservoir Off



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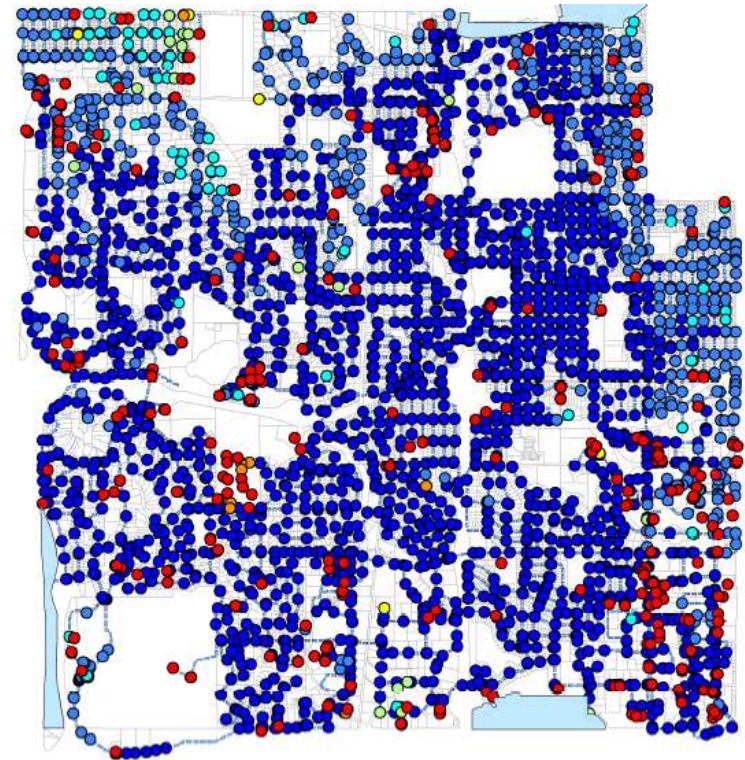


Water Distribution Strategy



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- WTP at Dublin



Water Distribution Strategy



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- Strategy #1: Treatment at location of demand and complaints - SE
- Strategy #2: Treatment at location of other overlapping infrastructure needs
 - E-W Flow Capacity
 - Water age in western portion
 - Better utilization of Dublin Reservoir Site
 - 3 wells immediately available

Process to Date



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- March 2017: Detailed Study Began
- October 2017: Preliminary Report – selected Southdale Site
- February 2018: Planning Commission setback variance
- February 2018: Council setback variance but architectural concerns
- April 2018: Hired Snow Kreilich – enhanced architectural option at Southdale
- October 2018: Council accepted the Water Supply Plan
- October 2018: Hired AE2S to study Dublin Reservoir Site

Options



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- Studied 13 options at 5 locations
- 4 options for discussion
 - Option 1C: Southdale Site at 95% design
 - Option 1E: Southdale Site with Snow Kreilich Concept
 - Option 5A: Dublin Site at 3,000 gpm capacity
 - Option 5C: Dublin Site at 4,000 gpm capacity

Options



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- Option 1C: Southdale Site at 95% Design



Options



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- Option 1E: Southdale Site – Snow Kreilich Concept

*Concerns – equipment, exterior doors, etc.



Options



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- Option 5A: Dublin Site at 3,000 gpm
- Option 5C: Dublin Site at 4,000 gpm



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Advantages / Disadvantages

- Option 5A or 5C: Dublin Site at 3,000 gpm or 4,000 gpm

1. Three wells immediately available
2. Distribution system available
3. Overlapping infrastructure needs
 - a. Addresses water age issue
 - b. Better utilization of storage volume
 - c. Improves E-W distribution
4. Lesser architectural premium
5. Simpler chemical process
6. Coordinate piping needs with 2020 street reconstruction

1. Raw WM required
2. Located in residential area
3. Water storage need increases from 0.5 MG to 1.5 MG by 2040

Advantages / Disadvantages

- 3 wells immediately available
- 4,000 gpm
 - Option for 4th well



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Future Needs



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- All options – future storage – size and location TBD
 - Future water demands and conservation trends
 - Potentially Community Center Tower
 - Oldest Tower
 - Centrally Located

Future Needs



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- Southdale
 - 3rd well
 - Due to 3,000 gpm size – may need additional treatment facility
- Dublin at 4,000 gpm
 - 4th well
 - May reduce need for additional treatment facility

Future Needs



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- Dublin at 4,000 gpm
 - 4th well – Well #8





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Professional Services to Date

<u>Item</u>	<u>Date</u>	<u>Fees</u>
AE2S Preliminary Engineering Services	March 7, 2017	\$75,000
AE2S Change Order #1 – Additional Pilot Testing and Evaluation of Fred Richards Site	September 6, 2017	\$10,500
AE2S Design and Bidding Phase Services	October 3, 2017	\$911,000
Total AE2S Approved Services to Date		\$996,500
Snow Kreilich Approved Services to Date	April 17, 2018	\$19,600
AE2S Additional Professional Services	October 16, 2018	\$27,200
Total Professional Services to Date		\$1,043,300

Total Estimated Project Costs



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	Option 1C – Southdale Site - 95% Plan	Option 1E - Southdale Site - Snow Kreilich Concept	Option 5A – Dublin Site – 3,000 gpm	Option 5C – Dublin Site – 4,000 gpm
Estimate Total Project Cost	\$13.81 M	\$19.26 M	\$15.86 M To \$16.31 M	\$16.78 M To \$17.23 M

Funding Sources



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- 2019-2024 CIP
 - WTP #5 - \$15 million
 - Well #21 - \$0.7 million
- Shift other watermain projects
- Contingency
- Value Engineering

Schedule



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- December 2018: Select Option
- January 2019: Public Participation and Engineering Proposal
- Summer / Fall 2019: Bid Opening / Award
- Fall / Winter 2019/2020: Construction Start
- Fall / Winter 2021/2022: Construction Complete

Recommendation



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- Staff recommends Option 4 the Dublin Reservoir Site at a 4,000 gpm capacity
- Staff would bring a public engagement proposal and request for purchase for professional services for council's consideration.

Public Participation - Questions



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- Siding Material Type / Texture
- Siding Color
- Window Style
- Roof Style
- Roofing Material
- Landscaping

New Architectural Concept



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- 2008 Concept



New Architectural Concept



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- October 2017 Concept



New Architectural Concept



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- February 2018 Concept



New Architectural Concept



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- March 2018 Concept



New Architectural Concept



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New Architectural Concept



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New Architectural Concept



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