



January 14, 2021

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

Overview

The Orange County Transportation Authority is implementing the OC Streetcar project, and updates are provided to the Board of Directors on a quarterly basis. This report provides an update on OC Streetcar project activities from September 2020 through December 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 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 Project line involves complex and specialized work, including the installation of embedded track in existing 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 to streetcar vehicles. Also included is the installation of new traffic signals and transit signal priority at intersections along the route.

The MSF can accommodate up to 15 modern streetcar vehicles, as well as 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 \$149,000,000, in federal New Starts discretionary funding for the Project. In February 2019, the FFGA was funded through the FTA Transit Award Management System, which was the final step necessary to begin the drawdown of federal funding. Through November 2020, \$53,451,461, has been drawn down on the FFGA.

Discussion

The following is the status of ongoing project activities related to construction, vehicle manufacturing, and public outreach.

Construction

Several significant milestones were completed in the Pacific Electric Right-of-Way (PEROW), including the two bridges on the Project as follows:

- Falsework was removed which supported the cast-in-place Westminster Avenue Bridge, and for the Santa Ana River Bridge pier caps.
- Retaining walls supporting approaches to the bridges were completed and soundwalls constructed.
- Drainage improvements were completed.
- Installation of OCS pole foundations and communication duct banks commenced.
- Sticks of rail were delivered to the PEROW and welded into strings.
- Installation of underground conduits and foundations began for the Fairview Street stop.

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. On September 16, 2020, Native American cultural resources were discovered during excavation for the MSF wheel truing pit. A Data Recovery Plan was submitted and approved by the State Historic Preservation Officer on November 3, 2020, and data recovery was completed on December 9, 2020. During this time, construction was restricted within a 50-foot radius of the discovery. On December 9, 2020, the site was released back to Walsh to resume work. The cost and schedule impacts associated with this discovery are being evaluated. Work was able to continue on the west half of the MSF building to prepare the foundation and slab for the car wash, and the new utility services to the facility. Staff will be seeking Board approval of a construction change order to compensate Walsh for changes to the MSF plans associated with required building permit design compliance requirements in the first quarter of 2021. Several equipment components associated with the communications system in the original design have been phased out by manufacturers and replaced with newer models. A contract change order to compensate Walsh for these end-of-life equipment changes will be brought to the Board for approval in late January 2021.

All wet utility (sewer, water, and storm drains) relocation and installation in the city streets are complete. There are a few remaining third-party utility relocations that are not impeding streetcar construction. OCS, traffic signal, and streetlight foundations are being installed throughout the alignment. Staff will be seeking Board approval of a supplemental construction change order to compensate Walsh for additional OCS and signal pole foundation conflicts with unknown and abandoned utilities in late January 2021.

Construction of westbound embedded track on Santa Ana Boulevard between Raitt Street and Bristol Street began in August 2020. The first concrete for embedded track was placed on Santa Ana Boulevard across Bristol Street in December 2020, and concrete placement will proceed west towards Raitt Street in 300-foot segments. Walsh encountered thicker than anticipated asphalt pavement, buried obstructions, railroad ties from the former Pacific Electric Railway, areas of contaminated soil, and unsuitable subgrade conditions which required remediation. Board approval will be sought for a change order to compensate Walsh for the additional cost to remove thicker than anticipated pavement in late January 2021. The cost and impacts of the remediation for the remaining unanticipated conditions are being assessed and change orders will be brought to the Board for approval as needed. Work also began on the embedded track installation on Santa Ana Boulevard between Parton Street and Mortimer Street. After embedded track is complete in these two segments, Walsh will begin installing embedded track on Fourth Street.

Vehicle Manufacturing and Delivery

Siemens continues the production of the eight S700 streetcar vehicles in Sacramento, California. OCTA has an on-site resident inspector at the facility to oversee the vehicle manufacturing process and ensure compliance with the technical specifications. The first four of the eight vehicles are near completion, with the cars having been assembled, the interior of the seats equipped, and installation completed of the truck assemblies, flooring, doors, and electrical systems. There are three outstanding vehicle components that remain in final design review and have not yet been approved, which include the energy absorbing bumper, emergency battery drive, and flange lube system. These items are anticipated to be closed out next quarter. These first four vehicles have also completed water testing to verify that the vehicle's electric components are completely sealed to prevent damage from unintended water intrusion and hi-pot electrical testing, to ensure that the vehicle wiring is sized properly for the intended use, and that the wires are properly connected. The four vehicles are currently undergoing static and dynamic testing to verify component and system functionality.

The remaining four vehicles are in various stages of production, including interior equipping, final assembly, and sub-floor installation.

During the reporting period, first article inspections (FAI) were conducted for the vehicle doors and the four-person flip seats that are unique to the OC Streetcar system. This is the only S700 vehicle that Siemens produces that allows for all four seats to flip up to accommodate bicycles, strollers, and larger mobility devices. 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.

Coordination is ongoing between Conduent Transportation, OCTA, and Siemens in the design of the computer-aided dispatch and automated-vehicle location system as well as the communications equipment on the vehicles. Coordination also continued with Siemens on the vehicle delivery schedule anticipated to occur mid-2021.

On May 22, 2020, the OCTA Board approved the award of the operations and maintenance 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 anticipated for early 2021.

Public Outreach

Coronavirus protocols continued throughout this reporting period, where in-person events were cancelled, and outreach staff continued to rely on electronic and phone notifications for the most of its efforts. Exceptions include notices delivered to residents in Segment 2 along Santa Ana Boulevard between Raitt Street and Bristol Street. A series of bilingual fliers were delivered as work progressed along this segment to remind residents of parking restrictions and alternatives, such as the shuttle service provided by the contractor.

In preparation for the week-long intersection closure at Bristol Street and Santa Ana Boulevard, bilingual fliers were distributed to residents near the work area. The flier included the description of the activities planned as well as notification of night work. In addition to the fliers, social media posts, and an email to the Project database were distributed. Notices and a closed-circuit television slide were provided to staff from the City, and the City distributed notifications through its networks. In addition, a press release was distributed by the City.

As the track installation activities expand into additional segments, another bilingual virtual community meeting was held on December 17, 2020. Notifications were distributed through the Project's database and social media channels, as well as the City's distribution network. In addition, press releases by OCTA and the City included details of the virtual meeting. The platform for the meeting was moved to Zoom to provide a call-in number to increase participation ease and reach for stakeholders. A bilingual fact sheet describing the sequence of track installation activities was developed and is available on the Project website. It will also be distributed to business owners and residents along the alignment as the track activities progress close to the locations.

OCTA supported the City's installation of parklets and standalone dining platforms in Downtown Santa Ana by reviewing the City's proposed locations and providing recommendations to avoid conflicts with future construction activities planned for the next quarter.

OCTA's Eat Shop Play program has expanded to 47 participants, exceeding the goal of 40 businesses. Biweekly newsletters continue to feature businesses and include information about local community events.

Both business associations continued to identify projects and programs to expand marketing efforts to develop and implement events to bring visitors safely into Downtown Santa Ana. In addition, modest investments have been made in additional signage and banners to create interest and excitement for visitors. Technical assistance is also being provided to business owners interested in

virtual networking and having an increased web presence to accommodate on-line purchasing opportunities.

Cost and Schedule

The Project cost as specified in the FFGA is \$407,800,000, which includes \$37,960,000 in contingency. As of November 2020, approximately \$24,900,000 in contingency has been expended or committed. While Project construction is 38 percent complete (as of November 2020), a significant number of challenges have been experienced in the initial stages of construction. Some examples of construction challenges include:

Unforeseen Utility Conflicts

The number and nature of utility conflicts encountered during the relocation of wet utilities was higher and more complex than anticipated, as many were unmapped and/or abandoned utility lines within City streets. Many of these locations required extensive redesign work and additional construction. Additionally, more labor-intensive hand-digging of OCS, traffic signal, and streetlight pole foundations has been undertaken to minimize the risks associated with striking an unknown utility with heavy equipment.

Contaminated Materials in the PEROW, City Streets, and MSF

An extensive amount of contaminated and hazardous soil was encountered during excavations on the PEROW, City streets, and MSF. The contaminated materials also include many buried wooden railroad ties from the Pacific Electric Railway. This level of contamination and the subsequent requirements for removal and disposal was unanticipated based on the results of testing conducted during final design.

Additional Unforeseen Conditions

Walsh has encountered additional unforeseen conditions during the performance of the work, including thicker sections of existing pavement and unsuitable subgrade conditions on City streets, as well as an abandoned well, underground storage tank, and discovery of cultural resources at the MSF.

Construction Quality Control and Compliance

Contractor difficulties complying with construction quality requirements and quality control plans have resulted in construction delays, contractor re-work, and more extensive oversight and acceptance monitoring being performed by OCTA.

Oversight and Approvals from Multiple Agencies and Third Parties

An extensive number of Requests for Information are being submitted by Walsh. Each require review from specialized design disciplines, as well oversight and approval from multiple agencies and third parties.

Change Requests

An extensive number of Request for Changes have been also submitted by Walsh to address the unforeseen conditions and material substitutions, and several change notices have been issued to address design modifications and requests made by third parties.

These challenges have resulted in a higher than anticipated number of construction change orders, as well as additional staff resources required of OCTA to manage. As a result, the Project contingency has been drawn down faster than originally forecast for this stage of completion.

Based on changes and contractor progress through the quarter, the schedule for targeted revenue service has been extended to October 2022.

The Project schedule and cost to complete is under review by OCTA and FTA considering the challenges experienced and outstanding project risks. Staff will return to the Board in February 2021 to present the results of the most recent comprehensive risk analysis, as well as recommendations for cost and schedule adjustments needed to complete the Project.

Next Steps

Construction activities in the next quarter will focus on completing the floor slabs in the MSF building, installation of embedded track in the street and ballasted track in the PEROW, installing OCS poles, delivering the traction power substations, and constructing 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, particularly along Fourth Street where businesses are more prevalent.

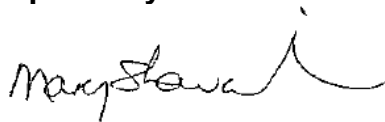
Summary

An OC Streetcar project update covering September 2020 through December 2020 is provided for the Orange County Transportation Authority Board of Directors' review.

Attachment

None.

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