

working for clean rivers



ENVIRONMENTAL SERVICES
CITY OF PORTLAND

working for clean rivers

NICK FISH, COMMISSIONER | MICHAEL JORDAN, DIRECTOR

CBWTP Lagoon Reconstruction Phase 3/4 Status Report

Bill Ryan, PE, Chief Engineer

May 17, 2017

E07146

CBWTP Lagoon Reconstruction Phase 3/4

Main plant

Columbia Slough

Phase 2 - South Lagoon
21 acres
New Cells 3 & 4 and
Monofill finished in 2014

Phase 3/4 – North Lagoon
15 acres
New Cells 1 & 2 in work

Phase 1 – Dike
finished in 2002

Heron Lakes Golf Club

CBWTP Lagoon Reconstruction Project Background

- Design began in the late 1990s.
- Phase 1, completed in 2002, divided Triangle Lake into north and south lagoons.
- Phase 2, completed in 2014, removed biosolids, lined the south lagoon and created a new lined “Monofill” to bury biosolids.
- Phase 3&4 is currently in work and will remove biosolids and line the north lagoon.
- Phase 5 will finish the reconstruction project and install landscaping.



Current Phase 3/4 Project Area



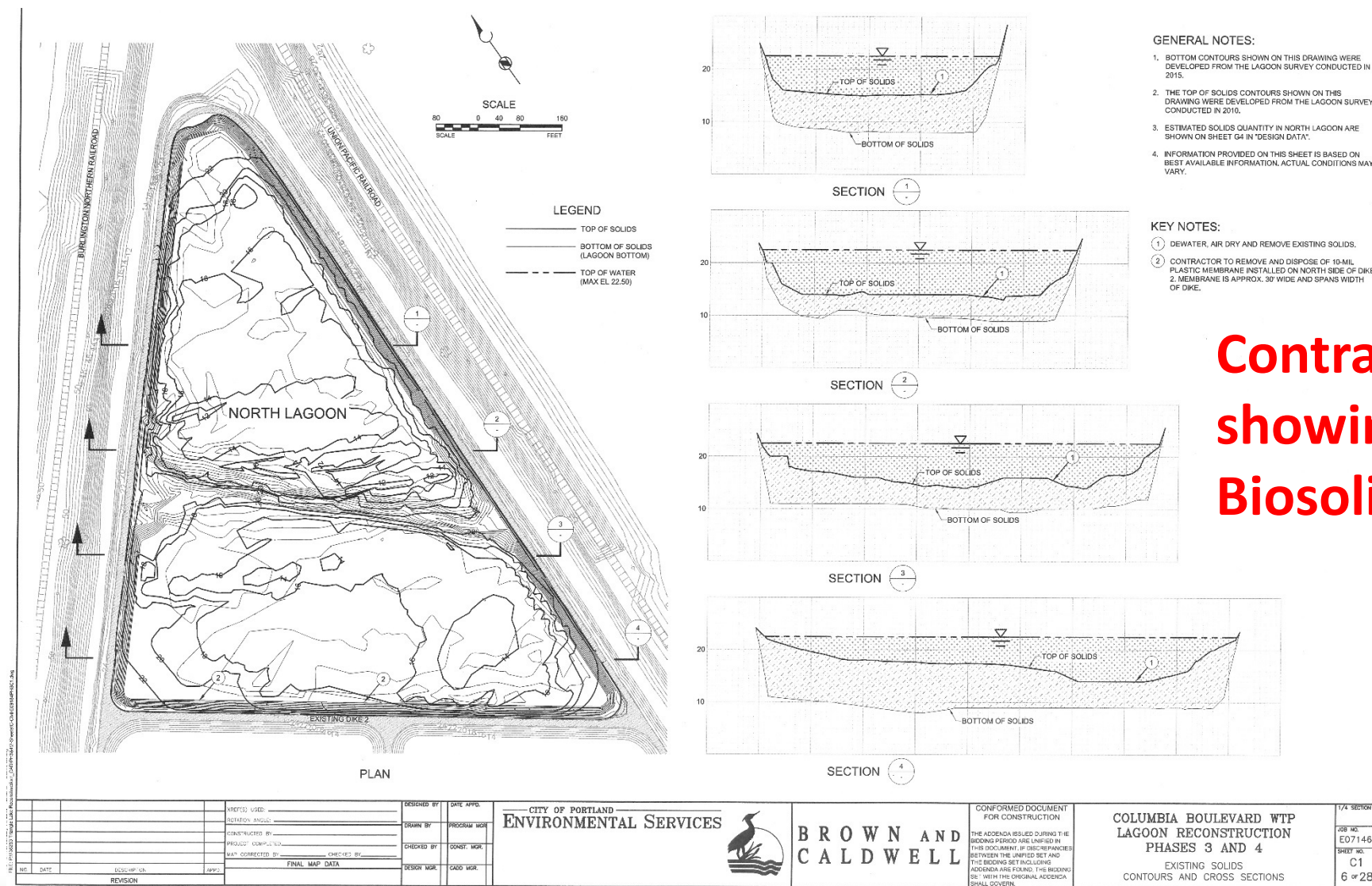
**North Lagoon
will be lined**

**South Lagoon is
now in operation**

**Existing Monofill
will be filled up**



Current Phase 3/4 Project Area & Sections



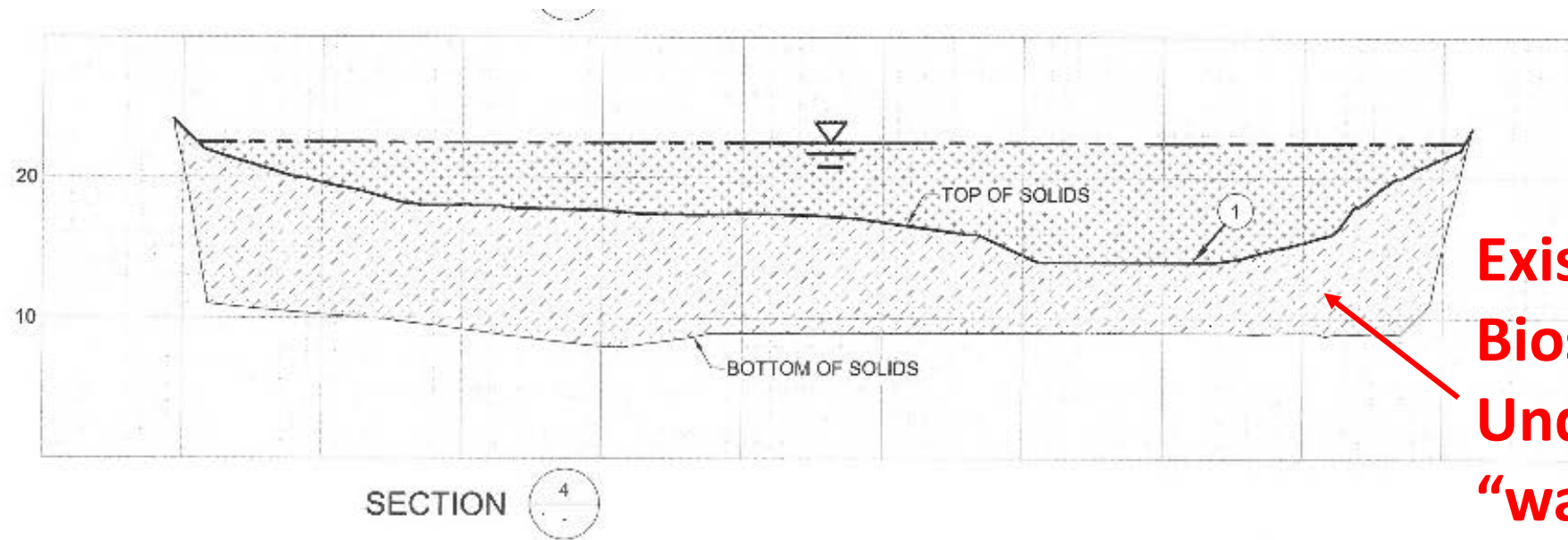
Contract Plan Sheet
showing existing
Biosolids Layers




Project Overview – Bid Quantities Are Estimates



Current Phase 3/4 Project Area & Sections



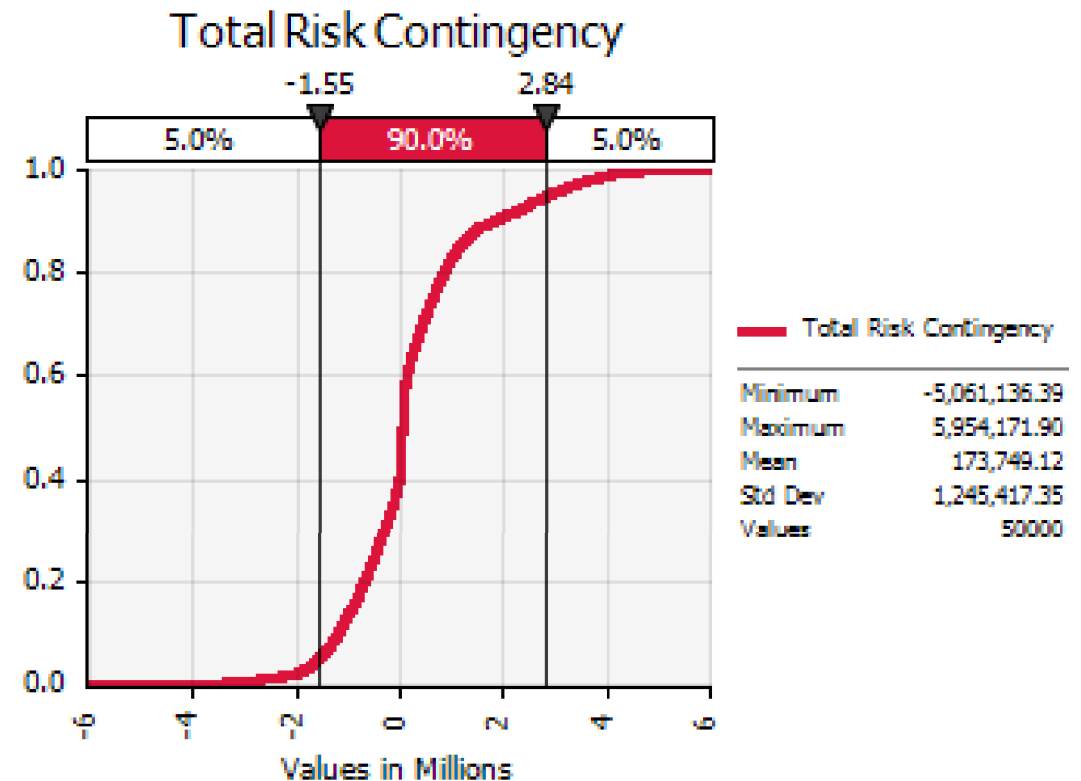
VICES 	BROWN AND CALDWELL	CONFORMED DOCUMENT FOR CONSTRUCTION THE ADDENDA ISSUED DURING THE BIDDING PERIOD ARE UNIFIED IN THIS DOCUMENT. IF DISCREPANCIES BETWEEN THE UNIFIED SET AND THE BIDDING SET INCLUDING ADDENDA ARE FOUND, THE BIDDING SET WITH THE ORIGINAL ADDENDA SHALL GOVERN.	COLUMBIA BOULEVARD WTP LAGOON RECONSTRUCTION PHASES 3 AND 4 EXISTING SOLIDS CONTOURS AND CROSS SECTIONS	1/4 SECTION JOB NO. E07146 SHEET NO. C1 6 OF 28
---	---------------------------	---	---	--



2015 Presentation for Authorizing Ordinance

Project Budget and Schedule

- Lagoon Replacement Value = \$91M
- Lagoon Reconstruction Program Estimate = \$30M
- \$9.3 to \$13.6 M expected construction costs
- \$500,000 annual operating savings for 2 years +
- Schedule:
 - NTP: November 2015
 - Completion: November 2018

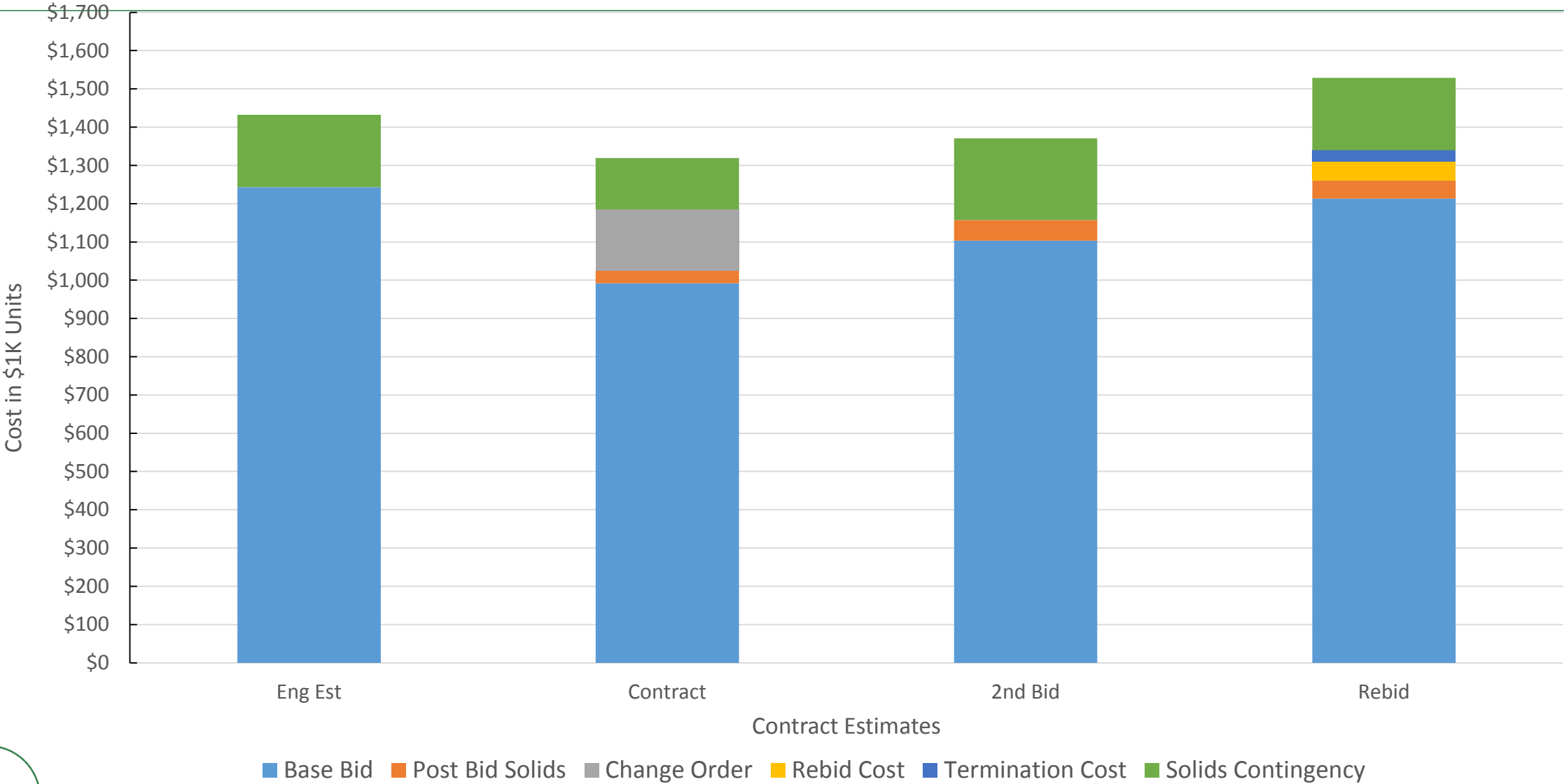


Equitable Adjustment for Differing Site Condition

- Differing Site Conditions:
 - Contractor testing indicated more water in biosolids than stated in plans
 - Owner testing confirmed some additional water
 - Owner testing also found potential for deeper biosolids and more quantities
- Change Order Executed: \$1,588,795 and 590 Days (For 2 additional drying seasons)



Comparative Cost Projection Breakdown



Remaining Phase 3/4 Construction Risks

Unknown Conditions Still Exist:

1. Final amount of biosolids to haul away may be more than estimated.
2. Subgrade groundwater conditions.
3. Subgrade soft soils.

Proactive Steps will be Taken:

1. Early estimates of the biosolids will be attempted so necessary approvals can be made if needed.
2. Options for disposal and beneficial use of biosolids will be explored.
3. Subgrade treatment of soft soils will be pursued.



Questions

