



# Construction Update

June 12, 2014

## Transbay Transit Center

TJPA





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# Period Summary

- There was one recordable safety incident this period. An ironworker doing rebar installation experienced exhaustion. Corrective actions have been implemented.
- The WOJV Team will be hosting a Safety Fest currently scheduled for Friday June 20<sup>th</sup> on site.
- There have been over 1,050,000 craft hours completed, excluding demolition, through May 31, 2014. An increase of over 20,000 hours since our last construction update.



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# Period Summary – Safety Statistics

	2011	2012	2013
<b>Total Craft Hours by Year</b>	<b>203,560</b>	<b>421,488</b>	<b>315,000</b>
<b>Number of Recordable Incidents</b>	<b>3</b>	<b>6</b>	<b>3</b>
<b>Number of Lost Time Incidents</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>WO Project Annual RIR / National Annual BLS RIR Average</b>	<b>2.95 / 3.10</b>	<b>2.85 / 3.20</b>	<b>1.90 / tbd</b>
<b>WO Project Annual LTIR / National Annual BLS LTIR Average</b>	<b>0.98 / 0.90</b>	<b>0.00 / 1.10</b>	<b>0.00 / 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 X 200,000) / actual hours worked.

BLS is the Bureau of Labor Statistics, U.S. Department of Labor, it takes the BLS about 16 to 18 months to produce the statistics after year's end. As a result, 2013 statistics are not yet available.



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## Period Summary

- Wall and column concrete placement continues between the Rail Level and the Lower Concourse in the west and central zones.
- Lower Concourse slab rebar, embedded plumbing and embedded electrical is in progress, in anticipation of concrete placement, in the central and western zones.
- The first Lower Concourse concrete placement is scheduled for June 7<sup>th</sup> in the central zone.
- Re-Bracing, following wall placement, continues in the western, central and now the eastern zones.
- Waterproofing and protection slab work continues in preparation for future mat foundation pours in the eastern zone.
- Mat Foundation pour #12 is currently scheduled for June 28<sup>th</sup>.



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# Current Project Overview



Western Zone – Gridlines 1 to 10

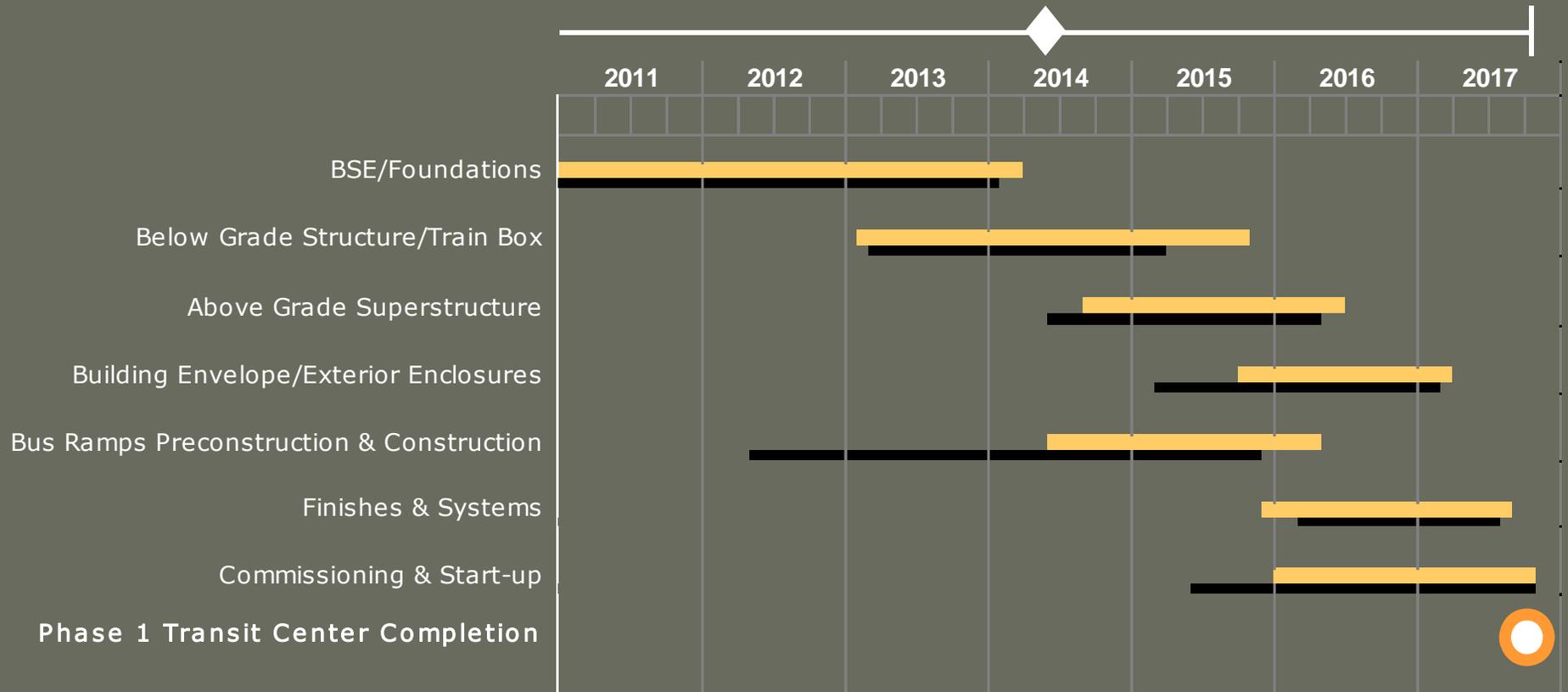
Central Zone – Gridlines 10 to 20

Eastern Zone – Gridlines 20 to 35



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# Construction Schedule – Critical Items

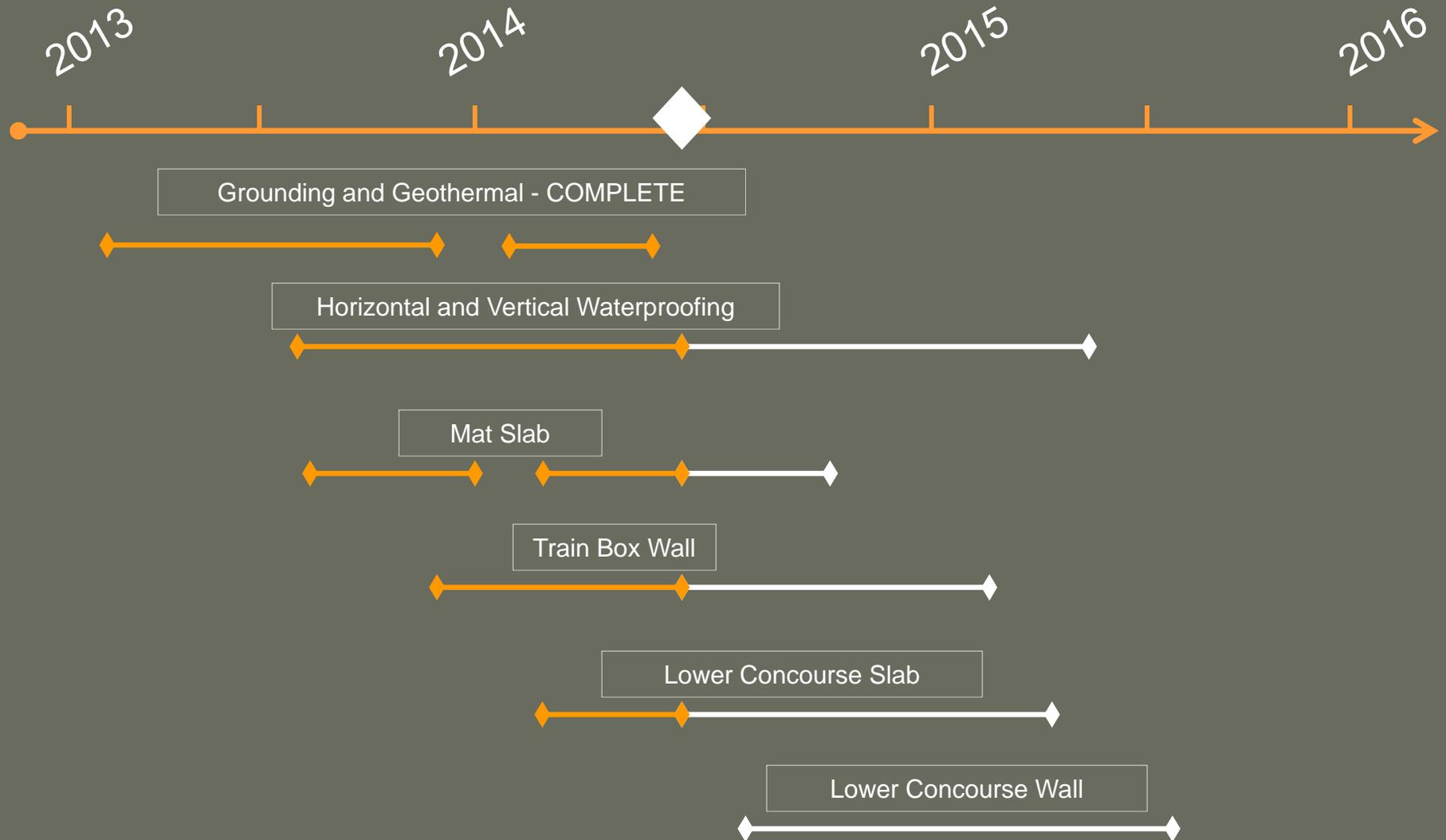


Current Schedule   
Baseline Schedule 



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# Below Grade Concrete Timeline Summary





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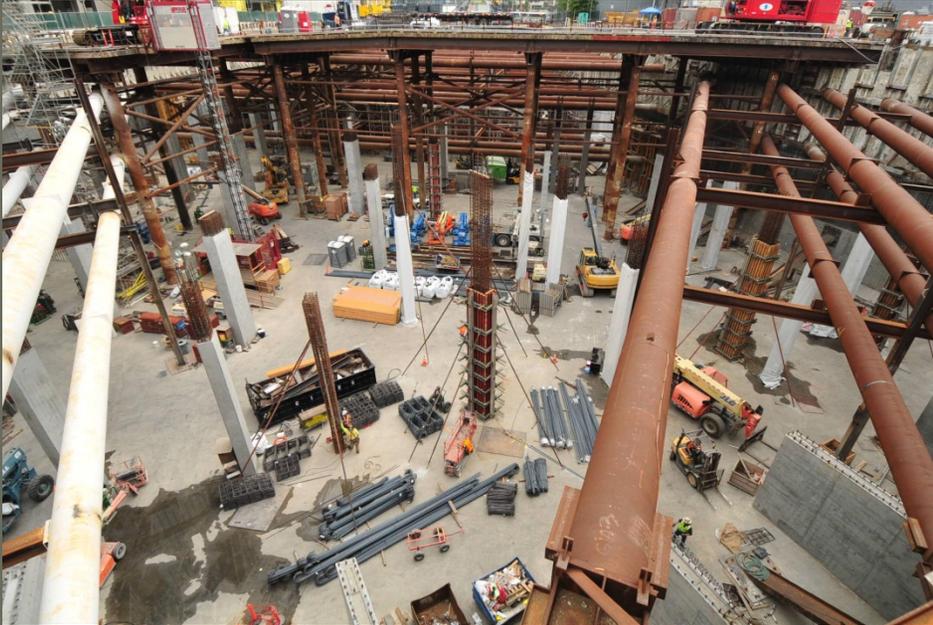
# Below Grade Concrete Progress Through May 27, 2014

Zone	Total Columns	Columns Complete	Percent Complete	Total 1st Lift Walls	1st Lift Walls Complete	Percent Complete	Total 2nd Lift Walls	2nd Lift Walls Complete	Percent Complete
Western	62	57	92%	35	35	100%	35	8	23%
Central	44	40	91%	20	20	100%	20	18	90%
Eastern	62	0	0%	35	0	0%	35	0	0%



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# Western Zone Activity (zones 1 and 2)





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# Western Zone Activity (zones 1 and 2)





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# Central Zone Activity (zones 2 and 3)





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# Central Zone Activity (Zones 2 and 3)





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## Central Zone Activity (Zones 2 and 3)





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# Eastern Zone Activity (zones 3 and 4)





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# Eastern Zone Activity (zones 3 and 4)



05/02/2014



05/05/2014



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## Train Box Mat Slab Concrete Placement

Five (5) mat slabs remain to be placed.

### Current Scheduled Dates:

Sec. 12 – Saturday June 28

Sec. 13 – Saturday July 26

Sec. 14 – August TBD

Sec. 15 – September TBD

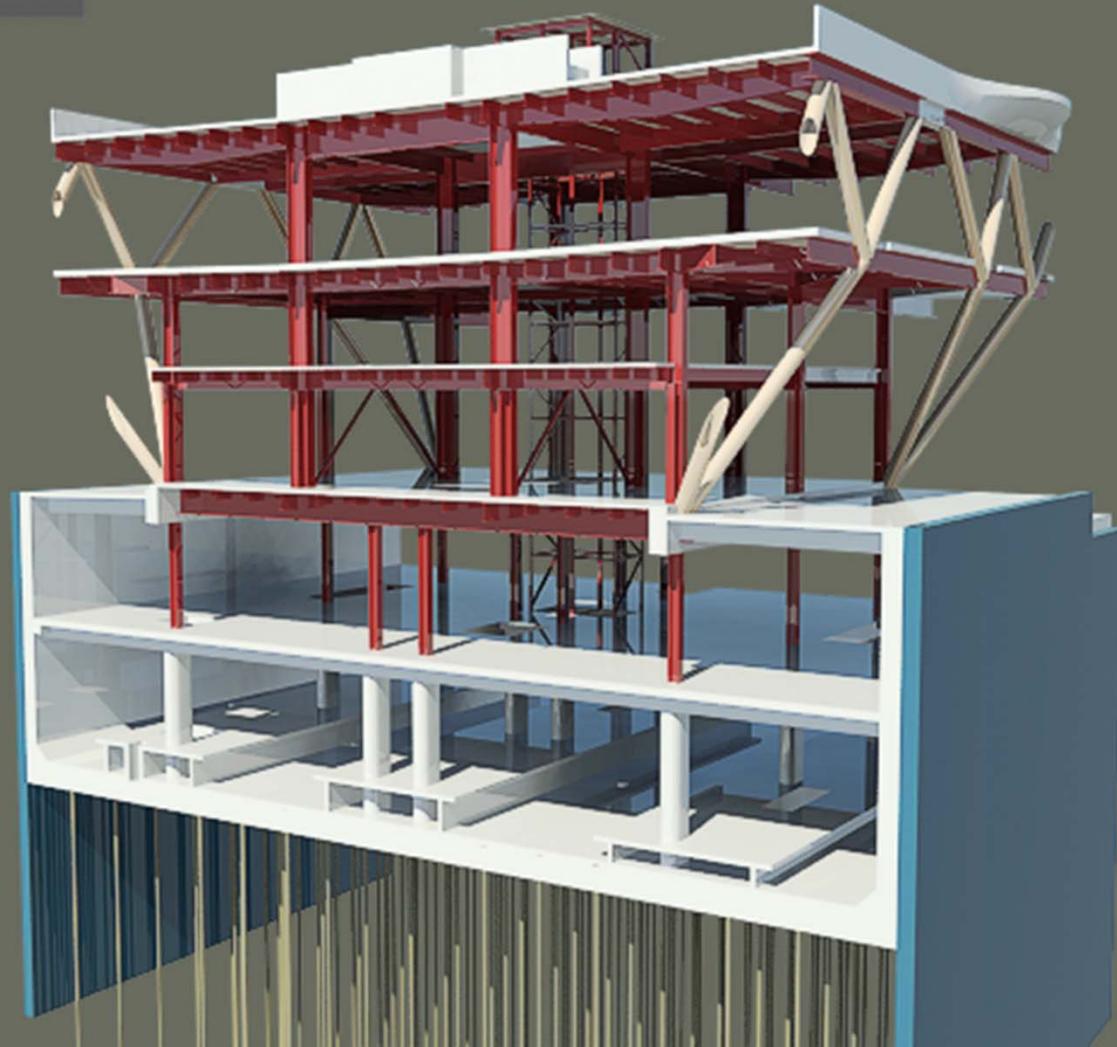
Sec. 16 – September TBD





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# Structural Steel





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# 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.
- Begin fabrication of structural steel in San Bernardino, CA.

## Steel Erection : West of First Street

September 2014 – Deliver steel sections and start erection near Shaw Alley.

## Steel Erection : First – Fremont

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

## Steel Erection : Fremont – Beale

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



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# Structural Steel Fabrication

Work Proceeding at  
Oregon Iron Works –  
laying out and cutting  
plate for built up  
shapes





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# Structural Steel Fabrication

Oregon Iron Works –  
Built up beam in  
progress





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# Structural Steel Fabrication

Oregon Iron Works –  
Built up beam in  
progress





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# Cast Node Fabrication as of May 27, 2014

Casting Group	Totals	In-Process Pattern Completion	In-Process Casting and Machining	Release 1 Shipments March-May	Release 2 Shipment May-June	Release 3 Shipment August	Release 4 Shipment October	Release 5 Shipment December	Release 6 Shipment December
Ground Level - Atchison 19,600 - 46,300 lbs	35	12	5	8	6	0	0	0	0
Bus Deck - Amite 9,500 - 22,800 lbs	75	23	13	16	5	0	0	0	4
Roof Level - Atchison 4,400 - 5,400 lbs	138	2	54	32	32	0	0	0	0
Light Columns	56	26	40	N/A	0	0	0	0	0
<b>Totals</b>	<b>304</b>	<b>63</b>	<b>112</b>	<b>56</b>	<b>43</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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



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## 99 Cast Node Shipped to Date





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# Cast Node Fabrication

Type 5 Node ready for shipping



Type 72 Node





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# Cast Node Fabrication



Type 6 Node



Type 21 Node



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# Utility Relocation - AWSS Installation Update

AWSS work continues at night at direction of SFMTA/MUNI to accommodate bus traffic. Mission Street repaving completed Second to First and Beale to Main Street.

Mission Street AWSS System

Completed :

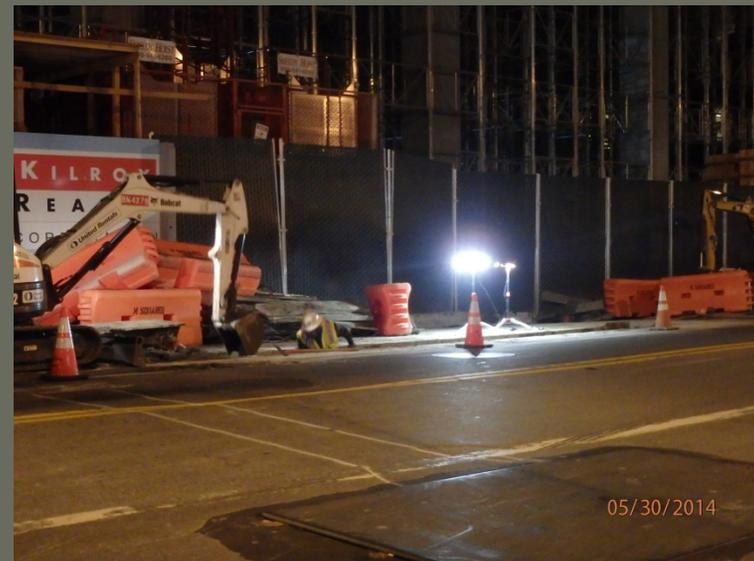
First – Second Street

First – Fremont Street

Main – Beale Street

To Go- In Progress :

Fremont – Beale Street; anticipate completion by end of July.





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# Construction The Next 90 Days

- Next 30 Days (June)
  - Continue concrete foundation walls and columns in western and eastern zones.
  - Continue Lower Concourse concrete deck rebar and embedded piping/electrical in the central and western zones.
  - Place first Lower Concourse slab in central zone.
  - Place mat slab 12 in zone 3
  - Complete waterproofing for mat slab pours 13-16.
  - Continue Structural Steel and Cast Node fabrication.
  - Continue AWSS work along Mission Street.
- Next 60-90 Days (July-August)
  - Continue concrete foundation walls and columns of the train box in west, central and east zones.
  - Continue Lower Concourse decks in central zone.
  - Start re-bracing eastern zone
  - Place mat slab 13 and 14 concrete eastern zone.
  - Complete AWSS work along Mission Street.
  - Start Bus Ramp project between Harrison and Howard Street.
  - Continue Structural Steel and Cast Node fabrication.



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# 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 April 2014	\$0.0	(\$1.0)	(\$1.1)	(\$12.8)	(\$0.0)	(\$14.9)
Remaining Baseline Budget Amounts (April 2014)	\$8.2	\$61.5	\$35.3	\$74.7	\$30.3	\$210.0
Utility Relocation Change Orders		(\$0.2)				(\$0.2)
BSE Change Orders		(\$0.1)				(\$0.1)
Award Bus Ramp Construction	(1.7)			(\$15.8)		(\$17.5)
<b>Total Draws in May 14</b>	<b>(\$1.7)</b>	<b>(\$0.3)</b>		<b>(\$15.8)</b>		<b>(\$17.8)</b>
Remaining Balances	\$6.5	\$61.2	\$35.3	\$58.9	\$30.3	\$192.2



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# Bay Area Regional Labor Breakdown

Labor by Area	Through May 2014	
Location	Total Hours Completed	Hours Percent
East Bay (Alameda, Contra Costa, Solano)	353,813	34%
North Bay (Marin, Napa, Sonoma)	33,682	3%
South Bay (San Mateo, Santa Clara)	95,847	9%
San Francisco	187,838	18%
Other*	385,646	36%
<b>Totals</b>	<b>1,056,826**</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

Apprentices by Area	Through May 2014	
Location	Total Apprentice Hours	Percent of Total
East Bay (Alameda, Contra Costa, Solano)	41,589	26%
North Bay (Marin, Napa, Sonoma)	5,501	3%
South Bay (San Mateo, Santa Clara)	25,981	16%
San Francisco	55,480	35%
Other*	31,340	20%
<b>Totals</b>	<b>159,891</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 May 2014

Classification	TTC Building and RUP's*
Inspectors – Soils / Material Test	43
Carpenters and Related Trades	99
Cement Mason	57
Electrical – Utility Lineman	26
Electrician	44
Field Surveyor	28
Iron Worker	242
Laborer and Related Trades	606
Operating Engineer	361
Pile Drivers	140
Plumber	17
Roofer and Waterproofor	36
Sheet Metal	5
Teamsters	166
Tile Setters / Finishers	7
Water Well Driller	9
<b>Totals</b>	<b>1,886</b>

\* Relocation of Utilities Project



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# Questions?

