

Project Background

- Original sewer main ~80 years old
- History of bypass events directly into lake
- Difficult maintenance
- Lake erosion – exposed pipe potential
- Located in residential lakefront yards



Project Background



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Project Background



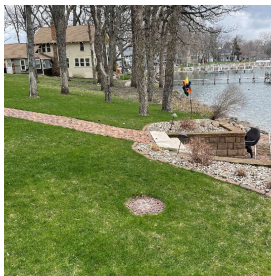
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Project Background



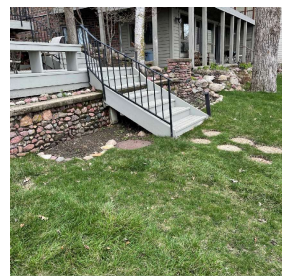
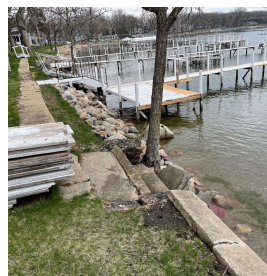
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Project Background



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Considerations



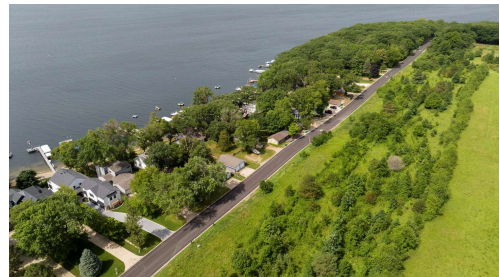
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Considerations



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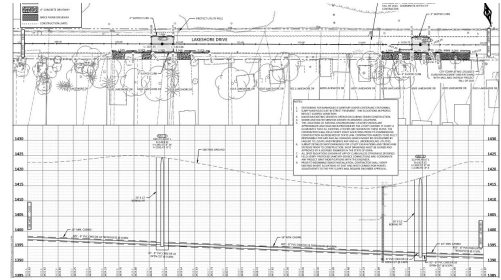
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Considerations



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Considerations



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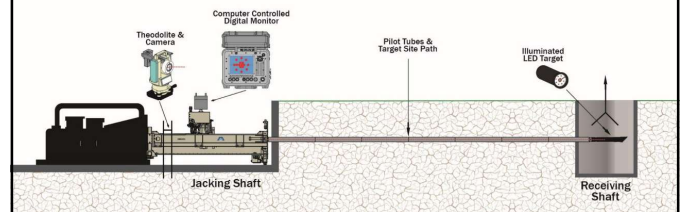
Real Solutions



- Sanitary Sewer Length: 1800 LF
- Average Bury Depth: 20-30 LF
- Manhole Maximum Spacing: 600 LF
- Over 10 LF Vertical Difference Between Lakeshore Drive and Water Level
- Feasibility Cost:
 - Open Cut: \$2.5 Million
 - Pilot Tube Guided Bore: \$1.8 Million
- Bid Cost (Bored): \$2.0 Million

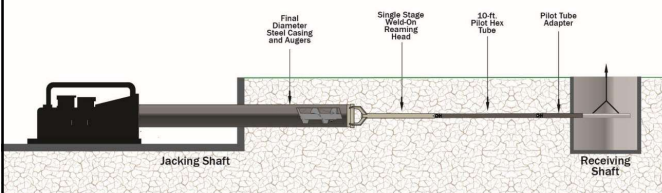
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Real Solutions



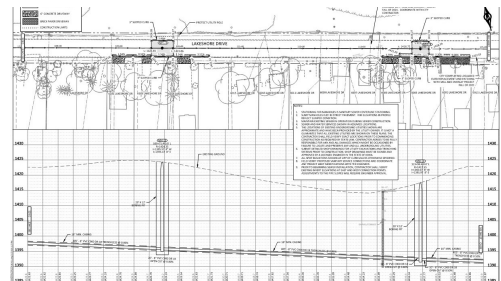
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Real Solutions



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Real Solutions



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Real Solutions



Shoring Construction

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Real Solutions



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Real Solutions




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Real Solutions



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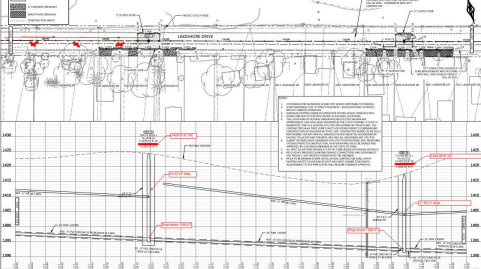
Real Solutions




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Real Solutions

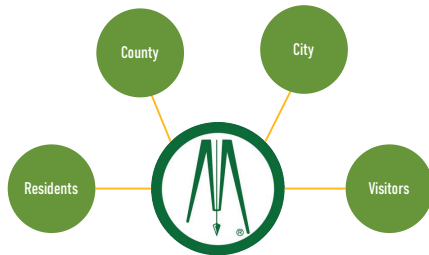


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HJO Josh please put a short caption or detail of what is happening in the video
Hannah Johnson, 2023-05-02T17:03:30.542

Coordination



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Coordination



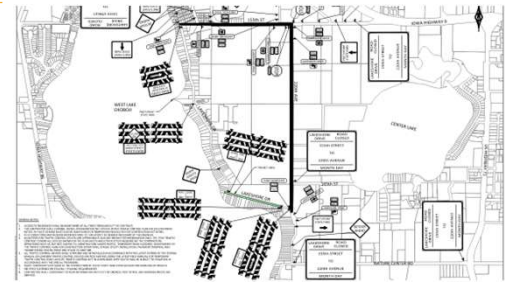
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Coordination



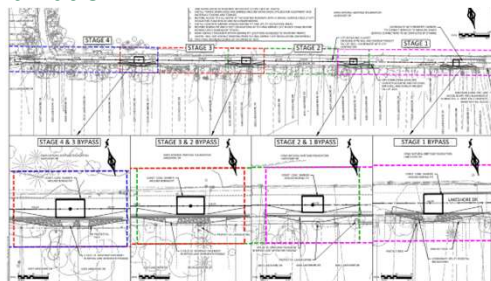
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Coordination



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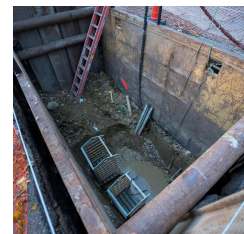
Coordination



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Results

- Sanitary Sewer Length: 1800 LF
- Construction Schedule:
 - October – December 2021
 - April – May 2022
- Feasibility Cost: \$1.8 Million
- Bid Cost: \$2.0 Million
- Constructed Cost: \$1.9 Million
- Open Cut Cost (Est.): \$2.5 Million



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Real People, Real Feedback

"THANK YOU for all you and your crew did to make our son's wedding day a success! I must say that the smaller renovation projects of the cottages next door have caused significantly more inconvenience than your very large project."



"We have been very pleased with the work of Bolton & Menk on all of our projects. They have provided quality design along with a dedicated staff that provides great communication to staff and elected and appointed officials all while keeping the project on time."

"Bolton & Menk's communication with property owners during construction has been exceptional. I typically only hear complaints while projects are being completed; however, I have received numerous positive comments from the public regarding their work."

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Thank you!

Josh Pope
PE, ENV SP, LEED AP BD+C
Principal Engineer



Joshua.Pope@bolton-menk.com

