



# Construction Update

March 12, 2015

## Transbay Transit Center

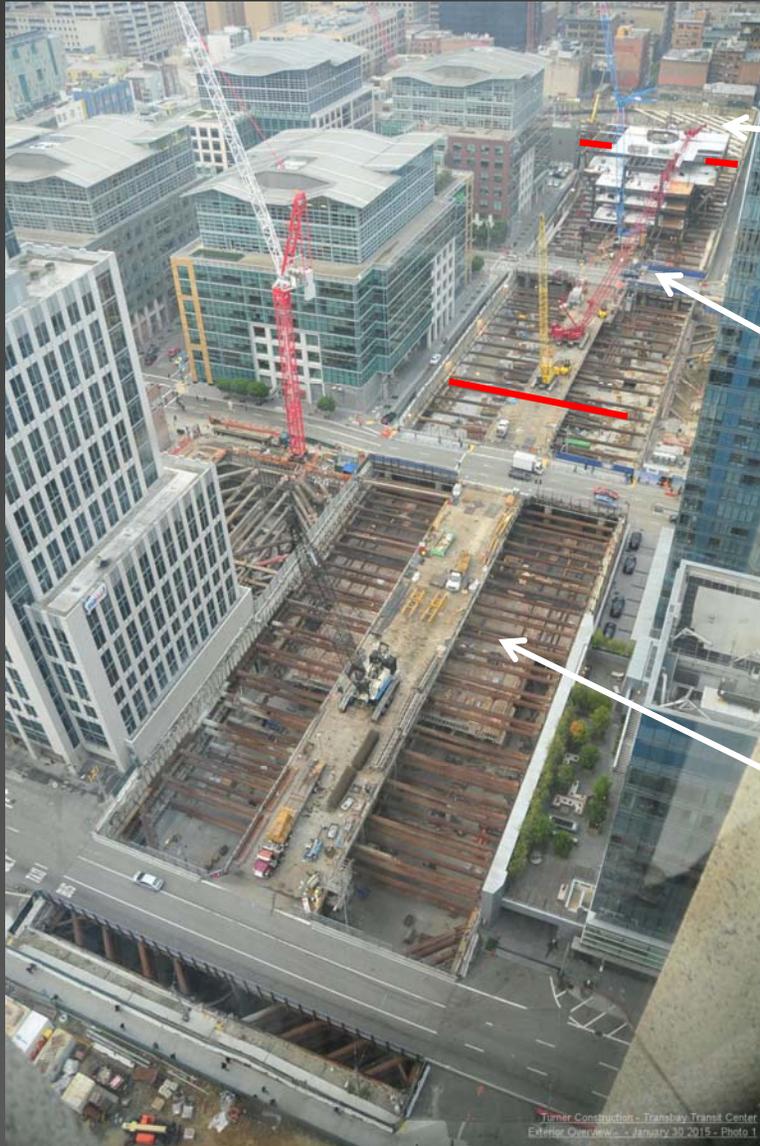
**TJPA**





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# Current Project Overview



Western Zone – Gridlines 1 to 10

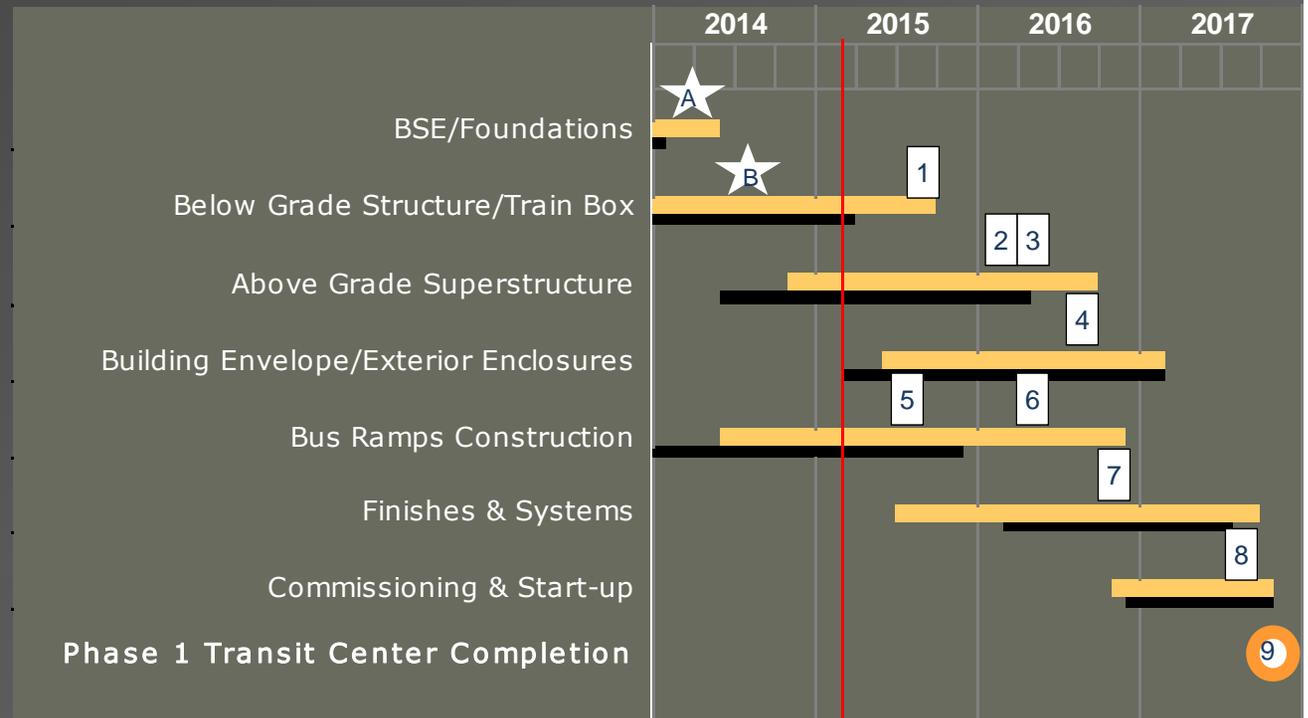
Central Zone – Gridlines 10 to 20

Eastern Zone – Gridlines 20 to 35



# Project Status – Schedule

#	Milestone	Current
1	Complete TG 6.0 Below Grade Concrete	Q4 2015
2	Complete Structural Steel Erection and Welding	Q1 2016
3	Complete Above Grade Concrete	Q2 2016
4	Building Watertight	Q3 2016
5	Complete Bus Ramp Below Grade Concrete	Q3 2015
6	Complete Bus Ramp Viaduct and Cable Stay Bridge	Q2 2016
7	Permanent Power to Building	Q4 2016
8	Building Ready for Bus Driver Training	Q3 2017
9	Substantial Completion	Q4 2017



\* The current critical path of the project is as follows; structural steel fabrication and erection (GL's 10 - 20), western zone steel erection GL 1 – 10 and eastern zone wall lift 2, lower concourse slab, wall lift 3 and re-bracing.

Current Schedule   
 Baseline Schedule

★ = Completed Work; A) excavation through “rat” slab installation (re-bracing remains). B) mat foundation slabs.



# Project Status – Active Milestones

#	Milestone	Planned	Actual / Current
1	Complete TG 6.0 Below Grade Concrete	Q3 2015	Q4 2015
	Milestone Activity Start	March 2013	Jul 17, 2013 (A)
	Milestone Activity Finish	June 2015	November 2015
	Percent Complete as of Feb. 28, 2015	80%	91%
2	Complete Structural Steel Erection and Welding	Q1 2016	Q1 2016
	Milestone Activity Start	July 2014	Oct. 29, 2014 (A)
	Milestone Activity Finish	Dec. 2015	Mar 2016
	Percent Complete as of Feb. 28, 2015	44%	18%



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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 Jan. 2015	(\$3.1)	(\$8.3)	(\$1.7)	(\$72.5)	(\$9.5)	(\$95.1)
Remaining Baseline Budget Amounts (Jan. 2015)	\$5.1	\$54.2	\$34.7	\$15.0	\$20.8	\$129.8
Award of TG08.9	(\$0.0)				(\$0.1)	(\$0.1)
BGS Change Orders		(\$1.1)				(\$1.1)
Total Draws/Addrs February 2015	(\$0.0)	(\$1.1)	\$0	\$0	(\$0.1)	(\$1.3)
Remaining Balances	\$5.1	\$53.1	\$34.7	\$15.0	\$20.7	\$128.6



# Project Status – Safety Statistics

	2010 / 2011 / 2012	2013	2014	2015 (through Feb. 28 <sup>th</sup> )
<b>Total Craft Hours by Year</b>	<b>627,744</b>	<b>315,000</b>	<b>375,615</b>	<b>47,459</b>
<b>Number of Recordable Incidents</b>	<b>9</b>	<b>3</b>	<b>13</b>	<b>1</b>
<b>Number of Lost Time Incidents</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>
<b>WO Project Annual RIR / National Annual BLS RIR Average / California RIR Average</b>	<b>2.87 / 3.6 / 3.8</b>	<b>1.90 / 3.8 / 4.0</b>	<b>6.92 / tbd / tbd</b>	<b>tbd / tbd / tbd</b>
<b>WO Project Annual LTIR / National Annual BLS LTIR Average / California LTIR Average</b>	<b>0.32 / 1.9 / 1.8</b>	<b>0.00 / 1.8 / 1.7</b>	<b>1.60 / tbd / tbd</b>	<b>tbd / tbd / tbd</b>

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.



# Period Summary

- There were no recordable or lost time safety incidents this period. There was a single first aid case. It was a back strain suffered by a Shimmick employee. The incident has been reviewed and corrective action has been taken.
- There have been over 1,365,000 craft hours completed, excluding demolition, through February 28, 2015. This is an increase of over 16,000 hours since our last construction update.
- Steel fabrication continues in all Structural Steel fabrication shops.
- For structural steel erection, the access trestle disassembly work continues and has been completed between gridlines 10 and 17. Next phase of disassembly work is on hold pending erection of steel over First Street.
- Structural steel erection with Crane #1 continues and is currently in progress between gridlines 10 and 17. Crane #2 will arrive and be built up beginning 3/3/15 for steel erection from gridlines 10 to 1.



## Period Summary

- In the eastern zone, wall lift 2 work continues, followed by re-bracing and Lower Concourse formwork. Column concrete placement also continues in this area.
- In the western zone, work on the vehicle / bike ramp as well as interior walls and A level re-bracing continues.
- TG 7.2, above grade concrete, work continues with waterproofing and reinforcing steel for 4<sup>th</sup> lift walls between gridlines 7 and 17.
- In the eastern zone, the next Lower Concourse slab placement is scheduled for March 21<sup>st</sup>. Total placement of lower concourse slabs is over 75% complete with 27 of 36 finished. Lower Concourse concrete placement is scheduled to complete in June.
- On the Bus Ramp / Bridge project, reinforcing steel for pylon 9 is partially installed and 15 of 29 CIDH piles have been completed for the ramp viaduct structure.



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# Below Grade Concrete Progress Through February 28, 2015

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	35	100%
Central	20	20	100%	20	20	100%	20	20	100%
Eastern	35	35	100%	35	20	57%	35	10	29%
<b>Total</b>	<b>90</b>	<b>90</b>	<b>100%</b>	<b>90</b>	<b>75</b>	<b>83%</b>	<b>90</b>	<b>65</b>	<b>72%</b>

Steel Erection Zones	Columns	Columns Poured	Columns Percent	Lower Concourse Decks	Lower Concourse Poured	Lower Concourse Percent
Western	62	62	100%	10	10	100%
Central	48	48	100%	10	10	100%
Eastern	66	50	76%	16	7	44%
<b>Total</b>	<b>176</b>	<b>160</b>	<b>91%</b>	<b>36</b>	<b>27</b>	<b>75%</b>



Above Left and Right: Work progressing on vehicle and bike ramps.

Below Right: Bracing removal in the southwest corner of the project.





Above Left and Right: Continued steel erection activities.

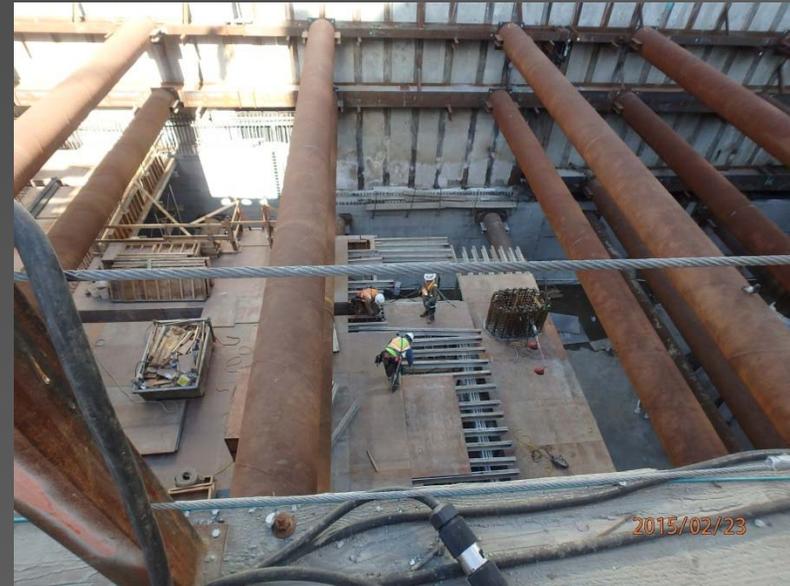
Below Right: Continued steel erection and waterproofing for fourth lift walls progressing from Central Zone into Western Zone.





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# Eastern Zone Activity



Above: Reinforcing and waterproofing installation for 3<sup>rd</sup> lift walls.

Above Right: Lower concourse formwork in progress.

Below Right: Re-bracing with raker in progress after first lift walls complete.





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# Ongoing Structural Steel Fabrication



Above and Right: Lower ring of light column, XKT facility in Vallejo, CA.





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# Cast Node Fabrication as of February 28, 2015

Casting Group	Totals	Shipments Mar.-May	Shipment May-June	Shipment August	Shipment September - October	Shipment November - December	Shipment January - February	Total Shipped to Date
Ground Level - Atchison 19,600 - 46,300 lbs	35	8	6	8	2	0	3	27
Bus Deck - Amite 9,500 - 22,800 lbs	75	16	5	10	16	8	5	60
Roof Level - Atchison 4,400 - 5,400 lbs	138	32	32	14	24	12	8	122
Light Columns	56	0	0	8	0	33	15	56
Totals	304	56	43	40	42	53	31	265

Of the 304 total cast nodes required for the project, a total of 265, or 84%, have shipped to the structural steel fabricators. There are 39 nodes remaining.



# Cast Node Fabrication



Above and Right: One of the largest cast nodes (approximately 20 tons) prepared for transit to the steel fabricators in Oregon. Eventually will be installed at the east end of the project along Beale Street.





## Bus Ramp and Bridge as of February 28, 2015

- Current Status
  - Contractor completed demolition of the necessary portions of the original bus ramp foundations and off-ramps.
  - CIDH Piles in progress, total of 15 CIDH piles completed through February 28<sup>th</sup>.
  - Two columns pours have occurred at Bent 5.
  - CIDH Piles will continue over the next 30 to 45 days.
  - Pylon 9 pile cap and reinforcing steel installation has begun.
  - Cable stay bridge materials are in fabrication.





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# Bus Ramp and Bridge



Above: Pylon 9 pile cap and start of reinforcing steel.

Above Right: Demolition of a portion of the Fremont off-ramp.

Below Right: Form in place for first above grade bus ramp support.





# Construction

## The Next 90 Days

- Next 30 Days (Mar.)
  - Continue Lower Concourse decking, rebar and concrete in eastern zone.
  - Complete western zone bracing removal and make ready for structural steel.
  - Continue foundation walls (lift 2), re-bracing and columns in the eastern zone.
  - Continue Structural Steel and Cast Node fabrication.
  - Continue Bus Ramp CIDH pile work and above grade concrete work.
  - Continue structural steel work onsite.
  - Continue MEPF Coordination.
  - Continue stair and ladder fabrication.
- Next 60-90 Days (Apr. – May)
  - Complete concrete foundation lift 2 walls and all columns of the Train Box in the eastern zones.
  - Continue Lower Concourse decking, rebar and concrete in the eastern zone.
  - Continue re-bracing in eastern zones.
  - Continue Bus Ramp and Bridge work; CIDH, columns and Pylon 9.
  - Continue structural steel erection and fabrication and complete cast node fabrication.
  - Start MEPF installation on decks, gridlines 10 to 20.
  - Start installation of stairs/ladders.



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# Bay Area Regional Labor Breakdown

	Through February 2015	
Location	Total Hours Completed	Percent of Total
East Bay (Alameda, Contra Costa, Solano)	471,994	35%
North Bay (Marin, Napa, Sonoma)	47,321	3%
South Bay (San Mateo, Santa Clara)	125,666	9%
San Francisco	243,325	18%
Other*	477,512	35%
<b>Totals</b>	<b>1,365,818**</b>	<b>100%</b>

\*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.



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# Bay Area Regional Apprentice Hours Breakdown

	Through February 2015	
Location	Total Hours Completed	Percent of Total
East Bay (Alameda, Contra Costa, Solano)	59,958	26%
North Bay (Marin, Napa, Sonoma)	11,299	5%
South Bay (San Mateo, Santa Clara)	31,777	14%
San Francisco	69,750	31%
Other*	54,851	24%
<b>Totals</b>	<b>227,635*</b>	<b>100%</b>

\*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 February 2015

<b>Classification</b>	<b>TTC Building and RUP's*</b>
Inspectors – Soils / Material Test	43
Carpenters and Related Trades	187
Cement Mason	76
Electrical – Utility Lineman	28
Electrician	47
Field Surveyor	38
Iron Worker	465
Laborer and Related Trades	718
Operating Engineer	429
Pile Drivers	175
Plumber	22
Roofer and Waterproofor	40
Sheet Metal	5
Teamsters	177
Tile Setters / Finishers	7
Water Well Driller	9
<b>Totals</b>	<b>2,466</b>

\* Relocation of Utilities Project



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# Questions?

