April 8, 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 January 2021 through March 2021.

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,

variable 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. Furthermore, the installation of new traffic signals and transit signal priority at intersections along the route is also included.

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 March 15, 2021, $57,378,721, 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

In the Pacific Electric Right-of-Way (PEROW), Walsh continues to install OCS pole foundations, duct banks, and three soundwalls. A short retaining wall on the south side of the Harbor Station parking lot was completed, and the sidewalks and medians on Westminster Avenue have been restored. Minor concrete placements on the Westminster and Santa Ana River bridge decks continue, including upcoming placement of plinths, which are raised curbs that the rail is affixed to. Double-sided station platforms at Fairview Street and Raitt Street are under construction, and conduits are being installed at the Harbor Station. Electrical conduits are being placed to serve traction power substations near Westminster Avenue and at the northwest corner of the 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. OCTA continues to coordinate with FTA and the Most Likely Descendant on the reinterment of the Native American cultural remains, which were encountered during excavations at the MSF site in fall 2020. Construction work continues on the site utilities, foundation slab, wheel-truing pit, service and inspection pits, perimeter block wall, and the storm drainage infiltration basin was installed. MSF construction delays have been experienced while waiting for design of cathodic and stray current protection, as well as the associated procurement of the materials. Staff will be seeking Board approval of a construction change order (CCO) to compensate Walsh for changes to the MSF plans associated with building permit design compliance requirements in the second quarter of 2021.

Construction of westbound embedded track on Santa Ana Boulevard between Bristol Street and Raitt Street and between Parton Street and French Street is ongoing. As noted in the communication to the Board on February 23, 2021, several challenges encountered in both sections have impeded track installation progress resulting in portions of the streets being inaccessible for longer periods than originally scheduled. A surveying error at the Bristol Street intersection and a detail related to the streetcar traffic signal detector system near Raitt Street have been resolved and track installation is proceeding. Work to install eastbound embedded track on Santa Ana Boulevard between Raitt Street and Bristol Street is estimated to begin in April 2021. Excavation for embedded track on Santa Ana Boulevard between Mortimer Street and Parton Street exposed about 20 undocumented shallow utilities and one storm drain in conflict with the communications and traction power duct bank, which is installed under the track slab. Some delays were encountered as a new localized track slab and duct bank design detail were developed to enable work to proceed. These new design details will also be utilized on future unknown conflicts.

Walsh has been authorized to undertake advanced “mini-trench” excavation explorations, the width of the duct bank, in future track bed segments to identify unknown utilities which may be present. This will help in minimizing delays and disruptions if additional unknown utilities are encountered. Staff will be seeking Board approval of a supplemental CCO to compensate Walsh for additional utility conflicts in the second quarter of 2021. Other activities in the city streets include continued installation of OCS and traffic signal pole foundations, and the reconstruction of impacted sidewalks and curb ramps.

During the reporting quarter, the construction management team worked on preparation of additional CCOs, including design modifications to the traction power substations, traffic signal interconnects, additional removal and disposal of contaminated soil in the PEROW, and over-excavation of unsuitable soil on Santa Ana Boulevard. Staff anticipates seeking Board approval of these CCOs in the second quarter of 2021.

Vehicle and Operations

Siemens continues production of eight S700 streetcar vehicles in the City of Sacramento. OCTA has an on-site resident inspector at the Siemens facility to oversee the vehicle manufacturing process and ensure compliance with the technical specifications. The first six vehicles are currently undergoing static and dynamic testing. Static testing is when the vehicle is stationary inside the facility to verify functionality of components in a controlled environment. Static testing starts earlier in the testing sequence and is also referred to as verification testing. Dynamic testing is performed on the test track and the vehicle is in motion. Dynamic testing allows the vehicle manufacturer to observe the functional behavior of the vehicle, monitor system functionality and performance in vehicle operation, and verify response time. This testing process usually takes approximately two months to verify component and system functionality. The remaining two cars, Cars 7 and 8, are in equipping and final assembly and are anticipated to begin static and dynamic testing in the next quarter.

During the reporting period, a First Article Inspection (FAI) was conducted for the energy absorbing bumper. The energy absorbing bumper is the first of its kind in production by Siemens for the S700 vehicle and is specific to the rail vehicles at OCTA and the City of Phoenix, Arizona. The bumper's unique design incorporates enhanced safety features and can be more easily repaired in the event of an incident, resulting in reduced downtime and ensuring vehicle availability. During the FAI, staff witnessed multiple performance tests and discussed design modifications required before the bumper design was finalized. Two other vehicle components that remain in final design review are the emergency battery drive and the flange lube system, which are both estimated to be closed out next quarter. Additionally, staff coordinated with Siemens in closing out items from the vehicle door FAI that occurred last quarter. 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 are met.

Ongoing coordination with Siemens on the design features and FAIs of multiple vehicle components, as well as extended testing efforts for the vehicle door, energy absorbing bumper and emergency battery drive, has impacted the anticipated dates for delivery of the S700 vehicles. As a result, Siemens submitted a revised master program schedule to reflect current progress of production and to propose vehicle completion late in the second quarter. This revised schedule is currently in review by OCTA. Staff is in negotiations with Siemens regarding options for vehicle storage to align with the availability of the Project infrastructure that is needed to accept and test the vehicles. Staff will return to the Board later this year with any contract amendments required for Siemens as a result of these discussions.

On January 19, 2021, a Request for Proposals (RFP) was released for a rail tow vehicle (RTV), which will be used during the testing and commissioning of the system, and in revenue service as an emergency tow vehicle. As of the due date of February 17, 2021, no bids were received for the RFP. Staff followed up with multiple prospective vendors and learned that the nature of the track alignment, specifically the ability of an RTV to navigate 20-meter curves, was a significant challenge in meeting the technical specification. Subsequently, staff has modified the technical specification to allow for an alternative option that eliminates the requirement for tow vehicle to be in high-rail mode (riding on rails) while traversing the 20-meter curves. The RFP has been released with the revised technical specification, and bids are due on April 14, 2021. Staff is also enhancing outreach efforts to the industry given the nature of this specialized vehicle and anticipates returning to the Board in June 2021 for approval of an RTV contract award.

During the quarter, staff coordinated with the operations and maintenance contractor, Herzog Transit Services (Herzog), on timing for the execution of the contract and the potential for a limited notice to proceed with Herzog while the Project completion date is being evaluated, as was discussed with the Board in March 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 most of its efforts. In addition, bilingual notices were delivered to residents and businesses along portions of Santa Ana Boulevard with active track excavation to highlight specific activities, such as excavations, rail placement, and concrete placement occurring in front of homes and businesses.

OCTA is aware of the issues experienced by the residents on Santa Ana Boulevard between Bristol Street and Raitt Street. Bilingual outreach staff conducted door-to-door canvassing to residents providing an opportunity to acknowledge the inconveniences, explain the cause of the delays, and answer questions about the Project and upcoming work. Residents were gracious and many expressed appreciation for the opportunity to discuss concerns. A bilingual fact sheet explaining the track installation process and a bilingual construction brochure with the Project timeline and descriptions of project phases were provided.

The upcoming segment for work on Fourth Street presents unique challenges due to the concentration of businesses with visitors on Fourth Street between Ross Street and Mortimer Street. A field walk with Walsh, construction management representatives, and City staff was conducted to identify and

highlight specific needs for Walsh, businesses, and visitors given the access and parking needs of the area. Although the exact schedule for the start of this work has not been confirmed, this preparatory effort will allow for informing the businesses and residents about access and phasing of activities.

As part of continually evaluating and enhancing outreach efforts, staff is refreshing the biweekly eblast to include bilingual descriptions of construction highlights. A new link to an interactive map on the Project website with bilingual descriptions of work activities is in development and will be debuted next quarter.

OCTA's Eat Shop Play program has expanded to 47 participants, exceeding the goal of 40 businesses. Targeted social media campaigns and 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 ecommerce opportunities.

Cost and Schedule

In March 2021, the Board approved the use of $15.68 million in additional funding to supplement the Project contingency. The Project cost and schedule to complete is under review by OCTA and FTA, considering the challenges encountered and outstanding project risks. Staff will return to the Board on or before November 2021 to present the results of FTA's risk analysis, as well as recommendations for the cost and schedule adjustments needed to complete the Project. The Project cost history documented from key decision points is provided in Attachment A.

The schedule to complete construction and achieve the revenue service date (RSD) has been extended due to realization of known and unplanned risks, including contaminated materials, removal of undocumented underground tank and well and other buried man-made objects, cultural discovery at the MSF, the high number of undocumented utility conflicts, unsuitable subgrade soils, contractor non-compliance and rework, and resolution of design plan and specification deficiencies and omissions. OCTA staff and Walsh are not in agreement on the impact, and in some cases responsibility, of the myriad of risks and issues encountered on the planned critical path schedule. The current updated OCTA staff forecast is for a July 2023 RSD.

The risk assessment currently being performed by FTA is reassessing the overall project cost and schedule. FTA will likely be recommending additional cost contingency to cover additional risk for construction claims, and additional schedule risks to assure the RSD is achieved within the term of the FFGA.

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, as well as continued production, assembly, and ongoing static and dynamic testing. 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 January 2021 through March 2021 is provided for the Orange County Transportation Authority Board of Directors' review.

Attachment

A. OC Streetcar Project Cost History

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