

working for clean rivers



Authorize Alternate Contracting Method Columbia Boulevard Wastewater Treatment Plant Secondary Treatment Expansion Program

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**ENVIRONMENTAL SERVICES
CITY OF PORTLAND**

NICK FISH, COMMISSIONER
MICHAEL JORDAN, DIRECTOR

**Council Item 1072
September 27, 2017**



Secondary Treatment Expansion Program

- Overview
- Need
- Schedule
- Request for an alternate contracting method





Columbia Boulevard Wastewater Treatment Plant Campus



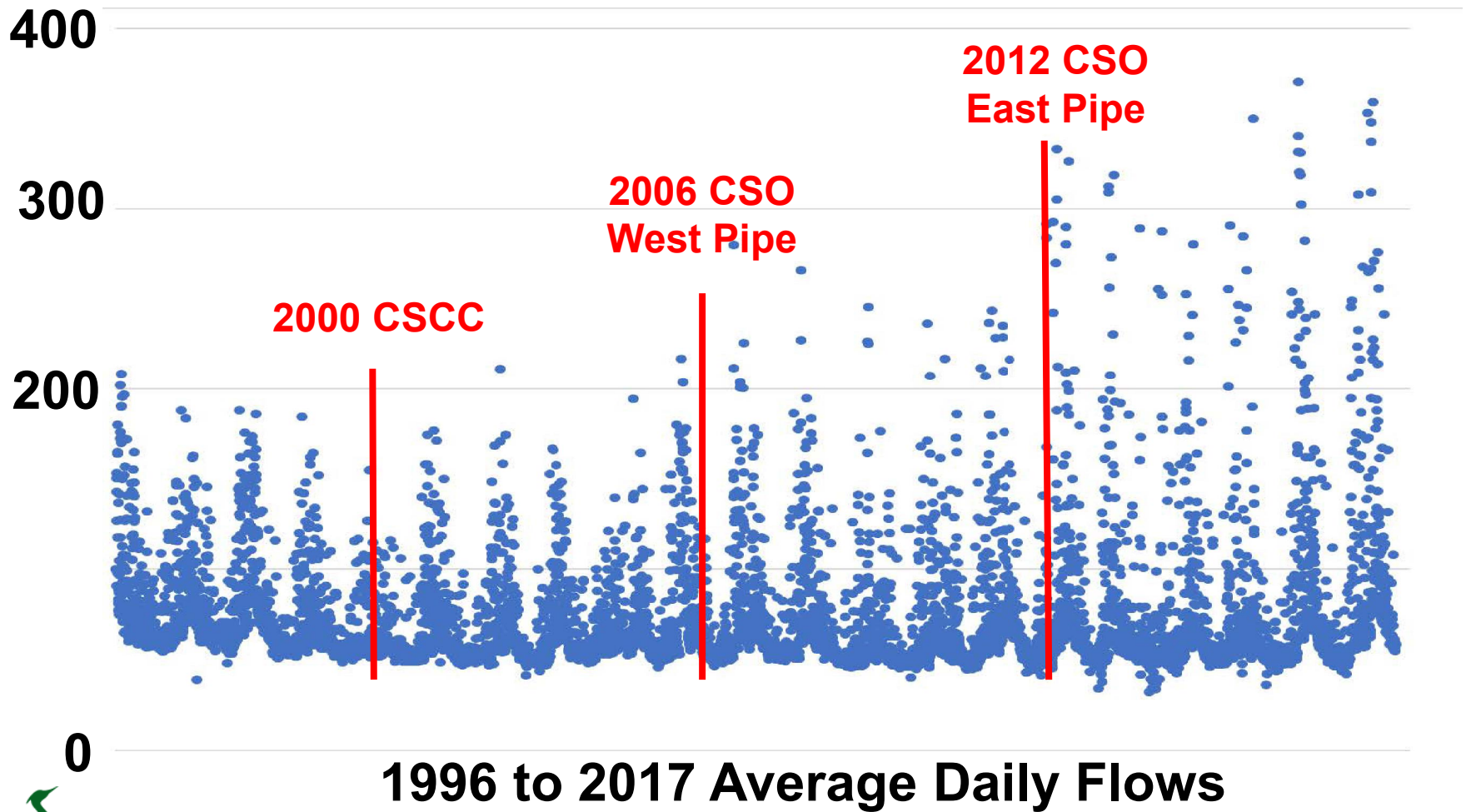
Built 1952

More than 600,000
Population served

76 million gallons
Daily average

450 million gallons
Peak instantaneous flow

Increased Captured CSO goes to CBWTP

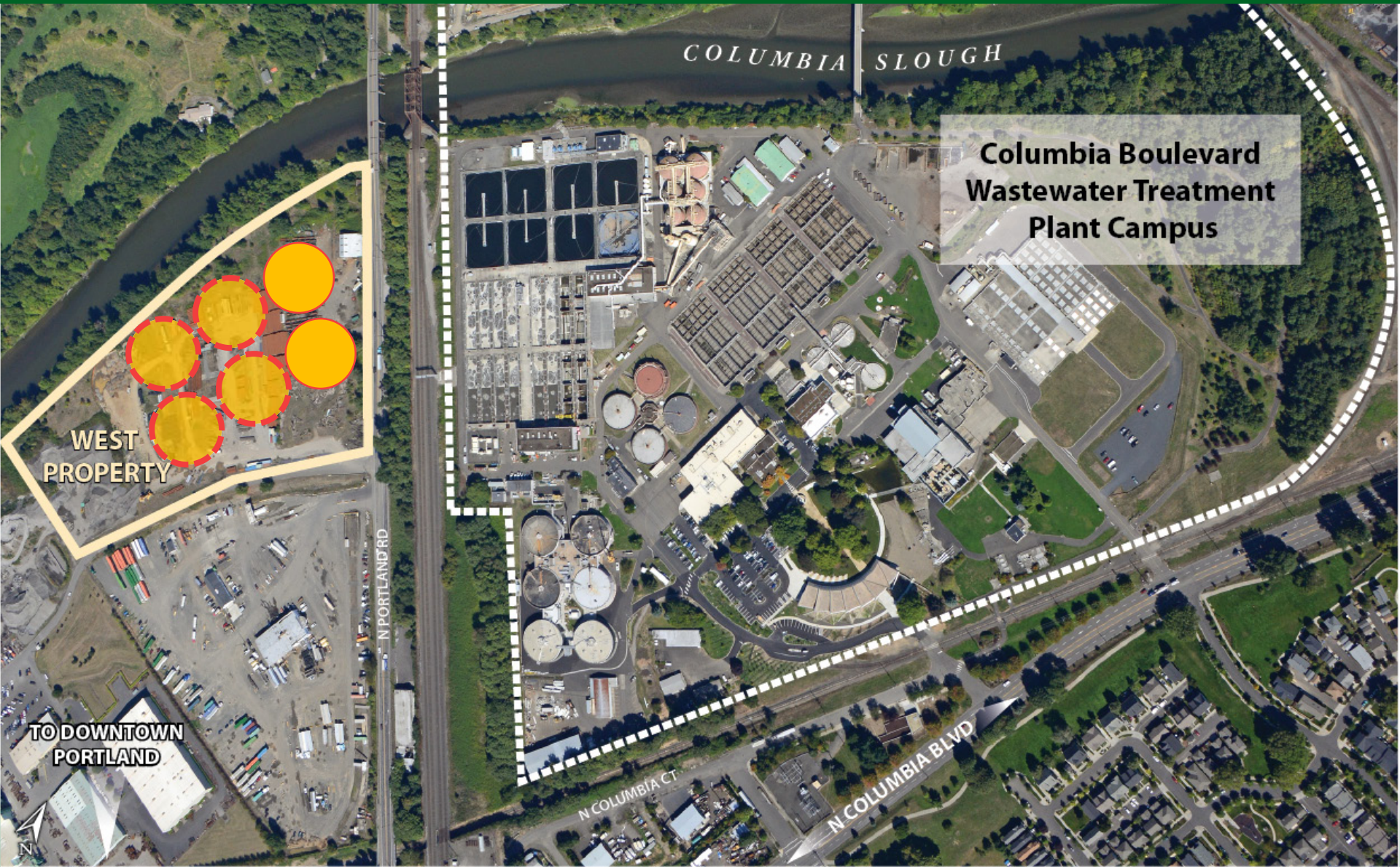


Secondary Treatment Expansion Program

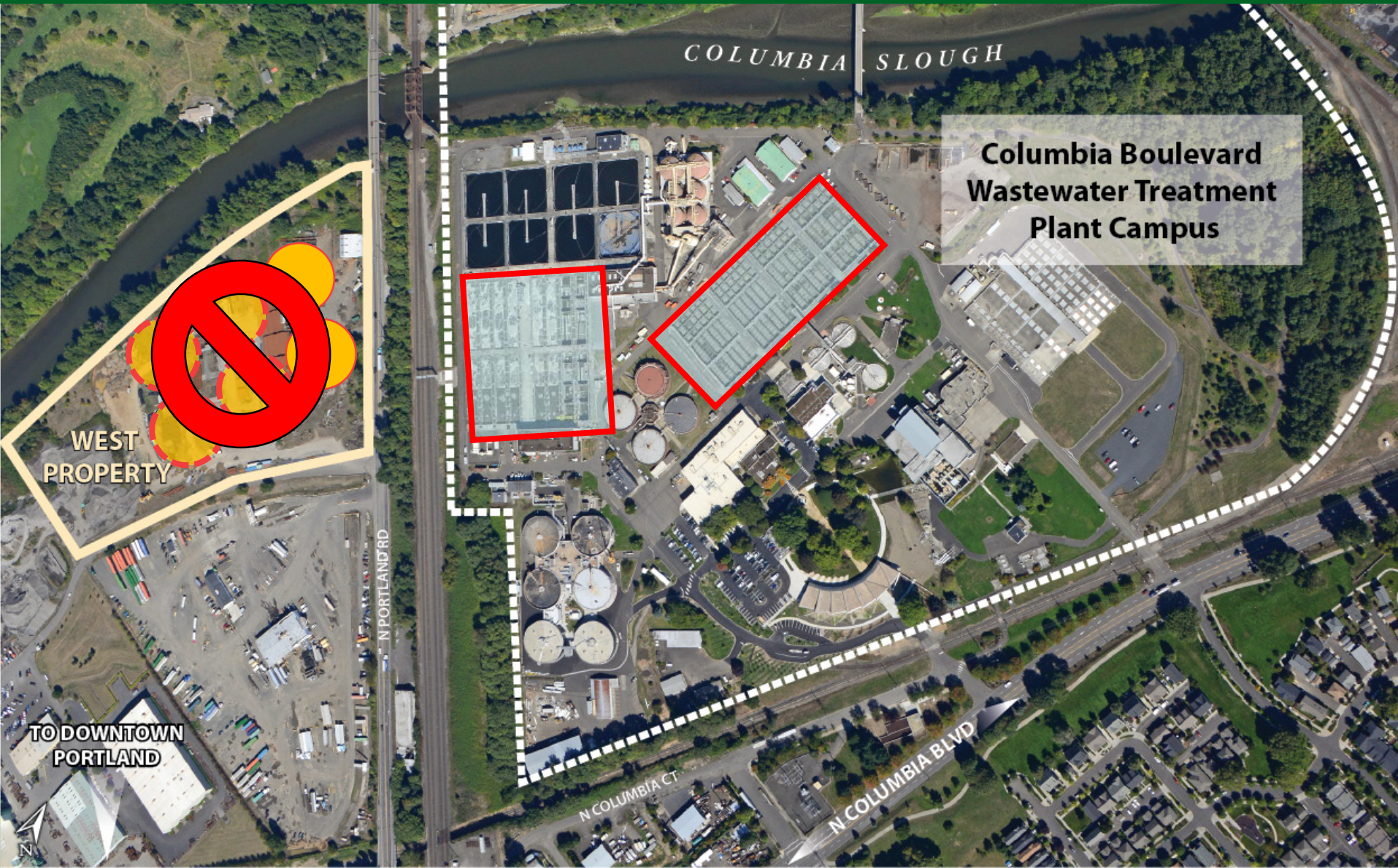
- Expansion is mandated by Oregon Department of Environmental Quality with a completion by December 2024
- Included in planning efforts for more than 20 years, including the 2016 Facilities Plan (Council agenda item #1079, October 2015)
- Expansion provides more biological treatment during high rain events, and added resiliency



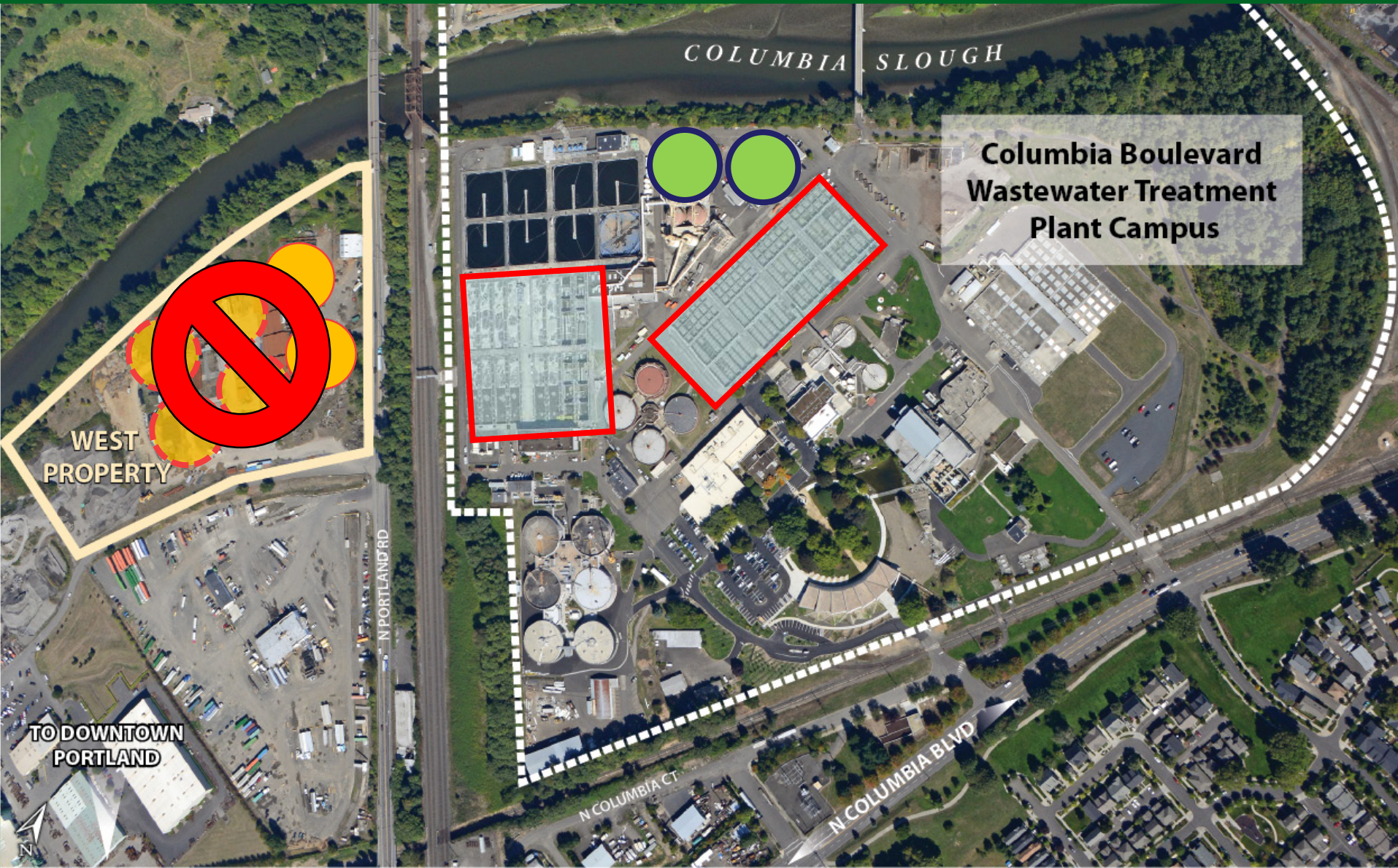
1995 : \$70,000,000 expansion (2 Clarifiers)



2011: Mutual Agreement and Order Signed



2016 Facilities Plan - Approved Plan

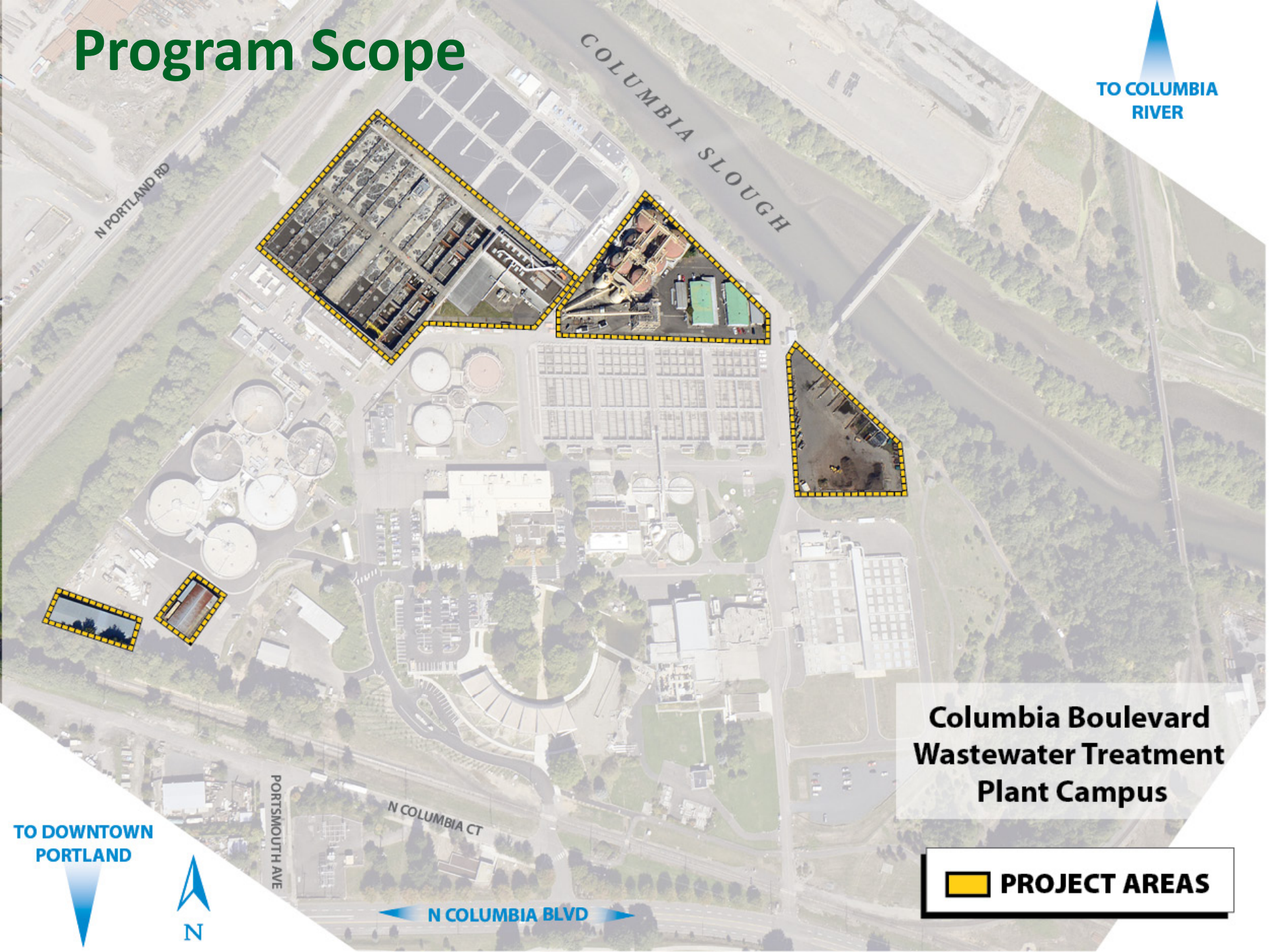


Project Delivery Considerations

- Program is based on secondary clarifiers addition
- “Domino effect”
- Other critical planned projects are adjacent, connected, and on the same timeline
- Program approach optimizes design and reduces constructability, construction sequencing, and operational risks



Program Scope



**Columbia Boulevard
Wastewater Treatment
Plant Campus**

 **PROJECT AREAS**

TO DOWNTOWN
PORTLAND

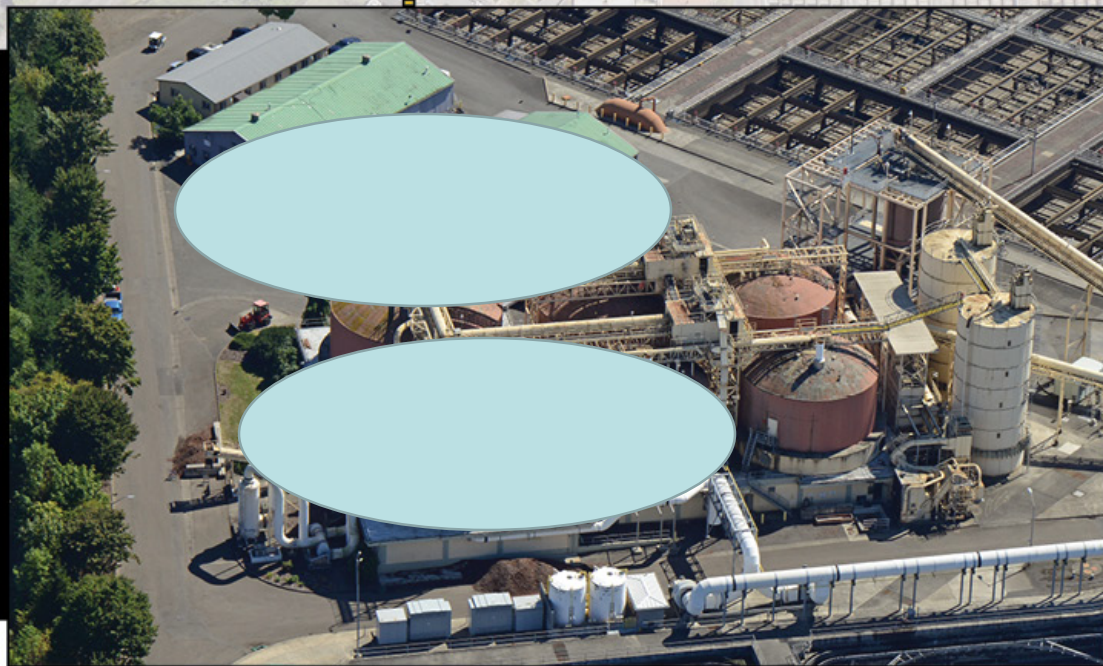
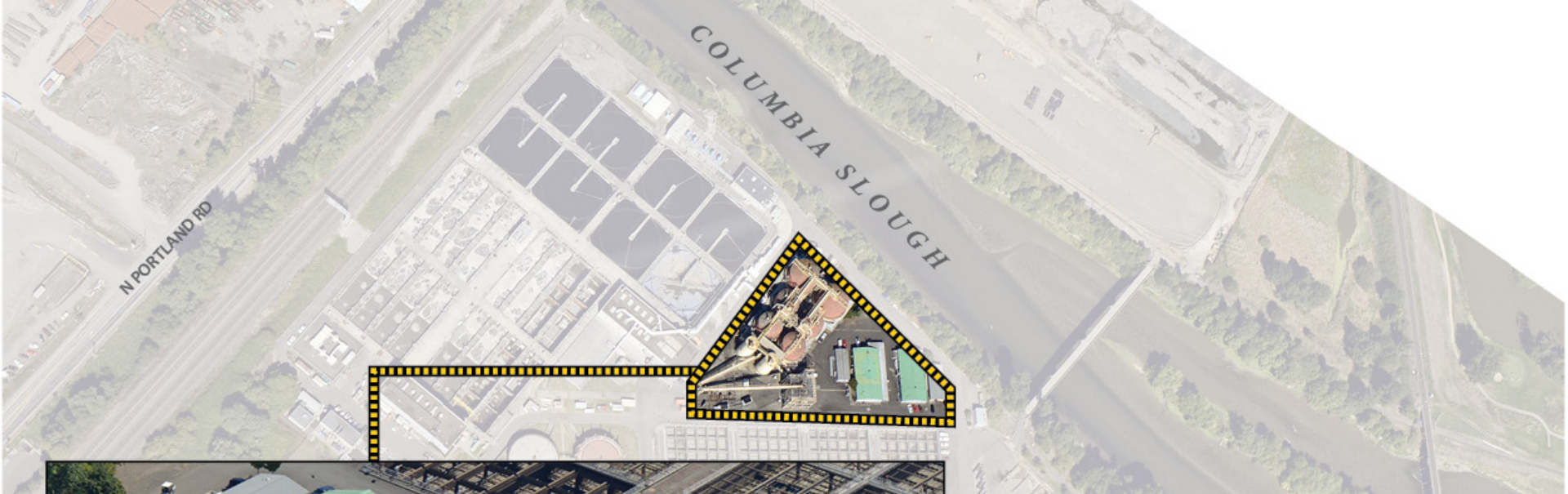


N COLUMBIA BLVD

PORTSMOUTH AVE

N COLUMBIA CT

N PORTLAND RD



New Clarifiers

- Demo and relocations
- Soil stabilization, excavations
- Complex tie-ins
- Odor control system replacement

**Columbia Boulevard
Wastewater Treatment
Plant Campus**



SOUTH AVE

COLUMBIA CT

N COLUMBIA BLVD

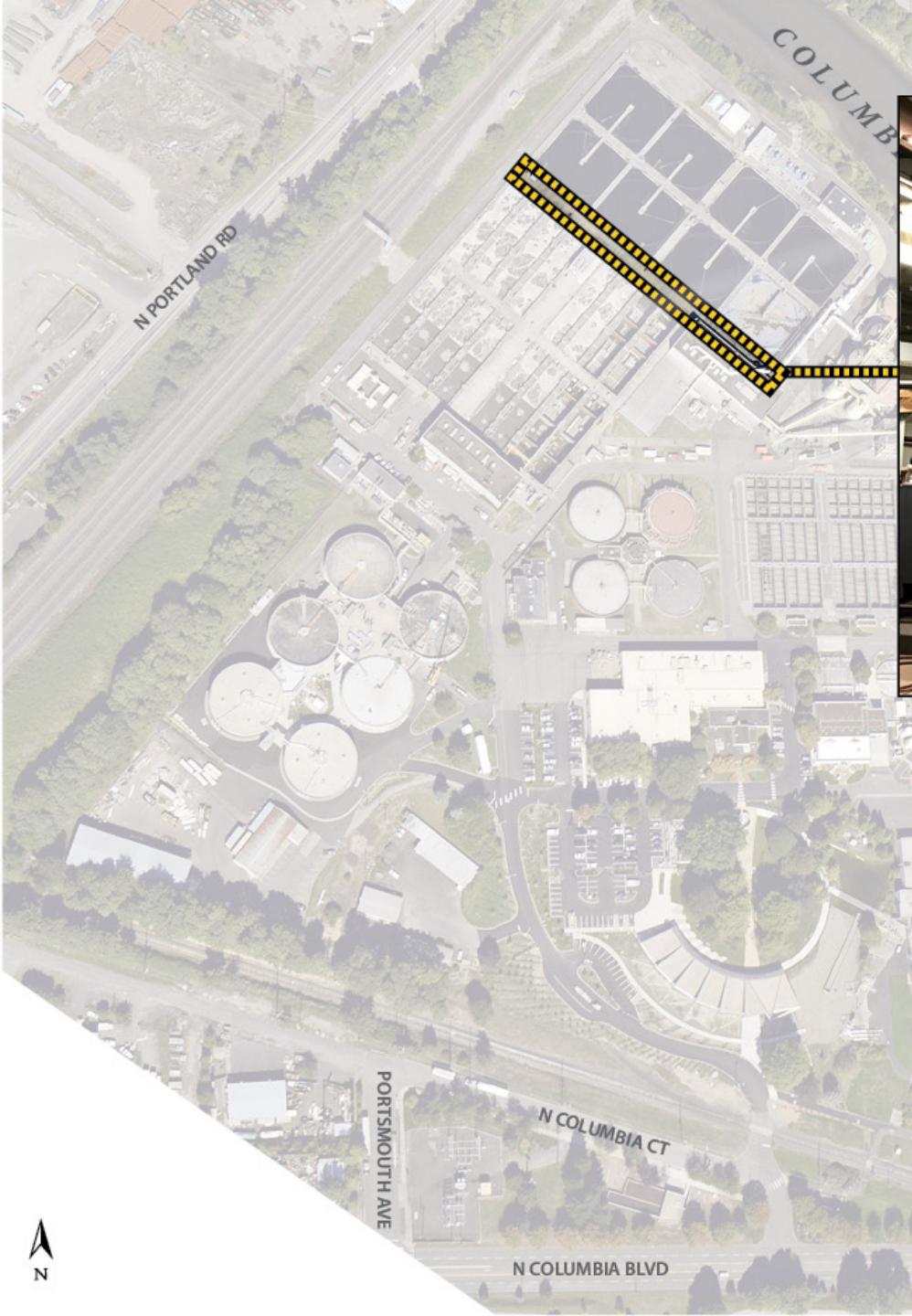


New Storage and Staff Buildings

- Replacement of the composter area facilities
- 5,000 square feet staff space
- 15,000 square feet storage
- Adjacent to public trail

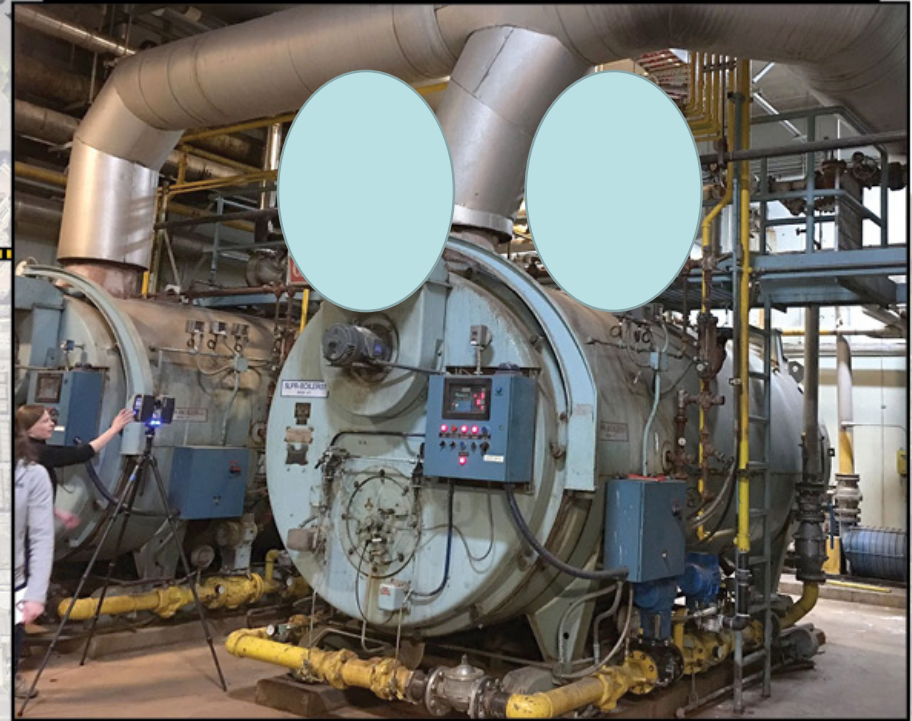


**Columbia Boulevard
Wastewater Treatment
Plant Campus**



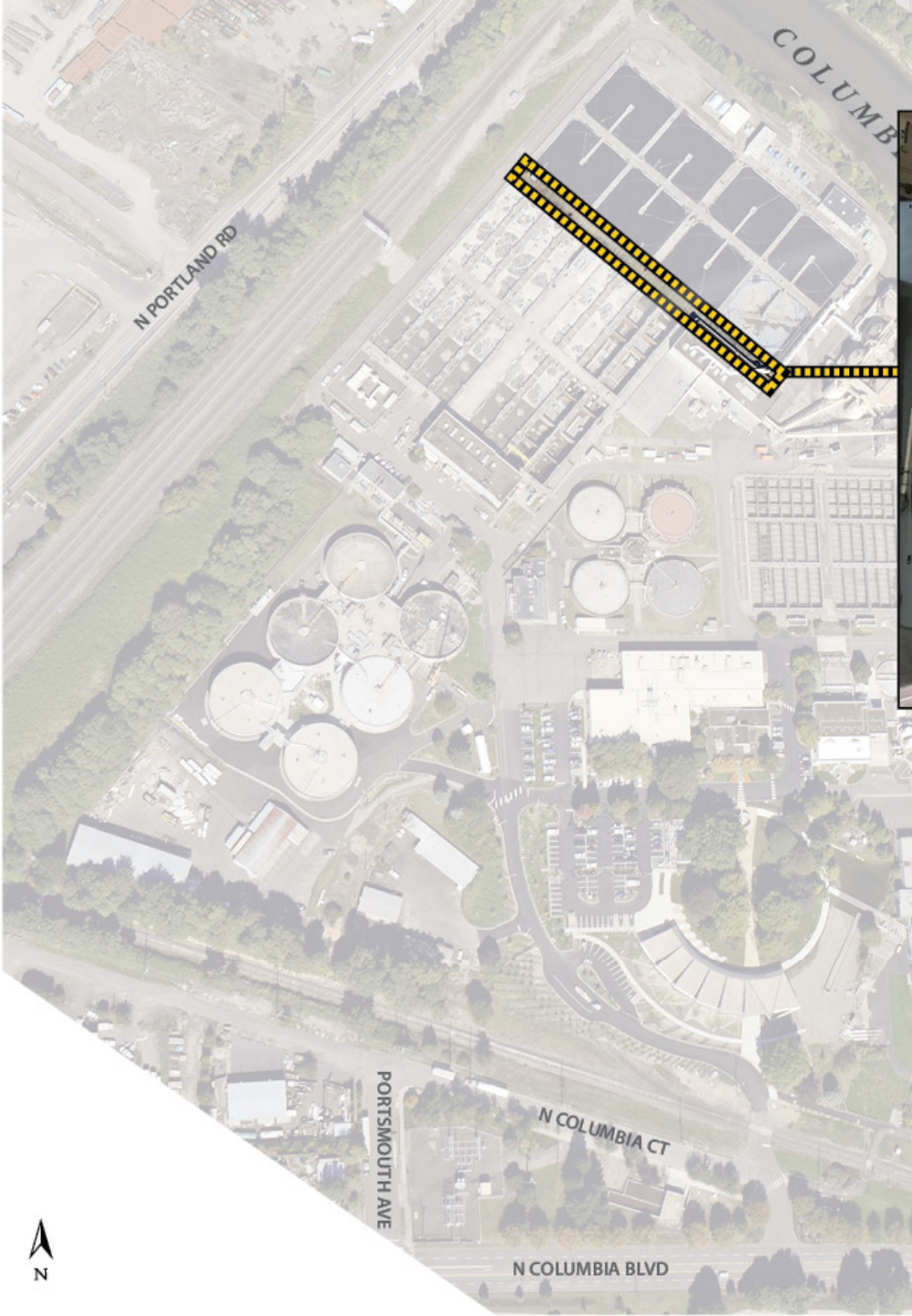
Utility Tunnel Work

- Return Activated Sludge piping replacement
- Mixed Liquor piping expansion
- Tie-in between new and old
- Constrained area



Utility Tunnels/Heating

- Steam boilers replacement
- Provide building heat across the plant
- 1970's, using Bioga\$
- In the way of new pipes



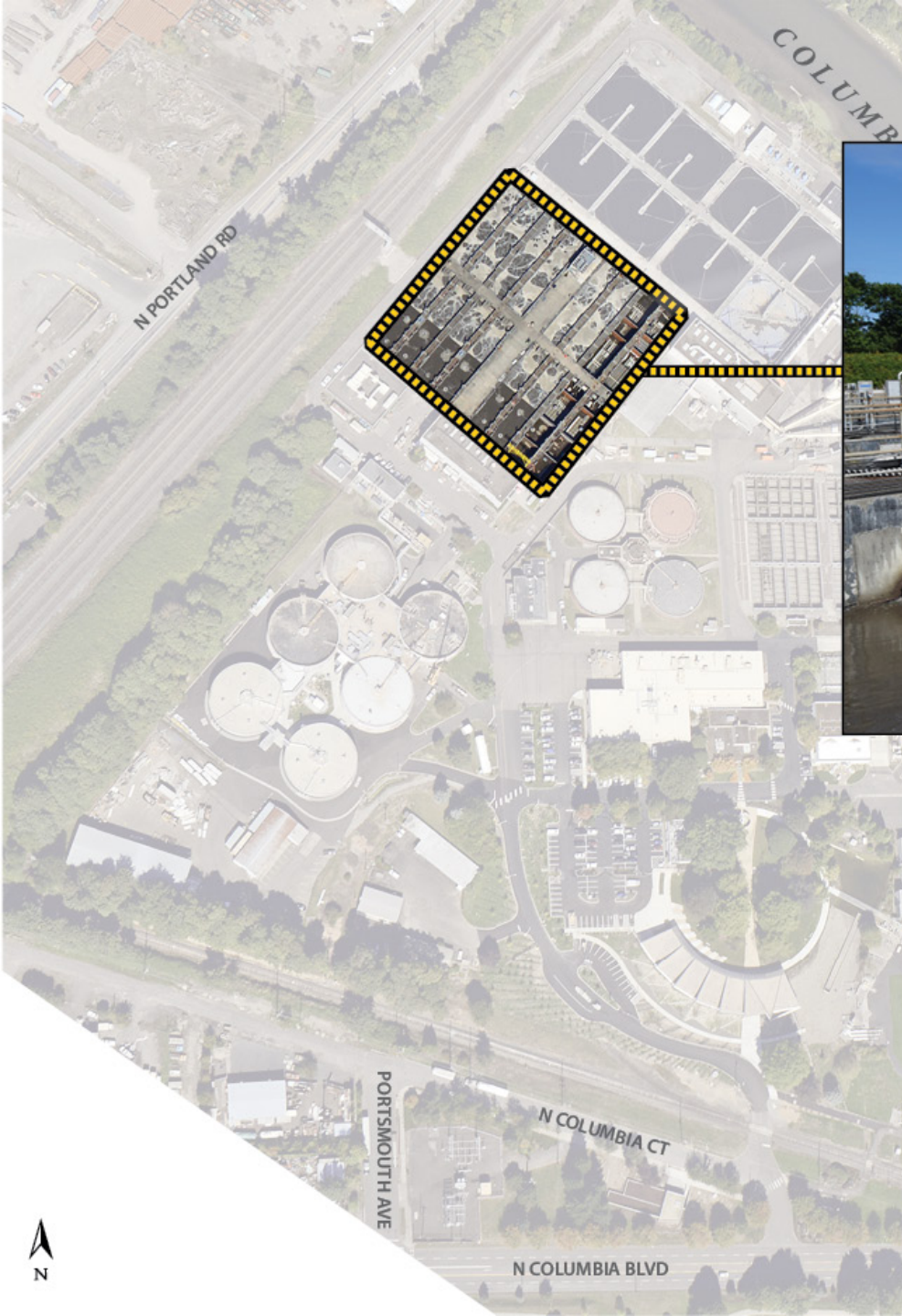
Electrical Resiliency

- Motor Control Centers and transformers need to be moved out of flooding zone
- Transformers need to be moved out from the composter area



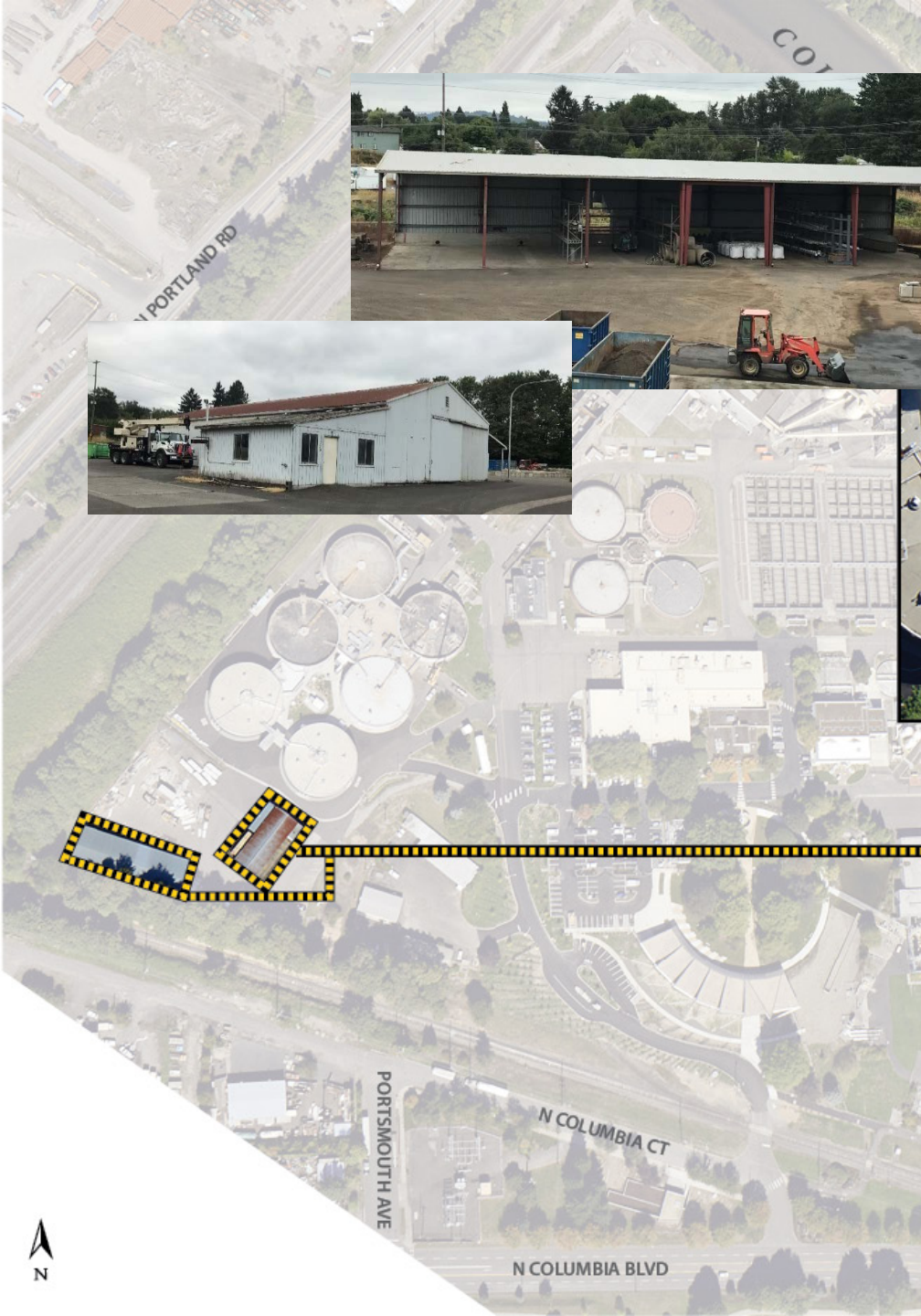
Biosolids Processing

- Thickening and dewatering systems
- Odor control system
- Chemical feed system
- Building retrofit
- Biosolids hoppers



Aeration Basins

- Surface rehabilitation of vertical walls
- One pair of basins at a time
- Summer construction only



Storage Buildings

- Building demolition
- Metal siding and roofing replacement, lighting

Program Budget

- Construction Cost Estimate = \$89M
- Total Program Cost Estimate = \$146M
 - Low Level of Confidence
 - 7 year project: escalation not included at project level



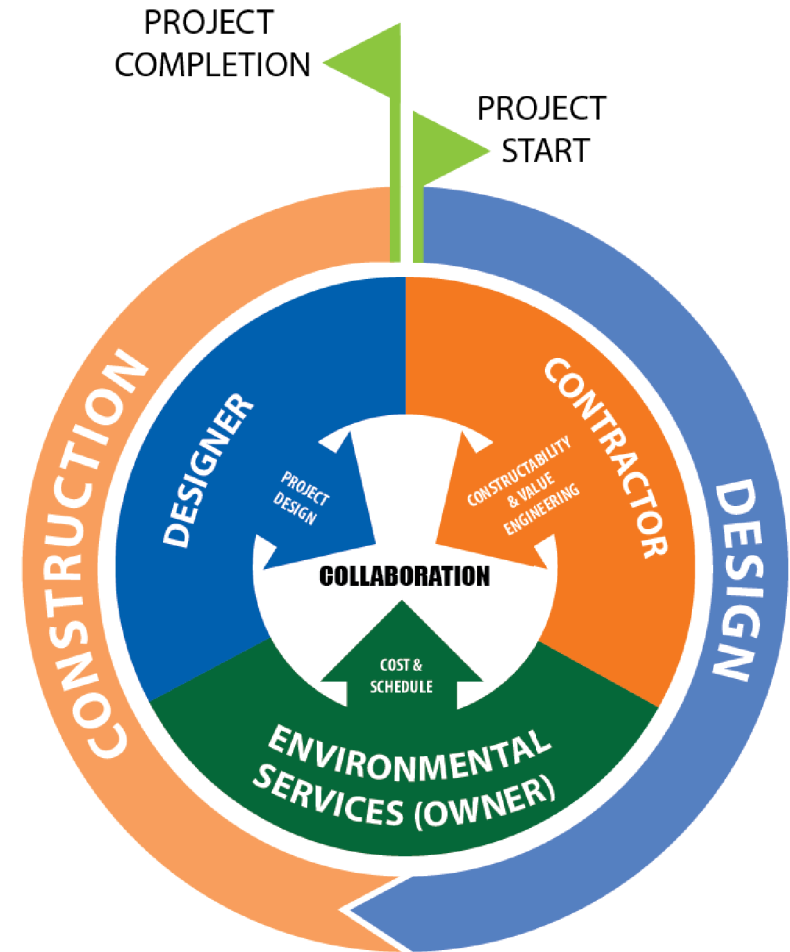
CM/GC Contracting Method Drivers

- December 2024 Completion (mandate)
 - Increased schedule certainty with sequenced construction packages
- Complex sequencing and maintenance of operations considerations
- Early field investigations will reduce construction risk
- Early cost estimating will increase cost certainty



CM/GC Contracting Method Key Findings

- Allows qualifications-based selection for specialty work
- Enhances opportunities for achieving D/M/W/ESB goals
- Likely to reduce project costs:
 - Contractor constructability review and value engineering assistance
 - Encourages Owner/Designer/Constructor collaboration
 - Early involvement to minimize change orders and impacts to ongoing treatment plant operations



Next Steps

- September 30 Notice to DEQ “City has begun implementing the work”
- Professional, Expert and Technical Services Procurement
 - Design Services
 - Program Support
- With the Exemption approved, CM/GC Procurement



Reporting on Our Progress and Transparency

- Portland Utility Board (PUB) updates will be provided as requested as the Program progresses
- CBWTP Citizens Advisory Committee (CAC) – Will continue involving and updating the CAC
- Citizens Utility Board (CUB) updates will be provided as requested
- City Council- will report to Council as required for contract requirements, and as otherwise requested



Questions?

Thank you

