

working for clean rivers

Secondary Treatment Expansion Project (“STEP”) Phase 2 Construction Amendment (BES Project Number E07947)

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Manager



ENVIRONMENTAL SERVICES
CITY OF PORTLAND

MINGUS MAPPS, COMMISSIONER
DAWN UCHIYAMA, INTERIM DIRECTOR



Guaranteed Maximum Price Agreement – Phase 2

- Regulatory-Driven improvements at the Columbia Boulevard Wastewater Treatment Plant
- Previous Council Authorization November 2020 (first phase)
- Work is on ongoing and on schedule, with \$100M authorized to date
- \$515M total authority requested to add second phase of Work
- The project implements a Community Benefits Agreement

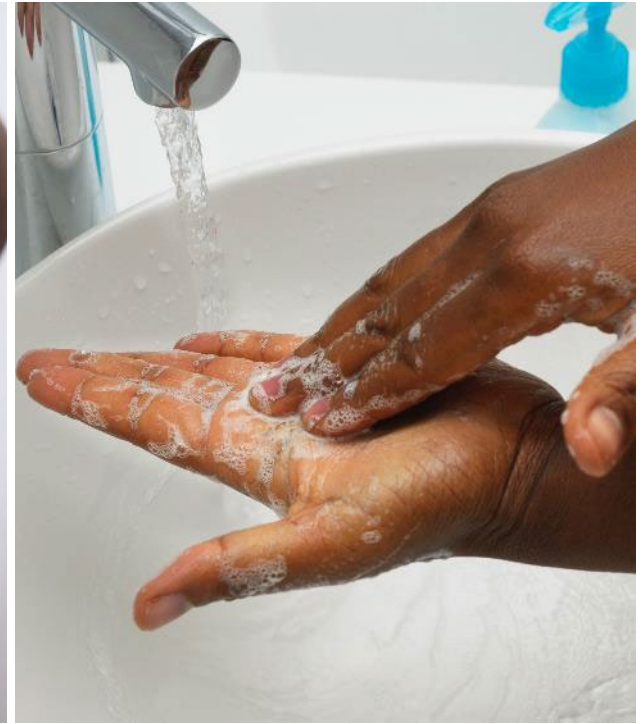


Procurement and Council History

- **October 2017**, Council approved use of the Construction Manager/General Contractor (CM/GC) alternative contract delivery method (ordinance 188630)
 - **June 2018**, Council authorized Design Contract No. 30006543 with CH2M Hill Engineers, Inc. (ordinance 189056A)
 - **June 2018**, Council authorized Program Management Support Contract No. 30006509 with Stantec Consultant Services, Inc. (ordinance 189057)
 - **June 2019**, City entered Contract 30006509 with Kiewit Infrastructure West for Pre-Construction Services
-
- **October 2020**, Authority to enter into first phase of construction with Guaranteed Maximum Price Agreement 1
 - with notification of needed council action in 2022 for a construction estimate of **\$301M at a 30% design level completion** (-80% to + 130% confidence)



Every Portland resident, business, and visitor
relies on the treatment plant.



The plant must keep working



**24 hrs/day, 7 days a week, Rain or Shine, Through
Covid, Fires, Snow and Ice**

How we got here

- **1952** : Columbia Boulevard Wastewater Treatment Plant (CBWTP) Built
- **1972** : last major expansion of CBWTP to add secondary treatment



How we got here

- **1990's – 2010's** : Combined Sewer Overflow Program implementation to protect public health, the Willamette and Columbia Slough
- **2011** : “Big Pipes” completed
-> water goes to the treatment plant

2011
**Regulatory
requirements
shift to the
treatment
plant**



Mutual Agreement and Order

1. Chemically Enhance Primary Treatment starts	Sept. 30, 2012	✓
2. Secondary Improvements start	Oct. 31, 2014	✓
3. Monitoring and Analysis Program Report	Dec. 30, 2015	✓
4.a Facilities Plan Update	Dec. 30, 2016	✓
4.b No Feasible Alternative Analysis	Dec. 30, 2016	✓
5. DEQ response to City	Mar. 30, 2017	✓
6. Critical path schedule	June 30, 2017	✓
7. Begin implementing schedule	Sept. 30, 2017	✓
8. Start up of new facilities	Dec. 31, 2024	

***BES met all the regulatory milestones
and remains on schedule***





Heating boilers from 1970s



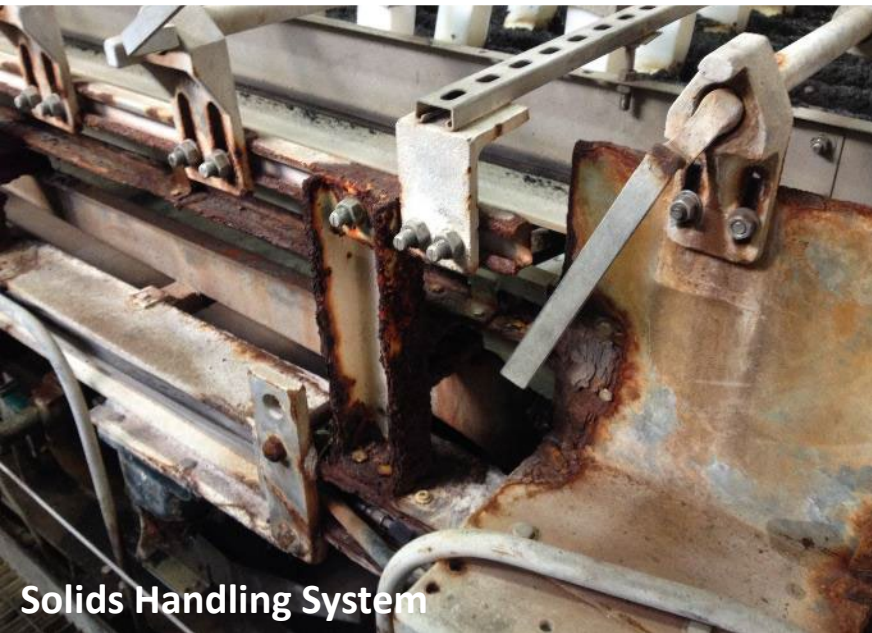
Aeration basins



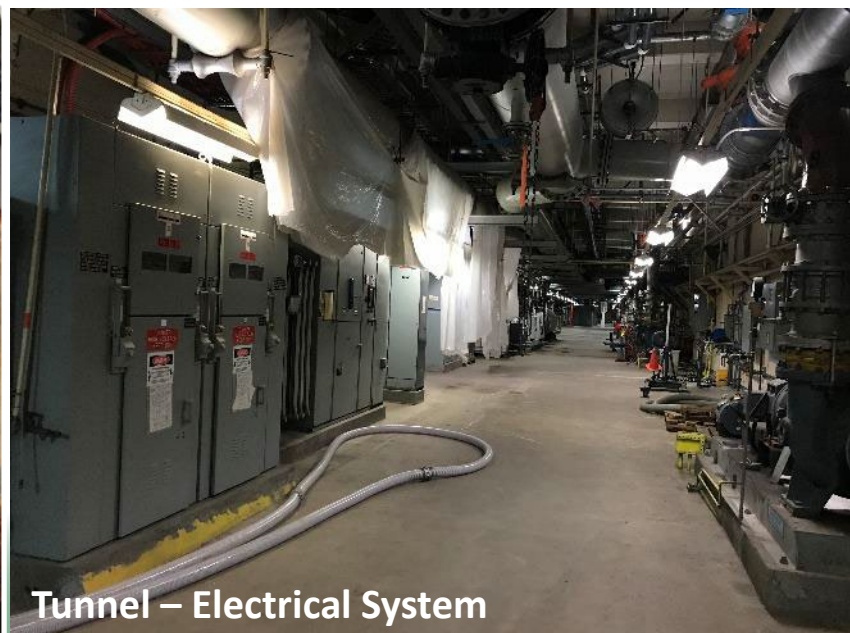
Solids Handling Control Panels

Clarifiers are one driver

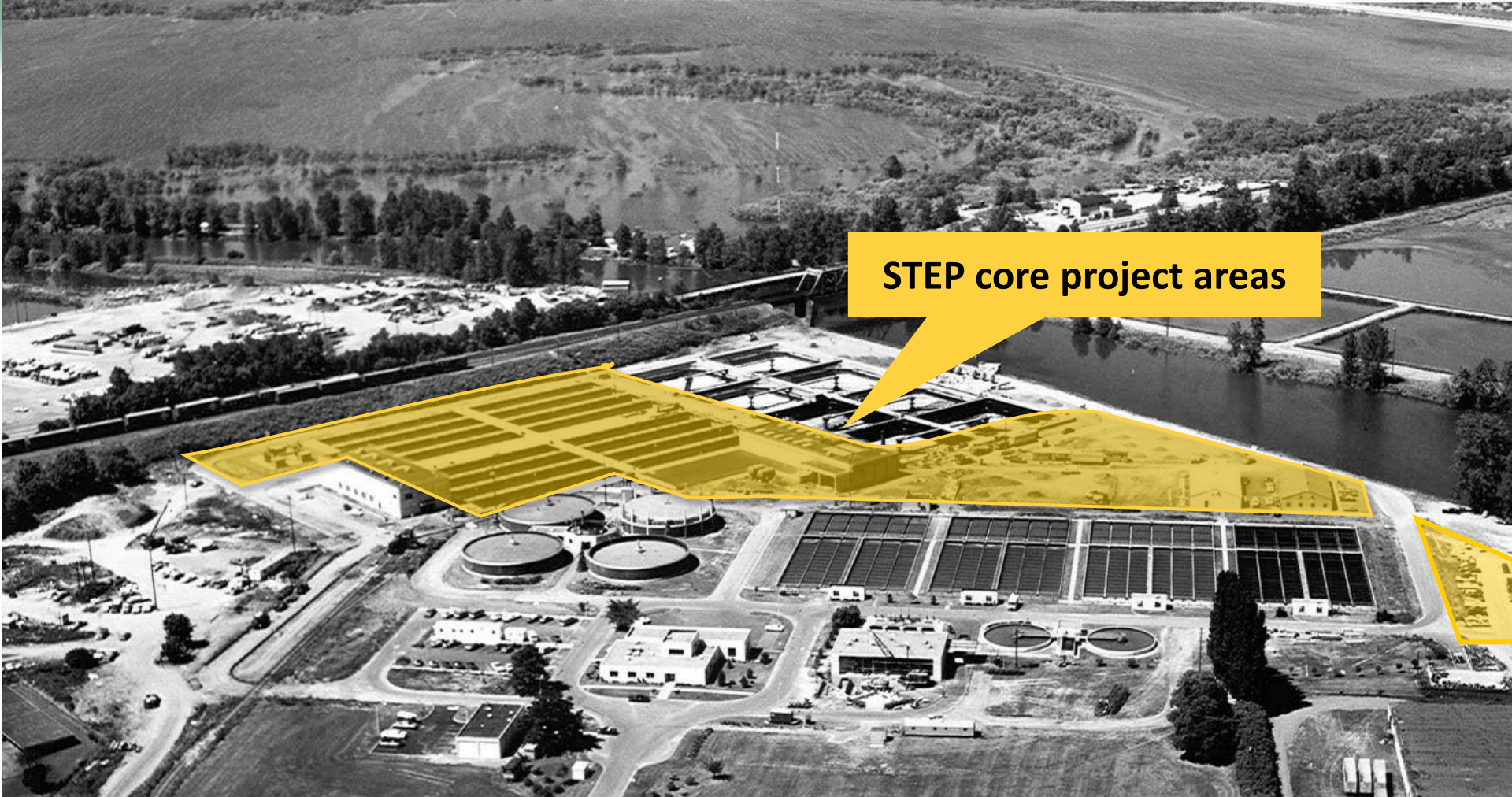
they are associated with systems that are failing or severely outdated



Solids Handling System



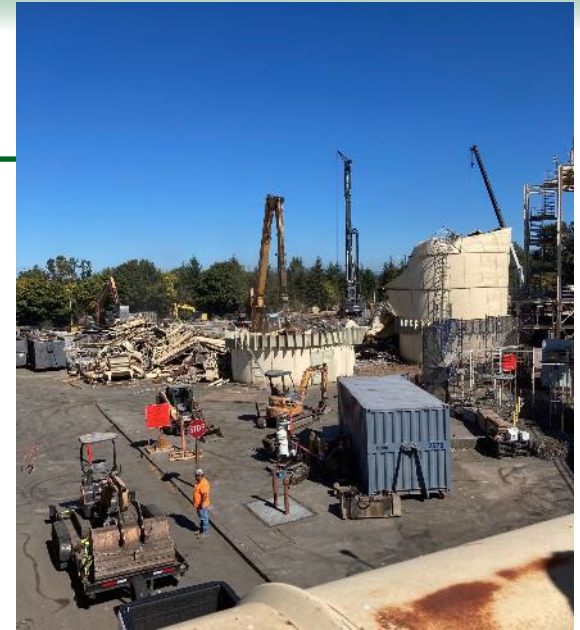
Tunnel – Electrical System



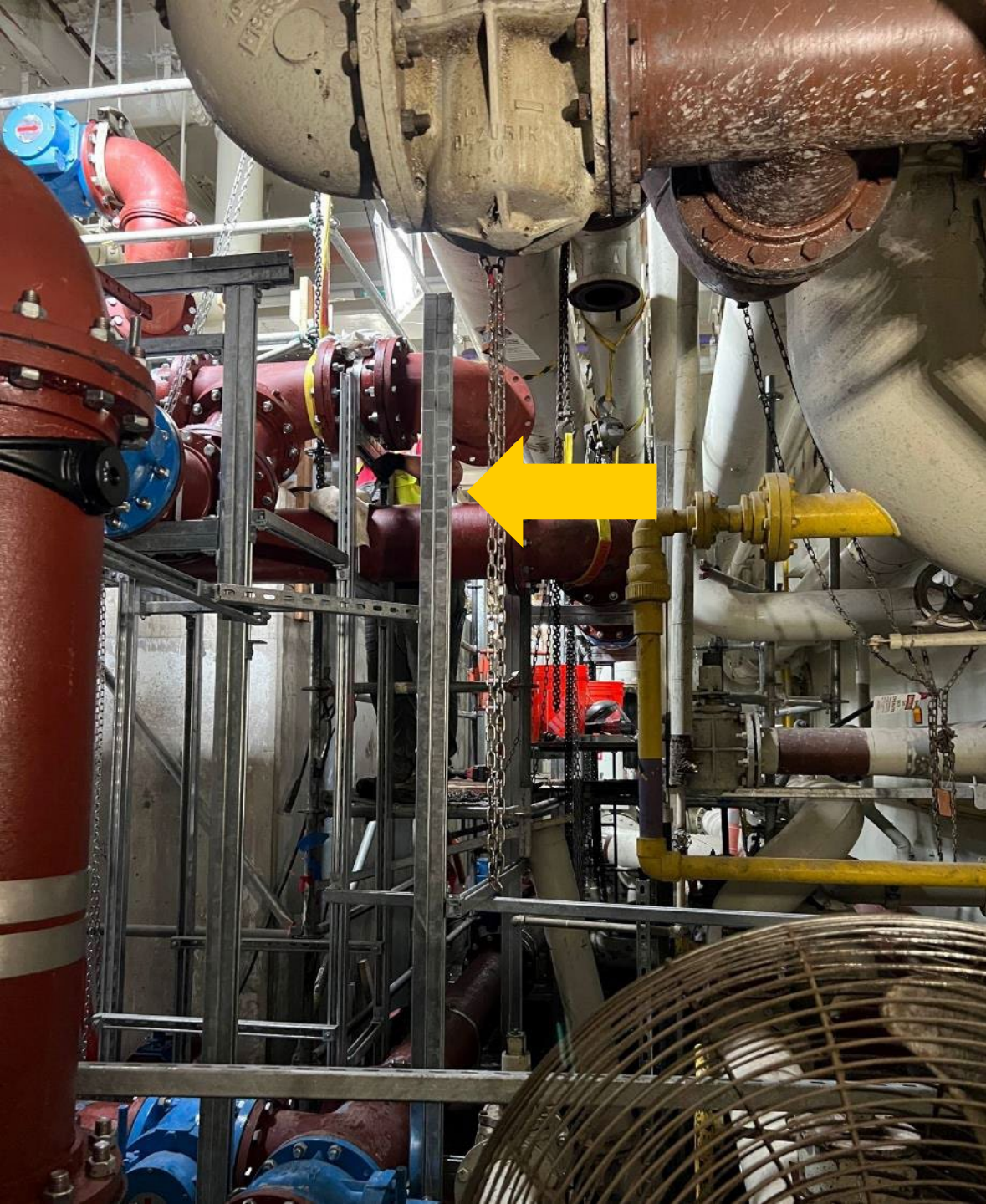
STEP core project areas

Most of the facilities replaced by STEP were built in 1970s





Phase 1 (ongoing) is about getting ready for Phase 2



Phase 2 Scope

It is not easy work

Phase 1 construction – July 2022

The Largest Clarifiers in Oregon

- 40% more performance
- Better performance = better treatment capacity
- Seismically resilient construction





Today



2025

Significant work underground to connect water, gas, power, add resiliency

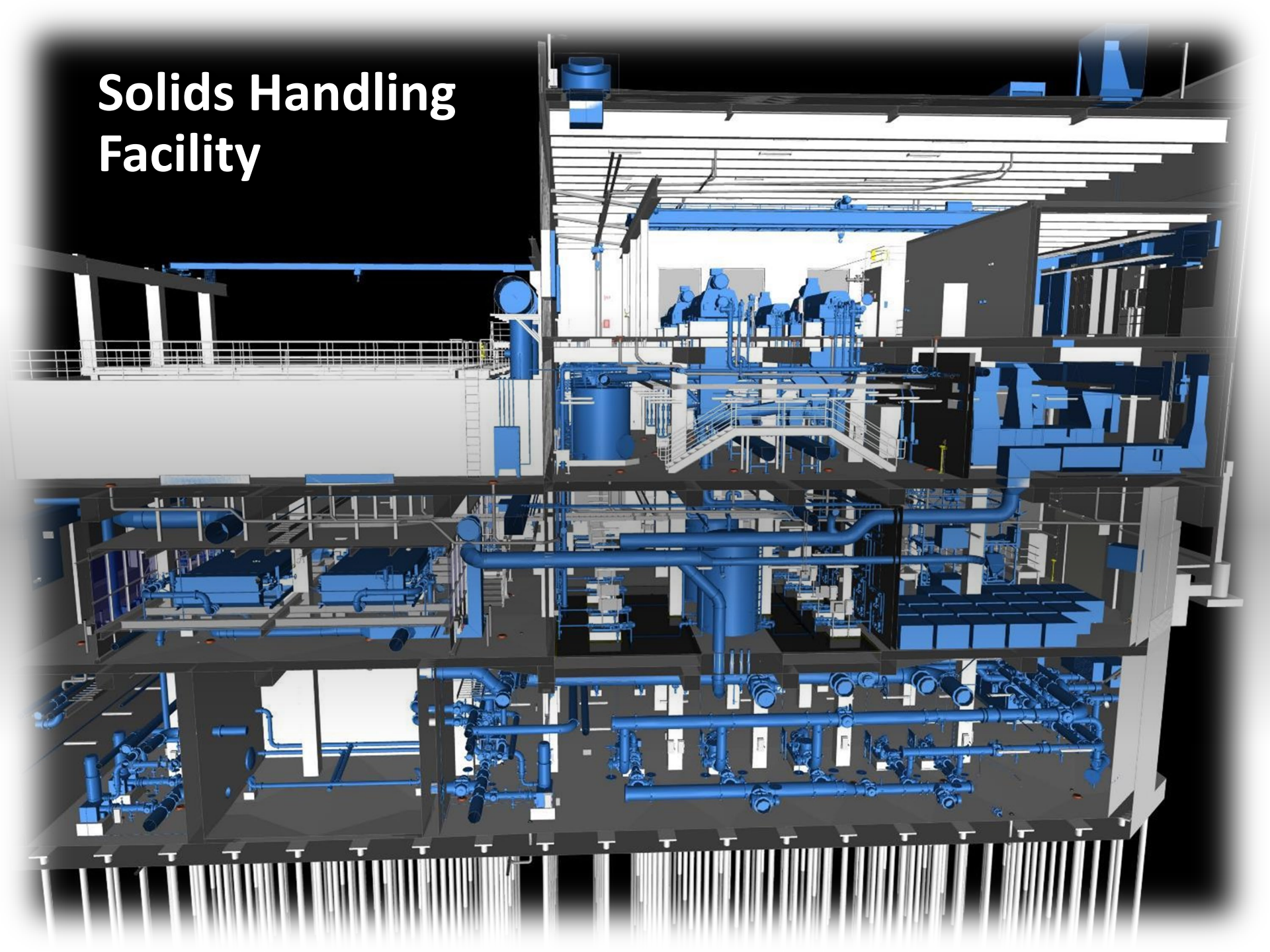




Solids Handling Facility

- 25% Reduction in Long Distance Hauling cost and carbon emissions
- Received Energy Efficiency Incentives from Energy Trust of Oregon
- Biofilter to treat odors
- Green Roofs
- Provides healthy and safer workspace
- Seismically Resilient

Solids Handling Facility



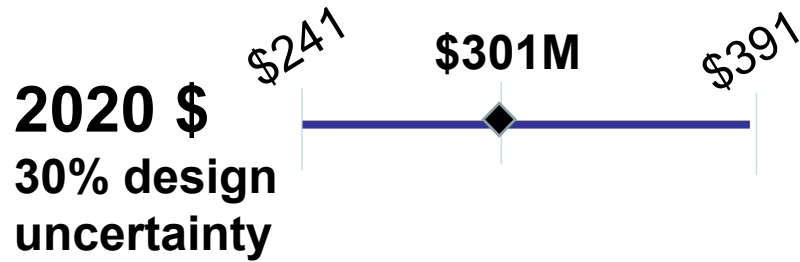


**Replacement Shop/Office
space**

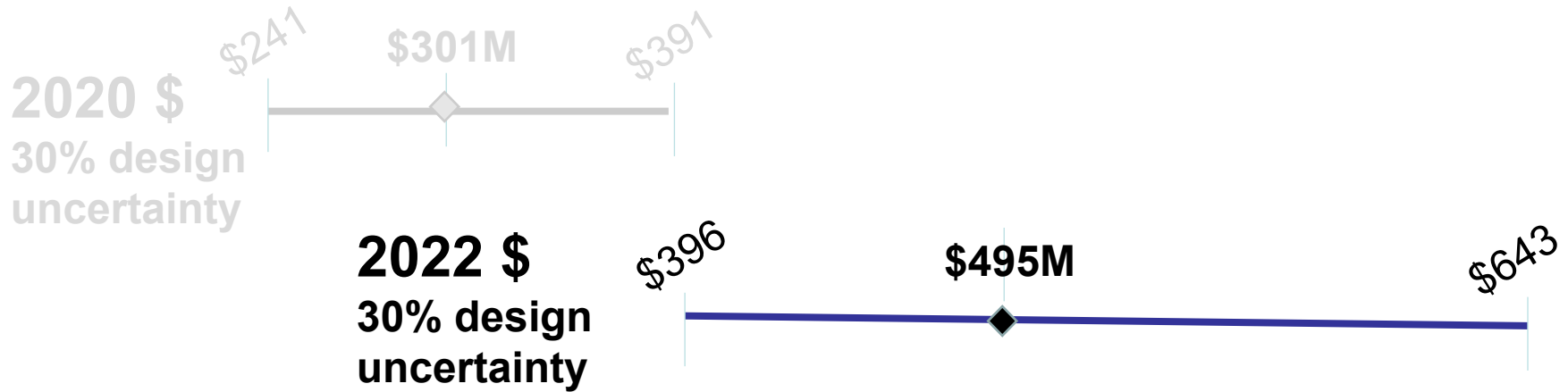
The end game



Cost Estimate Evolution since last Council



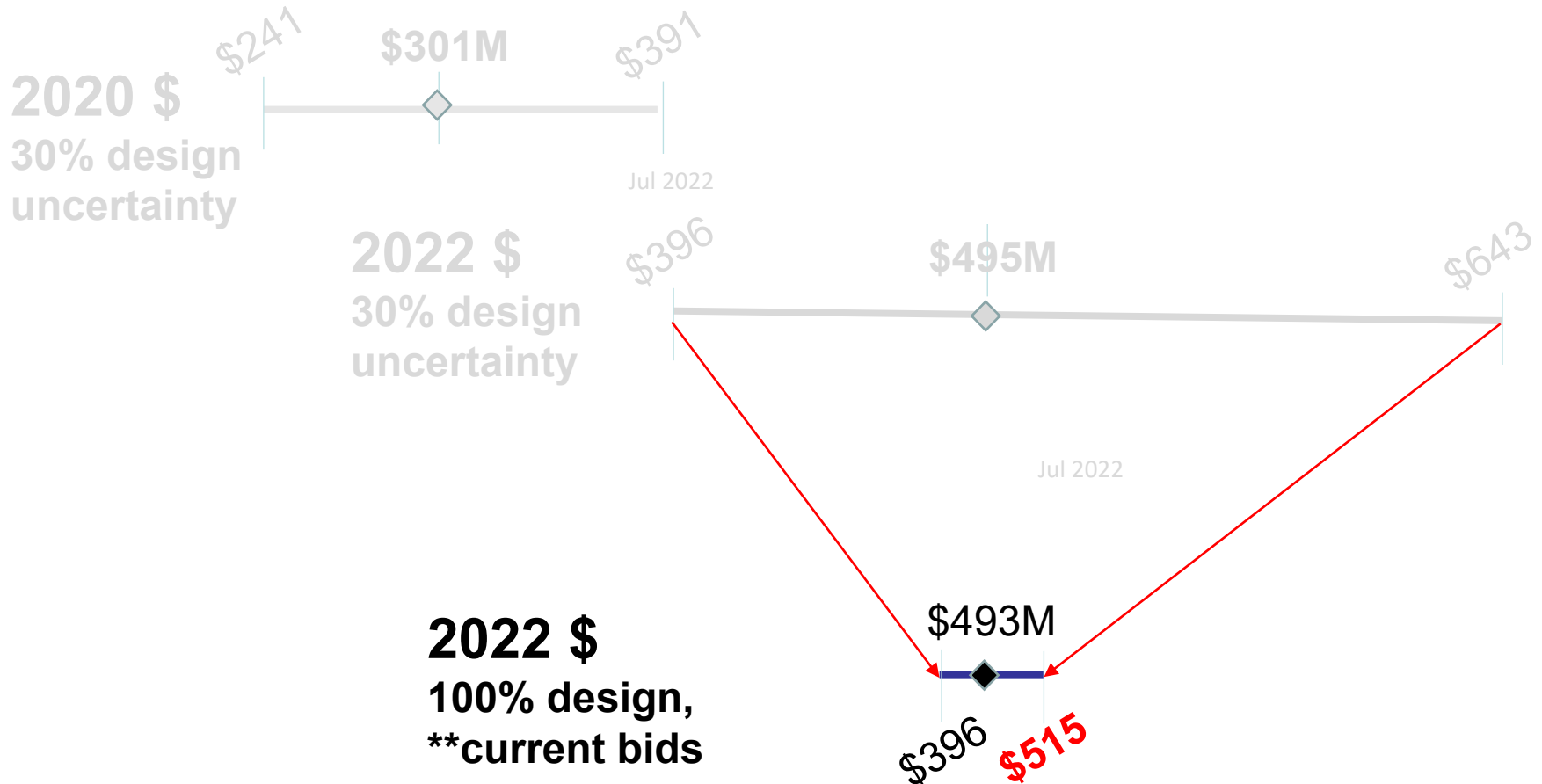
Cost Estimate Evolution since last Council



While consumer inflation since 2020 has been 14%, construction industry inflation (steel, PVC, HDPE, concrete, copper, diesel, etc) has been 64%



Cost Estimate Evolution since last Council



Uncertainty reduced with increased design level; cost growth controlled through value engineering; current bids and market pricing control the price



Value Engineering Efforts

- Cost savings opportunities
- Continuous through Design
- **\$111M in savings realized**
- Examples:
 - Ground improvements means and methods: (\$17M)
 - Excavated spoils disposal: (\$6.2M)
 - Raise clarifiers 10 ft, reduce size to 145 ft dia: (\$5.7M)
 - All the way down to replace ductile iron pipe C110 fitting to C153 (\$0.06M)

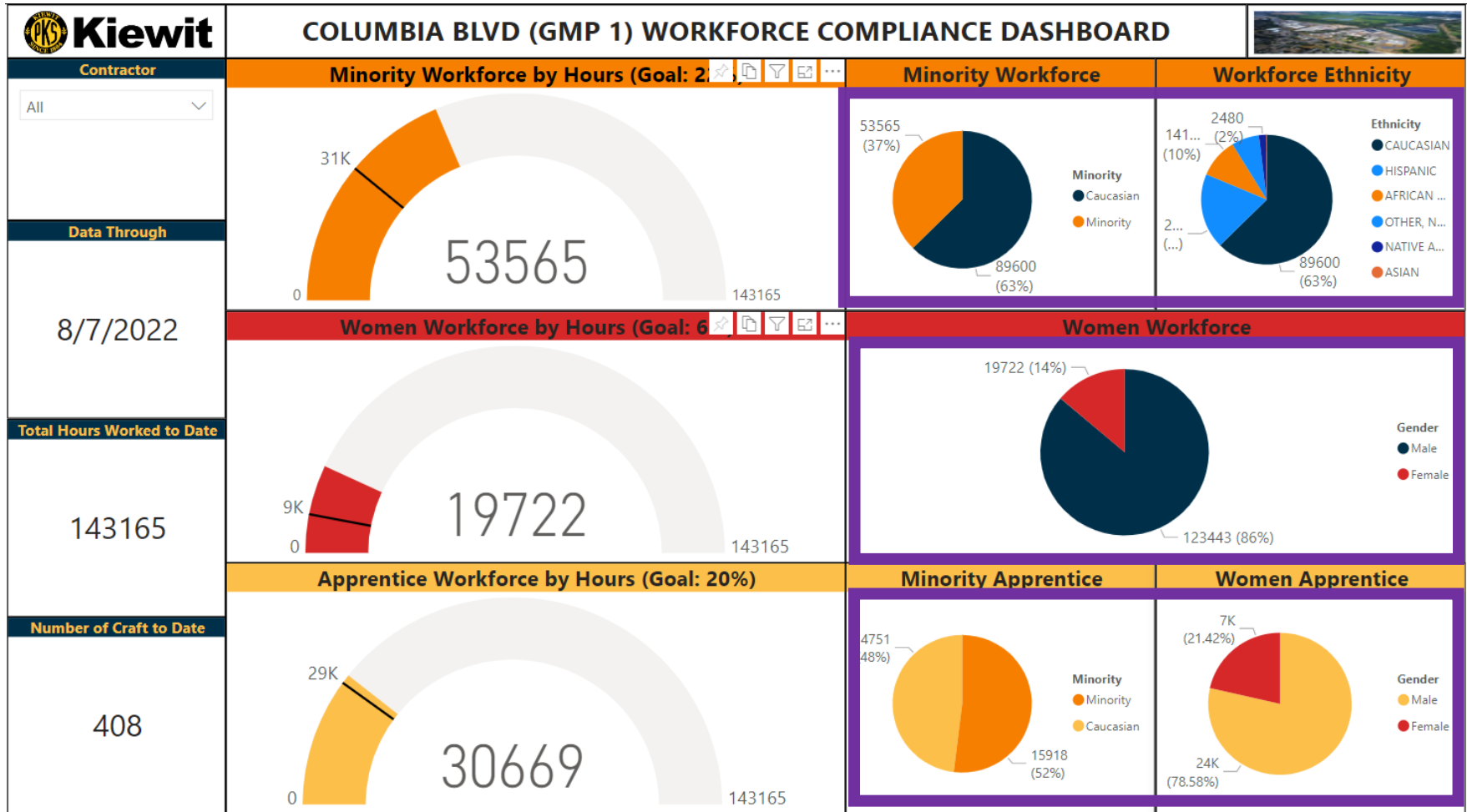


STEP Community Benefits Agreement Integral to this Amendment

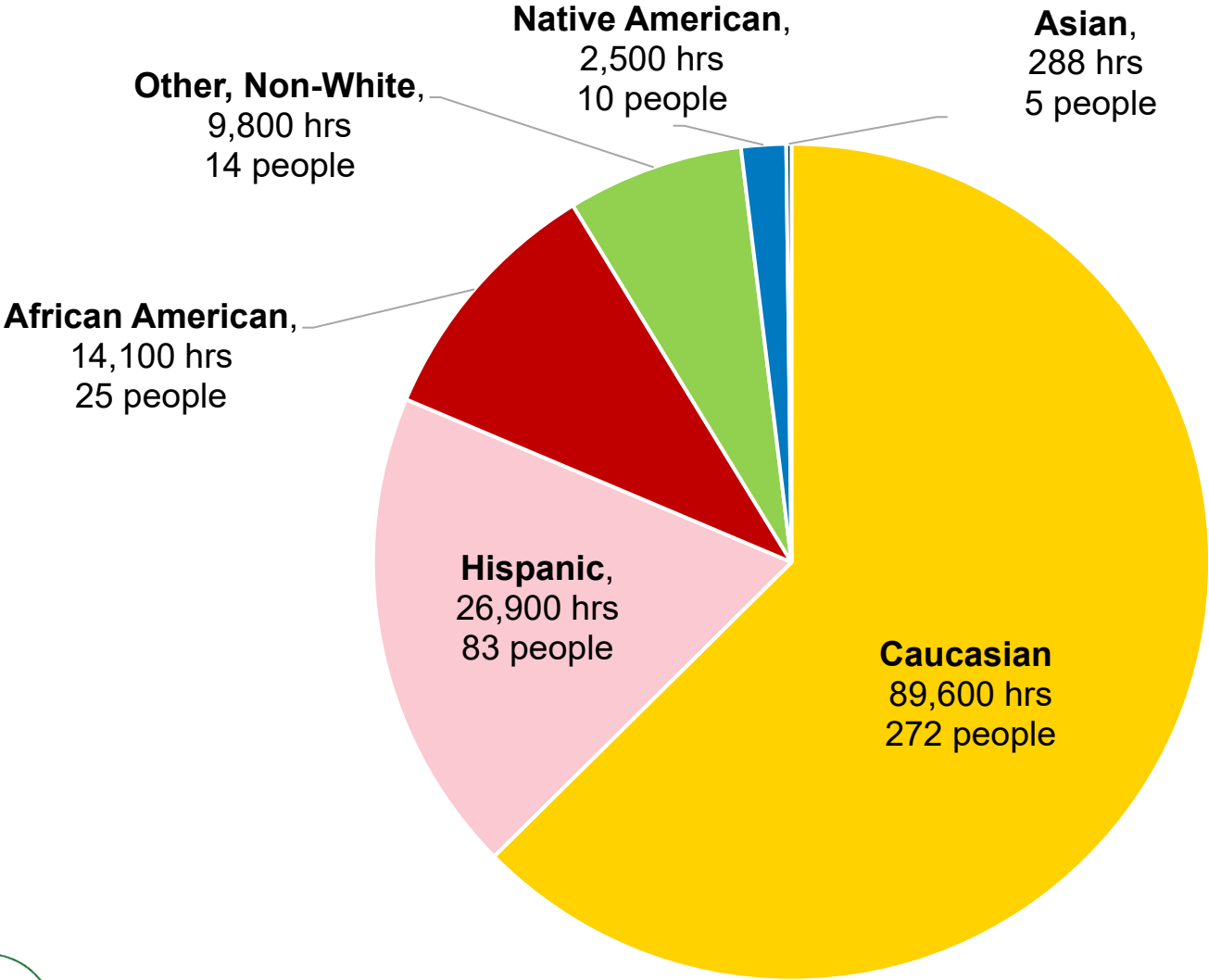
- 30% Kiewit Performed - 70% subcontracted work
- Background on CBA
- Performance to date on Phase 1
- Proposed Plan



Workforce Diversity and Performance to Date

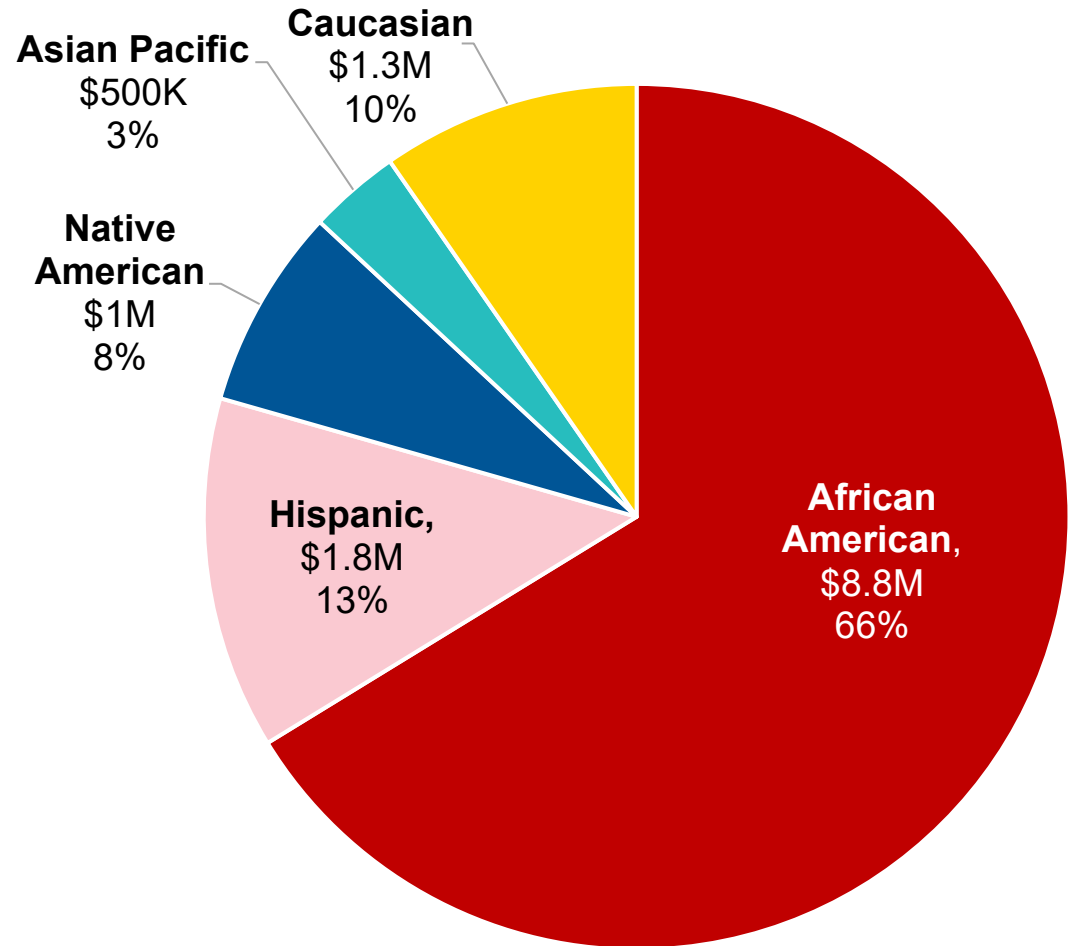


Workforce Ethnicity to Date

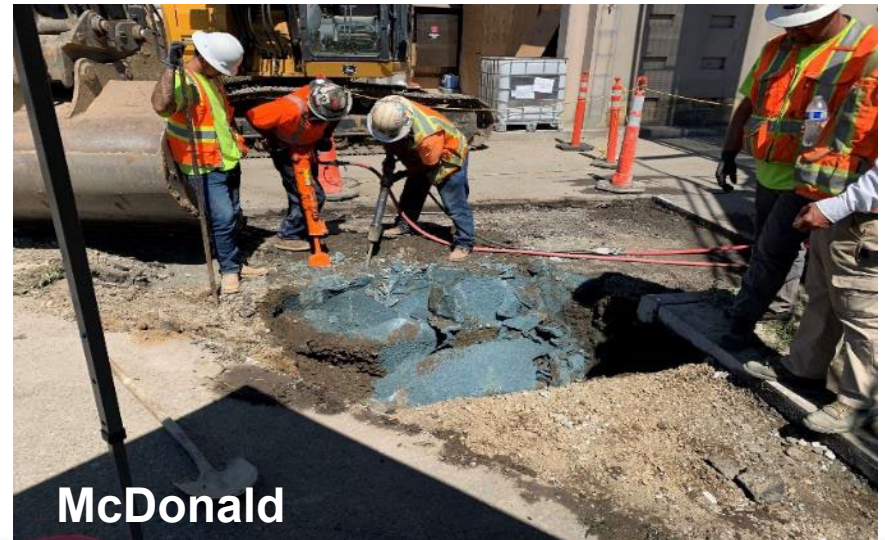


Subcontractor Diversity to Date

- M/W/DBE/ESB contracted work to date \$13.3M
- 39 different M/W/DBE/ESB Businesses
- What types of work performed:
 - Civil Excavation
 - Demolition
 - Concrete
 - Mechanical
 - HVAC
 - Utilities



Subcontractor Diversity to Date



Workforce Diversity Forecast

Planned Project Craft Hours (total project):

➤ 750,000 hours

- ❖ Build on successes of Phase 1
- ❖ Continue working with CBA advisory Committee
- ❖ Continue outreach



*Portland Opportunities Industrialization
Center site tour, June 2022*

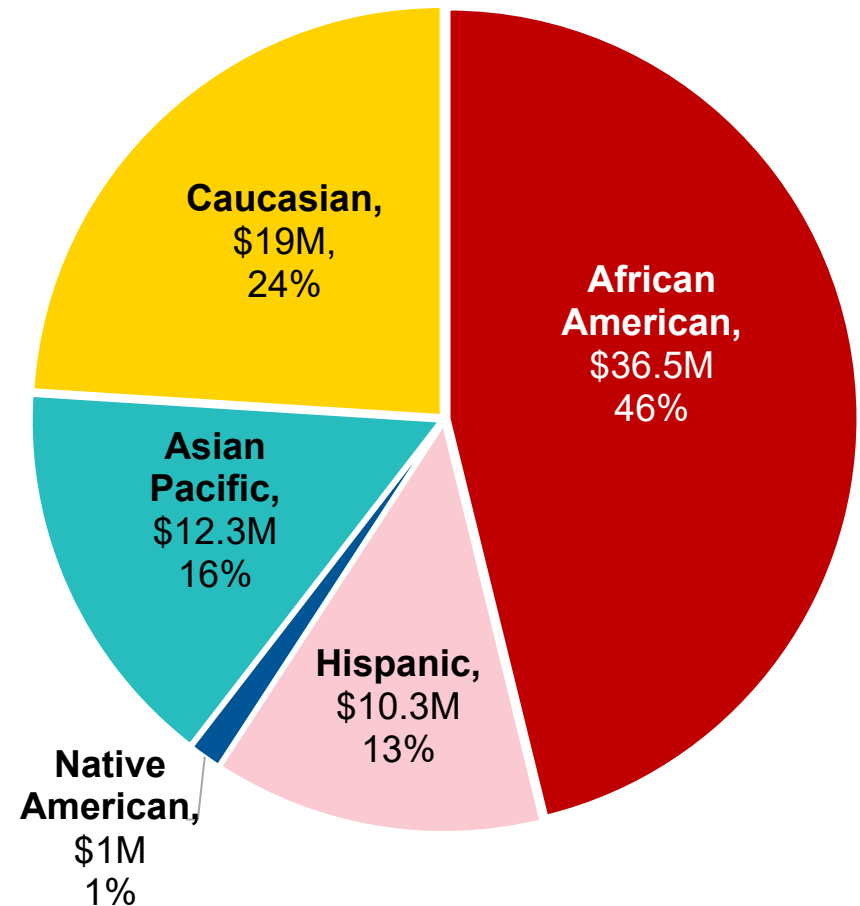


*Oregon Tradeswomen site tour, Aug
2022*

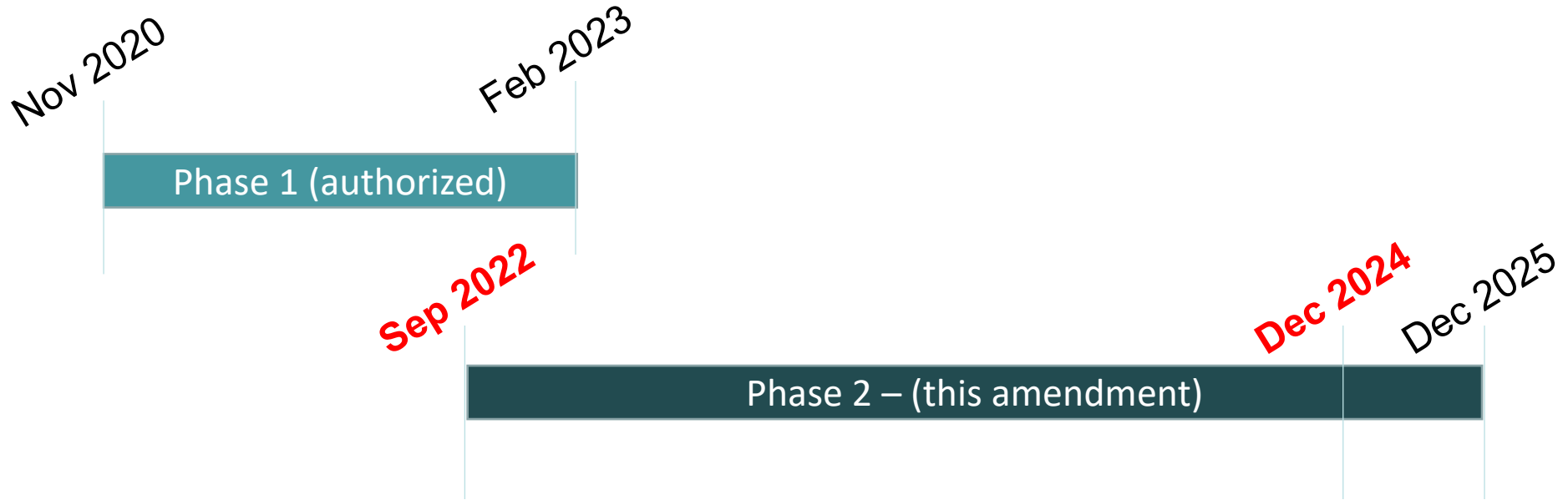


Subcontractor Diversity Forecast

- M/W/DBE/ESB projected contract value of **\$79M**
- **80** different M/W/DBE/ESB Businesses
- Work Scope Types:
 - Utility, Structure, Mass Excavation
 - Structure and Utility demolition
 - Concrete formwork reinforcing and placement
 - Mechanical and HVAC
 - Utility installation/tie-in
 - Commercial building
 - Electrical
 - Architectural
 - Metals fab/install



SCHEDULE



- Supply Chain issues are challenging our ability to meet the December 2024 regulatory milestone and control costs



Authorization Request

The Chief Procurement Officer is authorized to execute amendment(s) that are approved as to form by the City Attorney's office and/or change orders to Contract 30007489 as long as the contract not-to-exceed amount is \$515,000,000 or less.



Acknowledgments

Current and past Members of the Community Benefits Agreement Advisory Committee :

- Community Based Organizations Representatives:
 - Kelly Haines, Worksystems
 - Bill Kowalczyk, Portland Youth Builders
 - Charles Manigo, POIC
- Unions Representatives:
 - Michael A. Burch, NW Carpenters
 - Twauna Hennessee, NW Carpenters
 - Nathan “Nate” Stokes, IUOE701
 - Melvin Norman, NW Carpenters
 - Sheldon Wormley, Laborers Local 737
 - Aaron B. Strong, IBEW Local 48
- Employers Representatives:
 - John Jackley, NAMC
 - Molly Washington, NAMC
 - Kenechi Onyeagusi, PBDG
 - J. W. Matt Hennessee, PBDG
 - Nathaniel Hartley, Professional Lath and Plaster LLC



Thank you