

Lower Santa Cruz River Basin Study

Supply & Demand Approach—CAP:SAM

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*Groundwater Modeling Results Presentation
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RECLAMATION

Water Supply and Demand

Some of the major factors that affect water supply, demand and reliability:

- Growth
- Shortage
- Climate Variability
- Socio-Economic Changes
- Agricultural Trends
- Water Storage Preferences
- Policy Changes
- Behavioral Shifts
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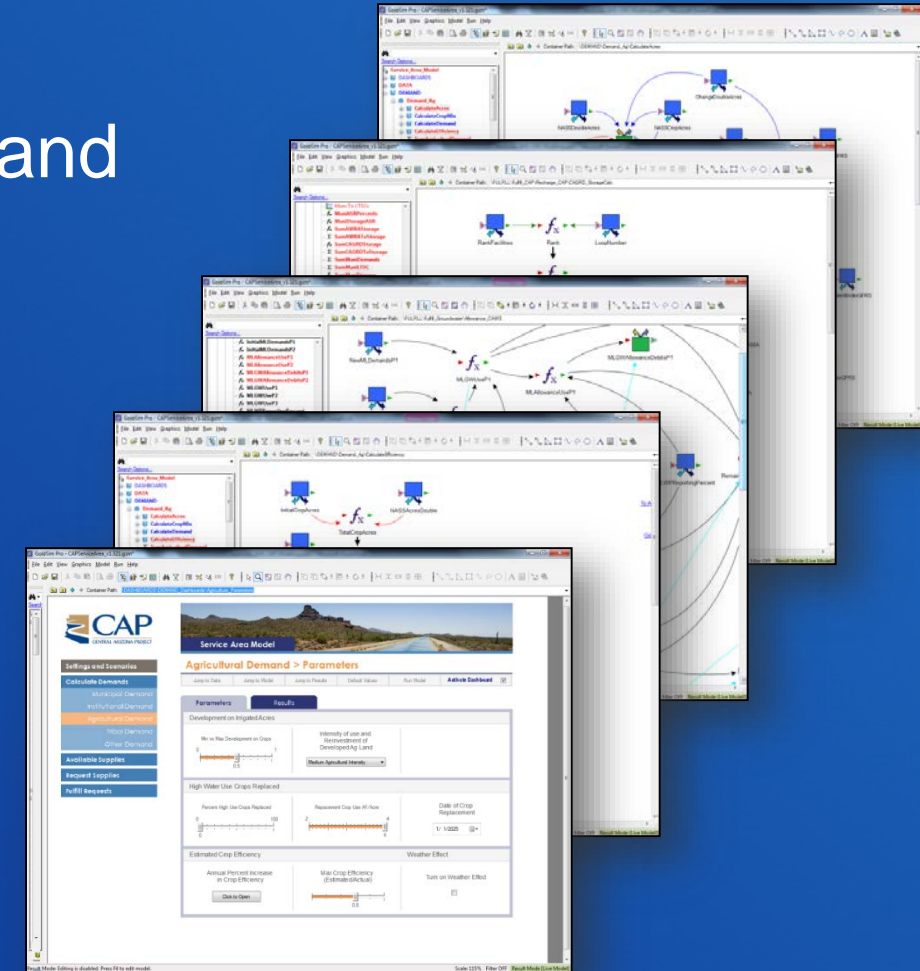


“Driving Forces”

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CAP Service Area Model

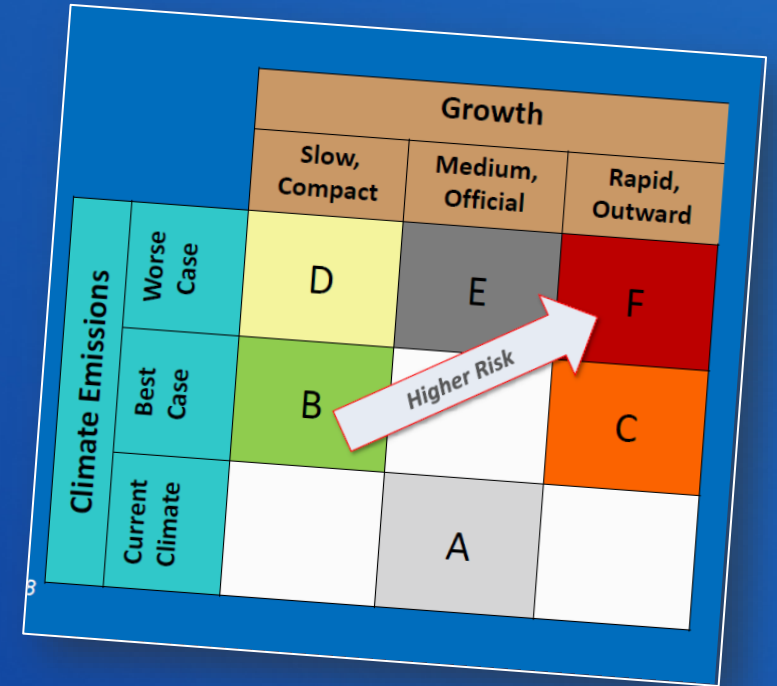
- Tool for projecting supply and demand for water providers, irrigation districts, tribes, and others in CAP's three county service area
- Accounts for complex legal and physical characteristics of users and supplies
 - Assured Water Supply Rules
 - CAGRDR replenishment
 - Recharge & recovery accounting
 - Agricultural allotments & crop mix
- Designed to generate “what if” scenarios



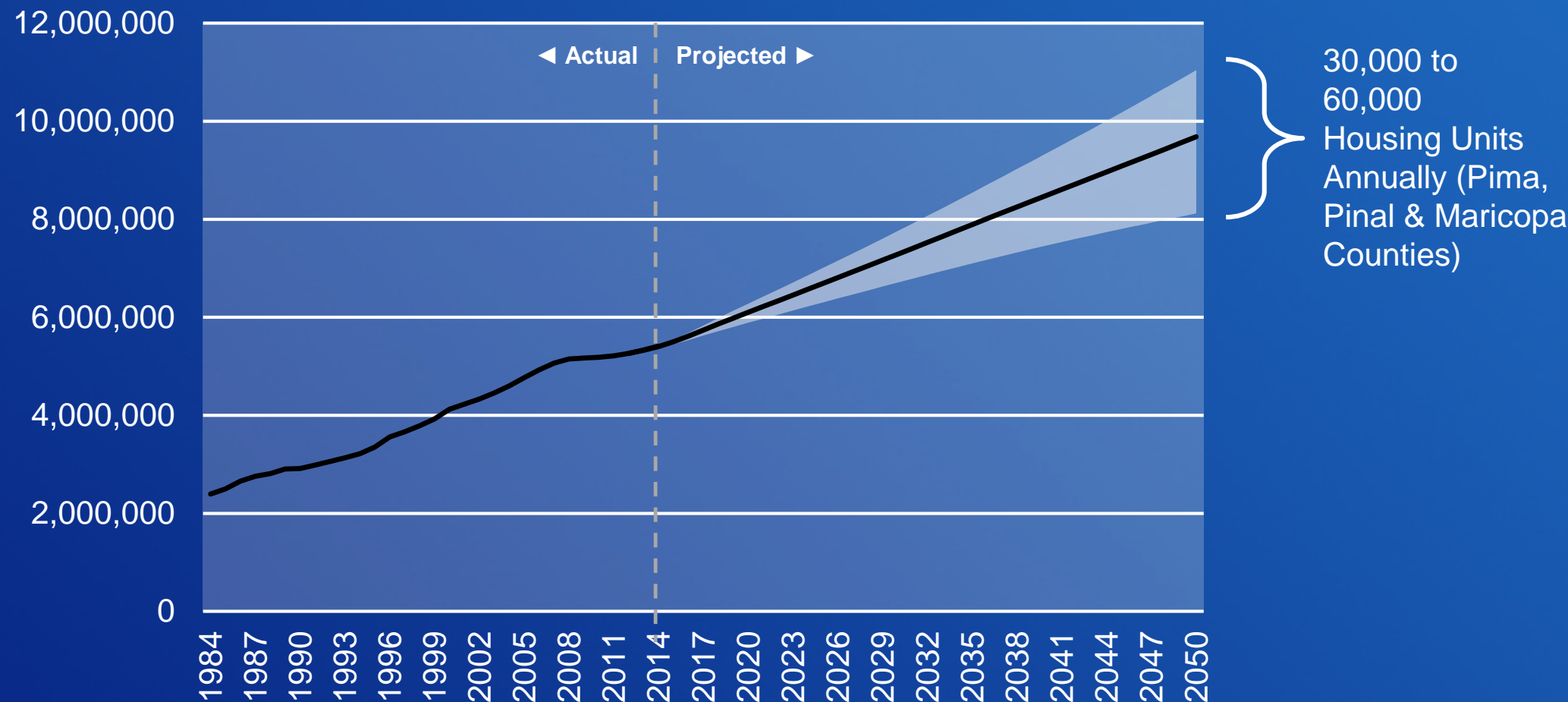
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LSCRBS Scenarios

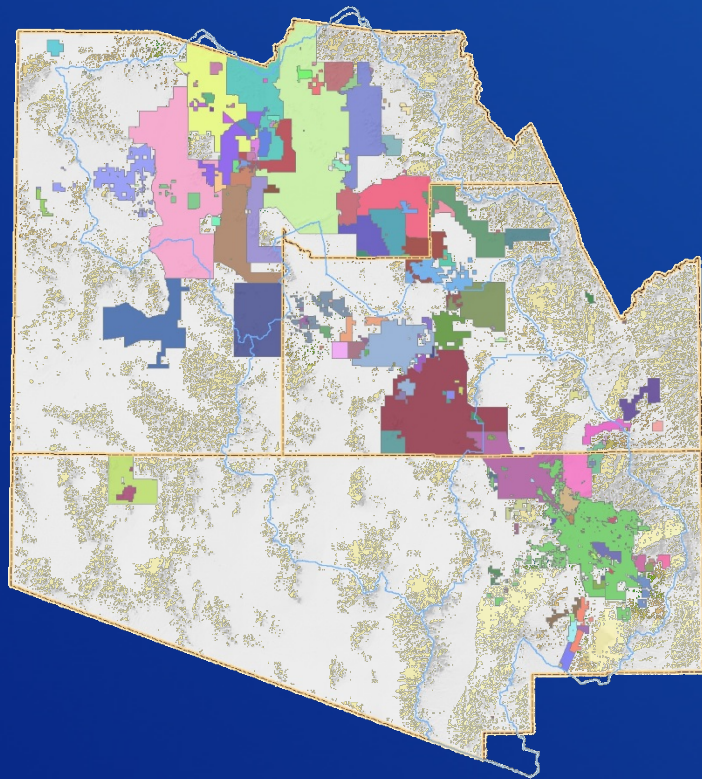
- Scenario planning is a way to test and evaluate the response of a system to a range of plausible futures
- In CAP:SAM, a single scenario is comprised of dozen or more factors (assumptions) that make sense together
 - e.g., denser urban development & lower per capita water use
- For the Study, scenarios were developed to assess varying levels of water supply risk



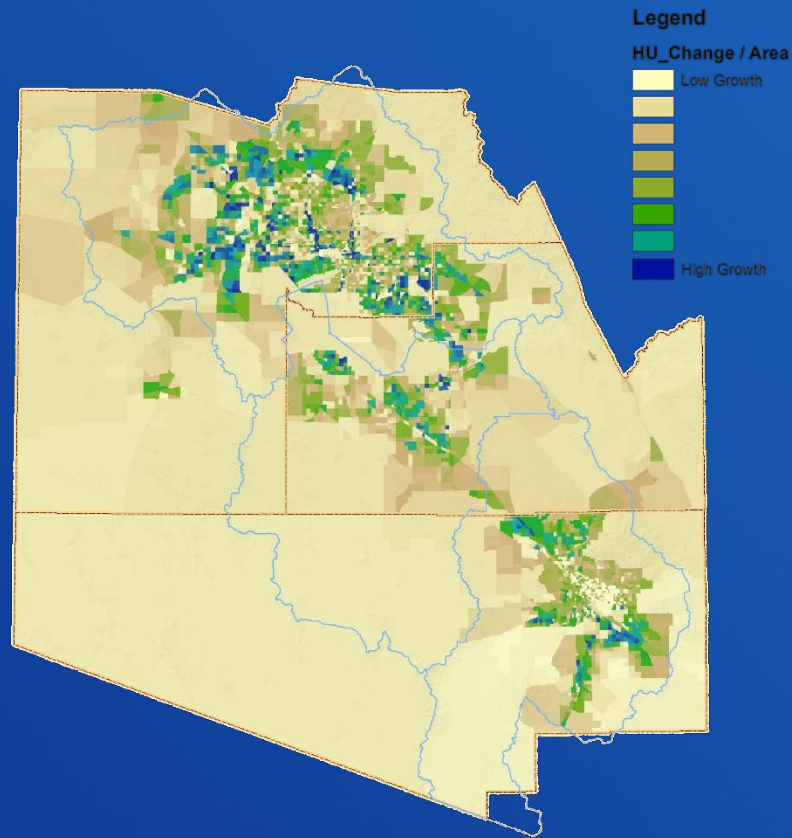
Growth Rate



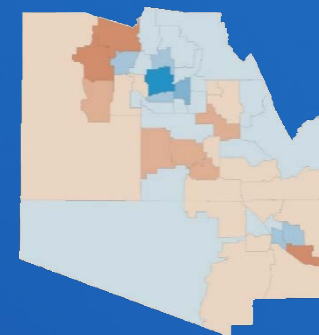
Growth Location



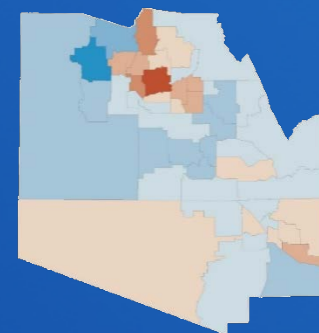
Water Providers



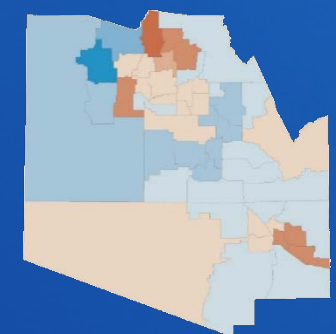
2040 Growth



Outward Growth



Infill

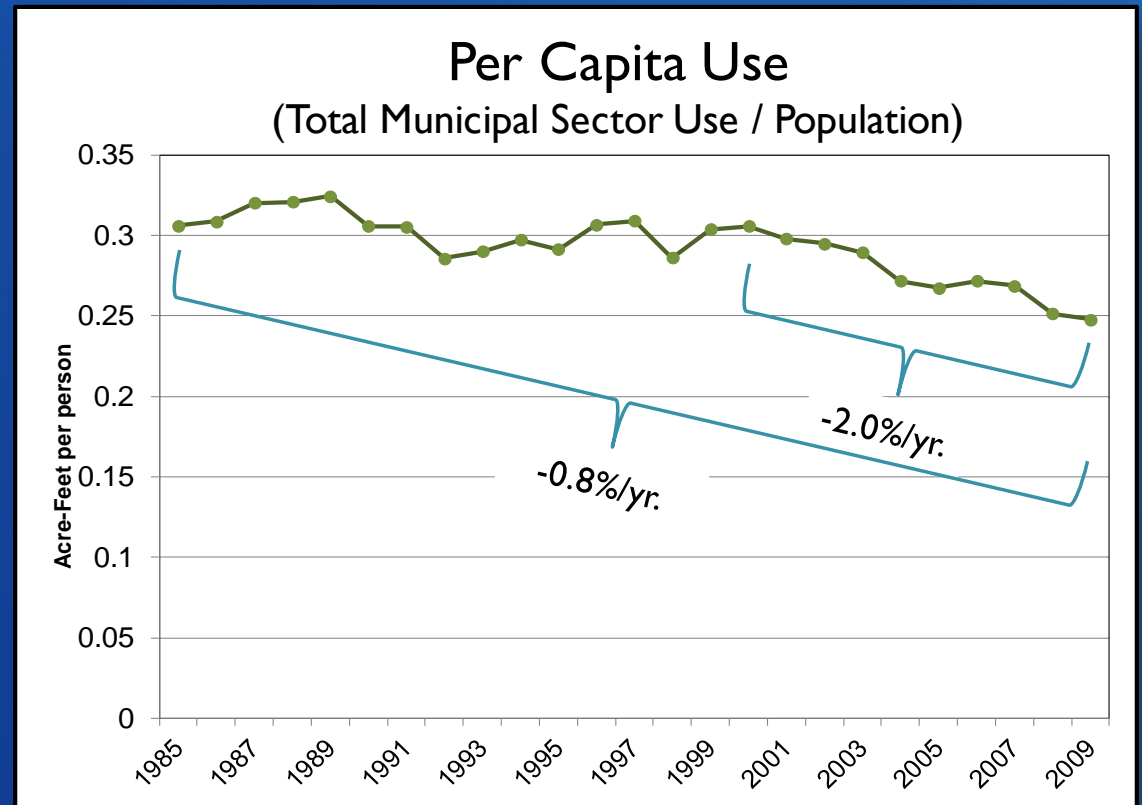


Redevelopment

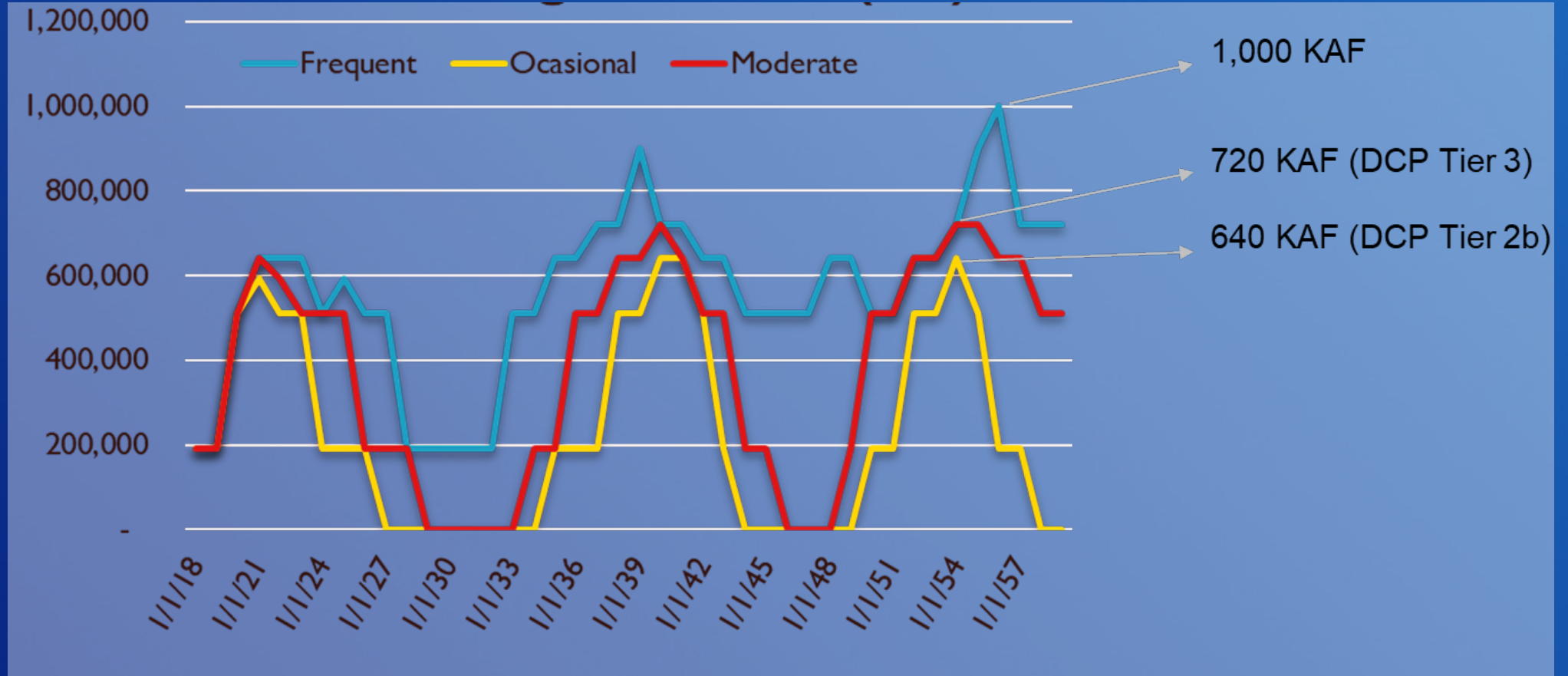
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Municipal Usage Rates

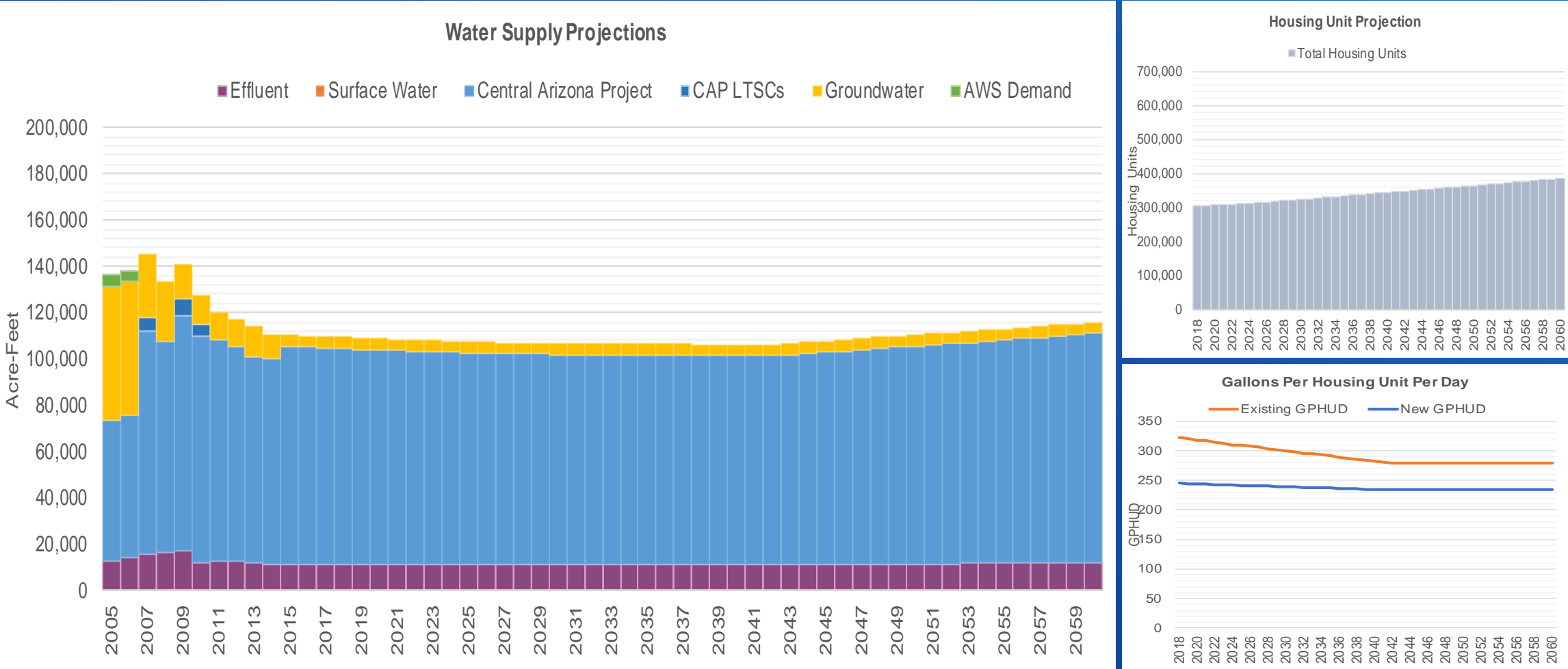
- CAP:SAM differentiates between new and existing demand
 - Based on projected housing units and associated demands
- Rates of change can be varied to reflect conservation and climate effects



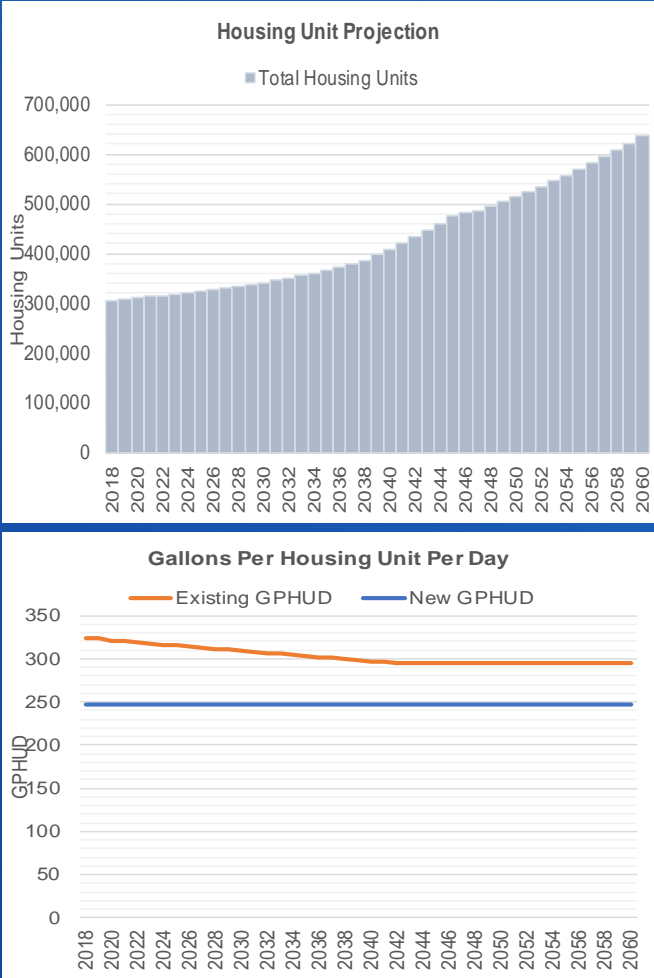
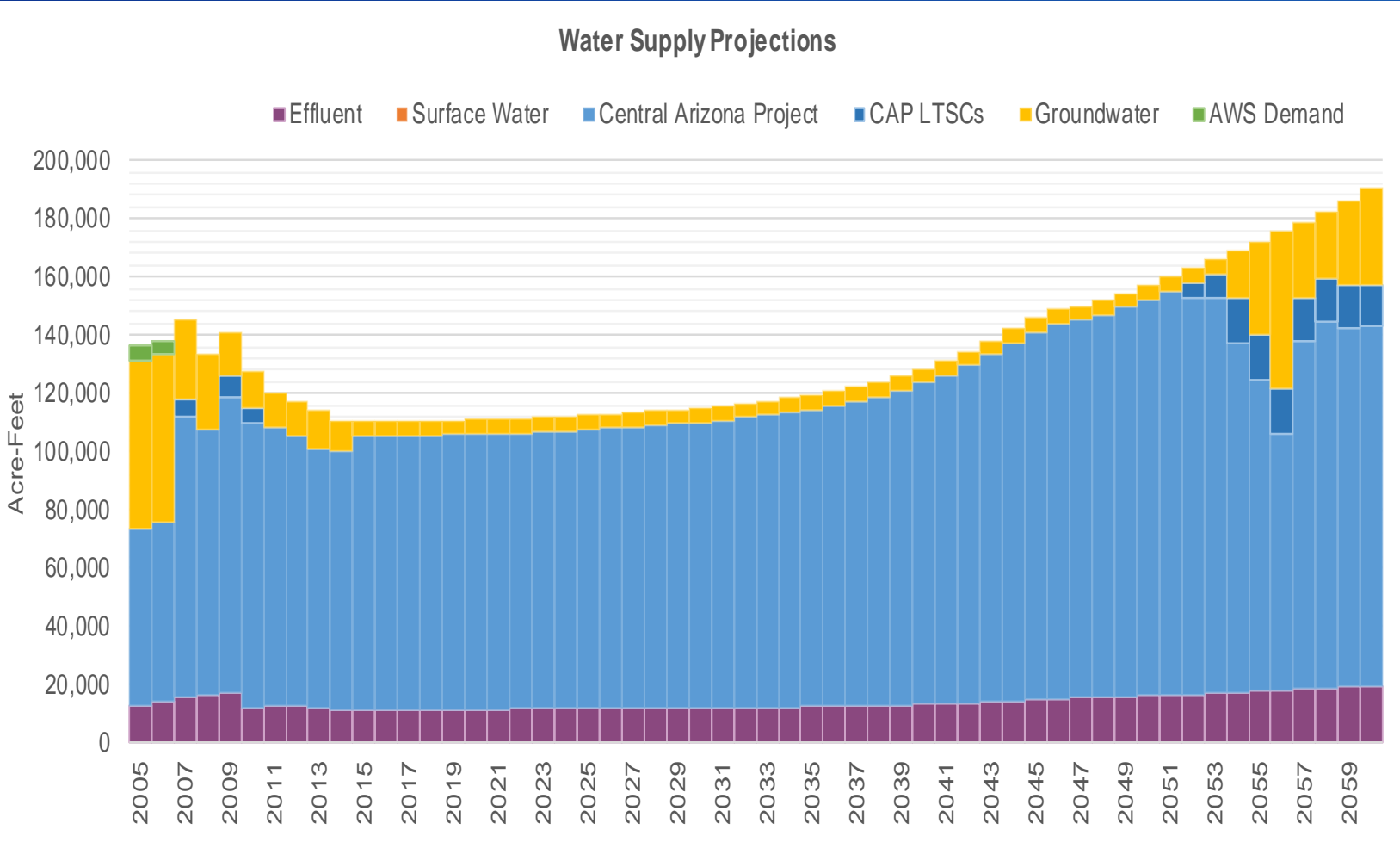
CAP Supply Shortages



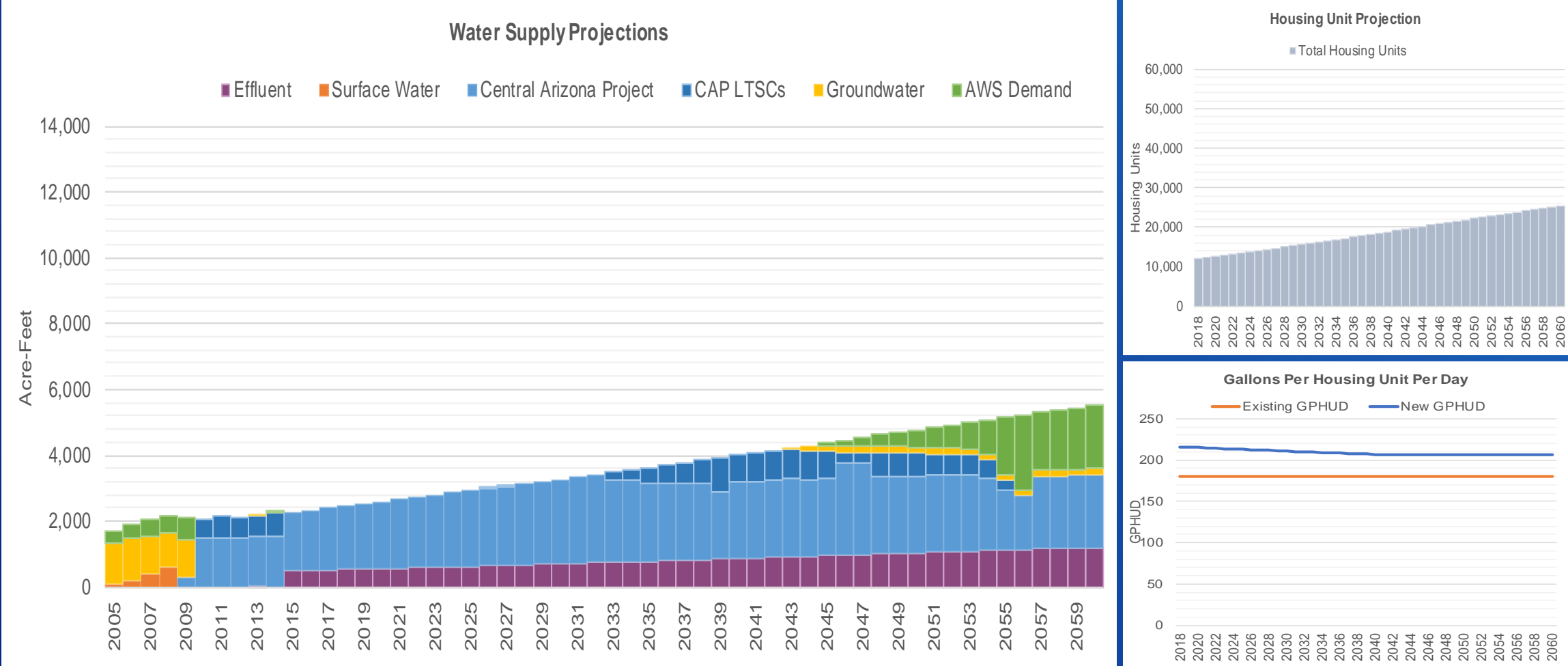
Example: Tucson Water, Scenario B



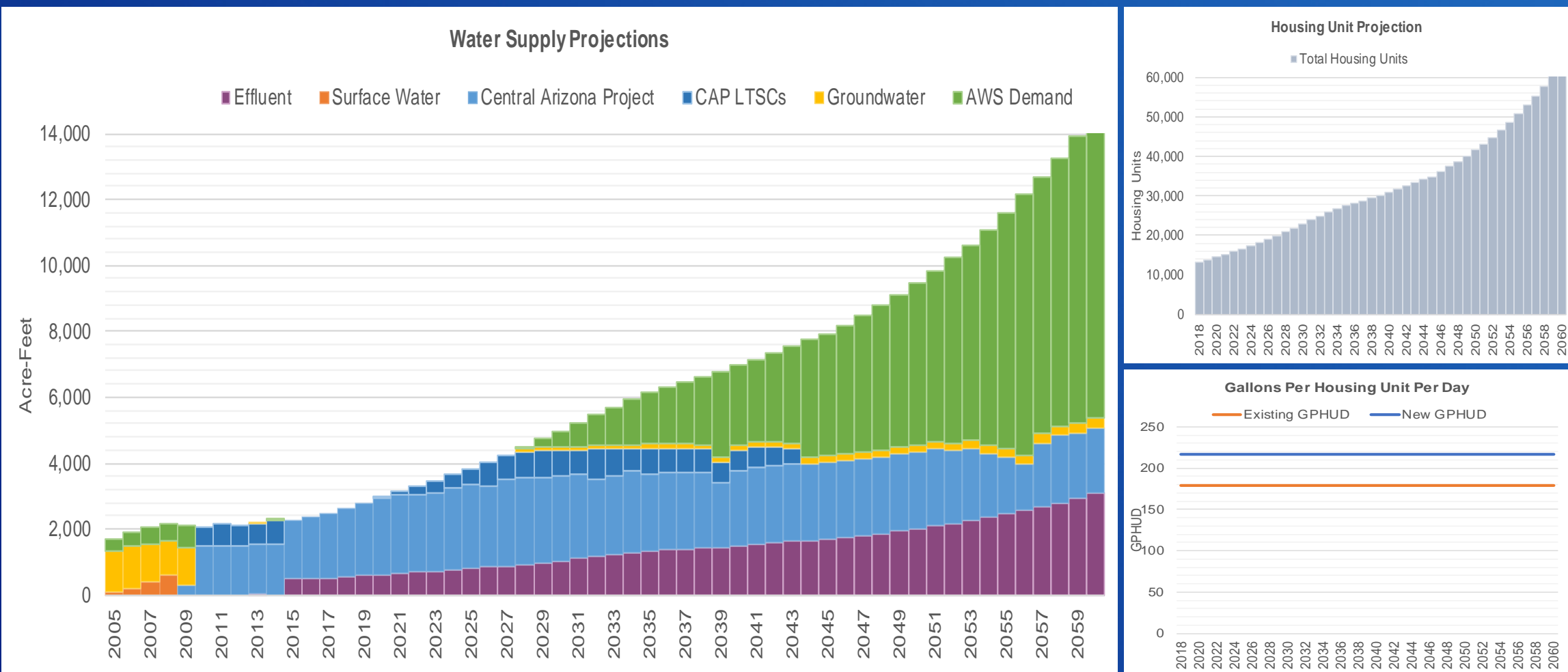
Example: Tucson Water, Scenario F



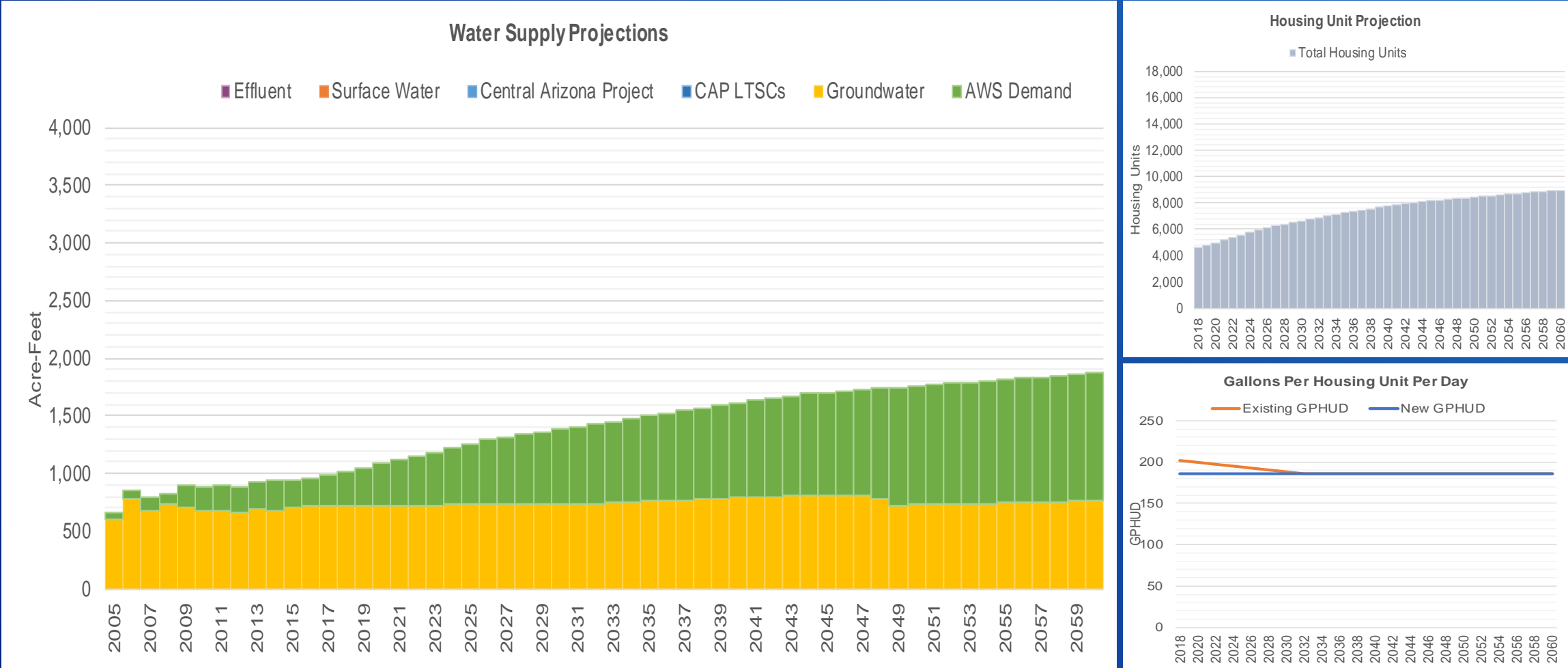
Example: Marana, Scenario B



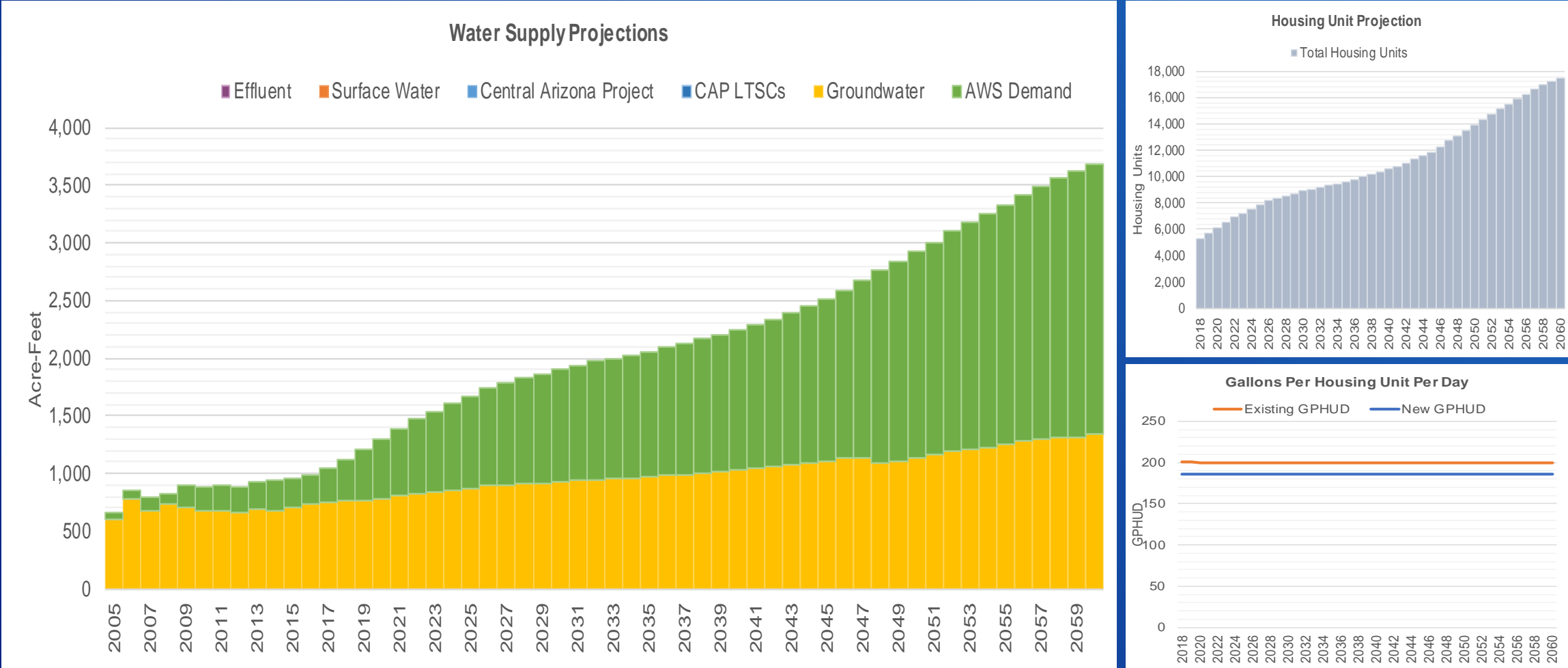
Example: Marana, Scenario F



Example: Farmers WC, Scenario B



Example: Farmers WC, Scenario F



Take-aways

- There is a significant range in demand among the scenarios
- Total demand is closely tied to the overall rate of growth
- The location of growth has a strong influence on the types of supplies available to meet demand
 - The “outward growth” spatial pattern results in greater reliance on groundwater than “compact urban”