



**September 10, 2020**

**To:** Transit Committee  
**From:** Darrell E. Johnson, Chief Executive Officer  
**Subject:** OC Streetcar Project Quarterly Update

### **Overview**

The Orange County Transportation Authority is currently implementing the OC Streetcar project. Updates are provided to the Board of Directors on a quarterly basis. This report provides an update on OC Streetcar project activities from June 2020 through August 2020.

### **Recommendation**

Receive and file as an information item.

### **Background**

The Orange County Transportation Authority (OCTA), in cooperation with the cities of Santa Ana and Garden Grove, is implementing a modern streetcar running between the Santa Ana Regional Transportation Center (SARTC) in the City of Santa Ana (City) and the intersection of Harbor Boulevard and Westminster Avenue in the City of Garden Grove. The OC Streetcar project (Project) will improve transit connectivity and accessibility, increase transit options, relieve congestion, and provide benefits to the community and traveling public. The Project is being implemented as part of Measure M2 Project S – Transit Extensions to Metrolink, approved by Orange County voters in November 2006.

Construction of the 4.15-mile route OC Streetcar line involves complex and specialized work, including the installation of embedded track in streets, an overhead contact system (OCS) to supply power to the vehicles, stops with canopies, bridges, and a maintenance and storage facility (MSF).

The Project includes ten streetcar stops in each direction (four shared center platforms and six side platforms in each direction, for a total of 16 platforms). Each stop includes a canopy, benches, leaning rails, trash cans, lighting,

changeable message signs, video cameras, a public address system, and ticket vending machines, which will be procured separately. Platforms will be 14 inches high to enable level boarding. Also included is the installation of new traffic signals and transit signal priority at intersections.

The MSF can accommodate up to 15 modern streetcar vehicles and accommodates all necessary administration, operations, vehicle maintenance, parts storage, and maintenance-of-way needs for the Project. Secured exterior vehicle storage, including a wye track for turning vehicles end-for-end, a free-standing vehicle wash, employee parking, and fire department/delivery access will also be included.

On March 26, 2018, the Board of Directors (Board) awarded a contract to Siemens Mobility, Inc., (Siemens) for the manufacture and delivery of eight modern streetcar vehicles, spare parts, and special tools. On September 24, 2018, the Board awarded the project construction contract to Walsh Construction Company II, LLC (Walsh). On November 30, 2018, the Federal Transit Administration (FTA) executed the Full Funding Grant Agreement (FFGA), securing \$149 million in federal New Starts discretionary funding for the Project. In February 2019, the FFGA was awarded through the FTA Transit Award Management System, which was the final step necessary to begin the drawdown of federal funding. Through August 2020, \$41,257,690 million has been drawn down on the FFGA.

### ***Discussion***

The following is a status of ongoing project activities. Also included is a brief summary of coronavirus (COVID-19) impacts for both the construction contractor and vehicle manufacturer.

#### **Construction Activities**

Construction activities continued throughout the Project, with focus on construction of the Santa Ana River and Westminster Avenue bridges, the MSF, and relocation of storm drain, sewer, and water systems within the City's streets. Walsh has continued to follow state and local health care agency requirements regarding COVID-19 safety precautions, including appropriate social distancing and face coverings. Walsh has submitted a force majeure letter and notified OCTA of potential supply chain disruptions. OCTA is coordinating with Walsh to track any impacts of COVID-19 on construction. As of mid-August, Walsh reported that eight staff were infected and has advised that all appropriate safety protocols are being followed.

### Bridges and Pacific Electric Right-of-Way (PEROW)

Hauling and disposal of hazardous materials from the PEROW was completed in July. The contractor has completed the majority of grading and installed drainage features (culverts, storm drains, and ditches) within the PEROW. Sections of rail are being delivered to the PEROW, which will be welded into long rail strings in preparation to be placed in the track alignment within the PEROW and streets.

The next scheduled major activity on the Westminster Avenue bridge is placement of the concrete for the bridge deck. The temporary falsework used to support the bridge during construction will be removed after the bridge deck has cured and the girders have been stressed. Construction of retaining walls leading to both ends of the bridge continues.

The Santa Ana River bridge deck reinforcing steel is currently being placed, and retaining walls leading to both ends of the bridge are complete, allowing the bridge approach fill settlement monitoring period to begin.

### MSF

Construction of the MSF is critical to the project schedule, as it is needed to accept delivery and conduct final acceptance testing for the eight vehicles being manufactured by Siemens. Construction of the service and inspection pit has been delayed by continuing construction quality issues. The lower service and inspection pit slab was placed in June without the elements required to protect against stray current corrosion. This protection is required for all steel-reinforced concrete structures directly supporting the vehicle, which is powered by direct current electricity. The contractor is required to submit an acceptable repair plan before work on the inspection pit can be completed. Additionally, the contractor proceeded with installation of the wheel truing pit, elevator pit, and the car wash foundation.

### City Streets

Nearly all wet utility relocation and installation (sewer, water, and storm drains) is complete. Remaining work includes rehabilitation of a sewer main on Santa Ana Boulevard between Broadway and Mortimer Street, installation of a sewer line on 4<sup>th</sup> Street at French Street, installation of a storm drain on Main Street, and water service connections. All underground third-party utility work is complete except for sidewalk and roadway restoration work. In addition, there are four remaining overhead relocations by Crown Castle and two by Spectrum/Charter/Time Warner yet to be completed.

Construction of the westbound concrete embedded track slab began in August on Santa Ana Boulevard between Raitt Street and Bristol Street. The north half of Santa Ana Boulevard is closed to traffic and parking, and driveway access is maintained. Traffic is temporarily reduced to one lane eastbound and parking is maintained on the south side of the street.

Foundations for overhead contact system (OCS), streetlight, and traffic signal poles continues to be a challenge with undocumented underground utilities being discovered in approximately half of the locations. This requires the contractor to hand-dig the foundation and submit a request for information to resolve the conflict when identified.

### Station Stops

A prototype canopy/station shelter has been assembled and underwent an initial inspection. The contractor is working to address a number of fabrication comments and a subsequent inspection will be performed. Grading for the first stop platform at Fairview Street began in August.

### Vehicle Manufacturing and Delivery

Siemens continues the production of the eight S700 streetcar vehicles. The first vehicle (Car 1) is furthest in production and has completed several significant milestones during this quarter, including the interior and exterior equipping of the vehicle. Equipping refers to the installation of electrical components, all wiring, doors, windows, and power trucks. Car 1 was then moved to the water test facility that tests the streetcar in a controlled environment for leaks. The testing includes high-pressure water sprayed on the exterior of the vehicle to verify that the vehicle's electric components are completely sealed to prevent damage from unintended water intrusion. This testing will also ensure that the doors, windows, and seals will not leak during inclement weather.

In August, Car 1 began hi-pot wire size testing and continuity electrical testing. This phase of testing ensures that the vehicle wiring is sized properly for the intended use and that the wires are properly connected. Upon completion and certification of the electrical system, the vehicle was moved to another facility to conduct static testing. During static testing, the vehicle was powered up for the first time, and vehicle components were tested for functionality. Car 1 was then moved to the test track to begin dynamic testing. In dynamic testing, the vehicle is moved under its own power.

A summary of production status of all eight vehicles is provided below:

Vehicle No.	Status
01	<ul style="list-style-type: none"><li>• Moved to test track for dynamic testing</li></ul>
02	<ul style="list-style-type: none"><li>• Internal and external equipping continues</li></ul>
03	<ul style="list-style-type: none"><li>• Carshell integration and water test completed</li><li>• Equipping continues</li></ul>
04	<ul style="list-style-type: none"><li>• Final paint in process</li><li>• Staged for trucking</li></ul>
05	<ul style="list-style-type: none"><li>• Subflooring installed</li></ul>
06-08	<ul style="list-style-type: none"><li>• All carshells staged for sand blast and paint</li></ul>

As of August 20, 2020, Siemens has reported 35 cases of COVID-19 at its production facility in Sacramento, California. OCTA does have an on-site resident inspector at the facility to oversee the vehicle manufacturing process and ensure compliance with the technical specifications. Siemens is committed to ensuring the safety of OCTA's on-site inspector, along with its employees, and is following all proper safety protocols. Siemens has submitted two force majeure letters and has reported some initial material shortages and delivery delays from suppliers. OCTA is coordinating with Siemens to track any impacts of COVID-19 on the manufacturing and delivery of the vehicles.

As a result of COVID-19-related travel restrictions, there were no first article inspections (FAI) conducted during the reporting period. However, plans are in development to conduct a virtual FAI for the doors. FAIs are a contract requirement and a critical component of the manufacturing process to ensure that each component of the vehicle is built according to specifications and quality control measures have been met.

Parallel to production of the vehicle carshells, final design review continues for the remaining vehicle components, including the energy absorbing bumper, emergency battery drive, and flange lube system. These items are anticipated to be closed out next quarter.

Coordination is ongoing between Conduent Transportation, OCTA, and Siemens in the design of the computer-aided dispatch and automated vehicle location, as well as the communications equipment on the vehicles. Coordination also continued between OCTA, Siemens, and Walsh in the integration of the streetcar vehicle with the infrastructure, including the tracks, platforms, MSF, and wayside equipment and systems.

### Operations and Maintenance (O&M) Contract

On May 22, 2020, the OCTA Board approved the award of the O&M contract to Herzog Transit Services (Herzog). During the quarter, staff coordinated with Herzog on timing for the execution of the contract and preparing for issuance of the Notice to Proceed.

### Public Outreach

COVID-19 protocols continued throughout this reporting period, in-person events were cancelled, and outreach staff continued to rely on electronic and phone notifications for the majority of its efforts. Exceptions include in-person notices for interruption of water service and parking limitations. If bilingual outreach staff was not able to talk to the resident or business owner, then a printed bilingual notice was provided to the address. This approach was successful in communicating information in a timely manner.

OCTA outreach staff coordinates closely with the two business associations that received funding approved by the Board in February 2020 for expanded marketing and outreach efforts in the downtown business district. Staff is present at the associations' Board meetings and coordinates efforts with OCTA's Eat Shop Play program. Both associations have submitted an initial quarterly report as required by the agreement. A summary of the associations' activities is provided below.

Downtown, Inc., has created an ad hoc group to review and develop ideas and proposals. Downtown, Inc., explored what other downtowns across the country are doing, solicited ideas from its constituents, and sought input via social media, its newsletter, and the Voice of OC. Downtown, Inc., have established the following principles:

- Prioritize media creation, video, articles, social content, and extend reach and exposure;
- Partner with Santa Ana Business Council (SABC) and the City on banners and downtown business district identity materials, and;
- Create new ways and reasons to access the district wherever possible.

To date, Downtown, Inc., has spent \$4,571 of its first-year allocation of \$100,000, identified future programming opportunities for \$50,000, and continues to develop plans for the remainder.

The SABC has also formed a fund allocation committee to review best practices and has used \$1,110.59 thus far in a partnership with Downtown, Inc., to create a Dine Out Downtown Marketing Program. The SABC's initial expenditure included efforts to support outdoor dining in downtown Santa Ana. The SABC is also are working on future projects to program the remaining funds.

OCTA's Eat Shop Play program produced a video to introduce the program to prospective businesses, and it has been shared by the two Santa Ana business associations and on OCTA's social media platforms. The initial focus of this program was concentrated in the downtown area; however, during this quarter, the program was shared with businesses in the City of Garden Grove and other locations along the corridor.

As the construction activities expanded into the track installation phase, OCTA held a virtual neighborhood meeting on August 19, 2020. More than 3,000 bilingual notices were distributed along the alignment and on social media. In addition, the City and Artesia Pilar Neighborhood Association distributed information. The bilingual virtual neighborhood meeting, attended live by 31 stakeholders and viewed 78 times on replay, included a brief overview of the project alignment and benefits, with a specific focus on the traffic shift in Segment 2, between Raitt Street and Bristol Street on Santa Ana Boulevard. Parking changes were also discussed, specifically recent changes that maintained parking in the Artesia Pilar neighborhood. Overall, viewers appreciated that the information was broadcast in both English and Spanish. A follow-up meeting is scheduled when the next phase of activity is planned approximately eight and ten weeks from now. Outreach staff is also supplying project information materials to the City to support the City's Coronavirus Aid, Relief, and Economic Security kits distributed throughout the City.

#### Cost and Schedule

The project cost, as included in the FFGA, remains at \$407.7 million, including \$37.96 million in contingency. As of August 2020, approximately \$21.3 million in contingency has been expended or committed. Construction risks realized to date have expended a higher amount of contingency than anticipated. An updated risk analysis is being finalized, which identifies any needed adjustments to the project cost estimate and completion schedule. Staff will return to the Board to present the results of this risk analysis and any cost and schedule adjustments needed to complete the project.

**Next Steps**


Construction activities in the next quarter will focus on MSF building floor slabs, the start of in-street embedded track installation and ballasted track installation in the PEROW, installation of OCS poles, and starting construction of station stop platforms. Next steps for vehicles include finalizing design for remaining vehicle components, additional first article inspections, and continued production and assembly. Upcoming outreach activities include ongoing coordination with the construction team and the City regarding traffic control measures that are needed for the in-street embedded track installation.

**Summary**

An OC Streetcar project update is provided for the Orange County Transportation Authority Board of Directors' review.

**Attachment**

None.

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