

TRAPAC TERMINAL PROGRAM

Cost Summary & Status Update

August 2013

SUMMARY:

The TraPac Terminal Program consists of 10 projects and will provide wharves, automated backlands, rail facilities, buildings, and gates for the Port of Los Angeles' first automated container terminal at Berths 136-147.

In February 2012, the TraPac Terminal Program was identified in the City's Priority Capital Projects at the Port. This program will deliver the first automated terminal on the West Coast.

Cost Summary

The baseline budget for this program of \$364,495,525 was approved by the Board on April 19, 2012. A significant portion of this cost estimate was based on conceptual level information, particularly the automated portions of the program. Our current cost estimate for the program has increased to \$510,412,388, a 40% increase or \$145,916,813, due to a number of factors detailed in the Background Section of this memo.

There was no grant funding at the time the baseline budget was set. Since then, the Port has secured \$60,081,000 bringing the POLA Share amount to \$450,331,388, a 23.5% increase.

It is important to note that these cost increases are not a result of tenant initiated scope changes. The table below indicates the overall baseline, Grant Funding, current cost estimate, and the delta.

	TraPac Terminal Program
Baseline Budget (4/19/2012)	\$364,495,525
Grant Funding	\$0
POLA Share	\$364,495,525
Current Cost Estimate	\$510,412,338
Grant Funding	\$60,081,000
POLA Share	\$450,331,338
Delta = Current Cost Estimate – Baseline Budget	\$145,916,813 (40.0% increase)
Delta POLA Share = Current POLA Share – Baseline POLA Share	\$85,835,813 (23.5% increase)

Current Status Summary

The Program is on schedule and continues to move forward. Three projects are complete, and three are under construction. Two projects are nearing advertisement, and the last two are in design and planning. See attached Exhibit 2 for a project listing and status.

BACKGROUND

The TraPac Terminal Program will expand, modernize, and automate the TraPac container terminal at Berths 136-147. The improvements consist of expanding and redeveloping container terminal facilities, new buildings and structures, a new main gate and secondary gate, a new wharf extension and upgrades to the existing wharf facilities, AMP, a new intermodal container transfer facility (ICTF), and automated backland infrastructure.

Consultant CH2M Hill was selected as the designer for the automated backlands due to their experience in container terminal automation design, specifically APM Terminal in Norfolk, VA, the only existing automated terminal in the United States. There is no standard design for automated container terminals, each is unique based on layout, operational needs, and equipment. The conceptual construction cost estimates for the automated backlands were prepared by the consultant in October 2011, based on costs and experience in the development of the Norfolk terminal. Design of the first phase of Berths 142-147 Backland automation began early 2012, and subsequent phases started design near the end of 2012. As design progressed, the cost estimates increased as a result of factors unique to this development and the current bidding climate. Berths 144-145 Backland Improvements (Phase 1C automation) opened bids in January 2013 with unit bid item costs much higher than anticipated at the baseline budget.

Cost Increase Factors

The primary reasons for the cost increase for the TraPac Terminal Terminal are indicated below. A detailed Cost Increase Breakdown is included as Exhibit 3:

1. Electrical System
(Current Estimate \$67.08 M - Baseline Estimate \$15.01 M = Delta \$52.07 M)
 - a. As design of the terminal progressed, it was evident that automation requires a much more extensive electrical infrastructure than estimated, a 4.16 kV power supply system was assumed in the baseline estimate. During the design process, it was determined that a 12.47 kV power supply system was required, which resulted in additional infrastructure including new high voltage 34.5kV electrical substations, multiple feeds from DWP, switchgear, transformers, voltage conversion switchgear, and extensive underground conduit for telecommunication, fiber optics, and power. 12.47 kV is a US standard voltage; Norfolk, VA is supplied by 13.2 kV and CTB Hamburg is 10 kV.
 - b. Construction activities in the San Pedro Bay are at a historic high. The current bidding climate is showing significant signs of large cost increases, particularly with electrical infrastructure. With the number of AMP projects in construction, in both ports, the availability of equipment and resources have been stretched and is resulting in increased costs showing up in recent bids.
2. Storm Drain System
(Current Estimate \$14.53 M - Baseline Estimate \$1.63 M = Delta \$12.90 M)
 - The original storm drain design consisted of infiltration to comply with the City of Los Angeles Watershed Protection Program and the Standard Urban Stormwater Mitigation

Plan (SUSMP). The existing site is contaminated. Since infiltration is prohibited due to the high levels of contamination, the storm drain system resulted in a very intricate design, including sand filtration, subdrains, trench drains, and overflow system.

3. Concrete Pavement & Foundations
(Current Estimate \$24.60 M – Baseline Estimate \$3.80 M = Delta \$20.80 M)
 - Due to site conditions and geotechnical studies, design is resulting in thicker concrete pavement sections, pile supported buildings and structures, thicker and stronger crane rail, and surcharge to decrease long-term settlement.
4. Water/Fire Protection System, Los Angeles Fire Department
(Current Estimate \$6.01 M - Baseline Estimate \$1.22 M = Delta \$4.79 M)
 - The automated stacking block layout does not provide for typical LAFD access per code, design was approved by LAFD to incorporate an extensive stand pipe system, containment areas, and additional access points to allow LAFD to provide fire protection.
5. Fencing and Specialty Gates
(Current Estimate \$3.88 – Baseline Estimate \$0.75 = Delta \$3.13 M)
 - Life Safety fencing surrounding the automated areas and individual blocks are required to provide life safety and separation between automated and manned operations. Additional specialty gates, with electrical infrastructure, will be equipped with radio-frequency identification (RFID) to maintain safety for personnel accessing the automated areas.
6. Construction Inflation (\$8.60 M)
 - Per Engineering News Record (ENR), there was a 5.9% cost increase in local labor union wages for 2012. Recent bids are indicating much higher labor and material costs.
7. Phasing, Specialty Design, Construction Management, Miscellaneous
(Current Estimate \$58.09 – Baseline Estimate \$14.50 = Delta \$43.59 M) See Exhibit 3 for details.
 - Additional phasing within each project is required to facilitate ongoing terminal operations at a higher than anticipated level and concurrent construction projects that are adjacent, nearby and interdependent.
 - Additional miscellaneous specialty infrastructure associated with automation: reefer racks, protected access, booth and weight activated pad for trucker safety.
 - Grant funding deadlines required some schedules to be accelerated impacting design and construction phasing.
 - Additional utility relocations were identified during design.

Value Engineering

Engineering has and continues to perform value engineering to decrease the cost estimates. To date, approximately \$50 Million has been trimmed from these projects' cost estimates (see attached Exhibit 4). The following changes have been incorporated and have helped to reduce the cost estimates: revisions to materials and design elements of the storm drain system and electrical system, foundation selection for the automated stacking crane (ASC) crane rail, redesign of the rail mounted gantry (RMG) crane rail foundation, using construction material for surcharge instead of hauling material in and out, revising the phasing plan to reduce mobilization costs, early detailed coordination with 3rd party utilities to minimize impacts during construction.

The scopes of the projects, for the TraPac Terminal Program, are consistent with the proposed lease amendment.

FINANCIAL IMPACT:

The TraPac Terminal Program Baseline budget of \$364,495,525 was approved by the Board on April 19, 2012. The proposed revised baseline cost of \$510,412,388 for the TraPac Terminal Program will result in an increase of \$145,916,813. Reimbursement grant funding in the amount of \$60,081,000 was secured, resulting in a change in the POLA cost share from \$364,495,525 to \$450,331,338, which is a \$85,835,813 increase.

The TraPac Terminal Program is expected to be completed in 17/18. It is expected that through FY 12/13, \$154,263,637 of the \$364,495,525 April 19, 2012 Board adopted baseline budget, will have been expended. Funds in the amount of \$99,344,073 have been included in the FY 13/14 Capital Budget for the TraPac Terminal Program costs. Revised TraPac Terminal Program costs have been incorporated into the Harbor Department's ten-year Capital Improvement Program as follows:

Fiscal Year	Through 12/13	13/14 (estimated)	14/15 (estimated)	15/16 (estimated)	16/17 (estimated)	17/18 (estimated)	Total
Amount	\$154,263,637	\$84,426,874	\$114,725,075	\$92,587,482	\$52,122,062	\$12,287,208	\$510,412,388

These project estimates include approximately 10% contingencies applied to individual project budgets.

Each fiscal year capital expenditures are requested to be budgeted as part of the annual budget adoption process before the Board.

Grant Funding

Grant Funding in the amount of \$60,081,000 has been allocated for three projects, within the TraPac Terminal Program. By the end of 2013, the Port should begin receiving reimbursements on one project. The remaining two should begin receiving reimbursements by 2014 and 2015.

Rate of Return:

The original Rate of Return at Board approval of the baseline budget was 10.09%. The revised Rate of Return, based on the current cost estimate, is 8.75%. The FY 2013-2014 and 5-year CIP includes the current cost estimates.

This Program continues to make financial sense because it:

- Fulfills our contractual commitment to deliver the terminal infrastructure required under our permit with TraPac
- Creates the capacity needed to meet the revenue projections planned for TraPac
- Returns 8.75% on our terminal infrastructure investment (compared to 10.09% initially)
- Allows us to take advantage of significant grant funding opportunities (see Exhibit 2)
- Compares well with POLB's per-acre development cost for similar automated terminal infrastructure (\$3.3M/acre @ TraPac versus \$3.9M/acre @ POLB's Middle Harbor, see Exhibit 5)

PROGRAM CURRENT STATUS

The status of the TraPac Terminal Program projects are at various stages from design and planning, bid and award, construction, and complete (see attached Exhibit 2). The remaining projects awaiting a construction start are described below.

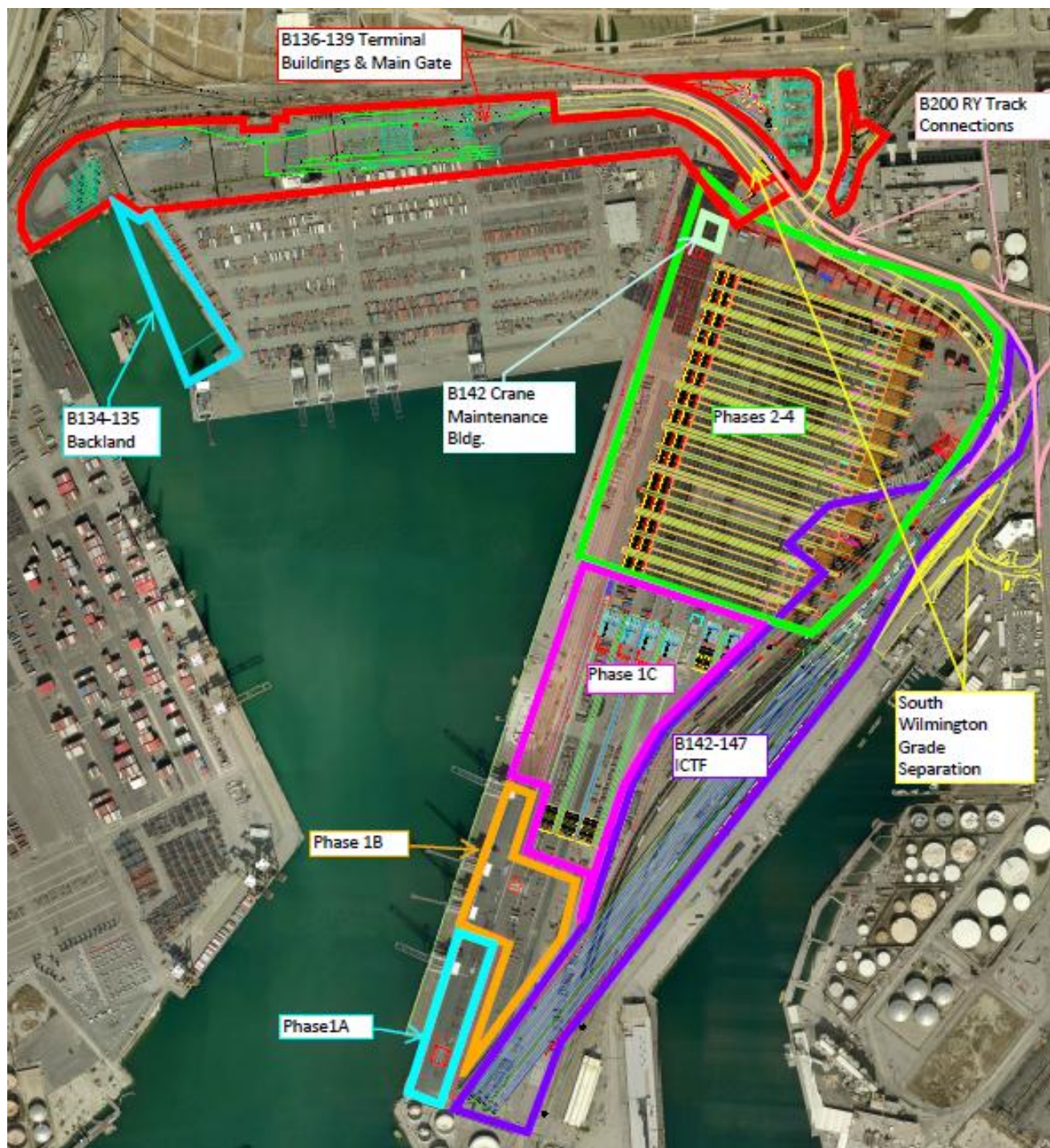
TraPac Terminal Project	Status	Bid & Award	Construction
Berths 142-143 Backland Impr. (Phases 2-4 – Automation)	100% Design	Sept. 2013 – Dec. 2013	Feb. 2014 – Feb. 2018
Berths 142-147 ICTF (Automation)	100% Design	Sept. 2013 – Dec. 2013	Feb. 2014 – Feb. 2016
Berth 142 Crane Maintenance Building	80% Design	Mid 2015 – Early 2016	Early 2016 – Early 2017
Berths 134-135 Backland Terminal	Planning/ Pre-Design	Mid 2015 – Early 2016	Early 2016 – Mid 2017

These projects, in addition to the three under construction (Terminal Buildings and Main Gate, Phase 1B Automation, and Phase 1C Automation), are all moving forward on schedule. Staff will continue to monitor the progress of these projects and report their status on a quarterly basis, implementing any and all cost saving measures available within the scope of our contractual commitments.

EXHIBITS:

- Exhibit 1 TraPac Terminal Projects - Site Map
- Exhibit 2 TraPac Terminal Projects – Status & Cost Breakdown
- Exhibit 3 TraPac Terminal Projects – Cost Increase Breakdown
- Exhibit 4 TraPac Terminal Projects – Estimated Cost Reductions
- Exhibit 5 POLA/POLB Comparison (FYI Only)

Exhibit 1 TraPac Terminal Projects - Site Map



Note Berth 200 Rail Yard & B145-147 Wharf not shown for clarity.

Exhibit 2

TraPac Terminal Projects – Status & Cost Breakdown

TOTAL PROJECT - DESIGN & CONSTRUCTION										
TraPac Terminal Projects		WO	Status	Sept. 2009 (at Lease Execution)	Feb. 2011 Estimate (w/ conventional backland, no automation)	Feb. 2011 Estimate (includes automation)	April 19, 2012 Baseline Budget	Proposed Budget (May 2013)	Delta (Proposed - Baseline)	Grant Funding
1	EIR/EIS and Small Misc Impvs.	24612 25111	Complete	\$5,110,405	\$5,721,025	\$5,721,025	\$5,721,025	\$5,221,189	\$(499,836)	
2	Berths 145 - 147 Wharf Imp., including AMP at B136-139 and B144-147	24242 24898 24943	Complete	\$107,695,285	\$115,075,001	\$115,075,001	\$115,075,000	\$111,931,001	\$(3,143,999)	
3	Berth 147 Backland Impr. (Phase 1A - Automation)	25132	Complete	included in B142 - 143 Backland	included in B142-143 Backland	included in B142 - 143 Backland	\$4,215,000	\$3,641,577	\$(573,423)	
4	Rear Berths 136-139 Terminal Buildings & Main Gate	24585	In Const.	\$36,935,375	\$54,000,000	\$54,000,000	\$62,500,000	\$80,000,000	\$17,500,000	
5	Berths 145 - 147 Backland Impr. (Phase 1B - Automation)	25143	In Const.	included in B142 - 143 Backland	included in B142-143 Backland	included in B142 - 143 Backland	\$19,870,000	\$13,862,310	\$(6,007,690)	
6	Berths 144 - 145 Backland Impr. (Phase 1C - Automation)	25131	In Const.	included in B142 - 143 Backland	included in B142-143 Backland	included in B142 - 143 Backland	\$26,595,000	\$50,034,494	\$23,439,494	\$12,705,000
7	Berths 142 - 143 Backland Impr. (Phases 2 - 4 Automation)	24498	In Design	\$52,503,000	\$86,068,125	\$118,500,000	\$79,340,000	\$143,422,405	\$64,082,405	\$26,664,000
8	Berths 142 - 147 ICTF (Automation)	24551	In Design	\$36,807,446	\$40,426,000	\$40,426,000	\$40,426,000	\$85,865,560	\$45,439,560	\$20,712,000
9	Berth 142 Crane Maintenance Building	25177	In Design	included in B142 - 143 Backland	included in B142-143 Backland	included in B142 - 143 Backland	included in B142 - 143 Backland	\$5,680,302	\$5,680,302	
10	Berths 134 - 135 Backland Expansion	25138	Pre-Design	\$11,258,894	\$10,753,500	\$10,753,500	\$10,753,500	\$10,753,500	\$	
	GRAND TOTAL			\$250,310,405	\$312,043,651	\$344,475,526	\$364,495,525	\$510,412,338	\$145,916,813	\$60,081,000
							Increase in Total Project Budget		40.0%	
	Grant Funding							\$60,081,000		
	POLA SHARE			\$250,310,405		\$344,475,526	\$364,495,525	\$450,331,338		
							Increase in POLA Share		23.5%	

*Cost w/o EIR: \$245,200,000

Exhibit 3

TraPac Terminal Projects - Cost Increase Breakdown

		Current Estimate	Baseline Estimate	Delta
Electrical System (\$52 M Increase)				
Phase 1C	Electrical System	\$ 12,404,000	\$ 2,398,600	\$ 10,005,400
	New & Relocated HMP	\$ 780,000	\$ 584,000	\$ 196,000
Phs 2-4	Conduit, Wires, Cables, Ductbanks, MHs)	\$ 21,400,000	\$ 5,213,300	\$ 16,186,700
	Equipment (Switchgears, Meters, Substations)	\$ 10,700,000	\$ 4,000,000	\$ 6,700,000
	New & Relocated HMP	\$ 2,160,000	\$ 1,386,000	\$ 774,000
ICTF	Conduit, Wires, Cables, Ductbanks, MHs)	\$ 5,980,000	\$ 425,000	\$ 5,555,000
	Equipment (Switchgears, Meters, Substations)	\$ 11,400,000	\$ 200,000	\$ 11,200,000
	New & Relocated HMP	\$ 2,260,000	\$ 800,000	\$ 1,460,000
	Subtotal	\$ 67,084,000	\$ 15,006,900	\$ 52,077,100
Storm Drain System (\$12.9 M Increase)				
Phase 1C	SD System, including Geotextile	\$ 4,230,000	\$ 346,000	\$ 3,884,000
Phases 2-4	SD System, including Geotextile	\$ 6,200,000	\$ 740,000	\$ 5,460,000
ICTF		\$ 4,100,000	\$ 540,000	\$ 3,560,000
	Subtotal	\$ 14,530,000	\$ 1,626,000	\$ 12,904,000
Concrete Pavement & Foundations (\$20.8 M Increase)				
Phases 1B & 1C	Concrete Pavement	\$ 6,036,340	\$ 1,500,000	\$ 4,536,340
Phases 2-4	Concrete Pavement	\$ 6,500,000	\$ 1,100,000	\$ 5,400,000
ICTF	RMG Rail Foundation (Ties/Ballast to Concr. Beam)	\$ 6,000,000	\$ 700,000	\$ 5,300,000
	Building Foundation (Matt to Piles)	\$ 600,000	\$ 200,000	\$ 400,000
	Surcharge	\$ 3,000,000		\$ 3,000,000
	Crane Maintenance Building (Matt Foundation to Piles)	\$ 2,500,000	\$ 300,000	\$ 2,200,000
	Subtotal	\$ 24,636,340	\$ 3,800,000	\$ 20,836,340
Water/Fire Protection System, Los Angeles Fire Department (\$4.8 M Increase)				
Phase 1C	Water Distribution System	\$ 1,206,000	\$ 300,000	\$ 906,000
Phases 2-4	Water Distribution System	\$ 4,800,000	\$ 920,000	\$ 3,880,000
	Subtotal	\$ 6,006,000	\$ 1,220,000	\$ 4,786,000
Safety Fencing and Specialty Gates (\$3.1 M Increase)				
Phase 1C		\$ 777,819	\$ 100,300	\$ 677,519
Phases 2-4		\$ 1,900,000	\$ 152,000	\$ 1,748,000
ICTF		\$ 1,200,000	\$ 500,000	\$ 700,000
	Subtotal	\$ 3,877,819	\$ 752,300	\$ 3,125,519
Construction Inflation Subtotal		\$ 8,600,000		\$ 8,600,000
Phasing, Specialty Design, Construction Management, misc (\$43.6 M Increase)				
Phase 1C	Reefer Racks	\$ 2,229,000	\$ 1,000,000	\$ 1,229,000
	Booth & weight activated pad for trucker safety	\$ 78,900		\$ 78,900
	Prefabricated Walkways	\$ 110,000		\$ 110,000
	10% Contingency at Award	\$ 3,839,954		\$ 3,839,954
Phs 2-4	Additional Design/Construction Support	\$ 2,000,000		\$ 2,000,000
	Reefer Racks	\$ 8,700,000	\$ 4,000,000	\$ 4,700,000
	Phasing/Mobilization 10%	\$ 8,000,000		\$ 8,000,000
	Booth & weight activated pad for trucker safety	\$ 230,000		\$ 230,000
	Prefabricated Walkways	\$ 400,000		\$ 400,000
	Contingency/Allowance	\$ 8,000,000	\$ 6,000,000	\$ 2,000,000
	10% Contingency at Award	\$ 11,000,000		\$ 11,000,000
ICTF	Additional Design/Construction Support	\$ 1,500,000		\$ 1,500,000
	Contingency/Allowance	\$ 5,000,000	\$ 3,500,000	\$ 1,500,000
	10% Contingency at Award	\$ 7,000,000		\$ 7,000,000
	Subtotal	\$ 58,087,854	\$ 14,500,000	\$ 43,587,854
GRAND TOTAL				\$ 145,916,813

Exhibit 4

TraPac Terminal Projects – Estimated Cost Reductions

Project	Status	Description	Estimated Cost Reduction*	Notes
Berths 144-145 Backland Impr. (Phase 1C – Automation)	In Construction	Storm Drain System	\$ 600,000	Material substitution, CM to verify amount
		Subtotal	\$ 600,000	
Berths 142-143 Backland Impr. (Phases 2-4 Automation)	In Construction	Demo & Dispose AC pvmt	\$ 650,000	Reduced volume
		Excavation	\$ 75,000	Reduced volume
		Asphalt Concrete pvmt	\$ 400,000	Reduced quantity
		CMB	\$ 626,000	Maximized Department furnished CMB
		Curb in Rows	\$ 890,000	Eliminated
		Concrete pvmt & Misc Concrete	\$ 620,000	Reduced quantity
		Ballast, Subballast, Crushed Rock	\$ 920,000	Reduced quantity & adjusted unit costs per Ph 1C bids
		Reefer Racks	\$ 3,665,000	Reduced quantity, modified design
		Container Corridor	\$ 220,000	Reduced quantity
		Concrete barriers, pvmt markings, tire stops	\$ 166,000	Reduced quantity
		Fencing, gates, railings	\$ 790,000	Reduced quantity & adjusted unit costs per Ph 1C bids
		Storm Drain System	\$ 3,700,000	Material substitution (HDPE)
		Mobilization/Phasing	\$ 7,750,000	Reduced from 15% to 10% of subtotal
		Electrical System	\$ 13,860,000	Re-evaluated materials & equipment, adjusted unit costs
		Contingency	\$ 5,000,000	Reduced contingency
Subtotal	\$ 39,332,000			
Berths 142-147 ICTF (Automation)	100% Design	RMG Rail System	\$ 5,900,000	Modified foundation & unit costs (TraPac agreed to increase # of wheels from 6 to 8 on RMGs to accommodate the change in design)
		Rail	\$ 240,000	Refined estimate due to design
		Storm Drain System	\$ 343,000	Material substitution (HDPE)
		Surcharge Material	\$ 1,500,000	Replaced with onsite construction material
		Slurry Seal - deleted	\$ 100,000	Modified AC mix, to not require slurry seal
		Contingency	\$ 1,700,000	Reduced contingency
		Subtotal	\$ 9,783,000	
TOTAL			\$ 49,715,000	

*Estimated Cost Reductions are estimates only