City of Bryan
Water Plan Substitution

CITY OF BRYAN
The Good Life, Texas Style.™

Regional Water Planning Group

September 24, 2024

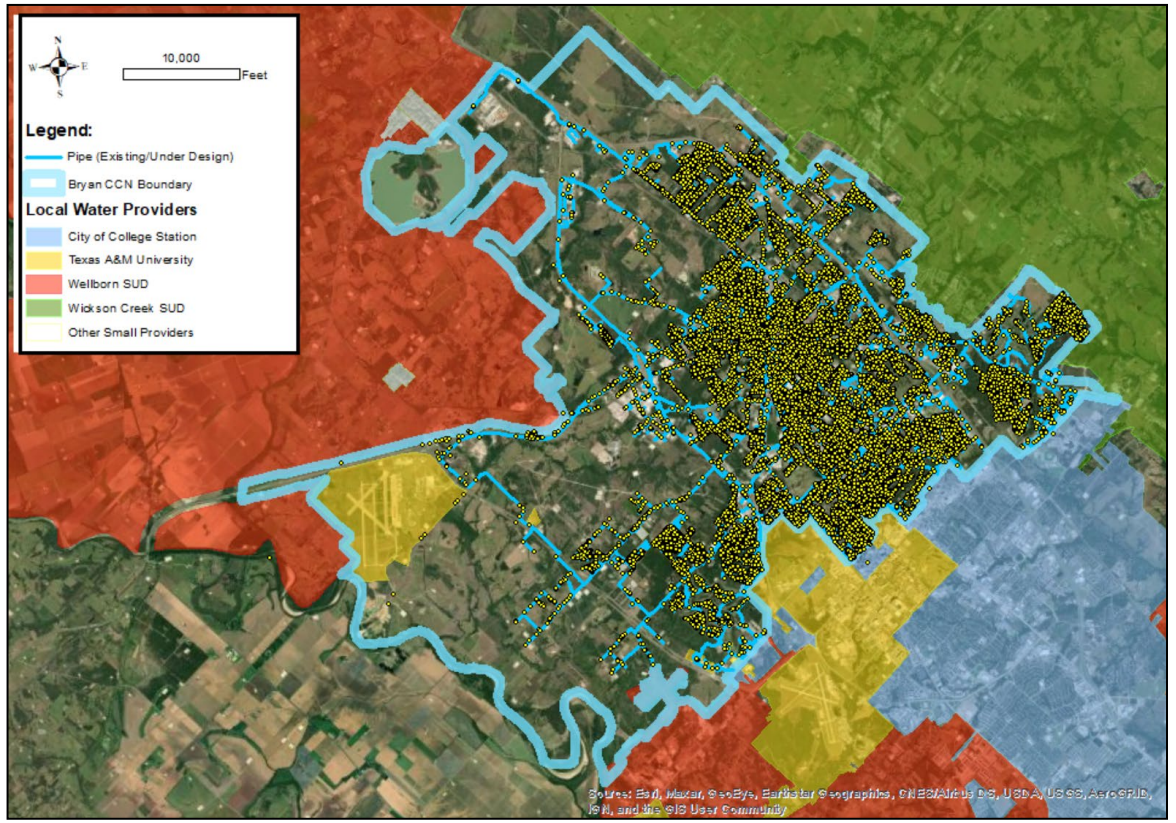
What We Will Discuss

1. Current and Projected Supply and Demand
2. Future Planning and Challenges
3. Production Improvement Activities

Current and Projected Supply and Demand

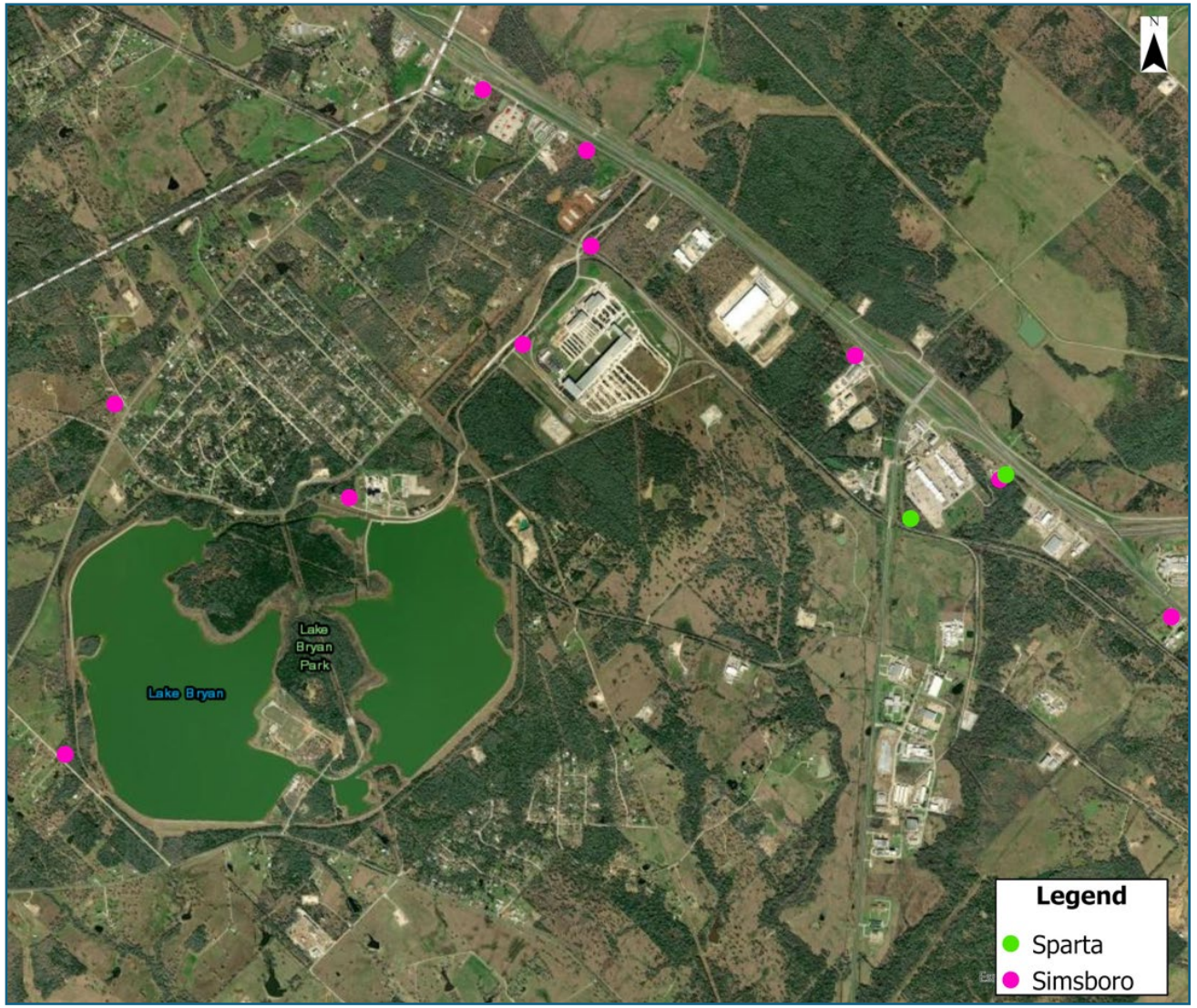
Current Service Area

- Serving customers within:
  - City of Bryan city limits
  - Wellborn Special Utility District (SUD)
  - Wickson Creek SUD
- 26,924+ connections served
- Approximately 88,000 people
- 87 residential gallons per capita per day



Current Water Sources

- ✓ 10 groundwater wells from Simsboro aquifer (Wells 10-19)
- ✓ 2 groundwater wells in the Sparta (Wells 6 and 8)



Projected Population

+1.7%

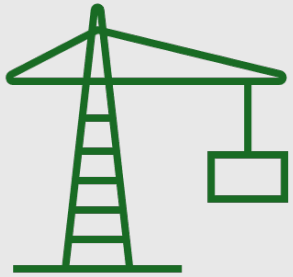
yearly

To increase by about 1.7% per year until 2060

30,000+

connections

The number of connections estimated to increase to over 30,000 by 2030



more

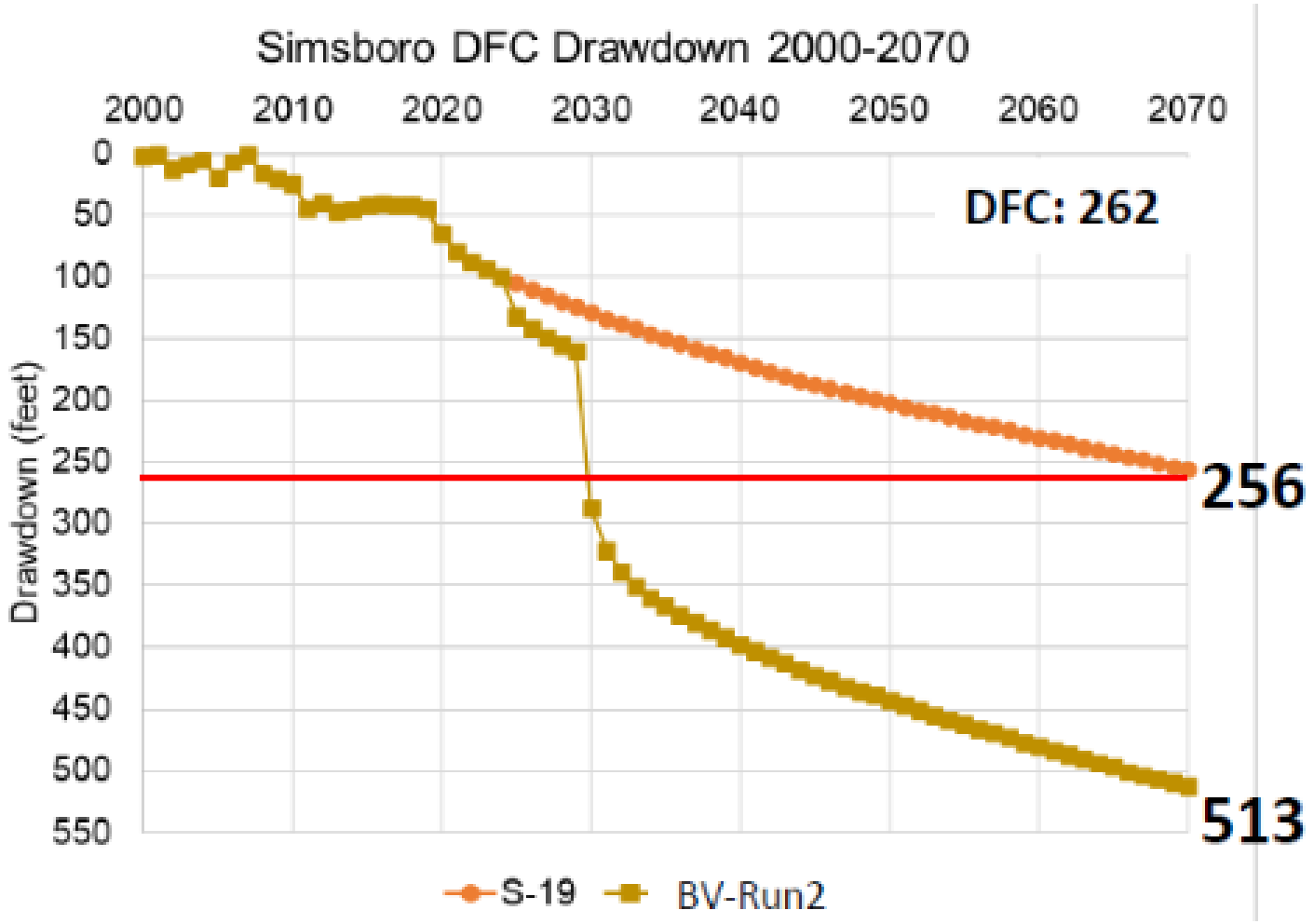
development

More development of residential, commercial, and industrial areas are expected by 2040

Future Planning and Challenges

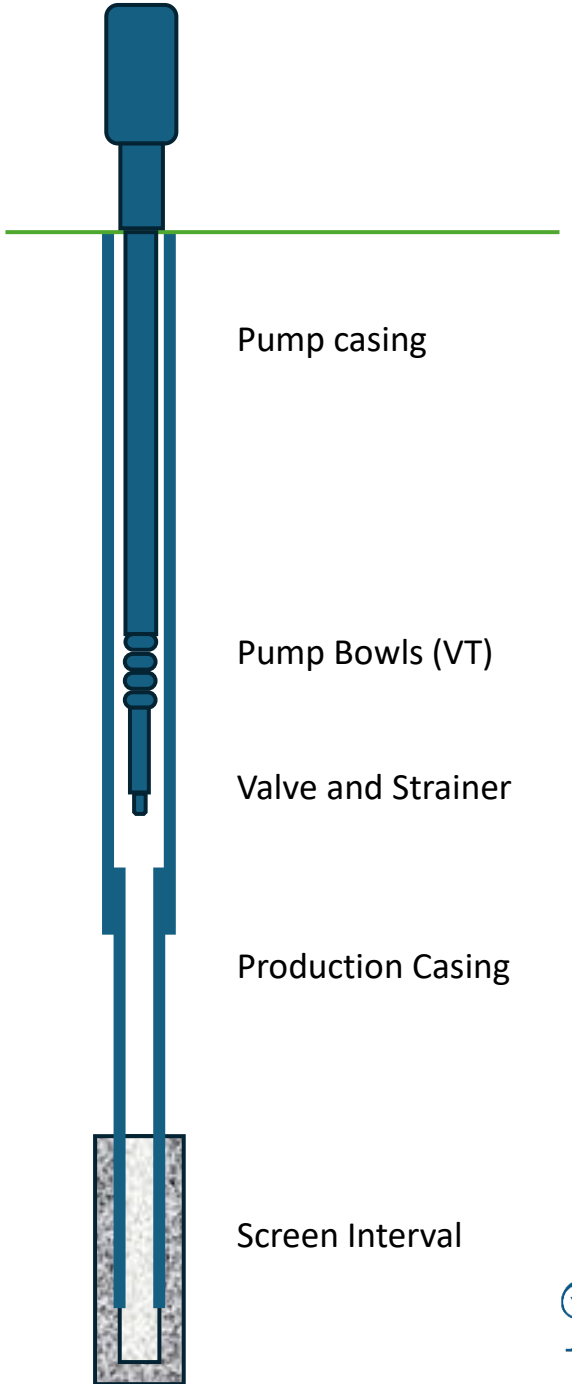
Declining Aquifer Levels

- Aquifer levels have been declining
- 2023 saw record permit applications
- Bryan assessed “Best”, “Likely” and “Worst” case scenarios based on forecasted new wells production and selected the “Likely” scenario, shown to the right, as compared to the PS-19.

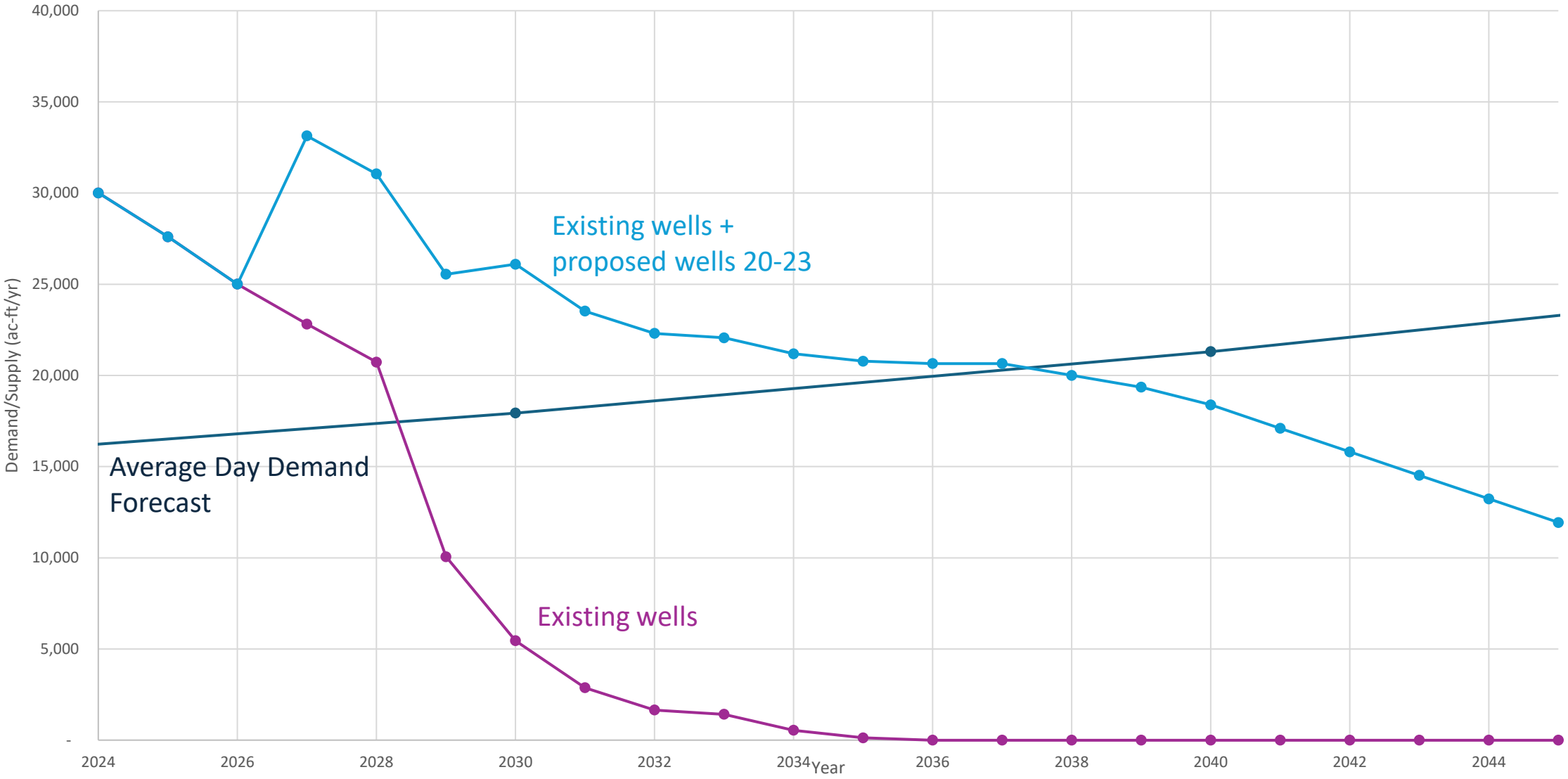


Declining Aquifer Levels

- As water levels decline, well production decreases
- Lowering pumps will mitigate short-term production losses
- Aquifer levels are anticipated to drop below the pump casing
- Limited proven pumping technology exists for these depths and temperatures



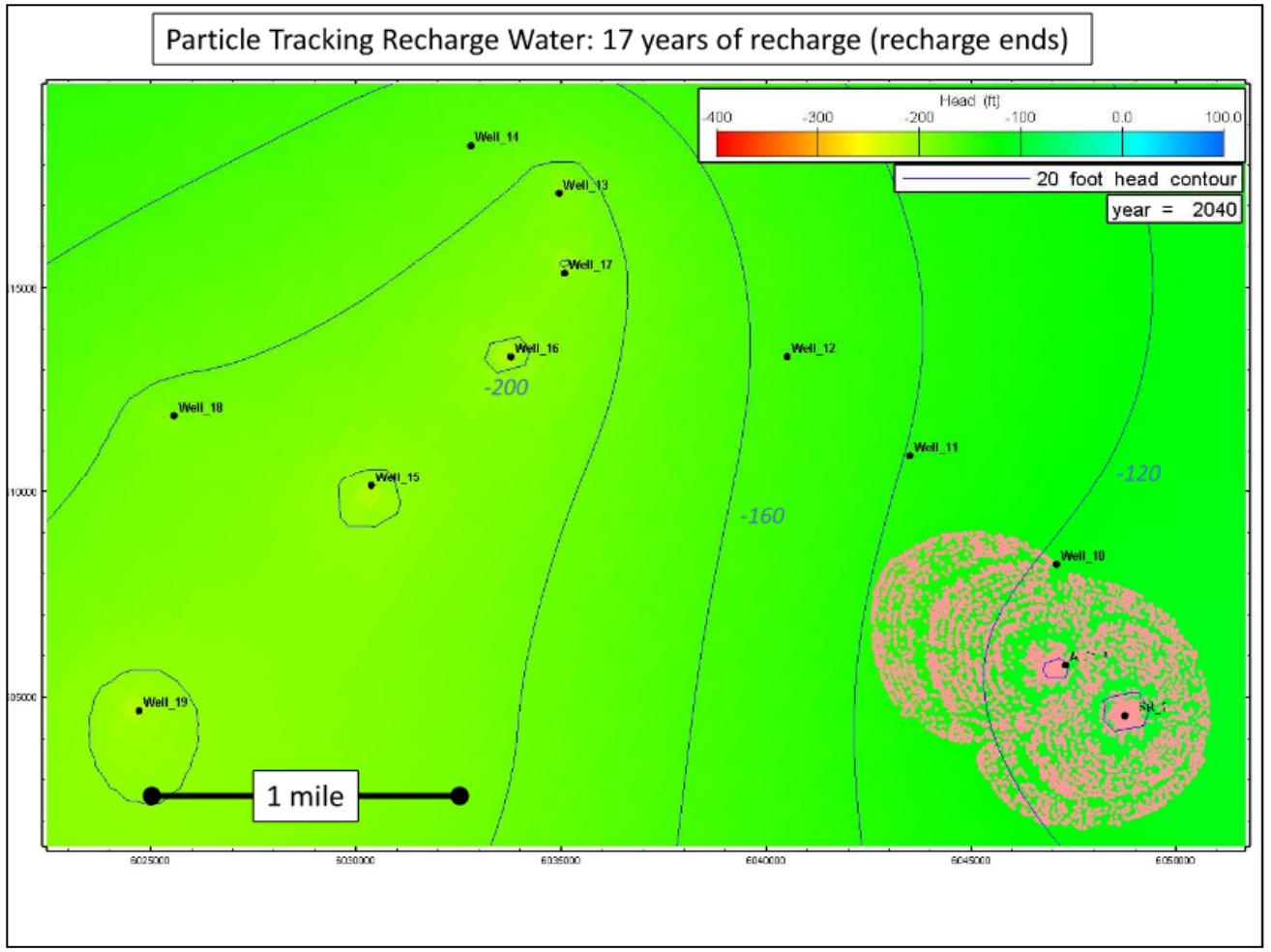
Production Impact of Declining Aquifer Levels



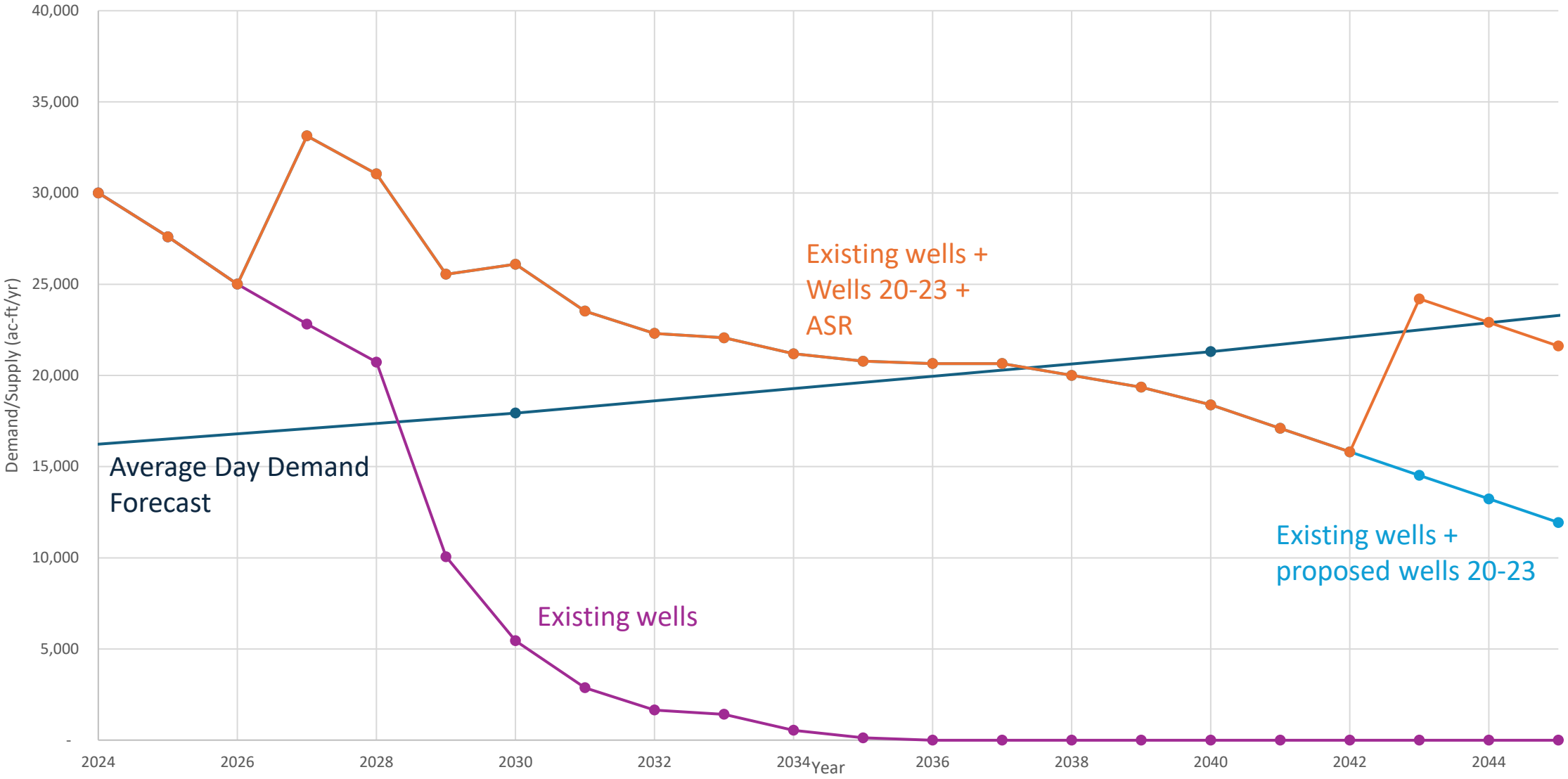
Role of Aquifer Storage and Recovery

Production in excess of demand will be directed to a new ASR wellfield for aquifer storage.

When demand exceeds allowable use from the MAG, stored water can be recovered to help meet demand.



Production Forecast with ASR

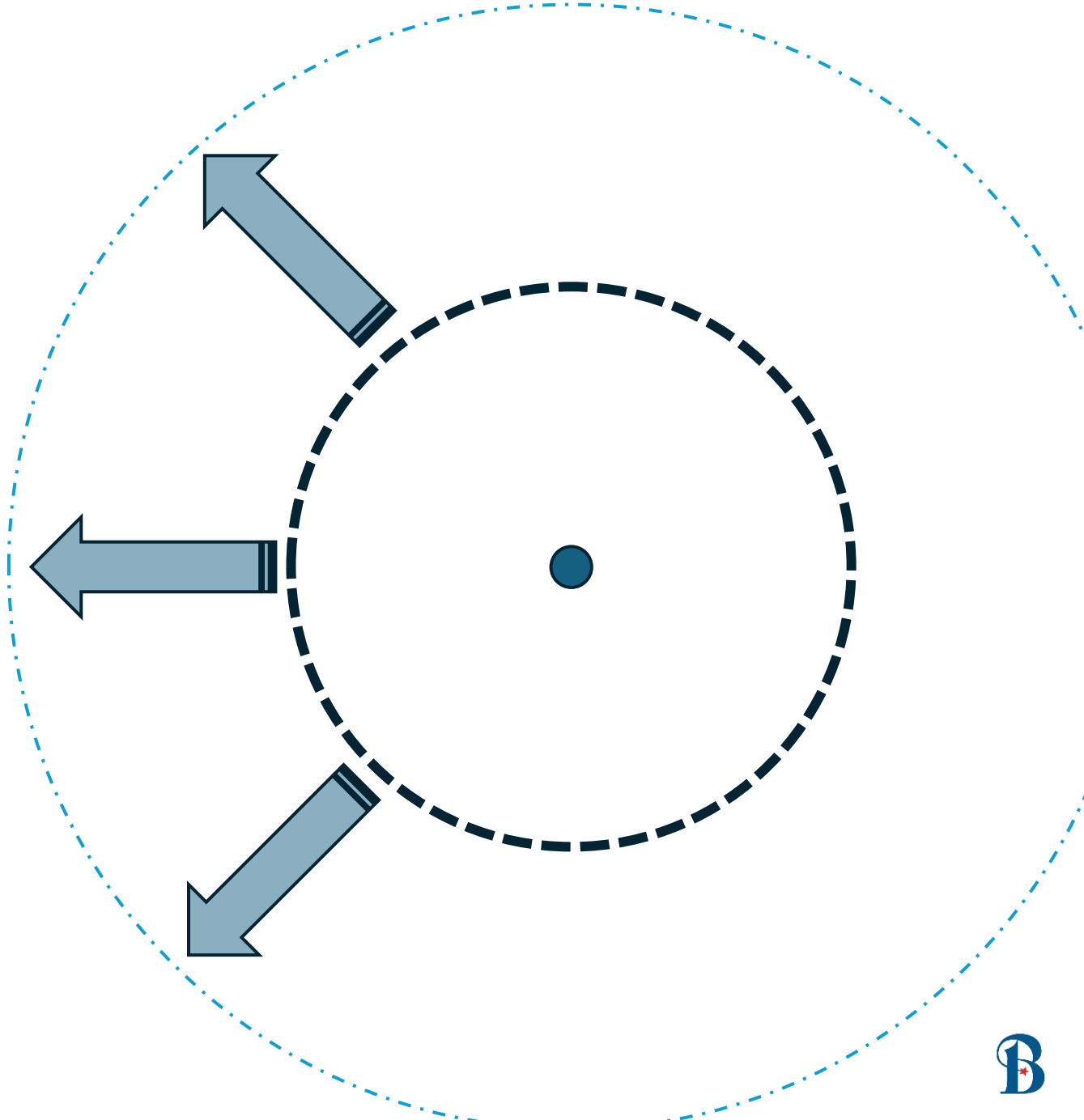


New BVGCD Regulations

Well spacing requirements increased

1 ft / gpm ➔ 2 ft/gpm

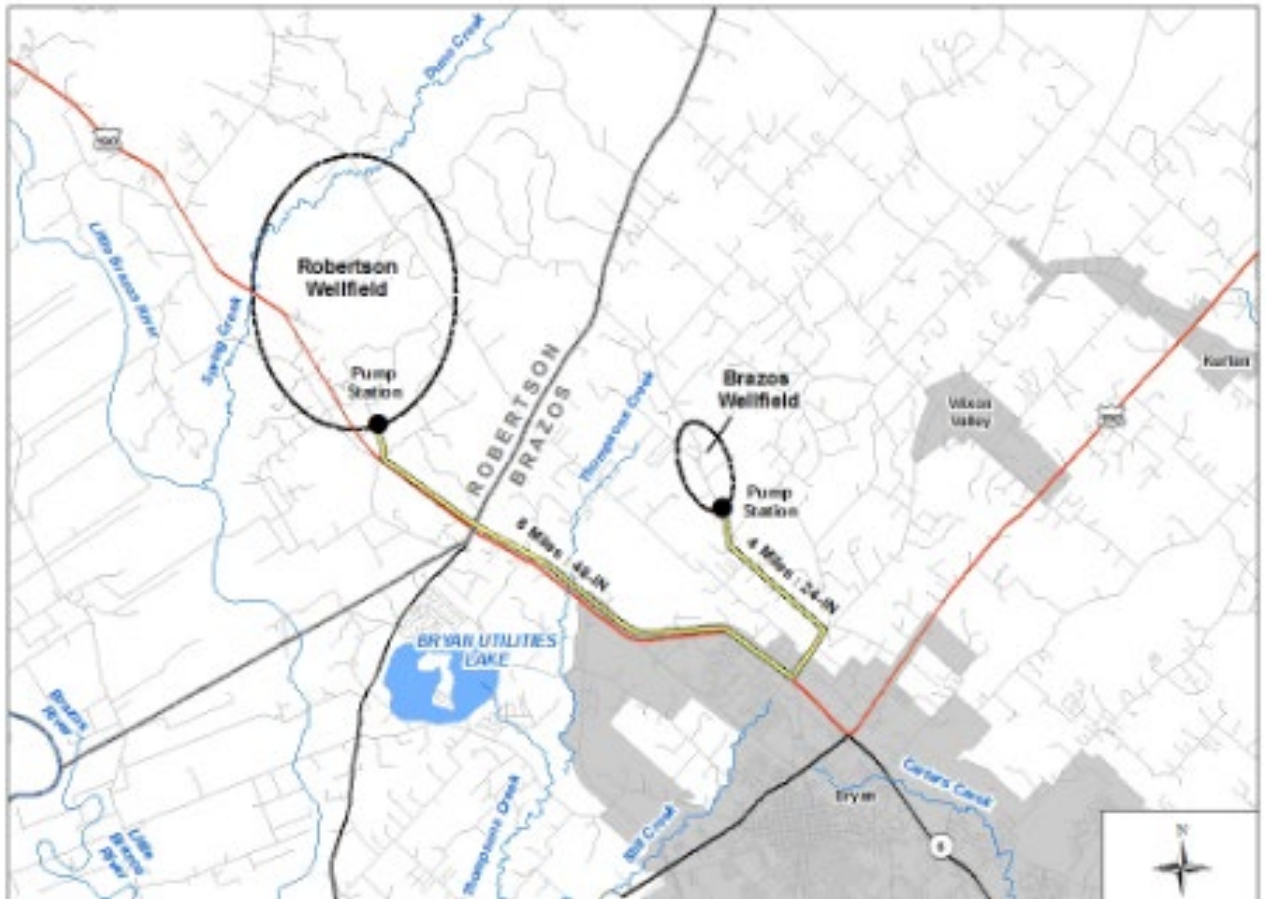
Insufficient space in the current wellfield or Brazos County



2016 & 2021 Planned Well Development

In the 2016 Brazos G Regional Water Plan the Robertson County wellfield was identified as a future source that would help the City of Bryan meet future demands.

Figure 9.1-1. Locations of planned Bryan well fields and facilities

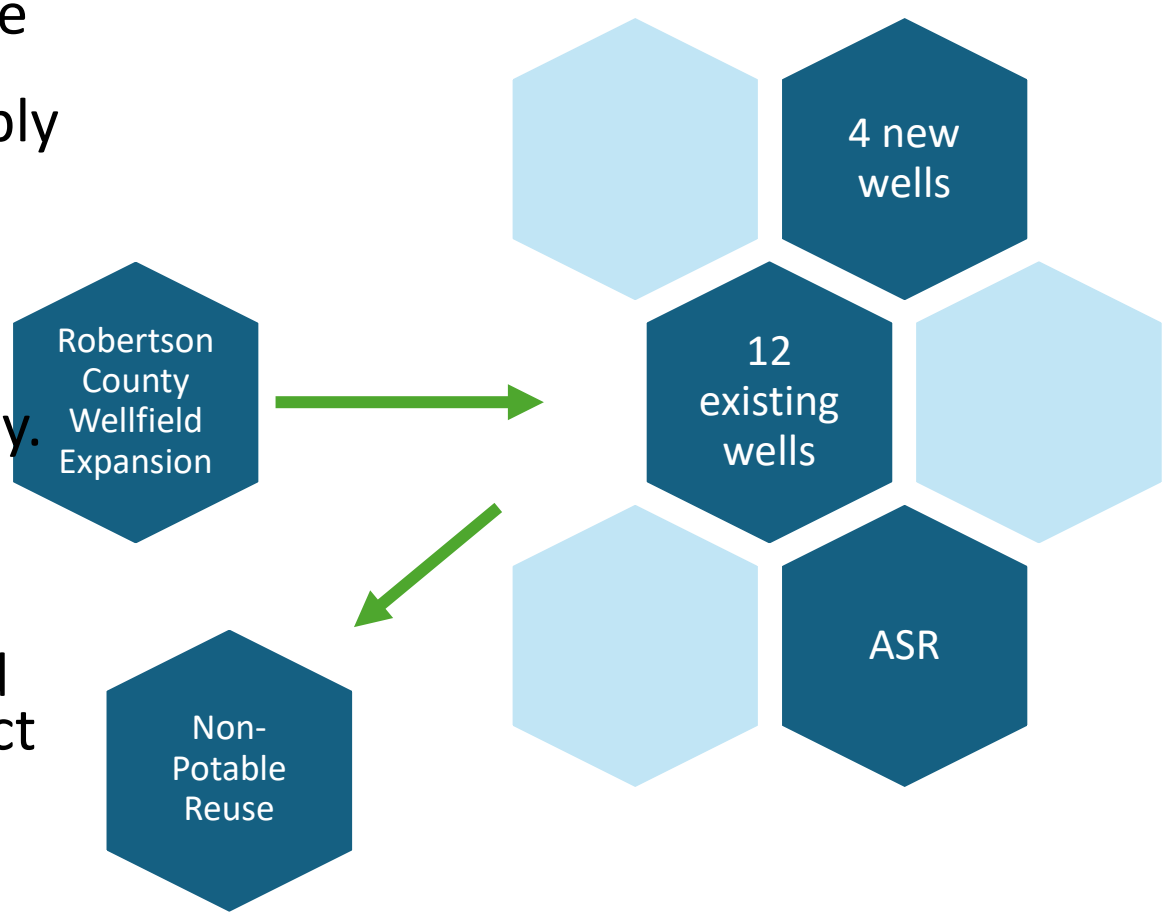


Alternative Source to Recommended Source

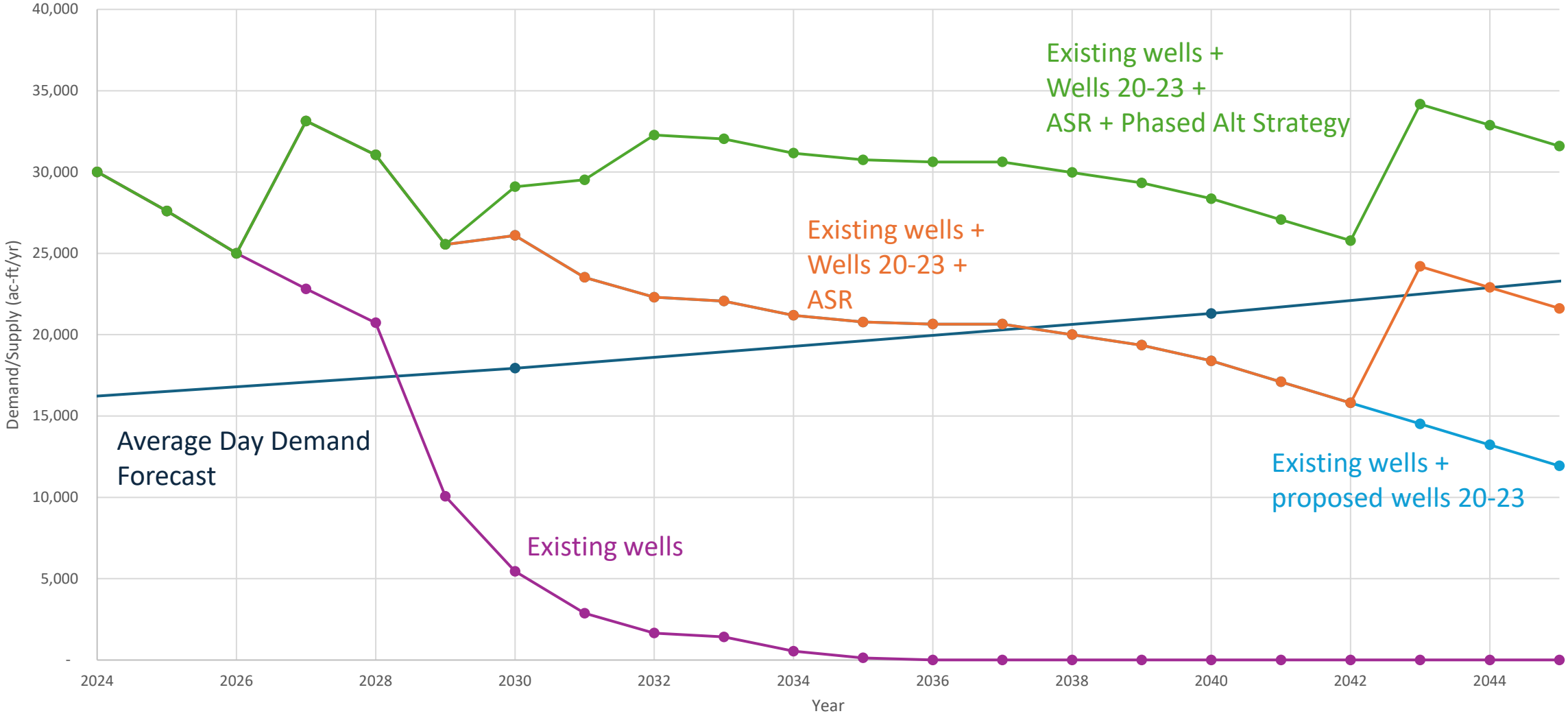
The development of the Robertson County groundwater project was envisioned to be initiated in phases to meet the City of Bryan's growth and increasing water supply needs.

Projected changes in aquifer levels, coupled with anticipated growth, have accelerated the need for additional supply.

Non-potable reuse is not efficient as originally allocated. We are looking at other ways to utilize that water (ASR) and sending it to the lake is no longer a project we intend to pursue.



Production Forecast with Phased Alternative Strategy Development

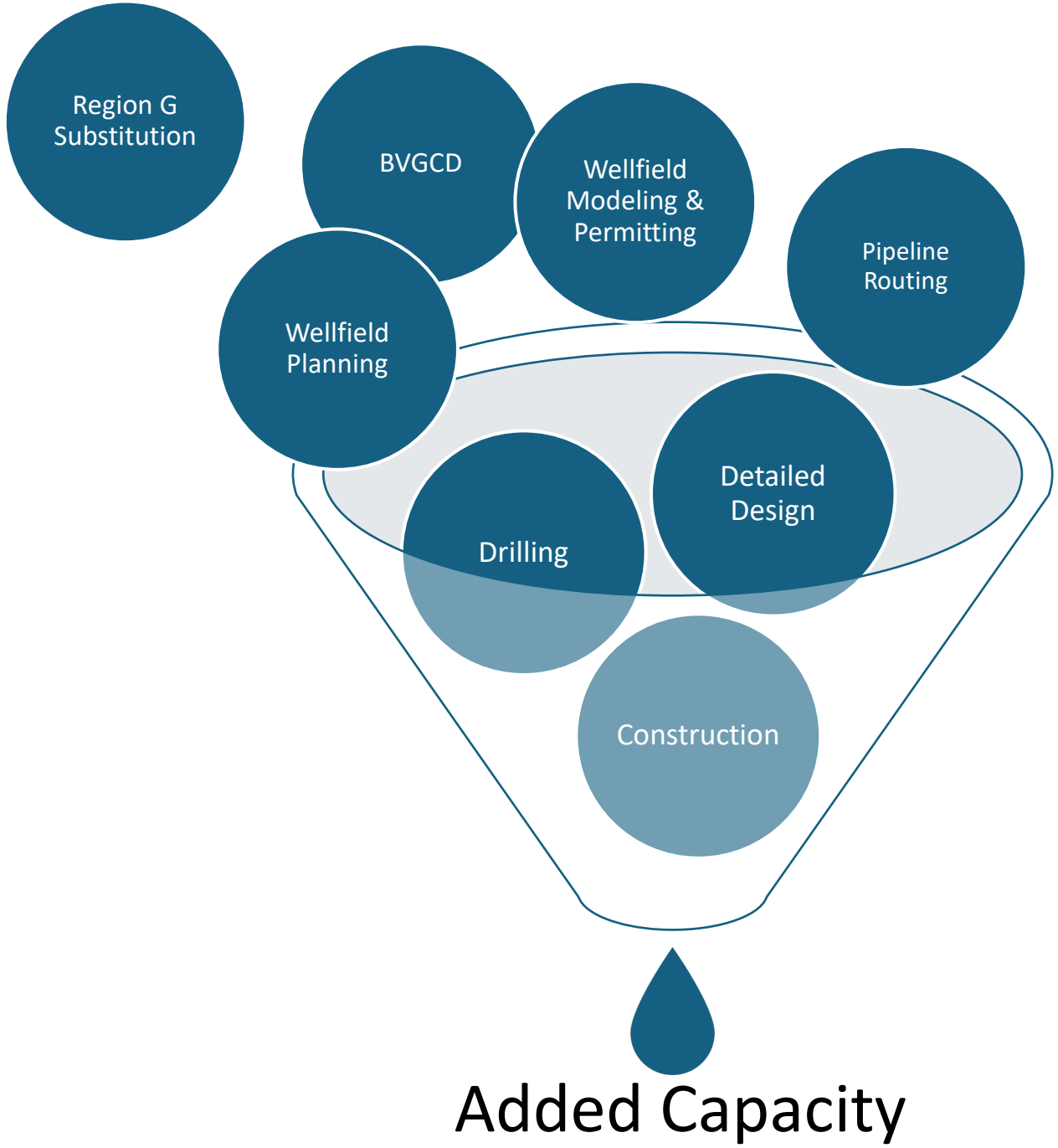


Timing

Process needs to start now to meet the City of Bryan's near-term demand.

Future production is impacted by District Rules passed in 2023, which require more acreage per well.

Current and future production capacity is impacted by discussions regarding Depletion Management Zones.



Production Improvement Activities

Production Improvement Activities

Proposed Wells 20, 21, 22, and 23

- BVGCD approved permits in hand (BVGCD permit approval 2024)
- Detailed design started

Existing Well Production Mitigation

- Hydrogeologic analysis complete
- Well rehabilitation, pump upgrades, and timing identified
- Capital Improvement Project planning and funding

2 New ASR Wells

- Permit approval pending (TCEQ)
- Detailed design 30% complete

Substitution within Region G Plan

- Wellfield Expansion in Robertson County from Alternative to Recommended Water Strategy

Thank You

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