



Foothill Gold Line

Arcadia ♦ Monrovia ♦ Duarte ♦ Irwindale ♦ Azusa

Pasadena to Azusa

NEWSLETTER

2015 – FIRST QUARTER

Construction Update

The Foothill Gold Line light rail project from Pasadena to Azusa has now surpassed 85% complete! Many important project milestones were reached this past quarter and we are closing in on overall project completion.

Bridge Construction - In this past quarter, the final railroad bridge on the project was completed over Huntington Drive and 2nd Avenue in Arcadia. Work included a 4-day, around the clock shut down of the intersection of Huntington Drive and 2nd Avenue. While this work did require rerouting cars and pedestrians,



The final bridge of the 24 bridge structures completed on the project spans the intersection of Huntington Drive and Second Avenue in the City of Arcadia.

many interested residents set up folding chairs and coolers to watch the amazing show.

Track Completion - With the new Huntington Bridge in place, the final section of rail could be installed making the permanent connection between the cities of Pasadena, Arcadia, Monrovia, Duarte, Irwindale and Azusa, via this new light rail line. A track completion ceremony was held in the City of Azusa to commemorate this exciting milestone in the San Gabriel Valley. *See more about the ceremony on page 4.*

Grade Crossings - To the delight of local residents of both Monrovia and Duarte, the final grade crossing on the project was completed two months ahead of schedule this past quarter. Due to its complicated traffic pattern, the nearby residences, retail shopping and schools, Mountain Avenue had to be constructed in three different phases of construction. Our hats are off to the whole team including the staff of both cities who kept the ball moving, which allowed the early completion.

All this work led to the final important milestone that occurred in the last quarter - **Train Testing.**

In December, Metro delivered a shiny new, two-car train for the project's use in our first phase of testing. The train was towed from Metro's Sierra Madre Villa station all the way to the Operations Campus in Monrovia. From there, crews towed the train back and forth between Monrovia and Irwindale and then later it operated under its own power using the recently installed and tested Overhead Catenary System. *See testing article on pages 2 and 3 for more information.*



Recently completed Mountain Ave grade crossing, bordering the cities of Duarte and Monrovia, now with dedicated right and left turn lanes, but missing the large hump and sharp turn in the road.

Looking forward to the **final phase of construction**, activities that will take place in the next quarter are the completion of the Overhead Catenary System (OCS) for the entire 11.5 mile corridor, completion of all remaining fencing and, hand railings at the grade crossings and station platforms, and landscaping around the station platforms and hydro-seeding of all the slopes on the project. Installation of station artwork and informational casework and seating areas on the platforms will also be completed. Testing will continue through summer.

In Monrovia, the 24-acre Operation Campus is quickly being finished. The \$265 million facility is on schedule to be turned over to Metro in June 2015; in time for Metro to receive light rail vehicles and start to train personnel.

Substantial completion of the entire project remains on schedule for late September 2015, when the project as a whole will be turned over to Metro for pre-revenue service. Metro will decide when the line opens for passenger service to the public.



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Foothill Gold Line Train Testing and Turnover Schedule

	2014		2015										2016										
	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
Construction Completion	█	█	█	█	█																		
OCS (Overhead Catenary System)/Train Control/Communications Local Functional Acceptance Testing	█	█																					
Fixed Facilities Local Functional Acceptance Testing			█	█	█	█																	
TPSS (Traction Power Substation) Local Functional Acceptance Testing						█	█	█	█														
SIT (Systems Integrated Testing)							█	█	█	█													
Agency Testing (30 days)										█	█	█											
Operational Punchlist											█	█	█										
Substantial Completion																							
Pre-Revenue Testing (approximately 90 days)												█	█	█									
System Performance Demonstration Period															█	█							

Construction is anticipated to be complete in late September 2015 and the project will be turned over to Metro, who then determines when passenger service begins.

Testing the Foothill Gold Line

Train Testing

Over the last several years, more than 1.5 million man hours have been spent moving dirt and rock, installing pipe, pouring concrete, demolishing old bridges and grade crossings to rebuild new ones, hauling and installing rail and concrete ties, installing conduits and pulling wire; all for the common goal of connecting the cities of Arcadia, Monrovia, Duarte, Irwindale and Azusa to the Gold Line. As we near the end of construction, the work ahead is very focused - **Testing and Startup**.

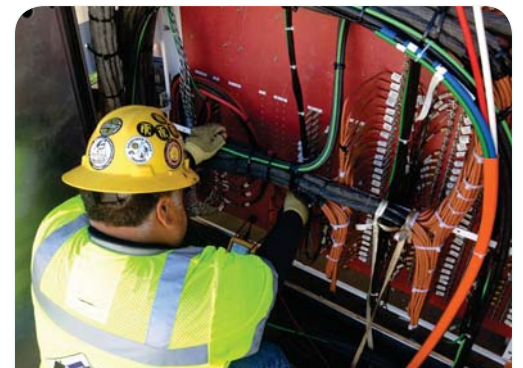
In order to test 11.5 miles of light rail with 6 stations, 14 street-level grade crossings and a 24 acre maintenance and operations campus, a specialized team from Foothill Transit Constructors and the Construction Authority will systematically spend the next several months working with Metro to check, test and startup each individual element on the project as well as all elements working together. As with the construction, testing will be broken up into four geographic segments across the project plus the Operations Campus in Monrovia.

In general, the team tests the physical elements first: the track, switches, station platforms, traction power substations, overhead catenary system (OCS) poles and wires, underground wire and fiber optic system, etc. Each of the elements is tested for functionality, as well as many for proper clearance. A test train is then brought in to make sure the train physically clears elements (like poles and station platforms), before tests are conducted on the power system and the train is allowed to run on its own power.

Once the system has passed initial tests that ensure the elements are working properly, and the train clears all necessary elements, the bulk of the work turns to testing of the train control and communications systems. Tests are conducted to make sure that the location of active trains are communicated accurately and reliably back to the Rail Operations Center (ROC), which acts like an airport control tower for Metro's entire light rail system. Tests are also conducted on the



Clearance testing is performed at a walking pace to ensure there are no obstructions in the LRV's path. Note the foam boards placed on the LRV to simulate the worst case scenarios of cab movement.



Wire by wire, an electrician from Foothill Transit Constructors, performs continuity and insulation testing inside a train control cabinet.

train control and communication system to ensure that the system accurately communicates with the traffic and train control signals at the grade crossings, and that all the elements of the grade crossing systems work as designed.

Once each element is checked out, it's then time to start the intergrated testing period. Here, the system is tested as a whole to make sure that all systems are working and communicating together. During each step of the testing, if items are not working as intended, troubleshooting and repairs are made.

This past Decemeber, Metro delivered its first light rail vehicle (LRV) to the Foothill Gold Line for clearance testing. This two-car train was towed from the existing Siera Madre Villa station in Pasadena by a big-rig truck outfitted with track riding gear. Once on the project, foam boards were placed around the train's exterior to simulate the possible "dynamic envelope" of the train when traveling at top speed. This test is performed at walking speed until all areas are proved. Once that has been achieved the train is operated under its own power, first at five, then 20 and finally at 55 miles per hour. A second two-car train was delivered in early February 2015 to continue the testing process. Testing will continue through the summer, as the project moves to Substantial Completion in late-September 2015; when the line is turned over to Metro for pre-revenue service.

Go to www.foothillgoldline.org to find out more information and to sign-up for updates on the project

Stay Safe Around Trains

- » Never walk on the train tracks
- » Never go around lowered gates
- » Obey all warning signs
- » Watch for trains from both directions



Seen here in Monrovia, many different pieces of specialized on-track equipment are utilized to install the Overhead Catenary System.



In December 2014, the first two-car train was brought to the Foothill Gold Line to support testing of the new light rail line. A \$4 million AnsaldoBreda P2550 weighing over 100,000 pounds was outfitted with specialized gear to test clearances, wheel/rail interface, rail switches, and the Overhead Catenary System.



Workers in the 210 Fwy median through Arcadia are using a track mounted boom truck and bucket truck to thread the "messenger wire" from large cable reels as part of the Overhead Catenary System (OCS).



During a functional test of the Traction Power Systems in Duarte as it approached the San Gabriel River in Irwindale, a two-car Light Rail Vehicle (LRV) is seen here traveling quietly and effortlessly under its own power.

Track Completion Ceremony

On October 18, 2014, the Foothill Gold Line paused to acknowledge a major milestone reached this past quarter: all tracks have been laid and the cities of Pasadena, Arcadia, Monrovia, Duarte, Irwindale and Azusa are now connected from one end to the other by light rail.

More than 300 people from all around the San Gabriel Valley gathered in Azusa to join the Construction Authority and Foothill Transit Constructors as we celebrated the progress to date.



On display at the event were the brightly painted e-clip and golden sledge hammer.

Mayors and City Councilmembers from each city along the corridor were represented, including from the next phase of construction (Glendora to Montclair). Serving the San Gabriel Valley, Congressional Representatives of the 27th and 32nd Districts, Judy Chu and Grace Napolitano, were also on hand for the momentous occasion, along with State and County officials.

The celebration included the arrival of distinguished guests via a hi-rail truck decorated with a huge gold ribbon and

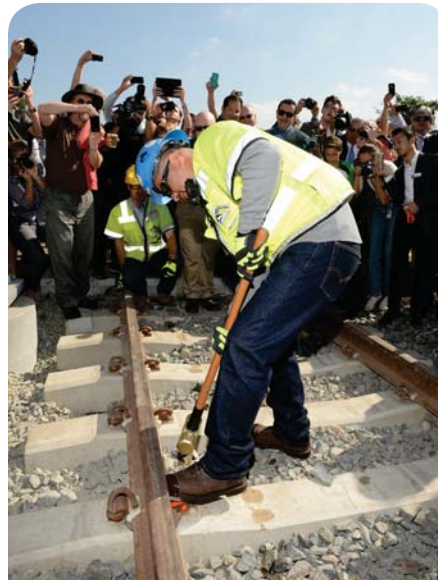


Foothill Gold Line CEO, Habib Balian, is joined by Mayors and City Council Members from the corridor cities to unveil a plaque to commemorate the occasion and all of the hard work performed to date.

the unveiling of a commemorative plaque that was cast into concrete near Azusa's Memorial Park. Based on the swarms of camera wielding spectators, perhaps the biggest moment of the event was when a brightly painted commemorative e-clip was driven into place by a member of the construction track crew using a golden sledge hammer. E-clips (shown on left), are used to firmly hold the rail to its concrete ties. Nearly 300,000 were installed on the project, including the final one installed at the event.



Azusa Mayor Joe Rocha, Foothill Gold Line Board Chair and Glendora City Councilman, Doug Tessitor, joined California's US Representative of the 32nd District, Grace Napolitano as they arrived to the event by rail.



Under no pressure from the gallery, laborer foreman, Elias Avila, does the honors of installing the last of nearly 300,000 e-clips.

Stay Informed

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- » Call the construction hotline at (626) 324-7098
- » Visit our Public Information offices located at: 1300 W. Optical Dr., Ste 500, Azusa, and 406 E. Huntington Dr., Suite 202, Monrovia

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