



Review of Water Treatment Plant Operating Capacities

Engineering and Operations Committee

Item 6a

February 13, 2017

Topics

- Water system overview
- Historical water treatment plant flows
- Evaluation of treatment plant capacities
- Recommendations for the Skinner and Jensen Plants

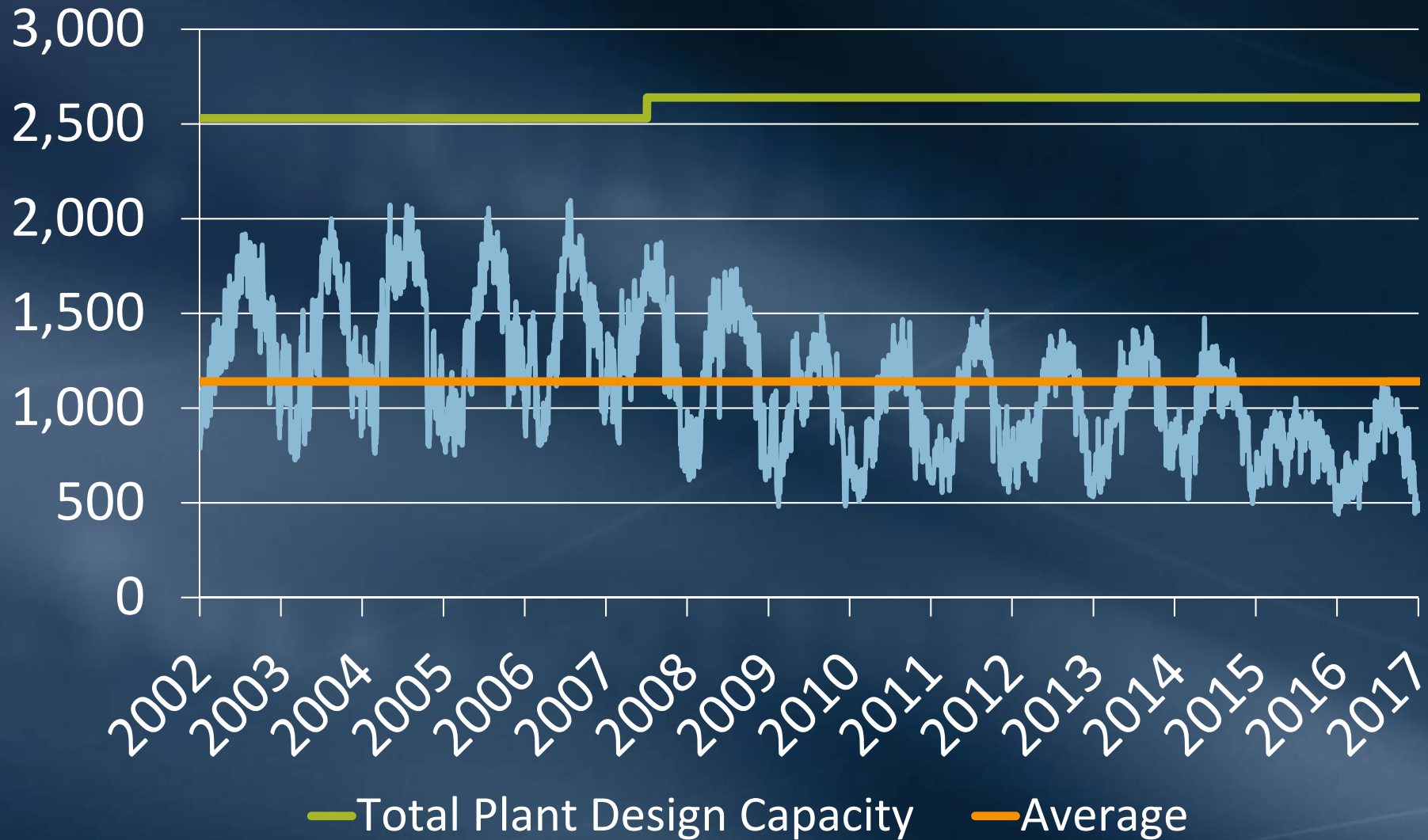
Minimize SWP Operation



Maximize SWP Operation

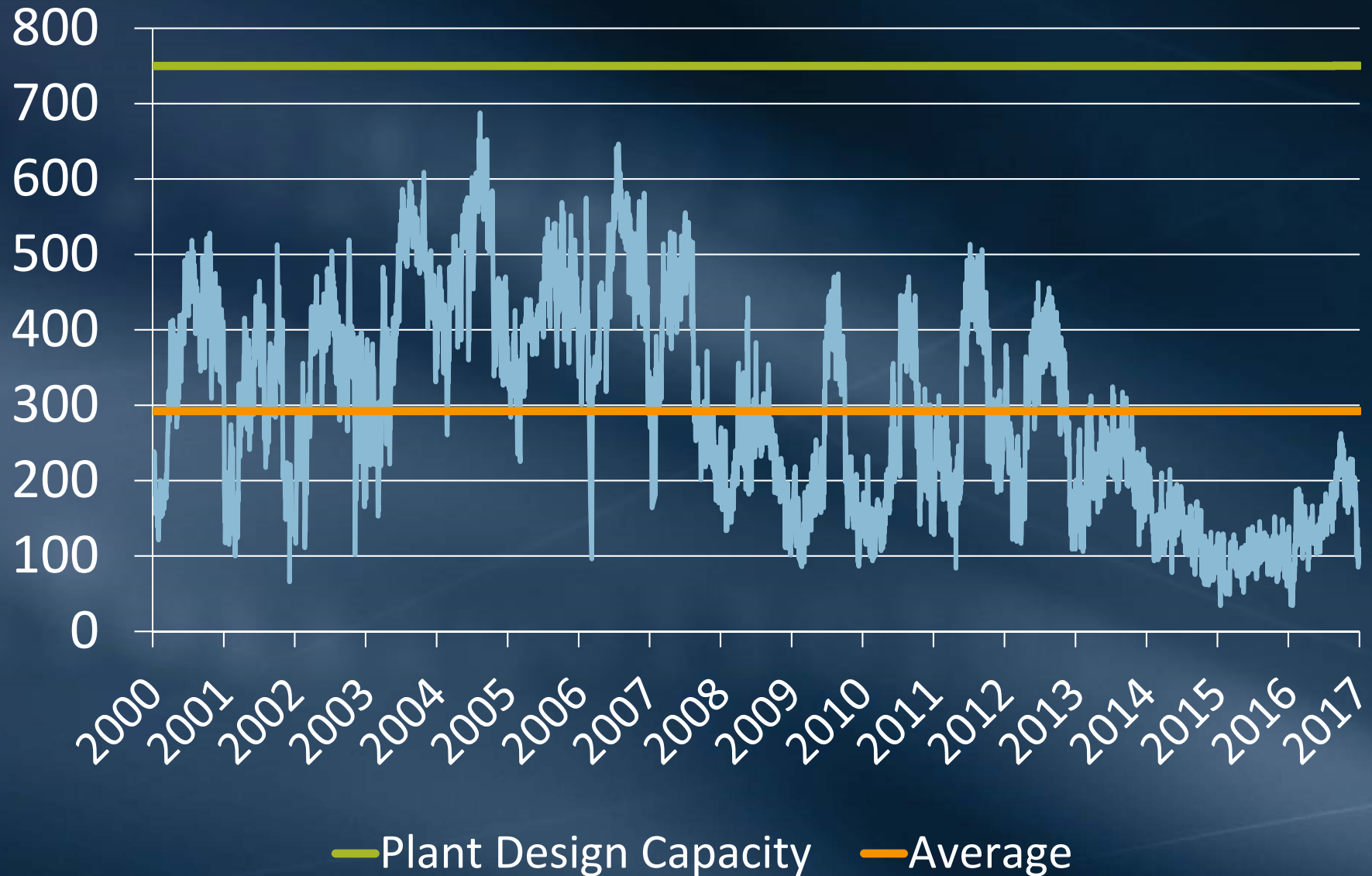


Combined Peak Daily Effluent (mgd)

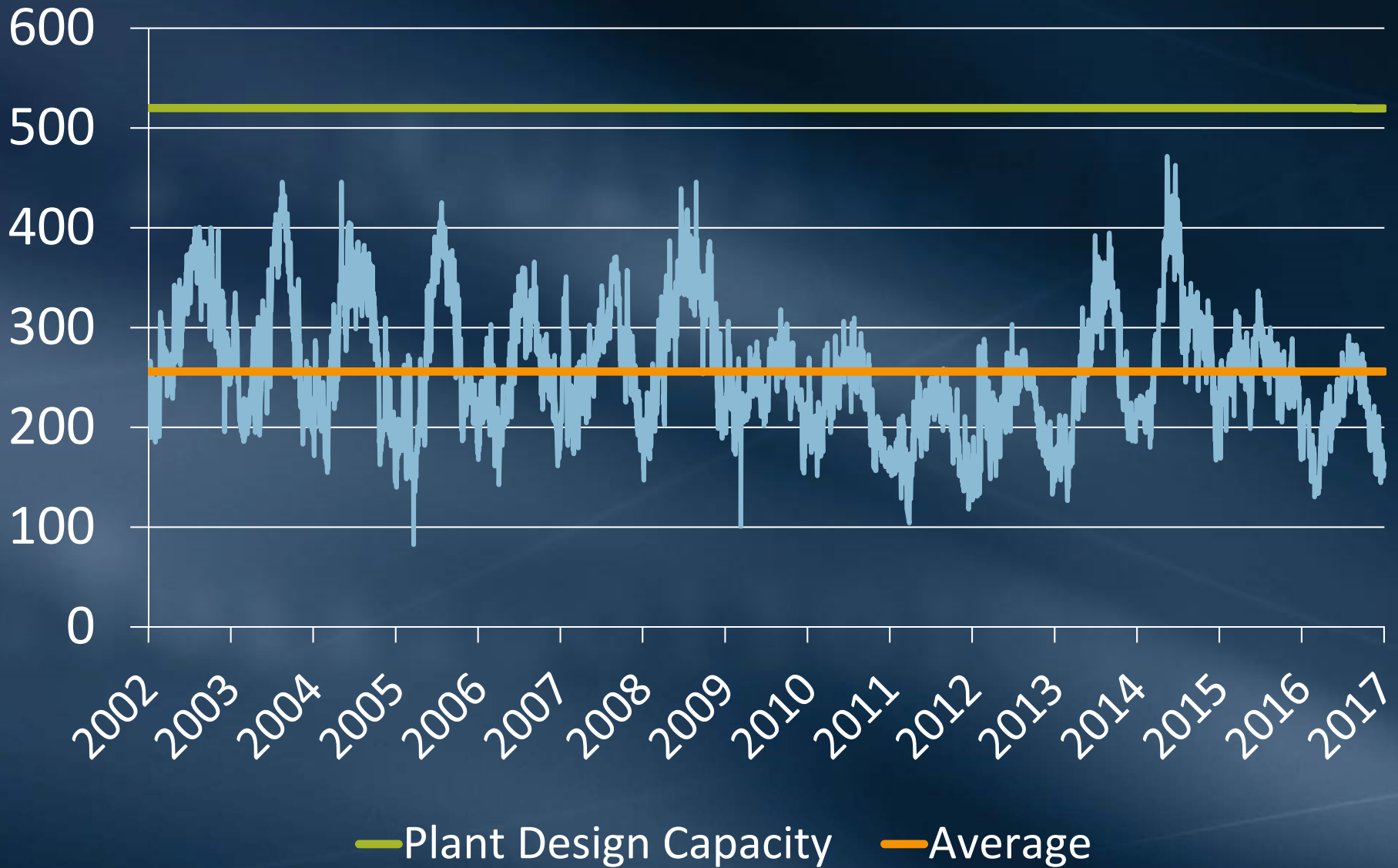


Non-coincident peak flow

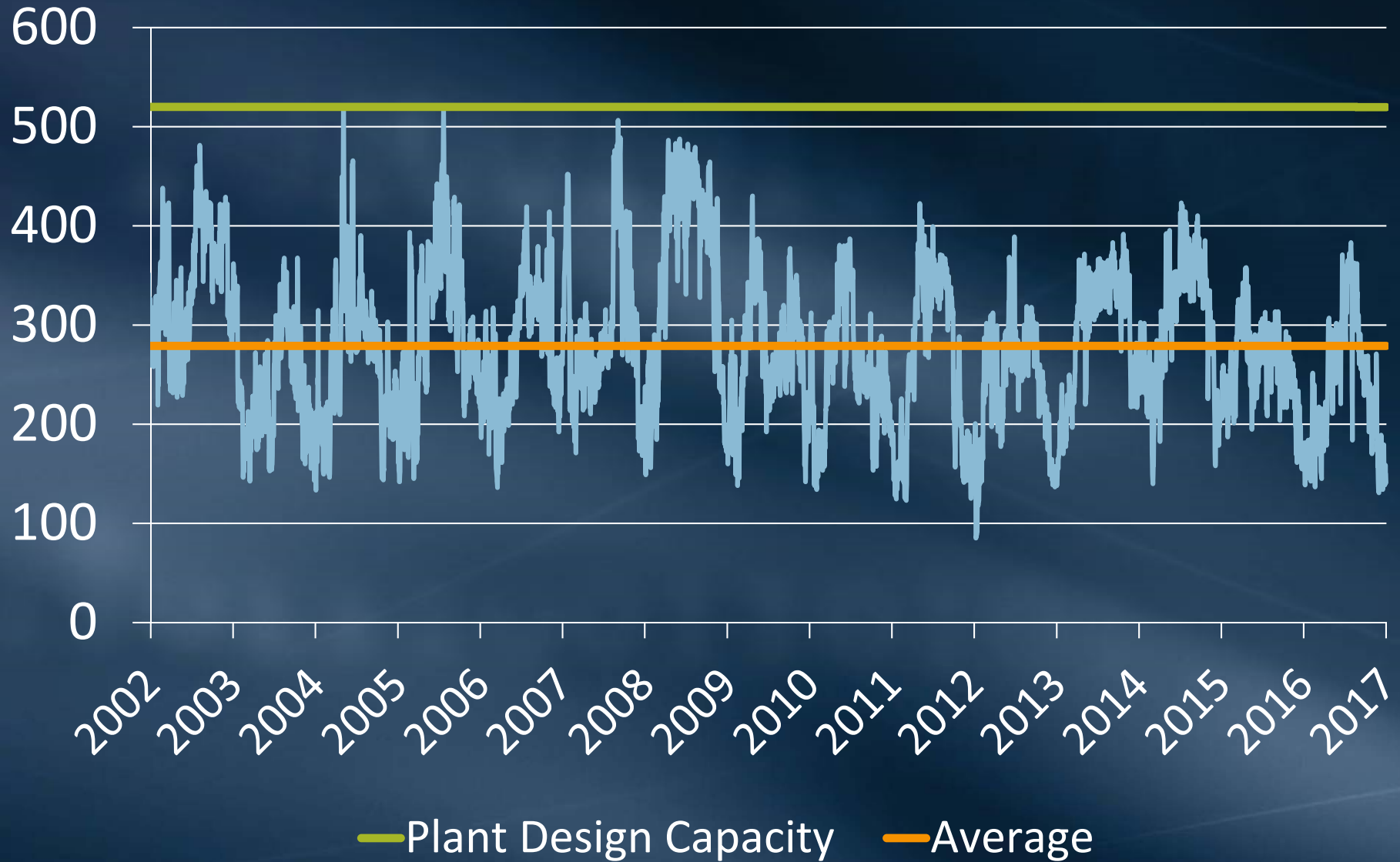
Jensen Peak Daily Effluent (mgd)



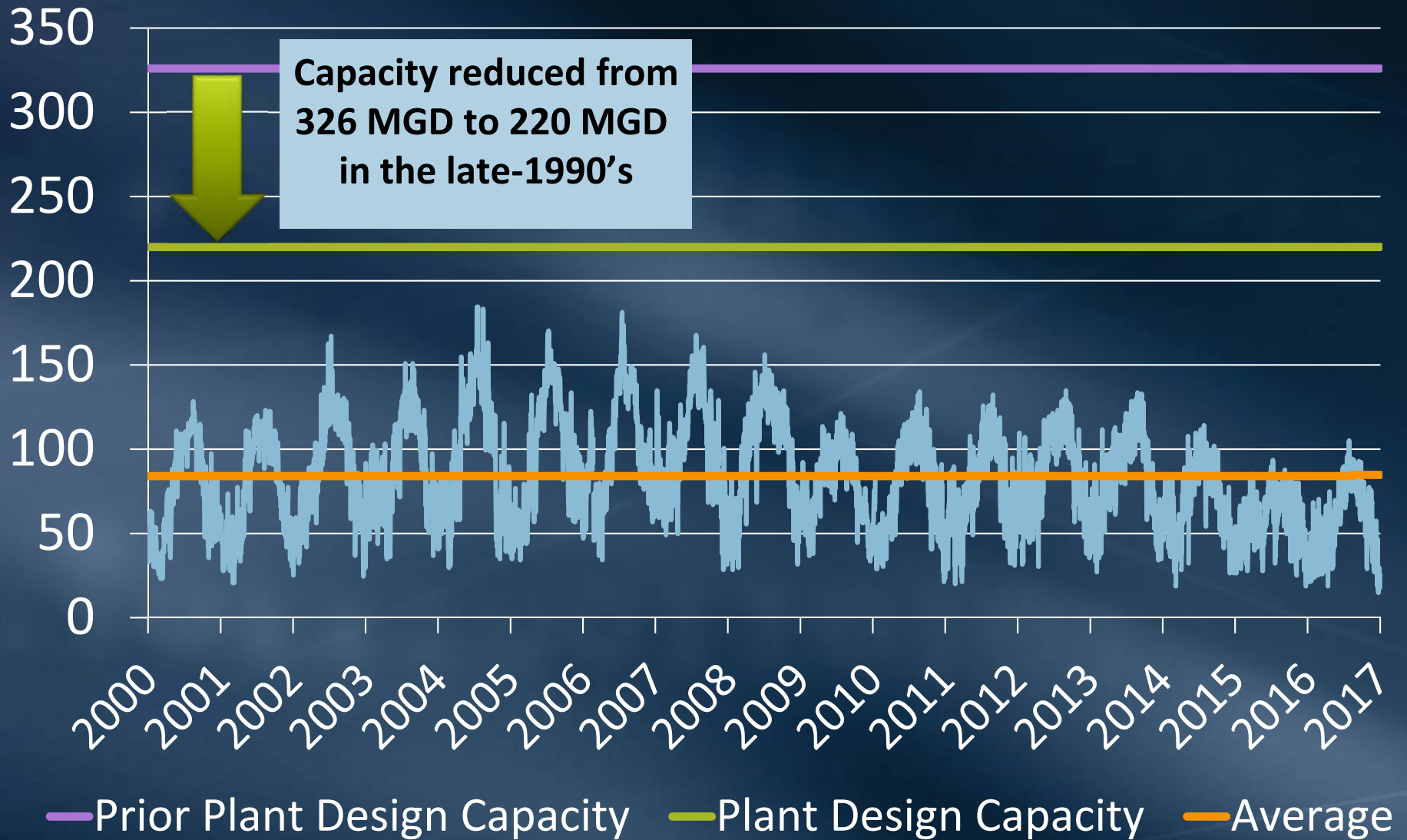
Weymouth Peak Daily Effluent (mgd)



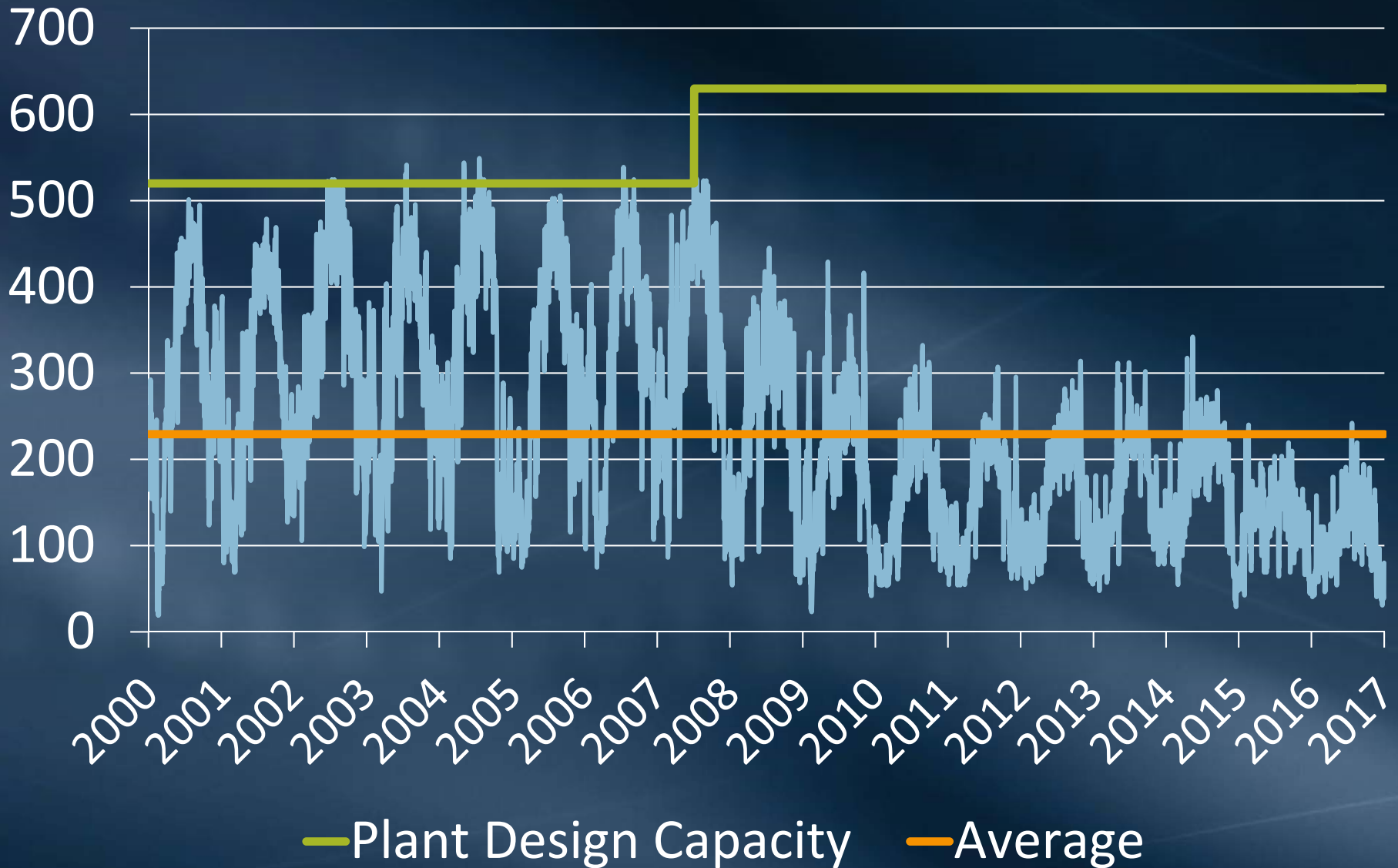
Diemer Peak Daily Effluent (mgd)



Mills Peak Daily Effluent (mgd)

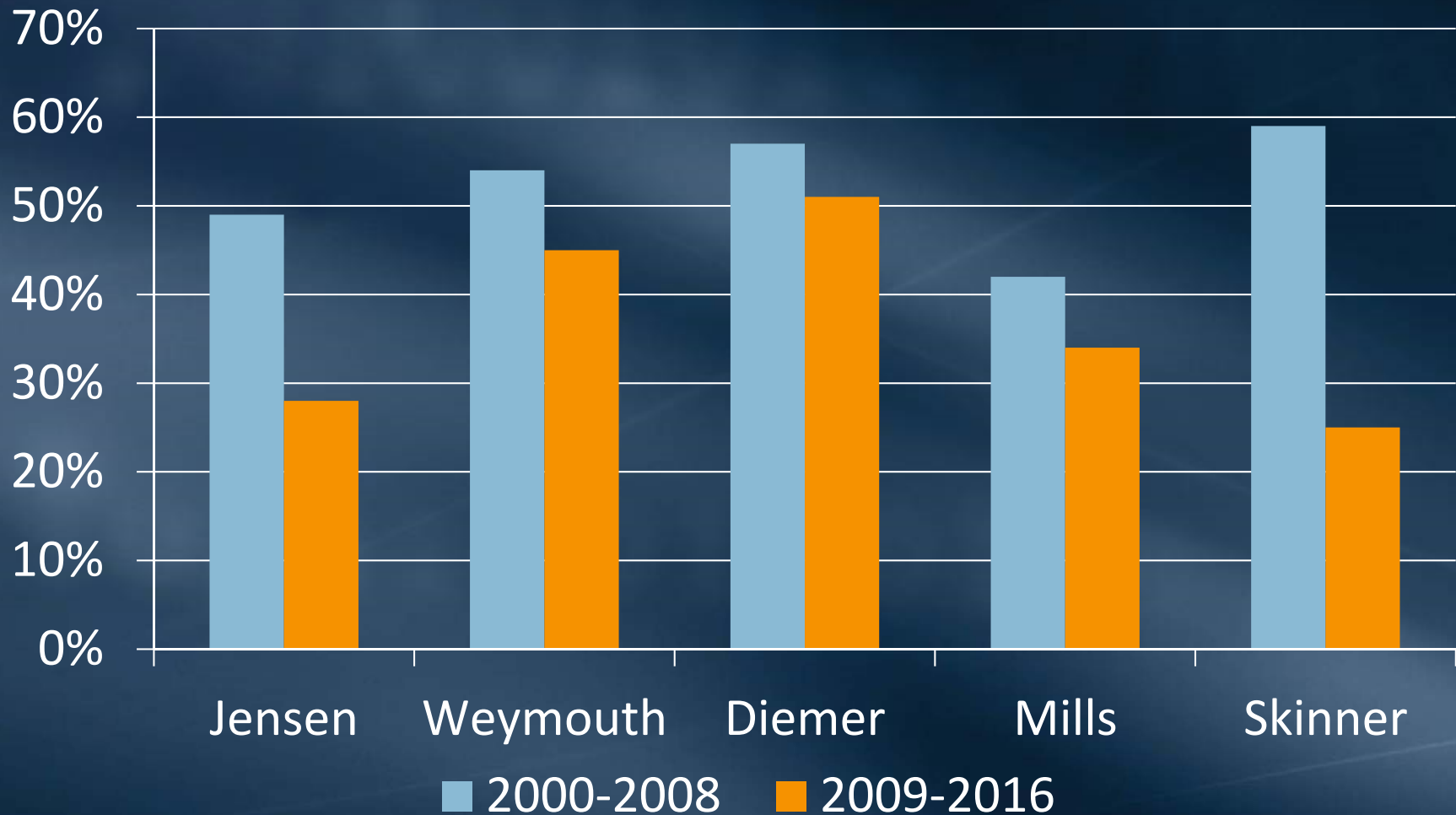


Skinner Peak Daily Effluent (mgd)



WTP Utilization has Declined

% Utilization = Peak Daily Average / Capacity



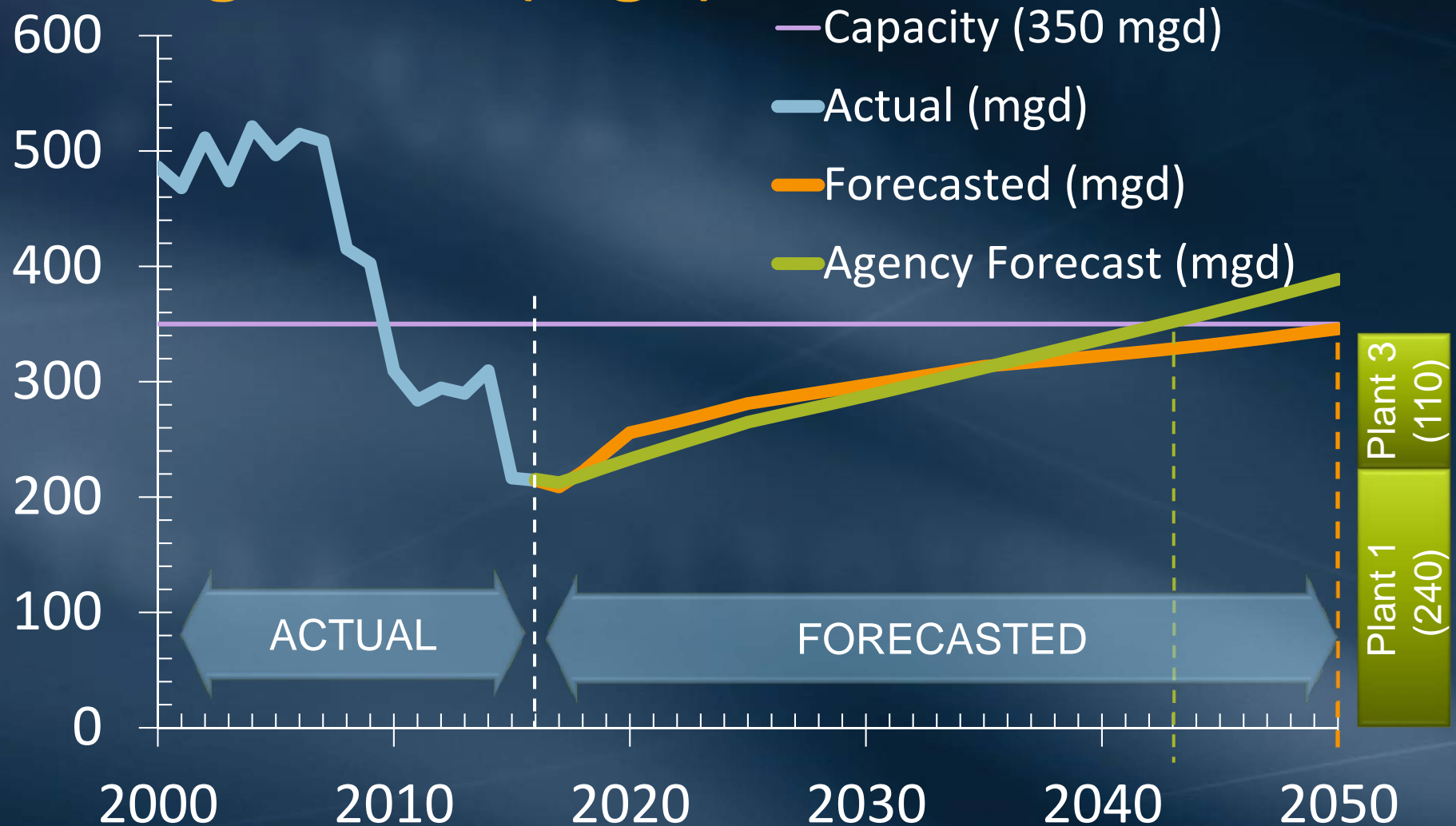
Evaluation of Treatment Plant Capacities

Plant	Area Served	Evaluation Status	Capacity
Mills	Local Mills Area	Complete	220 MGD
Skinner	Local Skinner Area	Complete	350 MGD (proposed)
Jensen	Common Pool and Local Jensen Area	In-progress	In-progress
Diemer	Common Pool and Local Diemer Area	Complete	520 MGD
Weymouth	Common Pool and Local Weymouth Area	Complete	520 MGD

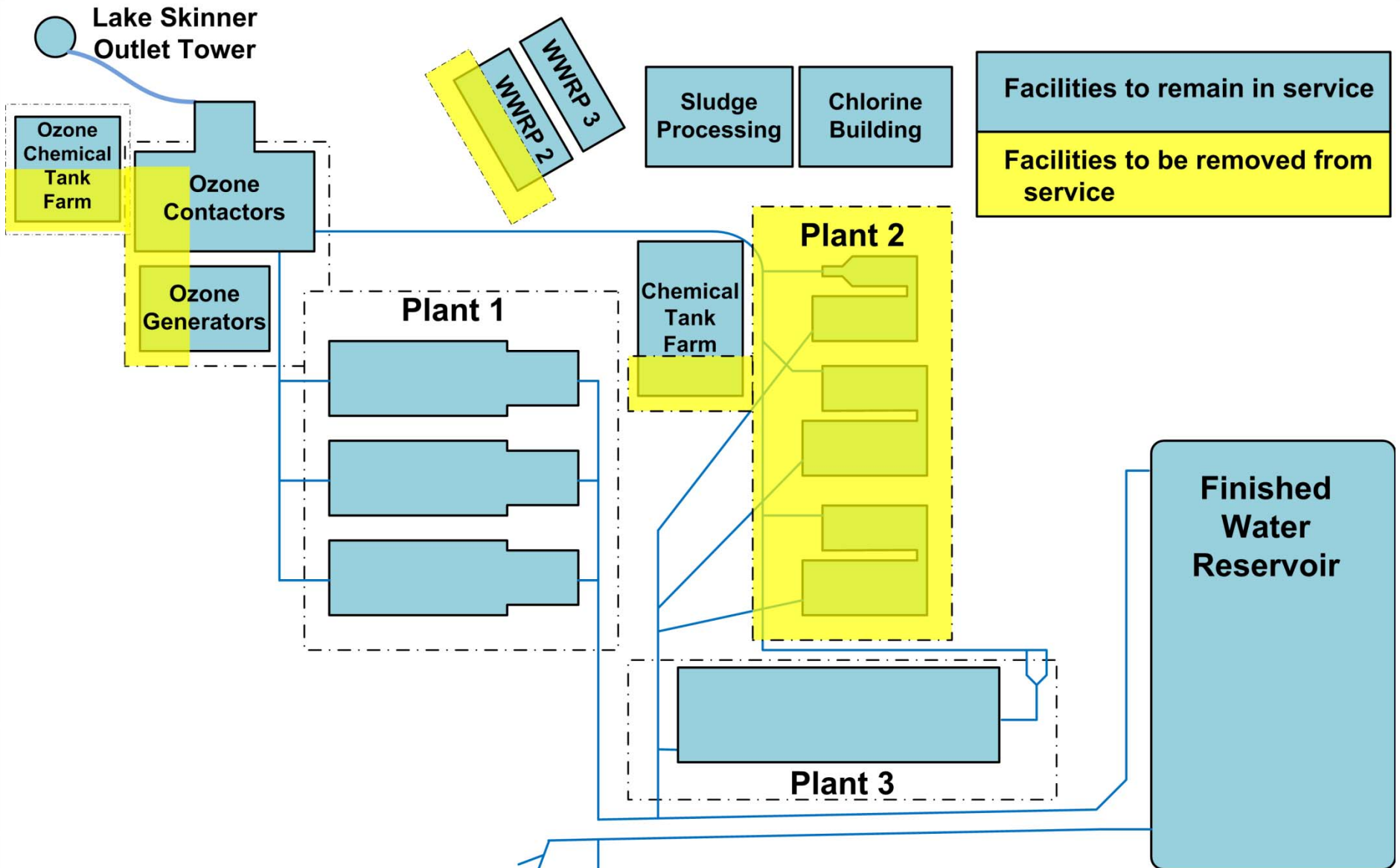
Skinner Flow Capacities

Plant	Module	Module Design Capacity (mgd)	Plant Design Capacity (mgd)
Plant 1	1	75	240
	2	75	
	3	90	
Plant 2	4	80	280
	5	100	
	6	100	
Plant 3	7	110	110

Maximum Daily Skinner Plant Flows through 2050 (mgd)



Skinner Treatment Plant



O&M Impacts Associated with Removing Skinner Plant 2 from Service

Item	Cost Impact
Ozone (LOX and Electricity)	↓
Electricity	↓
Maintenance Labor	↓
Maintenance Materials & Supplies	↓
Operations Labor	↓
Chemicals	↑
Solids (Sludge) Disposal	↑
Overall Cost Impact	↓

Capital Improvement Projects Avoided at Skinner Plant Over Next 30-years

Project Type	Cost (\$)
Instrumentation	1,541,000
Control System	2,092,000
Mechanical/Electrical	7,935,000
Filters	6,560,000
Piping	872,000
Total	19,000,000

Other Considerations for Removing Skinner Modules from Service

- Time to respond to large flow changes will increase
- Revisions to operating permit required
- One-time cost of removing facilities from service
- Time and cost to return decommissioned facilities to service in the future

Next Steps

- Remove Skinner Plant 2 from service this year
- Coordinate with Member Agencies and update Jensen demand projections
- Evaluate feasibility of removing Jensen plant modules from service
- Provide updates to the Board



Blended Demand Areas

