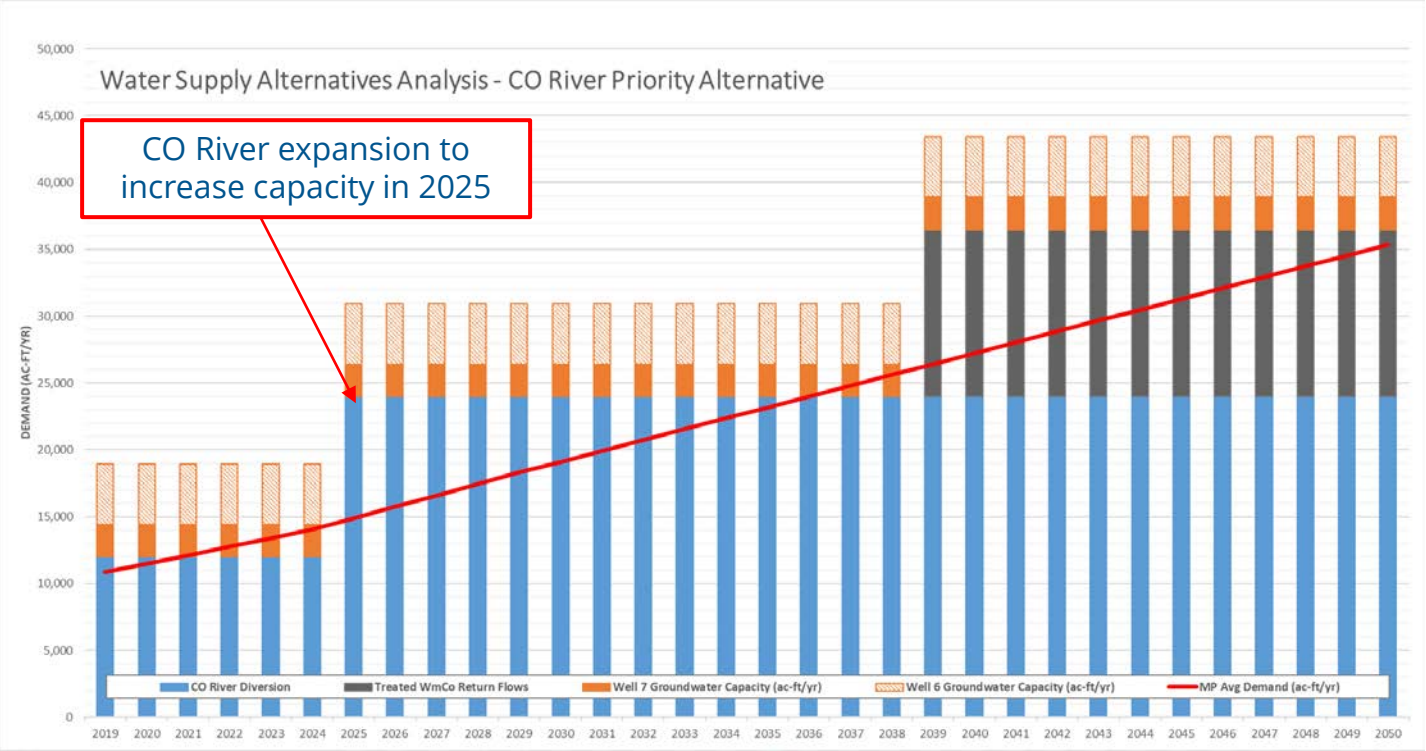
Pflugerville CO River Water Supply Analysis: Progress Update

December 14, 2021

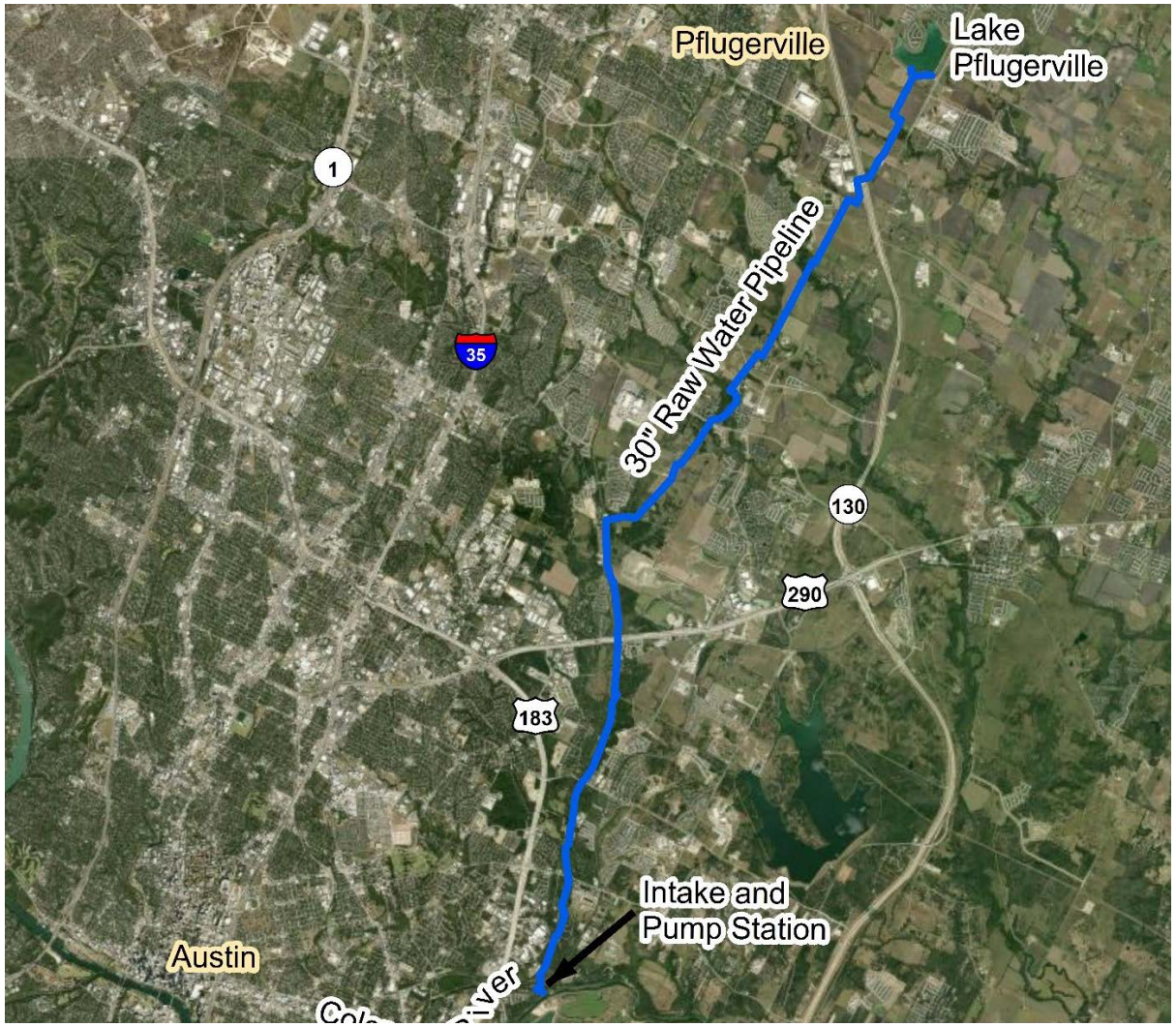
Project Background

- Per 2020 WMP, current firm water supplies are set to be exceeded in 2025
  - Including LCRA contract (blue) and groundwater (orange)
- CO River Intake System Expansion
  - Adds redundancy and resiliency to existing water supply
  - One of quickest options identified to meet increasing demand
- Current contract is for 12k ac-ft/yr, to be doubled to 24k ac-ft/yr

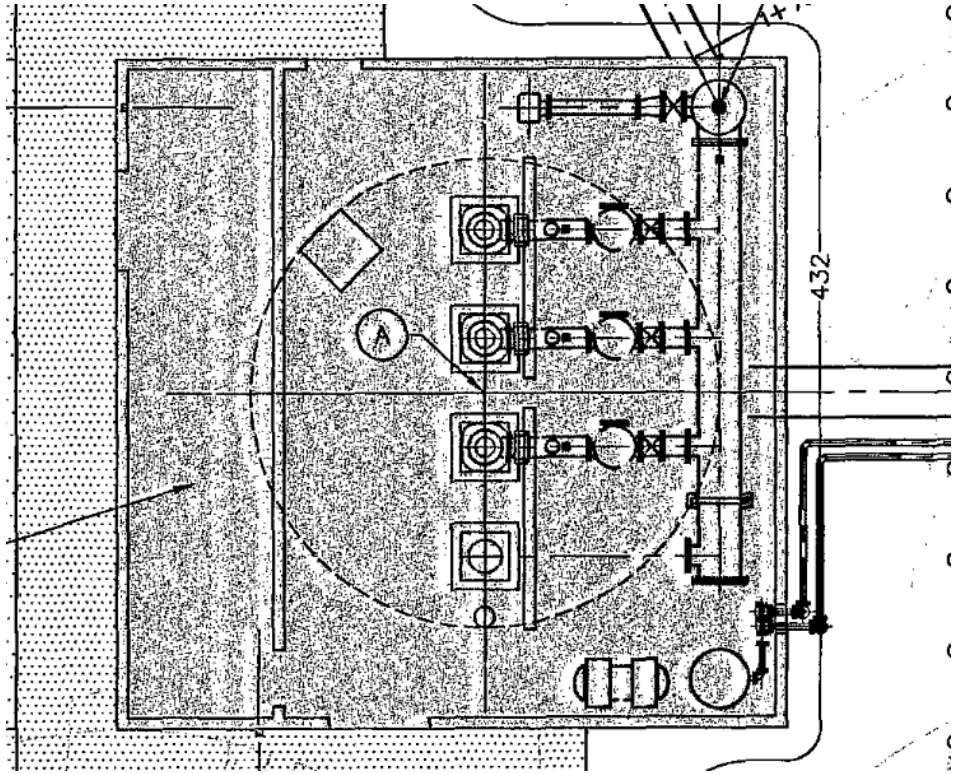


Existing Infrastructure

- Construction completed in 2004
- Total capacity of 12k ac-ft/year (11 MGD)
- Major Components
  - Pipeline
    - 14.8-miles
    - 30-inch diameter
    - Concrete Steel Cylinder Pipe (C303)
    - Installed in 40-ft easement
  - Pump Station
    - 3 pumps (with empty 4th slot)



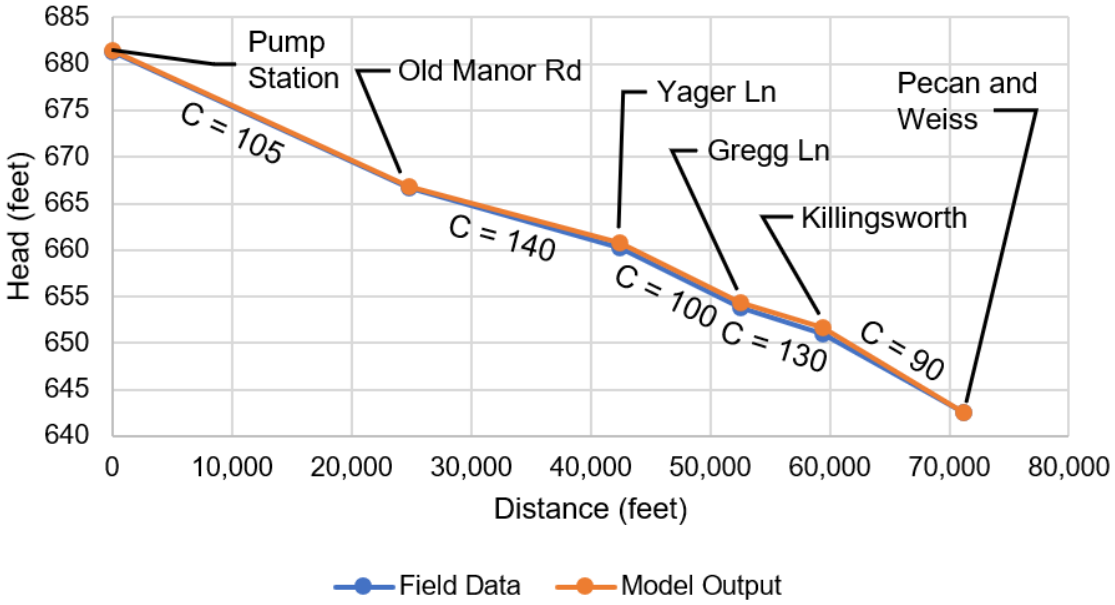
Hydraulic Evaluation - PER



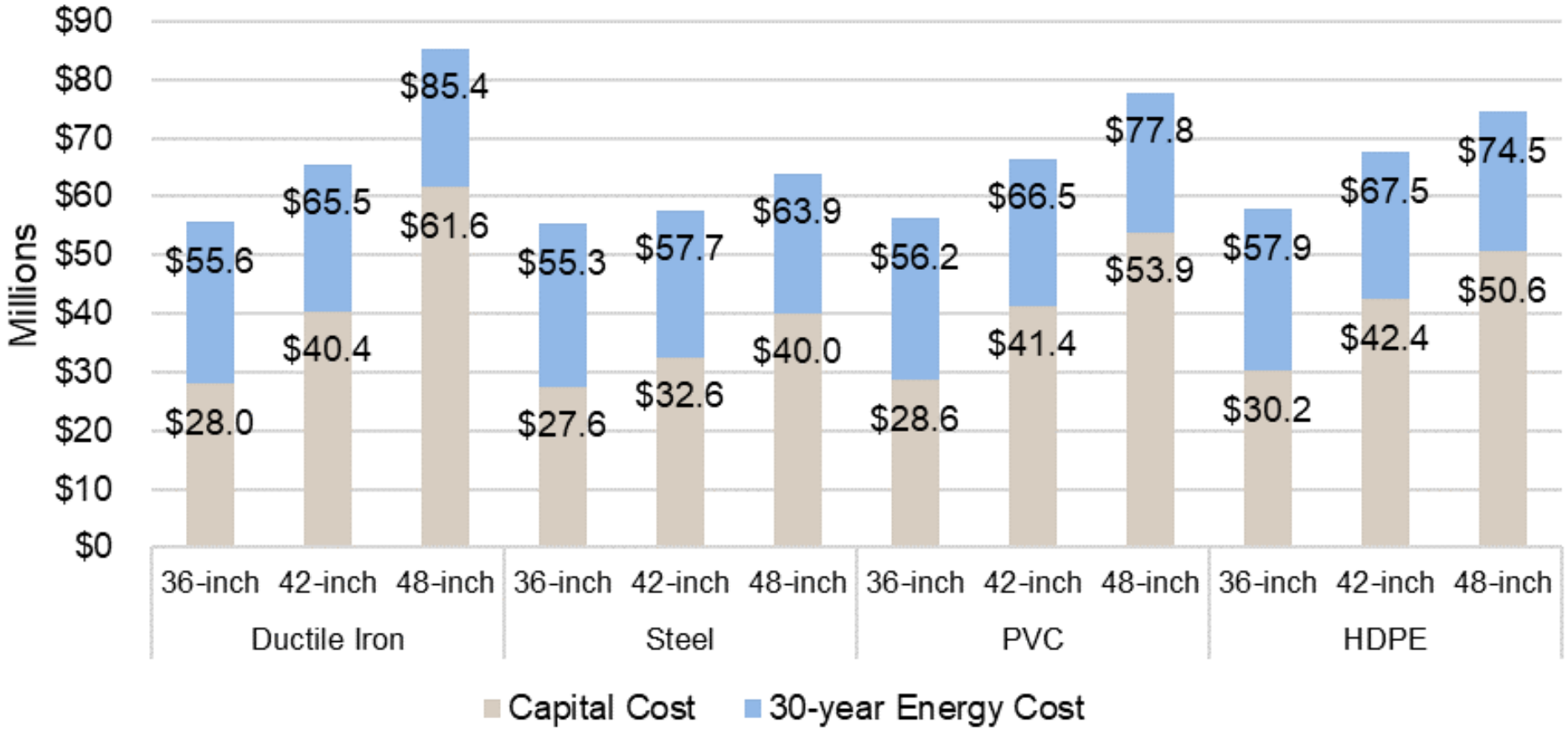
- Create hydraulic model to:
  - Confirm pump station capacity
    - Target firm capacity of 24k ac-ft/year
    - Identify modifications to existing pump station
    - Rule out need for new pump station
  - Analyze hydraulic capacity of adding parallel pipeline
    - Size (36-inch, 42-inch, 48-inch)
    - Material (Ductile Iron, Steel, PVC, HDPE)
- Balance hydraulic capacity against project cost

Analysis Results

- Firm capacity of 24k ac-ft/year achieved with:
  - Upgrades to existing pump station
    - Replace existing pumps
    - Add 4th pump to empty slot
  - Various pipe diameters considered
- Larger pipe
  - Increased capacity
  - Increased capital cost
  - Decreased energy cost
- Smaller pipe
  - Decreased capacity
  - Decreased capital cost
  - Increased energy cost



Capital vs Energy Cost Balance

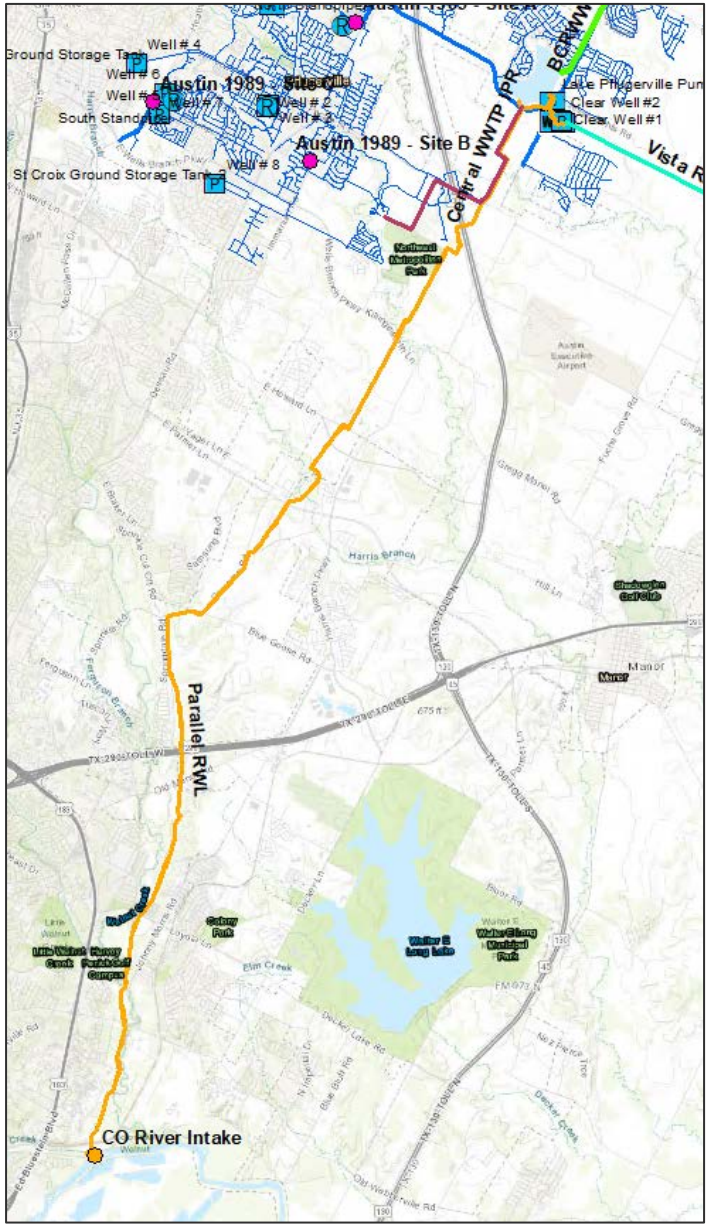


Total Project Cost Estimate

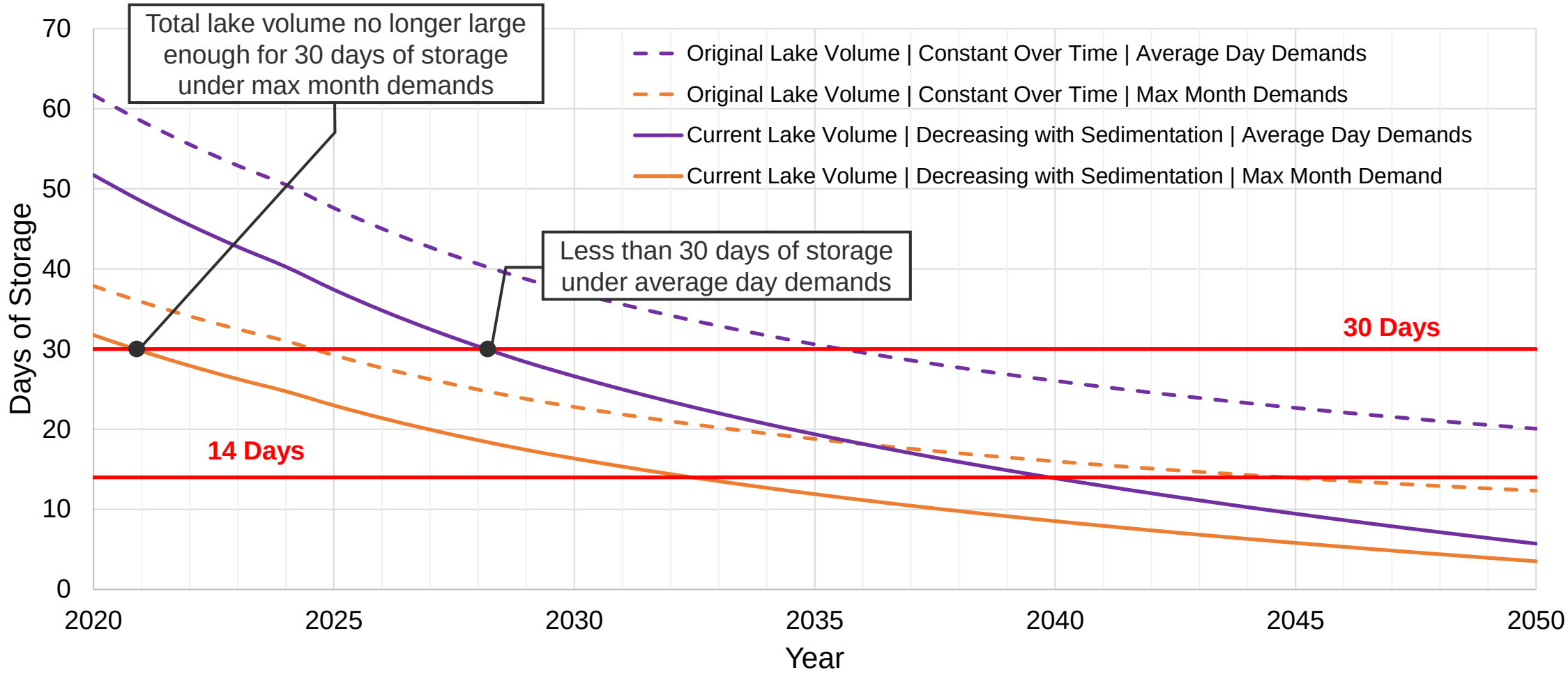
Item	Cost
Pump Station Rehabilitation Subtotal	$ 2.8 M
Pump Station Rehabilitation Contingency (30%)	$ 0.9 M
Pump Station Rehabilitation Total	**$ 3.7 M**
42” DI Raw Water Line Subtotal	$ 54.7 M
42” DI Raw Water Line Contingency (30%)	$ 16.4 M
42” DI Raw Water Line Total	$ **71.1 M**
Construction Subtotal	$ 74.8 M
Professional Services (15%)	$ 11.2 M
Total	$ ***86.0 M***

Other Important Considerations

- Easement Acquisitions:
  - Permanent – 3 locations, 6 properties
  - Temporary – 72 properties
- Stakeholder Coordination:
  - Austin Water
  - TxDOT
  - Austin Energy



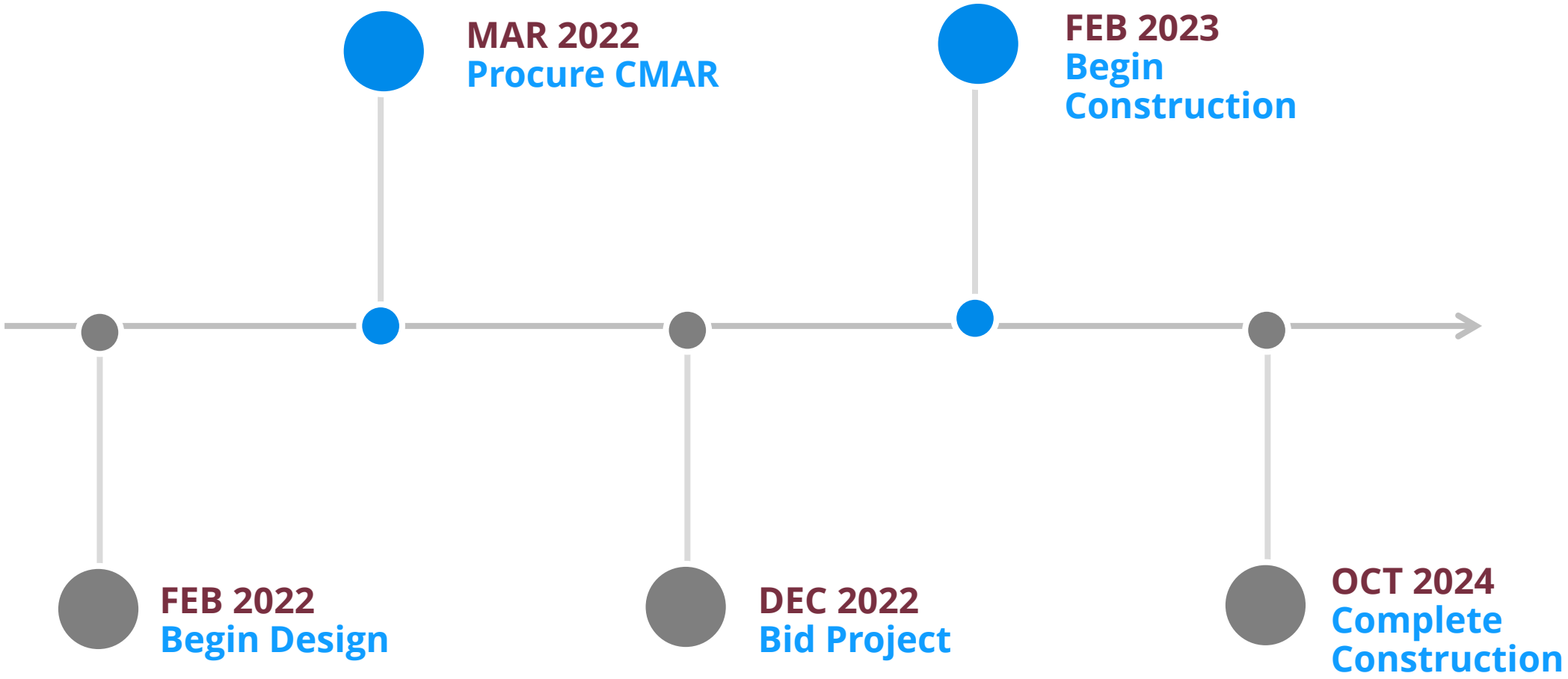
Lake Pflugerville Water Balance Analysis



Construction Manager at Risk (CMAR)

- Contractor brought onto team early in design
- Benefits Include:
  - Provide feedback on constructability
  - Manage material procurement
  - Assists overseeing bidding process
- CMAR Features:
  - Separate contracts for Engineer and Contractor
  - Quality Based Selection (QBS) or Best Value for Contractor
  - Guaranteed maximum price (60-90%)

Estimated Timeline

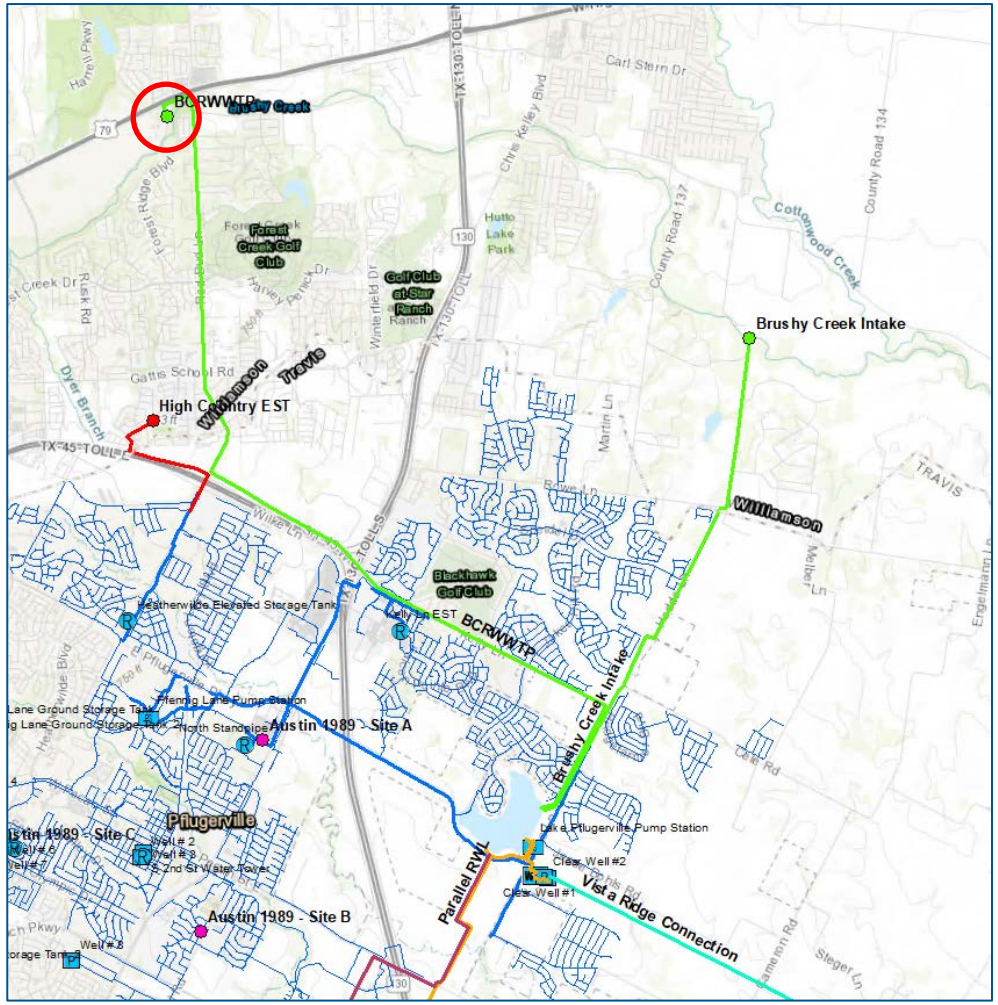


LCRA Contract Amendment

- Current contract allows for 12k ac-ft/year of **total annual diversions** (can peak above this)
- Total diversion target of 24k ac-ft/yr requires contract amendment
- Application for amendment submitted last week
- Water rights availability will be contingent on LCRA's evaluation of additional firm rights availability in the Highland Lakes reach resulting from the completion of the Arbuckle Reservoir project

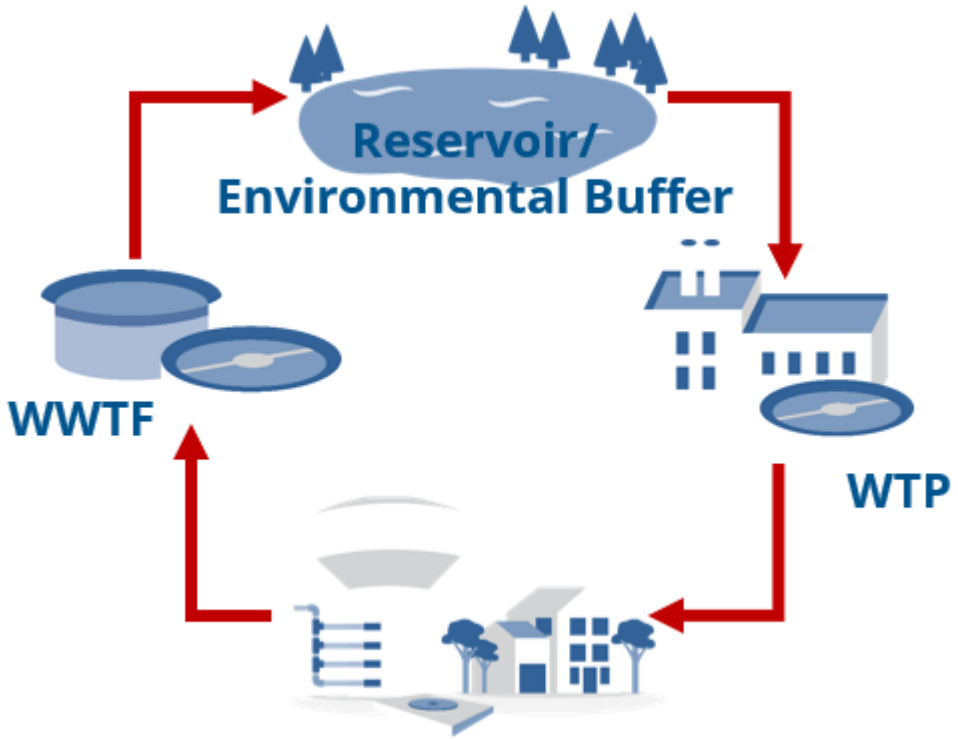
Future Firm Water Supplies (~2039)

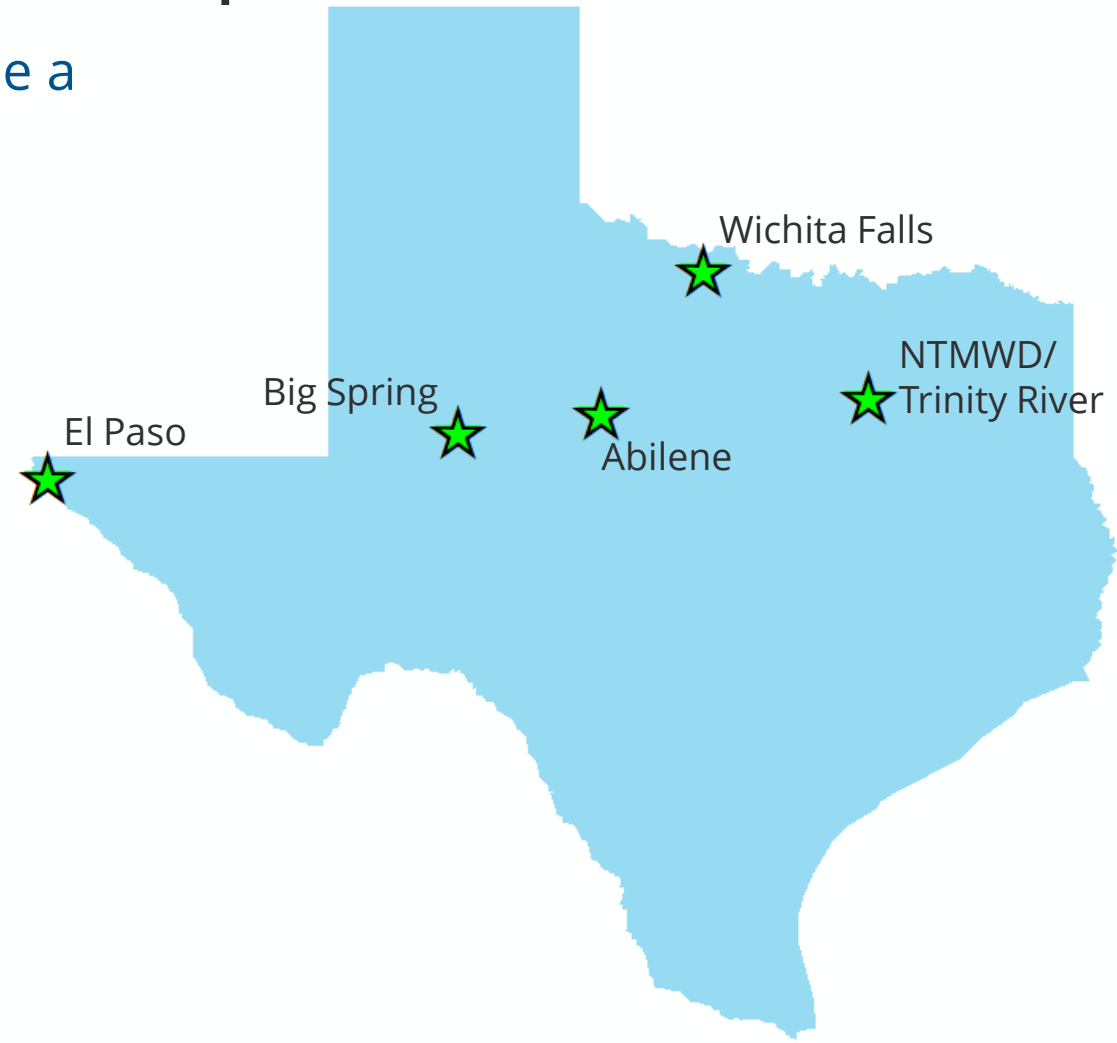
- LCRA and BRA are planning a return flows project for HB 1437
- Pflugerville is partnering with LCRA, BRA and City of Round Rock to investigate return flows viability
- Project could offer low-capital cost, reliable, scalable, long-term firm water rights
- MOI represents mutual intent to study feasibility of this option



Reuse Concept and Texas Examples

- Indirect Potable Reuse has been shown to be a flexible, reliable alternative water supply solution in several Texas applications





Questions and Discussion