



Engineering, Operations, & Technology Committee

# Jensen Operating Capacity Analysis

Item 7b

April 10, 2023

# Jensen Water Treatment Plant

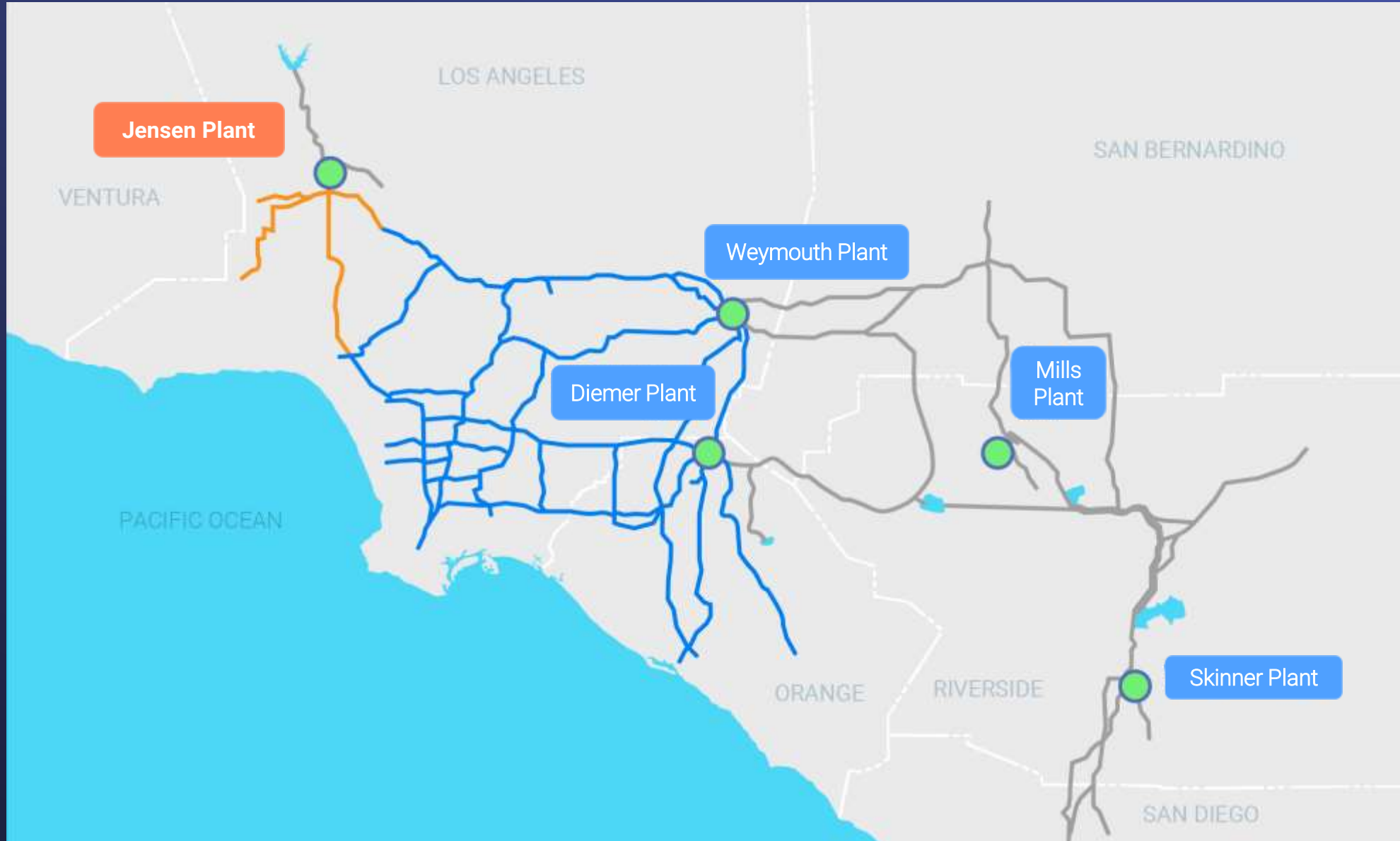


# Jensen WTP Operating Capacity Study

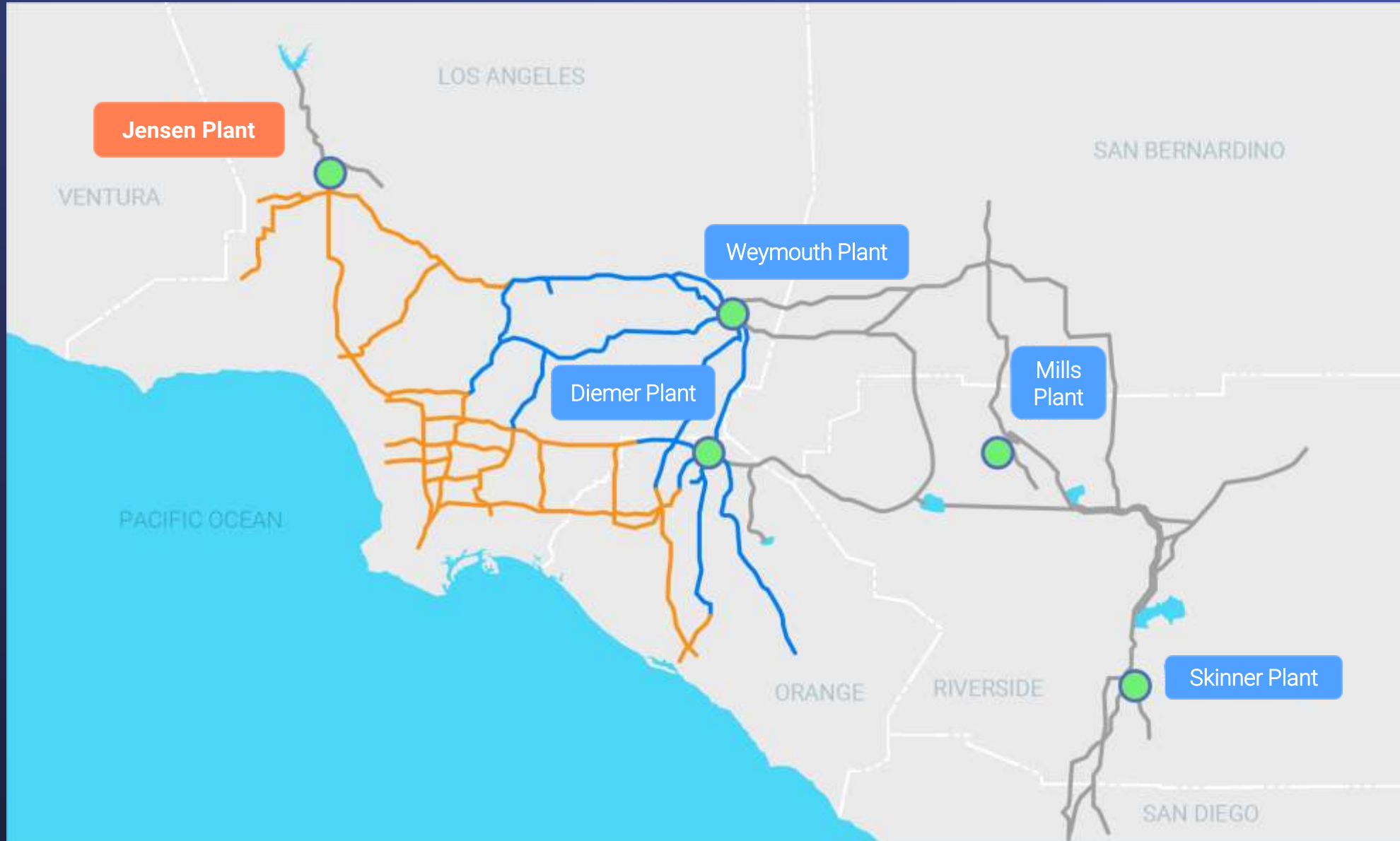
## Background

- Board policy to decommission unneeded treatment infrastructure and minimize future O&M & capital expenditures (April 2017)
- Capacity reduced at Mills Plant (late 1990s) and Skinner Plant (2017)
- Jensen Plant has experienced reduced flows and treatment capacity exists above peak demands
- Reduction in flow results from:
  - Conservation
  - Availability of State Water Project supplies

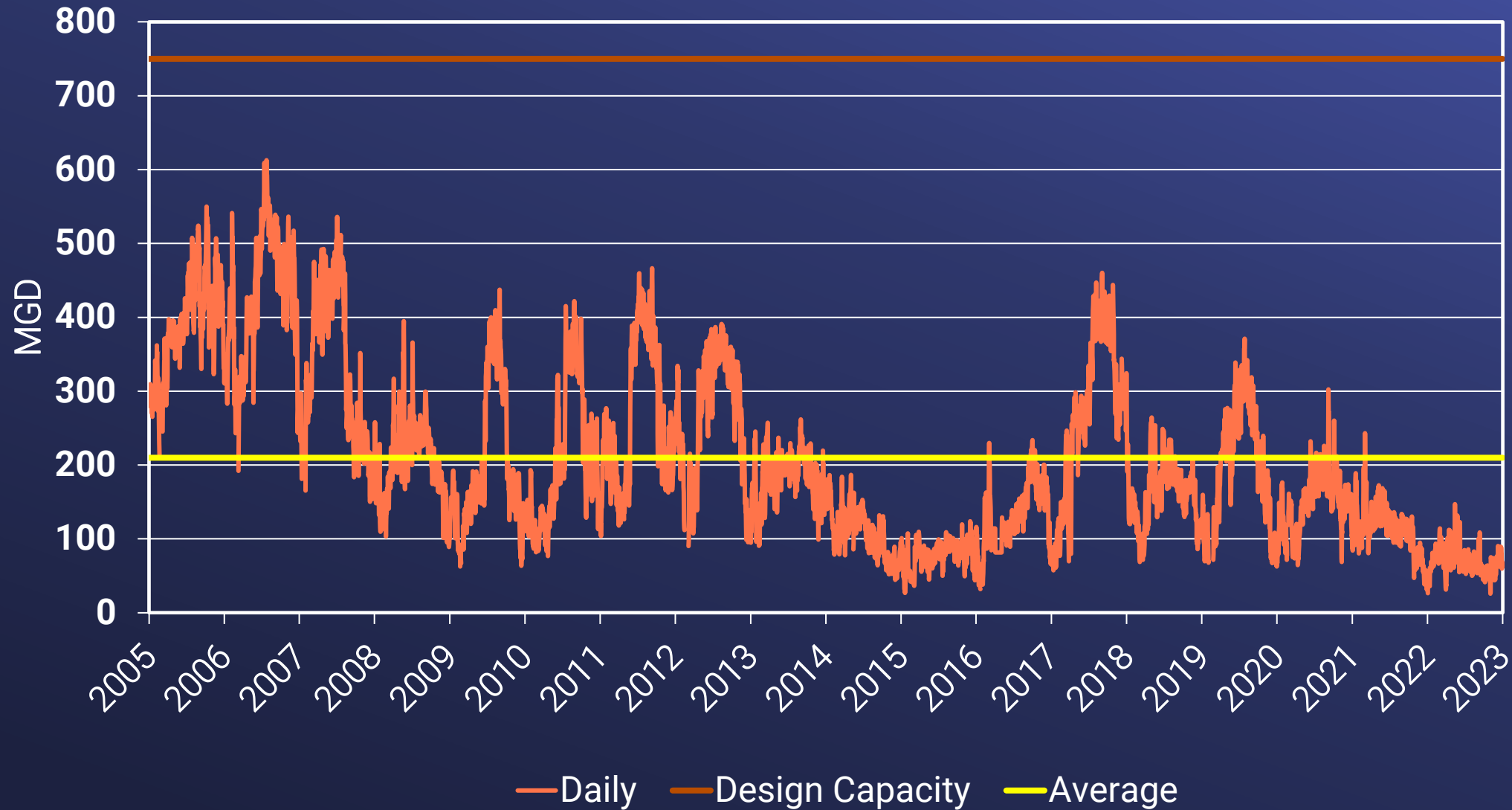
# Jensen WTP – Service Area Minimized



# Jensen WTP – Service Area Maximized

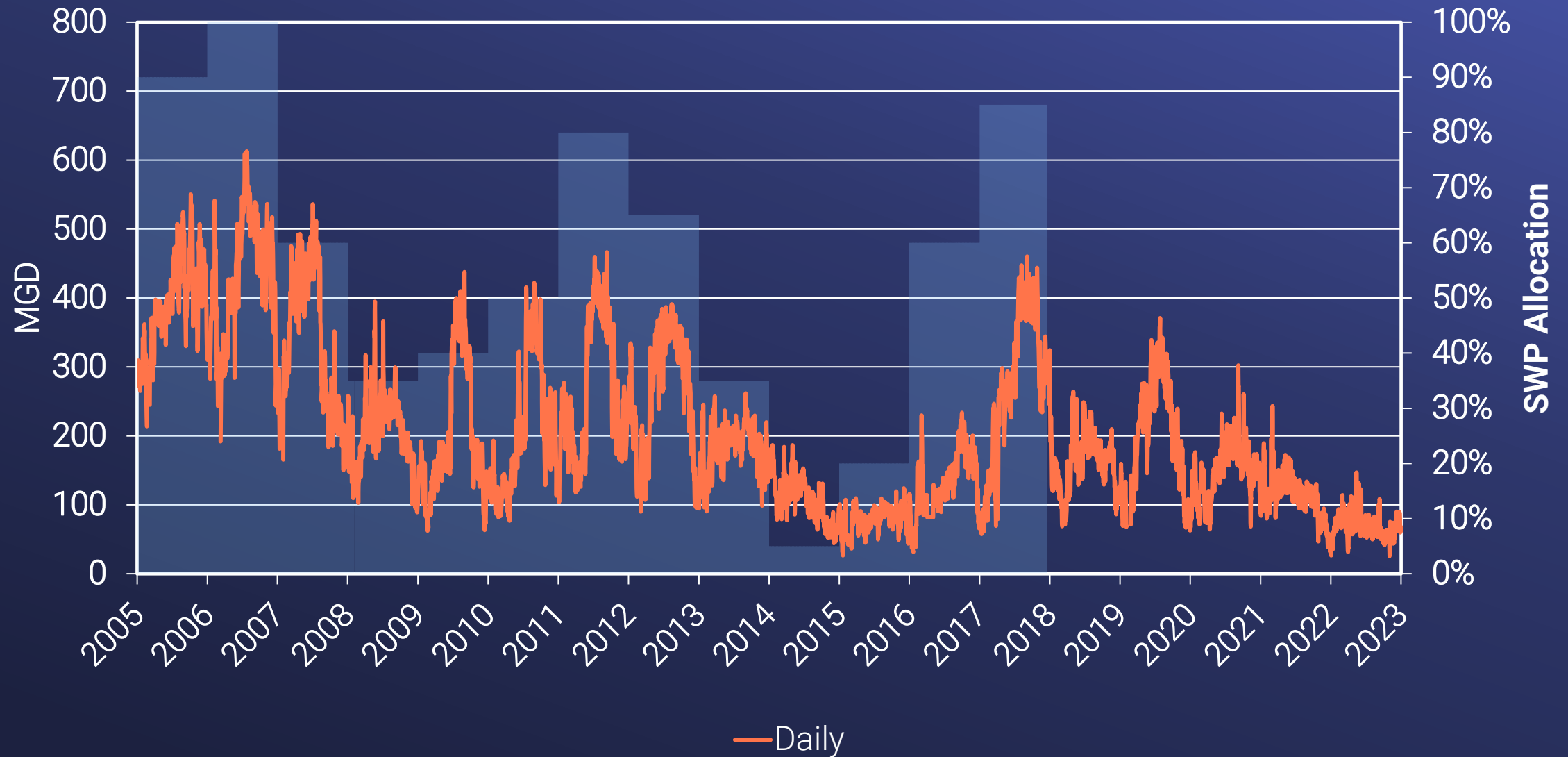


# Historical Jensen Daily Flows (MGD)



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## In Relation to SWP Allocation



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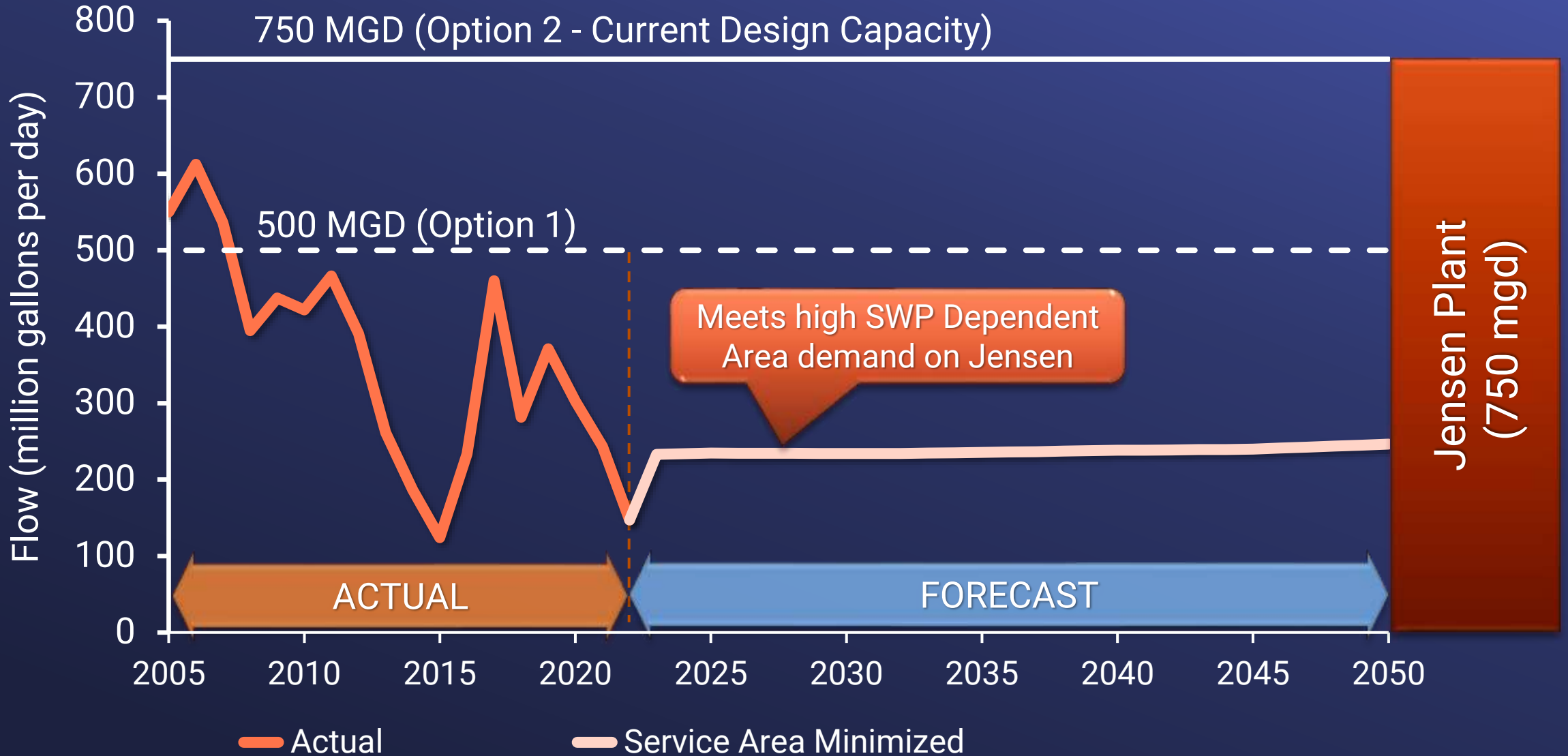
# Two Options Under Consideration

- Option 1
  - Reduce capacity to 500 MGD
- Option 2
  - Keep current rated capacity at 750 MGD



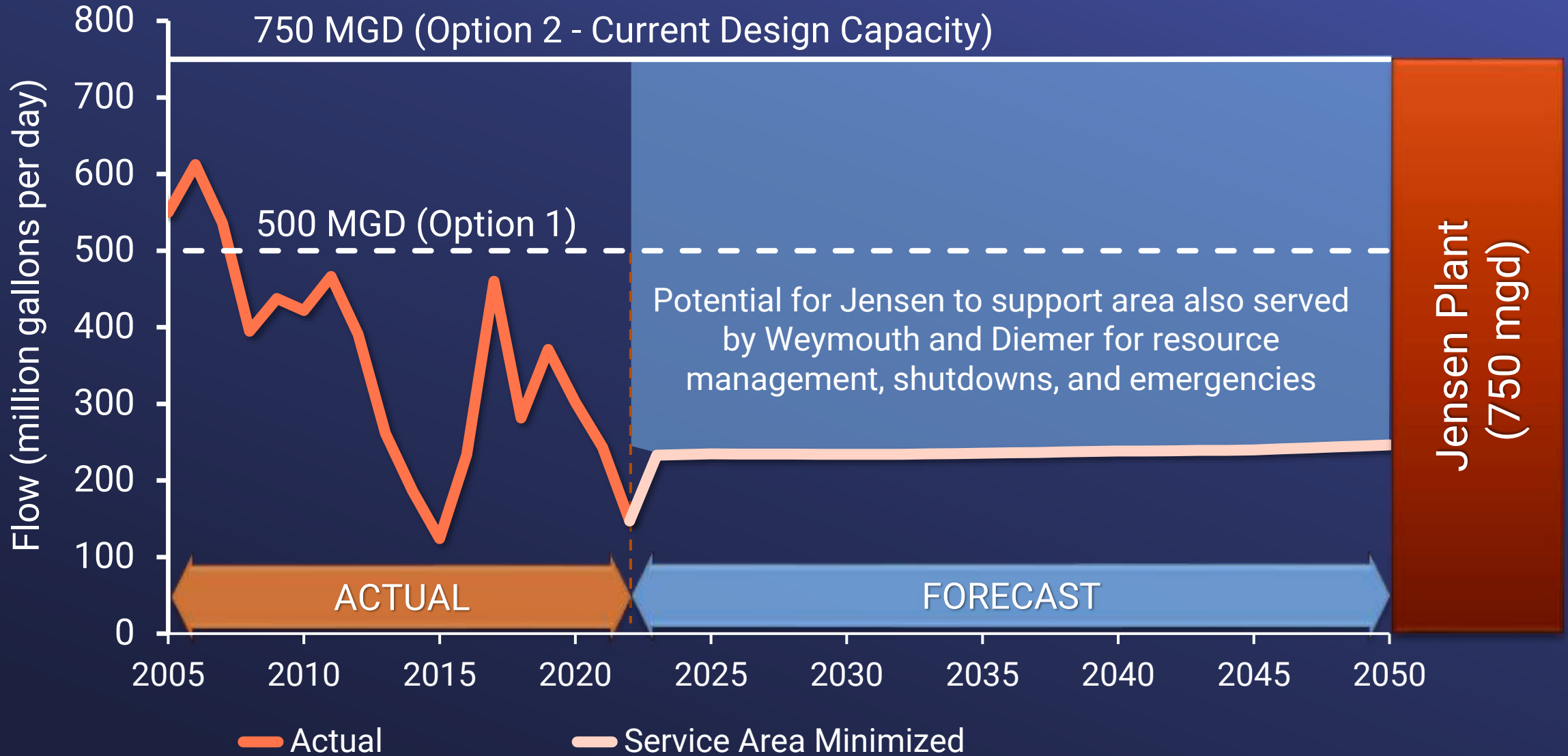
# Jensen Plant Flow Forecast

(Based on Maximum Daily Plant Flows)



# Jensen Plant Flow Forecast

(Based on Maximum Daily Plant Flows)



# Design Capacity can be Exceeded on a Case-by-Case Basis

Capacity (MGD)	Option 1	Option 2
Design	500	750
Short-Term Maximum *	667	1,000

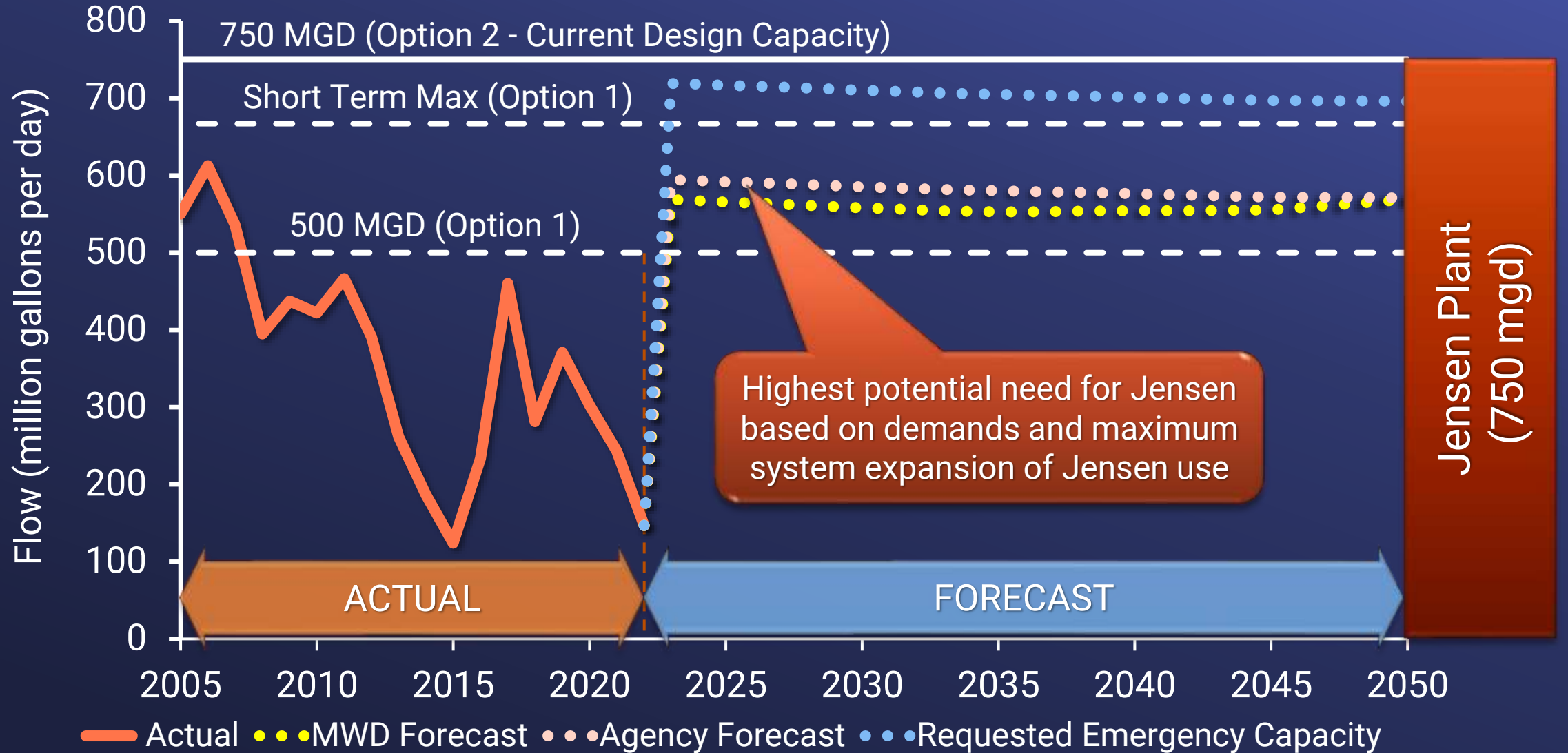
\*Coordinated with DDW

- Sedimentation basins limit max. hydraulic capacity
- Less mechanical redundancy
- Requirements when operating above design
  - Favorable water quality
  - Additional monitoring
  - Slow, incremental flow changes
  - DDW notification

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Short-term  
Maximum  
Flows

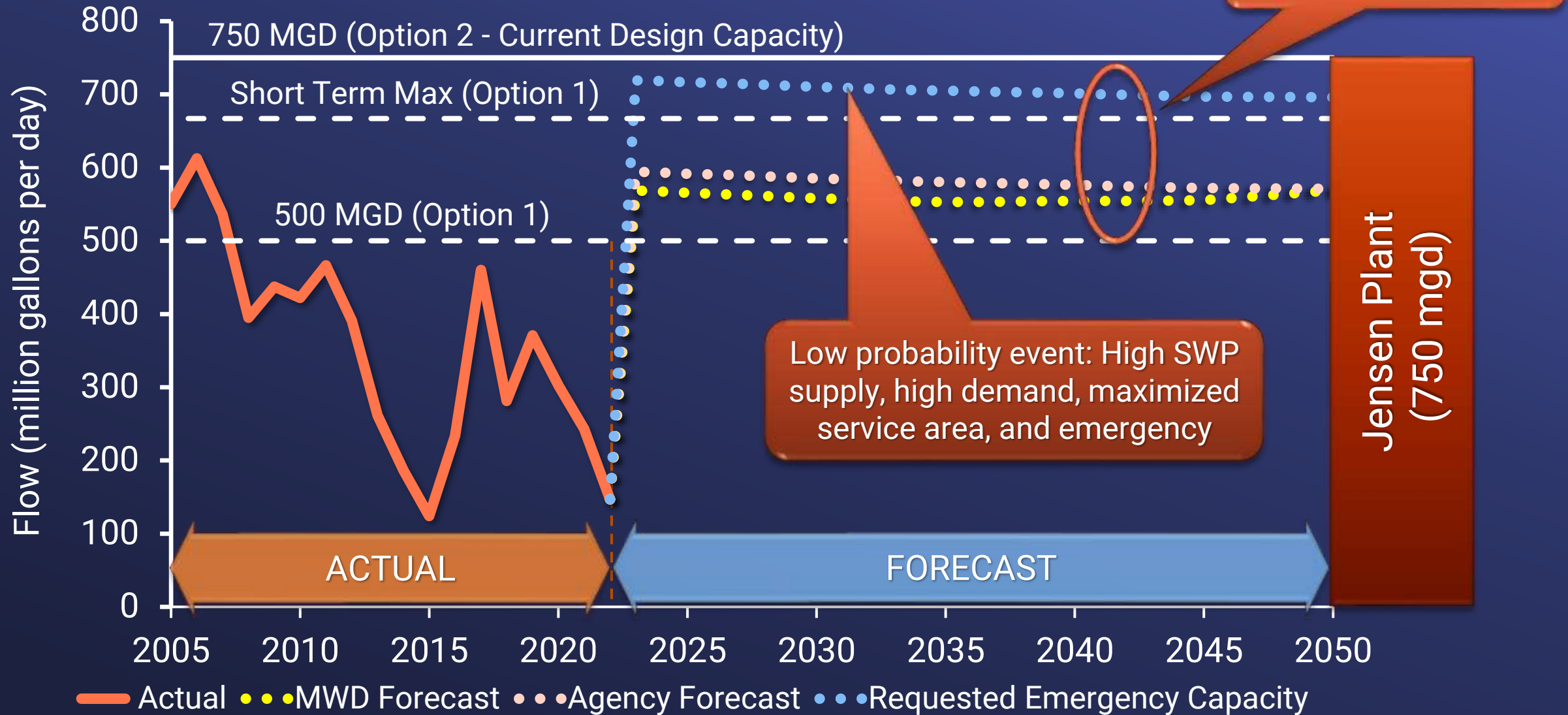
# Jensen Plant Flow Forecasts

(Agency Forecast, Requested Capacity, and MWD Forecast)



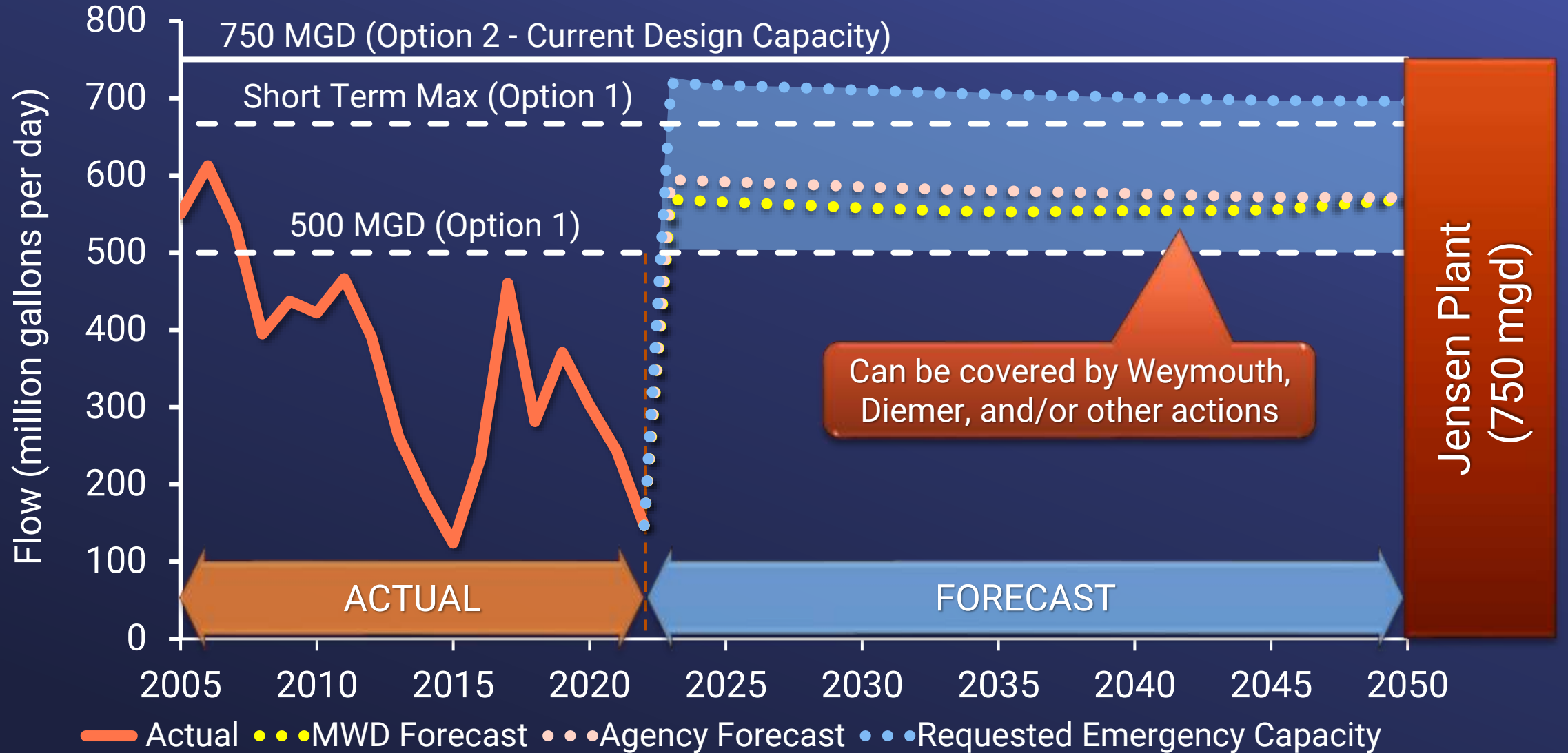
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(Agency Forecast, Requested Capacity, and MWD Forecast)

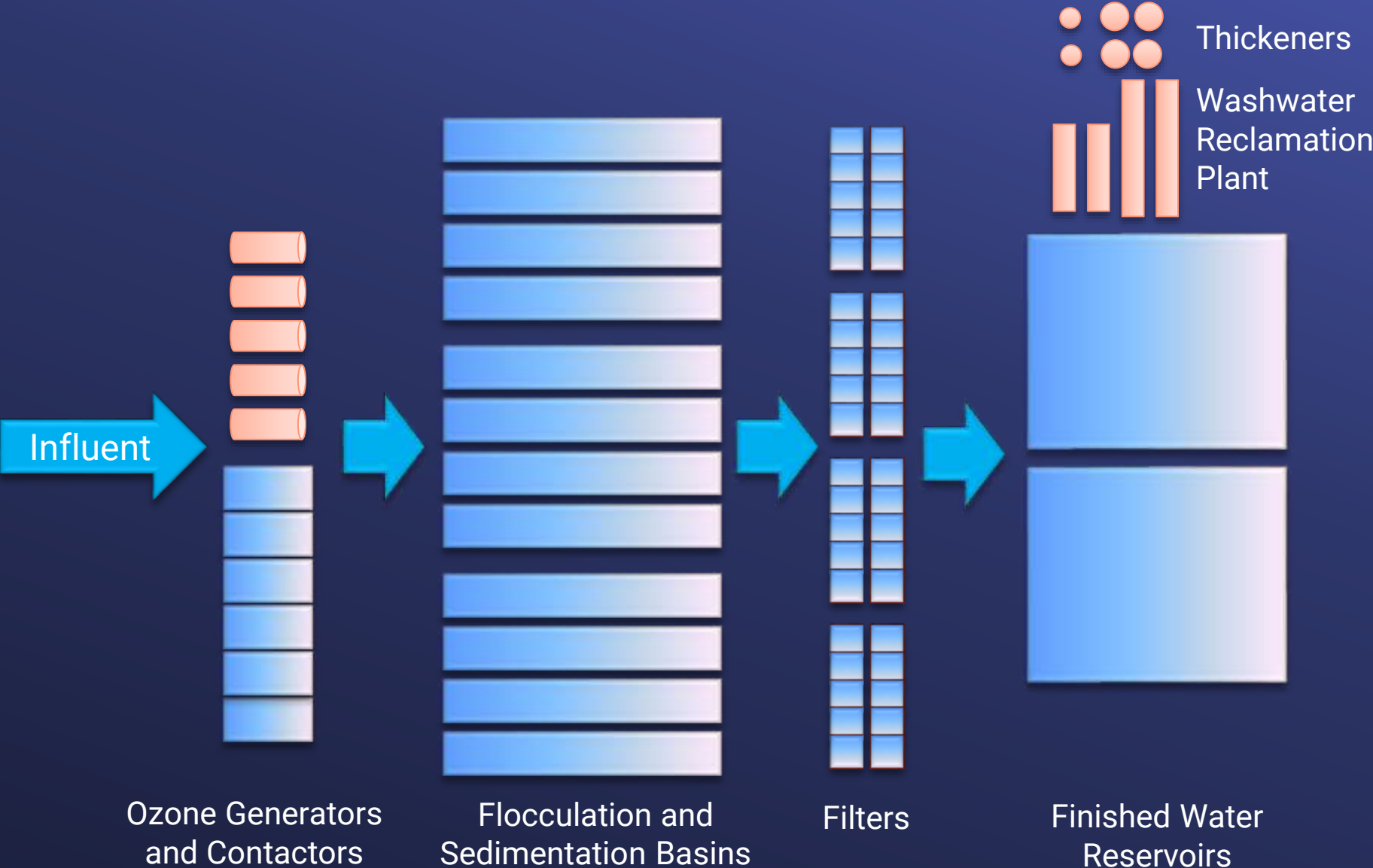


# Jensen Plant Flow Forecasts

(Agency Forecast, Requested Capacity, and MWD Forecast)

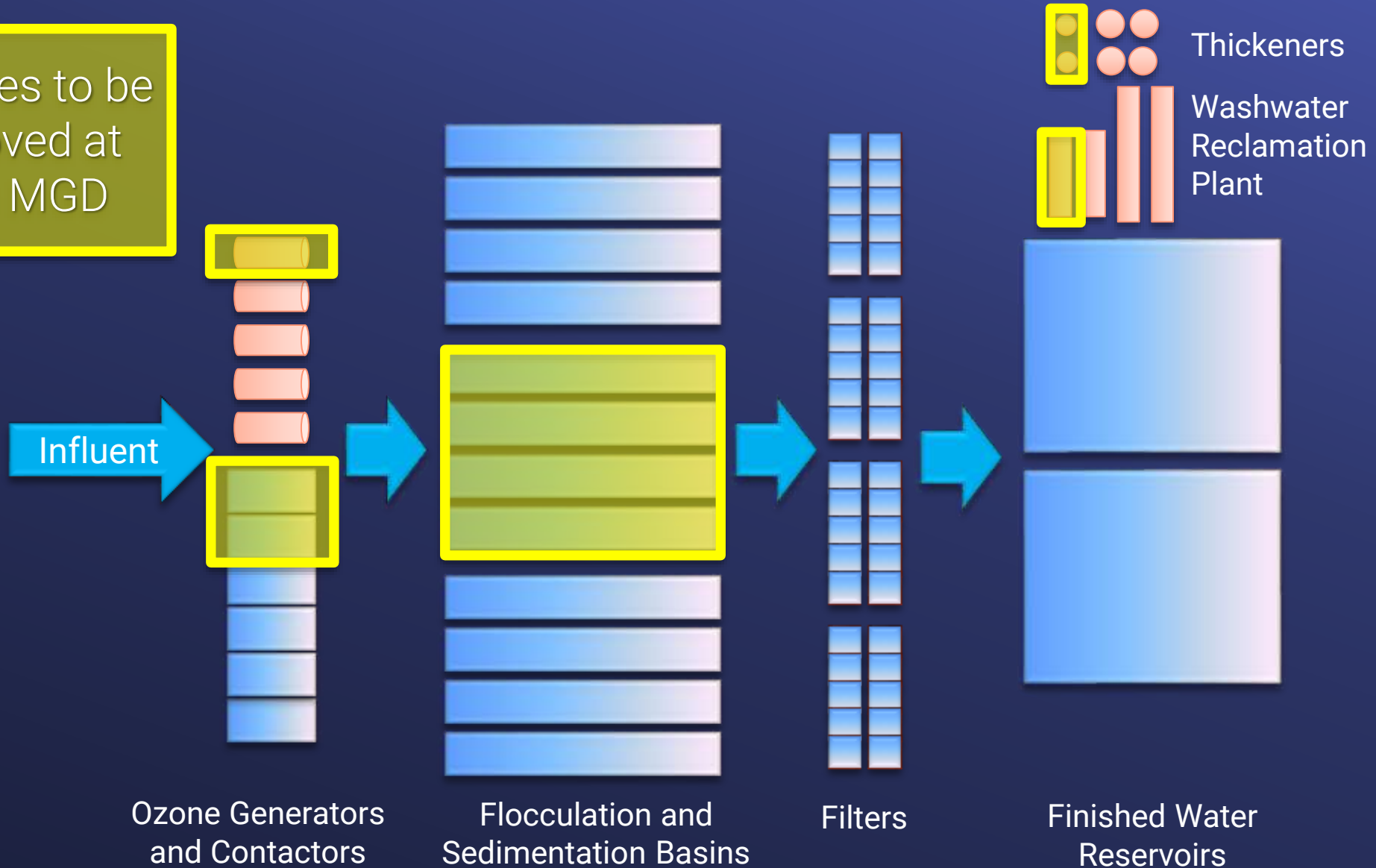


# Jensen Water Treatment Plant



# Jensen Water Treatment Plant

Facilities to be removed at 500 MGD





# Jensen WTP Operating Capacity Study

## Projected CIP Savings for 500 MGD Option

- Project phases already deferred: \$32 million
  - Flocculators
  - Ozone Power Supply Units
  - Washwater Reclamation
  - Stage 2 Electrical Upgrades
- Project phases being deferred: \$95 million
  - Bromate Control Upgrade
  - Stage 3 Electrical Upgrades
  - Solids Dewatering
  - Sedimentation Basins
- Total estimated CIP savings: \$127 million

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## Additional Cost Considerations for 500 MGD Option

- Reduces or eliminates O&M required for out-of-service facilities
  - Annual savings estimate: \$420,000
- One-time cost of removing facilities from service
- Additional future recommissioning costs would be anticipated

# Summary

Alternatives	Advantages	Disadvantages
<b>Option 1 – 500 MGD</b>	<ul style="list-style-type: none"><li>• Capital cost savings</li><li>• O&amp;M savings</li><li>• Provides system flexibility and covers majority of demand scenarios</li></ul>	<ul style="list-style-type: none"><li>• May not cover low-probability events<ul style="list-style-type: none"><li>• High demand/high supply condition (short-term max operations needed)</li><li>• Worst-case emergency condition</li></ul></li></ul>
<b>Option 2– 750 MGD (Current Design)</b>	<ul style="list-style-type: none"><li>• Increases system flexibility to cover low probability events<ul style="list-style-type: none"><li>• High demand/high supply condition</li><li>• Worst-case emergency condition</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Additional capital cost</li><li>• Increased O&amp;M costs</li></ul>

# Jensen WTP Operating Capacity Study

## Additional Alternative for 500 MGD Option

- Received feedback from member agencies
- Gain additional clarity through current planning efforts
  - Climate Action Management Plan
  - Pure Water Southern California
  - SWP Dependent Area Solutions
- Continue phasing CIP projects and selectively deferring maintenance

# Jensen WTP Operating Capacity Study

## Options Under Consideration

- 1a. Phase CIP projects and maintenance to 500 MGD with potential future phase to 750 MGD
  - Close to maximum cost and resource savings
  - Close to maximum system flexibility
  - Easier opportunity to complete phases for 750 MGD if needed
- 1b. Officially downsize to 500 MGD
  - Maximum cost and resource savings
  - Close to maximum system flexibility
  - Difficult and costly to increase back to 750 MGD if needed
2. Proceed with CIP project phases for 750 MGD
  - Maximum system flexibility
  - No cost and resource savings

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## Next Steps

- Receive feedback from EO&T Committee
- Develop actions and recommendations, as appropriate

