



Waukesha Water Supply Alternative

July 9th, 2015

Prepared For:
Webinar Press Conference

Prepared By:

GZA GeoEnvironmental, Inc.
Global Water Center
Milwaukee, Wisconsin

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What is the Non-Diversion Solution?

- Use of Waukesha's EXISTING service supply area
- Addition of radium treatment technology to three existing deep groundwater wells

| | Does <u>DNR's Technical Review</u> conclude that the 6 alternatives: | Does <u>CIC's Independent Analysis</u> conclude that a single alternative: |
|---|--|--|
| ...provide(s) an sustainable <u>potable</u> water supply? | No | Yes |
| ...cause(s) <u>additional drawdown</u> of the deep sandstone aquifer? | Yes | No |
| ... <u>treat(s) radium</u> to meet public health standards? | No | Yes |



DNR's Three Criteria to Determine A 'Reasonable' Alternative

| | Great Lakes Diversion | Non-Diversion Solution |
|----------------------------|---|---|
| | Cost | |
| 50-Year Present Worth Cost | \$334 Million ✗ | \$174 Million ✓ |
| | Public Health Protection | |
| Radium Concentrations | Meets Standards for Drinking Water ✓ | Meets Standards for Drinking Water ✓ |
| | Environmental Impacts | |
| Deep Aquifer | No Additional Draw Down ✓ | No Additional Draw Down ✓ |
| Surface Water | Additional Impacts to Root River ✗ | No Additional Impact to Wetlands ✓ |
| | Additional Impacts to Fox River ✗ | |

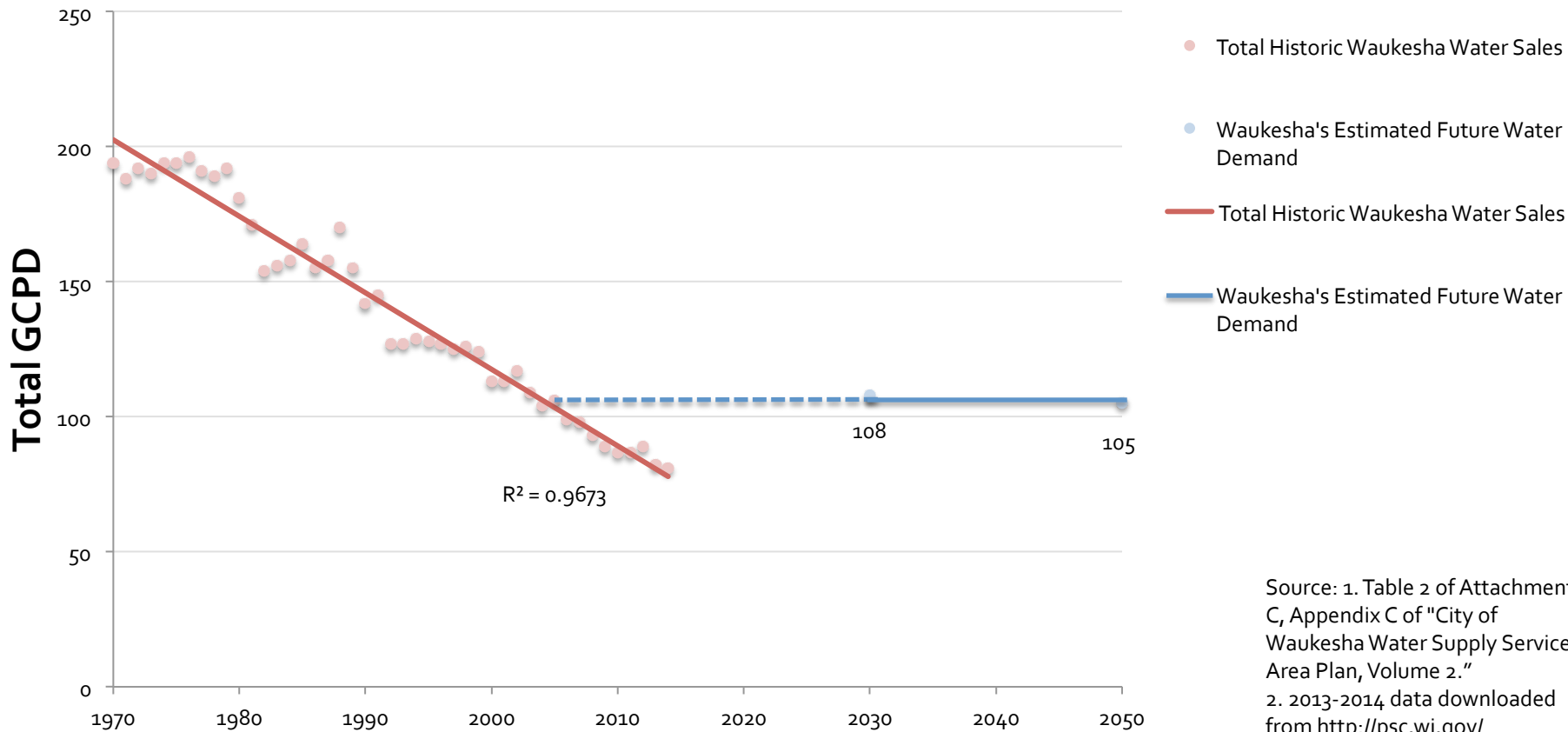


| How is the Non-Diversion Solution analysis <u>the same</u> ? | | | | | | | | | | | |
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| <u>Waukesha's Diversion Application</u> | <u>Non-Diversion Solution</u> | | | | | | | | | | |
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| Population Growth | 0.5% per year | | | | | | | | | | |
| Maximum Day Demand | 1.66 Million Gallons Per Day Average Day Demand | | | | | | | | | | |
| Unaccounted For Water | 8% | | | | | | | | | | |

| How is the Non-Diversion Solution analysis <u>different</u> ? | | | | | | | | | |
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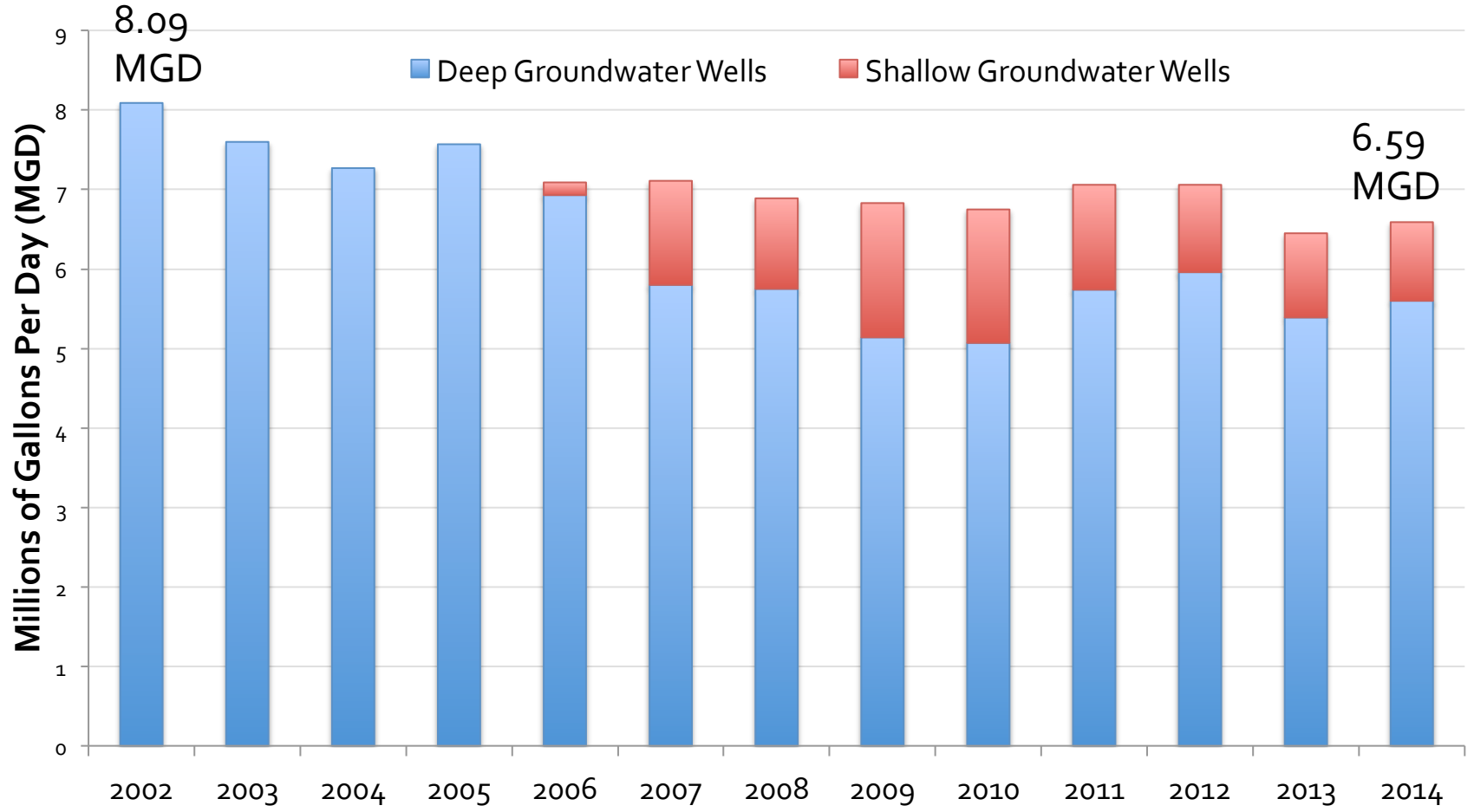


Total Historic Waukesha Water Sales (GPCD) (1970-2014) VS Waukesha's Estimated Future Demand (2030, 2050)

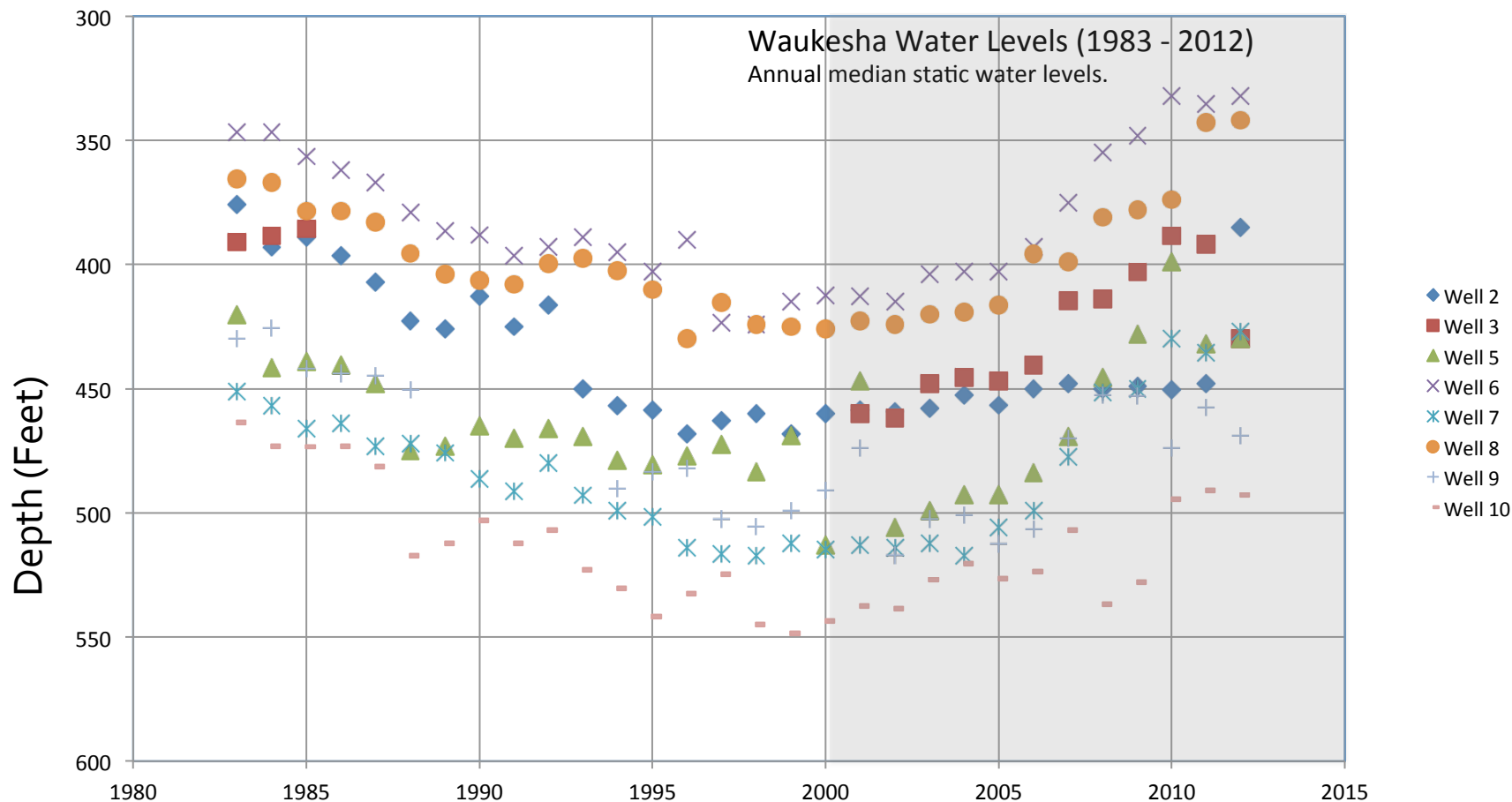


Source: 1. Table 2 of Attachment C, Appendix C of "City of Waukesha Water Supply Service Area Plan, Volume 2."
2. 2013-2014 data downloaded from <http://psc.wi.gov/>

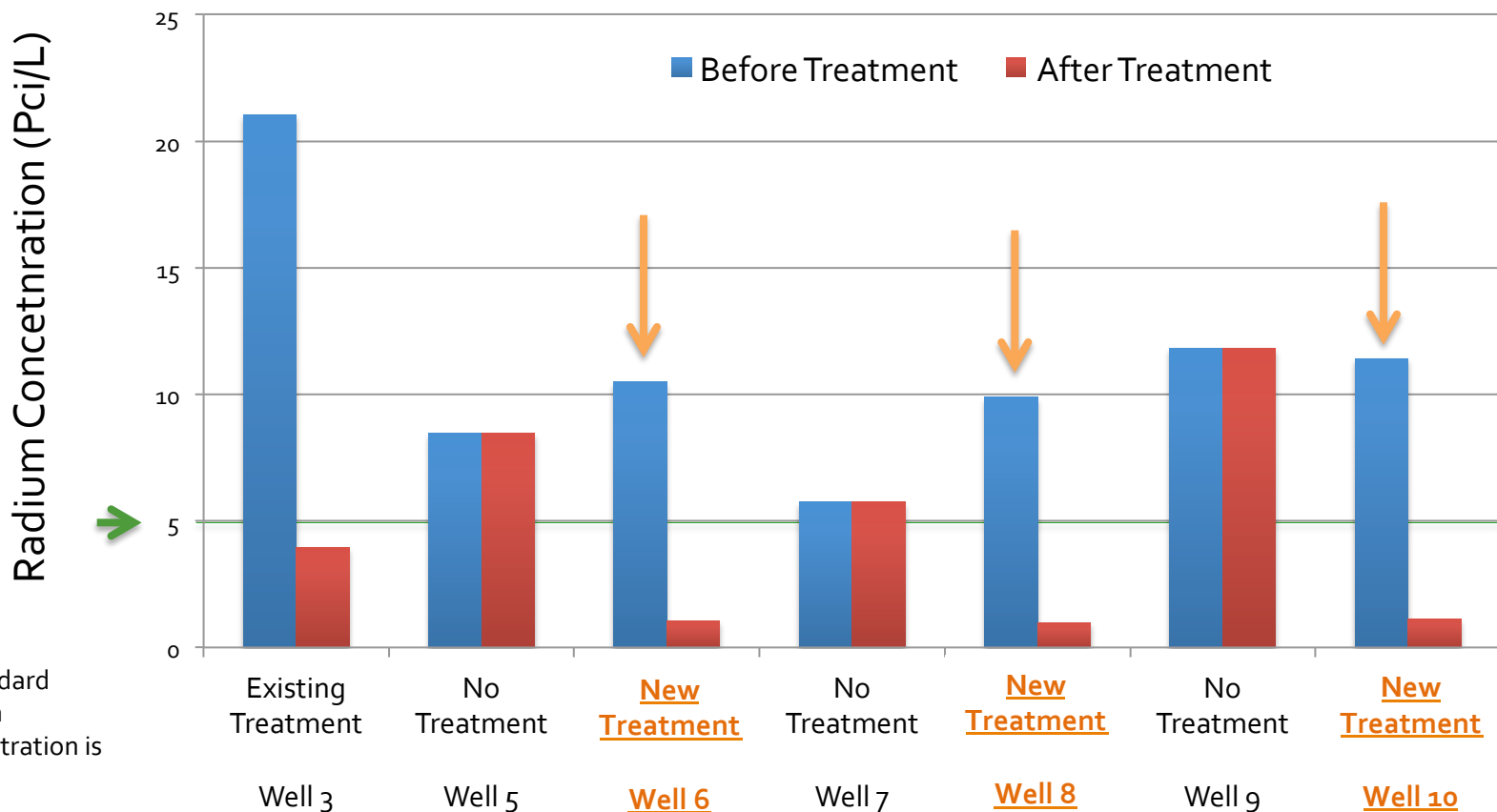
Average Day Pumping Rate (MGD) of Existing Waukesha Water Wells



Deep Bedrock Water Level Rebound (Ave App. 80 ft)



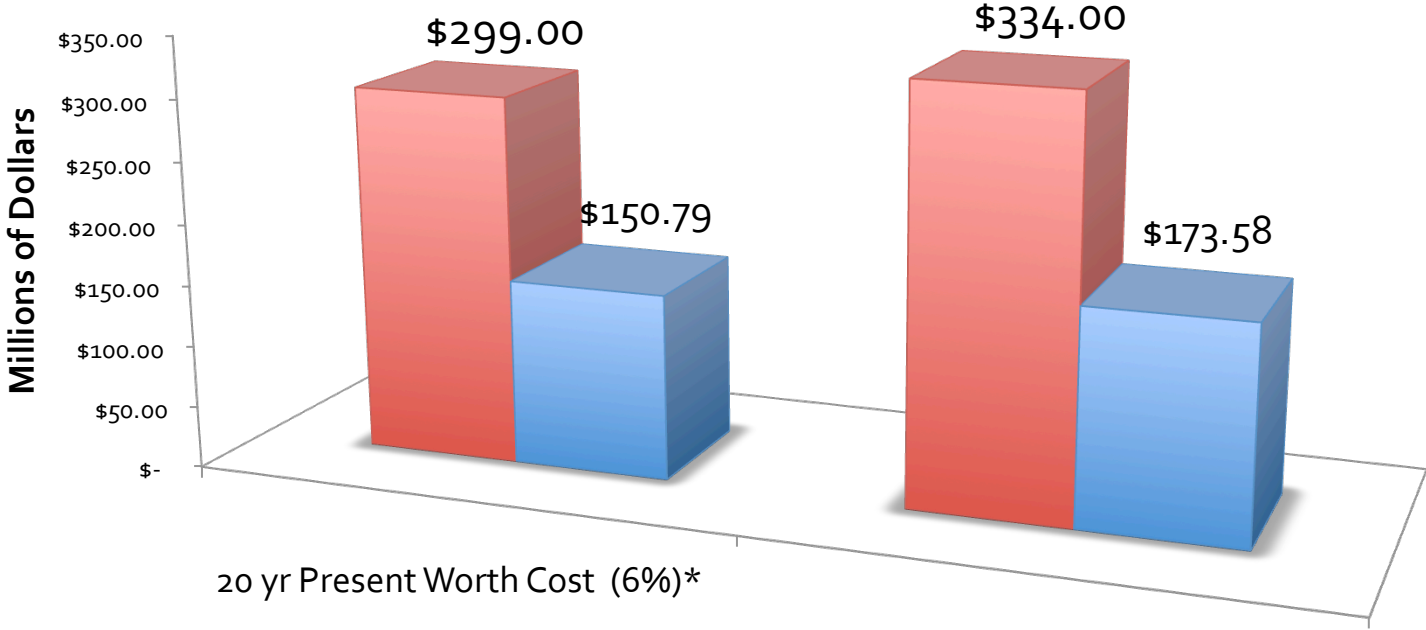
Mean Radium Concentrations Before Treatment VS Estimated Mean Radium Concentrations After Treatment



**Standard Radium Concentration is 5 Pci/L

Cost

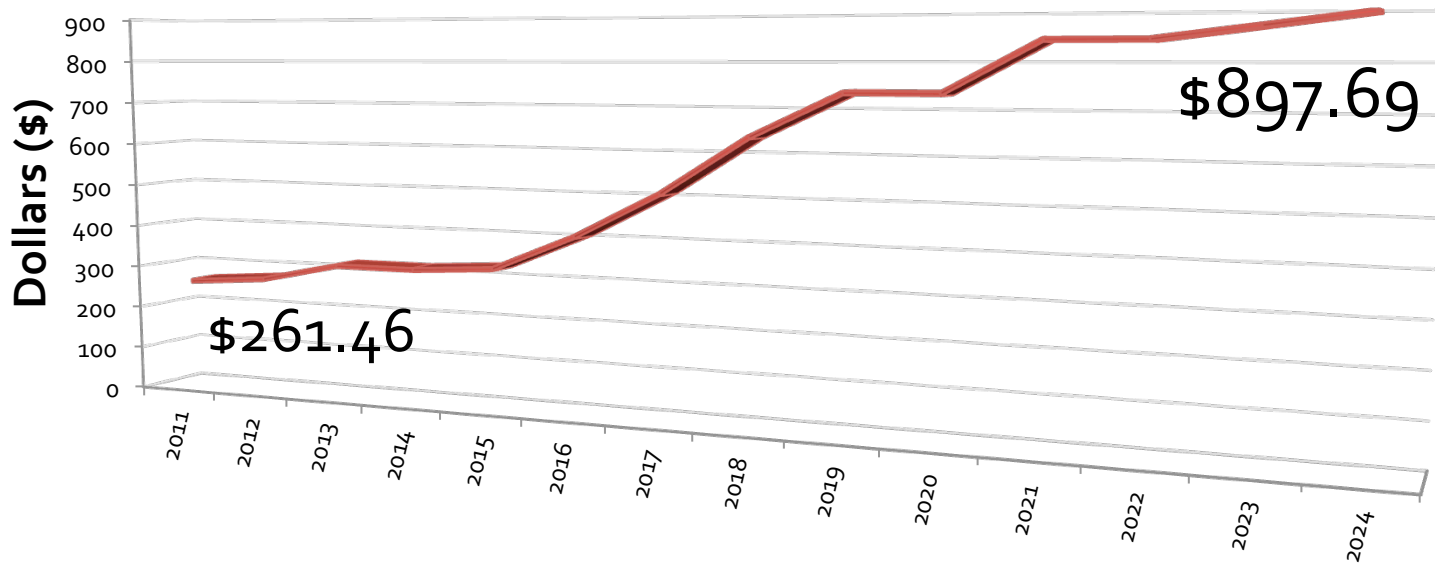
■ Great Lakes Diversion ■ Non-Diversion Solution



*Provided by Mead & Hunt; includes capital and annual operation and maintenance costs

Water Tax

Great Lakes Diversion Average Annual Water Bill - Residential



Source: Waukesha Water Utility's 2015 budget, Page 4,
http://www.waukesha-water.com/downloads/UC_R_Budget2015-2.pdf



Non-Diversion Solution, A Reasonable Alternative

| | Non-Diversion Solution |
|---------------------------|--------------------------------------|
| | Cost |
| 50 Year Net Present Worth | \$174 Million ✓ |
| | Public Health Protection |
| Radium Concentrations | Meets Standards for Drinking Water ✓ |
| | Environmental Impacts |
| Deep Aquifer | No Additional Draw Down ✓ |
| Surface Water | No Additional Impact to Wetlands ✓ |