

The Future of Goodyear's Water Production

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Background

- The City of Goodyear focuses on water production via groundwater wells.
- Based on firm supply*, the City currently has a 5.6 MGD deficit in water supply. This deficit will reach 11.1 MGD by the year 2020, and 18 MGD by 2025.
- The city drastically needs to look at their options for future water production and begin moving forward with planning for additional groundwater wells.

* Firm supply is defined as the City's overall capacity with its two largest wells out of service.

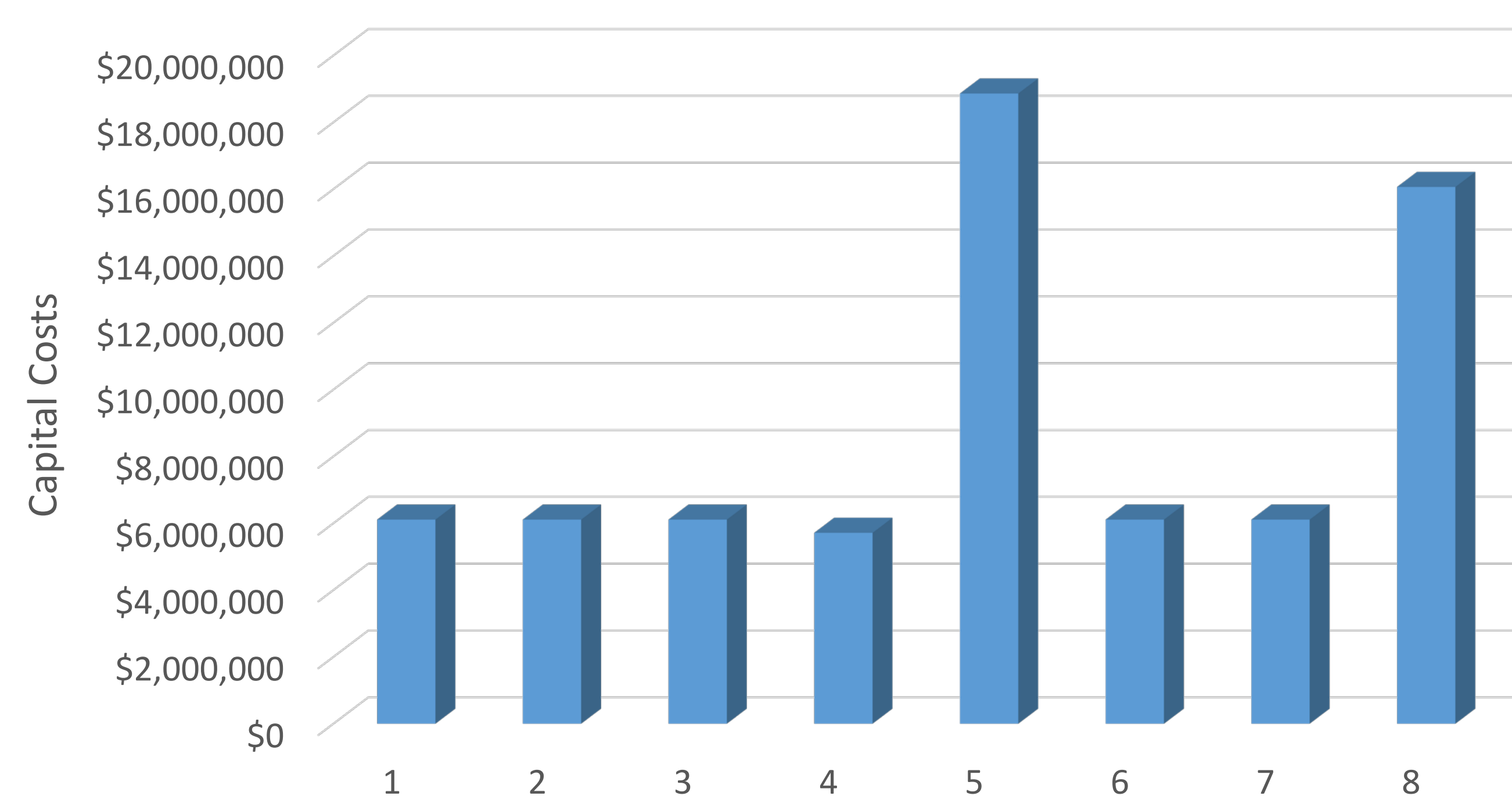
Objectives

- Research Question:** Which water production options suggested to the City of Goodyear by the Carollo engineering firm in the Integrated Water Master Plan 2015 (IWMP) report provide the "highest benefit" for the City to meet future water demands through the year 2025?
- Highest Benefit:** Lowest investment in capital and operations costs, with the biggest return in water production.

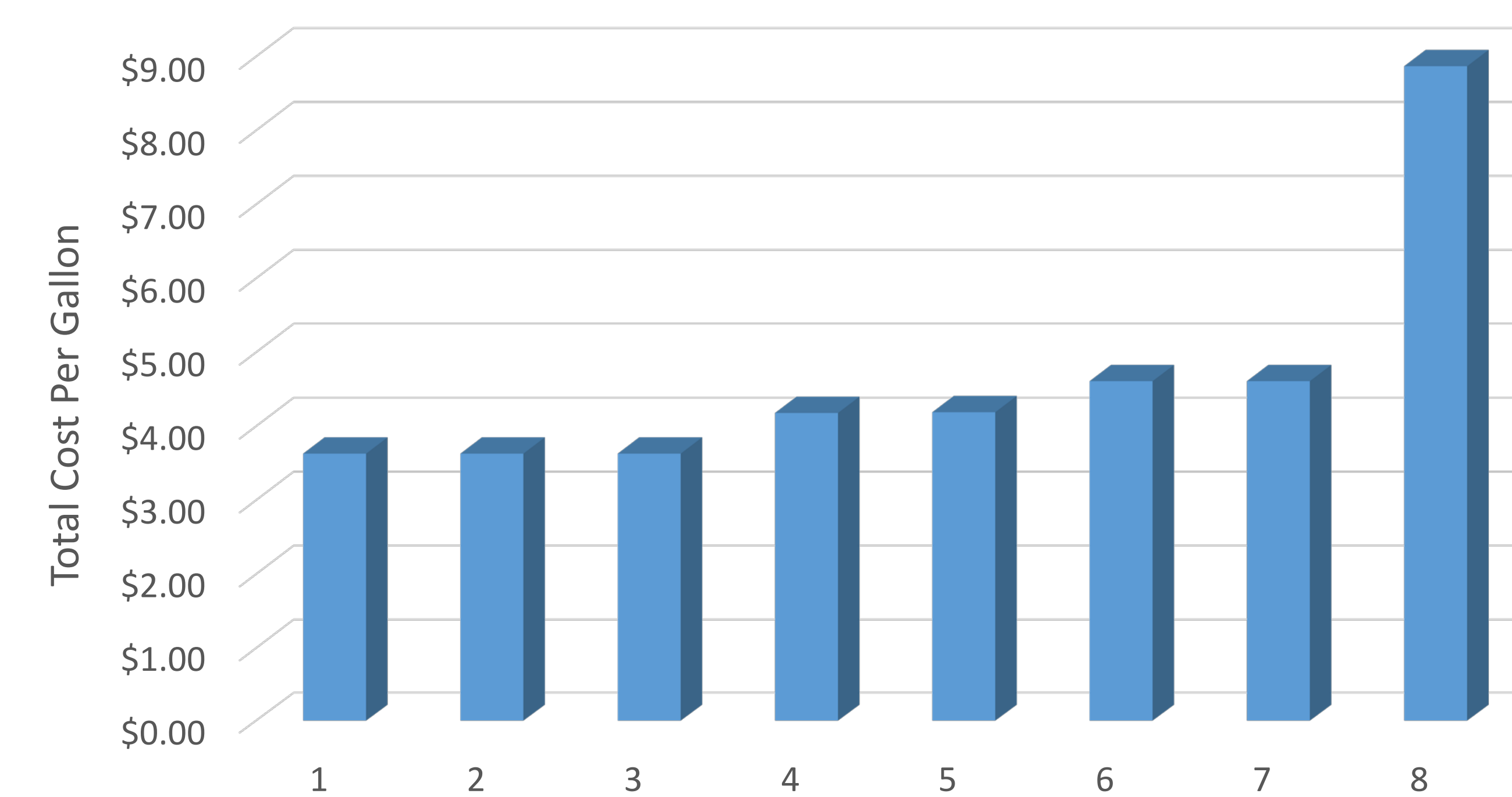
Methods

- This study looks at 8 specific options purposed to the City within the *INWP 2015* report.
- Materials: *Integrated Water Master Plan 2015, Five-Year Capital Improvement Program – May 2015*, and the *Unit Cost Analysis for Water Commodity FY 2012*.
- Perform cost/benefit analysis of the 8 options and create a preferred ranking order of results.
Cost/Benefit = (Capital Costs + Operation Costs) / Water Production (see graphs)

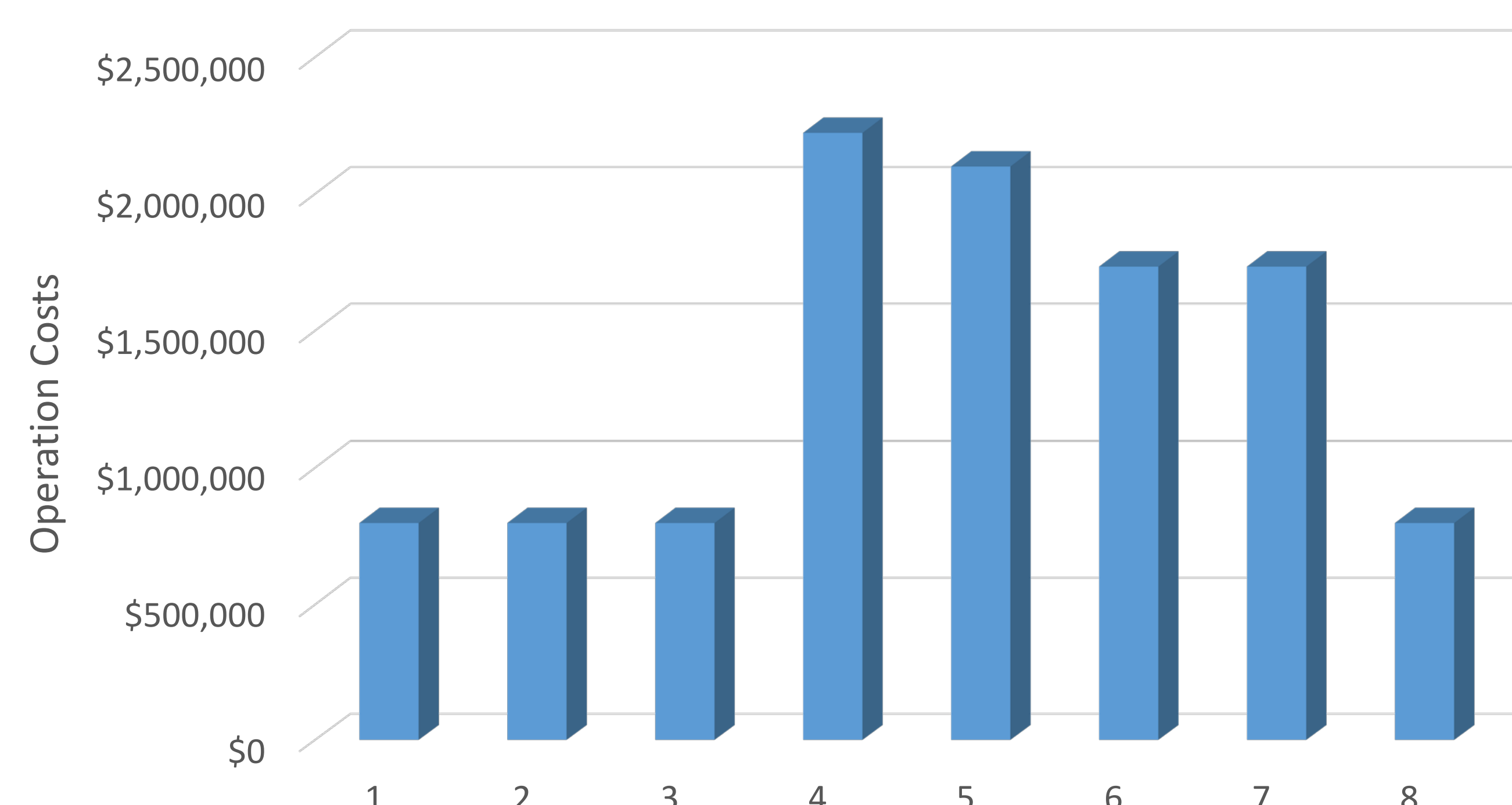
Capital Costs



Cost/Benefit

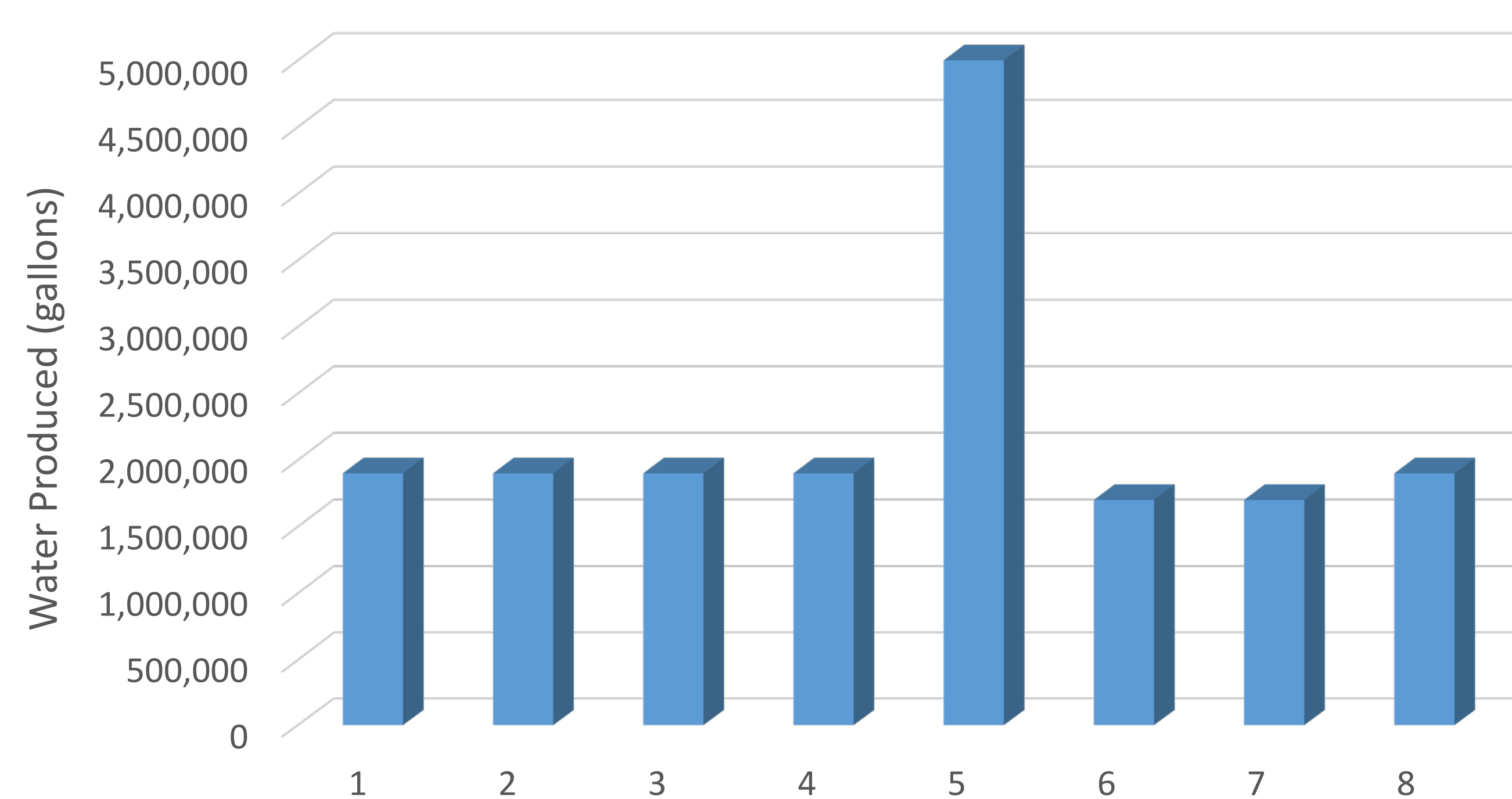


Operation Costs



Rank	Option Name
1	New Well 1
2	New Well 2
3	New Well 3
4	Adaman Well 3
5	Adaman "in lieu" Agreement
6	Site 12 New Well
7	Site 12 New Well 2
8	Rainbow Valley New Well

Production



Conclusion

- This research conducted a financial prioritization of water resource projects.
- "New Wells" being the lowest, with Adaman slightly higher due to need of arsenic treatment, followed by new wells at site 12 which require reverse osmosis treatment, and finally a new well in rainbow valley which would require all site resources to be constructed as well.
- Additional metrics to be analyzed in further research include: time to plan for and construct, level of need per service area, and ease of adding to the system.