



CAC

Construction Update

September 9, 2014

Transbay Transit Center

TJPA





Transbay Transit Center Phase 1 Construction (\$ millions)

Awarded to Date (direct cost):

Transit Center	\$650.32
Utility Relocations	\$20.06
Demolition Old Terminal	\$16.48
Temporary Terminal	\$20.65
Bus Ramp	\$56.23
Total	\$763.74
<u>Recommended Award Sept. 2014</u>	<u>\$34.70</u>
Total Potential Award through Sept. 2014	\$798.44

Upcoming TTC Trade Packages:

Budget	\$247.80
CM/GC Estimate*	\$284.61
Balance	\$36.81

Roof Top Park (above slab elements): \$38.00

*Amount does not include above slab roof-top-park elements



Trade Package Awards since May 2014

(\$ millions)

Trade Package	Budget	CMGC Estimate	Recommended Award	CM/GC vs Award Over/(Under)
Awarded June to August 2014	\$34.16	\$47.52	\$50.04	\$2.52
Recommended for Award September 2014:				
TG10.2 – Plumbing	\$15.69	\$24.33	\$15.78	(\$8.55)
TG10.3 – “Mechanical/HVAC”	\$13.04	\$12.32	\$12.06	(\$0.26)
TG10.5 – “Fire Sprinklers & Suppression”	\$7.09	\$9.03	\$6.86	(\$2.17)
TOTAL	\$69.98	\$93.20	\$84.74	(\$8.46)



Status of Contingencies & Reserves (\$ millions)

	Board Approved Budget July 2013	Current Balance Sept. 2014	Mitigation Plan (May 2014)	Mitigation Plan (Sept. 2014)*	Projected Balance after Final Award*
Design Contingency	\$8.2	\$6.4	\$3.1	\$3.1	\$0.0
Construction Contingency	\$62.5	\$59.2	(\$30.0)	(\$21.5)	\$37.7
CM/GC Contingency	\$36.4	\$35.0	\$6.4	\$6.4	\$41.4
Program Reserve	\$87.5	\$43.0	(\$59.7)	(\$59.7)	\$15.0
Escalation	\$30.3	\$27.7	(\$1.8)	(\$1.8)	\$0.0
TOTAL	\$224.9	\$171.5	(\$82.0)	(\$73.5)	\$94.1

*Assumes Board award of September 2014 trade packages

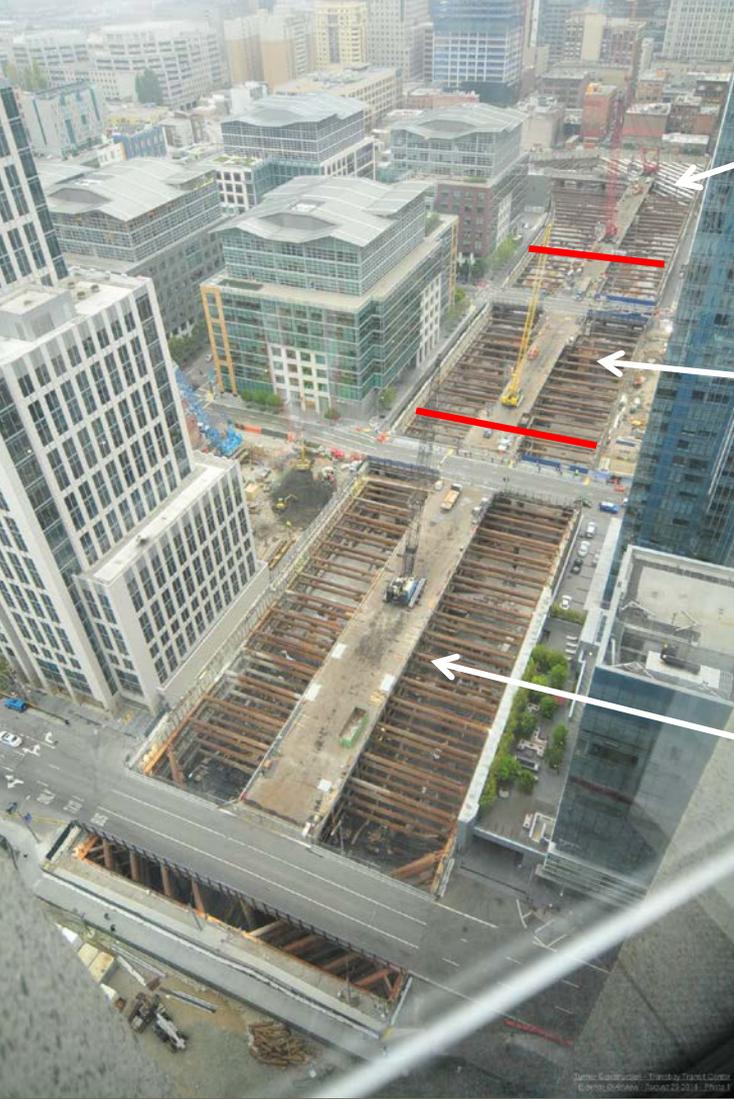


Questions



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Current Project Overview



Western Zone – Gridlines 1 to 10

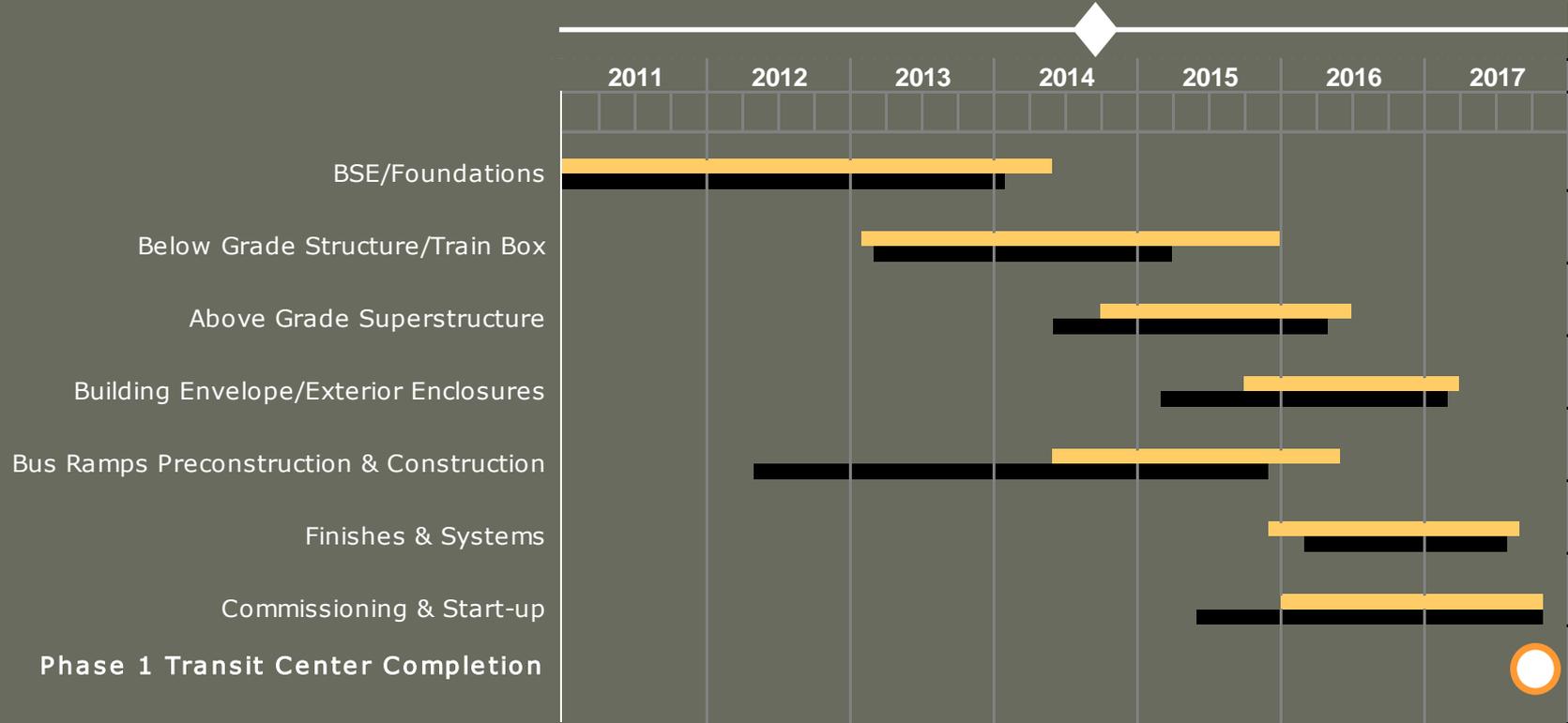
Central Zone – Gridlines 10 to 20

Eastern Zone – Gridlines 20 to 35



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Project Status – Construction Schedule (Critical Items*)



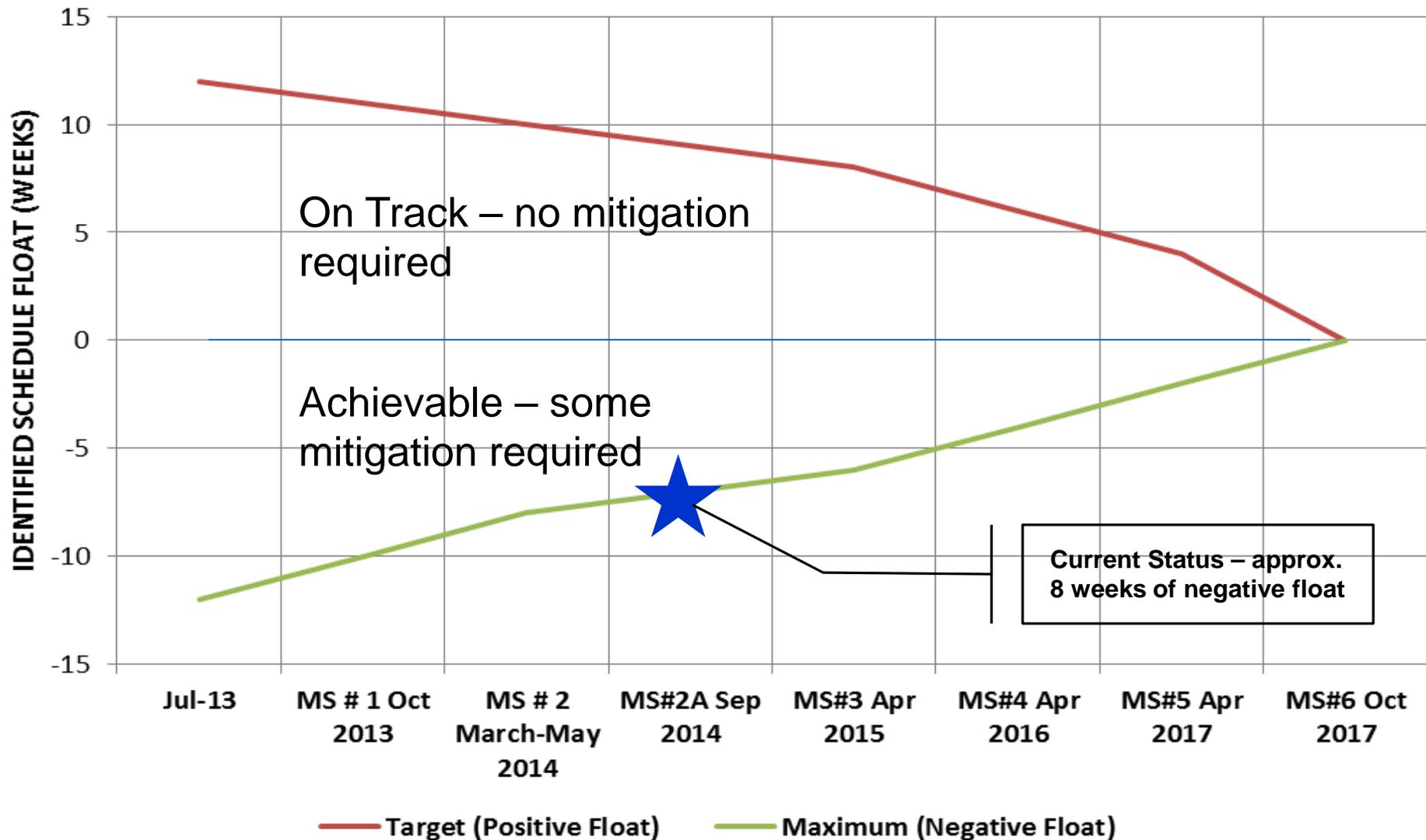
* The current critical path of the project is as follows; structural steel fabrication (GL's 10 -16), central zone lift 3 walls, structural steel fabrication (GL's 16 – 20) and eastern zone train box mat slab, walls lifts 1 & 2 and re-bracing.

Current Schedule
 Baseline Schedule



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Project Status – Schedule Float Drawdown





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Project Status – Contingency Tracking (\$millions)

Trend	Design Contingency	Construction Contingency	CM/GC Contingency	Program Reserve	Escalation	Total Contingency & Reserve
Baseline Budget Amounts (July 2013)	\$8.2	\$62.5	\$36.4	\$87.5	\$30.3	\$224.9
Contingency Usage Through June 2014	(\$1.7)	(\$1.8)	(\$1.1)	(\$28.6)	(\$0.0)	(\$33.2)
Remaining Baseline Budget Amounts (June 2014)	\$6.5	\$60.7	\$35.3	\$58.9	\$30.3	191.7
Utility Relocation Change Orders		(\$0.5)				(\$0.5)
BGS Change Orders		(\$1.0)				(\$1.0)
BSE Change Orders			(\$0.1)			(\$0.1)
5 Trade Package Awards (7/10/14)	(\$0.1)			(\$15.9)	(\$2.6)	(\$18.6)
Total Draws Jul/Aug 14	(\$0.1)	(\$1.5)	(\$0.1)	(\$15.9)	(\$2.6)	(\$20.3)
Remaining Balances	\$6.4	\$59.2	\$35.2	\$43.0	\$27.7	\$171.5



Project Status – Safety Statistics

	2011	2012	2013	2014 (through Aug. 31 st)
Total Craft Hours by Year	203,560	421,488	315,000	227,171
Number of Recordable Incidents	3	6	3	10
Number of Lost Time Incidents	1	0	0	2
WO Project Annual RIR / National Annual BLS RIR Average / California RIR Average	2.95 / 3.10 / 3.8	2.85 / 3.20 / 3.6	1.90 / tbd* / tbd*	n/a
WO Project Annual LTIR / National Annual BLS LTIR Average / California LTIR Average	0.98 / 0.90 / 1.8	0.00 / 1.10 / 1.7	0.00 / tbd* / tbd*	n/a

NOTES:

RIR = recordable incident rate, LTIR = lost time incident rate.

These rates are calculated as follows: RIR and LTIR = (# of recordable or lost time incidents for the year X 200,000) / actual hours worked.

* BLS is the Bureau of Labor Statistics, U.S. Department of Labor and State of California, it takes these agencies more than 18 months to produce the statistics after year's end. As a result, 2013 statistics are not yet available.



Period Summary

There were two recordable safety incidents this period. One worker tripped and fell injuring their wrist. Another suffered a dislocated shoulder while relocating a large project sign. Corrective actions have been implemented.

Lower Concourse concrete slab placement is 80% in the central zone of the project. Third lift train box walls and re-bracing are now occurring in this area.

There have been over 1,169,000 craft hours completed, excluding demolition, through August 31, 2014. An increase of over 69,000 hours since our last construction update in July.

The initial trial assembly of the perimeter Basket Columns, made up of pipe columns and cast nodes, began this period in Oregon.



Period Summary

Wall lifts 1 & 2 and column concrete placement between the Rail Level and the Lower Concourse was completed in the western zone this period allowing for the continued installation of the Lower Concourse decking.

The first 12 of 36 Lower Concourse decks have been completed.

In the eastern zone, wall lifts 1 & 2 are in progress followed by re-bracing and column placement.

Also in eastern zone, waterproofing and protection slab work has been completed. Mat foundation sections 13, 14 and 15 were also completed this period.

The final mat foundation section, 16, is currently scheduled to be placed on September 27th.



Below Grade Concrete Progress Through August 29, 2014

Steel Erection Zones	1st Lift Walls	1st Lift Walls Poured	1st Lift Walls Percent	2nd Lift Walls	2nd Lift Walls Poured	2nd Lift Walls Percent	3rd Lift Walls	3rd Lift Walls Poured	3rd Lift Walls Percent
Western	35	35	100%	35	35	100%	35	2	6%
Central	20	20	100%	20	18	90%	20	4	20%
Eastern	35	8	23%	35	0	0%	35	0	0%
Total	90	63	70%	90	53	59%	90	6	7%

Steel Erection Zones	Columns	Columns Poured	Columns Percent	Lower Concourse Decks	Lower Concourse Poured	Lower Concourse Percent
Western	62	62	100%	10	4	40%
Central	48	44	92%	10	8	80%
Eastern	66	0	0%	16	0	0%
Total	176	106	60%	36	12	33%



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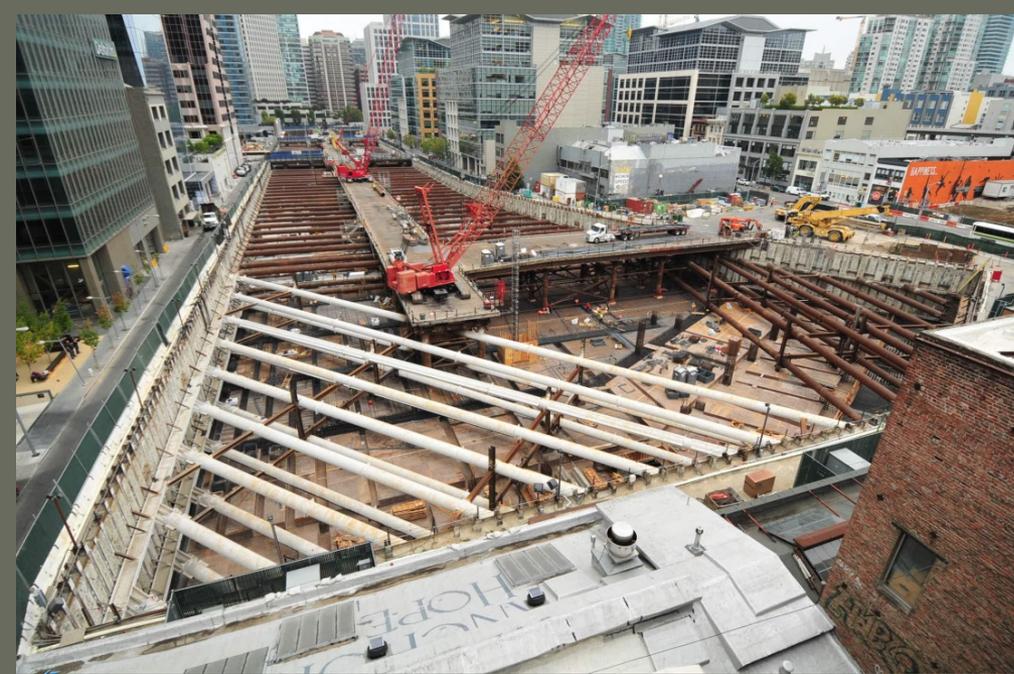
Western Zone Activity



Completion of perimeter lift 2 walls and internal concrete walls prior to start of Lower Concourse decking.



Western Zone Activity



Primary focus in the western zone has been the completion of the Lower Concourse level decking for concrete placement.



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Central Zone Activity



Rail Level in central zone is clear of internal bracing.



Central Zone Activity



Completion of 80% of the central zone lower concourse level slab has allowed for the placement of 3rd lift foundation walls and re-bracing. These are the items that need to be completed prior to start of structural steel.

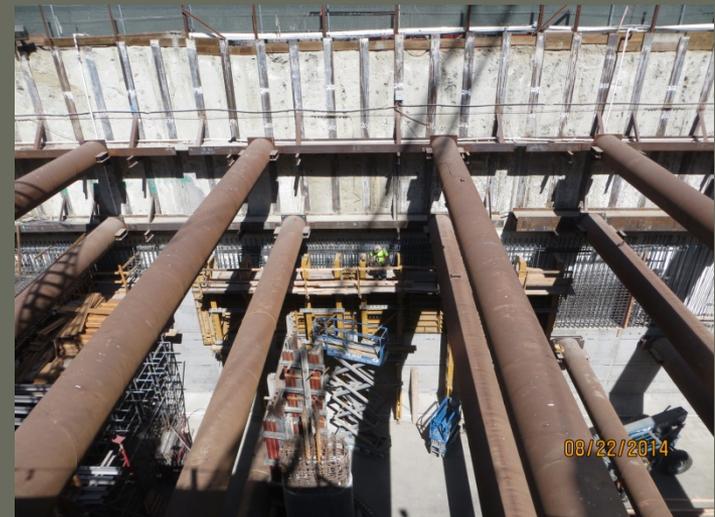


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Eastern Zone Activity

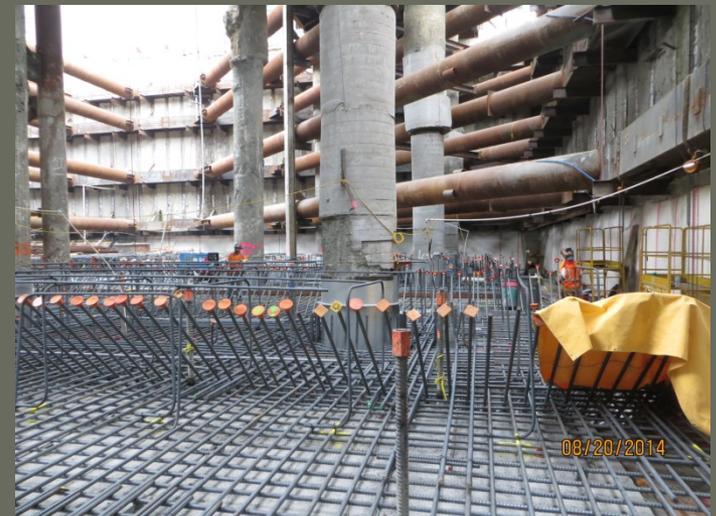


Eastern zone bracing removal, 1st and 2nd lift wall construction.





Eastern Zone Activity

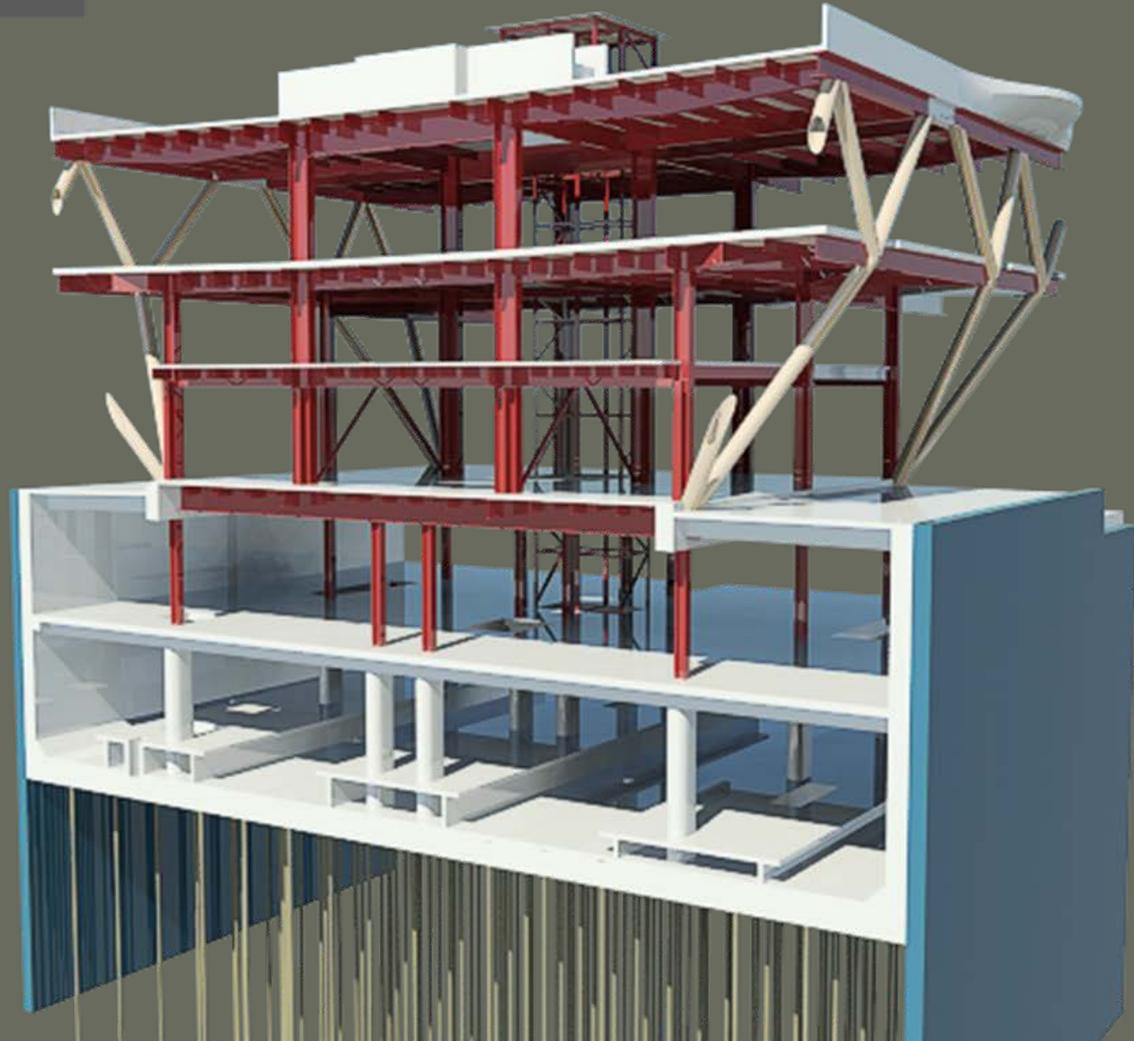


Mat foundation slab placement #15,
reinforcing steel for mat foundation
pour #16 (the last one).



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Structural Steel and Cast Nodes





Structural Steel Fabrication

Steel Fabrication

- Continue cast node fabrication in Louisiana and Kansas.
- Continue cast node shipments to Oregon and Washington.
- Continue fabrication of structural steel in Oregon and Washington.
- Continue fabrication of structural steel in Vallejo, CA.
- Continue fabrication of structural steel in San Bernardino, CA.

Steel Erection : West of First Street

October 2014 – Deliver steel sections and start erection below street level near Shaw Alley.

Steel Erection : First – Fremont

February 2015 – Deliver steel sections and start erection First St. to Fremont St.

Steel Erection : Fremont – Beale

October 2015 – Deliver steel sections and start erection Fremont St. to Beale St.



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Structural Steel Fabrication



Work Proceeding at Oregon Ironworks – robot welding, cast node with attachment plates, cast node attached to pipe column.



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Structural Steel Fabrication



Initial Trial Assembly of Basket Columns.





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Structural Steel Fabrication



Tapered Beam in fabrication at Herrick shop in Southern California and Column (Lower Concourse to Transfer Girder) in fabrication at XKT shop in Vallejo.



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Cast Node Fabrication as of August 31, 2014

Casting Group	Totals	In-Process Pattern Completion	In-Process Casting and Machining	Release 1 Shipments Mar.-May	Release 2 Shipment May-June	Release 3 Shipment August	Release 4 Shipment October	Release 5 Shipment December	Release 6 Shipment December	Total Shipped to Date
Ground Level - Atchison 19,600 - 46,300 lbs	35	16	5	8	6	8	0	0	0	22
Bus Deck - Amite 9,500 - 22,800 lbs	75	32	23	16	5	10	0	0	0	31
Roof Level - Atchison 4,400 - 5,400 lbs	138	2	24	32	32	14	0	0	0	78
Light Columns	56	27	48	N/A	0	8	0	0	0	8
Totals	304	77	100	56	43	40	0	0	0	139

Note: In-Process Casting quantity does not include already shipped nodes.



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Cast Node Fabrication



Bradken workers with Type 21 A/B Node in Amite Foundry

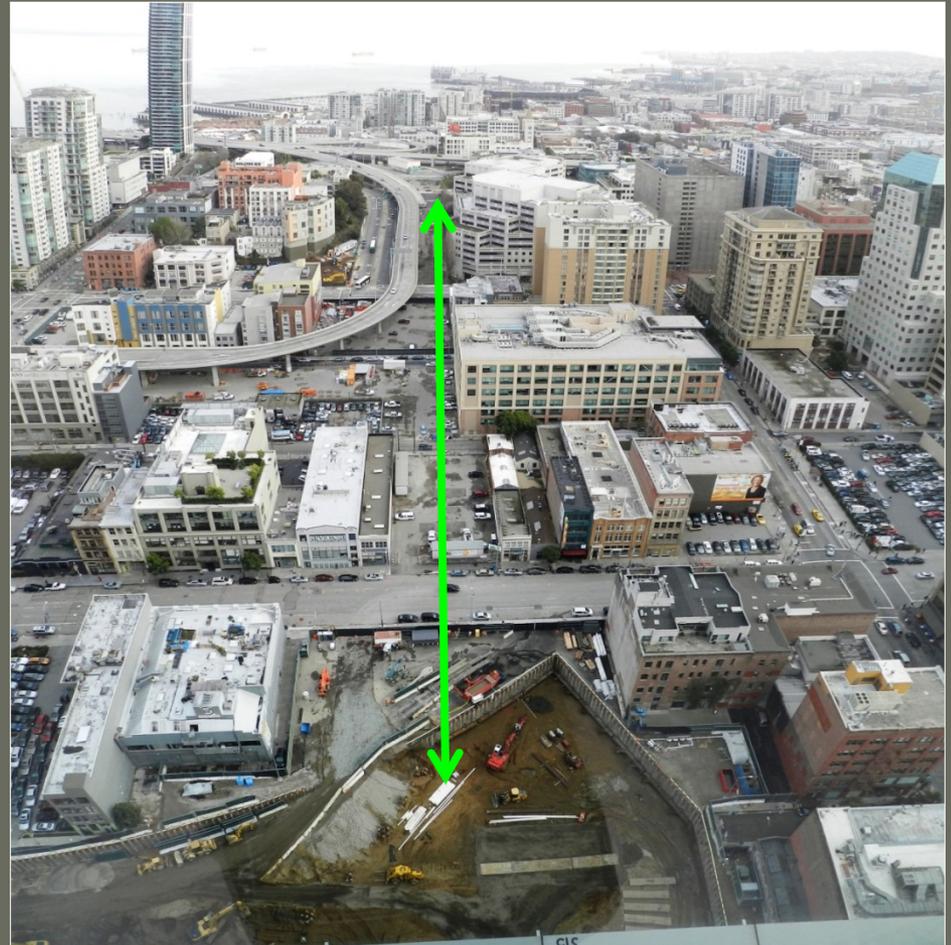
QA Team with Light Column Node



Bus Ramps and Bridge

Current Status

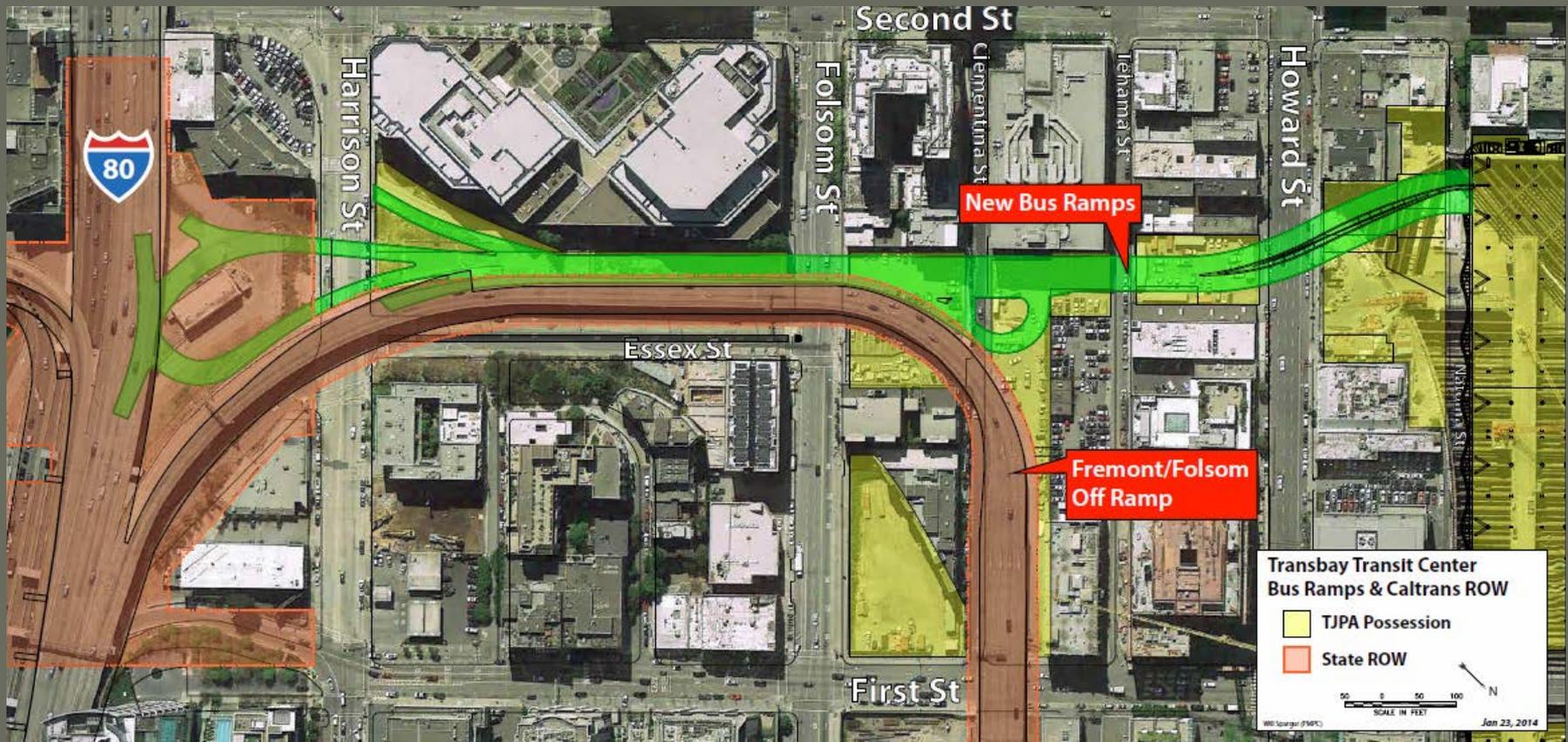
- Contractor submittals in progress.
- Contractor has mobilized and begun demolition of portions of original bus ramp foundations.
- Mobilization of CIDH pile contractor as well as Barrette Pile contractor





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Bus Ramps and Bridge



Bus Ramps / Viaduct Layout



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Bus Ramps and Bridge



Cable-Stayed Structure crossing Howard Street.





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Bus Ramps and Bridge



Installation of shoring at Pylon 9 location in preparation for Barrette Pile installation work has been completed. Cable-stayed pylon structure requires the specialized *barrette pile* foundation to accommodate lateral seismic forces without impacting train box.





Utility Relocation - AWSS Installation Update

- PG&E has completed the re-routing of their conflict and AWSS work, that has been idle since June 24th will re-start Sept. 7, 2014 and continue at night at the direction of SFMTA/MUNI to accommodate bus traffic.
- Fremont to Beale Street along Mission Street remains and is anticipated to be completed by end of September.



Construction

The Next 90 Days

Next 30 Days (Sept.)

- Continue Lower Concourse decking, rebar and concrete in the western zone.
- Continue foundation walls (lift 3) and re-bracing in the central zone.
- Continue foundation walls (lifts 1 & 2) and columns in the eastern zone.
- Place final mat slab, #16, in zone 4.
- Continue waterproofing for wall lifts 1, 2 and 3 in all areas.
- Continue Structural Steel and Cast Node fabrication.
- Continue Bus Ramp work between Harrison and Howard Streets.
- Complete AWSS Work along Mission Street.

Next 60-90 Days (Oct. – Nov.)

- Continue concrete foundation walls and columns of the train box at various levels in west, central and eastern zones.
- Continue Lower Concourse decking, rebar and concrete in western and eastern zones.
- Continue re-bracing in western and eastern zones.
- Continue Bus Ramp and Bridge work; CIDH and Barrette Piles.
- Continue Structural Steel and Cast Node fabrication.
- Deliver and erect Structural Steel gridlines 10 to 12.



Bay Area Regional Labor Breakdown

	Through August 2014	
Location	Total Hours Completed	Percent of Total
East Bay (Alameda, Contra Costa, Solano)	394,320	34%
North Bay (Marin, Napa, Sonoma)	39,868	3%
South Bay (San Mateo, Santa Clara)	105,324	9%
San Francisco	209,376	18%
Other*	420,927	36%
Totals	1,169,815**	100%

*Other includes workers from throughout California including the Central Valley as well as workers from out of state who are onsite for specific tasks.

**Total hours are for the Transit Center construction work and do not include the initial Demolition work represented by a total of approximately 55,000 craft hours.



Bay Area Regional Apprentice Hours Breakdown

	Through August 2014	
Location	Total Apprentice Hours	Percent of Total
East Bay (Alameda, Contra Costa, Solano)	47,596	26%
North Bay (Marin, Napa, Sonoma)	7,638	4%
South Bay (San Mateo, Santa Clara)	27,915	15%
San Francisco	62,024	34%
Other*	39,555	21%
Totals	184,728	100%

*Other includes workers from throughout California including the Central Valley as well as workers from out of state who are onsite for specific tasks.



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Labor Breakdown by Trade through August 2014

Classification	TTC Building and RUP's*
Inspectors – Soils / Material Test	43
Carpenters and Related Trades	170
Cement Mason	64
Electrical – Utility Lineman	28
Electrician	46
Field Surveyor	34
Iron Worker	327
Laborer and Related Trades	634
Operating Engineer	373
Pile Drivers	151
Plumber	18
Roofer and Waterproofer	39
Sheet Metal	5
Teamsters	166
Tile Setters / Finishers	7
Water Well Driller	9
Totals	2,114

* Relocation of Utilities Project



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Questions?

