

FRANKFORT PLANT BOARD

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City Commission Update on Reservoir April 16, 2018

Frankfort Electric and Water Plant Board
Frankfort, Kentucky
David Billings, Chief Water Engineer

Agenda

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- Public discussions
- Past considerations
- Replacement was ultimate solution
- Current design and merits thereof
- Alternate design
- Comparison and Conclusion



Public Discussions

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- August 2016 – Strand resumes project design
- November 2016 – Reservoir presentation to City Commission
- December 2016 – Public tour and Public Meeting
- Accepted public comments from Dec 2016 through end of January 2017
- January 2017 – Reservoir presentation to various civic clubs
- March 2017 – Alternative Site Evaluation Report & Responses to Public comments

Public Discussions (cont.)

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- March 2017 – Design Criteria approved for one – 7 MG tank on south side
- April 2017 – Crom presentation on roof options and additional costs
- May 2017 – Present 6 different 3D models (1/10, 1/16, flat roof, each with and without retaining wall)
- July 2017 – Design criteria approved for 1/10 dome roof
- January 2018 – Submittal to Planning and Zoning
- April 2018 – KIA Board meeting

What does all this mean?

- Recognize this project is visible to the public
- Communicate issues with the Reservoir and why it needs replaced
- FPB has been very transparent in the process

How did we get to this point?

Past Options Considered

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- Do Nothing –



- Repair - Not cost effective
- Move – Not cost effective
- Replace – Most cost effective and longest service life



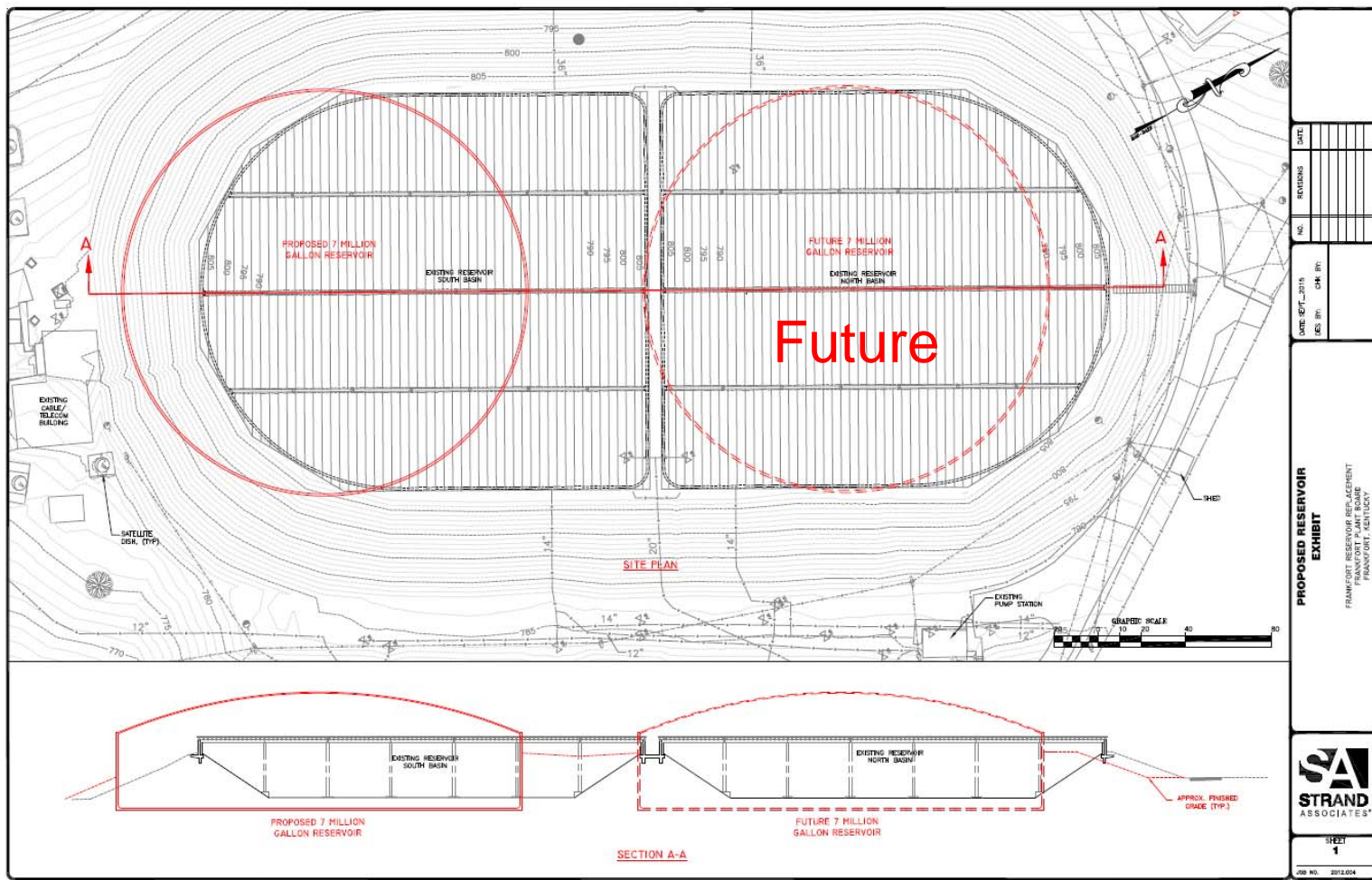
Where Are We Now?

- Wrapping up design - 7 MG tank now, one when needed
- Have secured funding - KIA low interest loan
- Documents submitted to P&Z in accordance with KRS
- Tentative bid date – November 2018
- Tentative construction date – February 2019

■ Estimated Costs

■ Administration	\$ 18,000	
■ Engineering	\$ 226,200	
■ Construction	\$3,450,000	
■ Contingency	<u>\$ 305,800</u>	
	\$4,000,000	total

Plan View – Proposed 7 MG tank





**PROPOSED
SITE PLAN**
(Rendered View)



**PROPOSED
FUTURE SITE
PLAN** *(Rendered View)*



RENDERED VIEW FROM US60



RENDERED VIEW WITH FUTURE TANK



RENDERED VIEW FROM TANGLEWOOD DR



RENDERED VIEW FROM RESERVOIR RD

Merits of Current Plan

- Least cost option (now and future)
- Long service life (50+ years)
- Incorporates seismic design
- One 7 MG meets projected water demands beyond 2060
- Smaller footprint than existing

Demand Sizing

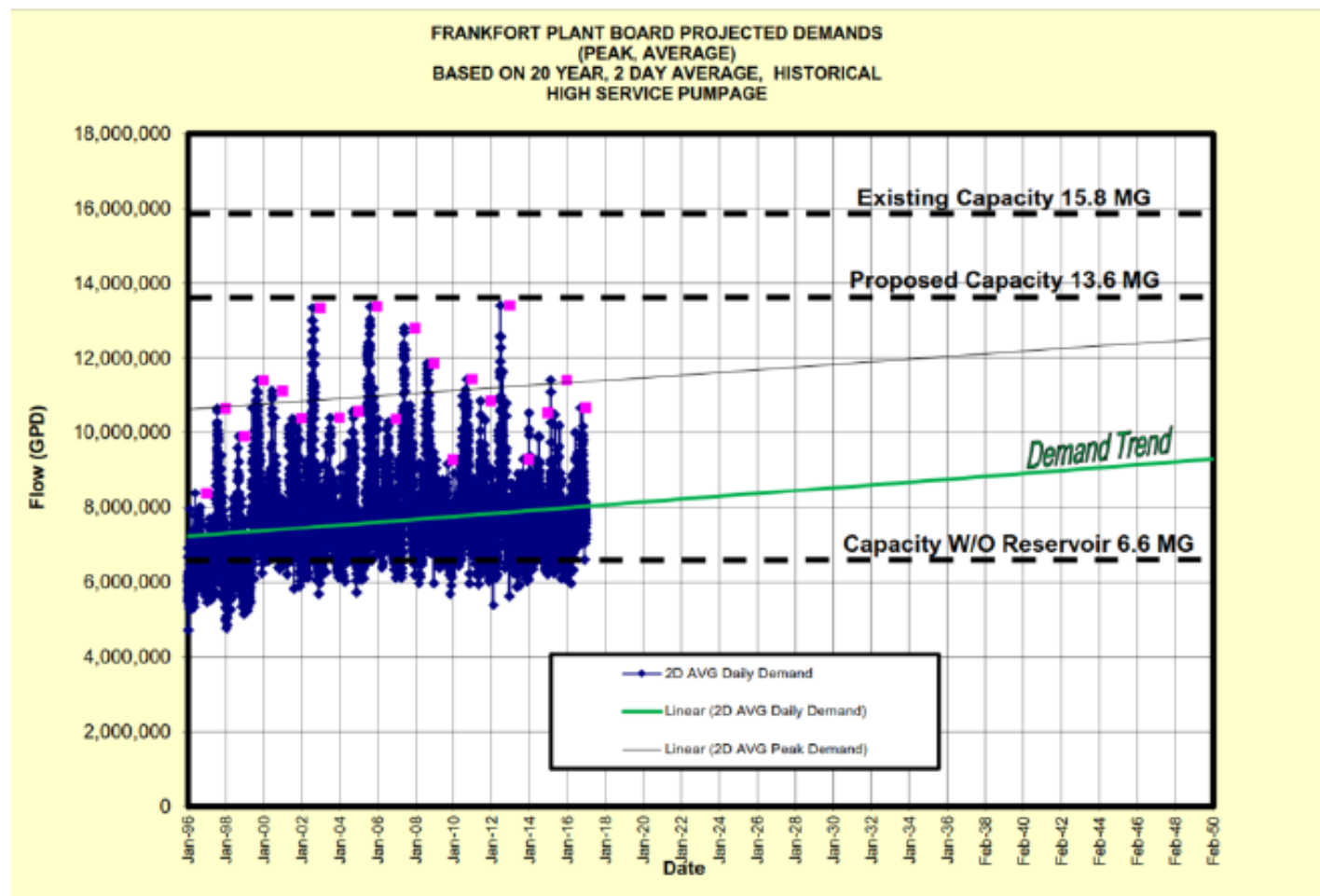
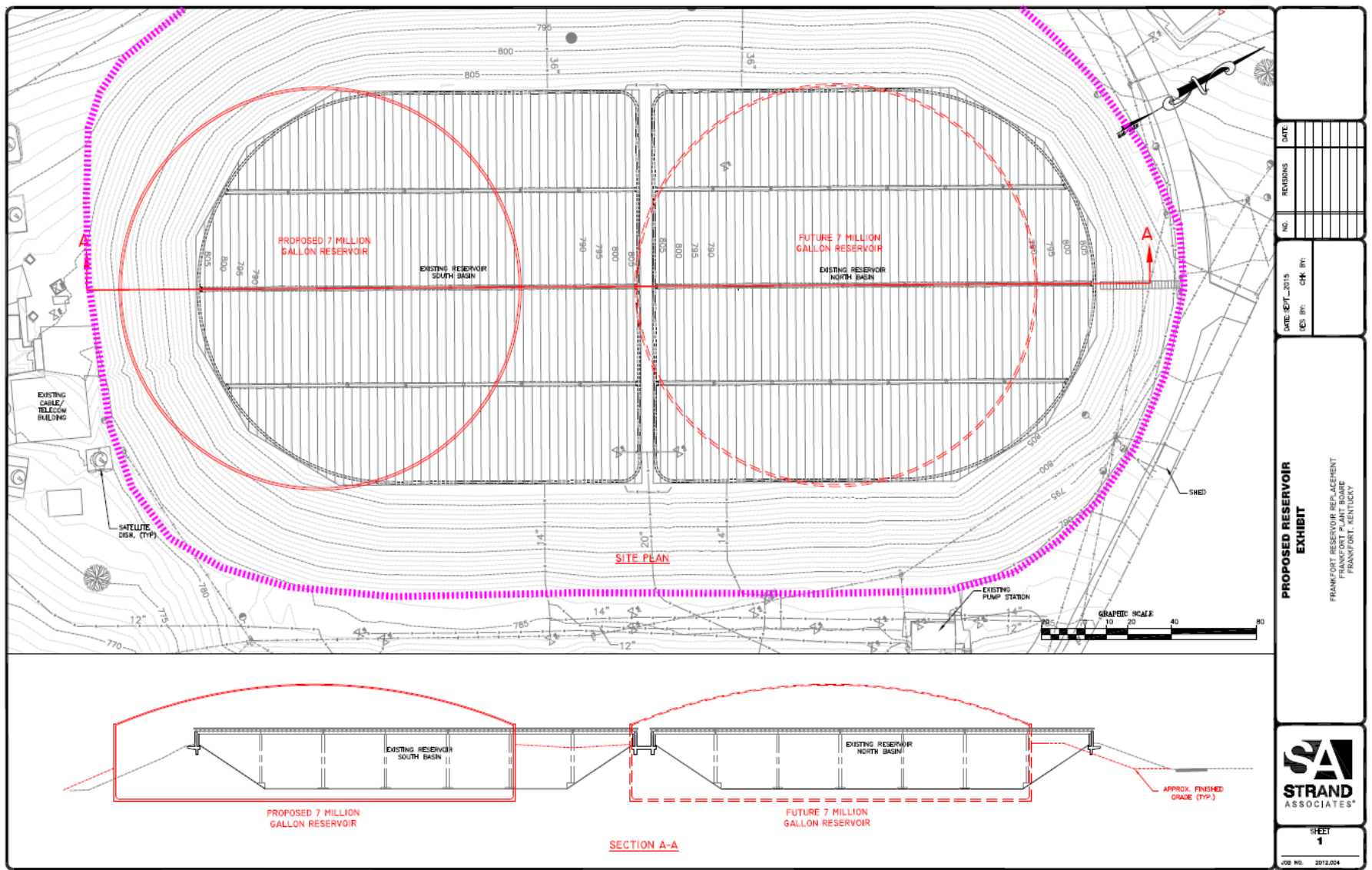


Figure 1 FPB 20 Year Water Usage and Projected Demands

Proposed Footprint



Near Term Rates

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Current rate design*

Year	FY 18	FY19	FY20	FY21
City	\$29.30	\$31.20	\$33.10	\$34.92
County	\$34.26	\$34.96	\$35.66	\$36.36
Commercial	\$147.80	\$153.00	\$158.20	\$162.80

*Monthly costs for typical 4K gallon residential and 30K gallon commercial user.

These rates reflect the costs associated with construction of the current reservoir design (single 7MG tank)

Build smaller tanks?

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- Been suggested to build two
 - 4.6 MG tanks
- Doing so costs more now
- Doing so cost significantly more later

Smaller Tanks – What are the near term costs?

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<u>Current Design</u>	<u>Est. Costs</u>
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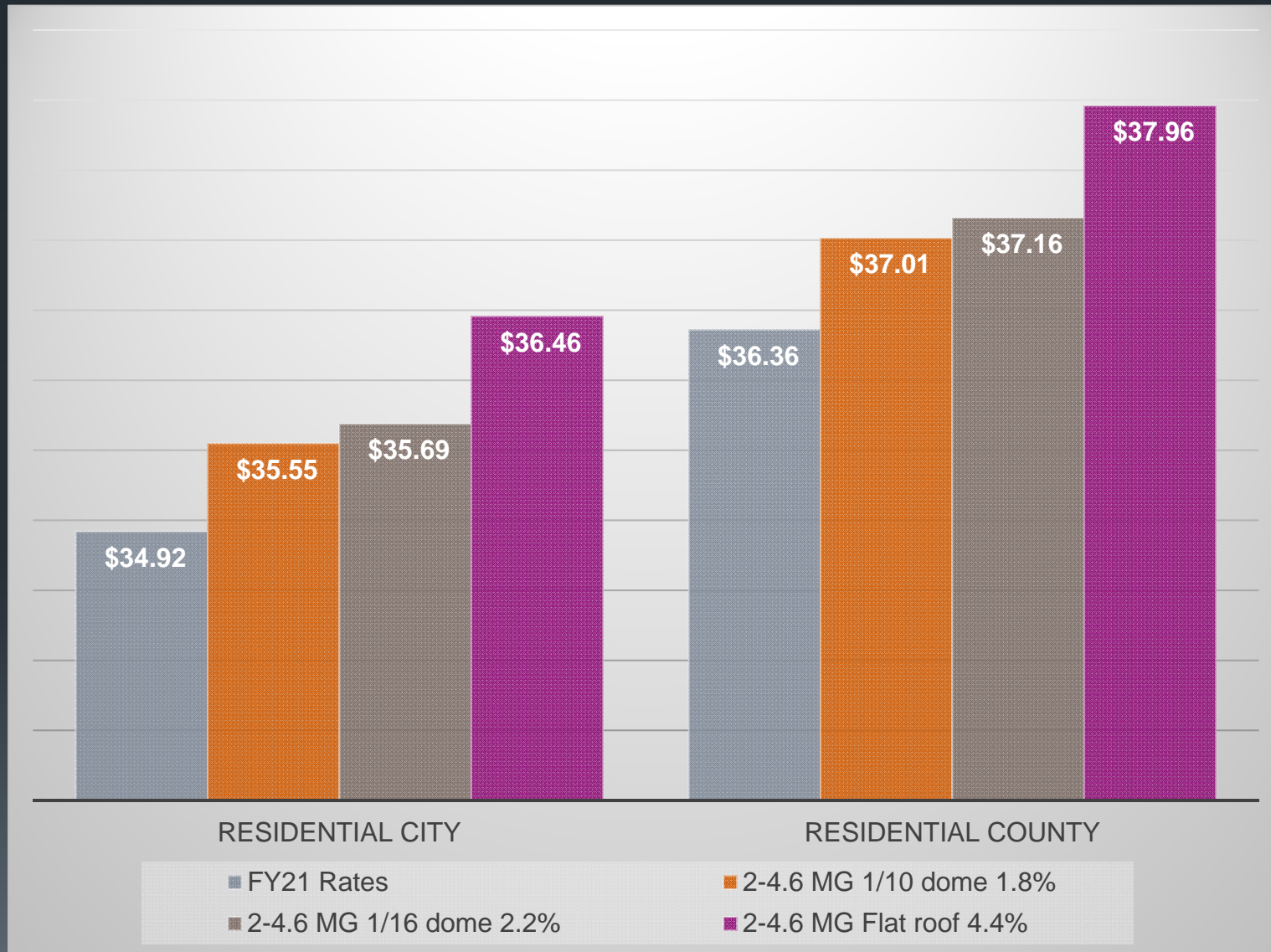
One – 7 MG tank 1/10 dome	\$3.8M*
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<u>Alternative design costs</u>	<u>Est. Costs</u>	<u>Additional</u>	<u>Increase</u>
Two – 4.6 MG tanks 1/10 dome	\$6.3M**	\$2.5M	66% min
Two – 4.6 MG tanks 1/16 dome	\$6.8M**	\$3.0M	79% min
Two – 4.6 MG tanks flat roof	\$9.9M**	\$6.1M	161% min

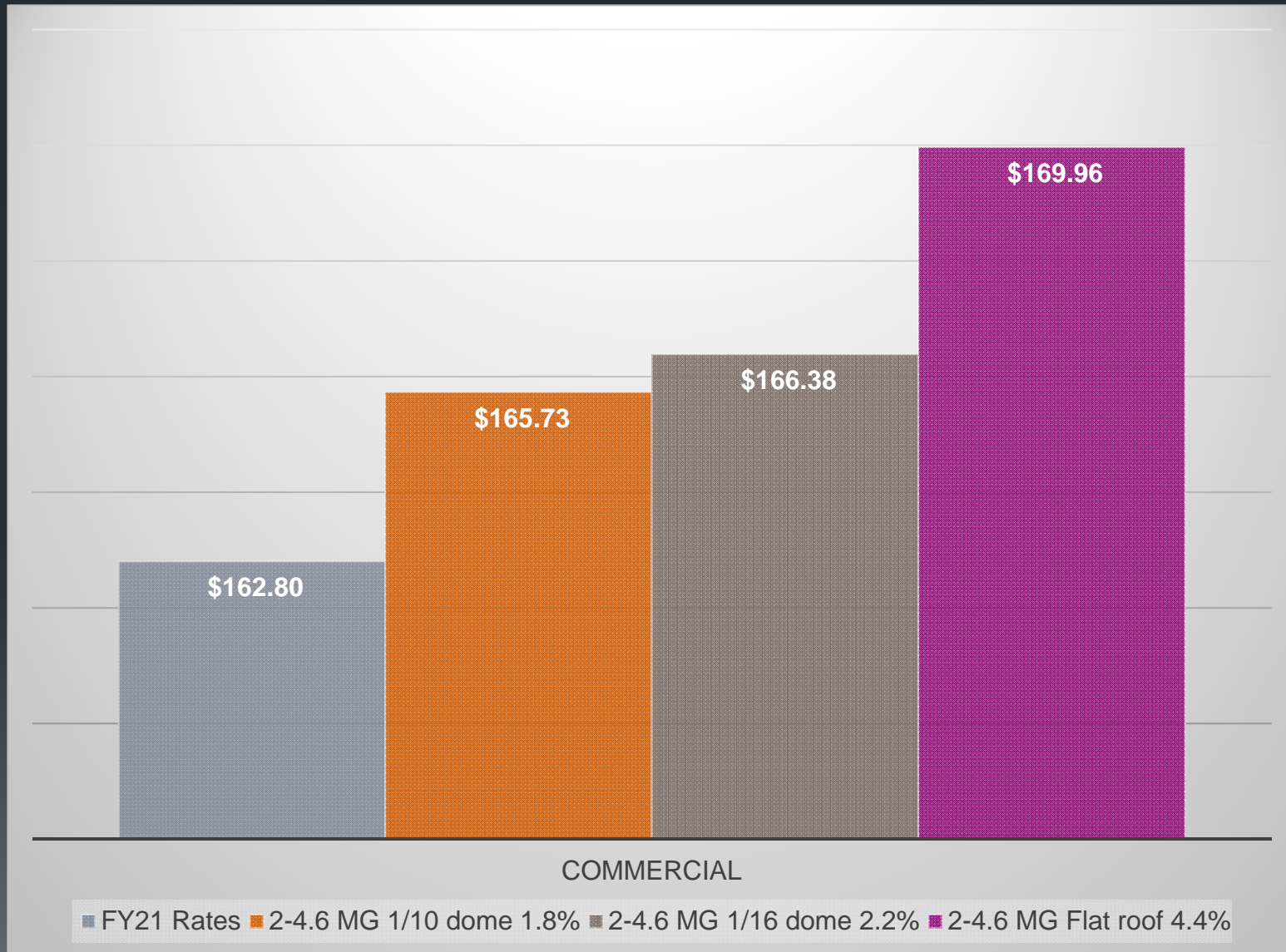
* Construction costs for tank(s) and site work

** Alternative design costs do not include additional design or construction related services

Near Term Rate Impact



Near Term Rate Impact



What are the long term costs?

- Reservoir site has a two tank capacity
- Building 2 tanks now will require additional future storage somewhere else
- Suitable locations are limited and costly

From 2017 Site Alternatives Evaluation (Strand)

Option 1 - behind Franklin Square	\$10.5M*
Option 2 - Next to AT&T tower site off Sower BLVD	\$7.1M*
Option 3 - Berry Hill / Golf course area	\$2.0M*

*does not include tank

Advantages

Disadvantages

Single 7 MG Tank

- Least cost alternative
- Shortest construction duration
- Least cost future capacity
- Perceived aesthetics (slightly higher dome)
(more exposure on south side)

Two 4.6 MG Tanks

- Perceived aesthetics (slightly lower dome)
(least exposure on south side)
- Higher Construction Cost (\$2.5M to \$6.1M or more)
- Higher Rates (1.8% to 4.4% or more)
- Longer Construction Duration (9-13 Months)
- Additional Cost for Re-Design
- Significant Future Capacity Cost (7M to \$10M or More)

In Summary

1 – 7 MG Tank

- Least cost alternative, least rate impact today
- Meets needs well into the future (projected beyond 2060)
- Significantly smallest rate impact for future storage needs
- Most responsible to all rate payers



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Questions

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