

Clack-A-Mole

How Clackamas WES Succeeded in Building the
Tri-City Water Resource Recovery Facility Outfall Project

Vision & Mission

VISION

Be a collaborative partner in building a resilient clean water future where all people benefit, and rivers thrive.

MISSION

Clackamas Water Environment Services (WES) produces clean water, protects water quality and recovers renewable resources. We do this by providing wastewater services, stormwater management, and environmental education.

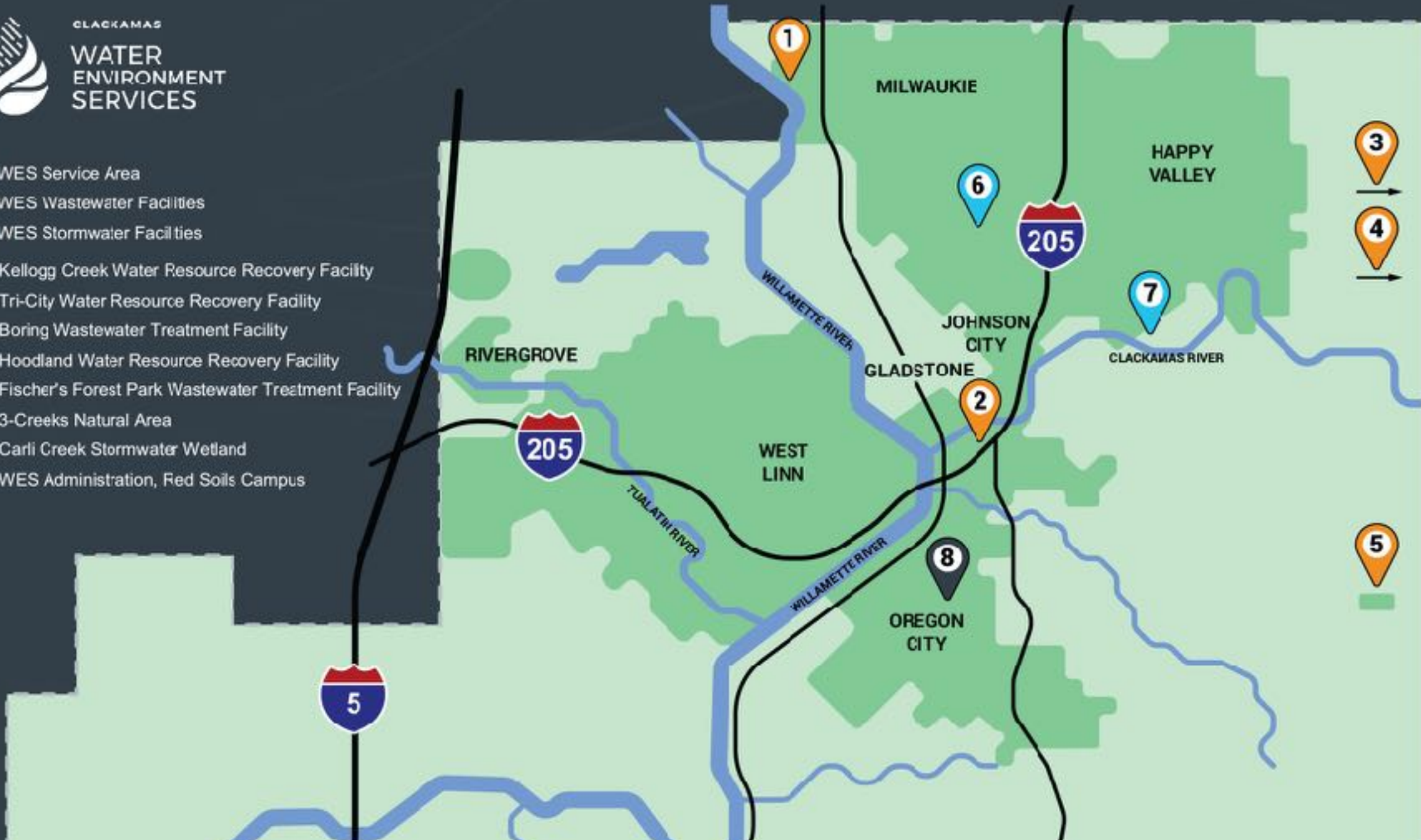
It's our job to protect public health and support the vitality of our communities, natural environment, and economy.





CLACKAMAS
WATER
ENVIRONMENT
SERVICES

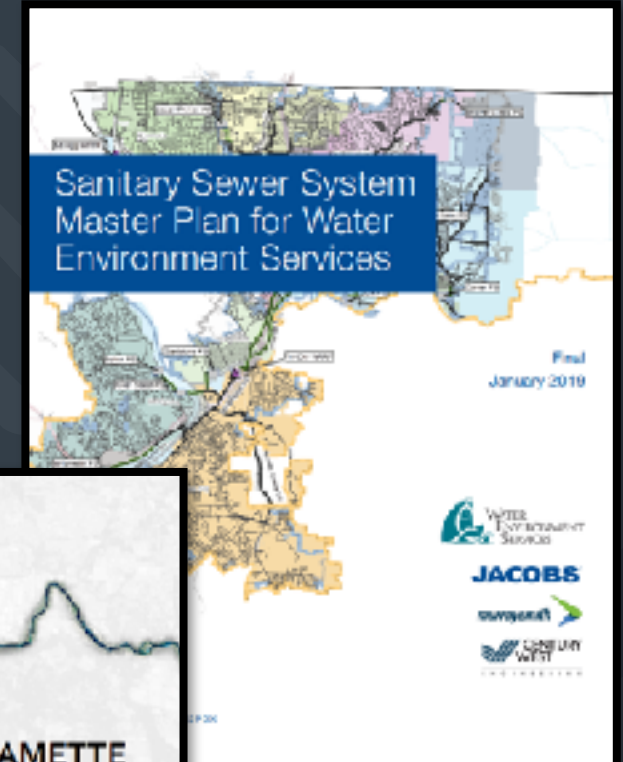
- WES Service Area
 - WES Wastewater Facilities
 - WES Stormwater Facilities
- 1 Kellogg Creek Water Resource Recovery Facility
 - 2 Tri-City Water Resource Recovery Facility
 - 3 Boring Wastewater Treatment Facility
 - 4 Hoodland Water Resource Recovery Facility
 - 5 Fischer's Forest Park Wastewater Treatment Facility
 - 6 3-Creeks Natural Area
 - 7 Carli Creek Stormwater Wetland
 - 8 WES Administration, Red Soils Campus



Project Snapshot



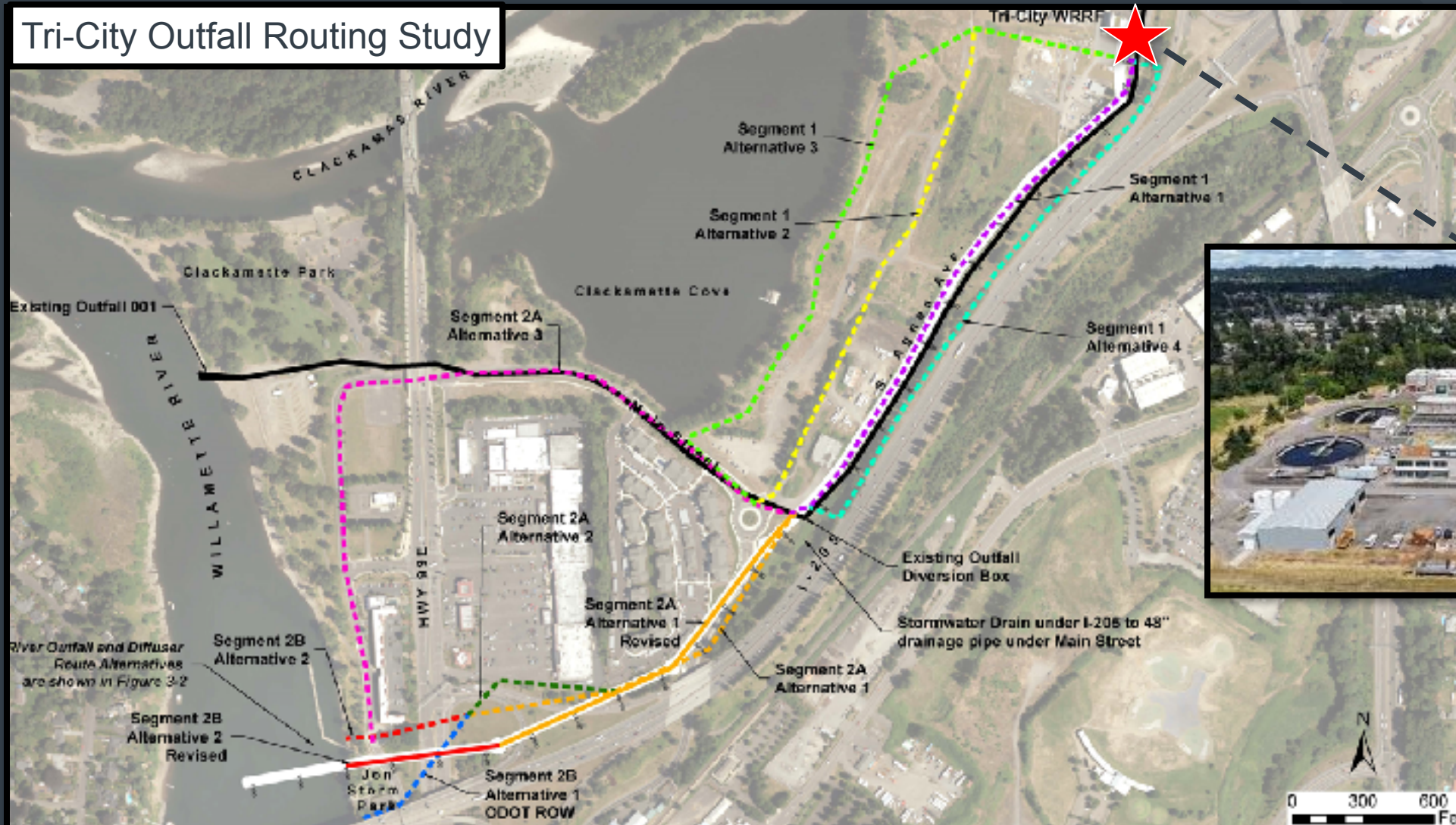
Tri-City Outfall Alignment



Phase 1



Tri-City Outfall Routing Study



Tri-City WRRF



Ballot Measure



April 2020

Virtual Outreach

March 2020

**COVID
Changes
Everything**

January 2020

**Kick-off
Working with
Oregon City**



Jon Storm Park, Oregon City

October 2020

**Ballot Measure
Outreach
Concludes**

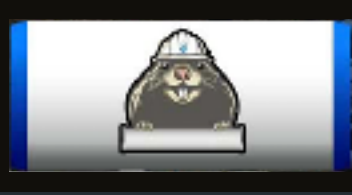
November 2020

**Ballot
Measure
Passed**

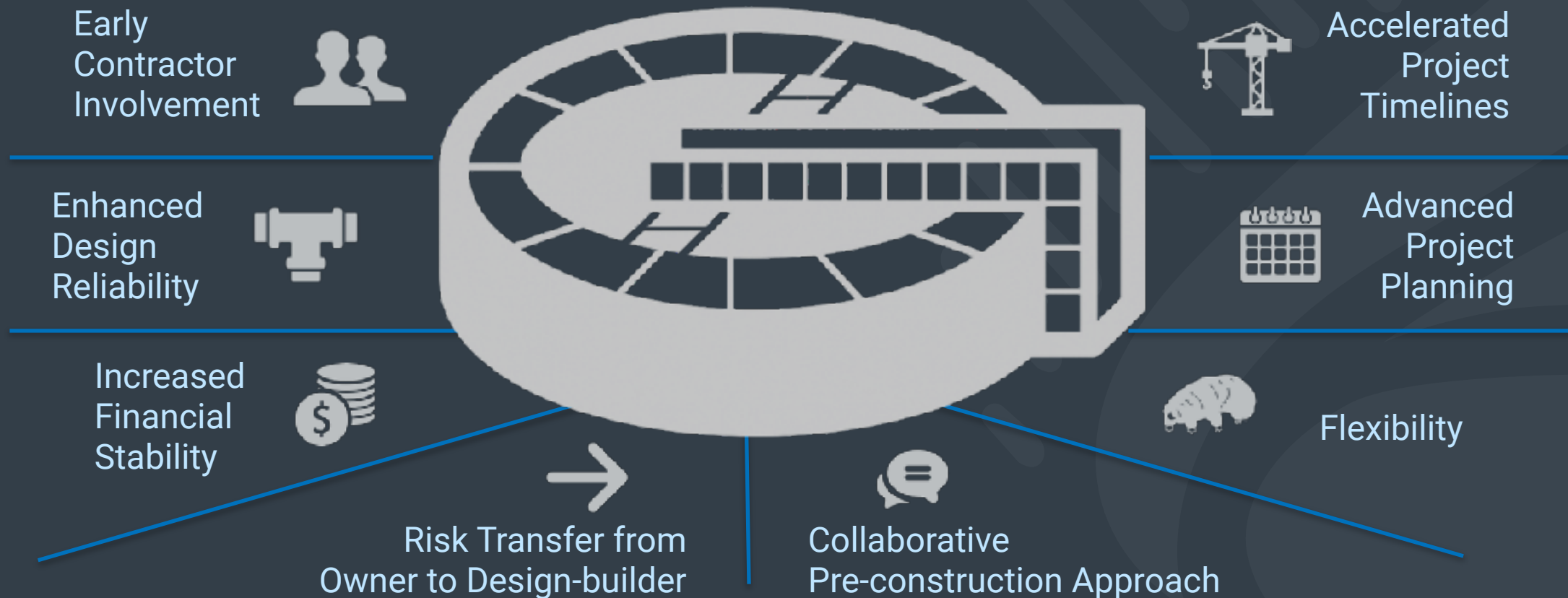


NACo Award: Innovative Outreach

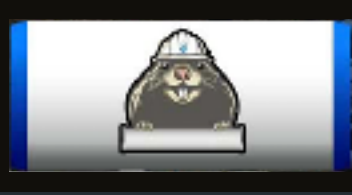
Change in Delivery



PROGRESSIVE DESIGN-BUILD BENEFITS



Contracts

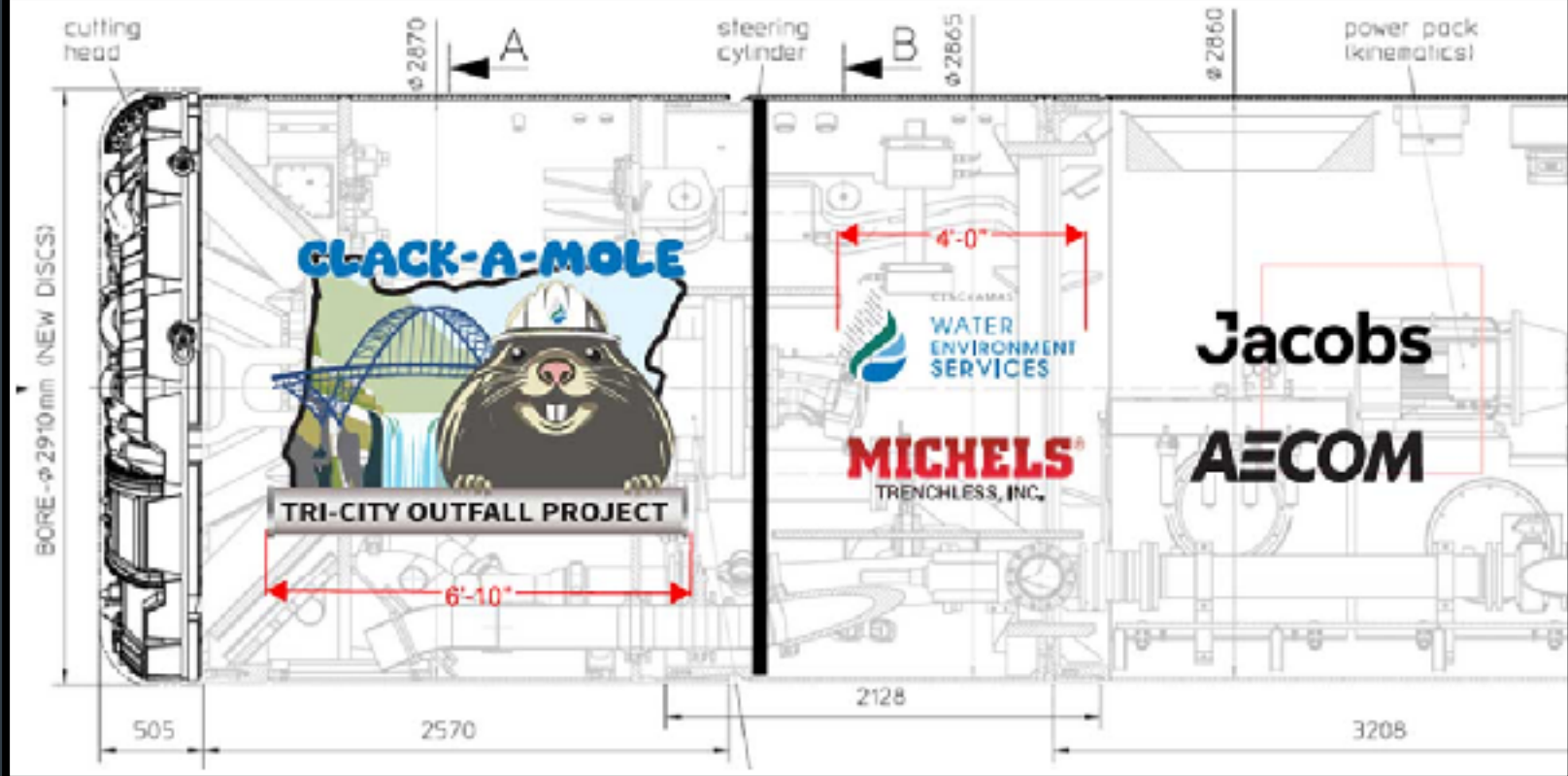


AGREEMENT BETWEEN OWNER AND DESIGN-BUILDER FOR PROGRESSIVE DESIGN-BUILD

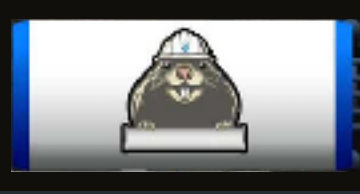
Prepared by



Issued and Published Jointly by



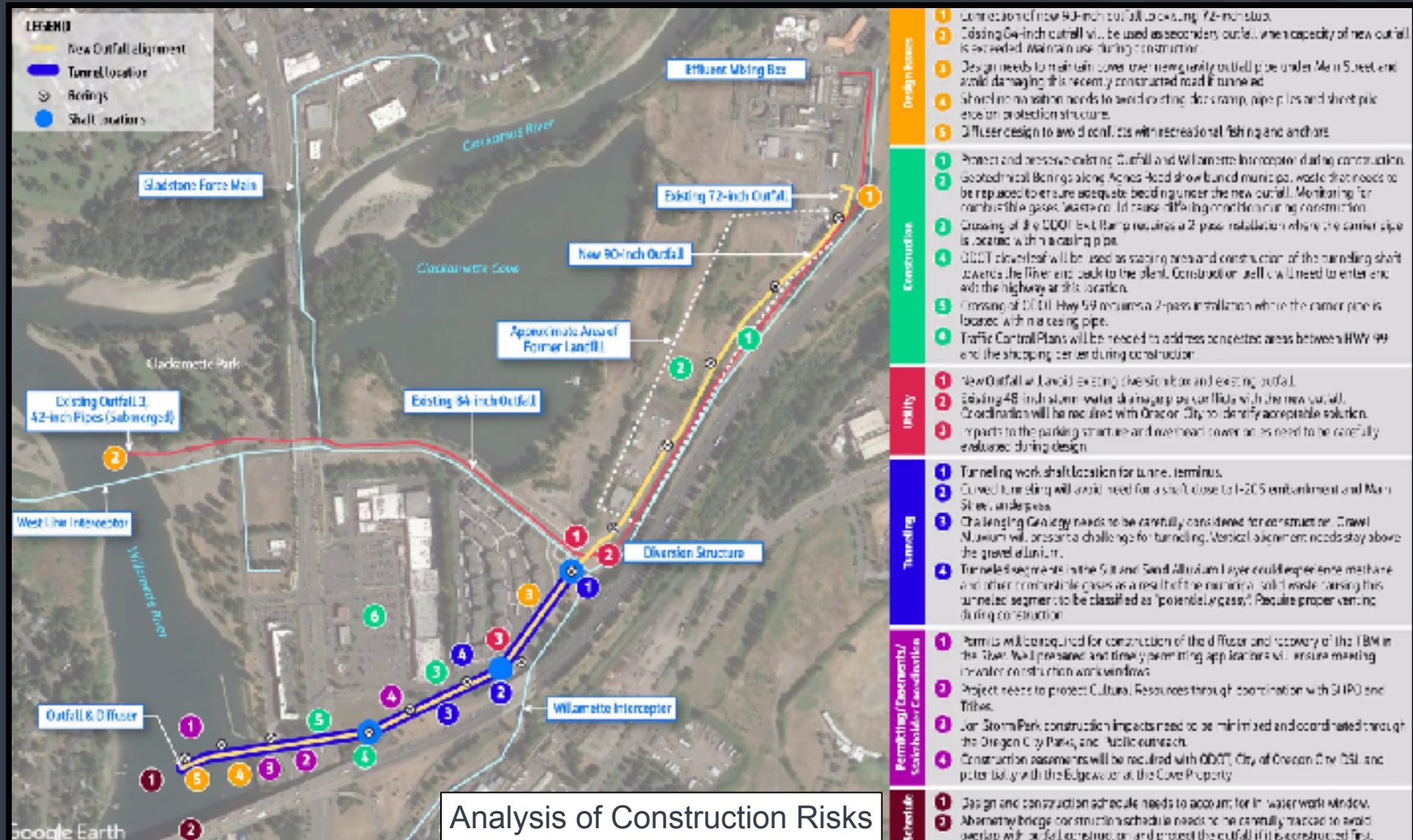
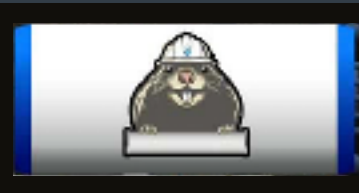
PDB Team Dynamic



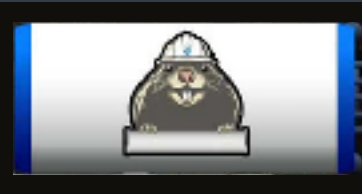
Construction Risk Management



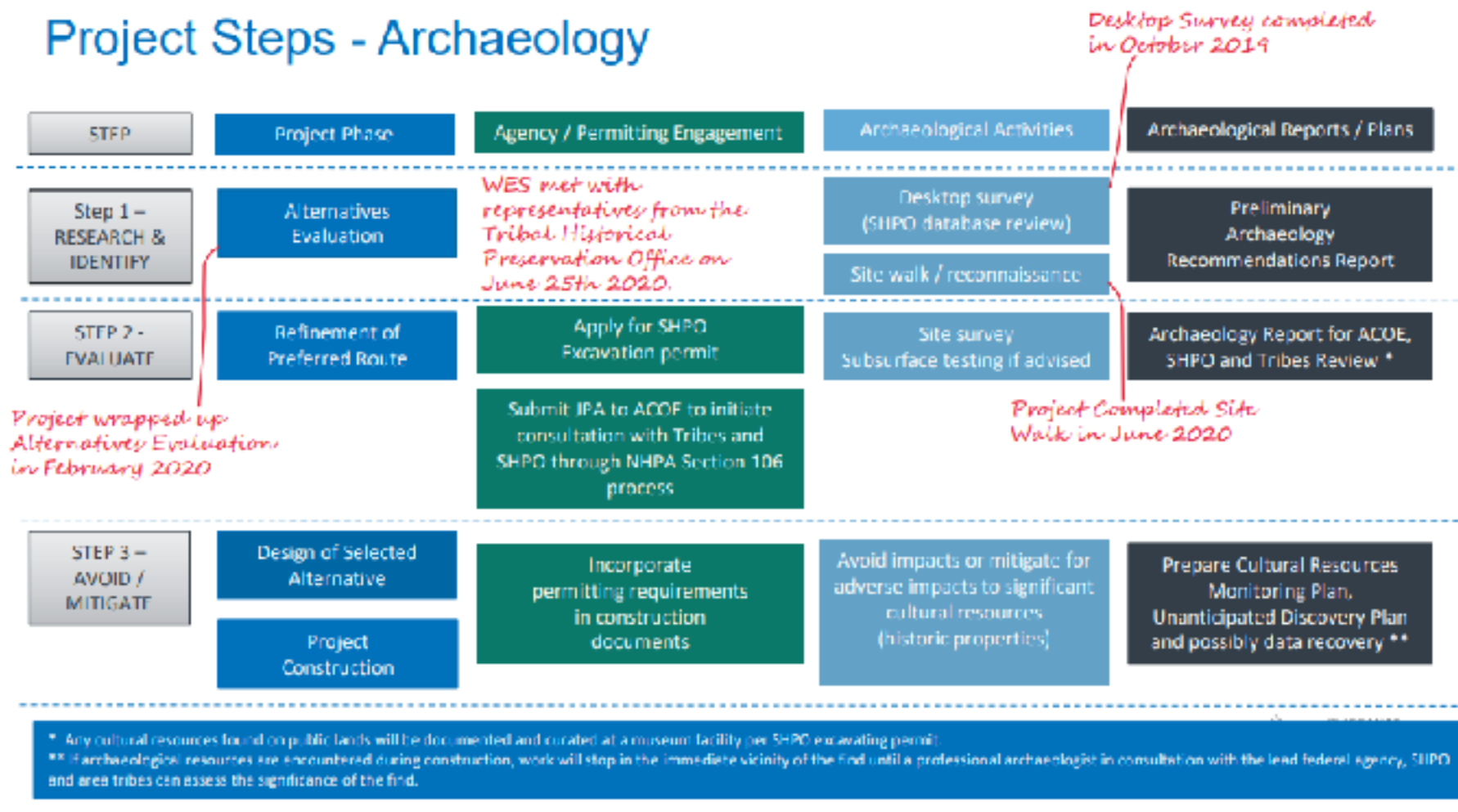
Risk and Choices



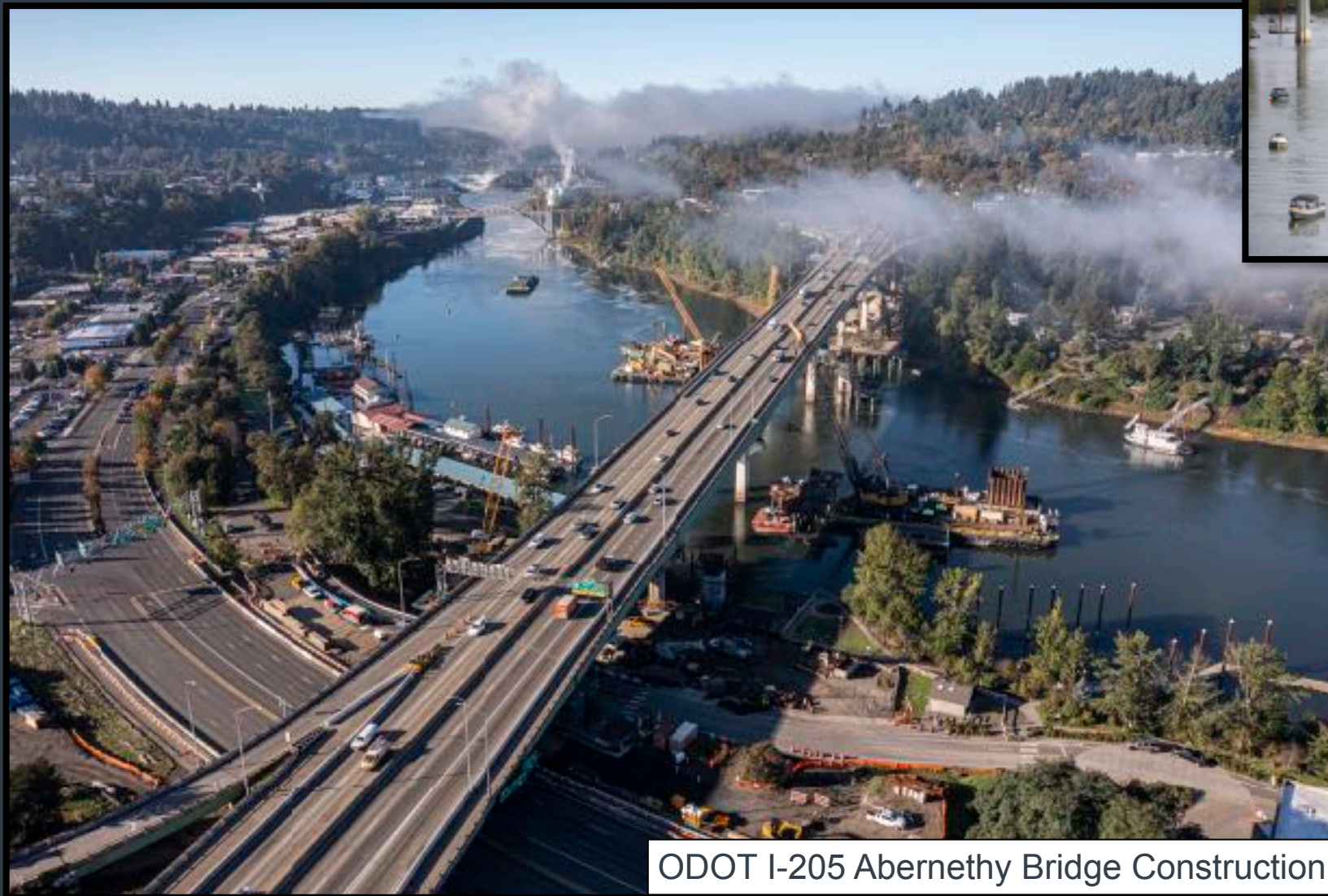
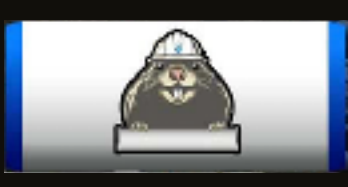
Archeological Input



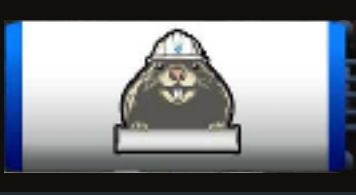
Project Steps - Archaeology



ODOT Coordination



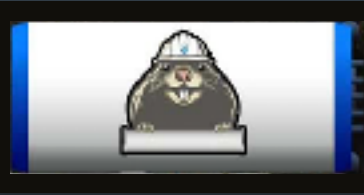
Ground Breaking



February 21, 2024 – Outfall Ground Breaking Ceremony



Clack-A-Mole Naming



CLACKAMAS COUNTY

Can you dig it? Clackamas County Tunnel Boring Machine officially named "Clack-A-Mole"



Permitting Revisited



Site Survey



Log pins



Unidentified metal artifact



Tunnel Launch Event



The Tunneling Process



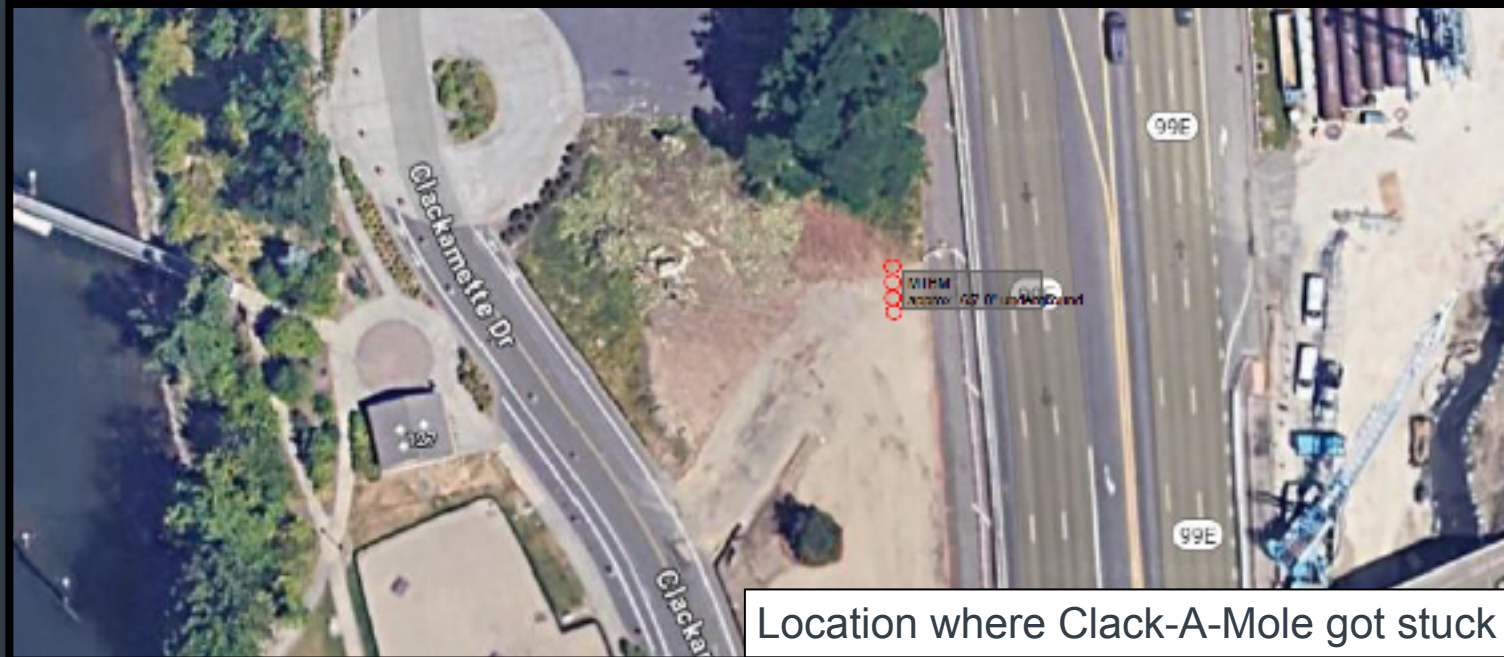
Launching Clack-A-Mole



Jacking new pipe



Challenges



Location where Clack-A-Mole got stuck



Jon Storm Park Sinkhole



Outfall Alignment



River Arrival



Final Segment of Pipe



Under the river



Pipe Inspection



Wet Recovery



Portland

"CLACK-A-MOLE" COMPLETES HALF-MILE TUNNELING FEAT BENEATH CLACKAMAS COUNTY EN ROUTE TO WILLAMETTE RIVER

By Clara Robinson

Published on February 06, 2015

Source: Clackamas County



TBM Being Pulled From the River



The Other 1/2 Mile



Open Cut Construction



Sections of pipe on-site



Adjacent Property Owners



Stakeholders Tour



Launch Shaft Adjacent to Main Street Roundabout & Residences



In-Water Diffuser Construction



NPDES Permit Renewal

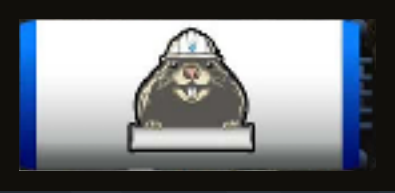


State of Oregon
Department of
Environmental
Quality

**National Pollutant Discharge Elimination System
Permit Renewal Fact Sheet
Water Environment Services
Tri-City Water Resource Recovery Facility**



Construction Costs



- Original Contract Value: \$58.4M
- Current Contract Value: \$58.4M
- Change and Costs Managed with well developed Risk Register



Major Take-Aways



- Relationships are critical to all projects and are key to project success.
- Always be willing to adjust your expectations and plans.
- Celebrate your success and make it fun.



Acknowledgements

Companies

Michels Trenchless
Jacobs
AECOM

City Partners

Oregon City
West Linn

Stakeholders

WES Board of Directors
Business Community
WES Advisory Committee

Tribes

The Confederated Tribes
of Grand Ronde

Partner Agencies

ODOT
Oregon Heritage State Historic
Preservation Office



2025 Outstanding Member Agency Award



Oregon Association of Clean Water Agencies

