



AGENDA

Transit Committee Meeting

Committee Members

Andrew Do, Chairman
Laurie Davies
Steve Jones
Miguel Pulido
Tim Shaw
Harry S. Sidhu

Orange County Transportation Authority
Headquarters
Conference Room 07
550 South Main Street
Orange, California

Thursday, October 8, 2020 at 9:00 a.m.

Any person with a disability who requires a modification or accommodation in order to participate in this meeting should contact the OCTA Clerk of the Board, telephone (714) 560-5676, no less than two (2) business days prior to this meeting to enable OCTA to make reasonable arrangements to assure accessibility to this meeting.

Agenda descriptions are intended to give members of the public a general summary of items of business to be transacted or discussed. The posting of the recommended actions does not indicate what action will be taken. The Committee may take any action which it deems to be appropriate on the agenda item and is not limited in any way by the notice of the recommended action.

All documents relative to the items referenced in this agenda are available for public inspection at www.octa.net or through the Clerk of the Board's office at the OCTA Headquarters, 600 South Main Street, Orange, California.

Guidance for Public Access to the Board of Directors/Committee Meeting

On March 12, 2020 and March 18, 2020, Governor Gavin Newsom enacted Executive Orders N-25-20 and N-29-20 authorizing a local legislative body to hold public meetings via teleconferencing and make public meetings accessible telephonically or electronically to all members of the public to promote social distancing due to the state and local State of Emergency resulting from the threat of Novel Coronavirus (COVID-19).

In accordance with Executive Order N-29-20, and in order to ensure the safety of the Orange County Transportation Authority (OCTA) Board of Directors (Board) and staff and for the purposes of limiting the risk of COVID-19, in-person public participation at public meetings of the OCTA will not be allowed during the time period covered by the above-referenced Executive Orders.

Instead, members of the public can listen to AUDIO live streaming of the Board and Committee meetings by clicking the below link:

<http://www.octa.net/About-OCTA/Who-We-Are/Board-of-Directors/Live-and-Archived-Audio/>



Guidance for Public Access to the Board of Directors/Committee Meeting (Continued)

Public comments may be submitted for the upcoming Board and Committee meetings by emailing them to boardofdirectors@octa.net.

If you wish to comment on a specific agenda Item, please identify the Item number in your email. All public comments that are timely received will be part of the public record and distributed to the Board. Public comments will be made available to the public upon request.

In order to ensure that staff has the ability to provide comments to the Board Members in a timely manner, please submit your public comments **30 minutes prior to the start time of the Board and Committee meeting date.**

Call to Order

Roll Call

Pledge of Allegiance

Committee Chairman Do

1. Public Comments

Special Calendar

There are no Special Calendar matters.

Consent Calendar (Items 2 through 7)

All items on the Consent Calendar are to be approved in one motion unless a Committee Member or a member of the public requests separate action or discussion on a specific item.

2. Approval of Minutes

Approval of the minutes of the Transit Committee meeting of September 10, 2020.



3. Agreement for Fullerton Transportation Center Stair Replacement Project

Lora Cross/James G. Beil

Overview

The Orange County Transportation Authority, in coordination with the City of Fullerton, is replacing the Fullerton Transportation Center stairs that serve the station overcrossing. On June 22, 2020, an invitation for bids was released. Bids were received in accordance with the Orange County Transportation Authority's public works procurement procedures. Board of Directors' approval is requested to execute the agreement.

Recommendations

- A. Find A2Z Construct, Inc., the apparent low bidder and Metro Building and Engineering Group, Ltd., the apparent third low bidder, as non-responsive for failure to meet the federal requirement for Disadvantaged Business Enterprise participation; and find AP Construction, Inc., the apparent second low bidder, as non-responsive for failure to sign the Disclosure of Lobbying Activities form as required by the bid instructions and the Federal Transit Administration.
- B. Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2267 between the Orange County Transportation Authority and Golden Gate Construction, the lowest responsive, responsible bidder, in the amount of \$705,300, for the Fullerton Transportation Center Stair Replacement Project.

4. Agreement for Replacement of Light Poles and Luminaires at Golden West Transportation Center

George Olivo/James G. Beil

Overview

The Golden West Transportation Center requires the replacement of light poles and luminaries in order to maintain a safe environment and state of good repair. An invitation for bids was released on July 22, 2020. Bids were received in accordance with Board of Directors-approved procedures for public works projects. Board of Directors' approval is requested to execute the necessary agreement.



4. (Continued)

Recommendations

- A. Find KDC, Inc., dba Dynalectric, the apparent low bidder and Elecnor Belco Electric, Inc., the apparent second low bidder, as non-responsive for failure to meet the federal requirement for Disadvantaged Business Enterprise participation.
- B. Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2363 between the Orange County Transportation Authority and Crosstown Electrical & Data, Inc., the lowest responsive, responsible bidder, in the amount of \$223,789, for the replacement of light poles and luminaires at the Golden West Transportation Center.

5. Agreement for Locker Room Expansion at Santa Ana Bus Base Maintenance Building

George Olivo/James G. Beil

Overview

The Orange County Transportation Authority's Santa Ana Bus Base requires modifications to the maintenance building locker rooms. An invitation for bids was issued on August 5, 2020. Bids were received in accordance with Board of Directors-approved procedures for public works projects. Board of Directors' approval is requested to execute the agreement.

Recommendation

Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2467 between the Orange County Transportation Authority and Thomco Construction, Inc., the lowest responsive, responsible bidder, in the amount of \$339,123, for locker room expansion at the Santa Ana Bus Base maintenance building.

6. Metrolink Fiscal Year 2019-20 Performance Report

Megan LeMaster/Jennifer L. Bergener

Overview

The Southern California Regional Rail Authority is a five-member joint powers authority that operates the 400-mile commuter rail service known as Metrolink. A report on Metrolink ridership, revenue, and on-time performance for service in Orange County covering fiscal year 2019-20 is provided for Board of Directors' consideration.



6. (Continued)

Recommendation

Receive and file as an information item.

7. Agreement for the Procurement of 40-Foot Compressed Natural Gas-Powered Buses

Dayle Withers/Jennifer L. Bergener

Overview

On March 23, 2020, the Orange County Transportation Authority Board of Directors approved the release of a request for proposals for the purchase of up to 299, 40-foot compressed natural-gas powered buses. Board of Directors' approval is requested to award an agreement for the purchase of 165 buses.

Recommendations

- A. Approve the selection of GILLIG LLC as the firm to provide up to 165, 40-foot compressed natural gas-powered buses, with an option to purchase up to 134 buses.
- B. Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-9-1836 between the Orange County Transportation Authority and GILLIG LLC, in the amount of \$100,371,600, for the purchase of up to 165, 40-foot compressed natural gas-powered buses with an option to purchase up to 134 additional buses.

Regular Calendar

8. Agreement for the Procurement of 40-Foot Plug-In Battery-Electric Buses

Dayle Withers/Jennifer L. Bergener

Overview

On April 27, 2020, the Orange County Transportation Authority Board of Directors approved the release of a request for quotes for the purchase of up to ten, 40-foot plug-in battery-electric buses. As a result, quotes from qualified vendors under the California Statewide Contract for Zero-Emission Transit Buses issued by the California Department of General Services have been evaluated. Board of Directors' approval is requested to award an agreement for the purchase of these buses.



8. (Continued)

Recommendation

Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2165 between the Orange County Transportation Authority and New Flyer of America, Inc., in the amount of \$10,373,230, for the purchase of up to ten 40-foot plug-in battery-electric buses.

9. Contract Change Orders for the Construction of the OC Streetcar Project

Mary Shavaliel/James G. Beil

Overview

On September 24, 2018, the Orange County Transportation Authority Board of Directors authorized Agreement No. C-7-1904 with Walsh Construction Company II, LLC for construction of the OC Streetcar project. Contract change orders are required to increase the allowance for removal of buried man-made objects, modify the traction power and overhead contact system to enable a single track operation in the Pacific Electric Right-of-Way, and allow adjacent tracks to be de-energized for maintenance or emergencies and conduct electrical continuity testing.

Recommendations

- A. Authorize the Chief Executive Officer to negotiate and execute Contract Change Order No. 18 to Agreement No. C-7-1904 with Walsh Construction Company II, LLC, in the amount of \$300,000, to increase the allowance for removal of man-made objects.
- B. Authorize the Chief Executive Officer to negotiate and execute Contract Change Order No. 24.1 to Agreement No. C-7-1904 with Walsh Construction Company II, LLC, in the amount of \$845,985, for overhead contact system sectionalization.
- C. Authorize the Chief Executive Officer to negotiate and execute Contract Change Order No. 30.1 to Agreement No. C-7-1904 with Walsh Construction Company II, LLC, in the amount of \$320,164, to conduct electrical continuity testing.



10. Fullerton Park-and-Ride Joint Development Study

Sam Sharvini/Kia Mortazavi

Overview

The Orange County Transportation Authority initiated a study in the summer of 2018 to explore joint development opportunities at the Fullerton Park-and-Ride facility. This study analyzed conceptual scenarios, representing a range of land-use mixes to determine if further study and outreach are merited. The analysis and next steps are presented for Board of Directors' consideration.

Recommendation

Direct staff to work with the City of Fullerton and stakeholders to further explore joint development opportunities at the Fullerton Park-and-Ride facility.

11. Bus Operations Performance Measurements Report for the Fourth Quarter of Fiscal Year 2019-20

Johnny Dunning, Jr./Jennifer L. Bergener

Overview

The Orange County Transportation Authority operates fixed-route bus and demand-response paratransit service throughout Orange County and into neighboring counties. The established measures of performance for these services assess the safety, courtesy, reliability, and overall quality of the services. This report highlights proposed changes to the method for counting passengers, measuring on-time performance, and summarizes the year-to-date performance of the fixed-route and paratransit services through the fourth quarter of fiscal year 2019-20.

Recommendation

Receive and file as an information item.

Discussion Items

12. OC Bus Service Update

Johnny Dunning, Jr./Jennifer L. Bergener

Staff will provide an update on the OC Bus service.



AGENDA

Transit Committee Meeting

13. Chief Executive Officer's Report

14. Committee Members' Reports

15. Closed Session

There are no Closed Session items scheduled.

16. Adjournment

The next regularly scheduled meeting of this Committee will be held at **9:00 a.m. on Thursday, November 12, 2020**, at the Orange County Transportation Authority Headquarters, Conference Room 07, 550 South Main Street, Orange, California.

Item 1. Public Comments

For Item 1, the Committee Chairman will announce that members of the public may address the Board of Directors regarding any items within the subject matter jurisdiction of the Board of Directors, but no action may be taken on off-agenda items unless authorized by law.

Comments shall be limited to three (3) minutes per speaker, unless different time limits are set by the Chairman subject to the approval of the Board of Directors.



MINUTES

Transit Committee Meeting

Committee Members Present Via Teleconference:

Andrew Do, Chairman
Laurie Davies
Steve Jones
Tim Shaw
Harry S. Sidhu

Staff Present

Darrell E. Johnson, Chief Executive Officer
Jennifer L. Bergener, Deputy Chief Executive Officer
Laurena Weinert, Clerk of the Board
Sara Meisenheimer, Deputy Clerk of the Board

Via Teleconference:

James Donich, General Counsel

Committee Members Absent

Miguel Pulido

Call to Order

The September 10, 2020, regular meeting of the Transit Committee was called to order by Committee Chairman Do at 9:01 a.m.

Roll Call

The Deputy Clerk of the Board conducted an attendance Roll Call and announced that there was quorum of the Transit Committee.

Pledge of Allegiance

Committee Chairman Do led in the Pledge of Allegiance.

1. Public Comments

No public comments were received.

Special Calendar

There were no Special Calendar matters.

Consent Calendar (Items 2 through 6)

2. Approval of Minutes

A motion was made by Director Sidhu, seconded by Director Shaw, and following a roll call vote, declared passed 4-0, to approve the minutes of the Transit Committee meeting of August 13, 2020.

Director Davies was not present to vote on this item.

3. Agreement for Metrolink Train Stations Platform Detectable Tiles Replacement and Painted Guideline Restriping Project

A motion was made by Director Sidhu, seconded by Director Shaw, and following a roll call vote, declared passed 4-0, to:

- A. Find AP Construction, Inc., the apparent low bidder, as non-responsive for failure to complete and submit the List of Subcontractors form with the bid as required by the California Public Contract Code and for failure to sign the Disclosure of Lobbying Activities form as required by the bid instructions and the Federal Transit Administration.
- B. Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2413 between the Orange County Transportation Authority and Two Brothers Construction Corp., the lowest responsive, responsible bidder, in the amount of \$1,098,000, for the Metrolink train stations platform detectable tiles replacement and painted guidelines restriping project.

Director Davies was not present to vote on this item.

4. Amendment to Agreement for Janitorial Services

A motion was made by Director Sidhu, seconded by Director Shaw, and following a roll call vote, declared passed 4-0, to authorize the Chief Executive Officer to negotiate and execute Amendment No. 3 to Agreement No. C-7-1723, between the Orange County Transportation Authority and Gamboa Services, Inc., doing business as Corporate Image Maintenance, in the amount of \$2,485,575, to exercise the option term of the agreement from November 1, 2020 through October 31, 2022, for continued janitorial services. This will increase the maximum obligation of the agreement to a total contract value of \$5,787,111.

Director Davies was not present to vote on this item.

5. October 2020 Bus Service Change

Committee Chairman Do pulled this item and inquired about the following:

- The reasoning for increasing the bus capacity on a 60-foot bus compared to a 40-foot bus.
- If there is a process for passengers to provide concerns about social distancing.

5. (Continued)

Gary Hewitt, Manager of Transit Planning, responded as follows:

- Distancing on the bus prevents people from sitting right next to each another. A 60-foot bus is 50 percent longer and there are more seats.
- There are several ways that passengers can express their concerns about social distancing through customer feedback (i.e. through the call center and emails) and customer round tables.
- As the economy continues to reopen, the Orange County Transportation Authority (OCTA) will adjust to the level of service to match the level of ridership by continuing to track ridership and pass-bys, being in contact with school districts and large employers, and working on the contingency plan.

Committee Chairman Do requested that OCTA staff monitor the customer feedback closely to address the public's concerns, as well as, provided other comments. He asked to bring the bus service changes to the Board of Directors (Board) sooner than the four to six weeks' time frame.

An additional discussion ensued regarding service levels, the amount of pass-bys, OCTA doing well for the safety of public and employee health, ridership demand, and fiscal responsibility. There is a contingency plan to project service needed and staff understands Committee Chairman Do's directive to report the service change sooner.

Following the discussion, no action was taken on this receive and file information item.

6. Hydrogen Fuel-Cell Electric Bus Pilot Update

A motion was made by Director Sidhu, seconded by Director Shaw, and following a roll call vote, declared passed 4-0, to receive and file this information item.

Director Davies was not present to vote on this item.

Regular Calendar

7. OC Streetcar Project Quarterly Update

Jim Beil, Executive Director of Capital Programs, Cleve Cleveland, Department Manager of OC Streetcar Operations, and Tresa Oliveri, Community Relations Specialist, co-presented a PowerPoint presentation as follows:

- Construction – Segment 1;
- Westminster Bridge;
- Santa Ana River Bridge;
- Maintenance and Storage Facility;
- Construction – Segments 2 Through 5;
- Project Challenges;
- Upcoming Construction Milestones;
- Vehicles; and
- Outreach – Support.

A discussion ensued regarding:

- OCTA took advantage of the shutdown periods in downtown Santa Ana on Fourth Street, which allowed the contractor to complete some work.
- The contingency budget on the projects is \$37.9 million, \$21.7 million has been used, and the remaining is \$16.2 million if Board-approved.

Following the discussion, no action was taken on this receive and file information item.

8. Contract Change Order for Vapor Barrier Installation for the Construction of the OC Streetcar Project

James G. Beil, Executive Director of Capital Programs, highlighted the reasons for the vapor barrier that is required by the California Regional Water Quality Control Board and was not a part of the original design. Mr. Beil also described the purpose of the vapor barrier and summarized the recommendation in the Staff Report.

A motion was made by Committee Chairman Do, seconded by Director Davies, and following a roll call vote, declared passed 5-0, to authorize the Chief Executive Officer to negotiate and execute Contract Change Order No. 9 to Agreement No. C-7-1904 with Walsh Construction Company II, LLC, in the amount of \$395,717, for installation of a vapor barrier under the maintenance and storage facility.

9. Amendment to Agreement for the Design of the OC Streetcar Project

James G. Beil, Executive Director of Capital Programs, summarized the agreement with design consultant, HNTB Corporation, and highlighted the reasons for the amendment to increase the design support services during construction of the OC Streetcar project.

A discussion ensued regarding the technology changes that would require an upgrade such as: traffic signal controllers, anything related to servers, computers and software, and reader boards at the platform stations.

A motion was made by Committee Chairman Do, seconded by Director Davies, and following a roll call vote, declared passed 5-0 to authorize the Chief Executive Officer to negotiate and execute Amendment No. 10 to Agreement No. C-5-3337 between the Orange County Transportation Authority and HNTB Corporation, in the amount of \$2,900,000, for continuation of OC Streetcar project design support services during construction. This will increase the maximum cumulative obligation of the agreement to a total contract value of \$23,583,841.

10. Measure M2 Project W Safe Transit Stops - 2020 Programming Recommendations

Joe Alcock, Project Manager of M2 Local Programs, reported on the following:

- Overview of what the Measure M2, Project W program funds and provides and the background on the two calls for projects.
- Due to high demand, a third round of Project W funding consideration was conducted, and the City of Santa Ana (Santa Ana) submitted a funding request to improve 35 bus stops.
- Highlighted the recommendation in the Staff Report.
- During this call for projects, two rounds of outreach were conducted to eligible cities and the only response was from Santa Ana.

Committee Chairman Do thanked the Committee members and OCTA staff for their support especially when Santa Ana was ineligible to apply for funding. He stated that Santa Ana continues to be the core of OCTA's transit services and this funding will add a comfort level to riders. Committee Chairman Do also complimented staff for identifying improvements to the bus system.

Director Shaw stated that during the first call for projects, Santa Ana was considered the hundred busiest bus stops.

10. (Continued)

A motion was made by Committee Chairman Do, seconded by Director Shaw, and following a roll call vote, declared passed 5-0, to approve the award of \$1.03 million in 2020 Project W Safe Transit Stops Program funds to the City of Santa Ana for 35 bus stop improvements.

Discussion Items

11. OC Bus Service Update

Johnny Dunning, Jr., Department Manager of Scheduling and Bus Operations Support, presented a PowerPoint presentation as follows:

- OC Bus Trends During the Coronavirus (COVID-19) Pandemic;
- OC Bus Ridership and Productivity;
- OC Bus Trends: Trippers Vs. Pass-Bys;
- OC Bus Trends: On-Time Performance;
- Customer Communication and Feedback; and
- Next Steps.

No action was taken on this information item.

12. Chief Executive Officer's Report

Darrell E. Johnson, CEO, reported on the following:

- The six-month update on the hydrogen fuel-cell electric bus pilot program that was just approved on today's consent calendar is going well. OCTA is learning a lot and just received approval on the zero emissions bus roll out plan from the Air Resources Board. The plug-in battery electric buses pilot program is also moving along.
- The pandemic has significantly affected transit ridership, but at the same time OCTA needs to continue to plan for the future. OCTA initiated a Freeway Bus Rapid Transit Concept Study to develop a conceptual plan for two freeway routes: the Interstate 5 from Fullerton to Laguna Niguel and the State Route 55 from Santa Ana to Newport Beach. OCTA is starting to collect feedback and in October, there will be a virtual public webinar and a stakeholder working group meeting.

13. Committee Members' Reports

There were no Committee Members' Reports.

14. Closed Session

There were no Closed Session items scheduled.



15. Adjournment

The meeting adjourned at 10:01 a.m.

The next regularly scheduled meeting of this Committee will be held at **9:00 a.m. on Thursday, October 8, 2020**, at the Orange County Transportation Authority Headquarters, Conference Room 07, 550 South Main Street, Orange, California.

ATTEST


Andrew Do
Committee Chairman Do

Sahara Meisenheimer
Deputy Clerk of the Board



October 8, 2020

To: Transit Committee

From: Darrell E. Johnson, Chief Executive Officer 

Subject: Agreement for Fullerton Transportation Center Stair Replacement Project

Overview

The Orange County Transportation Authority, in coordination with the City of Fullerton, is replacing the Fullerton Transportation Center stairs that serve the station overcrossing. On June 22, 2020, an invitation for bids was released. Bids were received in accordance with the Orange County Transportation Authority's public works procurement procedures. Board of Directors' approval is requested to execute the agreement.

Recommendations

- A. Find A2Z Construct, Inc., the apparent low bidder and Metro Building and Engineering Group, Ltd., the apparent third low bidder, as non-responsive for failure to meet the federal requirement for Disadvantaged Business Enterprise participation; and find AP Construction, Inc., the apparent second low bidder, as non-responsive for failure to sign the Disclosure of Lobbying Activities form as required by the bid instructions and the Federal Transit Administration.
- B. Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2267 between the Orange County Transportation Authority and Golden Gate Construction, the lowest responsive, responsible bidder, in the amount of \$705,300, for the Fullerton Transportation Center Stair Replacement Project.

Discussion

The City of Fullerton (City), in coordination with the Orange County Transportation Authority (OCTA), has completed plans, specifications, and estimates (PS&E) for the Fullerton Transportation Center (FTC) Stair Replacement Project (Project). The stairs are part of the existing pedestrian

overpass and were recently inspected by a structural engineer from Ficcadenti, Waggoner, and Castle. It was determined that the treads and risers have considerable structural degradation and need to be replaced. The existing stringer and railing will remain and be repainted.

On June 22, 2020, the Board of Directors (Board) approved a cooperative agreement with the City that defined roles and responsibilities for the Project. The City is the lead on the design and will provide inspection services, design support during construction, and all right-of-way needed for the Project. OCTA is the lead on the construction phase and programmed funding, in the amount of \$1,295,000, in fiscal year 2019-20 Federal Transit Administration Section 5337 funds for the construction phase of the Project.

Procurement Approach

This procurement was handled in accordance with OCTA's Board-approved procedures for public works projects. These procedures, which conform to both federal and state requirements, require that contracts are awarded to the lowest responsive, responsible bidder after a sealed bidding process.

Invitation for Bids (IFB) 0-2267 was electronically released on June 22, 2020, through OCTA's CAMM NET system. The Project was advertised on June 23 and 29, 2020, in a newspaper of general circulation. A pre-bid conference was held on June 30, 2020, and was attended by 12 firms. Four addenda were issued to provide the pre-bid conference registration sheets and handle administrative issues related to the IFB. On July 23, 2020, eight bids were received and publicly opened.

One bid was no longer considered for award after being withdrawn by the bidder. The remaining seven bids were reviewed by staff from both the Contracts Administration and Materials Management and Rail Programs departments to ensure compliance with the contract terms and conditions, and technical specifications. The list of bidders and bid amounts is presented below:

<u>Firm and Location</u>	<u>Bid Amount</u>
A2Z Construct, Inc. Rancho Santa Margarita, California	\$520,000
AP Construction, Inc. Gardena, California	\$529,000

Metro Builders & Engineers Group, Ltd. Newport Beach, California	\$616,815
Golden Gate Construction Norwalk, California	\$705,300
Fast-Track Construction Corporation Culver City, California	\$862,000
LJB Construction Inc. Norwalk, California	\$870,000
Caliagua Inc. Yorba Linda, California	\$949,787

A2Z Construct, Inc., and Metro Builders & Engineers Group, Ltd., were deemed non-responsive for failure to meet the federal requirement for Disadvantaged Business Enterprise participation or demonstrate sufficient good faith efforts as required by the United States Department of Transportation, which is providing funding for this Project.

AP Construction, Inc., was deemed non-responsive for failure to sign the Disclosure of Lobbying Activities form as required by the bid instructions and the Federal Transit Administration, which is providing funding for this Project.

State law requires award to the lowest responsive, responsible bidder. As such, staff recommends award to Golden Gate Construction, the lowest responsive, responsible bidder, in the amount of \$705,300, for the Project.

The engineer's estimate for the Project was \$650,000. The recommended firm's bid is eight percent above the engineer's estimate and is considered by staff to be fair and reasonable.

Fiscal Impact

Funding for the Project is approved in OCTA's Fiscal Year 2020-21 Budget, Capital Programs Division, Account 0018-9084-C5069-0Z5, and is funded with Federal Transit Administration Section 5337 funds.

Summary

Based on the information provided, staff recommends the Board of Directors authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2267 between the Orange County Transportation Authority and Golden Gate Construction, the lowest responsive, responsible bidder, in the amount of \$705,300, for the Fullerton Transportation Center Stair Replacement Project.

Attachment

None.

Prepared by:



Lora Cross
Project Manager
(714) 560-5788

Approved by:



James G. Beil, P.E.
Executive Director, Capital Programs
(714) 560-5646



Pia Veasapen
Interim Director, Contracts
Administration and Materials
Management
(714) 560-5619



October 8, 2020

To: Transit Committee

From: Darrell E. Johnson, Chief Executive Officer

Subject: Agreement for Replacement of Light Poles and Luminaires at Golden West Transportation Center

Overview

The Golden West Transportation Center requires the replacement of light poles and luminaires in order to maintain a safe environment and state of good repair. An invitation for bids was released on July 22, 2020. Bids were received in accordance with Board of Directors-approved procedures for public works projects. Board of Directors' approval is requested to execute the necessary agreement.

Recommendations

- A. Find KDC, Inc., dba Dynalectric, the apparent low bidder and Elecnor Belco Electric, Inc., the apparent second low bidder, as non-responsive for failure to meet the federal requirement for Disadvantaged Business Enterprise participation.
- B. Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2363 between the Orange County Transportation Authority and Crosstown Electrical & Data, Inc., the lowest responsive, responsible bidder, in the amount of \$223,789, for the replacement of light poles and luminaires at the Golden West Transportation Center.

Discussion

The Orange County Transportation Authority (OCTA) completed construction of the Golden West Transportation Center (GWTC) in 1994. Each of the light poles originally installed at the GWTC is beyond its useful life and requires replacement. The project will replace the original parking lot and bus dock platform safety lighting poles and luminaires, and related work, including required phasing, traffic control, and safety compliance in the active transportation center environment. The project is needed for public safety, state

of good repair compliance, and will increase energy efficiency with use of light emitting diode (LED) luminaires.

Procurement Approach

This procurement was handled in accordance with OCTA's Board of Directors-approved procedures for public works projects. These procedures, which conform to both state and federal requirements, require that contracts are awarded to the lowest responsive, responsible bidder after a sealed bidding process.

Invitation for Bids (IFB) 0-2363 was electronically released on July 22, 2020, through OCTA's CAMM NET system. The project was advertised on July 22 and 27, 2020, in a newspaper of general circulation. A pre-bid conference was held on July 28, 2020 and was attended by six firms. Four addenda were issued to provide the pre-bid conference registration sheets and handle administrative issues related to the IFB. On August 19, 2020, ten bids were received and publicly opened.

All bids were reviewed by staff from both the Contracts Administration and Materials Management and Facilities Engineering departments to ensure compliance with the contract terms and conditions, and technical specifications. The list of bidders and bid amounts is presented below:

<u>Firm and Location</u>	<u>Bid Amount</u>
KDC, Inc., dba Dynalectric Los Alamitos, California	\$190,855
Elecnor Belco Electric, Inc. Chino, California	\$195,229
Crosstown Electrical & Data, Inc. Irwindale, California	\$223,789
RMF Contracting, Inc., dba R&M Electrical Contracting Lake Forest, California	\$228,364
AMTEK Construction Orange, California	\$323,333
Comet Electric, Inc. Chatsworth, California	\$357,800

A2Z Construct, Inc. Rancho Santa Margarita, California	\$370,000
California Professional Engineering, Inc. La Puente, California	\$397,800
Baker Electric, Inc. Escondido, California	\$404,000
PUB Construction, Inc. Diamond Bar, California	\$438,000

KDC, Inc., dba Dynalectric and Elecnor Belco Electric, Inc., were deemed non-responsive for failure to meet the federal requirement for Disadvantaged Business Enterprise participation or demonstrate sufficient good faith efforts as required by the bid instructions and regulations from the United States Department of Transportation, which is providing funding for this project.

State law requires award to the lowest responsive, responsible bidder. As such, staff recommends award to Crosstown Electrical & Data, Inc., the lowest, responsive, responsible bidder, in the amount of \$223,789, for the replacement of light poles and luminaires at the GWTC.

The engineer's estimate for this project was \$400,000. The recommended firm's bid is 44 percent below the engineer's estimate. The bid analysis determined the engineer's estimate for material costs and overhead was higher, resulting in the variance. The Disadvantaged Business Enterprise participation commitment form shows \$84,240 for lighting materials, while the engineer's estimate was \$142,874, which is a difference of \$58,624. The firm included minimal overhead in its bid and appears to be absorbing the project overhead under its overall company business operations. The firm allocated \$10,000 to mobilization, whereas the engineer's estimate included \$33,000 for mobilization. Similarly, the firm allocated minimal costs for general conditions, making the overall bid price to engineer's estimate variance. The bidder is a general engineering and electrical contractor licensed and in business for over 20 years. Reference checks received from the California Department of Transportation noted successful delivery of work on similar projects. The bidder indicated that it will be self-performing the work, which accounts for aggressive pricing by the bidder due to no subcontractor markups. The bid includes all the required work components and has been determined to be fair and reasonable. Crosstown Electrical & Data, Inc., met the requirements of the IFB, as well as all federal and state requirements.

Fiscal Impact

The project was approved in OCTA's Fiscal Year 2020-21 Budget, Capital Programs Division, Account 1722-9022-D3118-0M6, and is funded through Federal Transit Administration Section 5337 State of Good Repair Grant Funds, Revenue Code 0030-6041-D3118-MJK.

Summary

Based on the information provided, staff recommends the Board of Directors authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2363 to Crosstown Electrical & Data, Inc. in the amount of \$223,789, for the replacement of light poles and luminaires at the Golden West Transportation Center.

Attachment

None.

Prepared by:



George Olivo, P.E.
Program Manager
(714) 560-5872



Pia Veasapen
Interim Director, Contracts
Administration and Materials
Management
(714) 560-5619

Approved by:



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October 8, 2020

To: Transit Committee

From: Darrell E. Johnson, Chief Executive Officer

Subject: Agreement for Locker Room Expansion at Santa Ana Bus Base Maintenance Building

Overview

The Orange County Transportation Authority's Santa Ana Bus Base requires modifications to the maintenance building locker rooms. An invitation for bids was issued on August 5, 2020. Bids were received in accordance with Board of Directors-approved procedures for public works projects. Board of Directors' approval is requested to execute the agreement.

Recommendation

Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2467 between the Orange County Transportation Authority and Thomco Construction, Inc., the lowest responsive, responsible bidder, in the amount of \$339,123, for locker room expansion at the Santa Ana Bus Base maintenance building.

Discussion

The Orange County Transportation Authority (OCTA) completed construction of the Santa Ana Bus Base in 2005. In support of operations, the maintenance building contains two locker rooms for bus maintenance staff, with one locker room each for women and men. The space provided for the men's locker room is undersized for maintenance employees, resulting in inadequate space, locker size, and quantity. Facility modifications are needed to expand the size of the locker room footprint using adjacent, underutilized space. The project scope includes minor demolition, framing a new locker room adjacent to the existing men's locker room, installation of lockers, benches, lighting, ventilation, fire protection appurtenances, finishes, and related work. The locker room expansion will increase efficiency and provide an improved work environment for bus maintenance staff.

Procurement Approach

This procurement was handled in accordance with OCTA's Board of Directors-approved procedures for public works projects. These procedures, which conform to both state and federal requirements, require that contracts are awarded to the lowest responsive, responsible bidder after a sealed bidding process.

Invitation for Bids (IFB) 0-2467 was electronically released on August 5, 2020, through OCTA's CAMM NET system. The project was advertised on August 5 and 12, 2020, in a newspaper of general circulation. A pre-bid conference was held on August 11, 2020, and was attended by 14 firms. Three addenda were issued to provide the pre-bid conference registration sheets and handle administrative issues related to the IFB. On September 3, 2020, 11 bids were received and publicly opened.

All bids were reviewed by staff from both the Contracts Administration and Materials Management and Facilities Engineering departments to ensure compliance with the contract terms and conditions, and technical specifications. The list of bidders and bid amounts is presented below:

<u>Firm and Location</u>	<u>Bid Amount</u>
Thomco Construction, Inc. Anaheim, California	\$339,123
A2Z Construct, Inc. Rancho Santa Margarita, California	\$340,000
Golden Gate Steel, Inc., dba Golden Gate Construction Norwalk, California	\$362,560
Reed Family Enterprises, Inc. Temecula, California	\$378,833
Corner Keystone Construction Corporation Walnut, California	\$383,870
Model Builders, Inc. Westminster, California	\$398,765

R. Dependable Construction, Inc. San Bernardino, California	\$520,000
Horizons Construction Company International, Inc. Orange, California	\$527,724
Kazoni Inc. dba Kazoni Construction Costa Mesa, California	\$534,142
Fast-Track Construction Corporation Culver City, California	\$545,000
Two Brothers Construction Corporation Buena Park, California	\$548,000

The engineer's estimate for this project was \$400,000. The recommended firm's bid is 15 percent below the engineer's estimate and is considered by staff to be fair and reasonable.

State law requires award to the lowest responsive, responsible bidder. As such, staff recommends award to Thomco Construction, Inc., the lowest responsive, responsible bidder, in the amount of \$339,123, for the locker room expansion at the Santa Ana Bus Base maintenance building.

Fiscal Impact

The project was approved in OCTA's Fiscal Year 2020-21 Budget, Capital Programs Division, Account 1722-9022-D3126-00G, and is funded through Local Transportation Funds.

Summary

Based on the information provided, staff recommends the Board of Directors authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2467 between the Orange County Transportation Authority and Thomco Construction, Inc., the lowest responsive, responsible bidder, in the amount of \$339,123, for the locker room expansion at the Santa Ana Bus Base maintenance building.

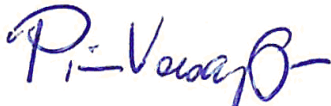
Attachment

None.

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October 8, 2020

To: Transit Committee

From: Darrell E. Johnson, Chief Executive Officer

Subject: Metrolink Fiscal Year 2019-20 Performance Report

Overview

The Southern California Regional Rail Authority is a five-member joint powers authority that operates the 400-mile commuter rail service known as Metrolink. A report on Metrolink ridership, revenue, and on-time performance for service in Orange County covering fiscal year 2019-20 is provided for Board of Directors' consideration.

Recommendation

Receive and file as an information item.

Background

The Southern California Regional Rail Authority's (Metrolink) membership includes the Los Angeles County Metropolitan Transportation Authority (LA Metro), the Orange County Transportation Authority (OCTA), the Riverside County Transportation Commission, the San Bernardino County Transportation Authority, and the Ventura County Transportation Commission (VCTC). Metrolink operates 169 weekday trains on seven lines, serving 62 stations, and carries approximately 35,000 riders each weekday.

In response to the coronavirus (COVID-19) pandemic and the resulting decrease in ridership, Metrolink implemented a temporary 30 percent systemwide service reduction in March 2020. Weekday trains were reduced from 169 to 115 systemwide. The change resulted in a 16.7 percent reduction of service on the three lines that serve Orange County. Metrolink will continue to operate with reduced service, incrementally restoring service as demand warrants, with the anticipation that pre-COVID-19 service levels will be fully reinstated by the third quarter of fiscal year (FY) 2020-21.

In addition to fare revenue, Metrolink is funded by its member agencies, with formulas based upon several factors covering each aspect of operations, maintenance, rehabilitation, and capital.

Metrolink service in Orange County includes three lines (OC Metrolink), with pre- and post-COVID-19 pandemic service levels outlined below:

- OC Line:
 - Oceanside to Los Angeles via Anaheim
 - Established in 1994
 - 27 daily trains (21 trains post-COVID-19 pandemic service reduction)
- Inland Empire – Orange County (IEOC) Line:
 - San Bernardino to Oceanside via Orange
 - Established in 1995
 - 16 daily trains (14 trains post-COVID-19 pandemic service reduction)
- 91/Perris Valley (91/PV) Line:
 - Perris to Los Angeles via Fullerton
 - Established in 2002
 - 11 daily trains (ten trains post-COVID-19 pandemic service reduction)

Metrolink trains serve 11 Orange County stations daily and carry an average of 14,413 daily passengers on OC Metrolink for the full FY, down 22.3 percent compared to the prior FY. Weekend service is offered on all three lines, with 16 trips on Saturday and Sunday.

Metrolink service along portions of each line in Orange County shares the corridor with the state-supported intercity passenger rail service known as the Amtrak Pacific Surfliner, managed by the Los Angeles – San Diego – San Luis Obispo Rail Corridor Agency with OCTA serving as the current managing agency.

The Rail 2 Rail (R2R) Program, which began in 2003, allows Metrolink monthly passholders the option of riding Amtrak Pacific Surfliner trains at no additional charge to the rider, if the rider travels within the stations identified on their monthly pass. Amtrak Pacific Surfliner monthly pass holders may also ride any Metrolink train within the station pairs of their monthly pass. The R2R Program is fully funded by the three member agencies that benefit from the program: LA Metro, VCTC, and OCTA, with OCTA contributing 66 percent.

Discussion

This report provides an update on Metrolink weekday and weekend ridership, revenue, and on-time performance (OTP) for FY 2019-20 by line. All performance data is obtained directly from Metrolink, unless otherwise noted. Service operated as outlined above pre-COVID-19 was reduced in March, and most impacts from the COVID-19 pandemic were realized in the last quarter of the FY. Metrolink performance: ridership, revenue, and OTP are detailed in Attachment A.

Ridership

Total Ridership

Weekday and weekend ridership combined for FY 2019-20 for OC Metrolink was 3.9 million, which represents a 23.6 percent decrease compared to the previous FY, as shown in the table below.

Total Boardings			
Line	FY 2018-19	FY 2019-20	Percent Change
OC Line	2,864,777	2,158,259	-24.7%
IEOC Line	1,315,621	1,015,806	-22.8%
91/PV Line	893,079	700,553	-21.6%
OC Metrolink	5,073,477	3,874,618	-23.6%
Systemwide	11,935,362	9,357,013	-21.6%

A quarterly ridership breakdown for OC Metrolink is provided below to show the impact of the COVID-19 pandemic on ridership through the FY, which shows a decline in the third and fourth quarters.

Total Boardings by Quarter				
	Quarter	FY 2018-19	FY 2019-20	Percent Change
OC Metrolink	Q1	1,315,084	1,329,985	1.1%
	Q2	1,254,275	1,277,507	1.9%
	Q3	1,226,349	1,153,217	-6.0%
	Q4	1,277,770	113,909	-91.1%
	Total	5,073,477	3,874,618	-23.6%

Each OC Metrolink line was impacted in the fourth quarter of FY 2019-20, as follows:

- OC Line - 92.6 percent decrease
- IEOC Line - 89.2 percent decrease
- 91/PV Line - 89.1 percent decrease

Average Weekday Ridership

As Southern California's commuter rail system, weekday commuters are Metrolink's key market, and schedules are optimized to serve that market. In FY 2019-20, there were 14,413 combined average weekday boardings on OC Metrolink, representing a decline of 22.3 percent compared to the prior year.

The OC Metrolink lines, stations, and boardings are geographically portrayed in Attachment B. The table below shows the change in average weekday station boardings in FY 2018-19 compared to FY 2019-20.

Average Weekday Station Boardings			
Orange County Station	FY 2018-19	FY 2019-20	Percent Change
Fullerton	1,651	1,269	-30.1%
Irvine	1,431	1,074	-33.3%
Tustin	1,198	922	-30.0%
Santa Ana	817	629	-30.0%
Orange	639	504	-26.7%
Buena Park	594	462	-28.5%
Anaheim	542	423	-28.0%
Laguna Niguel/Mission Viejo	327	263	-24.3%
Anaheim Canyon	307	240	-27.7%
San Juan Capistrano	143	111	-28.7%
San Clemente (North Beach)	102	74	-37.7%

In addition to local OC Bus routes that connect to rail stations, OCTA operates StationLink and iShuttle routes that are designed to meet certain trains. These rail feeder buses provide a commuter link to major employment centers, with nearly 1,350 average weekday boardings prior to the COVID-19 pandemic and 95 average weekday boardings post-COVID-19 pandemic (compared to 1,700 the previous year). StationLink service has been maintained with no reductions through the COVID-19 pandemic, whereas the iShuttle routes were suspended with plans to restore service once Metrolink ridership demand recovers following the COVID-19 pandemic. OCTA also provides the OC Flex on-demand shuttle service that serves the Laguna Niguel/Mission Viejo Station in one of its zones. Connections to OC Bus and OC Flex service are free with valid Metrolink fare. OC Flex serving the Metrolink station averaged 687 per month from July to March 2020 and dropped to a 217-monthly average from April to June 2020, or post-COVID pandemic.

Weekend Ridership

Metrolink weekend service began in 2006 with two roundtrips on the OC Line. There are currently four weekend roundtrips on the OC Line, two on the IEOC Line, and two on the 91/PV Line. Weekend service on the 91/PV Line extension began October 2019.

Combined weekend ridership on OC Metrolink lines during FY 2019-20 reached approximately 336,000 boardings. This represents a decrease of 26.4 percent compared to FY 2018-19. To encourage weekend ridership recovery, OCTA continues to promote Metrolink weekend service through Metrolink weekend campaigns, which feature exclusive deals and travel itineraries. The following table details weekend ridership by line.

Total Weekend Ridership			
Line	FY 2018-19	FY 2019-20	Percent Change
OC Line	227,147	166,930	-26.5%
IEOC Line	155,367	112,005	-27.9%
91/PV Line	73,794	56,986	-22.8%
OC Metrolink	456,308	335,921	-26.4%
Systemwide	1,028,937	770,579	-25.1%

Revenue

Systemwide revenue for FY 2019-20 was \$62 million, a 27.4 percent decrease from FY 2018-19. Annual revenue for OC Metrolink totaled \$27.3 million, which represents a 30.8 percent decrease from the previous FY, due to the COVID-19 pandemic. Revenue for OC Metrolink is 44 percent of the systemwide total of \$62 million.

Passenger fare revenue covers roughly half of Metrolink operating expenses, with the remainder covered by other revenues and member agency subsidies. The OC Line consistently has the highest farebox recovery rate, for FY 2019-20 projected farebox recovery was 65.1 percent, exceeding the systemwide projection of 34.3 percent. A summary of Metrolink revenue is depicted in the following table.

Metrolink Total Revenue			
Line	FY 2018-19	FY 2019-20	Percent Change
OC Line	\$ 22,495,173	\$ 16,901,989	-33.1%
IEOC Line	\$ 7,443,678	\$ 5,839,660	-27.5%
91/PV Line	\$ 5,758,327	\$ 4,548,926	-26.6%
OC Metrolink	\$ 35,697,178	\$ 27,290,575	-30.8%
Systemwide	\$ 79,007,225	\$ 62,018,826	-27.4%

On-Time Performance

Trains can be delayed for a variety of reasons, including equipment issues, unscheduled delays (or meets) with other trains, delays from other operators utilizing the same tracks, construction or track maintenance, and incidents. Metrolink's OTP goal is 95 percent. A train is defined as on-time if it arrives at its destination within five minutes of its scheduled arrival time. In FY 2019-20, Metrolink operated at a 95.1 percent systemwide on-time performance, a 2.4 percentage point increase from the prior year. The OC, IEOC, and 91/PV lines averaged 92.9, 94.3, and 94.7 percent OTP, respectively, for FY 2019-20. OTP improved significantly in the third and fourth quarters of the FY, including all the lines that operate in OC.

Key Initiatives FY 2019-20

Metrolink undertook several efforts to enhance service during the year. The list below highlights some of these efforts:

- *Smarter. Better. Essential.* Campaign: Metrolink launched a clean commute campaign in response to the COVID-19 pandemic, by increasing the cleaning and safety procedures onboard and at stations. The cleaning measures include an enhanced nightly train deep cleaning, the addition of more staff to perform touch-point cleaning, the purchase of electrostatic sprayers that disinfect passenger cars, and the installation of two hand sanitizer stations on each train car. To enhance safety, Metrolink installed decals on trains that remind riders to practice social distancing and highlight Metrolink's cleaning measures. Metrolink requires staff and riders to wear masks while onboard trains; if a rider does not have a mask or face covering, Metrolink conductors may provide one.
- The Metrolink Recovery Plan Framework is designed to protect employees and customers against the spread of COVID-19 while taking a phased approach to position Metrolink as smarter, better, and essential for post-stay-at-home operations:
 - Health and Safety
 - Operational Transparency
 - The Triple Bottom Line: Economy, Environment, Equity
 - Future Proof Operations: More Efficient Stewardship
 - Sustainable Financial Performance

- In July 2020, the OCTA Board of Directors approved the use of \$64,633,169 in Coronavirus Aid, Relief, and Economic Security Act funds for Metrolink operations. Metrolink has begun to draw down the funds to offset fare revenue shortfalls and to cover additional cleaning practices noted above.
- Special Trains – In response to the COVID-19 pandemic, Metrolink suspended special train service until further notice. The following special trains took place before the COVID-19 pandemic in FY 2019-20:
 - Los Angeles Rams: In coordination with member agencies, Metrolink operated special train service on the OC and 91/PV lines to four 2019 regular season Los Angeles Rams football home games at the Los Angeles Coliseum. On average during the regular season, boardings on game days nearly tripled compared to boardings on a typical Sunday.
 - Holiday Express Train: Metrolink debuted an interactive seasonal-themed special train that featured carolers, holiday characters, and decorations. The special train operated on the OC, Ventura County, and Antelope Valley lines. The OC Line train operated from the Laguna Niguel/Mission Viejo Station to Oceanside and back with no stops. The Holiday Express Train was a success, with 98.5 percent of tickets for the OC Line event sold.
- Tier 4 Locomotives: Metrolink currently has 37 of the 40 Tier 4 locomotives operating in its fleet, with the final three scheduled to be placed in service this fall. The Tier 4 Locomotive project received environmental certification in September 2020 from the California Air Resources Board, a designation that affirms Metrolink's commitment to reducing greenhouse gas emissions. As of May 2020, Metrolink removed its last Tier 0 Locomotive from service.
- New Fare Pilot Programs: As part of Metrolink's ridership recovery plan, Metrolink launched two new fare pilot programs: 'Kids Ride Free' on Weekends and the 5-Day Flex Pass.
- New Ticket Vending Devices: Metrolink completed the installation of 133 new ticket vending machines at all 62 stations as of June 2020. The machines' interface and technology are more reliable, user-friendly, and provide convenience and time savings.

Summary

This report provides an update on OC Metrolink commuter rail ridership, revenue, and OTP for FY 2019-20. Total ridership was 3.9 million boardings, a 23.6 percent decrease over the prior year, with the COVID-19 pandemic impacting both weekday and weekend ridership. Annual revenue for OC Metrolink totaled \$27.3 million, which represents a 30.8 percent decrease from the previous FY. The OC, IEOC, and 91/PV lines averaged 92.9, 94.3, and 94.7 percent OTP, respectively, for the period covered in this report.

Attachments

- A. Metrolink Fiscal Year 2019-20 Performance Report
- B. Metrolink Average Weekday Station Boardings (FY2019-20)

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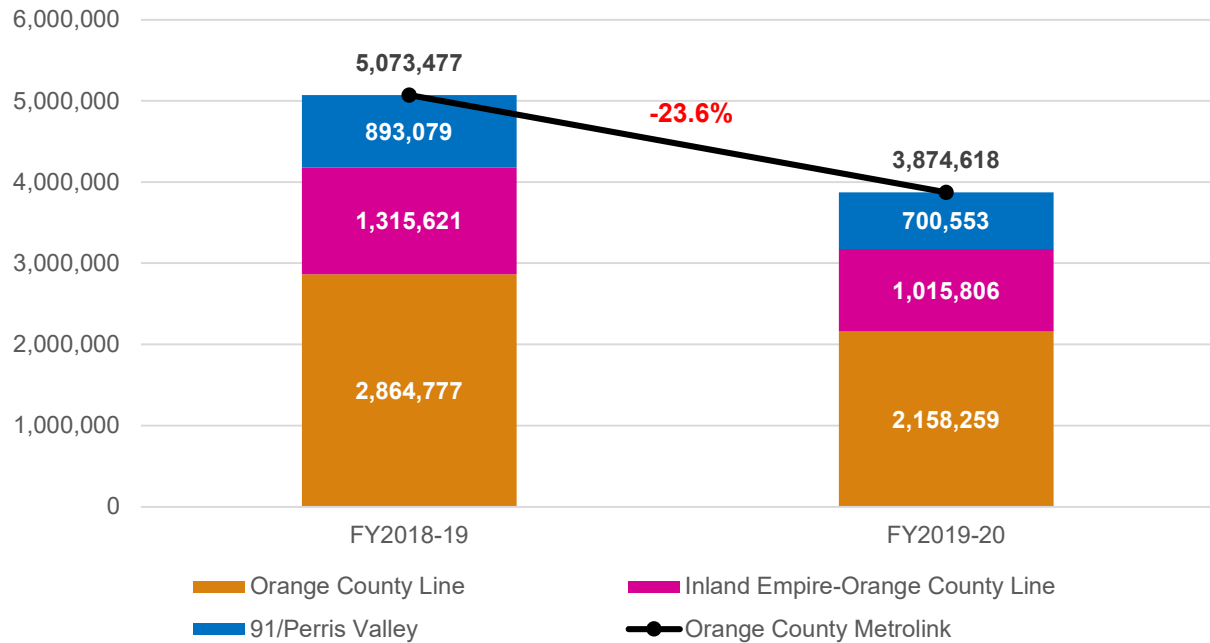
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Metrolink Fiscal Year 2019-20 Performance Report

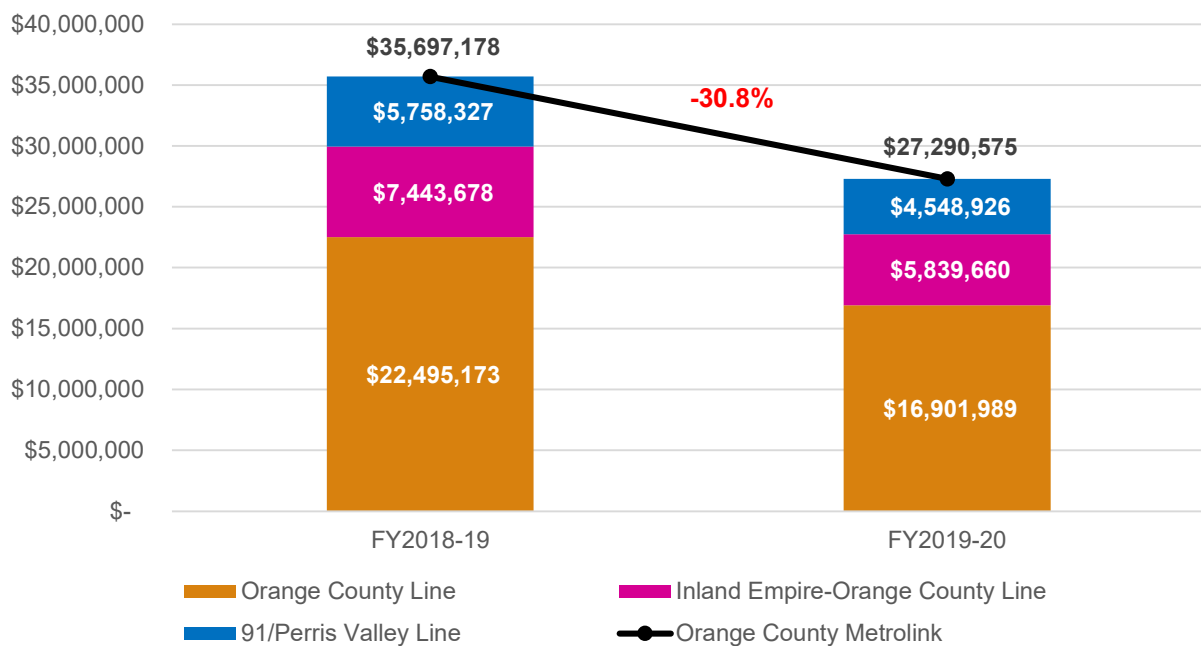
Ridership

Figure 1: FY2018-19 v. FY2019-20 Comparison - Total Boardings



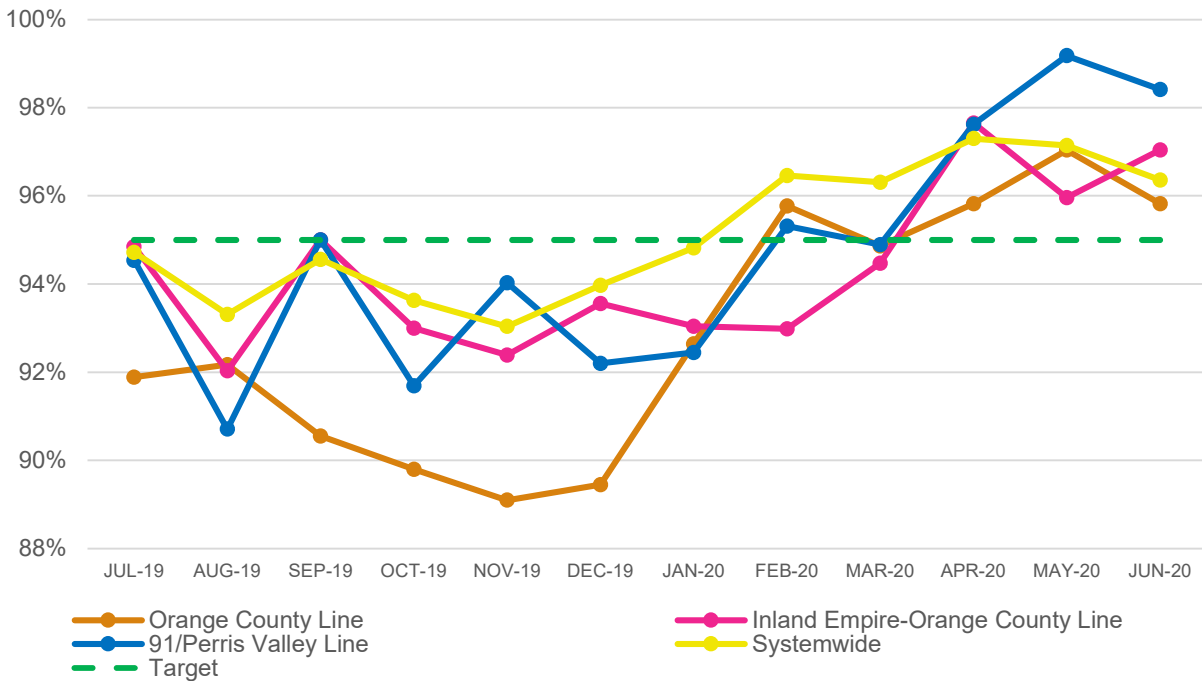
Revenue

Figure 2: FY2018-19 v. FY2019-20 Comparison - Total Revenue

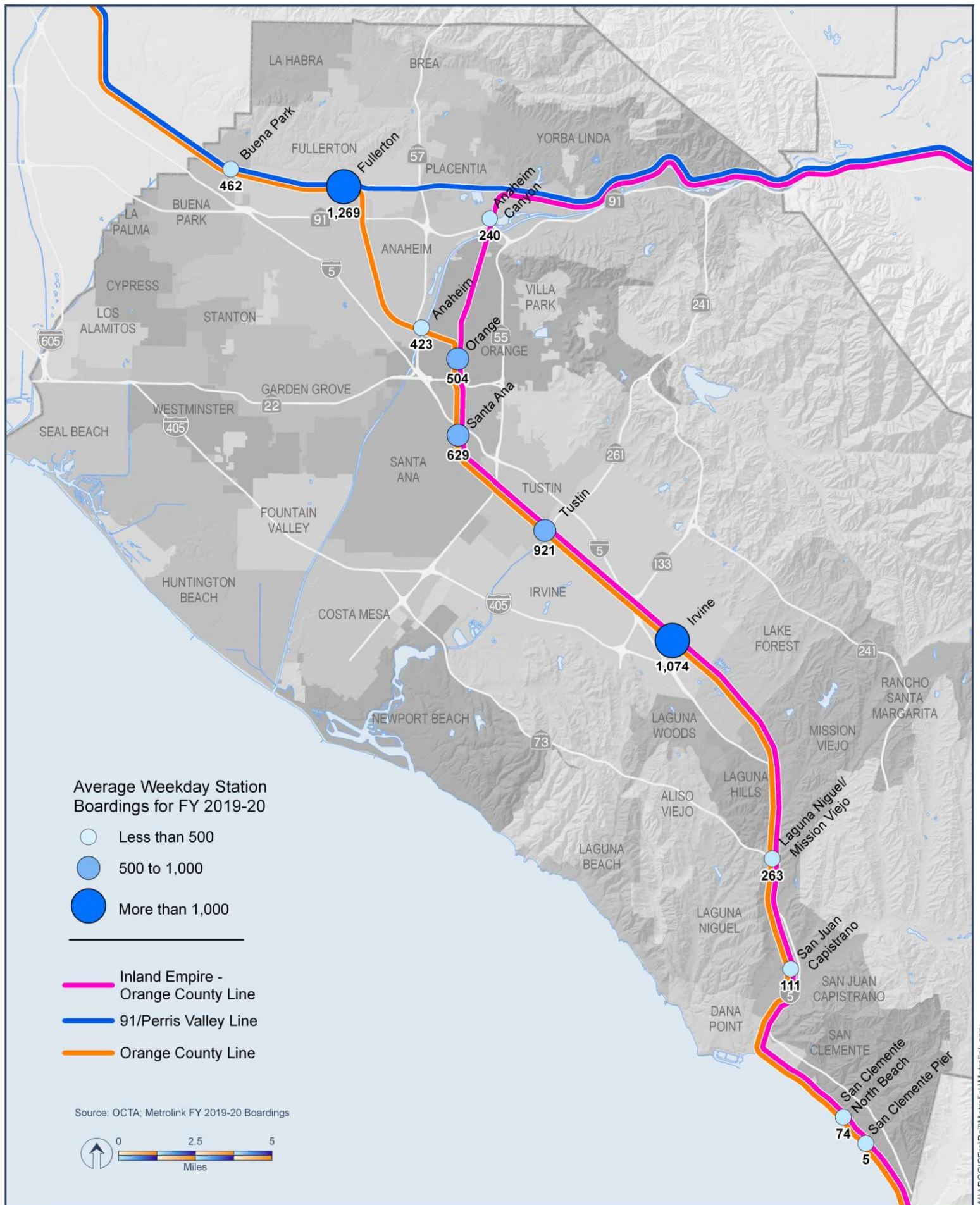


On-Time Performance

Figure 3: FY2019-20 On-Time Performance



Metrolink Average Weekday Station Boardings (FY2019-20)





October 8, 2020

To: Transit Committee

From: Darrell E. Johnson, Chief Executive Officer

Subject: Agreement for the Procurement of 40-Foot Compressed Natural Gas-Powered Buses

Overview

On March 23, 2020, the Orange County Transportation Authority Board of Directors approved the release of a request for proposals for the purchase of up to 299, 40-foot compressed natural gas-powered buses. Board of Directors' approval is requested to award an agreement for the purchase of 165 buses.

Recommendations

- A. Approve the selection of GILLIG LLC as the firm to provide up to 165, 40-foot compressed natural gas-powered buses, with an option to purchase up to 134 additional buses.
- B. Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-9-1836 between the Orange County Transportation Authority and GILLIG LLC, in the amount of \$100,371,600, for the purchase of up to 165, 40-foot compressed natural gas-powered buses, with an option to purchase up to 134 additional buses.

Discussion

The Orange County Transportation Authority (OCTA) currently has a fleet of 462, 40-foot compressed natural gas (CNG)-powered buses used to deliver both directly operated and contract operated fixed-route service. Of the 462, 40-foot CNG-powered buses, 299 were delivered and deployed into revenue service in years 2007 and 2008. The Federal Transit Administration (FTA) defines the minimum useful life of these buses as 12 years or 500,000 miles. Consistent with the OCTA Fleet Plan, the 299 CNG-powered buses will be replaced at 16, 17, and 18 years of service.

The coronavirus pandemic has had a significant impact on ridership and OC Bus System service levels. As a result, staff has reviewed and adjusted the ridership projections and corresponding revenue vehicle hours, resulting in a reduced requirement for the number of replacement buses. To align with the reduced number of buses required at this time, the request for proposals (RFP) was amended to adjust the quantity needed from 299, 40-foot CNG-powered buses to up to 165, 40-foot CNG-powered buses, with an option to purchase up to 134 additional buses, to be exercised no later than December 31, 2022.

The new buses will be equipped with all OCTA-required equipment and branding requirements, which includes BRAVO! exterior paint branding (up to 20 buses), Express configured buses, (up to 30 buses) and OC Bus branding for regular fixed-route service. In addition, these buses will include an on-board video surveillance system equipped with reverse-motion and interior 360-degree cameras, fire and methane detection systems, driver barriers, three-position bicycle racks, 12-inch and 15-inch awareness monitors/displays, provisions to mount devices at the front and rear doors for electronic fare transactions, tire pressure monitoring system, upgraded radio communication system (voice over internet protocol) as well as all other systems and components, required for a full integration of these buses into the OCTA fleet.

Procurement Approach

This procurement was handled in accordance with OCTA Board of Directors (Board)-approved procedures for goods and services. Award is recommended to the firm offering the most comprehensive overall proposal, considering factors such as the approach to comply with bus technical specifications and requirements, qualifications, related experience of the firm, as well as cost and price.

On March 23, 2020, the Board authorized the release of RFP 9-1836 to select a firm to provide 40-foot CNG-powered buses. The RFP was issued electronically on CAMM NET. The project was advertised in a newspaper of general circulation on March 23 and 30, 2020. A pre-proposal conference was held on April 7, 2020, with 19 attendees representing eight firms. Five addenda were issued to post the pre-proposal conference registration sheets, respond to questions related to the RFP, and to provide clarification to firms.

On June 23, 2020, three proposals were received. An evaluation committee consisting of OCTA staff from Contracts Administration and Materials Management, Transit Technical Services, Health, Safety and Environmental Compliance, Bus Operations, and Maintenance departments met to review the submitted proposals.

The proposals were evaluated based on the following Board-approved evaluation criteria and weightings:

- Technical Specifications 50 percent
- Qualifications, Related Experience, and Project Management 20 percent
- Cost and Price 30 percent

Technical specifications was assigned the highest level of importance, 50 percent, to ensure proposals addressed each section of the technical specifications in sufficient detail to demonstrate a clear understanding of the scope of work, as the approach to comply with the bus specifications and requirements, capability to deliver a non-defective bus, and provide quality assurance and warranty are critical elements to the successful manufacturing of the buses. In addition, proposals must include evidence of sufficient planning to show that work will be accomplished as required with suggestions intended to improve the technical and operational aspects of the buses. Proposals must also demonstrate compliance with performance requirements. Firms must provide information regarding engineering, manufacturing, program and quality controls, plans for the coordination of major suppliers and subcontractors, as well as a schedule for the production of both the pilot and production buses.

Qualifications of the firm was assigned a 20 percent weighting and includes the history of the firm and information regarding the firm's manufacturing capabilities in producing the same or similar vehicles, with an emphasis on experience in producing CNG-powered vehicles. Under this criterion, proposals must provide federal and non-federal certifications, warranty and service center locations, maintenance information, financial documentation, past performance of vehicles, and references. The overall reputation of the firm was assessed through the review of any judgements, liens, fleet defect history, and/or warranty claims, and the steps each firm took to resolve these matters.

Cost and price was assigned 30 percent, as each firm must demonstrate competitiveness in pricing with supporting data to carry out the required services.

On July 13, 2020, the evaluation committee reviewed all proposals based on the evaluation criteria and short-listed the two most qualified firms listed in alphabetical order as follows:

Firm and Location

GILLIG LLC (Gillig)
Livermore, California

New Flyer of America, Inc. (New Flyer)
St. Cloud, Minnesota

On July 21, 2020, the evaluation committee interviewed both firms to assess their project understanding and approach to the scope of work. Each firm had an opportunity to present its qualifications, the proposed bus platform, and respond to evaluation committee questions. The evaluation committee asked specific clarification questions related to each firm's proposal relative to OCTA's 40-foot CNG-powered bus technical requirements.

The individual criteria scores for both short-listed firms were reviewed after the interviews; however, the overall ranking of the firms did not change.

On July 30, 2020, both firms were requested to review recently-approved bus configuration component changes, as well as to confirm compliance with OCTA's requirements that were not clearly defined in each firm's proposal, and submit revised pricing on associated items, if needed.

Based on the evaluation of written proposals, the information obtained from interviews and clarifications, the evaluation committee is recommending Gillig for consideration of award. Following is a brief summary of the proposal evaluation results.

Technical Specifications

Both short-listed firms are established companies with demonstrated ability to manufacture and deliver a 40-foot CNG-powered bus that meets OCTA's specifications.

Both proposed buses are "Altoona tested" and have an FTA-defined useful life of 12 years or 500,000 miles. Altoona testing evaluates new transit bus models for safety, reliability, performance, maintainability, noise, fuel economy and emissions.

OCTA specified minimum manufacturer warranties on the complete bus, including body and chassis structure, propulsion system, and major subcomponents such as the fire suppression system, brake system, fuel storage system and the heating, ventilation, and air conditioning system.

Both firms proposed to provide basic manufacturer warranties; however, Gillig proposed extended coverage for the manufacturer's base warranty to either meet or exceed OCTA's requested warranties, where New Flyer proposed to meet some of the requested warranties by adding an additional cost per warranty to each bus. Further, the bus body structural and integrity corrosion warranties offered by Gillig are for 14 years or 600,000 miles, whichever comes first, exceeding the commonly offered warranties for transit buses by two years and 100,000 miles. The longer warranties will provide support to OCTA's current Board policy that requires transit buses to be operated for 18 years, regardless of mileage.

Gillig proposed a stainless-steel structural layout and chassis designed to increase longevity and minimize corrosion. The chassis contains no welding on the low floor structure and is sprayed with aluminum-filled epoxy corrosion protection throughout the vertical sidewall body structure from the lower edges to above the midrail extrusion to aid in minimizing corrosion. Bus weight is always an area of concern due to the State of California's weight regulations. The proposed rear axle weight is lighter than other proposed buses, thus decreasing the curb weight by approximately 600 pounds. Gillig's bus utilizes five CNG tanks and has a recorded range of approximately 442 miles. In addition, Gillig uses industry standard parts with minimal proprietary components to ensure aftermarket part competition.

New Flyer proposed a hybrid structure composed of carbon steel/ferritic stainless steel, coated in a polyurethane primer, said to be an improvement over earlier bus builds in terms of corrosion protection; critical areas are coated with the primer including the chassis, curbside, and street side structural walls. The curb weight of the proposed bus falls within regulation limits. New Flyer's bus utilizes six CNG tanks and is designed for a 350 to 400-mile range; OCTA's requirement is a minimum 400-mile range.

Qualifications, Related Experience, and Project Management

In recent years, OCTA has done business with both New Flyer and Gillig and currently has buses on order with Gillig. Both firms presented experienced key staff, demonstrated strong relationships with suppliers and proposed a manufacturing schedule that fits within OCTA's delivery timeline.

Gillig, founded in 1890, is a 100 percent United States owned-and-operated manufacturing company, with one location in Livermore, California. Gillig has been manufacturing heavy-duty buses since 1978 and began manufacturing CNG-powered buses in 2010. Gillig has 14 quality control inspectors that verify and document compliance with bus specifications during the manufacturing of

each bus and guarantees on-time delivery of each bus. Gillig plans to have two field service representatives living in Orange County to handle all warranty-related activities and coordinate with component suppliers, once the buses start arriving in Orange County and are delivered to OCTA. In addition, Gillig will secure off-site properties for the correction of any Gillig bus discrepancies that may be noted by OCTA, if necessary.

New Flyer, founded in 1930, is a subsidiary of NFI Group, Inc., operating more than 50 facilities across ten countries, with three manufacturing facilities in the United States. New Flyer began manufacturing heavy-duty buses in 1988 and CNG-powered buses in 1994. OCTA currently has both CNG-powered and hydrogen fuel-cell buses built by New Flyer in the fleet. New Flyer buses are manufactured on four linear continuous flow production lines, three in the United States and one in Canada. The proposed bus will be manufactured in St. Cloud, Minnesota. Before manufacturing, New Flyer creates a virtual bus, allowing for a cross-functional internal design review that carries through to post-production of the bus. The assembly structure of components contained within the virtual bus is intended to match the released production bill of materials, enhancing pre-production, production and aftermarket processes. In addition, a five-member team is used to perform validation testing throughout the manufacturing process. New Flyer has a service center in Ontario, California to provide support to OCTA.

Cost and Price

The proposed price was based on a firm-fixed-price per bus, including training, manuals, diagnostic equipment, and training simulators. Pricing scores were based on a formula, which assigned the highest score to the lowest proposed price and scored the remaining firms' prices based on their relation to the lowest price. Gillig received the highest score based on the initial and option pricing. Contract award is for the initial order only. The optional purchase will be exercised with Board approval at a future date.

Following is a breakdown of the per bus cost for each bus configuration:

Bus Configuration	GILLIG LLC	New Flyer of America, Inc.
Regular	\$607,974	\$621,760
BRAVO!	\$609,026	\$622,460
Express	\$618,092	\$622,410

The FTA requires completion of a pre-award Buy America audit for purchases using FTA funds for rolling stock. The audit is to verify the requirement that 70 percent of the parts content of the vehicle to be purchased are made in the United States. A recipient purchasing revenue-service rolling stock with FTA funds must ensure that a pre-award audit is complete before the recipient enters into a formal contract for purchase. This purchase is contingent upon completion of the pre-award Buy America audit that will be performed by OCTA's Internal Audit Department.

Fiscal Impact

Funds for the procurement of 40-foot CNG-powered buses are included in OCTA's Fiscal Year 2020-21 Budget, Transit Technical Services, accounts 2114-9024-D2108-00Q and 2114-7752-D2116-00G intended for training, specialized tools, and diagnostic equipment, funded with FTA Section 5307 Congestion Mitigation and Air Quality Improvement Program funds.

Summary

Based on the information provided, staff recommends the Board of Directors authorize the Chief Executive Officer to negotiate and execute Agreement No. C-9-1836 between the Orange County Transportation Authority and GILLIG LLC, in the amount of \$100,371,600, for the purchase of up to 165, 40-foot compressed natural gas-powered buses, with an option to purchase up to 134 additional buses.

Attachments

- A. Review of Proposals, RFP 9-1836 40-Foot Compressed Natural Gas-Powered Buses
- B. Proposal Evaluation Criteria Matrix ("Short-Listed Firms"), RFP 9-1836 40-Foot Compressed Natural Gas-Powered Buses
- C. Contract History for the Past Two Years, RFP 9-1836 40-Foot Compressed Natural Gas-Powered Buses

Prepared by:



Dayle Withers
Department Manager, Maintenance
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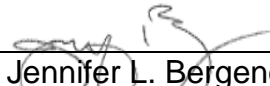
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Review of Proposals
RFP 9-1836 40-Foot Compressed Natural Gas-Powered Buses
PRESENTED TO THE TRANSIT COMMITTEE - OCTOBER 8, 2020
3 proposals were received, 2 firms were interviewed, 1 firm is being recommended

Overall Ranking	Proposal Score	Firm & Location	Sub-Contractors	Evaluation Committee Comments	Total Price Initial Purchase
1	89	GILLIG LLC Livermore, California	None	Highest-ranked firm overall Experienced project team Meets or exceeds the Orange County Transportation Authority's minimum warranty requirements Providing field service representatives to assist in bus delivery and acceptance In business 130 years Positive responses from references Proposed lowest price	\$100,371,600
2	86	New Flyer of America, Inc. St. Cloud, Minnesota	None	Second-ranked firm Experienced project team Could meet all minimum warranty requirements with extra cost on some Has service center in Ontario, California In business 90 years and has many subsidiary locations globally Positive responses from references OCTA's existing heavy-duty bus fleet is made up of New Flyer buses	\$102,597,189

Evaluation Panel:

Contracts Administration and Materials Management (1)
Transit Technical Services (1)
Health, Safety and Environmental Compliance (1)
Maintenance (1)
Bus Operations (1)

Proposal Criteria

Technical Specifications
Qualifications, Related Experience and Project Management
Cost and Price

Weight Factors

50%
20%
30%

PROPOSAL EVALUATION CRITERIA MATRIX ("SHORT-LISTED FIRMS")
RFP 9-1836 40-Foot Compressed Natural Gas-Powered Buses

FIRM: GILLIG LLC						Weights	Overall Score
Evaluator Number	1	2	3	4	5		
Technical Requirements	4.5	4.5	4.0	4.5	4.0	10	43.0
Qualifications, Related Experience and Project Management	4.0	4.0	4.0	4.0	4.0	4	16.0
Cost and Price	5.0	5.0	5.0	5.0	5.0	6	30.0
Overall Score	91.0	91.0	86.0	91.0	86.0		89
FIRM: New Flyer of America, Inc.						Weights	Overall Score
Evaluator Number	1	2	3	4	5		
Technical Requirements	4.0	4.0	4.0	4.0	4.0	10	40.0
Qualifications, Related Experience and Project Management	4.0	4.0	4.5	4.5	4.0	4	16.8
Cost and Price	4.9	4.9	4.9	4.9	4.9	6	29.4
Overall Score	85.4	85.4	87.4	87.4	85.4		86

Score for the Non-Short-Listed Firm Was 66.

CONTRACT HISTORY FOR THE PAST TWO YEARS

RFP 9-1836 40-Foot Compressed Natural Gas-Powered Buses

Prime and Subconsultants	Contract No.	Description	Contract Start Date	Contract End Date	Subconsultant Amount	Total Contract Amount
GILLIG LLC Contract Type: Firm-Fixed Price Subconsultants: None	C-9-1001	Purchase up to 12, 30-foot compressed	October 30, 2019	November 1, 2022		\$ 6,756,220
		natural gas-powered heavy-duty buses				
		with an option to purchase five additional				
		buses				
Sub Total						\$6,756,220
New Flyer of America, Inc. Contract Type: Firm-Fixed Price Subconsultants: None	C-7-1701	Purchase ten, 40-foot hydrogen fuel cell	February 6, 2018	September 30, 2020		\$ 12,978,382
		electric buses				
Contract Type: Firm-Fixed Price Subconsultants: None	C-4-1605	Purchase 16, 60-foot compressed natural	June 22, 2015	July 31, 2020		\$ 14,784,585
		gas-powered articulated buses				
Contract Type: Firm-Fixed Price Subconsultants: None	C-4-1280	Purchase 163, 40-foot compressed natural	December 30, 2014	December 30, 2019		\$ 95,172,988
		gas-powered buses with an option to purchase				
		39 buses				
Sub Total						\$122,935,955



October 8, 2020

To: Transit Committee

From: Darrell E. Johnson, Chief Executive Officer

Subject: Agreement for the Procurement of 40-Foot Plug-In Battery-Electric Buses

Overview

On April 27, 2020, the Orange County Transportation Authority Board of Directors approved the release of a request for quotes for the purchase of up to ten, 40-foot plug-in battery-electric buses. As a result, quotes from qualified vendors under the California Statewide Contract for Zero-Emission Transit Buses issued by the California Department of General Services have been evaluated. Board of Directors' approval is requested to award an agreement for the purchase of these buses.

Recommendation

Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2165 between the Orange County Transportation Authority and New Flyer of America, Inc., in the amount of \$10,373,230, for the purchase of up to ten 40-foot plug-in battery-electric buses.

Discussion

The California Air Resources Board (CARB) passed the Innovative Clean Transit (ICT) rule in 2018, requiring all public transit agencies to transition their bus fleets to zero-emission technologies by year 2040. The ICT rule also requires that a percentage of new bus purchases be zero-emission buses (ZEB) beginning with 25 percent in 2023 and increasing to 50 percent in 2026. Starting in 2029, bus purchases must be 100 percent ZEBs with the goal of a complete transition to ZEBs by 2040. CARB defines a ZEB as a bus with zero tailpipe emissions and is either a battery-electric bus or a fuel-cell electric bus.

The Orange County Transportation Authority (OCTA) has initiated a pilot program to test ZEBs in order to determine which technology best meets OCTA's service requirements. The pilot was initiated with the introduction of ten hydrogen

fuel-cell electric buses, which were placed into service in early 2020. Adding ten, 40-foot plug-in battery-electric buses to the pilot program will enable OCTA to gain necessary operational and technological experience for each ZEB type available in order to shape and define the fleet mix required to meet the service demands of Orange County when utilizing ZEBs.

The ZEBs currently in the market are experiencing challenges associated with vehicle operating range, charging times, cost, and infrastructure demands. Plug-in battery-electric buses require charging stations that are expected to exceed the current available electric capacity at OCTA bus facilities. In addition, battery charging times will need to be coordinated to meet bus service demands to maximize the operating range and cost effectiveness. Working through these operational and infrastructure challenges during a pilot will allow staff to compare and evaluate the operational effectiveness and limitations of this technology for large-scale deployment.

The new buses will be equipped with all OCTA-required equipment and branding requirements, which includes BRAVO! exterior paint branding for five buses and OC Bus branding for five buses for use regular service. In addition, these buses will include an on-board video surveillance system equipped with reverse-motion and interior 360-degree cameras, fire and methane detection systems, driver barriers, three-position bicycle racks, 12-inch and 15-inch awareness monitors/displays, provisions to mount devices at the front and rear doors for electronic fare transactions, tire pressure monitoring system, upgraded radio communication system (voice over internet protocol), as well as all other systems and components required for a full integration of these buses into the OCTA fleet.

The ten plug-in battery-electric buses will operate out of the Garden Grove base with in-depot charging during the evening hours. The battery storage systems can store 438 kWh of energy, providing an estimated 200 miles of range. Available seating capacity is similar to our existing fleet with 39 seated and 37 standees. Additionally, the manufacturer is providing an "Extended Warranty Propulsion System 4 years/200K miles (total of 6 years/300K miles)." Five of the ten, 40-foot plug-in battery-electric buses will be grant-funded through the California Transportation Commission Solutions for Congested Corridors Program (SCCP) under SB 1 (Chapter 5, Statutes of 2017) and the Low Carbon Transit Operations Program (LCTOP), administered by the California Department of Transportation. These buses will mark the introduction of OCTA's newest Bravo! route, Bravo! Main Street, providing rapid bus service between the Anaheim Regional Transportation Intermodal Center and South Coast Metro via Main Street. The remaining five buses will operate throughout Orange County and will be funded through LCTOP, SB 1 State of Good Repair (SGR), and

potentially the Volkswagen Environmental Mitigation Trust for California (VW Mitigation Trust), California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Program (HVIP), and federal funds, if available.

Procurement Approach

The OCTA Board of Directors (Board)-approved procurement policies and procedures allow for two options to purchase new vehicles. OCTA can either issue a request for proposals (RFP) or partner with another public agency and use its existing bus agreement. Using the first option, OCTA issues an RFP containing detailed vehicle specifications. The advantage of this procurement method is that OCTA can specify exactly the type of bus desired. The challenge of this procurement option is the timeline, which may take up to 18 months from when an RFP is issued to the time when the first article is received, and then an additional 12 months to receive the remaining vehicles.

Using the second option, OCTA identifies an existing contract with another agency for the type of buses desired, containing an assignability clause, and issues a request for quotes (RFQ) to the participating firms. The advantage of this procurement method is a shortened timeline, and OCTA can begin receiving buses in a much shorter time. In some cases, this could reduce the vehicle delivery for the entire bus order by as much as six months. In addition to the base configuration of the vehicles under the existing contract, OCTA can include standard fire detection and suppression systems, and radio hardware consistent with OCTA's existing fleet.

Based on the timeframes included in the ICT rule and the need to evaluate ZEBs prior to any large-scale future fleet purchases, staff determined that the cooperative contract procurement option is the most advantageous to OCTA due to the shortened procurement and vehicle delivery time. It was determined that the California Department of General Services (DGS) completed a cooperative procurement that specified vehicles with similar specifications to OCTA's requirements. The procurement allows for any city, county, district, or other governmental body to utilize this cooperative procurement.

On April 27, 2020, OCTA issued RFQ 0-2165 to both California DGS-awarded participants, New Flyer of America, Inc. (New Flyer), and Proterra, Inc. (Proterra), to provide pricing for specific features that meet OCTA's bus requirements. On July 10, 2020, two quotes were received. Both quotes were reviewed by staff from the Contracts Administration and Materials Management and Transit Technical Services departments.

On July 30, 2020, OCTA requested clarification on some cost items submitted with the initial quote. Based on the submitted quote, the evaluation committee is recommending that New Flyer be selected to provide the vehicles. The total cost to purchase ten, 40-foot plug-in battery-electric buses from New Flyer is \$10,373,230, or \$1,037,323 per bus, which includes all OCTA required equipment.

The Federal Transit Administration (FTA) requires completion of a pre-award Buy America audit for purchases using FTA funds for rolling stock. The audit is to verify the requirement that 70 percent of the parts content of the vehicle to be purchased are made in the United States. A recipient purchasing revenue-service rolling stock with FTA funds must ensure that a pre-award audit is complete before the recipient enters into a formal contract for purchase. This purchase is contingent upon completion of the pre-award Buy America audit that will be performed by OCTA's Internal Audit Department.

Fiscal Impact

Funding for the procurement of ten, 40-foot plug-in battery-electric buses is included in the OCTA Fiscal Year 2020-21 Budget, under Account No. 2114-9024-D2116-0UU, and funded through LCTOP, SB 1 SCCP, SB 1 SGR, VW Mitigation Trust, and HVIP. Due to insufficient funding capacity throughout the state, HVIP funds may not be available. If it is determined that additional funds are needed to replace HVIP funds, staff will return with a recommendation to use Federal Congestion Mitigation and Air Quality Improvement Program funds to meet the funding need. HVIP support was estimated at \$1,205,000.

Summary

Based on the information provided, staff recommends the Board of Directors authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2165 between the Orange County Transportation Authority and New Flyer of America, Inc., in the amount of \$10,373,230, for the purchase of up to ten, 40-foot plug-in battery-electric buses.

Attachment

A. 40-Foot Plug-In Battery-Electric Bus Procurement Price Comparison

Prepared by:



Dayle Withers
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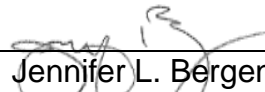
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40-Foot Plug-In Battery-Electric Bus Procurement Price Comparison

Summary Price Calculation	NEW FLYER 40' Xcelsior Charge (438kWh)	PROTERRA 40' Catalyst E2 (440kWh)
Base Vehicle Price	\$771,673	\$796,908
ADA Equipment (Non-Taxable)	\$37,850	\$14,653
Options Total includes all OCTA requirements	\$140,114	\$151,926
Documentation Preparation Fee	\$0.00	\$0.00
Vehicle Sub-Total	\$949,637	\$963,487
<i>Sales Tax</i>	\$70,663	\$73,535
California Tire Fee	\$12	\$12
Extended Warranty Propulsion System 4 yrs/200K miles (total of 6 yrs/300K miles)	\$17,011	\$20,816
<i>Vehicle Total – (Each) Delivered</i>	\$1,037,323	\$1,057,850
<i>Grand Total – 10 Buses</i>	\$10,373,230	\$10,578,500

Acronyms

ADA – Americans with Disabilities Act

OCTA – Orange County Transportation Authority

Agreement for the Procurement of 40-Foot Plug-In Battery-Electric Buses



Background

- Innovative Clean Transit Rule
 - Zero-Emission Bus (ZEB) Fleet by 2040
 - Regulation deadlines
 - Board of Directors-Approved ZEB Roll-Out Plan
- ZEB Technologies
 - Hydrogen Fuel-Cell
 - Battery-Electric
- Current Test Fleet
 - Ten Hydrogen Fuel-Cell Buses

Procurement

- California Department of General Services
- Request for quote sent to
 - New Flyer of America, Inc.
 - Proterra, Inc.
- Lowest Quote - New Flyer of America, Inc.
 - \$1,037,323 per bus; \$10,373,230 for ten buses
 - Includes all Orange County Transportation Authority (OCTA)-required equipment.

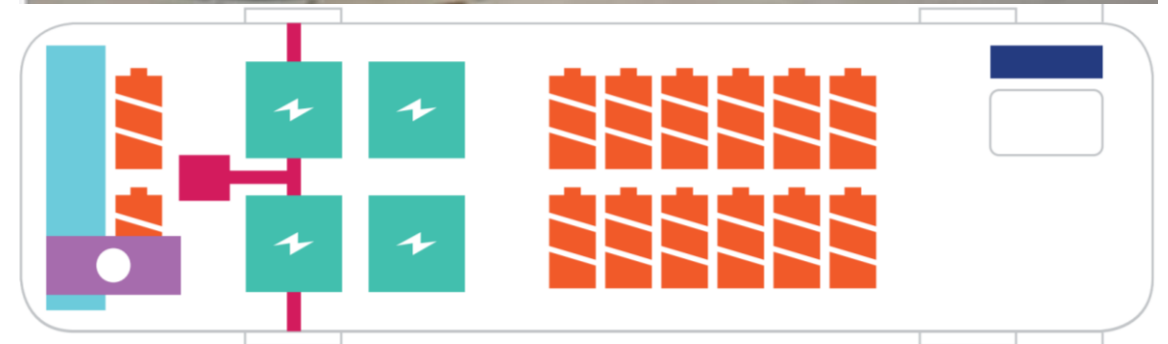
Attributes

Features

Bus	New Flyer Xcelsior
Electric Motor	Siemens drive system
Accessory Drives	Electric
Energy Storage	438kWh (est. 200-mile)
Seats / Standees	39 / 37
Bike Racks	3-position
Operator Protection	Operator Barriers
Operator Training	56 hours
Technician Training	304 hours

Warranty

Propulsion System	6 years, 300,000 miles
Structural	12 years, 500,000 miles



xcelcior CHARGE 40'

Staff Recommendation

- Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-0-2165 between OCTA and New Flyer of America, Inc., in the amount of \$10,373,230, for the purchase of up to ten, 40-foot plug-in battery-electric buses.



October 8, 2020

To: Transit Committee

From: Darrell E. Johnson, Chief Executive Officer

Subject: Contract Change Orders for the Construction of the OC Streetcar Project

Overview

On September 24, 2018, the Orange County Transportation Authority Board of Directors authorized Agreement No. C-7-1904 with Walsh Construction Company II, LLC for construction of the OC Streetcar project. Contract change orders are required to increase the allowance for removal of buried man-made objects, modify the traction power and overhead contact system to enable a single track operation in the Pacific Electric Right-of-Way, and allow adjacent tracks to be de-energized for maintenance or emergencies and conduct electrical continuity testing.

Recommendations

- A. Authorize the Chief Executive Officer to negotiate and execute Contract Change Order No. 18 to Agreement No. C-7-1904 with Walsh Construction Company II, LLC, in the amount of \$300,000, to increase the allowance for removal of man-made objects.
- B. Authorize the Chief Executive Officer to negotiate and execute Contract Change Order No. 24.1 to Agreement No. C-7-1904 with Walsh Construction Company II, LLC, in the amount of \$845,985, for overhead contact system sectionalization.
- C. Authorize the Chief Executive Officer to negotiate and execute Contract Change Order No. 30.1 to Agreement No. C-7-1904 with Walsh Construction Company II, LLC, in the amount of \$320,164, to conduct electrical continuity testing.

Discussion

On September 24, 2018, the Orange County Transportation Authority (OCTA) Board of Directors (Board) awarded a contract to Walsh Construction Company II, LLC, (Walsh) to construct the OC Streetcar project (Project). The Notice to Proceed with construction was issued to Walsh on March 4, 2019.

Removal of Buried Man-Made Objects

The construction contract includes a \$100,000 allowance for the work to remove buried man-made objects that are encountered and were either unknown or could not be quantified during the Project's design. Examples of buried man-made objects encountered include stumps, non-contaminated railroad ties, rail, woody debris, pilings, and buried pavement. As construction progressed, a higher number of buried man-made objects have been encountered than anticipated, including an underground storage tank and an abandoned well at the maintenance and storage facility (MSF) site, resulting in the existing allowance being depleted.

The allowance needs to be increased by an estimated \$300,000 to fund work to remove additional buried man-made objects and/or obstructions encountered during excavations along the city street section of the alignment. The street alignments date back to the 1800's, and many man-made obstructions that have been covered over without record have been found. OCTA intends to track, review, and pay for labor material and equipment costs on a time-and-materials basis.

Overhead Contact System Sectionalization

The Project's design assumed that the traction power system delivering electrical power to the vehicles would be provided by the traction power substations (TPSS). Each of the four TPSS along the alignment energize the overhead contact system (OCS) within a specific segment of the alignment. When maintenance is needed, or if an emergency occurs that requires a single section of track to be de-energized, electrical power to the entire segment is required to be de-energized to ensure the safety of maintenance crews and/or emergency responders. This results in the service being disrupted for all tracks within the section. A subsequent operational efficiency review identified that there is an opportunity in the two-mile Pacific Electric Right-of-Way (PEROW) section of the Project to minimize potential disruptions by enabling service to be operated on one track when the other track is de-energized, given the presence of track cross-overs located within the PEROW.

Additional construction efforts are required to implement this sectionalization of the OCS, including modifying the equipment at the two TPSS facilities serving the PEROW, revising the traction power cabling to the OCS, and installing additional OCS electrical power disconnects. In addition to power that can be de-energized on one section of a track for maintenance or emergencies, it will also provide enhanced flexibility in construction in and around the PEROW for future construction projects and encroachment permit work by public utilities.

To keep work proceeding and minimize delays, an initial contract change order (CCO), in the amount of \$158,941, is being processed for the engineering work required to modify the TPSS equipment. This supplement to the original CCO covers manufacturing and installation costs to complete the OCS sectionalization. The cost of the additional work has been determined by the construction management team to be \$845,985, and includes materials, equipment, and labor for the OCS sectionalization. Walsh has not agreed to the CCO amount and may pursue additional costs at a later time; however, it is prudent to proceed with this supplement in order to allow the project to advance without further delay.

Electrical Continuity Testing

The power system for the Project uses electricity which, if not properly grounded, can induce a current to supporting structures, such as a bridge deck or reinforced concrete sections. Stray current, if not properly grounded, can create premature corrosion over time in the adjacent conduits, and reinforcing steel resulting in deterioration of the concrete. To mitigate the possibility of stray current, the reinforcing steel is welded together and then grounded.

The contract did not specify that specific continuity testing is required to verify adequate grounding is in place at longitudinal reinforced steel locations during construction. To keep work progressing and minimize delays, an initial CCO, in the amount of \$23,928, was issued for continuity testing at the Westminster Avenue Bridge, the Santa Ana River Bridge, and the demonstration section of track, which is the initial section of track that is constructed to confirm track installation procedures. This testing included visual and mechanical tests of all rebar connections.

This supplement to the CCO covers the cost of electrical continuity testing required on the remaining alignment. This includes the embedded track on the streets in the City of Santa Ana, the MSF yard track and three additional spans of the Santa Ana River Bridge. The cost of the additional work has been determined by the construction management team to be \$320,164, and includes materials, equipment, and labor for the testing. The contractor has not agreed with the CCO amount and may pursue additional costs at a later date; however,

it is prudent to proceed with this supplement in order to allow the project to advance without further delay.

The cost of the work associated with the three CCOs will be funded from the Project contingency because the work was not included in the Project cost estimate. It will not increase the Project cost of \$407,700,000 as defined in the Full Funding Grant Agreement.

Procurement Approach

The initial procurement was handled in accordance with OCTA's Board-approved procedures for public works projects. These procedures, which conform to both federal and state requirements, require that contracts are awarded to the lowest responsive, responsible bidder after a sealed bidding process. On September 24, 2018, the Board authorized Agreement No. C-7-1904 with Walsh, in the amount of \$220,538,549, for construction of the Project.

Proposed CCO nos. 18, 24.1, and 30.1, in the amount of \$300,000, \$845,985, and \$320,164, respectively, will increase the cumulative value of the contract by \$1,466,149, to \$237,747,779, as shown in Attachment A. Board approval is required for CCO nos. 18, 24.1, and 30.1, pursuant to the State of California Public Contracting Code Section 20142.

Fiscal Impact

The additional work for this Project is included in OCTA's Fiscal Year 2020-21 Budget, Capital Programs Division, accounts 0051-9017-TS010-Z1A, 0051-9017-TS010-Z14, 0051-9017-TS010-Z32, 0051-9017-TS010-Z53, and 0051-9017-TS010-Z54, and is funded with Federal Transit Administration Section 5309 New Starts and local Measure M2 funds.

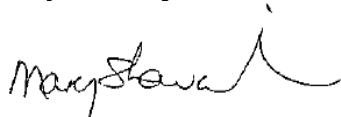
Summary

Staff recommends Board of Directors' authorization for the Chief Executive Officer to negotiate and execute CCO No. 18, in the amount of \$300,000, CCO No. 24.1, in the amount of \$845,985, and CCO No. 30.1, in the amount of \$320,164, to Agreement No. C-7-1904 with Walsh Construction Company II, LLC.

Attachment

- A. Walsh Construction Company II, LLC, Agreement No. C-7-1904, Contract Change Order (CCO) Log

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Approved by:



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**Walsh Construction Company II, LLC
Agreement No. C-7-1904
Contract Change Order (CCO) Log**

CCO No.	Title	Status	Date Executed	Cost	Remarks
1	Demolition, Removals, and Disposal at the Maintenance and Storage Facility (MSF) Property	Approved	6-20-2019	\$199,749.00	
1.1	Demolition, Removals, and Disposal at the MSF Property Additional Funding	Approved	6-25-2019	\$113,884.77	
2	Removal and Disposal of Contaminated Materials at the MSF Property	Approved	6-25-2019	\$200,000.00	
2.1	Removal and Disposal of Contaminated Materials at the MSF Property Additional Funding	Approved	8-15-2019	\$160,000.00	
3	Removal and Disposal of Contaminated Materials within the Orange County Transit District-Owned Pacific Electric Right-of-Way (PEROW)	Approved	9-12-2019	\$1,600,000.00	
3.1	Removal and Disposal of Contaminated Materials Within the Orange County Transit District-Owned PEROW and Other Project Areas	Approved	2-25-2020	\$7,278,795.00	
4	Required Work to Address Utility Conflicts	Approved	8-27-2019	\$200,000.00	
4.1	Required Work to Address Utility Conflicts Additional Funding	Approved	2-25-2020	\$833,300.00	
4.2	Required Work to Address Utility Conflicts Additional Funding	Approved	6-09-2020	\$2,426,000.00	
5	Tree Removal and Trimming	Approved	6-09-2020	\$129,215.52	
7	Orange County Sanitation District Specifications Revisions	Approved	6-09-2020	\$82,445.00	
8	Maintenance Path Profile	Approved	6-09-2020	\$6,055.00	
9	Vapor Barrier Installation	Pending		\$395,717.00	
10	Ultrasonic Testing	Approved	6-09-2020	\$0	
11	Opticom Vehicles	Approved	6-09-2020	\$40,120.00	
12	Santa Ana River Bridge Precast Girders	Approved	8-27-2020	\$88,877.00	
13	Retaining Wall 544 Reinforcing Steel	Approved	9-3-2020	\$2,321.30	
15	Overhead Contact System (OCS) and Traffic Signal Utility Conflicts	Approved	6-17-2020	\$195,723.00	
16	Hand digging and Survey for OCS and Traffic Signal Pole Foundation	Approved	6-23-2020	\$198,808.00	
16.1	Hand digging and Survey for OCS, Traffic Signal, and Streetlight Pole Foundations	Approved	6-26-2020	\$1,400,000.00	

17	Westminster Bridge OCS Diaphragm	Pending		\$1,682.00	
18	Removal of Man-Made Objects	Pending		\$300,000.00	
21	Changes to Turnout Geometry	Pending		\$0	
22	Railroad Crossing Gate Bells	Pending		\$0	
23	Santa Ana River Bridge, OCS Pole, and OCS Down Guy Diaphragms	Pending		\$7,419.00	
24	OCS Sectionalization – Siemens portion	Pending		\$158,941.00	
24.1	OCS Sectionalization	Pending		\$845,984.91	
30	Electrical Continuity Testing	Pending		\$23,928.10	
30.1	Electrical Continuity Testing	Pending		\$320,164.40	

Subtotal Executed CCOs	\$15,155,293.59
Subtotal Pending CCOs	<u>\$2,053,836.41</u>
TOTAL CCOs	\$17,209,130.00
ORIGINAL VALUE	\$220,538,649.00
PROPOSED REVISED VALUE	\$237,747,779.00



October 8, 2020

To: Transit Committee

From: Darrell E. Johnson, Chief Executive Officer

Subject: Fullerton Park-and-Ride Joint Development Study

A handwritten signature in blue ink, appearing to read "Darrell E. Johnson", is positioned to the right of the "From:" line.

Overview

The Orange County Transportation Authority initiated a study in the summer of 2018 to explore joint development opportunities at the Fullerton Park-and-Ride facility. This study analyzed conceptual scenarios, representing a range of land-use mixes to determine if further study and outreach are merited. The analysis and next steps are presented for Board of Directors' consideration.

Recommendation

Direct staff to work with the City of Fullerton and stakeholders to further explore joint development opportunities at the Fullerton Park-and-Ride facility.

Background

Joint development projects generally incorporate a mix of office, commercial, residential, and other uses in proximity to public assets. Joint development at transit facilities promotes customer convenience, safety, and access to transit and rideshare opportunities. It is also intended to provide economic and environmental benefits at the site and the surrounding communities by supporting new jobs, housing, and retail with easy access to an array of mobility options.

The Orange County Transportation Authority (OCTA) Joint Development Policy and Procedures (Attachment A) encourages joint development that supports local community goals, transit ridership, and generating revenue for transit operations. Study of joint development opportunities is also included in the Short-Term Action Plan within OCTA's 2018 Long-Range Transportation Plan. It should be noted that the Federal Transit Administration (FTA) supports joint development on sites previously acquired with FTA funds to generate transit-supportive revenues, so long as sites continue to serve their originally authorized purpose.

Consistent with the policies and plans noted above, the following four-phased approach will identify and pursue joint development opportunities at OCTA-owned sites:

- Phase 1 – Preliminary Evaluation
- Phase 2 – Goals and Parameters
- Phase 3 – Design and Final Approvals
- Phase 4 – Construction

Phase 1 evaluates the potential financial viability for joint development at OCTA-owned properties. The findings are presented to the Board of Directors (Board) to determine if further study and stakeholder engagement are merited. This phase considers a broad range of options and their financial viability, as well as other considerations including market conditions, development interests, and preliminary coordination with local jurisdictions and stakeholders. This phase is intended to assess joint development potential and does not entail any screening of options.

With Board direction, Phase 2 identifies site-specific goals for joint development in collaboration with local jurisdictions and stakeholders. The goals will establish parameters and expectations for developers before engaging in discussions of interest and conceptual designs. This would include more robust engagement with developers to inform strategy development for public-private partnerships, as well as the preparation of a draft development agreement and proposed selection process.

With developer interest and Board action, Phase 3 allows for the release of an invitation for bids, developer selection, and the establishment site plans consistent with the Phase 2 goals and parameters. Pending appropriate Board and local jurisdiction approval of site and zoning plans, environmental documents, and permits, the project may proceed to construction in Phase 4.

In 2018, OCTA initiated a Phase 1 joint development study at the OCTA-owned Fullerton Park-and-Ride facility. The discussion below includes the Fullerton Park-and-Ride financial viability analysis, findings, and proposed next steps for Board consideration.

Discussion

The Fullerton Park-and-Ride Facility is located at 3000 West Orangethorpe Avenue in the City of Fullerton (City), as depicted in Attachment B. It is an OCTA-owned and operated facility that was purchased with FTA funds and opened in 1974.

The site includes 745 public parking spaces on 11.1-acres, along with 14 bus docks, covered waiting areas, restrooms, and benches. This is OCTA's largest park-and-ride facility, and it serves as a key regional transfer point for transit customers. There are connections to eight bus routes, including Los Angeles County Metropolitan Transportation Authority bus operations. The facility is bounded by the Interstate 5/State Route 91 interchange to the south and west, Orangethorpe Avenue to the north, and Magnolia Avenue to the east.

When it first opened, the facility primarily served commuters traveling to the City of Los Angeles. However, the introduction of Metrolink service in the 1990s reduced demand for the site. Since 2007, three separate OCTA evaluations (including this joint development study) have consistently identified that parking is underutilized, with only 55 percent of available parking used on weekdays and 20 percent used on weekends.

The parking evaluation noted above was part of a larger site assessment that was conducted at the onset of this study. In addition to parking, the site assessment evaluated current transit operations, traffic conditions, travel mode splits, and on-site amenities. The evaluation also identified constraints and opportunities for joint development consideration. The facility's most notable constraint is its location between a freeway interchange and two major arterials. These adjacent facilities may impact the land-uses deemed appropriate and feasible at the site. However, the property possesses several opportunities, with the most notable being:

- Excess land - only 400 of the 745 parking spaces are needed to maintain 2019 OCTA operations,
- Street frontage - The large, linear site allows for a variety of development concepts that could be implemented in phases, and
- High-visibility and proximity to major roadways, existing retail, and residential developments make commercial and residential uses attractive.

A market study was then conducted to identify which types of land-uses are the most viable considering surrounding land-uses and financial conditions. Several land-use types were initially analyzed, including multifamily residential, affordable housing, office, hotel, retail, and light industrial. From this list, only hotel and office uses were found to have low market demand in the area and therefore deemed not economically viable.

In recognition of site conditions, and consistent with existing policy, the following criteria were used to develop conceptual scenarios for analysis:

- Identify land-uses that complement transit and park-and-ride uses,
- Support the City and local neighborhoods with complementary concepts, and
- Improve services and conditions for transit riders.

Seven conceptual scenarios were developed for analysis that utilized various land-use mixtures, site layouts, and densities. The scenarios also considered market-rated, affordable, and supportive housing types, and reflected input received from key stakeholders and the City. Pro forma reports were then developed for each concept to evaluate their respective financial viability (Attachment C).

Findings

Financial analysis of the conceptual scenarios suggests that joint development is viable at the Fullerton Park-and-Ride facility and can provide significant value to OCTA, its customers, the City, and the community. Analysis of the conceptual scenarios also revealed some challenges that a potential project would have to overcome. The most prevalent challenge being the cost of structured parking, which many of the concepts required to support higher-density development options. However, a phasing approach may offer opportunities to transition from surface parking to structured parking over time as site development intensifies.

Additionally, Phase 1 discussions with City staff indicated that the City supports exploring site development opportunities and they are particularly supportive of concepts that include housing. The addition of housing on the site can provide a safer and more secure environment for the community while also addressing some of the City's housing needs. However, zoning adjustments and city council direction would be required to accommodate a joint development project at this site. OCTA and the City will increase collaboration efforts should joint development proceed to Phase 2 at the Fullerton Park-and-Ride facility.

Finally, with regard to current economic uncertainties related to the coronavirus pandemic, preliminary discussions with OCTA's consultant for this study suggest that development opportunities at the site will likely remain positive due to the longer-term outlook of the analysis. OCTA will continue to monitor the evolving economic environment for potential implications on joint development.

Next Steps

To set expectations for potential development partners, proposed Phase 2 studies would establish site-specific goals through continued stakeholder engagement and appropriate Board approvals. These efforts would also include consideration of best practices to develop a recommended approach for engaging in public-private partnerships. In addition to advancing joint development opportunities at the Fullerton Park-and-Ride facility, the results from Phase 2 may help to set standards and precedents for any future consideration of joint development at other OCTA-owned sites.

Summary

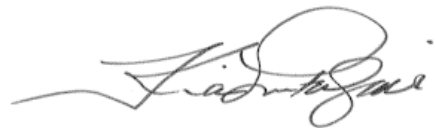
OCTA has completed a Phase 1 joint development study of the Fullerton Park-and-Ride facility (Attachment D) to evaluate financial viability for potential joint development. Findings show that joint development is feasible based on analysis of a set of conceptual scenarios that require further analysis and refinement. Joint development at the facility could provide significant value to OCTA, customers, the City, and community. With Board direction, a Phase 2 study will be initiated to develop site-specific goals and parameters for developers and gauge the interest of prospective developers.

Attachments

- A. Joint Development Policy and Procedures
- B. Site Context
- C. Concepts & Pro Forma Reports
- D. Fullerton Park-and-Ride Joint Development Study Report

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Executive Office


 Chief Executive Officer
JOINT DEVELOPMENT POLICY AND PROCEDURESPolicy#: EO-200.05JOINTDEVELOPOrigination Date: 09/26/2016Revised Date: 10/08/2019**I. PURPOSE**

The purpose of this policy is to encourage the joint development of Orange County Transportation Authority (OCTA) properties to increase transit ridership and generate new sources of revenue, consistent with local community goals.

II. ORGANIZATIONAL UNITS AFFECTED

This policy applies to all OCTA-owned properties along transit routes.

III. POLICY

- A. There is a public need for timely acquisition, design, construction, improvement, renovation, expansion, equipping, maintenance, and operation of transit systems in the OCTA service area. Authorizing private entities or other persons to develop all or a portion of the OCTA-owned properties may help address these needs and serve the public safety. This will also be a benefit to the welfare of the residents and businesses within the OCTA service area by making the projects available to the public in a timely or less costly fashion.
- B. The Federal Transit Administration (FTA) promotes joint development to maximize the utility of FTA-funded projects and encourage transit agencies to generate program income through joint development. According to the FTA, the benefits of joint development include revenue generation for the transit system through "value capture" mechanisms, such as income derived from rental or lease payments, and private sector contributions to public infrastructure.
- C. In addition, appropriate joint development may help to:
 - 1. Support and enhance economic growth
 - 2. Increase the efficient use of infrastructure
 - 3. Reduce the cost of infrastructure to the public sector
 - 4. Use land more efficiently
 - 5. Lower housing and transportation costs
 - 6. Reduce congestion and greenhouse gases
 - 7. Promote alternatives to drive-alone trips.
- D. Therefore, it is the policy of OCTA to encourage and pursue joint development projects on OCTA-owned properties along OCTA transit routes including office, commercial, residential, and other facilities to promote the safety, convenience, accessibility, environmental and air quality, and economic benefits to the public.

Executive Office
JOINT DEVELOPMENT POLICY AND PROCEDURES

Policy#: EO-200.05JOINTDEVELOP

Origination Date: 09/26/2016

Revised Date: 10/08/2019

E. The goals of this policy are to:

1. Comply with regional growth principles as developed by local elected officials
2. Efficiently and adequately operate and maintain OCTA infrastructure
3. Promote regional mobility through transportation choices
4. Promote regional collaboration
5. Pursue opportunities that supplement OCTA's ability to provide safe, reliable, and courteous countywide transit services
6. Increase transit ridership through coordinated planning of land use and development of properties at or near OCTA stops, stations, and transit centers
7. Encourage high quality development projects on and around OCTA properties and along OCTA transit routes that enhance revenues to the transit system
8. Enhance financial capabilities of the agency to sustain countywide transit services

IV. DEFINITIONS

Joint Development - refers to an OCTA public transportation asset or project that is integrally related to and/or co-located with commercial, residential, or mixed-use development. Joint development may include partnerships for public, private, and/or non-profit development associated typically with rail or bus transit systems and other OCTA assets that are being improved through new construction, renovation, or extension.

V. PROCEDURE

A. The following principles will guide OCTA's approach to joint development projects:

1. OCTA will work through an open and transparent process, including a predictable and timely decision-making process to foster a positive investment climate for the private sector.
2. OCTA will follow all applicable zoning, planning, and permitting processes.
3. OCTA will involve relevant city staff, planning commissions, mayors, and councils.
4. OCTA should work cooperatively with local jurisdictions, developers, and other public and private sector entities to promote land use policies that encourage high quality development on and surrounding transit properties and routes.
5. OCTA should promote joint development projects that enhance the use of the transit system and encourage connections from surrounding developments to promote pedestrian and bike access.
6. OCTA should consider development opportunities in the acquisition of additional property for new transit facilities.
7. OCTA will retain appropriate authority over its assets and facilities.

Executive Office
JOINT DEVELOPMENT POLICY AND PROCEDURES

Policy#: EO-200.05JOINTDEVELOP

Origination Date: 09/26/2016

Revised Date: 10/08/2019

8. Joint development projects must demonstrate, at a minimum, fair market value to OCTA.
 9. OCTA joint development revenue sharing agreements will target a fair share of gross profit/sales profit (before deducting any overhead, payroll, taxes, or interest payments.)
 10. OCTA will include a Title VI analysis as part of any joint development proposal.
- B.** OCTA will periodically conduct market feasibility studies and site assessments for OCTA-owned properties. This effort will include consultation with local agencies regarding land use and development in the project area. The studies will be used to prioritize projects that will be presented to the Board for direction and action. Studies will include necessary information regarding environmental and FTA compliance procedures and other requirements.
- C.** Joint Development studies will be the basis for soliciting development proposals for appropriate OCTA-owned transit properties. In soliciting proposals, OCTA will use the request for proposal (RFP) and procurement process to solicit competitive proposals from potential partners. In addition to the RFP evaluation committee, OCTA may convene an urban design panel to serve in an advisory capacity to the evaluation committee. All recommendations by the urban design panel are advisory but fall within OCTA procurement policies (including, but not limited to, standards of conduct, conflict of interest, and other requirements as included in the current OCTA Procurement Policy Manual.) The site-specific RFP shall include a draft development agreement that includes project development tasks (e.g., planning, environmental clearance, final design, permits, construction, etc.), draft ground lease, and other OCTA requirements for the future joint development project. Specific project task authorization by OCTA may proceed on a task-by-task basis in order to maintain continuing project control.

VI. EXCEPTIONS

Not applicable.

VII. PROVISIONS AND CONDITIONS

Not applicable.

VIII. RELATED DOCUMENTS

Not applicable.

END OF POLICY

SITE CONTEXT

Site's location is on the north side of the I-5 and SR-91 interchange, providing convenient access to employment and population centers, as well as commercial destinations in Orange County and beyond. Please refer to the appendix section 7.1 for more details.

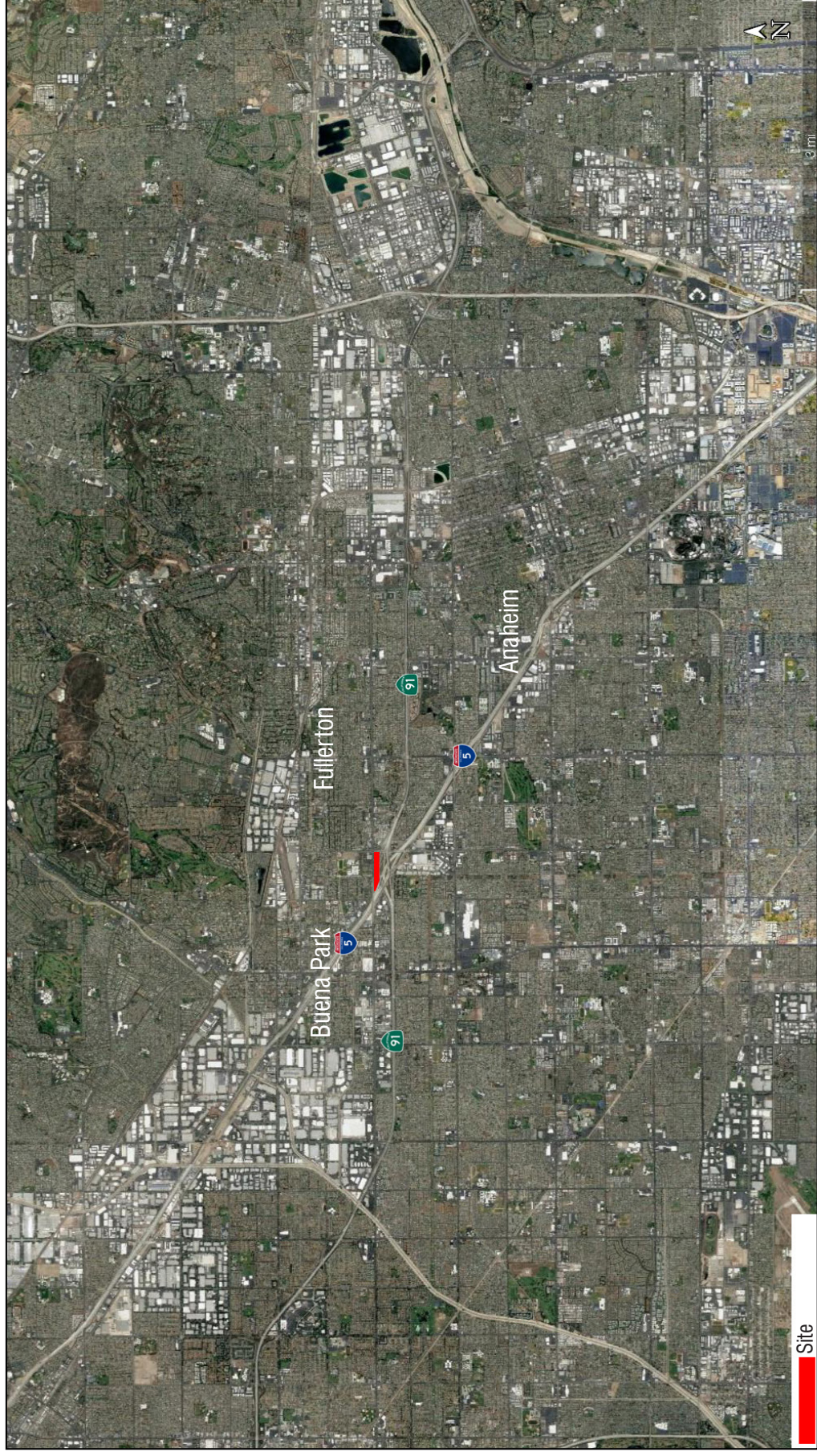


Figure 2.1. Regional Context

Data Source: Google Earth

The Site is located at the southwest corner of Orangethorpe Avenue and Magnolia Avenue, two major thoroughfares in North Orange County, as illustrated in Figure 2.2. It is a linear site with an overall area of 11.1 acres with 745 surface parking stalls. Please refer to the appendix section 7.1 for more details.

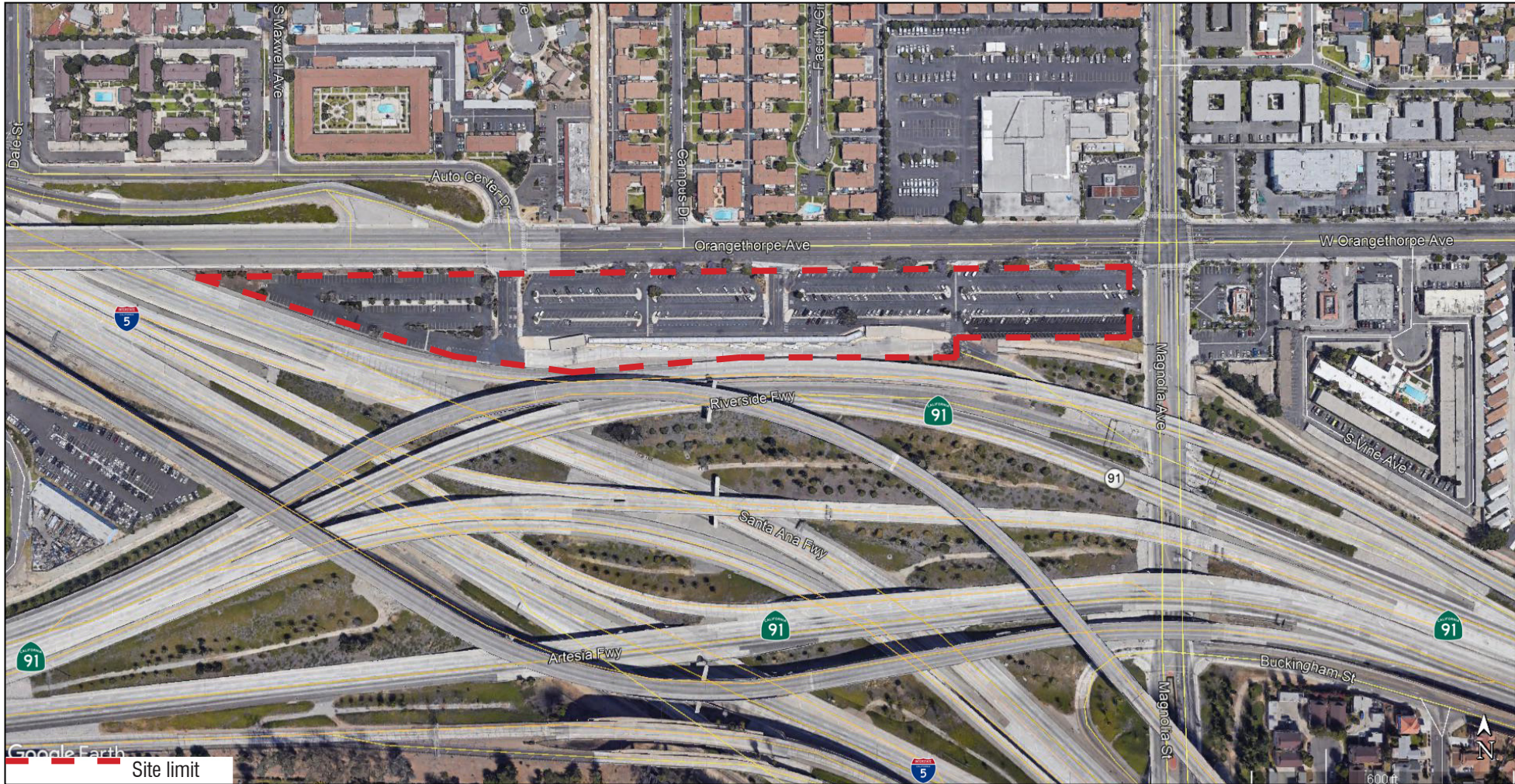


Figure 2.2. Aerial view of Fullerton Park-and-Ride site

Data Source: Google Earth

CONCEPTS & Pro Forma Reports

ATTACHMENT C



FULLERTON PARK-AND-RIDE JOINT DEVELOPMENT STUDY (REPORT)
Orange County Transportation Authority

3.1 CONCEPTS

Concepts were initially crafted and then narrowed to the final seven presented in this section of the report. These seven concepts:

- Evaluate market-rate and affordable/supportive housing types
- Reflect City and local developer input
- Create a range of configurations by creating districts which can be interchanged, phased, and adjusted to allow versatility for potential future development partners
- Encourage a mixture of uses (retail, residential, offices, affordable housing, supportive services) which not only complements the neighborhood built scale but also reflect the market study
- Allow for phased, efficient development that can be adjusted according to the market demand
- Provide accessible open spaces along the site for short term programming for the community
- Encourage a refined parking system to accommodate existing services and future development requirements



Figure 3.1. Site, looking east from existing facilities

3.2 LINEAR



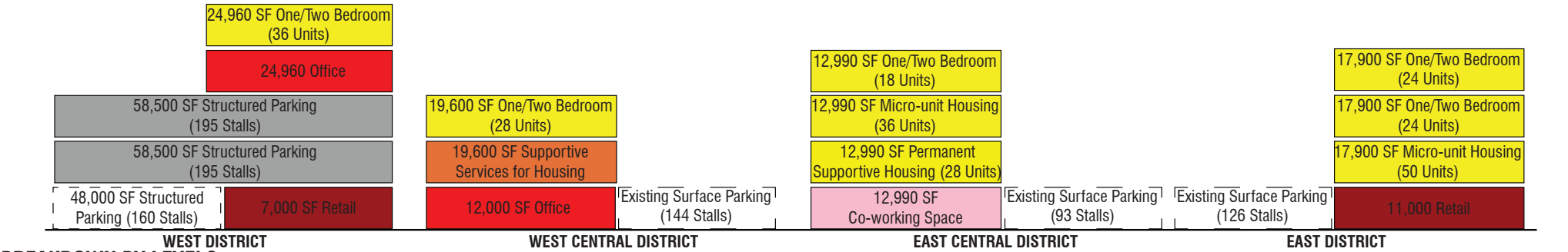
Figure 3.2. Rendered view, looking west from Orangethorpe Avenue

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Retains the existing bus circulation layout	-
CIRCULATION	Retains the existing bus parking (10 bus pads)	-
COMMUNITY	Addresses the goal of community by satisfying demands of affordable housing and supportive services	Lack of proper transition between areas with different types of land uses
DEVELOPMENT DENSITY	Consistent with the market study demand analysis	Difficult to meet the criteria of +/- 150 Units/district
ECONOMICS	-	Requires shared land-uses between districts to meet +/- 150 unit requirement
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	Retains the existing surface parking	Large, uninviting parking areas
PUBLIC SPACE	-	Core of activity missing around the bus parking

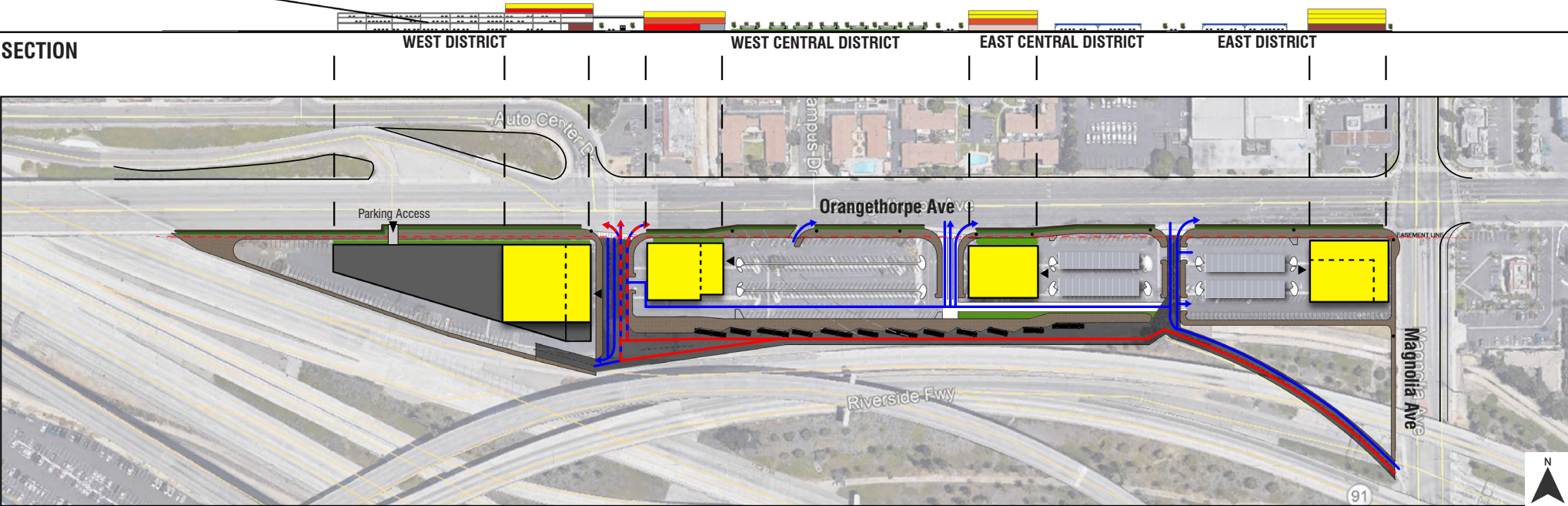
Table 3.1. Strength and Weakness Analysis

Required	+/- (37-44) Stalls	31 Stalls	71 Stalls	OCTA 265 Stalls	139 Stalls Available	34 Stalls	56 Stalls	+/- (28-34) Stalls	OCTA 144 Stalls	+/- (48-55) Stalls	39 Stalls	+/- (129-84) Stalls	49	
Provided	550 Stalls					124 Stalls Required	144 Stalls		93 Stalls		7 Stalls Required			126

PARKING ALLOCATION



BREAKDOWN BY LEVELS



PLAN (linear)

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential
- Community retail
- Co-working Space
- Supportive Services for Housing

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
One/Two Bedroom Unit	93,350	700	130	160
Micro-unit	30,890	350	88	44
Permanent Supportive Housing	12,990	450	28	14
Supportive Services for Housing	32,590			93
General & Community Retail	18,000	-	-	79
Co-working Space	12,990	-	-	37
Office	36,960	-	-	105
OCTA Stalls Required	-	-	-	409
Non OCTA Stalls Required	-	300	-	497
Total Stalls Required	-	-	-	906
Total Stalls Provided	-	-	-	913

3.2.1 PROFORMA (LINEAR OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use						
	Apartments	Micro Units	Permanent Supportive Housing	Office	Retail	Private Structured Parking	OCTA Structured Parking
Revenues							
Annual Net Operating Income	\$1,909,309	\$720,762	\$0	\$1,284,449	\$393,984		
Desired Yield on Cost*	5.50%	5.50%	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$34,714,716	\$13,104,756	\$0	\$17,125,992	\$5,253,120		
Net Building Value per Unit/Building SF	\$267,036	\$152,381	\$0	\$246.24	\$291.84	N/A	N/A
Costs							
Total Development Costs	\$29,672,994	\$10,715,940	\$4,176,533	\$15,829,024	\$3,509,818	\$16,153,800	\$1,831,200
TDC per Residential Unit/Commercial SF/Stall	\$228,254	\$124,604	\$149,162	\$227.59	\$194.99	\$32,700	\$32,700
Land Value							
Supportable Residual Land Value	\$5,041,722	\$2,388,816	\$0	\$1,296,968	\$1,743,302	-\$16,153,800	-\$1,831,200
Land Value per Unit or Bldg SF	\$38,782	\$27,777	\$0	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				PRIVATE	\$10,470,808	PARKING	-\$17,985,000
Starting Annual Ground Lease at 6% of Value					\$628,248		
Annual Debt Service on Parking Costs**							-\$1,169,950
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***							38
NPV of OCTA Revenues over 50 Years at 5% Discount Rate							-\$1,958,727

Table 3.2. Proforma Summary (Linear Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 550 structured parking spaces and 363 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories, plus a 10% premium per sq. ft. for micro units.

- Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking



Figure 3.3. Rendered view of the proposed bus parking

3.3 LAYERED



Figure 3.4. Built form context

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	14 bus pads with a layered parking layout	Requires a disruption to existing bus service to change operational configuration
CIRCULATION	Centralizes bus operations thereby reducing the walking distances from parking areas.	Disrupts the existing bus layout
COMMUNITY	Addresses the goal of community by satisfying demands of affordable housing and supportive services	-
DEVELOPMENT DENSITY	High-density development allowing for more residents and employees thereby increasing transit ridership	-
ECONOMICS	-	Requires structured parking for full buildout
PARK-AND-RIDE	-	Requires a parking structure to support the density
PARKING	Parking structure wrapped with active uses. Distinct parking areas defined by uses	-
PUBLIC SPACE	Increased open space opportunities	Core of activity missing around the bus parking

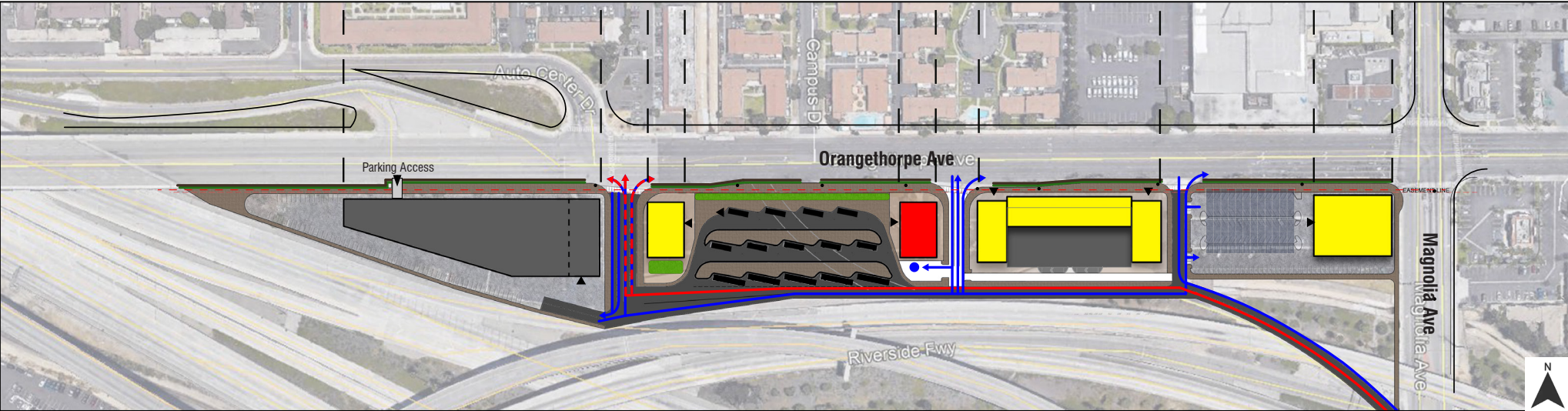
Table 3.3. Strength and Weakness Analysis

Required	+/- (15-18) Stalls	66 Stalls	41 Stalls	OCTA 409 Stalls	20 Stalls	+/- (164-188) Stalls	53 Stalls	4 Stalls Available	+/- (46-59) Stalls	77 Stalls
Provided	550 Stalls			4 Stalls Required			241 Stalls	140 Stalls		

PARKING ALLOCATION

				26,600 SF One/Two Bedroom (38 Units)													
				26,600 SF One/Two Bedroom (38 Units)													
58,500 SF Structured Parking (195 Stalls)		7,200 SF Permanent Supp- ortive Housing (16 Units)		7,200 Office						26,600 SF One/Two Bedroom (38 Units)		26,400 SF Structured Parking (88 stalls)		17,370 SF One/Two BeDroom (50 Units)			
58,500 SF Structured Parking (195 Stalls)		7,200 SF Micro unit Housing (20 Units)		7,200 Office						26,600 SF One/Two Bedroom (38 Units)		26,400 SF Structured Parking (88 stalls)		17,370 SF One/Two Bedroom (50 Units)			
48,000 SF Structured Parking (160 Stalls)		7,600 SF Retail		7,200 SF Supportive Services for Housing		7,200 Retail				18,290 SF Co-working Space		19,500 SF Structured Parking (65 stalls)		Existing Surface Parking (126 Stalls)		17,370 Retail	
WEST DISTRICT				WEST CENTRAL DISTRICT						EAST CENTRAL DISTRICT				EAST DISTRICT			

BREAKDOWN BY LEVELS



PLAN (layered)

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential
- Community retail
- Co-working Space
- Supportive Services for Housing

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
One/Two Bedroom Unit	141,140	700	200	246
Micro-unit	7,200	350	20	10
Permanent Supportive Housing	7,200	450	16	8
Supportive Services for Housing	7,200			20
General & Community Retail	32,170	-	-	142
Co-working Space	18,290	-	-	52
Office	14,400	-	-	41
OCTA Stalls Required	-	-	-	409
Non OCTA Stalls Required	-	300	-	519
Total Stalls Required	-	-	-	928
Total Stalls Provided	-	-	-	931

Not To Scale

3.3.1 PROFORMA (LAYERED OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use						
	Apartments	Micro Units	Permanent Supportive Housing	Office	Retail	Private Structured Parking	OCTA Structured Parking
Revenues							
Annual Net Operating Income	\$2,919,925	\$170,932	\$0	\$736,689	\$704,137		
Desired Yield on Cost*	5.50%	5.50%	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$53,089,554	\$3,107,847	\$0	\$9,822,514	\$9,388,493		
Net Building Value per Unit/Building SF	\$265,448	\$155,392	\$0	\$246.24	\$291.84	N/A	N/A
Costs							
Total Development Costs	\$45,379,200	\$2,541,330	\$2,314,937	\$9,078,645	\$6,272,825	\$16,971,300	\$8,894,400
TDC per Residential Unit/Commercial SF/Stall	\$226,896	\$127,066	\$144,684	\$227.59	\$194.99	\$32,700	\$32,700
Land Value							
Supportable Residual Land Value	\$7,710,355	\$566,518	\$0	\$743,869	\$3,115,668	-\$16,971,300	-\$8,894,400
Land Value per Unit or Bldg SF	\$38,552	\$28,326	\$0	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				PRIVATE	\$12,136,409	PARKING	-\$25,865,700
Starting Annual Ground Lease at 6% of Value					\$728,185		
Annual Debt Service on Parking Costs**							-\$1,682,601
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***							44
NPV of OCTA Revenues over 50 Years at 5% Discount Rate							-\$7,290,113

Table 3.4. Proforma Summary (Layered Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 791 structured parking spaces and 140 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction. Micro-units get another 10% premium. PSH units are priced at 30% AMI for a 1-person household.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories, plus a 10% premium per sq. ft. for micro units.

- Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking



Figure 3.5. Rendered view of the proposed transition plaza

3.4 HORSE-SHOE I



Figure 3.6. Proposed Retail (East District)

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Compact bus parking layout	Requires a disruption to existing bus service to change operational configuration
CIRCULATION	Centralizes bus operations thereby reducing the walking distances from parking areas	Disrupts the existing bus layout
COMMUNITY	Addresses the goal of community by satisfying demands of affordable housing and supportive services	-
DEVELOPMENT DENSITY	High activity non-residential uses engage the street. Local retail adjacent to the bus parking	Difficult to meet the criteria of +/- 150 Units/district
ECONOMICS	-	Requires a parking structure to support the density
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	-	Requires structured parking for full buildout
PUBLIC SPACE	Increased open space opportunities around the bus plaza	Public space concentrated in west central district

Table 3.5. Strength and Weakness Analysis

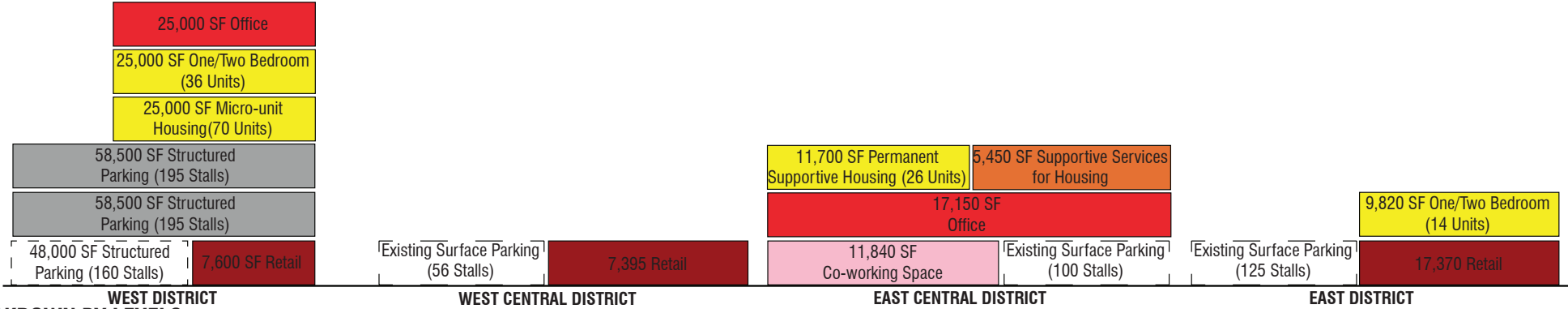
Required +/- (67-79) Stalls 34 Stalls 71 Stalls OCTA 409 Stalls
 Provided 550 Stalls 43 Stalls Required

33 Stalls 23 Stalls Available
 56 Stalls

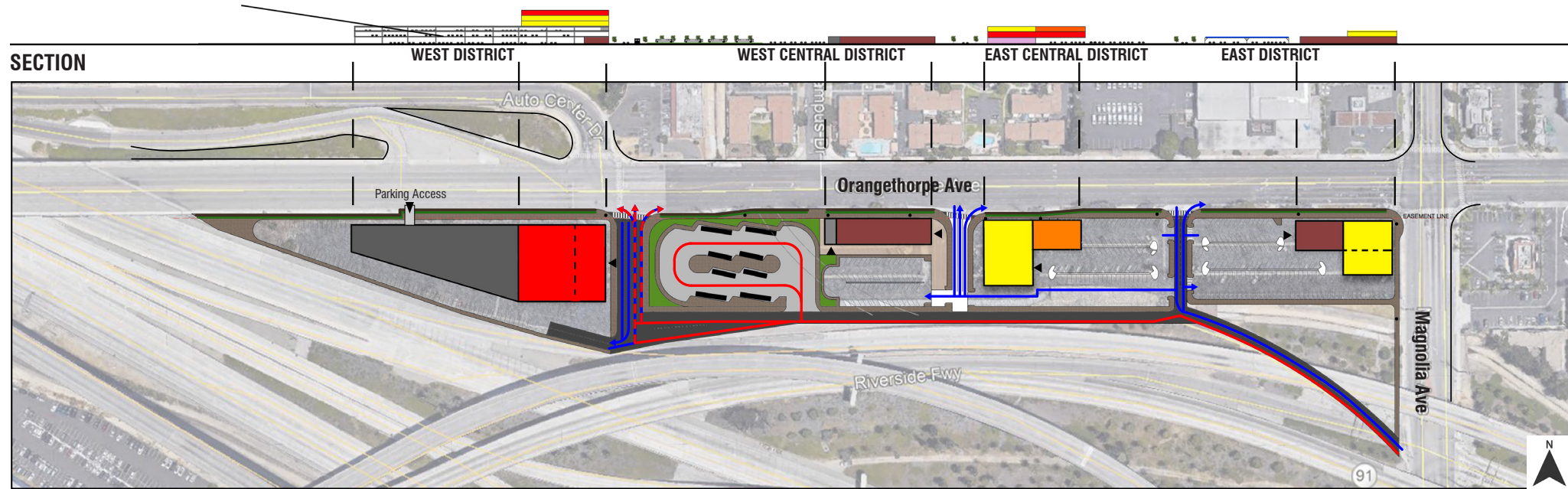
+/- (10-13) Stalls 34 Stalls 49 Stalls 15 Stalls
 100 Stalls 11 Stalls Required

31 Stalls Available +/- (14-17) Stalls 77 Stalls
 125 Stalls

PARKING ALLOCATION



BREAKDOWN BY LEVELS



PLAN (Horseshoe 1)

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential
- Community retail
- Co-working Space
- Supportive Services for Housing

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
One/Two Bedroom Unit	34,820	700	50	62
Micro-unit	25,000	350	70	35
Permanent Supportive Housing	11,700	450	26	13
Supportive Services for Housing	5,450	-	-	15
General & Community Retail	32,365	-	-	143
Co-working Space	11,840	-	-	34
Office	42,150	-	-	120
OCTA Stalls Required	-	-	-	409
Non OCTA Stalls Required	-	300	-	421
Total Stalls Required	-	-	-	830
Total Stalls Provided	-	-	-	831

Not To Scale

3.4.1 PROFORMA (HORSESHOE I OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use						
	Apartments	Micro Units	Permanent Supportive Housing	Office	Retail	Private Structured Parking	OCTA Structured Parking
Revenues							
Annual Net Operating Income	\$720,361	\$593,513	\$0	\$1,097,738	\$708,405		
Desired Yield on Cost*	5.50%	5.50%	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$13,097,480	\$10,791,136	\$0	\$14,636,506	\$9,445,402		
Net Building Value per Unit/Building SF	\$261,950	\$154,159	\$0	\$246.24	\$291.84	N/A	N/A
Costs							
Total Development Costs	\$11,195,294	\$8,824,062	\$3,761,773	\$13,528,068	\$6,310,848	\$13,766,700	\$4,218,300
TDC per Residential Unit/Commercial SF/Stall	\$223,906	\$126,058	\$144,684	\$227.59	\$194.99	\$32,700	\$32,700
Land Value							
Supportable Residual Land Value	\$1,902,186	\$1,967,075	\$0	\$1,108,437	\$3,134,554	-\$13,766,700	-\$4,218,300
Land Value per Unit or Bldg SF	\$38,044	\$28,101	\$0	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				PRIVATE	\$8,112,252	PARKING	-\$17,985,000
Starting Annual Ground Lease at 6% of Value					\$486,735		
Annual Debt Service on Parking Costs**							-\$1,169,950
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***							46
NPV of OCTA Revenues over 50 Years at 5% Discount Rate							-\$5,568,655

Table 3.6. Proforma Summary (Horseshoe 1 Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 550 structured parking spaces and 281 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction. Micro-units get another 10% premium. PSH units are priced at 30% AMI for a 1-person household.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories, plus a 10% premium per sq. ft. for micro units.

- Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking



Figure 3.7. Rendered view of the proposed transition plaza along Orangethorpe Ave

3.5 HORSE-SHOE II



Figure 3.8. View of the proposed retail and surface parking with carports from Orangethorpe Avenue

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Compact bus parking layout	Requires a disruption to existing bus service to change operational configuration
CIRCULATION	Centralizes bus operations thereby reducing the walking distances from parking areas	-
COMMUNITY	Addresses the goal of community by satisfying demands of affordable housing and supportive services	-
DEVELOPMENT DENSITY	High activity non-residential uses engage the street	Difficult to meet the criteria of +/- 150 Units/district
ECONOMICS	-	Doesn't meet the requirement of +/- 150 units/district
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	Retains some of the existing parking layout	Requires structured parking for full buildout
PUBLIC SPACE	Consolidated open space around the bus operations	-

Table 3.7. Strength and Weakness Analysis

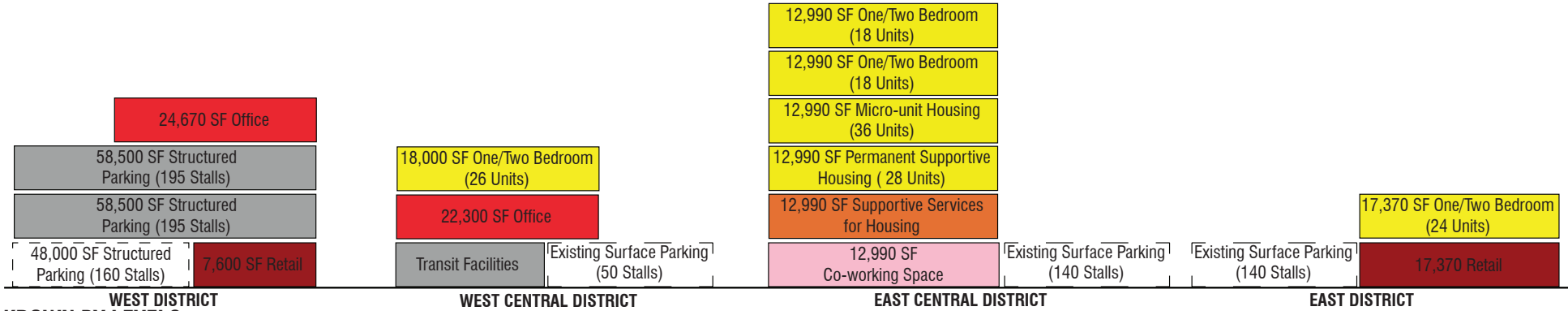
Required 34 Stalls 70 Stalls OCTA 409 Stalls 37 Stalls Available
 Provided 550 Stalls

63 Stalls +/- (27-32) Stalls
 45 Stalls Required 50 Stalls

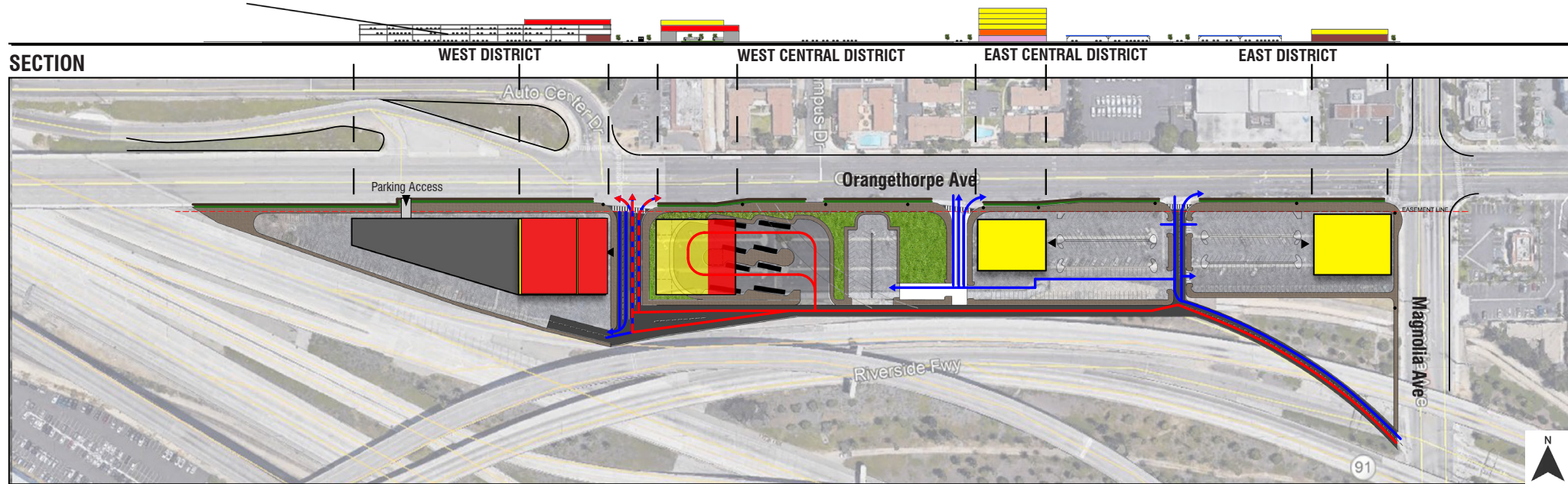
+/- (67-79) Stalls 37 Stalls 37 Stalls
 140 Stalls 12 Stalls Required

32 Stalls Available +/- (26-31) Stalls 77 Stalls
 140 Stalls

PARKING ALLOCATION



BREAKDOWN BY LEVELS



PLAN (Horseshoe II)

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential
- Community retail
- Co-working Space
- Supportive Services for Housing

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
One/Two Bedroom Unit	46,970	700	82	108
Micro-unit	12,990	350	36	19
Permanent Supportive Housing	12,990	450	28	14
Supportive Services for Housing	12,990			37
General & Community Retail	24,970	-	-	143
Co-working Space	12,990	-	-	37
Office	46,970	-	-	133
OCTA Stalls Required	-	-	-	409
Non OCTA Stalls Required	-	300	-	458
Total Stalls Required	-	-	-	867
Total Stalls Provided	-	-	-	880

Not To Scale

3.6 DEVELOPER I



Figure 3.9. Rendered view of the existing bus parking from Orangethorpe Avenue

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Retains the existing bus operations layout	-
CIRCULATION	Retained the existing bus parking (10 bus pads)	-
COMMUNITY	-	Lacks gathering spaces for the community
DEVELOPMENT DENSITY	Consistent with the market demand for the market study (+/-150 Units/district)	-
ECONOMICS	Meets the requirement of +/-150 units/district	Requires structured parking for full buildout
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	Retains some of the existing parking layout	Large, uninviting parking areas
PUBLIC SPACE	-	Core of activity missing around the bus parking

Table 3.8. Strength and Weakness Analysis

Required	+/- (131-151) Stalls	OCTA 9 Stalls	+/- (53-59) Stalls	OCTA 165 Stalls	71 Stalls Available	OCTA 235 Stalls	+/- (68-79) Stalls	27 Stalls	17 Stalls Available	+/- (128-145) Stalls	45 Stalls
Provided	160 Stalls		59 Stalls Required	165 Stalls		385 Stalls				209 Stalls	

PARKING ALLOCATION

3.6.1 PROFORMA (DEVELOPER I OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use			
	Apartments	Commercial	Private Structured Parking	OCTA Structured Parking
Revenues				
Annual Net Operating Income	\$5,445,121	\$527,501		
Desired Yield on Cost*	5.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$99,002,201	\$7,033,344		
Net Building Value per Unit/Building SF	\$233,496	\$292	N/A	N/A
Costs				
Total Development Costs	\$84,623,816	\$4,699,256	\$16,546,200	\$2,877,600
TDC per Residential Unit/Commercial SF/Stall	\$199,584	\$195	\$32,700	\$32,700
Land Value				
Supportable Residual Land Value	\$14,378,386	\$2,334,088	-\$16,546,200	-\$2,877,600
Land Value per Unit or Bldg SF	\$33,911	\$97		
SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$16,712,473	PARKING	-\$19,423,800
Starting Annual Ground Lease at 6% of Value		\$1,002,748		
Annual Debt Service on Parking Costs**				-\$1,263,546
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***				24
NPV of OCTA Revenues over 50 Years at 5% Discount Rate				\$6,155,760

Table 3.9. Proforma Summary (Developer 1 Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 594 structured parking spaces and 325 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings."

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking

3.6.2 ALTERNATIVES

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Alternative I: OCTA will be funding all of the structured parking required for private uses as well as any structured spaces required to provide 409 total spaces for OCTA. For example, this diagram shows 919 total spaces, of which 325 are surface and the remaining 594 are structured. Let's consider the cost of all that structured parking (about \$19.5M as of right now), assume that OCTA is financing that over 30 years, and compare that to the ground lease a private developer may be willing to pay for the rights to develop the indicated amount of housing and commercial space. As of right now, it appears that the total "residual land value" of the development program in Developer Option 1 does not exceed the cost of the structured parking, and OCTA would not be recouping its investment through ground lease payments for 20+ years, but after that the garage would be paid off and net ground lease revenues would accrue to OCTA.

Alternative II: The alternative to this approach is that the developer would have to pay for the structured parking, at least their own, but that essentially wipes out the residual land value entirely (the land for development is worth less than the cost of the parking) plus the developer's return threshold is higher than OCTA's, and OCTA essentially would not expect to get any ground lease revenue ever.

3.7 DEVELOPER II



Figure 3.10 Rendered view of the transition plaza and bus parking

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	14 bus pads with a layered parking layout	Requires a disruption to existing bus service to change operational configuration
CIRCULATION	Centralizes bus operations thereby reducing the walking distances from parking areas.	Disrupts the existing bus layout
COMMUNITY	Addresses the goal of community by providing gathering spaces for neighborhood uses	-
DEVELOPMENT DENSITY	High-density development allowing for more residents and employees thereby increasing transit ridership (+/- 150 Units/district)	-
ECONOMICS	Meets the requirement of +/-150 units/district	Requires structured parking for full buildout
PARK-AND-RIDE	-	Park-and-Ride not in close proximity to the bus plaza
PARKING	Parking structure wrapped with active uses	Requires structured parking for full buildout
PUBLIC SPACE	Increased open space opportunities around the bus plaza	Public space concentrated in west central district

Table 3.10. Strength and Weakness Analysis

3.7.1 PROFORMA (DEVELOPER II OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use			
	Apartments	Commercial	Private Structured Parking	OCTA Structured Parking
Revenues				
Annual Net Operating Income	\$6,056,249	\$422,657		
Desired Yield on Cost*	5.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$110,113,619	\$5,635,430		
Net Building Value per Unit/Building SF	\$236,295	\$291.84	N/A	N/A
Costs				
Total Development Costs	\$94,121,489	\$3,765,255	\$17,429,100	\$8,698,200
TDC per Residential Unit/Commercial SF/Stall	\$201,977	\$194.99	\$32,700	\$32,700
Land Value				
Supportable Residual Land Value	\$15,992,130	\$1,870,176	-\$17,429,100	-\$8,698,200
Land Value per Unit or Bldg SF	\$34,318	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$17,862,306	PARKING	-\$26,127,300
Starting Annual Ground Lease at 6% of Value		\$1,071,738		
Annual Debt Service on Parking Costs**				-\$1,699,618
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***				34
NPV of OCTA Revenues over 50 Years at 5% Discount Rate				\$1,212,155

Table 3.11. Proforma Summary (Developer 2 Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 799 structured parking spaces and 160 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings."

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking



Figure 3.11 Rendered view of the proposed bus parking layout

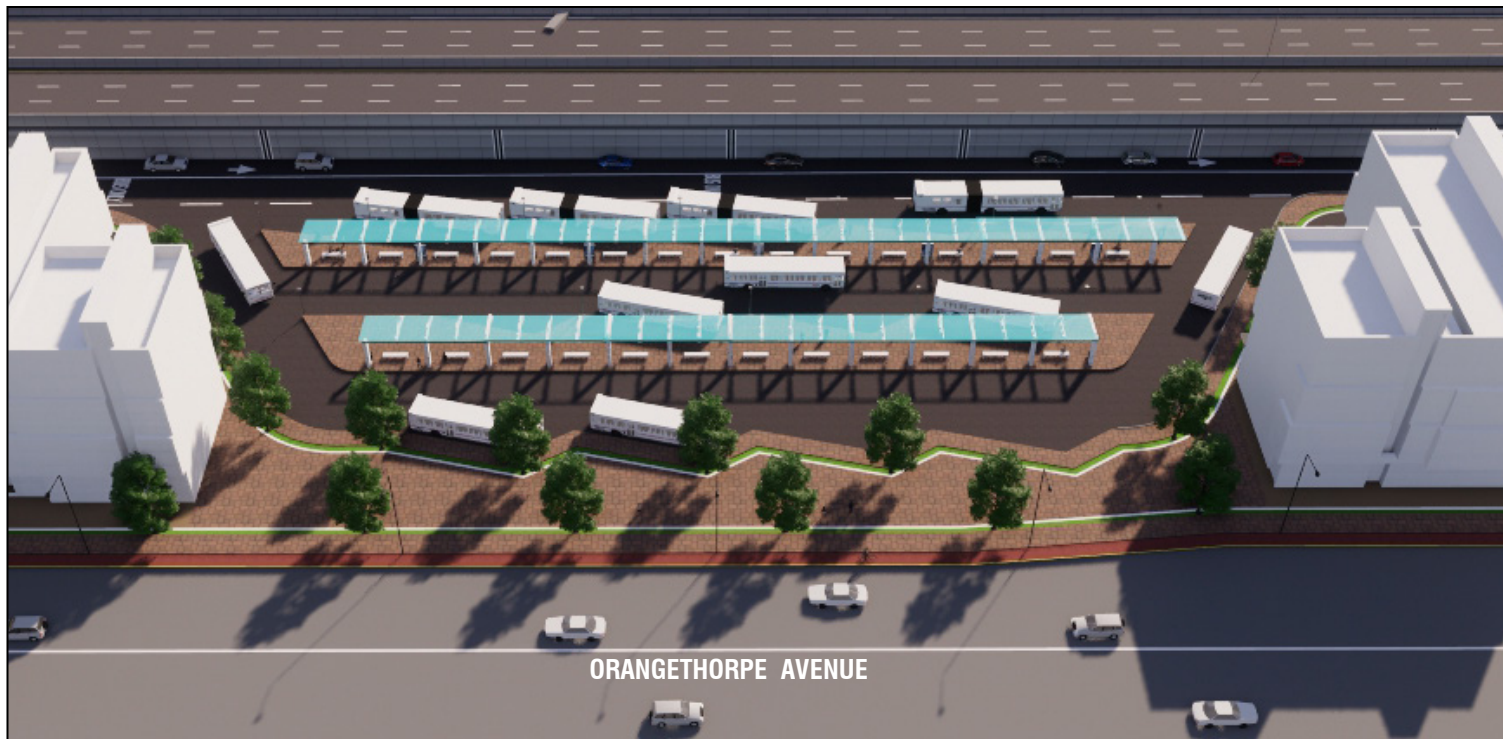


Figure 3.12. Rendered view of the proposed bus parking layout (West Central District)



Figure 3.13. Rendered view of surface parking with proposed solar carports (East District)



Figure 3.14. Rendered view of the transition plaza from West District



Figure 3.15. Rendered view of the proposed bus parking layout from Riverside Fwy

3.8 PHASED OPTION

The Phased Option keeps OCTA parking requirements (409 stalls) in mind, with only a portion of the site (East District and East Central District) built with existing surface parking supporting it, as illustrated in Figure 3.16.



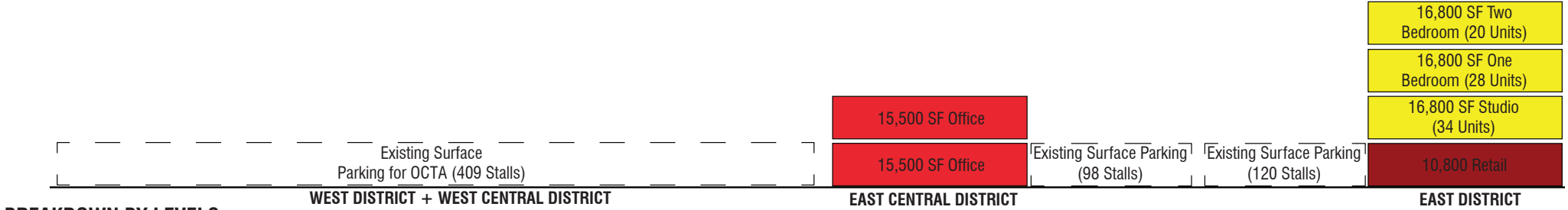
Figure 3.16. View of the proposed development with surface parking

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Retains the existing bus circulation layout	-
CIRCULATION	Retains the existing bus parking (10 bus pads)	-
COMMUNITY	-	Lack of proper transition between areas with different types of land uses
DEVELOPMENT DENSITY	Consistent with the market study demand analysis	Difficult to meet the criteria of +/- 150 Units/district
ECONOMICS	-	Requires shared land-uses between districts to meet +/- 150 unit requirement
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	Retains the existing surface parking	Large, uninviting parking areas
PUBLIC SPACE	-	Core of activity missing around the bus parking

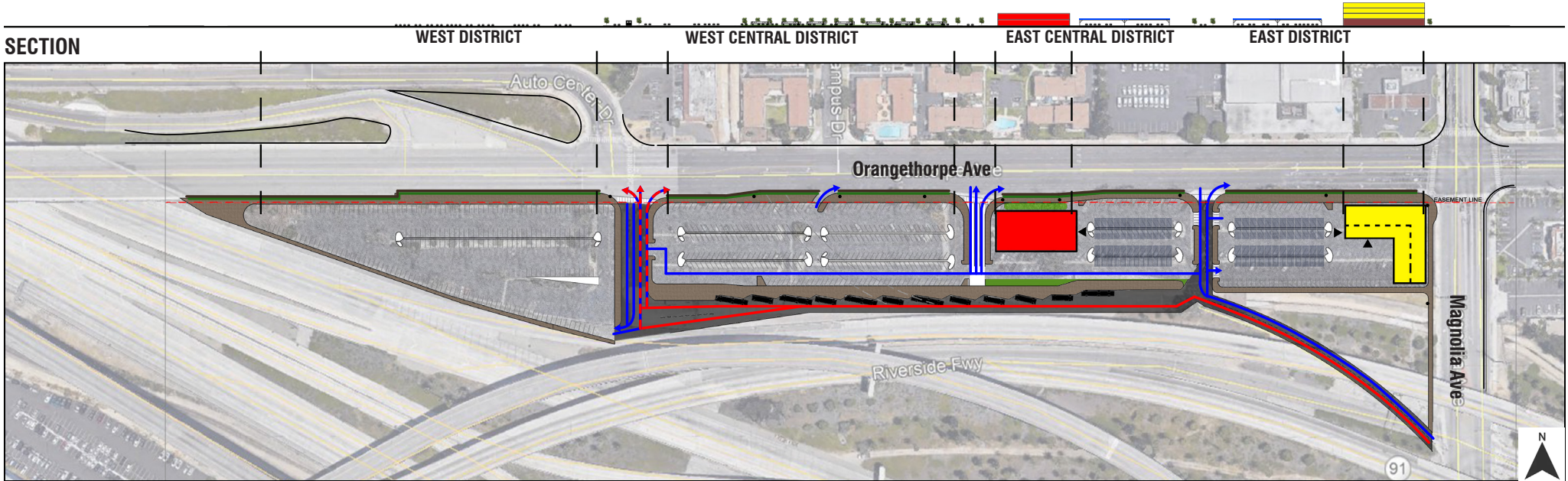
Table 3.12. Strength and Weakness Analysis (Phased Option)

Required	409 Stalls	90 Stalls	8 Stalls Available	+/- (71-84) Stalls	32 Stalls
Provided	409 Stalls	98 Stalls		120 Stalls	

PARKING ALLOCATION



SECTION



PLAN (Phased)

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
One/Two Bedroom Unit	33,600	700	48	67
Studio	16,800	350	34	17
Office	31,000	-	-	90
General & Community Retail	10,800	-	-	32
OCTA Stalls Required	-	-	-	409
Non OCTA Stalls Required	-	300	-	206
Total Stalls Required	-	-	-	615
Total Stalls Provided	-	-	-	627

Summary (Phased Option)

3.8.1 PROFORMA (PHASED OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use				
	Apartments	Office	Retail	Private Structured Parking	OCTA Structured Parking
Revenues					
Annual Net Operating Income	\$1,042,683	\$572,508	\$236,390		
Desired Yield on Cost*	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$18,957,868	\$7,633,440	\$3,151,872		
Net Building Value per Unit/Building SF	\$231,194	\$246.24	\$291.84	N/A	N/A
Costs					
Total Development Costs	\$16,204,560	\$7,055,352	\$2,105,891	\$0	\$0
TDC per Residential Unit/Commercial SF/Stall	\$197,617	\$227.59	\$194.99		
Land Value					
Supportable Residual Land Value	\$2,753,308	\$578,088	\$1,045,981	\$0	\$0
Land Value per Unit or Bldg SF	\$33,577	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES		PRIVATE	\$4,377,377	PARKING	\$0
Starting Annual Ground Lease at 6% of Value			\$262,643		
Annual Debt Service on Parking Costs**					\$0
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***					0
NPV of OCTA Revenues over 50 Years at 5% Discount Rate					\$6,699,869

Table 3.13. Proforma Summary (Phased Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the housing, office, and retail developments are assumed to utilize existing spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

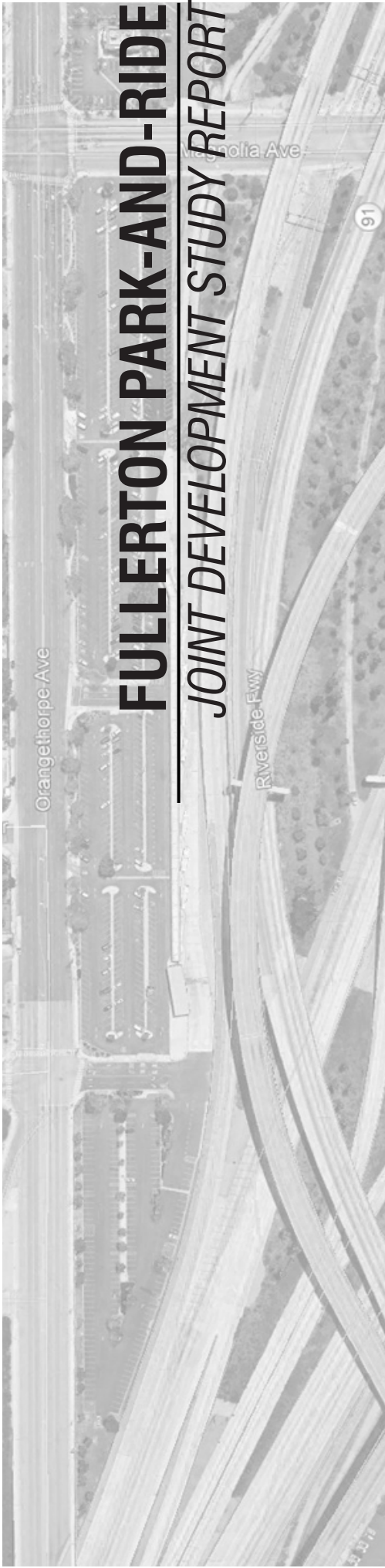
[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.

- Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking



FULLERTON PARK-AND-RIDE

JOINT DEVELOPMENT STUDY REPORT

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01 EXECUTIVE SUMMARY

1.1 EXECUTIVE SUMMARY

The Orange County Transportation Authority (OCTA) is considering development options on its 11.1 acre Fullerton Park-and-Ride property (Site). The property's parking lots are currently underutilized, presenting the potential for development while retaining its role as a multi-modal transit hub. OCTA has retained a consultant team comprised of IBI Group, Economic & Planning Systems, Inc. (EPS) and VCA Engineers to support the transit agency in exploring the Site's development potential.

The facility serves as a regional transfer point for OCTA and Los Angeles County Metropolitan Authority (Metro) bus operations. The facility provides a total of 745 parking spaces, including 29 ADA spaces to Park-and-Ride customers.

OCTA's primary goals for the site's development are as follows:

- Identify land uses that would complement transit and Park-and-Ride usage at the site
- Provide additional revenues for OCTA
- Support the City of Fullerton and local neighborhood with desirable developments
- Provide services to the transit riders

These primary goals are implemented through conceptual land use plans along with parking configurations, an economic market study and recommendations for development options on the site. These concept plans:

- Reflect City and local developer input
- Evaluate the market-rate and affordable/supportive housing types
- Allow design and development flexibility through the use of districts
- Encourage a mixture of uses (retail, residential, offices, affordable housing, supportive services)
- Provide accessible open spaces along the site
- Encourage a refined parking system

Keeping the OCTA parking requirements (409 stalls) in mind, only a portion of the site could be built with surface parking supporting it, as of now. In the near future, structured parking strategies need to be explored in order to support more intense development of the site. A phased approach to development of the site is also recommended with options for shared parking.

Overall, the purpose of this document is to set forth the vision, and present options along with next steps that will help determine the future development potential of the site. Graphic depictions used in this report are for illustrative purposes only. They are not intended to depict actual buildings but are a demonstration of the site development.



Figure 1.1. Fullerton park-and-Ride Site

02 INTRODUCTION

2.1 INTRODUCTION

Data Source: EPS

The Orange County Transportation Authority (OCTA) is considering development options on its Fullerton Park-and-Ride property (Site) at the southwest corner of Orangethorpe and Magnolia Avenues. Although the Site is a functioning Park-and-Ride facility servicing several OCTA and Metro bus routes, the property's parking lots are underutilized, presenting the potential for development while retaining its role as a multi-modal transit hub.

The purpose of this report is to identify redevelopment strategies that will provide a framework for generating revenue, increasing transit ridership for the OCTA Fullerton Park-and-Ride facility and to help meet community needs.

2.2 STUDY GOALS

- Identify land uses that would complement transit and Park-and-Ride usage at the site
- Provide additional revenues for OCTA
- Support the City of Fullerton and local neighborhood with desirable developments
- Provide services to the transit riders

2.3 SCENARIO OBJECTIVES

The following objectives will be used to achieve the study's goals:

Transit and Rideshare Operations

- Accommodate multimodal connections
- Provide curb drop-off areas
- Support Transit-Oriented Development
- Improve transit amenities

Site Development

- Provide legible and predictable circulation for all modes
- Enhance security
- Provide complementary land-uses that support on-site transit, residential, and office use

Economics

- Generate new revenue streams for OCTA
- Provide economic sustainability and stability
- Flexibility to adapt to market conditions
- Provide housing options that address market needs

Community

- Emphasize the community context
- Provide communal spaces for neighborhood uses

2.4 REGIONAL CONTEXT

Site's location is on the north side of the I-5 and SR-91 interchange, providing convenient access to employment and population centers, as well as commercial destinations in Orange County and beyond. Please refer to the appendix section 7.1 for more details.

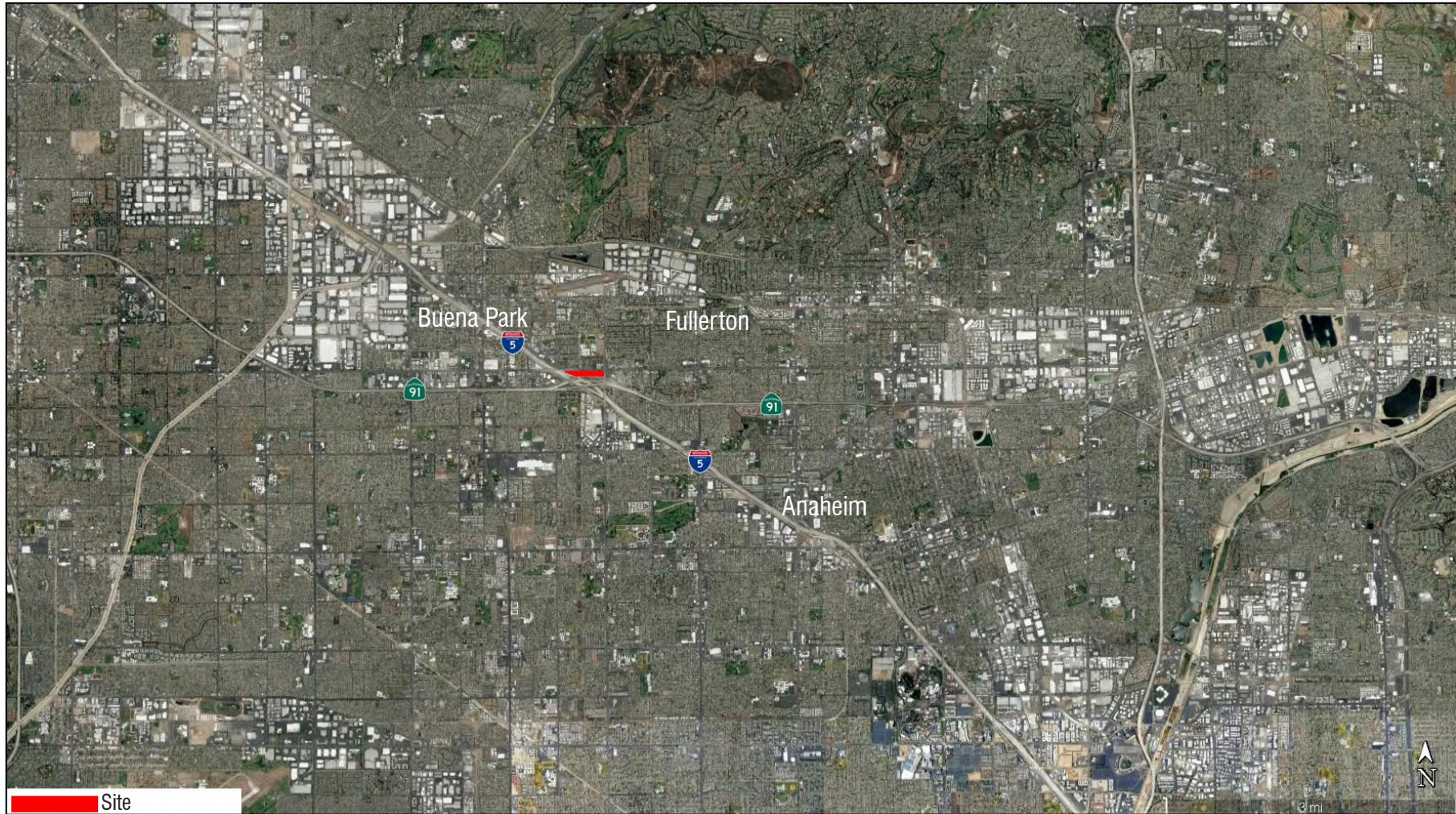


Figure 2.1. Regional Context

Data Source: Google Earth

2.5 SITE CONTEXT

The Site is located at the southwest corner of Orangethorpe Avenue and Magnolia Avenue, two major thoroughfares in North Orange County, as illustrated in Figure 2.2. It is a linear site with an overall area of 11.1 acres with 745 surface parking stalls. Please refer to the appendix section 7.1 for more details.

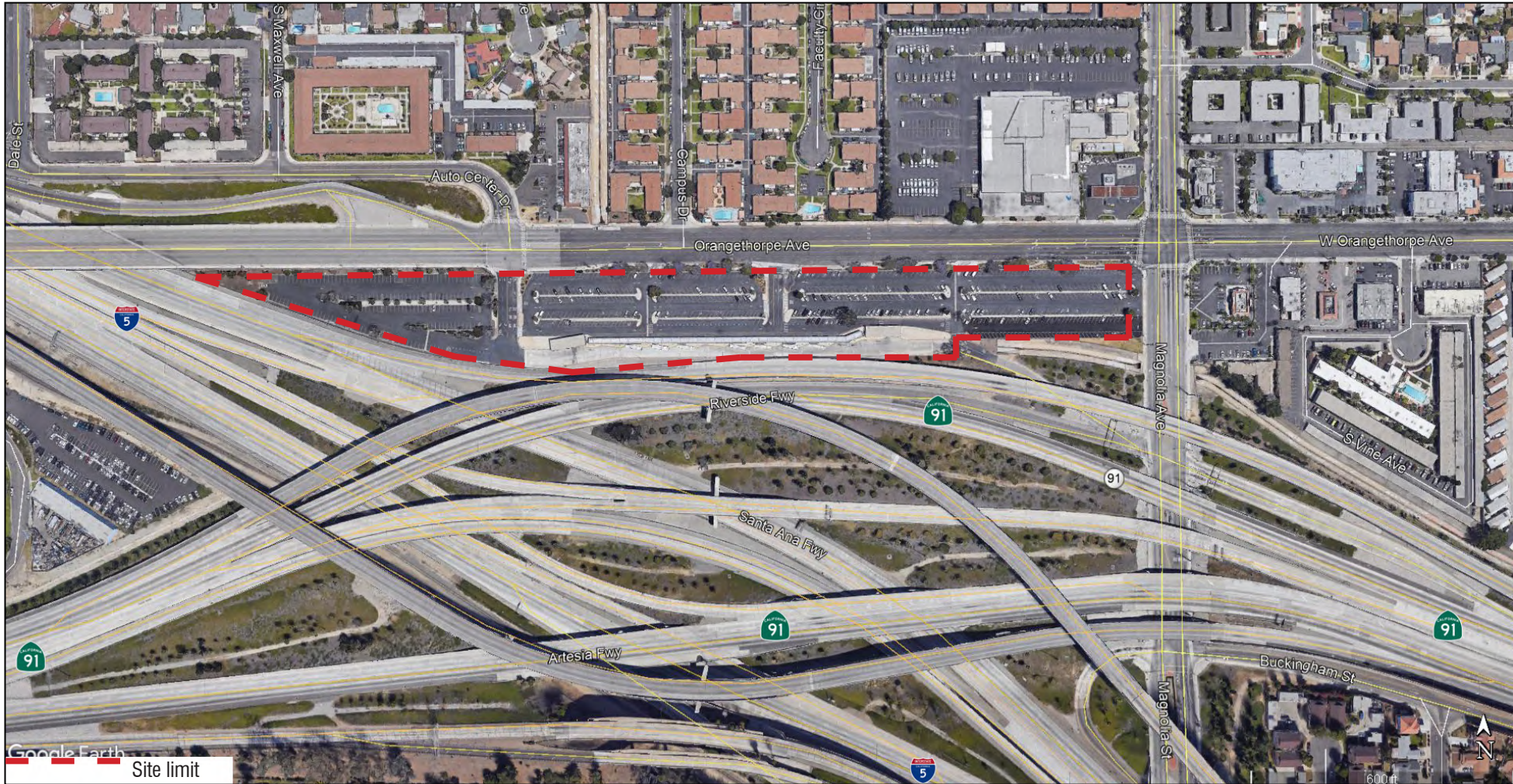


Figure 2.2. Aerial view of Fullerton Park-and-Ride site

Data Source: Google Earth

2.6 TRANSIT NETWORK

Seven OCTA bus routes and one LA Metro bus route serve the Fullerton Park-and-Ride site, as illustrated in Figure 2.3. Buses currently enter the site via the 91 West Freeway/Park-and-Ride entrance ramp, just south of the Park-and-Ride off Magnolia Street, or through the access driveways along Orangethorpe Avenue. Route 30 is the only route that does not enter the site, as it passes along Orangethorpe Avenue. Once at the Fullerton Park-and-Ride site, buses dock at one of fourteen existing bus bays located along the southern edge of the site. The Fullerton Park-and-Ride has covered bus bays for seven routes, including routes to Anaheim (including Disneyland), Buena Park (including Knott's Berry Farm), Placentia, Stanton, Westminster, Fountain Valley, Anaheim, Garden Grove, and Huntington Beach. Express bus service is offered to and from Los Angeles six times daily. In addition, OCTA recently introduced the Bravo! 529 rapid bus route that originates at the Fullerton Park-and-Ride and extends south to the Goldenwest Transportation Center. The site is easily accessible from local freeways via the I-5/Magnolia interchange. Please refer to the appendix section 7.1 for more details.

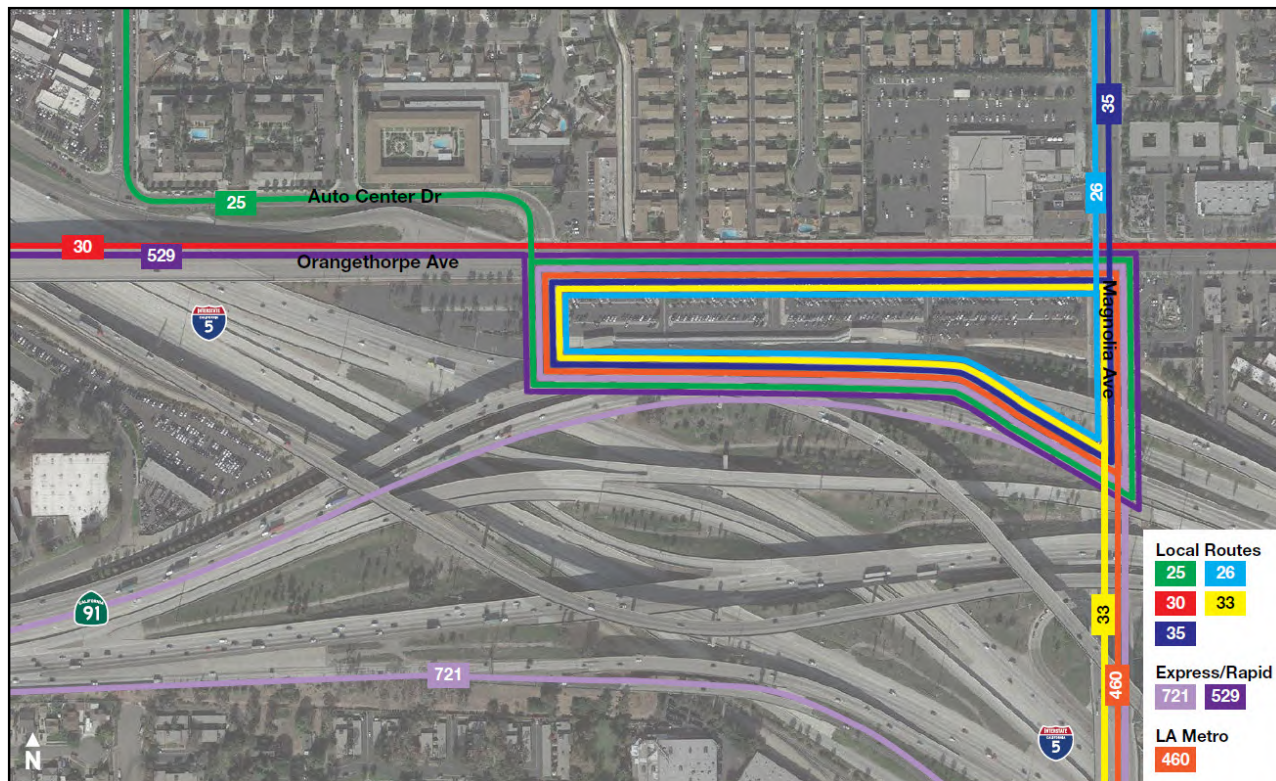


Figure 2.3. Fullerton Park-and-Ride Transit Network

2.7 EXISTING LAND USE

The area within a half-mile radius of the Fullerton Park-and-Ride site consists of mostly commercial, multi-family residential, single family residential, and public facilities uses. Figure 2.4. illustrates the various land uses within a half-mile radius of the Fullerton Park-and-Ride site as set forth by the City of Fullerton Zoning Code. Please refer to the appendix section 7.1 for more details.

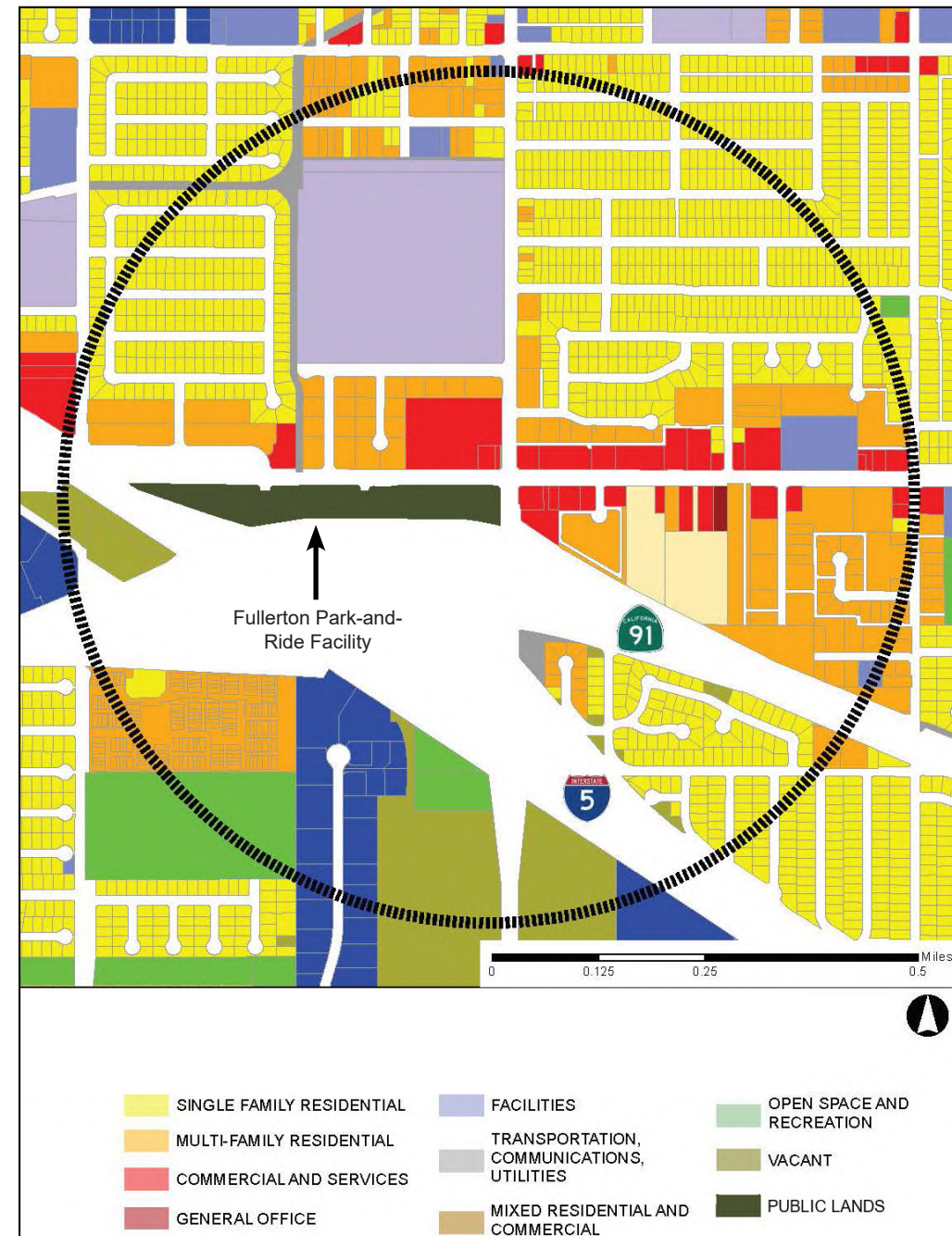


Figure 2.4. Fullerton Park-and-Ride Adjacent Land Use

2.8 PARKING OCCUPANCY

The survey reported peak parking demand occurred from 8:00 AM to 11:00 AM with an occupancy rate of approximately 46%, as illustrated in Table 2.1.

2.9 SITE ACCESS MODE SPLIT

An evaluation of the AM peak period shows a majority of users, approximately 54%, drove and parked at the Fullerton Park-and-Ride site before riding transit. In contrast, during the PM peak period, a majority of users, approximately 57%, were dropped off at the Fullerton Park-and-Ride site, as illustrated in Figure 2.5. and Figure. 2.6.

TIME	09/19/2018 SURVEY	
	OCCUPIED SPACES	PERCENTAGE
7:00 AM	311	42%
8:00 AM	345	46%
9:00 AM	346	46%
10:00 AM	337	45%
11:00 AM	341	46%
12:00 PM	330	44%
1:00 PM	332	45%
2:00 PM	319	43%
3:00 PM	305	41%
4:00 PM	266	36%
5:00 PM	188	25%
6:00 PM	144	19%

Table 2.1. Parking Occupancy Survey

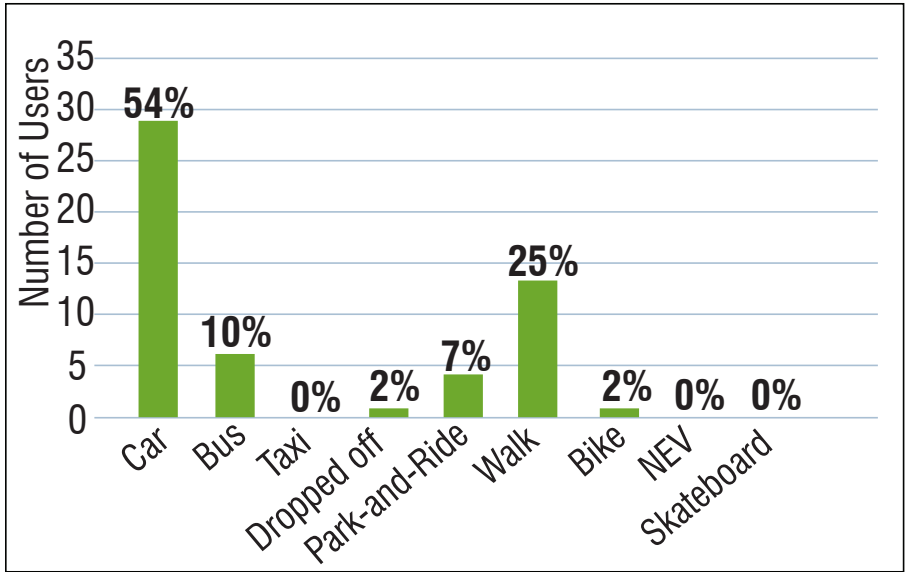


Figure 2.5. Modal Share – AM Peak

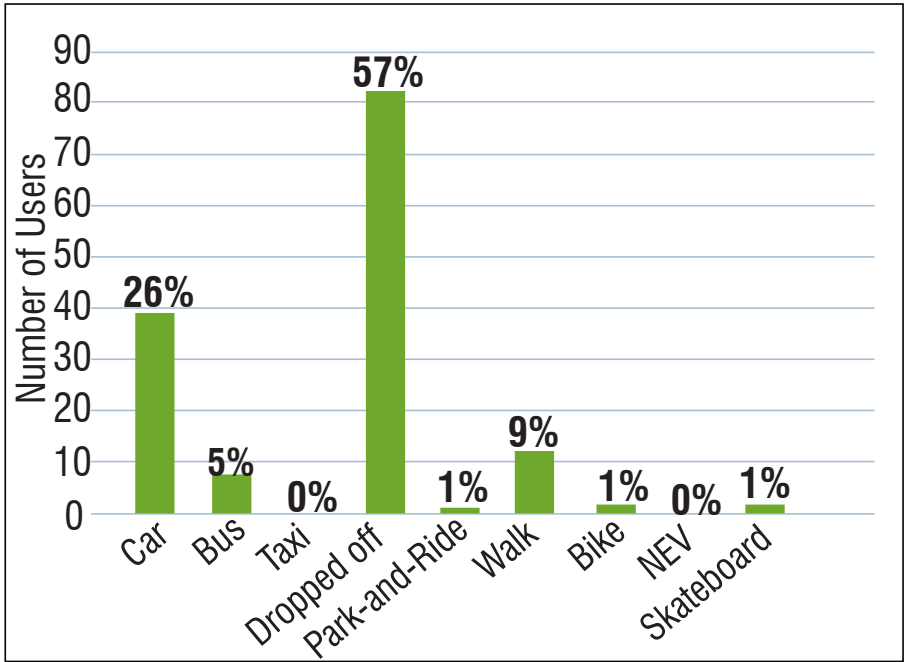


Figure 2.6. Modal Share – PM Peak

2.10 SITE CONSTRAINTS

- OCTA doesn't own the land around the Park-and-Ride
- Free parking encourages driving and doesn't allow for revenue capture from parking fees
- Multiple parties are not communicating their interests and needs for this site, missing joint planning opportunities
- Private transit operators function separately
- OCTA may be financially constrained to buy more land for transit parking
- The site is physically constrained by the freeway and existing development and there is no undeveloped land in the vicinity

2.11 SITE OPPORTUNITIES

- Excess parking supply can be redeveloped
- Community and local employer participation in the planning process
- Convert a portion of parking for a Park and Fly operation
- 'Redesign Fullerton Park-and-Ride to better serve future bus operation
- Adjust parking to meet current and future needs while promoting flexibility in design
- Explore the potential of revenue capture opportunities
- Formalize shared use agreements with various transit operators
- Improve the environment and public health with more opportunities to walk and bicycle
- Integrate facilities, amenities, and signage for all users into redevelopment plans



Figure 2.7. Axonometric view of the site

Data Source: Google Earth

2.12 STUDY AREA



Figure 2.8. Site, looking east from the existing facilities



Figure 2.9. Site, looking east from Magnolia Avenue



Figure 2.10. Site, looking east from Orangethorpe Avenue



Figure 2.11. Site, looking north east from Orangethorpe Avenue



Figure 2.12. North view from site, looking across Orangethorpe Avenue



Figure 2.13. Site, looking north west from existing facilities



Figure 2.14. Existing Facilities



Figure 2.15. Site, looking north east from existing facilities

03 CONCEPTS

3.1 CONCEPTS

Concepts were initially crafted and then narrowed to the final seven presented in this section of the report. These seven concepts:

- Evaluate market-rate and affordable/supportive housing types
- Reflect City and local developer input
- Create a range of configurations by creating districts which can be interchanged, phased, and adjusted to allow versatility for potential future development partners
- Encourage a mixture of uses (retail, residential, offices, affordable housing, supportive services) which not only complements the neighborhood built scale but also reflect the market study
- Allow for phased, efficient development that can be adjusted according to the market demand
- Provide accessible open spaces along the site for short term programming for the community
- Encourage a refined parking system to accommodate existing services and future development requirements



Figure 3.1. Site, looking east from existing facilities

3.2 LINEAR



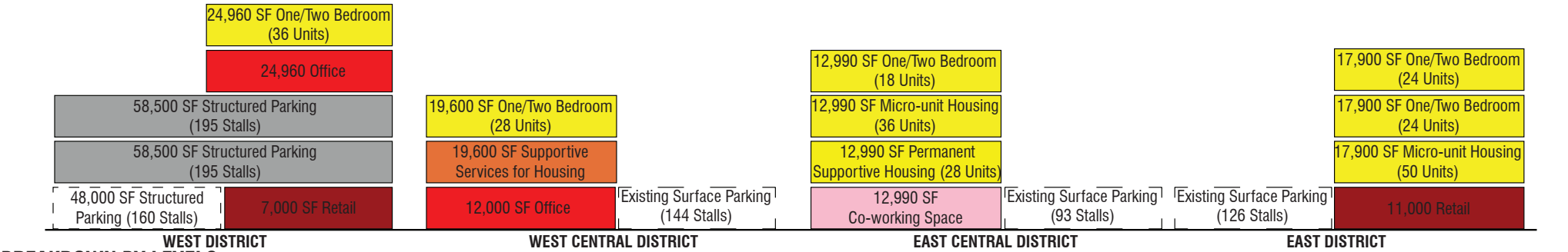
Figure 3.2. Rendered view, looking west from Orangethorpe Avenue

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Retains the existing bus circulation layout	-
CIRCULATION	Retains the existing bus parking (10 bus pads)	-
COMMUNITY	Addresses the goal of community by satisfying demands of affordable housing and supportive services	Lack of proper transition between areas with different types of land uses
DEVELOPMENT DENSITY	Consistent with the market study demand analysis	Difficult to meet the criteria of +/- 150 Units/district
ECONOMICS	-	Requires shared land-uses between districts to meet +/- 150 unit requirement
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	Retains the existing surface parking	Large, uninviting parking areas
PUBLIC SPACE	-	Core of activity missing around the bus parking

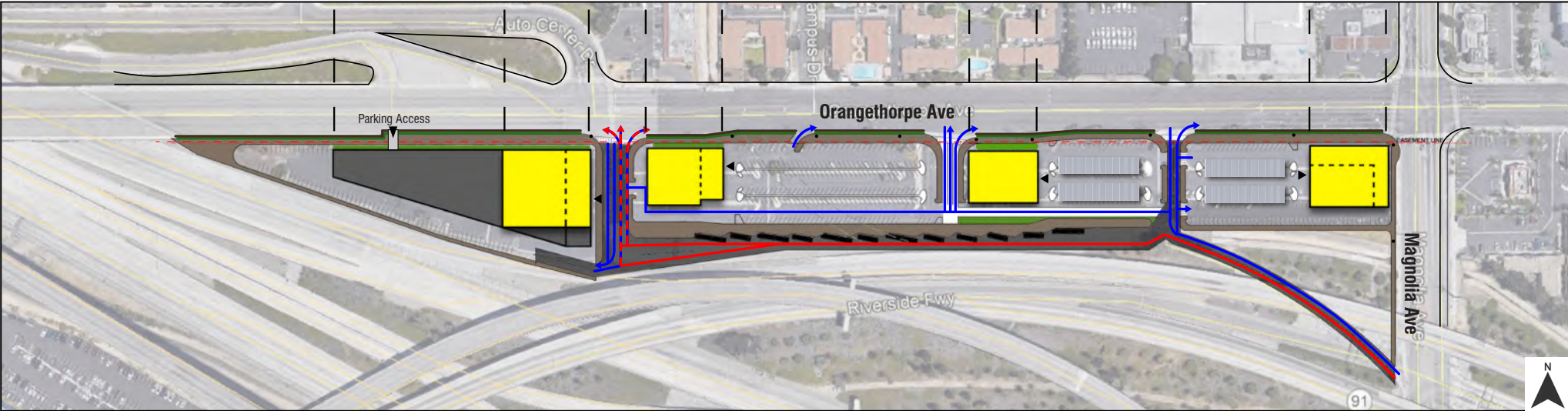
Table 3.1. Strength and Weakness Analysis

Required	+/- (37-44) Stalls	31 Stalls	71 Stalls	OCTA 265 Stalls	139 Stalls Available	34 Stalls	56 Stalls	+/- (28-34) Stalls	OCTA 144 Stalls	+/- (48-55) Stalls	39 Stalls	+/- (129-84) Stalls	49	
Provided	550 Stalls					124 Stalls Required	144 Stalls		93 Stalls		7 Stalls Required			126

PARKING ALLOCATION



BREAKDOWN BY LEVELS



PLAN (linear)

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential
- Community retail
- Co-working Space
- Supportive Services for Housing

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
One/Two Bedroom Unit	93,350	700	130	160
Micro-unit	30,890	350	88	44
Permanent Supportive Housing	12,990	450	28	14
Supportive Services for Housing	32,590			93
General & Community Retail	18,000	-	-	79
Co-working Space	12,990	-	-	37
Office	36,960	-	-	105
OCTA Stalls Required	-	-	-	409
Non OCTA Stalls Required	-	300	-	497
Total Stalls Required	-	-	-	906
Total Stalls Provided	-	-	-	913

Not To Scale

3.2.1 PROFORMA (LINEAR OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use						
	Apartments	Micro Units	Permanent Supportive Housing	Office	Retail	Private Structured Parking	OCTA Structured Parking
Revenues							
Annual Net Operating Income	\$1,909,309	\$720,762	\$0	\$1,284,449	\$393,984		
Desired Yield on Cost*	5.50%	5.50%	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$34,714,716	\$13,104,756	\$0	\$17,125,992	\$5,253,120		
Net Building Value per Unit/Building SF	\$267,036	\$152,381	\$0	\$246.24	\$291.84	N/A	N/A
Costs							
Total Development Costs	\$29,672,994	\$10,715,940	\$4,176,533	\$15,829,024	\$3,509,818	\$16,153,800	\$1,831,200
TDC per Residential Unit/Commercial SF/Stall	\$228,254	\$124,604	\$149,162	\$227.59	\$194.99	\$32,700	\$32,700
Land Value							
Supportable Residual Land Value	\$5,041,722	\$2,388,816	\$0	\$1,296,968	\$1,743,302	-\$16,153,800	-\$1,831,200
Land Value per Unit or Bldg SF	\$38,782	\$27,777	\$0	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				PRIVATE	\$10,470,808	PARKING	-\$17,985,000
Starting Annual Ground Lease at 6% of Value					\$628,248		
Annual Debt Service on Parking Costs**							-\$1,169,950
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***							38
NPV of OCTA Revenues over 50 Years at 5% Discount Rate							-\$1,958,727

Table 3.2. Proforma Summary (Linear Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 550 structured parking spaces and 363 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories, plus a 10% premium per sq. ft. for micro units.

- Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking



Figure 3.3. Rendered view of the proposed bus parking

3.3 LAYERED



Figure 3.4. Built form context

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	14 bus pads with a layered parking layout	Requires a disruption to existing bus service to change operational configuration
CIRCULATION	Centralizes bus operations thereby reducing the walking distances from parking areas.	Disrupts the existing bus layout
COMMUNITY	Addresses the goal of community by satisfying demands of affordable housing and supportive services	-
DEVELOPMENT DENSITY	High-density development allowing for more residents and employees thereby increasing transit ridership	-
ECONOMICS	-	Requires structured parking for full buildout
PARK-AND-RIDE	-	Requires a parking structure to support the density
PARKING	Parking structure wrapped with active uses. Distinct parking areas defined by uses	-
PUBLIC SPACE	Increased open space opportunities	Core of activity missing around the bus parking

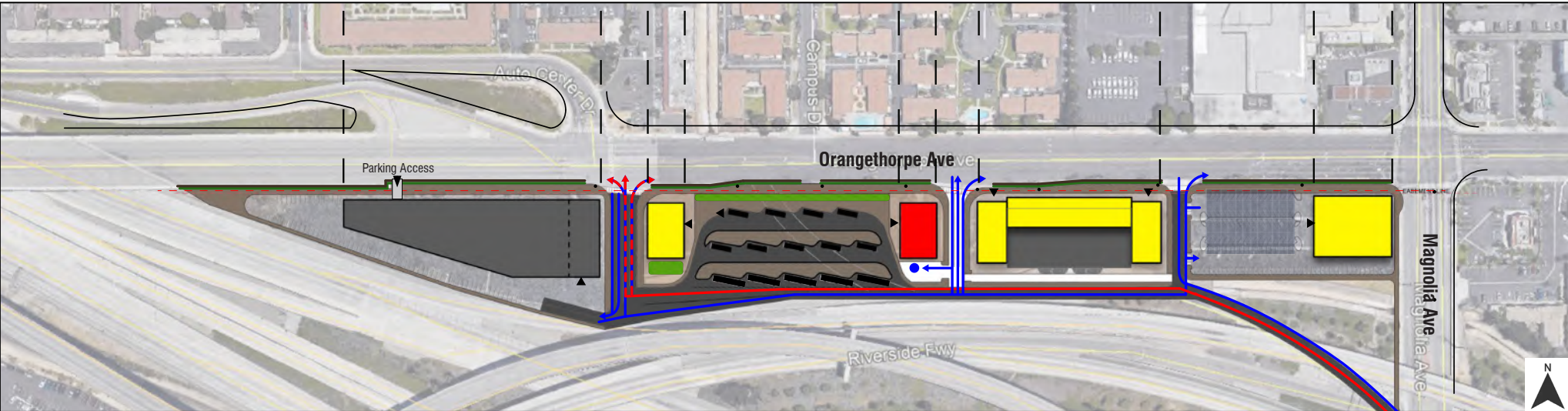
Table 3.3. Strength and Weakness Analysis

Required	+/- (15-18) Stalls	66 Stalls	41 Stalls	OCTA 409 Stalls	20 Stalls	+/- (164-188) Stalls	53 Stalls	4 Stalls Available	+/- (46-59) Stalls	77 Stalls
Provided	550 Stalls			4 Stalls Required			241 Stalls	140 Stalls		

PARKING ALLOCATION

				26,600 SF One/Two Bedroom (38 Units)					
				26,600 SF One/Two Bedroom (38 Units)					
58,500 SF Structured Parking (195 Stalls)	7,200 SF Permanent Supp- ortive Housing (16 Units)	7,200 Office	26,600 SF One/Two Bedroom (38 Units)	26,400 SF Structured Parking (88 stalls)	17,370 SF One/Two BeDroom (50 Units)				
58,500 SF Structured Parking (195 Stalls)	7,200 SF Micro unit Housing (20 Units)	7,200 Office	26,600 SF One/Two Bedroom (38 Units)	26,400 SF Structured Parking (88 stalls)	17,370 SF One/Two Bedroom (50 Units)				
48,000 SF Structured Parking (160 Stalls)	7,600 SF Retail	7,200 SF Supportive Services for Housing	7,200 Retail	18,290 SF Co-working Space	19,500 SF Structured Parking (65 stalls)	Existing Surface Parking (126 Stalls)	17,370 Retail		
WEST DISTRICT		WEST CENTRAL DISTRICT		EAST CENTRAL DISTRICT		EAST DISTRICT			

BREAKDOWN BY LEVELS



PLAN (layered)		Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
Bus movements		One/Two Bedroom Unit	141,140	700	200	246
Auto movements		Micro-unit	7,200	350	20	10
Shared lane		Permanent Supportive Housing	7,200	450	16	8
Sidewalk		Supportive Services for Housing	7,200	-	-	20
One way bike lane		General & Community Retail	32,170	-	-	142
Planting strip/buffer		Co-working Space	18,290	-	-	52
Pedestrian bridge		Office	14,400	-	-	41
Building access		OCTA Stalls Required	-	-	-	409
Flood control easement		Non OCTA Stalls Required	-	300	-	519
Powerline pole		Total Stalls Required	-	-	-	928
Pick up / drop off zone		Total Stalls Provided	-	-	-	931
Solar carports						
Structured parking						
Proposed bus park with transition plaza						
Plaza/ Event space/ Multipurpose area						
Transit facilities						
Office						
Residential						
Community retail						
Co-working Space						
Supportive Services for Housing						

3.3.1 PROFORMA (LAYERED OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use						
	Apartments	Micro Units	Permanent Supportive Housing	Office	Retail	Private Structured Parking	OCTA Structured Parking
Revenues							
Annual Net Operating Income	\$2,919,925	\$170,932	\$0	\$736,689	\$704,137		
Desired Yield on Cost*	5.50%	5.50%	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$53,089,554	\$3,107,847	\$0	\$9,822,514	\$9,388,493		
Net Building Value per Unit/Building SF	\$265,448	\$155,392	\$0	\$246.24	\$291.84	N/A	N/A
Costs							
Total Development Costs	\$45,379,200	\$2,541,330	\$2,314,937	\$9,078,645	\$6,272,825	\$16,971,300	\$8,894,400
TDC per Residential Unit/Commercial SF/Stall	\$226,896	\$127,066	\$144,684	\$227.59	\$194.99	\$32,700	\$32,700
Land Value							
Supportable Residual Land Value	\$7,710,355	\$566,518	\$0	\$743,869	\$3,115,668	-\$16,971,300	-\$8,894,400
Land Value per Unit or Bldg SF	\$38,552	\$28,326	\$0	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				PRIVATE	\$12,136,409	PARKING	-\$25,865,700
Starting Annual Ground Lease at 6% of Value					\$728,185		
Annual Debt Service on Parking Costs**							-\$1,682,601
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***							44
NPV of OCTA Revenues over 50 Years at 5% Discount Rate							-\$7,290,113

Table 3.4. Proforma Summary (Layered Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 791 structured parking spaces and 140 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction. Micro-units get another 10% premium. PSH units are priced at 30% AMI for a 1-person household.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories, plus a 10% premium per sq. ft. for micro units.

- Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking



Figure 3.5. Rendered view of the proposed transition plaza

3.4 HORSE-SHOE I



Figure 3.6. Proposed Retail (East District)

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Compact bus parking layout	Requires a disruption to existing bus service to change operational configuration
CIRCULATION	Centralizes bus operations thereby reducing the walking distances from parking areas	Disrupts the existing bus layout
COMMUNITY	Addresses the goal of community by satisfying demands of affordable housing and supportive services	-
DEVELOPMENT DENSITY	High activity non-residential uses engage the street. Local retail adjacent to the bus parking	Difficult to meet the criteria of +/- 150 Units/district
ECONOMICS	-	Requires a parking structure to support the density
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	-	Requires structured parking for full buildout
PUBLIC SPACE	Increased open space opportunities around the bus plaza	Public space concentrated in west central district

Table 3.5. Strength and Weakness Analysis

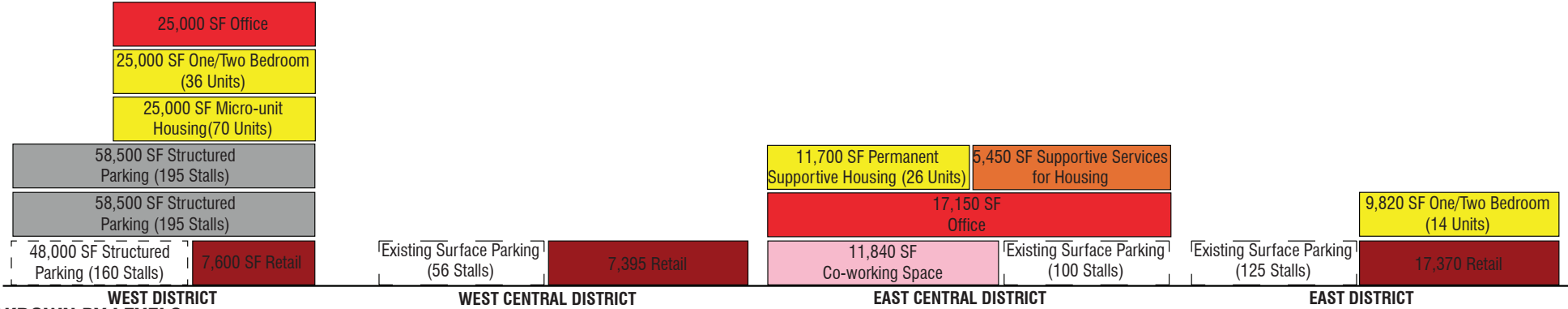
Required **+/- (67-79) Stalls** **34 Stalls** **71 Stalls** **OCTA 409 Stalls**
 Provided **550 Stalls** **43 Stalls Required**

33 Stalls **23 Stalls Available**
56 Stalls

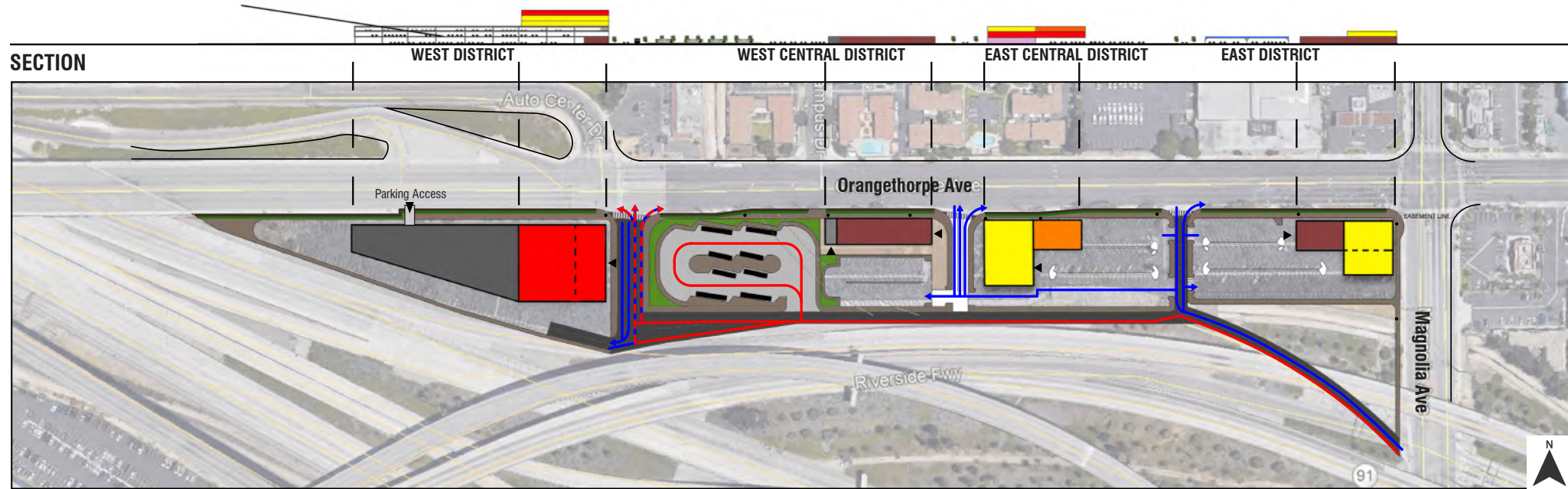
+/- (10-13) Stalls **34 Stalls** **49 Stalls** **15 Stalls**
100 Stalls **11 Stalls Required**

31 Stalls Available **+/- (14-17) Stalls** **77 Stalls**
125 Stalls

PARKING ALLOCATION



BREAKDOWN BY LEVELS



PLAN (Horseshoe 1)

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential
- Community retail
- Co-working Space
- Supportive Services for Housing

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
One/Two Bedroom Unit	34,820	700	50	62
Micro-unit	25,000	350	70	35
Permanent Supportive Housing	11,700	450	26	13
Supportive Services for Housing	5,450	-	-	15
General & Community Retail	32,365	-	-	143
Co-working Space	11,840	-	-	34
Office	42,150	-	-	120
OCTA Stalls Required	-	-	-	409
Non OCTA Stalls Required	-	300	-	421
Total Stalls Required	-	-	-	830
Total Stalls Provided	-	-	-	831

Not To Scale

3.4.1 PROFORMA (HORSESHOE I OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use						
	Apartments	Micro Units	Permanent Supportive Housing	Office	Retail	Private Structured Parking	OCTA Structured Parking
Revenues							
Annual Net Operating Income	\$720,361	\$593,513	\$0	\$1,097,738	\$708,405		
Desired Yield on Cost*	5.50%	5.50%	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$13,097,480	\$10,791,136	\$0	\$14,636,506	\$9,445,402		
Net Building Value per Unit/Building SF	\$261,950	\$154,159	\$0	\$246.24	\$291.84	N/A	N/A
Costs							
Total Development Costs	\$11,195,294	\$8,824,062	\$3,761,773	\$13,528,068	\$6,310,848	\$13,766,700	\$4,218,300
TDC per Residential Unit/Commercial SF/Stall	\$223,906	\$126,058	\$144,684	\$227.59	\$194.99	\$32,700	\$32,700
Land Value							
Supportable Residual Land Value	\$1,902,186	\$1,967,075	\$0	\$1,108,437	\$3,134,554	-\$13,766,700	-\$4,218,300
Land Value per Unit or Bldg SF	\$38,044	\$28,101	\$0	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				PRIVATE	\$8,112,252	PARKING	-\$17,985,000
Starting Annual Ground Lease at 6% of Value					\$486,735		
Annual Debt Service on Parking Costs**							-\$1,169,950
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***							46
NPV of OCTA Revenues over 50 Years at 5% Discount Rate							-\$5,568,655

Table 3.6. Proforma Summary (Horseshoe 1 Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 550 structured parking spaces and 281 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction. Micro-units get another 10% premium. PSH units are priced at 30% AMI for a 1-person household.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories, plus a 10% premium per sq. ft. for micro units.

- Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking



Figure 3.7. Rendered view of the proposed transition plaza along Orangethorpe Ave

3.5 HORSE-SHOE II



Figure 3.8. View of the proposed retail and surface parking with carports from Orangethorpe Avenue

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Compact bus parking layout	Requires a disruption to existing bus service to change operational configuration
CIRCULATION	Centralizes bus operations thereby reducing the walking distances from parking areas	-
COMMUNITY	Addresses the goal of community by satisfying demands of affordable housing and supportive services	-
DEVELOPMENT DENSITY	High activity non-residential uses engage the street	Difficult to meet the criteria of +/- 150 Units/district
ECONOMICS	-	Doesn't meet the requirement of +/- 150 units/district
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	Retains some of the existing parking layout	Requires structured parking for full buildout
PUBLIC SPACE	Consolidated open space around the bus operations	-

Table 3.7. Strength and Weakness Analysis

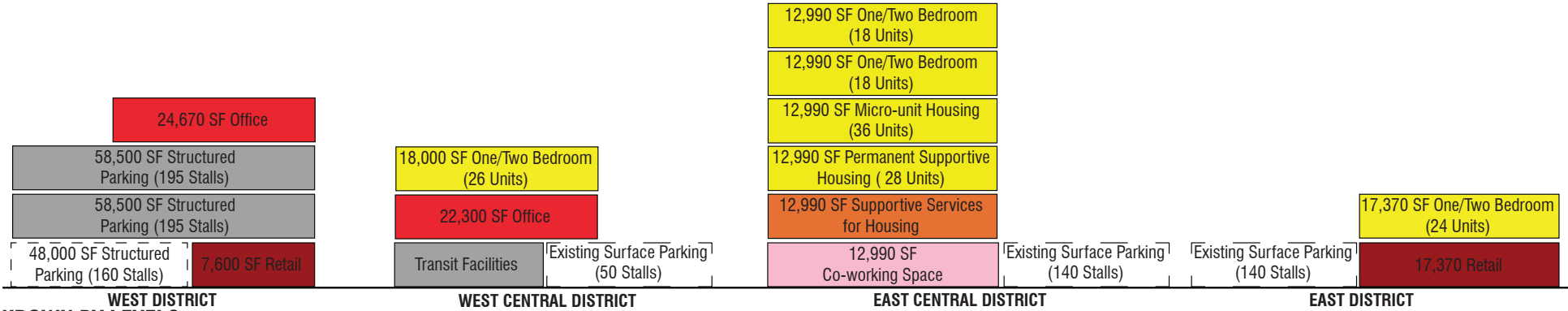
Required 34 Stalls 70 Stalls OCTA 409 Stalls 37 Stalls Available
 Provided 550 Stalls

63 Stalls +/- (27-32) Stalls
 45 Stalls Required 50 Stalls

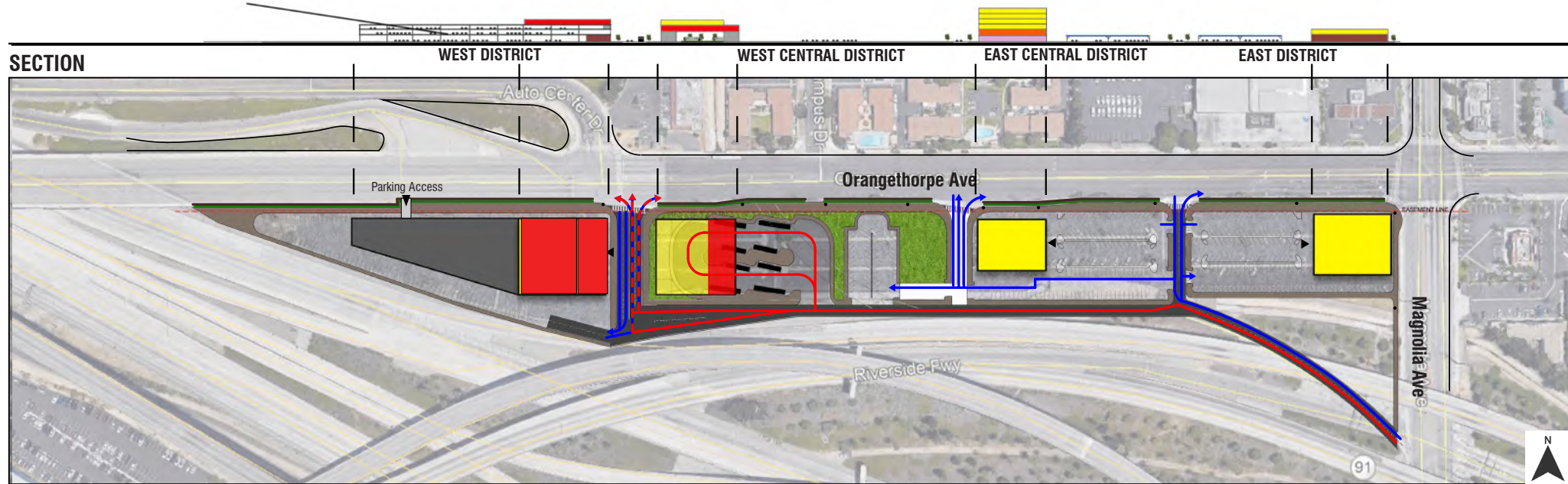
+/- (67-79) Stalls 37 Stalls 37 Stalls
 140 Stalls 12 Stalls Required

32 Stalls Available +/- (26-31) Stalls 77 Stalls
 140 Stalls

PARKING ALLOCATION



BREAKDOWN BY LEVELS



PLAN (Horseshoe II)

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential
- Community retail
- Co-working Space
- Supportive Services for Housing

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
One/Two Bedroom Unit	46,970	700	82	108
Micro-unit	12,990	350	36	19
Permanent Supportive Housing	12,990	450	28	14
Supportive Services for Housing	12,990			37
General & Community Retail	24,970	-	-	143
Co-working Space	12,990	-	-	37
Office	46,970	-	-	133
OCTA Stalls Required	-	-	-	409
Non OCTA Stalls Required	-	300	-	458
Total Stalls Required	-	-	-	867
Total Stalls Provided	-	-	-	880

Not To Scale

3.6 DEVELOPER I



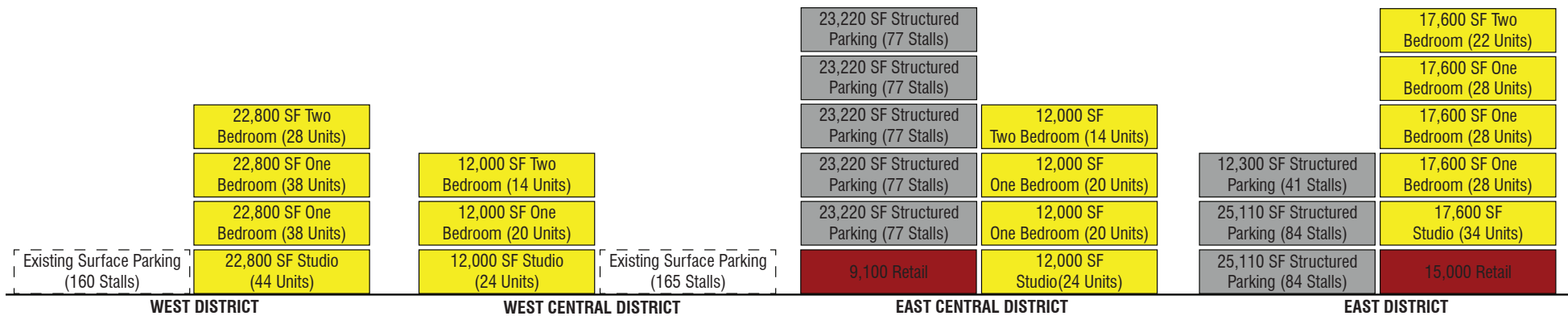
Figure 3.9. Rendered view of the existing bus parking from Orangethorpe Avenue

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Retains the existing bus operations layout	-
CIRCULATION	Retained the existing bus parking (10 bus pads)	-
COMMUNITY	-	Lacks gathering spaces for the community
DEVELOPMENT DENSITY	Consistent with the market demand for the market study (+/-150 Units/district)	-
ECONOMICS	Meets the requirement of +/-150 units/district	Requires structured parking for full buildout
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	Retains some of the existing parking layout	Large, uninviting parking areas
PUBLIC SPACE	-	Core of activity missing around the bus parking

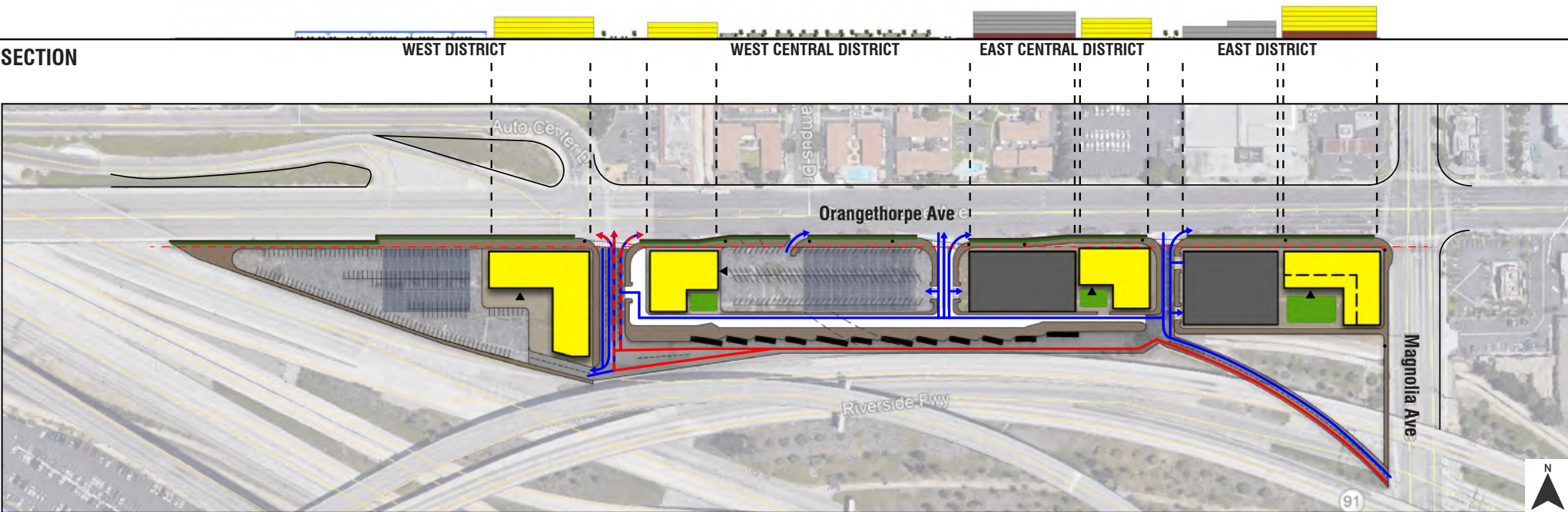
Table 3.8. Strength and Weakness Analysis

Required	+/- (131-151) Stalls	OCTA 9 Stalls	+/- (53-59) Stalls	OCTA 165 Stalls	71 Stalls Available	OCTA 235 Stalls	+/- (68-79) Stalls	27 Stalls	17 Stalls Available	+/- (128-145) Stalls	45 Stalls
Provided	160 Stalls		59 Stalls Required	165 Stalls		385 Stalls				209 Stalls	

PARKING ALLOCATION



BREAKDOWN BY LEVELS



PLAN

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential
- Community retail

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
Studio Unit	64,400	500	126	95
One Bedroom Unit	134,400	600	220	220
Two Bedroom Unit	64,400	800	78	117
General & Community Retail	24,100		-	72
OCTA Stalls Required	-		-	409
Non OCTA Stalls Required	-	300	-	504
Total Stalls Required	-		-	913
Total Stalls Provided	-		-	919

Table 3.2. Summary (Developer I Option)

3.6.1 PROFORMA (DEVELOPER I OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use			
	Apartments	Commercial	Private Structured Parking	OCTA Structured Parking
Revenues				
Annual Net Operating Income	\$5,445,121	\$527,501		
Desired Yield on Cost*	5.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$99,002,201	\$7,033,344		
Net Building Value per Unit/Building SF	\$233,496	\$292	N/A	N/A
Costs				
Total Development Costs	\$84,623,816	\$4,699,256	\$16,546,200	\$2,877,600
TDC per Residential Unit/Commercial SF/Stall	\$199,584	\$195	\$32,700	\$32,700
Land Value				
Supportable Residual Land Value	\$14,378,386	\$2,334,088	-\$16,546,200	-\$2,877,600
Land Value per Unit or Bldg SF	\$33,911	\$97		
SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$16,712,473	PARKING	-\$19,423,800
Starting Annual Ground Lease at 6% of Value		\$1,002,748		
Annual Debt Service on Parking Costs**				-\$1,263,546
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***				24
NPV of OCTA Revenues over 50 Years at 5% Discount Rate				\$6,155,760

Table 3.9. Proforma Summary (Developer 1 Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 594 structured parking spaces and 325 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings."

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking

3.6.2 ALTERNATIVES

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Alternative I: OCTA will be funding all of the structured parking required for private uses as well as any structured spaces required to provide 409 total spaces for OCTA. For example, this diagram shows 919 total spaces, of which 325 are surface and the remaining 594 are structured. Let's consider the cost of all that structured parking (about \$19.5M as of right now), assume that OCTA is financing that over 30 years, and compare that to the ground lease a private developer may be willing to pay for the rights to develop the indicated amount of housing and commercial space. As of right now, it appears that the total "residual land value" of the development program in Developer Option 1 does not exceed the cost of the structured parking, and OCTA would not be recouping its investment through ground lease payments for 20+ years, but after that the garage would be paid off and net ground lease revenues would accrue to OCTA.

Alternative II: The alternative to this approach is that the developer would have to pay for the structured parking, at least their own, but that essentially wipes out the residual land value entirely (the land for development is worth less than the cost of the parking) plus the developer's return threshold is higher than OCTA's, and OCTA essentially would not expect to get any ground lease revenue ever.

3.7 DEVELOPER II



Figure 3.10 Rendered view of the transition plaza and bus parking

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	14 bus pads with a layered parking layout	Requires a disruption to existing bus service to change operational configuration
CIRCULATION	Centralizes bus operations thereby reducing the walking distances from parking areas.	Disrupts the existing bus layout
COMMUNITY	Addresses the goal of community by providing gathering spaces for neighborhood uses	-
DEVELOPMENT DENSITY	High-density development allowing for more residents and employees thereby increasing transit ridership (+/- 150 Units/district)	-
ECONOMICS	Meets the requirement of +/-150 units/district	Requires structured parking for full buildout
PARK-AND-RIDE	-	Park-and-Ride not in close proximity to the bus plaza
PARKING	Parking structure wrapped with active uses	Requires structured parking for full buildout
PUBLIC SPACE	Increased open space opportunities around the bus plaza	Public space concentrated in west central district

Table 3.10. Strength and Weakness Analysis

PARKING ALLOCATION

BREAKDOWN BY LEVELS



- | Summary | Area (SF) | Area/Unit or Stall (SF) | Units | Stalls |
|----------------------------|-----------|-------------------------|-------|--------|
| Studio Unit | 69,940 | 500 | 138 | 104 |
| One Bedroom Unit | 152,860 | 600 | 248 | 248 |
| Two Bedroom Unit | 69,940 | 800 | 88 | 132 |
| General & Community Retail | 19,310 | - | - | 58 |
| OCTA Stalls Required | - | - | - | 409 |
| Non OCTA Stalls Required | - | 300 | - | 541 |
| Total Stalls Required | - | - | - | 950 |
| Total Stalls Provided | - | - | - | 959 |

3.7.1 PROFORMA (DEVELOPER II OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use			
	Apartments	Commercial	Private Structured Parking	OCTA Structured Parking
Revenues				
Annual Net Operating Income	\$6,056,249	\$422,657		
Desired Yield on Cost*	5.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$110,113,619	\$5,635,430		
Net Building Value per Unit/Building SF	\$236,295	\$291.84	N/A	N/A
Costs				
Total Development Costs	\$94,121,489	\$3,765,255	\$17,429,100	\$8,698,200
TDC per Residential Unit/Commercial SF/Stall	\$201,977	\$194.99	\$32,700	\$32,700
Land Value				
Supportable Residual Land Value	\$15,992,130	\$1,870,176	-\$17,429,100	-\$8,698,200
Land Value per Unit or Bldg SF	\$34,318	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$17,862,306	PARKING	-\$26,127,300
Starting Annual Ground Lease at 6% of Value		\$1,071,738		
Annual Debt Service on Parking Costs**				-\$1,699,618
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***				34
NPV of OCTA Revenues over 50 Years at 5% Discount Rate				\$1,212,155

Table 3.11. Proforma Summary (Developer 2 Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 799 structured parking spaces and 160 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings."

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking



Figure 3.11 Rendered view of the proposed bus parking layout

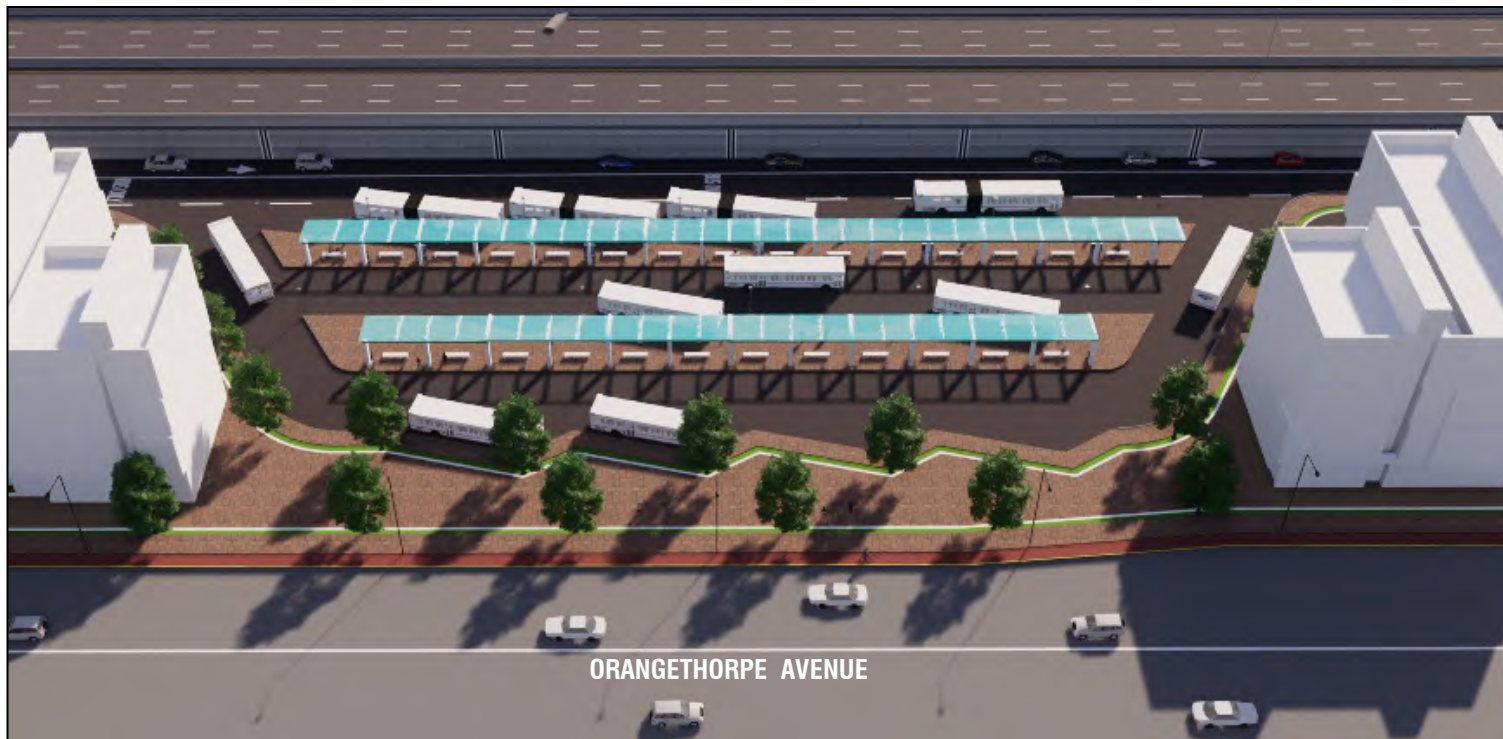


Figure 3.12. Rendered view of the proposed bus parking layout (West Central District)



Figure 3.13. Rendered view of surface parking with proposed solar carports (East District)



Figure 3.14. Rendered view of the transition plaza from West District



Figure 3.15. Rendered view of the proposed bus parking layout from Riverside Fwy

3.8 PHASED OPTION

The Phased Option keeps OCTA parking requirements (409 stalls) in mind, with only a portion of the site (East District and East Central District) built with existing surface parking supporting it, as illustrated in Figure 3.16.



Figure 3.16. View of the proposed development with surface parking

ELEMENT	STRENGTHS	WEAKNESSES
BUS OPERATIONS	Retains the existing bus circulation layout	-
CIRCULATION	Retains the existing bus parking (10 bus pads)	-
COMMUNITY	-	Lack of proper transition between areas with different types of land uses
DEVELOPMENT DENSITY	Consistent with the market study demand analysis	Difficult to meet the criteria of +/- 150 Units/district
ECONOMICS	-	Requires shared land-uses between districts to meet +/- 150 unit requirement
PARK-AND-RIDE	Distinct Park-and-Ride allocated near the bus parking	-
PARKING	Retains the existing surface parking	Large, uninviting parking areas
PUBLIC SPACE	-	Core of activity missing around the bus parking

Table 3.12. Strength and Weakness Analysis (Phased Option)

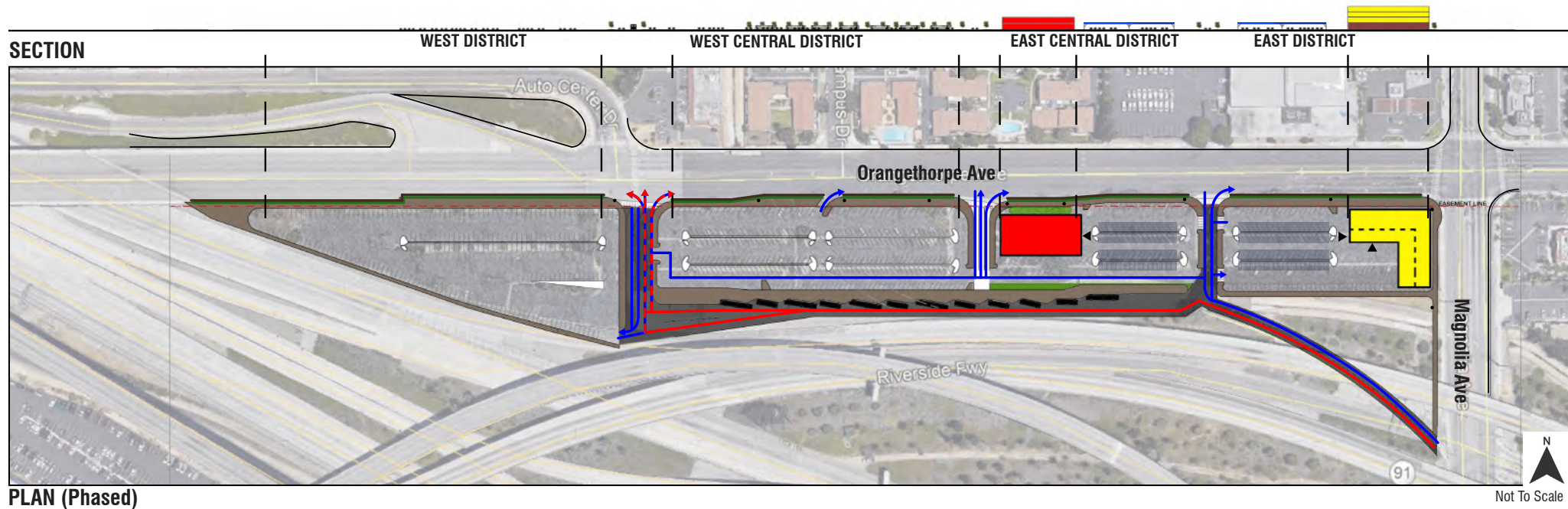
Required	409 Stalls
Provided	409 Stalls

90 Stalls	8 Stalls Available
98 Stalls	

+/- (71-84) Stalls	32 Stalls
120 Stalls	

PARKING ALLOCATION

BREAKDOWN BY LEVELS



PLAN (Phased)

- Bus movements
- Auto movements
- Shared lane
- Sidewalk
- One way bike lane
- Planting strip/buffer
- Pedestrian bridge
- Building access
- Flood control easement
- Powerline pole
- Pick up / drop off zone
- Solar carports
- Structured parking
- Proposed bus park with transition plaza
- Plaza/ Event space/ Multipurpose area
- Transit facilities
- Office
- Residential

Summary	Area (SF)	Area/Unit or Stall (SF)	Units	Stalls
One/Two Bedroom Unit	33,600	700	48	67
Studio	16,800	350	34	17
Office	31,000	-	-	90
General & Community Retail	10,800	-	-	32
OCTA Stalls Required	-	-	-	409
Non OCTA Stalls Required	-	300	-	206
Total Stalls Required	-	-	-	615
Total Stalls Provided	-	-	-	627

Summary (Phased Option)

3.8.1 PROFORMA (PHASED OPTION)*

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

Item	Land Use				
	Apartments	Office	Retail	Private Structured Parking	OCTA Structured Parking
Revenues					
Annual Net Operating Income	\$1,042,683	\$572,508	\$236,390		
Desired Yield on Cost*	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$18,957,868	\$7,633,440	\$3,151,872		
Net Building Value per Unit/Building SF	\$231,194	\$246.24	\$291.84	N/A	N/A
Costs					
Total Development Costs	\$16,204,560	\$7,055,352	\$2,105,891	\$0	\$0
TDC per Residential Unit/Commercial SF/Stall	\$197,617	\$227.59	\$194.99		
Land Value					
Supportable Residual Land Value	\$2,753,308	\$578,088	\$1,045,981	\$0	\$0
Land Value per Unit or Bldg SF	\$33,577	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES		PRIVATE	\$4,377,377	PARKING	\$0
Starting Annual Ground Lease at 6% of Value			\$262,643		
Annual Debt Service on Parking Costs**					\$0
Years of Ground Lease Payment until OCTA Parking Costs are Repaid***					0
NPV of OCTA Revenues over 50 Years at 5% Discount Rate					\$6,699,869

Table 3.13. Proforma Summary (Phased Option)

*Based on recent property sale transactions in the area and EPS professional judgment.

**Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

***Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

ASSUMPTIONS

Data Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018, EPS

[1] For these calculations, the housing, office, and retail developments are assumed to utilize existing spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

- Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.

- Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

- Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

- Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking

04 MARKET STUDY

4.1 EPS MARKET STUDY FINDINGS

Data Source: EPS Market Study

LAND USE	FINDINGS	CONCLUSIONS
MULTIFAMILY RESIDENTIAL (lower density)	High market demand demonstrated by healthy rent growth and low vacancy rates.	Economically viable up to 35 units/acre
AFFORDABLE HOUSING	High market demand due to the needs of homeless populations.	Economically viable up to 35 units/acre
OFFICE	Low market demand as the site’s relatively small size doesn’t resonate with the new speculative Class A office development.	Dropped from further consideration
HOTEL	Low market demand due to the site’s distance from major tourist destinations and employment centers.	Dropped from further consideration
NON RESIDENTIAL	High market demand due to the site’s visibility from the freeways and access to transit through the Park-and-Ride.	Economically viable within retail and light industrial uses

Table 4.1. Findings from the EPS Market Study (part I)

OCTA Objective	LAND USE				
	Multifamily Residential			Nonresidential	
	35 Units/Acre	70 Units/Acre	120 Units/Acre	Retail	Light Industrial
Potential Land Value to OCTA	High	Low	Low	Medium	High
Potential OCTA Ridership Gains	Medium	High	High	Low	Low
Mixed-Use & Pedestrian-Friendly	High	High	High	Medium	Low
Provides Community Amenity	Medium	Medium	Medium	Medium	Low
Compatible with Park & Ride	High	High	High	Medium	Low

Table 4.2. Findings from the EPS Market Study (part II)

4.2 SUMMARY

Data Source: EPS Market Study

1. The market position of the Fullerton Park-and-Ride is strengthened by its strong accessibility and visibility due to its transit service and adjacency to the region's freeway system (the I-5 / SR-91 interchange), as well as frontage on significant surface streets.

2. Residential development appears to be in demand at and around the OCTA site, given regional and local growth patterns, and can yield strong benefits to OCTA in terms of transit ridership. However, local market-rate rents are modest compared to some other areas, which will affect the financial feasibility of new housing, particularly at higher densities that cost more to construct (due to structured parking, life safety requirements, etc.).

3. Office development does not appear to be in high demand in the vicinity of the OCTA property, and is not recommended as a prioritized land use.

4. Hotel use is also not recommended as a prioritized use, as the local area commands relatively low room rates and the site is not competitive in terms of convenience with the many other hotels serving tourist destinations in the vicinity.

5. Retail development does appear to be in demand, given the site's strong accessibility and visibility, and should be considered a viable use as a stand-alone development or as part of a mixed-use development.

6. Light industrial development is also in demand, though such use may not be optimally compatible with the typical ridership and placemaking goals of transit-oriented development.

7. The OCTA site could also be an appropriate location for affordable housing or various housing solutions meant to serve the County's homeless population, but would not be expected to generate significant land revenues for OCTA.

8. A financial analysis was prepared that compares the value of potential market-supported developments to their construction costs, and yields "residual land values" estimating what OCTA might expect to receive for the sale or lease of the property. This analysis indicated that lower-density multifamily may yield the highest land values, followed by light industrial uses. Higher-density housing with structured parking appears to have feasibility challenges in the near term, as this development type has higher construction costs while the value of the units does not increase proportionately.

9. As market conditions evolve, developers may be more optimistic about higher density housing or other uses than this analysis suggests. It is recommended that OCTA be realistic in its expectations regarding financial returns from the land itself, but also aspirational about the long-term use of the property. A developer solicitation process that encourages creativity to meet a variety of objectives, rather than simply maximizing land value, may yield very positive results for OCTA and the local community.

10. When considering the potential disposition of its property at the Fullerton Park-and-Ride, OCTA should account for a variety of factors including transit ridership impacts, placemaking and community compatibility, and local and regional needs in addition to maximizing revenue from the land disposition. Table 4.3 below characterizes how each land use tested for the Site addresses a variety of OCTA goals.

4.3 PROFORMAS FINDINGS*

Data Source: EPS

	Item	Office	Retail	Private Structured Parking	OCTA Structured Parking
Linear Option	SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$10,470,808	PARKING	-\$17,985,000
	Annual Debt Service on Parking Costs [5]				-\$1,169,950
	Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]				38
	NPV of OCTA Revenues over 50 Years at 5% Discount Rate				-\$1,958,727
Layered Option	SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$12,136,409	PARKING	-\$25,865,700
	Annual Debt Service on Parking Costs [5]				-\$1,682,601
	Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]				77
	NPV of OCTA Revenues over 50 Years at 5% Discount Rate				-\$7,290,113
Horseshoe I Option	SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$8,112,252	PARKING	-\$17,985,000
	Annual Debt Service on Parking Costs [5]				-\$1,169,950
	Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]				46
	NPV of OCTA Revenues over 50 Years at 5% Discount Rate				-\$5,568,655
	Item	Apartments	Commercial	Private Structured Parking	OCTA Structured Parking
Developer I Option	SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$16,712,473	PARKING	-\$19,423,800
	Annual Debt Service on Parking Costs [5]				-\$1,263,546
	Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]				24
	NPV of OCTA Revenues over 50 Years at 5% Discount Rate				\$6,155,760
Developer II Option	SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$17,862,306	PARKING	-\$26,127,300
	Annual Debt Service on Parking Costs [5]				-\$1,699,618
	Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]				34
	NPV of OCTA Revenues over 50 Years at 5% Discount Rate				\$1,212,155
	Item	Office	Retail	Private Structured Parking	OCTA Structured Parking
Phased Option	SUM OF TOTAL PROGRAM LAND VALUES	PRIVATE	\$4,377,377	PARKING	\$0
	Annual Debt Service on Parking Costs [5]				\$0
	Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]				0
	NPV of OCTA Revenues over 50 Years at 5% Discount Rate				\$6,699,869

Table 4.3. Proformas Summary

*Please refer to the appendix section 7.4 for all the proformas.

4.3.1 ASSUMPTIONS*

Data Source: EPS

- All structured parking is considered a cost to the project that OCTA pays for either directly or through discounted land value. As such, the positive land values associated with private development (which are assumed to NOT have to pay their own parking development costs) are contrasted against the cost of the structured parking. In every case except the “Phased” plan that does not involve any structured parking, the aggregate cost of parking structures exceeds the value of the land for private development.
- The land value for permanent supportive housing (PSH) is assumed to be zero, as in OCTA would effectively donate the land for such development. In reality, those types of developments require significant subsidy because their income-restricted rents barely cover their operating expenses, so the entire construction cost must be subsidized. Rather than assuming OCTA provides that subsidy by actually paying the PSH developer several million dollars, it is assumed that OCTA gives the land for free but the actual development and operating cost subsidy comes from other sources.
- The amount that a developer would pay for the rights to develop the land on a ground lease is estimated at 6% of total “fee simple” land value. This ratio is pretty standard for ground leases, but is subject to negotiation and could conceivably be at least a little higher. The ground lease payments are then assumed to escalate at 2% per year over time, which again is pretty standard.
- The ground lease payments are then compared to the estimated amount that OCTA would pay in debt service on the parking structures. Those payments are assumed to be fixed rather than escalating, and the garages would be fully amortized over 30 years. In some cases, the garage costs so greatly exceed the land values that even though the ground lease revenues escalate over time, it still takes over 30 years before the nominal cumulative value of the ground leases exceeds the costs to finance the garages. Only the phased approach (which has no structured parking) and developer option 1 (which has a moderate amount of structured parking and does NOT include affordable housing) generate positive revenues to OCTA in less than 30 years.

05 FINDINGS AND RECOMMENDATIONS

5.1 FINDINGS

- Uses that appear to be feasible include**:
 1. Market-rate apartments (with and without structured parking)
 2. Market-rate micro-units (with and without structured parking)
 3. Retail (with surface parking)
 4. Co-working space (with surface parking)
 5. Mixed-use housing over commercial (with structured parking)
- Uses clearly requiring subsidy include:
 1. Affordable housing
 2. Permanent supportive housing
 3. Supportive services for housing
 4. Stand-alone retail (with structured parking)
 5. Stand-alone co-working office (with structured parking)
- Cost of Structured Parking can be prohibitive.
- Market-rate residential uses seem to generate the most value.
- A phased approach to development of the site is also recommended with options for shared parking.

**None of these uses appear to have enough value to contribute significantly to the costs of structured parking for transit riders, so an optimally feasible scenario would retain transit parking in a surface configuration OR identify another source of funding

5.2 RECOMMENDATIONS

- **Develop Joint-development policies** specific to the site. Also, maximize shared parking options with Private-Public and Private-Private Parking Agreements.
- **Coordinate with the City** to identify expectations, requirements, and potential variances for parking, etc.
- **Prepare and release a Request for Information or Request for Proposals** to identify developers interested in the site.



Figure 5.1. Fullerton Park-and-Ride site context

06 JOINT DEVELOPMENT POLICIES

6.1 POLICIES

Data Source: MARTA'S TOD guidelines, METRO Los Angeles policies, VTA's Transit-Oriented Development program

Case study research from Santa Clara Valley Transportation Authority (VTA) , Los Angeles County Metropolitan Transit Authority (METRO) and Metropolitan Atlanta Rapid Transit Authority (MARTA) reveal some policies adopted that OCTA should be aware of as they embark on joint development.

FINANCIAL

- METRO: Long term ground lease, and collaborative contribution to create greater community economic benefit.
- MARTA: Retains fee ownership of joint development parcels and conveys their development rights through long-term lease rather than sale.

PARKING

- VTA: Facilitate the creation of new TOD projects in VTA-owned land.
- MARTA: Limit parking capacity, and encourage shared parking.

TRANSIT

- METRO: Preserve and maximize connections to transit facilities via Transit Prioritization and Integration.
- VTA: Development projects will include Physical Improvements and/or Transit Programs.

AFFORDABLE HOUSING

- METRO: Affordable Housing Policies encourages a range of housing types, and discount joint development ground leases below the fair market value.
- MARTA: Applies a policy goal of 20% affordability, on average, to joint development projects through affordable housing policies.

07 APPENDICES

7.1.1 SITE ASSESSMENT

IBI GROUP – TECHNICAL MEMORANDUM
FULLERTON PARK AND RIDE JOINT DEVELOPMENT STUDY SITE ASSESSMENT
Prepared for Orange County Transportation Authority

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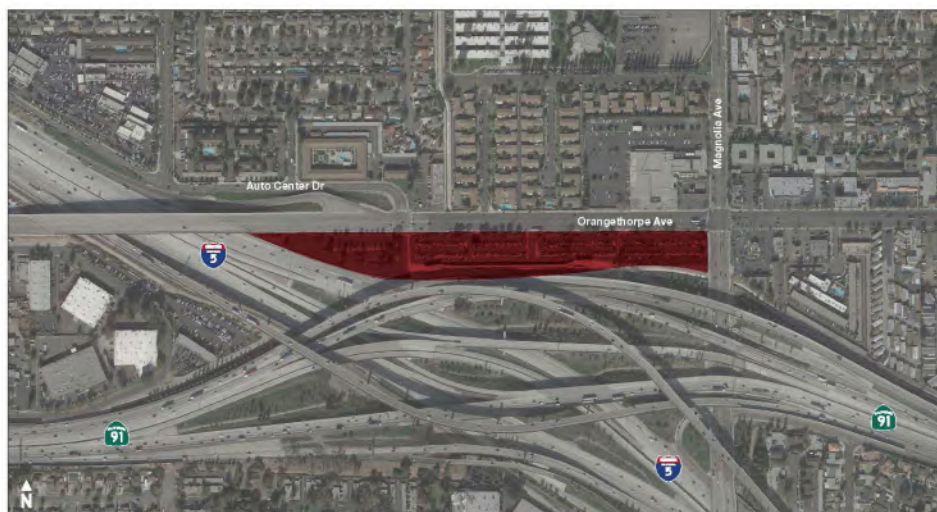
1 INTRODUCTION

This memorandum summarizes the results of an initial site assessment conducted for the Fullerton Park and Ride. The Fullerton Park and Ride is owned and operated by the Orange County Transportation Authority (OCTA) and is located at the southwest corner of Orangethorpe Avenue and South Magnolia Avenue in Fullerton. The purpose of the site assessment is to evaluate existing site conditions and conduct an initial qualitative and quantitative review of the project site to analyze conditions at and surrounding the site. This task identifies and discusses issues, opportunities and potential constraints to joint-development improvements at this site.

The Fullerton Park and Ride facility is located in Fullerton, California on 11.1 acres of land. The facility was constructed in two phases. Phase I in 1974 consisted of two covered 1,000 square feet bus shelters with four bus docks, waiting areas, restrooms, benches, and paved parking. Phase II in 1981 added 10 permanent bus berths, modifications to traffic flow pattern, additional parking canopies, and modifications to lighting, landscape, and irrigation systems. The facility serves as a regional transfer point for Los Angeles County Metropolitan Authority (Metro) and OCTA bus operations. The facility provides a total of 745 parking spaces, including 29 ADA spaces to park and ride customers. Figure 1.1 shows the location of the facility.

The Fullerton Park and Ride is being studied to identify the potential feasibility for joint development and improvements to the function and operations of the transit facility. This memorandum reviews existing data related to traffic volumes, mode of access, and transit boardings, as well as future conditions surrounding the site, including transportation and land use projects.

FIGURE 1.1 Fullerton Park and Ride Location



Legend
Study Area

2 EXISTING NETWORK CONDITIONS

This section details the existing street conditions within the Fullerton Park and Ride study area, defined as ½ mile surrounding the facility. The existing transportation environment consists of an extensive network of arterials and local streets, bus transit services provided by OCTA, bikeways, and pedestrian pathways.

2.1 STREET NETWORK

Magnolia Avenue – Magnolia Avenue is classified as a primary arterial that travels north and south throughout the study area. The roadway is a four lane divided roadway with raised landscaped median islands. The posted speed limit is 40 miles per hour. On-street parking is not permitted along the roadway. No bikeways are currently located along Magnolia Avenue. OCTA operates local bus routes 25, 26, 33, 35, and 721 along the roadway.

Orangethorpe Avenue – Orangethorpe Avenue is classified as a major arterial that travels east and west throughout the study area. The roadway is currently constructed as a six lane divided roadway. The posted speed limit is 45 miles per hour. On-street parking is not permitted along the roadway. Existing Class II bikeways are located along Orangethorpe Avenue from South Vine Avenue to Basque Street. OCTA operates local bus Route 30 along the roadway.

Gilbert Street – Gilbert Street is a local road that travels north and south throughout the study area. It is a two lane undivided roadway. The posted speed limit is 30 miles per hour. On-street parking is permitted along a portion of the roadway.

Auto Center Drive – Auto Center Drive is a local road that travels north and south throughout the study area. It is a two lane undivided roadway. The posted speed limit is 25 miles per hour. On-street parking is permitted along a portion of the roadway.

The Fullerton Park and Ride is served by four access driveways. There are three access driveways located along Orangethorpe Avenue, and one access located off of Magnolia Drive on the SR-91 on-ramp.

Magnolia Avenue provides access to SR-91 and I-5 in the vicinity of the project site. Additional access to I-5 is provided via Auto Center Drive to the north.

2.2 BIKEWAY NETWORK

While the study area contains a network of bikeways along several arterials throughout the City, there is a lack of bikeways on the immediate surrounding streets on Orangethorpe Avenue and Magnolia Avenue. However, there is bicycle infrastructure present, as there are two standard bike racks, one at each end of the transit boarding area.

The City of Fullerton has an existing bikeway network that provides circulation and internal community links as well as access to the regional bikeway network. The City utilizes the standards developed by Caltrans to classify its bikeways and is defined as follows:

Class I (Bike Path): Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flow minimized.

Class II (Bike Lane): Provides a striped lane for one-way bike travel on a street or highway.

Class III (Bike Route): Provides for shared use with pedestrian or motor vehicle traffic.

Figure 2.1 illustrates the existing and proposed bikeway network located within the Fullerton Park and Ride study area.

Existing bikeways/trails in the vicinity of the Fullerton Park and Ride include the following:

OCTOBER 2019

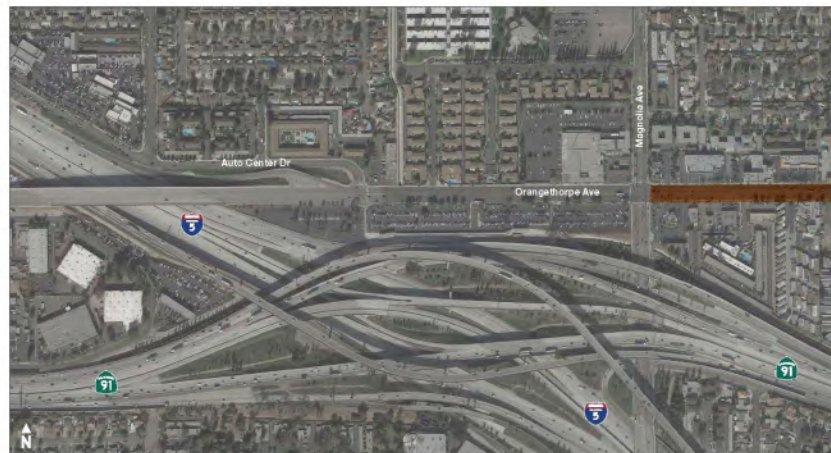
3

- Class II on-street bike lane on Orangethorpe Avenue between South Vine Avenue and Basque Avenue
- Class III bike route on Gilbert Street between Orangethorpe Avenue and Valencia Drive
- Class III bike route on Valencia Drive between Magnolia Avenue and Brookhurst Street
- Class III bike route on Brookhurst Road between Orangethorpe Avenue and Valencia Drive

The City of Fullerton adopted an updated General Plan in 2012, which included the adoption of a Bicycle Master Plan to guide bikeway planning within the city. Planned bikeways in the vicinity of the Fullerton Park and Ride are noted as the following:

- Class I bike path on Olive Avenue from Magnolia Avenue to Basque Street
- Class II on-street bike lane on Orangethorpe Avenue between Auto Center Drive and Magnolia Avenue
- Class II on-street bike lane on Valencia Drive between Gilbert Street and Brookhurst Road
- Class III bike route on Magnolia Avenue between Orangethorpe Avenue and Valencia Drive

FIGURE 2.1 Fullerton Bikeway Network



Legend
Class 2 Existing Bikeway

2.3 PEDESTRIAN NETWORK

The Fullerton Park and Ride serves as an active pedestrian zone, but the site is challenged by its immediate surroundings. The site is bounded by residential and commercial uses to the north and east. The I-5 and SR-91 freeways border the site to the south and west. Existing infrastructure, such as sidewalks, along major corridors support pedestrian activity in the area. Additionally, pedestrian crosswalks are also present at all major intersection crossings. Consideration should be given to improving wayfinding signage to assist transit patrons and visitors. Consideration should also be given to improving the lighting conditions within the area. Improved lighting conditions could help enhance pedestrian comfort and safety within the study area.

2.4 TRANSIT NETWORK

Seven OCTA bus routes and one LA Metro bus route serve the Fullerton Park and Ride site, as illustrated in Figure 2.2. Buses currently enter the site via the 91 West Freeway/Park and Ride entrance ramp, just south of the Park and Ride off Magnolia Street, or through the access driveways along Orangethorpe Avenue. Route 30 is the only route that does not enter the site, as it passes along Orangethorpe Avenue. Once at the Fullerton Park and Ride site, buses dock at one of fourteen existing bus bays located along the southern edge of the site. The seven OCTA bus routes and one LA Metro bus route that serve the Fullerton Park and Ride site are summarized in Table 2.1 below.

The Fullerton Park and Ride has covered bus bays for seven routes, including routes to Anaheim (including Disneyland), Buena Park (including Knott's Berry Farm), Placentia, Stanton, Westminster, Fountain Valley, Anaheim, Garden Grove, and Huntington Beach. Express bus service is offered to and from Los Angeles six times daily. In addition, OCTA recently included the Bravo! 529 rapid bus route that originates at the Fullerton Park and Ride and extends to the Goldenwest Transportation Center. The site is easily accessible from local freeways via the I-5/Magnolia interchange.

The eight bus routes that serve the Fullerton Park and Ride are described below:

OCTA Route 25: This route provides weekday and Saturday, Sunday, and Holiday services from Fullerton to Huntington Beach. It starts at the Fullerton Park and Ride, travels west then southerly through the cities of Buena Park and Cypress, then ends at the station of Pacific Coast Highway/1st in Huntington Beach. This route operates at approximately 55-minute headways at the Fullerton Park and Ride and provides 21 trips from this site on a daily basis.

OCTA Route 26: This route provides weekday and Saturday, Sunday, and Holiday services from Fullerton to Placentia. It starts at the Fullerton Park and Ride, travels west and northerly through the cities of Buena Park, Fullerton, then ends at the Rose/Yorba Linda station in Placentia. This route operates at approximately 25-minute headways at the Fullerton Park and Ride and provides 41 trips to this site on a daily basis.

OCTA Route 30: This route provides weekday and Saturday, Sunday, and Holiday services from Cerritos to Anaheim. It starts at the Los Cerritos Center, travels northerly through the cities of La Palma, Fullerton, and Placentia, then ends at the station of Esperanza/Fairlynn in the City of Anaheim. This route operates at approximately 30-minute headways at the Fullerton Park and Ride and provides 53 trips to this site on a daily basis.

OCTA Route 33: This route provides weekday and Saturday, Sunday, and Holiday services from Fullerton to Huntington Beach. It starts at the Fullerton Park and Ride, travels southerly through the cities of Stanton, Westminster, Fountain Valley, and ends at the Magnolia/Coast Highway station in Huntington Beach. This route operates at approximately 40-minute headways at the Fullerton Park and Ride and provides 23 trips to this site on a daily basis.

OCTA Route 35: This route provides weekday services from Fullerton to Costa Mesa. It starts at the Fullerton Park and Ride, travels easterly and southerly through the City of Anaheim, Garden Grove, Westminster, Fountain Valley, and ends at the 19th/Meyer station at in Huntington Beach. This route operates at approximately 30-minute headways at the Fullerton Park and Ride and provides 36 trips to this site on a daily basis.

OCTA Route 721: This route provides express weekday services from Fullerton to Los Angeles. It starts at the Fullerton Park and Ride, travels easterly and southerly to Los Angeles, and makes two stops at Flower/7th and Beaudry/5th. This route operates at approximately 30-minute headways at the Fullerton Park and Ride and provides 36 trips to this site on a daily basis. This route operates at approximately 1-hour headways during peak times at the Fullerton Park and Ride and provides 6 trips to this site on a daily basis.

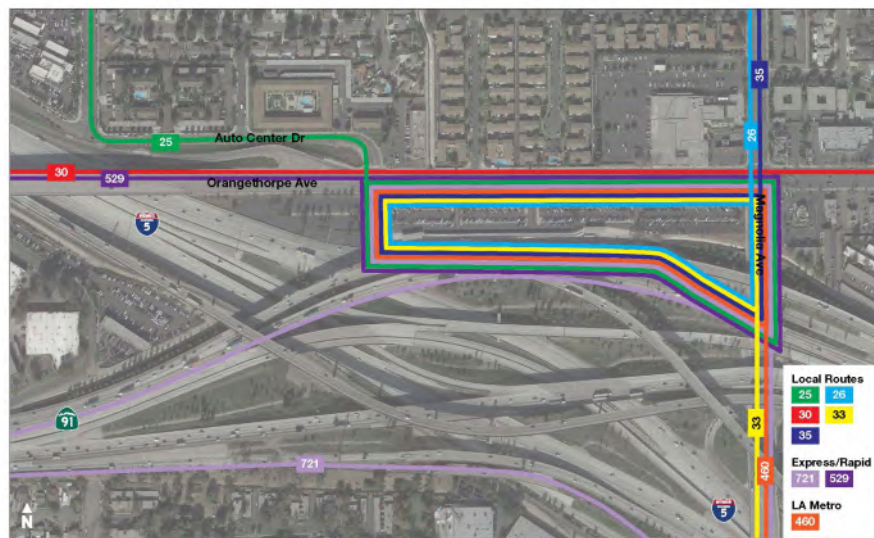
OCTA Bravo! 529 Route: This route provides rapid weekday service from the Fullerton Park and Ride to the Golden West Transit Center in Huntington Beach. The bus travels westerly along Orangethorpe Ave, and south on Beach, making key stops at Knott's Berry Farm, Beach/Katella, and Beach/Westminster. This route provides 12 minute headways during peak hours and 18 minute headway for off-peak hours. Bravo! 529 provides 51 trips each weekday.

LA Metro Route 460: This Los Angeles Metro route provides weekday, Saturday, Sunday and holiday express services from Disneyland to Downtown Los Angeles. It starts at Disneyland, travels northerly through the cities of Fullerton and Norwalk, and ends at 6th & Los Angeles. This route operates at approximately 20-minute headways at the Fullerton Park and Ride and provides 35 trips to this site on a daily basis.

TABLE 2.1: TRANSIT OPERATIONS

OCTA ROUTE	STREETS	WEEKDAY PEAK HEADWAY	NUMBER OF DAILY TRIPS
25	First, Goldenwest, Knott, Artesia, Dale, Magnolia	55 minutes	21
26	Magnolia, Commonwealth, Nutwood, State College, Placentia, Bradford, Yorba Linda, Linda Vista, Rose	25 minutes	41
30	Orangethorpe, Gridley, 183rd	30 minutes	53
33	Magnolia	40 minutes	23
35	Magnolia, Commonwealth, Brookhurst, Victoria, Placentia, 19 th , Newport	30 minutes	36
721	Magnolia, SR-91, I-110, Figueroa, 4 th , 5 th , Flower	30 minutes	36
529	Orangethorpe, Beach, Center	12 minutes	51
LA Metro 460	Disneyland, I-105, I-110, Downtown Los Angeles	20 minutes	35

FIGURE 2.2 Fullerton Park and Ride Transit Network



3 EXISTING PARKING CONDITIONS

This section details the existing parking conditions at the Fullerton Park and Ride. It includes an assessment of existing parking supply and demand at the facility. This section also summarizes the data collection process and parking analysis methodology.

3.1 METHODOLOGY

Parking occupancy counts were conducted during the day at the Fullerton Park and Ride site on a weekday. The daytime parking surveys were performed between 7:00 AM and 6:00 PM to provide information on variations in parking demand between AM/PM peak hours. The parking surveys were conducted while schools were in session on:

- Wednesday, September 19, 2018

The detailed parking count survey can be found in Appendix A of this report.

3.2 EXISTING PARKING SUPPLY

The Fullerton Park and Ride site offers 745 off-street parking spaces in its surface parking lot. Of the 745 parking spaces, 29 parking spaces are reserved for ADA parking. Access to the parking site is not controlled and no fees are charged for parking at the site. On-street parking is not permitted on any of the streets adjacent to the Fullerton Park and Ride site.

3.3 EXISTING PARKING DEMAND

The following section summarizes existing parking occupancy observed on a weekday. Results of the parking occupancy survey revealed occupancy percentages of 40% to 50% for the peak hours between 7:00 AM and 6:00 PM. Table 3.1 summarizes the results of the parking occupancy survey. The numbers below reflect the number of occupied spaces and the ratio of occupancy including all spaces in the lot (both standard and ADA spaces).

TABLE 3.1: PARKING OCCUPANCY SURVEY

TIME	09/19/2018 SURVEY	
	OCCUPIED SPACES	PERCENTAGE
7:00 AM	311	42%
8:00 AM	345	46%
9:00 AM	346	46%
10:00 AM	337	45%
11:00 AM	341	46%
12:00 PM	330	44%
1:00 PM	332	45%
2:00 PM	319	43%
3:00 PM	305	41%
4:00 PM	266	36%
5:00 PM	188	25%
6:00 PM	144	19%

The survey reported peak parking demand occurred from 8:00 AM to 11:00 AM with an occupancy rate of approximately 46%. Parking occupancy percentages equal to or greater than 85% is typically considered to be reflective of at capacity or near capacity conditions.

There is the potential for parking demand to change in the future. The Draft OCTA 2018 Long Range Transportation Plan (LRTP) identifies two new high-quality transit projects that would serve the Fullerton Park and Ride. These two projects include a high quality transit service along Beach Boulevard project between the Fullerton Park and Ride and Downtown Huntington Beach and a Freeway BRT operating in the Interstate 5 Corridor between the Fullerton Park and Ride and Mission Viejo/Laguna Niguel Metrolink Station. If these projects are implemented, there could be a future increase in parking demand at the Fullerton Park and Ride.

4 EXISTING TRAFFIC CONDITIONS

This section summarizes the existing traffic conditions within the Fullerton Park and Ride area, including AM and PM peak traffic volumes for vehicles, bicyclists, and pedestrians, as well as an assessment of existing mode split for persons accessing the site.

4.1 METHODOLOGY

4.1.1 TRAFFIC COUNT DATA

The existing intersection turning movement counts were taken on Wednesday, September 19, 2018 during the morning peak period (7:00 AM to 9:00 AM) and the afternoon peak period (4:00 PM to 6:00 PM) for vehicular, bicycle, and pedestrian traffic. The counts were conducted to capture peak weekday travel behavior when school was in session. The detailed traffic count data can be found in Appendix B of this report.

4.1.2 EXISTING GEOMETRY AND CONTROL

The intersection analysis includes an assessment of 3 study intersections:

1. Auto Center Drive and Orangethorpe Avenue
2. Magnolia Avenue and Orangethorpe Avenue
3. Magnolia Avenue and SR-91 Westbound Off-Ramp

Figure 4.1 illustrates the study intersections along with the existing intersection geometry and control.

FIGURE 4.1 Existing Intersection Geometry and Control



FIGURE 4.4 Existing Active Transportation Volumes – AM Peak Period

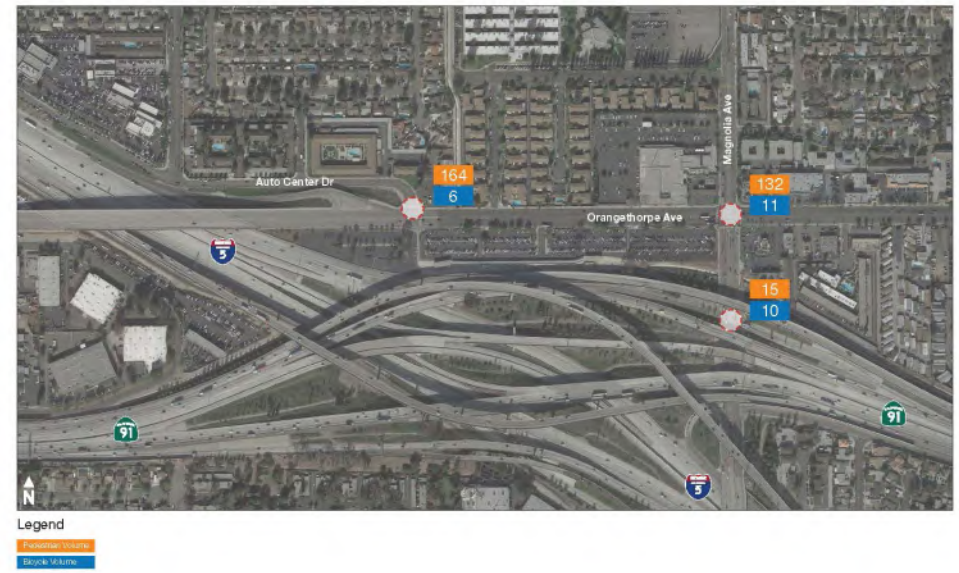
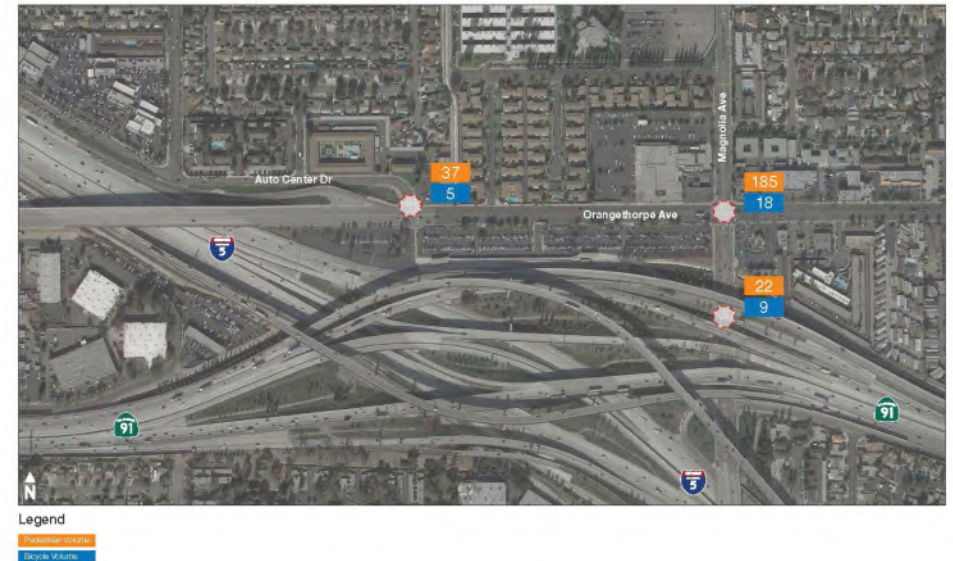


FIGURE 4.5 Existing Active Transportation Volumes – PM Peak Period



4.3 SITE ACCESS MODE SPLIT

In addition to AM and PM peak period traffic volume counts, a survey of arrival trip types was also conducted to evaluate the modal share of the Fullerton Park and Ride site. The survey assessed what mode of transportation visitors used to travel to the Fullerton Park and Ride site. The survey was conducted on the same weekday as the traffic volume counts, between the AM peak hours of 7:00 AM to 9:00 AM and between the PM peak hours of 4:00 PM and 6:00 PM. An evaluation of the AM peak period shows a majority of users, approximately 54%, drove and parked at the Fullerton Park and Ride site before riding transit. In contrast, during the PM peak period, a majority of users, approximately 57%, were dropped off at the Fullerton Park and Ride site. The results of the modal share evaluation are illustrated in Figures 4.6 and 4.7 below. The detailed modal share survey can be found in Appendix C of this report.

FIGURE 4.6: MODAL SHARE – AM PEAK

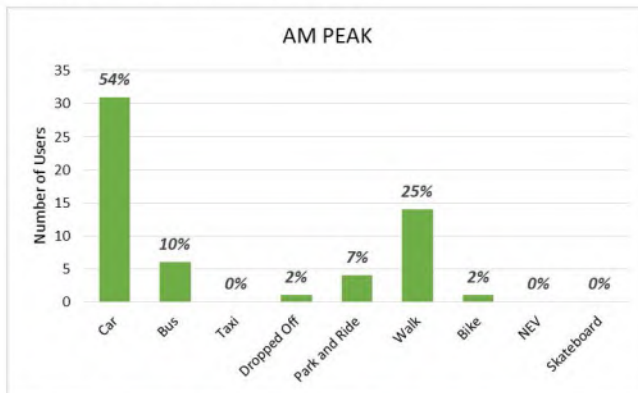
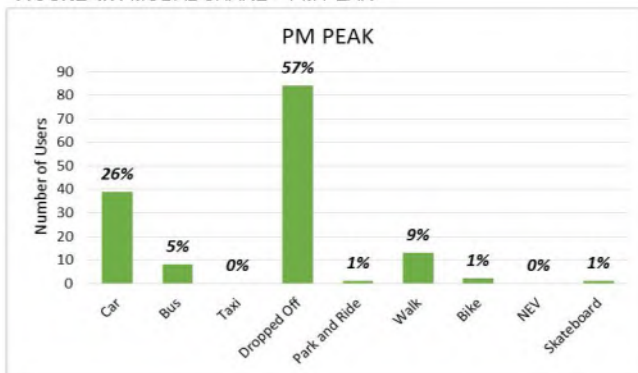


FIGURE 4.7: MODAL SHARE – PM PEAK



5 COLLISION HISTORY

As a part of the Fullerton Park and Ride site assessment, collision history data was also collected and evaluated. Collision data involving vehicles, bicyclists and pedestrians was collected from the Statewide Integrated Traffic Records System (SWITRS) for the five-year time ending on December 31, 2015. This section summarizes the collision history involving vehicles, bicyclists, and pedestrians within the Fullerton Park and Ride vicinity.

5.1 VEHICULAR COLLISION SUMMARY

As indicated by the modal share assessment, a majority of users arrive to the Fullerton Park and Ride site by driving. Upon review of the five-year SWITRS collision history data, it was noted that approximately 592 vehicular collisions occurred within a 1-mile radius of the Fullerton Park and Ride site. A majority of the reported collisions occurred on the 91 Freeway and I-5 Interchange. Figure 5.1 illustrates the locations of vehicular collisions within the vicinity of the Fullerton Park and Ride site for the five-year period from January 1, 2011 to December 31, 2015.

5.2 BICYCLE COLLISION SUMMARY

Upon review of the five-year SWITRS collision history data, it was noted that approximately 49 bicycle collisions occurred within a 1-mile radius of the Fullerton Park and Ride site. Figure 5.2 illustrates the locations of bicycle collisions within the vicinity of the Fullerton Park and Ride site for the five-year period ending from January 1, 2011 to December 31, 2015.

5.3 PEDESTRIAN COLLISION SUMMARY

Upon review of the five-year SWITRS collision history data, it was noted that approximately 43 pedestrian collisions occurred within a 1-mile radius of the Fullerton Park and Ride site. Figure 5.3 illustrates the locations of pedestrian collisions within the vicinity of the Fullerton Park and Ride site for the five-year period from January 1, 2011 to December 31, 2015.

FIGURE 5.1 2011 -2015 Vehicular Collision Locations



FIGURE 5.2 2011 -2015 Bicycle Collision Locations



FIGURE 5.3 2011 -2015 Pedestrian Collision Locations



6 ON SITE ASSESSMENT

A site visit was conducted on October 9th, 2018 between 8:30am and 10:00pm to assess existing transit and bicycle/pedestrian conditions at the transit center site and connections to the transit center from the surrounding community.

6.1 EXISTING TRANSIT CONDITIONS

The following observations were made regarding existing transit access and circulation conditions at the transit center:



- There are signs that indicate the presence of the park and ride from nearby freeway exits. The SR-91 Freeway shows a sign for a park and ride off the Magnolia westbound exit. A second freeway sign is visible to northbound vehicles on Magnolia Avenue. There is another park and ride sign southbound on Magnolia Avenue. A potential location for park and ride signage would be at the approach to all four Magnolia Avenue off-ramps on the I-5 and 91 Freeways.

- The bus docks are designed in a way to promote easy and quick loading and unloading.
- Transit signs are plentiful on the site, whether they are within the park and ride or on Orangethorpe Avenue.
- There is a passenger loading zone that spans nearly the entirety of the bus dock.
- The parking lot is not inherently easy to maneuver in.

Entrances into parking zones and drive aisles do not necessary line up to entry points.

- All street painting could be upgraded. It was either faded, difficult to understand, or misleading.
- The furthest section of parking from the Orangethorpe/ Magnolia intersection experienced very little parking utilization.
- There are protected turnouts on Orangethorpe Avenue.
- Some bus stops on Orangethorpe Avenue have no waiting area. All bus stops on the same street have congested walled configurations.
- Signage around the transit center is clearly marked which bus bays (dock number) that drivers pull into. However, the signage was not as clear for passengers to understand where to stand to catch the right bus. Signage showing bus route numbers in addition to the existing directory board may improve customer experience.



6.2 EXISTING BICYCLE CONDITIONS

The following observations were made regarding bicycle access at the site:

- There are two bike racks, one at each shelter on the ends. There were no bicycles observed to be parked at any of the racks provided.
- The bike racks are a style manufactured widely in the 1950's that hold only a portion of the bike's front tire. These racks are named "schoolyard" racks by the Association of Pedestrian and Bicycle Professionals (APBP), and should be avoided because they do not secure the bike frame in two places, but only lock the front wheel. Front wheels can be detached from the rest of the bike when the frame is not secured.
- There are no bike lockers on the site. Bike lockers are advantageous to have when customers lock their bikes for longer periods of time.
- Bicycle connections to the park and ride from the surrounding community were found to be lacking. There are no designated bicycle lanes on streets immediately adjacent to the park and ride on Magnolia Avenue and Orangethorpe Avenue.
- Cyclists can cross under I-5 using the Magnolia Avenue; however, there are no existing bikeway facilities to support this travel.
- Wayfinding signage directing cyclists and pedestrians to the Fullerton Park and Ride, restaurants and employment centers near the transit center were absent.
- There is no internal bicycle circulation signage or striping once inside the park and ride area.
- There were no bike racks observed at other destinations in the larger planning area.



6.3 EXISTING PEDESTRIAN CONDITIONS

The following observations were made regarding pedestrian access at the site:

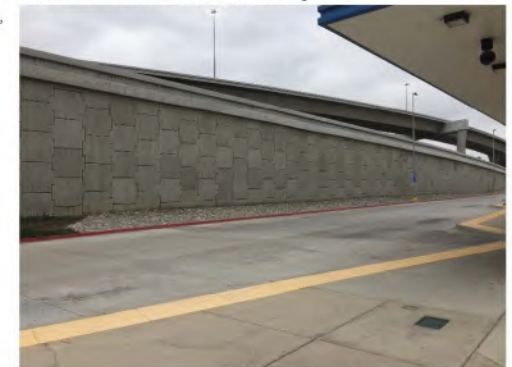
- There is an ample supply of sidewalks well connected through the site on the street frontages.
- Internal pedestrian circulation is not guided by designated pathways or signage. Striped crosswalks are present in certain, but not all locations. Pedestrians are observed walking through parking lots and crossing at mid-block locations.
- There are narrow sidewalks on the main dock, located to the north side of the bathrooms.
- The bathrooms building facilities were designed in a way that inhibit openness of pedestrian traffic and general transparency.
- There are plenty of benches and trashcans present. However, a pedestrian would have to sit at a different dock's bench if more than 4 other people are waiting for the same bus.
- There are no pamphlets for transit info in the pamphlet container.

- ADA yellow bumper strips are plentiful.
- Dock signs could be upgraded.
- The 2 ADA ramps to get onto the dock are far away from the majority of ADA parking spaces. The priority goes is to the passenger loading zone.
- Marked crosswalks are provided at multiple locations so that pedestrians can access the bus shelters using designated pathways instead of walking through the parking lot.

6.4 EXISTING AESTHETIC CONDITIONS

The following observations were made regarding aesthetic conditions at the site:

- The Fullerton Park and Ride has decently landscaped buffers along the Magnolia Avenue and Orangethorpe Avenue frontage. However, landscaping within the site is sporadic.
- Sidewalks are provided along the frontage of the site on both Orangethorpe Avenue and Magnolia Avenue, but narrow down at bus stations that have restricting blue colored walls.
- General street painting of the site could use a full update.
- The location of the Fullerton Park and Ride at the intersection of two major freeways and two major arterial streets creates a fairly noisy environment.
- While waiting for a bus, people face the grey wall of the 91 Freeway West/ I-5 North interchange ramp. Perhaps a mural on this wall could improve the waiting experience.
- There is light graffiti in multiple locations on the site.
- The bathroom areas on the west and east sides do not smell good.
- The site, in its entirety, is relatively clean.



7 CURRENT TRANSIT RIDERSHIP AND DEMAND

Current transit ridership for the Fullerton Park and Ride is calculated from boardings and alightings provided by OCTA by transit stop number within Transportation Analysis Zone (TAZ) number 127. Seven different routes (25, 26, 33, 35, 721, 527, and Metro 460) dock at the Fullerton Park and Ride, in Docks 6/7, 5, 11, 10, 8, 11, and 3/4, respectively. Route 30 travels on Orangethorpe Avenue, but does not go within the Fullerton Park and Ride Facility. There are 3 bus stops on Orangethorpe directly adjacent to the Fullerton Park and Ride, one of which is eastbound.

7.1 FUTURE TRANSIT RIDERSHIP

In general, transit ridership or demand for transit in a given region will parallel the overall population growth of the area. OCTA's 2018 LRTP predicts a 10% growth in population, a 11% growth in housing and a 17% increase in employment in Orange County forecast to 2040. The forecasted growth is predicted to create increased travel demand and increased congestion along already congested regional highways, local roadways, rail lines, and bus systems.

Local area ridership forecasts, such as for the routes serving the Fullerton Park and Ride and its vicinity, are driven by a combination of both local and regional growth factors. The Fullerton Park and Ride serves as a regional transit hub for destinations outside of Fullerton and will experience some regional growth. However, the area immediately surrounding the transit center is generally built out, so limited increases to local transit trips is anticipated as a result of local population growth. Transit trip growth would be anticipated to result more from the introduction of new transit services, including the Beach Boulevard transit corridor project and the Freeway BRT project identified in the 2018 LRTP.

8 PROJECTED TRAVEL CONDITIONS BY MODE

The OCTA 2018 LRTP forecasts increased trips and anticipated congestion for all modes of travel resulting from continued development of the remaining vacant land in Orange County, and the increased densification of already built-out areas. Table 8.1 below identifies expected growth of 16,000 transit trips per day, which will cause a 6.2% increase in delay as a percent of travel time. In addition, average freeway speed during peak morning traffic is expected to reduce from from the 38.3mph to just 36.4mph by 2040. Future additional congestion and delay on freeways is an issue to consider for all drivers and potential joint development at the Fullerton Park and Ride.

TABLE 8.1: PERFORMANCE OF FREEWAYS AND ARTERIALS IN THE 2015 BASE YEAR AND 2040 BASELINE SCENARIO

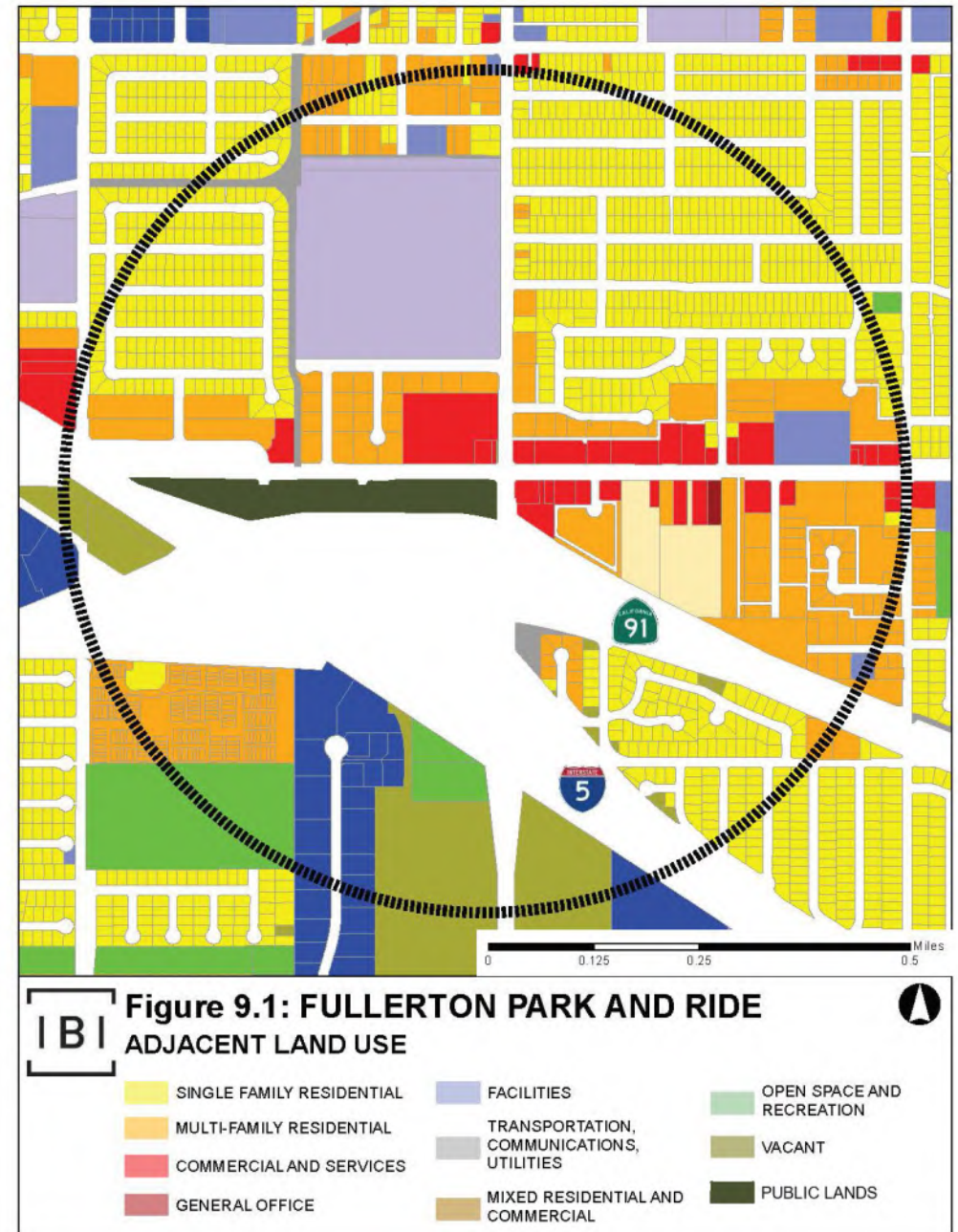
TRANSPORTATION SYSTEM PERFORMANCE SUMMARY			
Metrics (daily)	2015 Base Year	2040 Baseline	Trend 2040
Vehicle passenger delay per capita (minutes)	8.3	12.5	8.7
Vehicle passenger travel time per capita (minutes)	54.5	58.5	55.9
Delay as a percent of travel time	15.2%	21.4%	15.5%
Transit trips	149,000	165,000	174,000
Freeways - AM peak average speed (mph)	38.3	36.2	39.5
Managed lanes - AM peak capacity utilization	77%	83.6%	60%
Arterials - AM peak average speed (mph)	25.7	24.3	25.8

Note: Trend 2040 assumes managed lanes are operated as tolled express lanes by 2040

Source: OCTA 2018 LRTP⁴

9 LAND USE

The Fullerton Park and Ride site is located on an 11.1-acre parcel of land zoned for public land use. The area within a half-mile radius of the Fullerton Park and Ride site consists of mostly commercial, multi-family residential, single family residential, and public facilities uses. Figure 10.1 illustrates the various land uses within a half-mile radius of the Fullerton Park and Ride site as set forth by the City of Fullerton Zoning Code.



10 POTENTIAL OPPORTUNITIES AND CONSTRAINTS

The Fullerton Park and Ride has been identified by OCTA as a potential location for joint development opportunity.

10.1 JOINT DEVELOPMENT LITERATURE REVIEW

Several recent publications have provided guidance on the opportunities and recommended planning processes for joint public/private development projects in transit rich zones, summarized below:

1. Moving Ahead for Progress in the 21st Century Act (MAP-21), Pub. L. 112-141 (2012), informs FTA recipients of opportunities for private sector participation in public transportation projects, and includes the most current guidance for the federal public transportation program.

As a matter of policy, FTA encourages project sponsors to undertake joint development, and promotes the project sponsor's ability to work with the private sector and others to pursue joint development. Project sponsors can pursue joint development through new grants or with property previously acquired with FTA assistance. The project sponsor maintains satisfactory continuing control over such property used in a joint development project by ensuring that the property continues to serve its originally authorized purpose. Proceeds derived from an FTA-assisted joint development project are considered program income, which the project sponsor may apply to eligible FTA capital or operating expenses.

FTA assistance may not be used in construction of TOD projects, although it may be used to plan TOD in conjunction with transit projects. Thus, while joint development can be considered a form of TOD, it is much smaller in scope and uses project property or grant funds owned by the recipient. When the joint development incorporates either real property or other project property for which FTA assistance has been provided, or a direct investment of FTA grant funds, federal requirements apply to the joint development project. The involvement of federal assistance notwithstanding,

FTA's policy is to encourage TOD. Both joint development and TOD leverage FTA assisted projects to develop local economies and to encourage private investment near public transportation.

2. FTA Circular 7050.1 Federal Transit Administration Guidance on Joint Development, published August 25, 2014 provides the following definitions of joint transit development opportunities:

Joint Development definition: "A public transportation project that integrally relates to, and often co-locates with commercial, residential, mixed-use, or other non-transit development. Joint development may include partnerships for public or private development associated with any mode of transit system that is being improved through new construction, renovation, or extension. Joint development may also include intermodal facilities, intercity bus and rail facilities, transit malls, or historic transportation facilities".

Shared Use: "Instances in which a project partner, separate from the recipient, occupies part of a facility and pays for its' pro rata share of the construction, maintenance, and operations costs. Shared uses must be declared at the time of grant award. Shared use and incidental use are distinguishable."

Value Capture: "The term "value capture" means recovering the increased value of property located near public transportation resulting from the investments in public transportation. While value capture on the large scale often occurs through a special assessment district, tax-increment

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financing, or similar mechanisms, joint development is a meaningful value capture mechanism readily available to a project sponsor to be applied on the small scale of one or more parcels of real property it owns. Joint development is the value capture mechanism used most often for public transportation purposes. FTA encourages all forms of value capture that can contribute to the operation, maintenance, or expansion of public transportation service."

3. The Federal Transit Administration's Planning for Transit-Supportive Development: A Practitioner's Guide (2014) offers a number of lessons learned for integration of local land use planning and policy with strategies for transit investment. The relevant lessons for effective partnerships are summarized below. An education and outreach strategy is recommended in order for agency partners/community stakeholders to participate in making transit-supportive land uses a part of the community fabric. Educating and engaging with partners and the public is a prerequisite to forming a transit-supportive community.

Develop a community of champions. Assemble a collaborative team of forward thinking and dedicated community members. Select champions from the public, private and not-for-profit sectors and who represent a broad range of interests. Seek to ensure that the champions communicate frequently, collaborate closely on goals and agendas, and trust each other. Consider engaging champions through small task forces or committees that meet regularly and can provide information, support, and inspiration.

Educate and engage the public. Educating the public early and often is critical in gaining support. Clearly and effectively articulate the long-term vision for the transit system. Develop a clear and well-defined transit and/or transit-supportive development message. It is essential that the message be understandable and valuable to a large constituency. Images, key messaging, numbers, quantified results and benefits need to be carefully planned and consistent. Since there are many challenges in implementing a new transit system or transit-supportive developments, performance outcomes are often the best way to explain the objectives, choices and support needed. Place an emphasis on protecting and enhancing the existing community.

Emphasize the community context. Many components are needed to create a livable community. Transit is an important component but it is not the only piece of a sustainable community. Throughout the design and planning processes for transit systems and transit-supportive development, transit agencies and local governments should engage the community in developing plans and designs that reflect diverse neighborhoods with a strong sense of community. Give attention to community building goals instead of focusing solely on mobility objectives. The perspectives of transit agencies and other planning departments should be broadened so that transit is taken as a consideration and not the only driver of community goals.

Coordinate and collaborate with public agencies. Public agency coordination and collaboration are critical. Organizational structure and institutional policies can help ensure integrated land use and transit planning and implementation. In many cases, even within a single jurisdiction, it is difficult to work past the silos of multiple departments, each with its own mission and obligations. A municipality's organizational structure that places planning, economic development, transportation, and transit all under the municipality's purview can greatly streamline the way that transit planning is coordinated.

Form partnerships among agencies. For transit projects controlled by a municipality, coordination between the transit agency and the other departments, such as planning, should help streamline the planning efforts. Policies to prioritize transit improvements along select corridors and activity centers should be incorporated into citywide plans and programs and translated to street infrastructure investments as well as the new transit service. Cross-departmental coordination can facilitate efficient planning activities for route selections and station locations, as well as actions to encourage and enable transit-supportive development.

4. TRB Report 182: Linking Transit Agencies and Land Use Decision-Making: A Guidebook for Transit Agencies (October 2015) This guidebook presents a range of tools and

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tips for enhancing communication and coordination as well as building a transit-supportive community. While transit agencies lack the jurisdictional authority to ensure that land use decisions are transit-supportive, they can collaborate with and proactively engage a broad range of major stakeholders and the general public to achieve the desired land use outcomes. The key tools for enhancing communication and coordination include:

Partnering - Early and sustained communication provides the best outcomes and increases chances of better land use decisions. Formal and informal processes of engaging transit agencies in the decision making process can both be effective in fostering early communication. Informal structures of coordination can be as equally worthwhile as formal structures of coordinating if both the transit agency and the local government value the participation and comments provided by the other. Encouraging cities to incorporate transit considerations during their development review process can allow local jurisdictions to identify potential transit issues early on. Key tools include working groups, workshops and educational programs, and monitoring and referrals.

Strategic guidebooks - Many local governments, transit agencies, and non-profit advocacy groups have developed handbooks and guidebooks related to transit-supportive development. The use of a guidebook and/or a website to highlight the importance of inter-agency communication, collaboration, and coordination are common strategies used to address challenges and overcome barriers associated with implementing transit-supportive development projects.

Articulating the costs and benefits - Local government land use planners and/or private developers may not fully understand the service and operational issues related to their land use decisions, the benefits and need for transit, or the relationship between transit and land use. Transit agencies can explain various transit requirements and make the case for including transit officials in future land use decisions. In making their case, transit agencies can explain the costs and benefits.

10.2 SUMMARY OF OPPORTUNITIES

The timing of this study examining options and joint development for the Fullerton Park and Ride affords OCTA with several opportunities to design a transit site that would meet the needs of its customers in the future and allow OCTA the ability to evolve with changing trends in mobility and transportation that are currently underway.

Transit centers and transportation facilities need to incorporate flexibility to meet current transportation needs and to accommodate the rapid changing landscape of individual mobility. The Fullerton Park and Ride has not drastically changed since the 1980's, making the current site infrastructure limited in its ability to adequately serve rapid expanding markets for electric vehicles, shared ride services, and active transportation modes.

The site planning efforts will explore not only opportunities for joint development on the Fullerton Park and Ride, but strategies and opportunities for improving the form and function of the site. A summary of the opportunities identified by this study, previous studies, and the literature review for the Fullerton Park and Ride include:

- Joint development and public private partnership opportunities
- Integrate transit rider needs for signs and benches into redevelopment plans
- Integrate bicycle pathways and parking into the redevelopment plans
- Designate pedestrian pathways throughout the site
- Excess parking supply can be redeveloped
- Community and local employer participation in the planning process
- Expand parking for a Park and Fly operation

- Redesign Fullerton Park and Ride to better serve future bus operation needs
- "Right size" parking and promote flexibility in design to meet today's needs, as well as the changing needs for parking in the future
- Identify the appropriate location and configuration of additional customer parking
- Improve wayfinding signage from the freeways to the Fullerton Park and Ride
- Explore potential for revenue capture opportunities of an updated Park and Ride
- Formalize shared use agreements with various transit operators
- Improve the environment and public health with more opportunities to walk and bicycle
- Current Fullerton Park and Ride does not reach capacity
- FTA grant funding available for joint development projects

10.3 SUMMARY OF CONSTRAINTS

The list of issues and constraints summarized below is drawn from the research and data collected for this task, in addition to the observations made at the site:

- OCTA doesn't own the land around the Park and Ride
- Free parking encourages driving and doesn't allow for revenue capture from parking fees
- Multiple parties are not communicating their interests and needs for this site, missing joint planning opportunities
- Private transit operators function separately
- OCTA may be financially constrained to buy more land for transit parking
- The site is physically constrained by the freeway and existing development and there is no undeveloped land in the vicinity

10.4 MATRIX OF OPPORTUNITIES AND CONSTRAINTS

OPPORTUNITIES AND CONSTRAINTS	TRANSIT	BICYCLES & PEDESTRIANS	CARS
Opportunities			
Joint development and public private partnership opportunities			
Integrate transit rider needs for signs and benches into redevelopment plans			
Integrate bicycle pathways and parking into the redevelopment plans			
Designate pedestrian pathways throughout the site			
Excess parking supply can be redeveloped			
Community and local employer participation in the planning process			
Expand parking for a Park and Fly operation			
Redesign Fullerton Park and Ride to better serve future bus operation needs			
"Right size" parking and promote flexibility in design to meet today's needs, as well as the changing needs for parking in the future			
Identify the appropriate location and configuration of additional customer parking			
Improve wayfinding signage from the freeways to the Fullerton Park and Ride			
Explore potential for revenue capture opportunities of an updated Park and Ride			
Formalize shared use agreements with various transit operators			
Improve the environment and public health with more opportunities to walk and bicycle			
Current Fullerton Park and Ride does not reach capacity			
FTA grant funding available for joint development projects			
Constraints			
OCTA doesn't own the land around the Park and Ride			
The site is physically constrained by the freeway and existing development and there is no undeveloped land in the vicinity			
Free parking encourages driving and doesn't allow for revenue capture from parking fees			
Private transit operators function separately			
OCTA may be financially constrained to buy more land for transit parking			

11 APPENDIX

11.1 APPENDIX A: PARKING SURVEY

Fullerton Park and Ride

Wednesday, September 10th, 2015

Zone	Time	Inventory	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM
Zone 1	Require	126	6	7	8	8	11	11	11	12	10	9	7	7
	Inventory	126	6	7	8	8	11	11	11	12	10	9	7	7
	Require	134	6	7	8	8	11	11	11	12	10	9	7	7
	Inventory	134	6	7	8	8	11	11	11	12	10	9	7	7
Total Capacity		134	6	7	8	8	11	11	11	12	10	9	7	7
Total Percent			4%	5%	5%	5%	8%	8%	8%	9%	7%	6%	5%	5%
Zone 2	Require	113	50	50	50	50	50	50	50	50	50	50	47	46
	Inventory	113	50	50	50	50	50	50	50	50	50	50	47	46
	Require	113	50	50	50	50	50	50	50	50	50	50	47	46
	Inventory	113	50	50	50	50	50	50	50	50	50	50	47	46
Total Capacity		113	50	50	50	50	50	50	50	50	50	50	47	46
Total Percent			40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	41%	40%
Zone 3	Require	110	50	50	50	50	50	50	50	50	50	50	50	50
	Inventory	110	50	50	50	50	50	50	50	50	50	50	50	50
	Require	110	50	50	50	50	50	50	50	50	50	50	50	50
	Inventory	110	50	50	50	50	50	50	50	50	50	50	50	50
Total Capacity		110	50	50	50	50	50	50	50	50	50	50	50	50
Total Percent			40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Zone 4	Require	146	50	50	50	50	50	50	50	50	50	50	50	50
	Inventory	146	50	50	50	50	50	50	50	50	50	50	50	50
	Require	146	50	50	50	50	50	50	50	50	50	50	50	50
	Inventory	146	50	50	50	50	50	50	50	50	50	50	50	50
Total Capacity		146	50	50	50	50	50	50	50	50	50	50	50	50
Total Percent			30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Zone 5	Require	230	50	50	50	50	50	50	50	50	50	50	50	50
	Inventory	230	50	50	50	50	50	50	50	50	50	50	50	50
	Require	230	50	50	50	50	50	50	50	50	50	50	50	50
	Inventory	230	50	50	50	50	50	50	50	50	50	50	50	50
Total Capacity		230	50	50	50	50	50	50	50	50	50	50	50	50
Total Percent			20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%

11.2 APPENDIX B: TRAFFIC COUNT DATA

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Fullerton
N/S Auto Center Drive
E/W Orangethorpe Avenue
Weather: Clear

File Name : 01_FLN_Auto Center_Orangethorpe AM
Site Code : 20218690
Start Date : 9/19/2018
Page No : 1

Groups Printed- Total Volume																	
	Auto Center Drive Southbound				Orangethorpe Avenue Westbound				Auto Center Drive Northbound				Orangethorpe Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	83	1	6	90	1	188	26	195	1	1	5	7	12	203	3	218	510
07:15 AM	125	1	21	147	0	227	29	256	7	1	8	16	11	243	7	261	690
07:30 AM	111	1	20	132	1	294	45	340	11	3	6	20	11	305	19	335	827
07:45 AM	102	2	25	129	0	339	64	403	2	5	5	12	17	242	5	264	808
Total	421	5	72	498	2	1028	164	1194	21	10	24	55	51	993	34	1078	2825
08:00 AM	117	1	20	138	0	174	32	207	2	0	4	6	12	189	1	202	553
08:15 AM	78	0	18	96	0	157	20	177	0	0	5	5	17	178	0	195	473
08:30 AM	73	0	11	84	1	142	20	163	1	0	4	5	7	162	0	169	421
08:45 AM	68	1	15	84	1	139	17	157	3	2	4	9	18	123	1	142	392
Total	336	2	64	402	3	612	89	704	6	2	17	25	54	652	2	708	1839
Grand Total	757	7	136	900	5	1640	253	1898	27	12	41	80	105	1645	36	1786	4664
Approch %	84.1	0.8	15.1		0.3	86.4	13.3		33.8	15	51.2		5.9	92.1	2		
Total %	16.2	0.2	2.9	19.3	0.1	35.2	5.4	40.7	0.8	0.3	0.9	1.7	2.3	35.3	0.8	38.3	

Auto Center Drive Southbound					Orangethorpe Avenue Westbound					Auto Center Drive Northbound					Orangethorpe Avenue Eastbound					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total			
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 07:15 AM																				
07:15 AM	125	1	21	147	0	227	29	256	7	1	8	16	11	243	7	261	690			
07:30 AM	111	1	20	132	1	294	45	340	11	3	6	20	11	305	19	335	827			
07:45 AM	102	2	25	129	0	339	64	403	2	5	5	12	17	242	5	264	808			
08:00 AM	117	1	20	138	1	174	32	207	2	0	4	6	12	189	1	202	553			
Total Volume	455	5	86	546	2	1034	170	1206	22	9	23	54	51	979	32	1062	2888			
% App. Total	83.3	0.9	15.8		0.2	85.7	14.1		40.7	16.7	42.6		4.8	92.2	3					
PHF	.910	.625	.860	.929	.500	.763	.664	.748	.500	.450	.719	.675	.750	.802	.421	.793	.867			

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

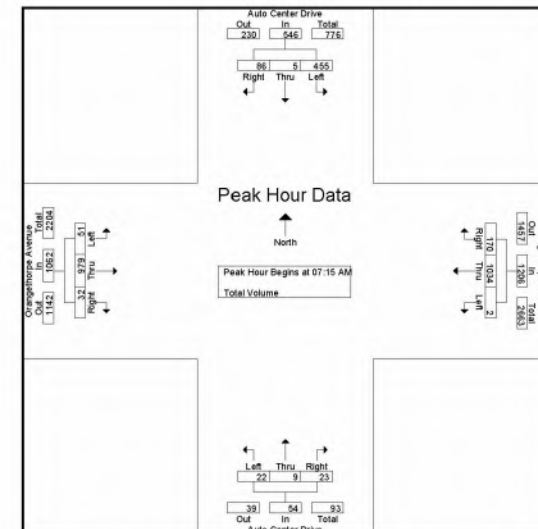
Peak Hour for Entire Intersection Begins at 07:15 AM

07:15 AM	125	1	21	147	0	227	29	256	7	1	8	16	11	243	7	261	690
07:30 AM	111	1	20	132	1	294	45	340	11	3	6	20	11	305	19	335	827
07:45 AM	102	2	25	129	0	339	64	403	2	5	5	12	17	242	5	264	808
08:00 AM	117	1	20	138	1	174	32	207	2	0	4	6	12	189	1	202	553
Total Volume	455	5	86	546	2	1034	170	1206	22	9	23	54	51	979	32	1062	2888
% App. Total	83.3	0.9	15.8		0.2	85.7	14.1		40.7	16.7	42.6		4.8	92.2	3		
PHF	.910	.625	.860	.929	.500	.763	.664	.748	.500	.450	.719	.675	.750	.802	.421	.793	.867

Counts Unlimited
PO Box 1178
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(951) 268-6268

City of Fullerton
N/S Auto Center Drive
E/W Orangethorpe Avenue
Weather: Clear

File Name : 01_FLN_Auto Center_Orangethorpe AM
Site Code : 20218690
Start Date : 9/19/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:45 AM				08:00 AM			
+0 mins.	125	1	21	147	0	227	29	256	1	1	5	7	12	203	3	218
+15 mins.	111	1	20	132	1	294	45	340	7	1	8	16	11	243	7	261
+30 mins.	102	2	25	129	0	339	64	403	11	3	6	20	11	305	19	335
+45 mins.	117	1	20	138	1	174	32	207	2	5	5	12	17	242	5	264
Total Volume	455	5	86	546	2	1034	170	1206	21	10	24	55	51	993	34	1078
% App. Total	83.3	0.9	15.8		0.2	85.7	14.1		38.2	18.2	43.6		4.7	92.1	3.2	
PHF	.910	.625	.860	.929	.500	.763	.664	.748	.477	.500	.750	.688	.750	.814	.447	.804

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PO Box 1178
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City of Fullerton
N/S: Auto Center Drive
E/W: Orangethorpe Avenue
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File Name : 01_FLN_Auto Center_Orangethorpe PM
Site Code : 20218690
Start Date : 9/19/2018
Page No : 1

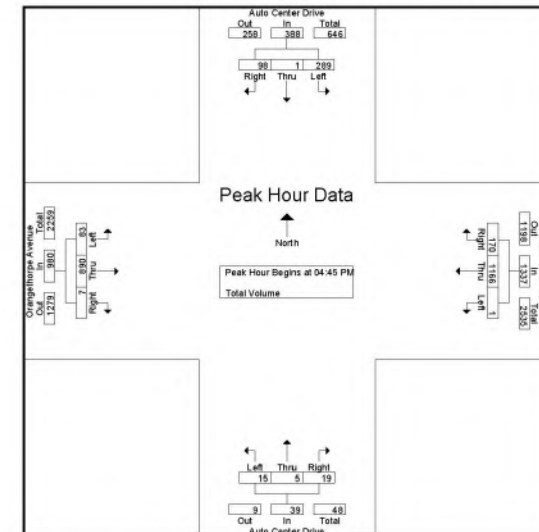
Groups Printed- Total Volume												
Start Time	Auto Center Drive Southbound				Orangethorpe Avenue Westbound				Auto Center Drive Northbound			
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
04:00 PM	84	0	25	109	0	281	51	332	1	3	3	7
04:15 PM	75	0	29	104	2	278	41	321	1	0	3	4
04:30 PM	74	0	24	98	0	265	33	298	5	2	5	12
04:45 PM	67	0	30	97	0	288	41	329	2	1	6	9
Total	300	0	108	408	2	1112	166	1280	9	6	17	32
05:00 PM	75	0	23	98	0	288	38	326	7	1	6	14
05:15 PM	67	0	21	88	1	313	41	355	2	0	4	6
05:30 PM	80	1	24	105	0	277	50	327	4	3	3	10
05:45 PM	79	0	20	99	1	266	37	304	9	1	8	18
Total	301	1	88	390	2	1144	166	1312	22	5	21	48
Grand Total	601	1	196	798	4	2256	332	2592	31	11	38	80
Approach %	75.3	0.1	24.6		0.2	87	12.8		38.8	13.8	47.5	
Total %	11.2	0	3.7	14.9	0.1	42.1	6.2	48.4	0.6	0.2	0.7	1.5

Start Time	Auto Center Drive Southbound				Orangethorpe Avenue Westbound				Auto Center Drive Northbound			
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
04:00 PM	84	0	25	109	0	281	51	332	1	3	3	7
04:15 PM	75	0	29	104	2	278	41	321	1	0	3	4
04:30 PM	74	0	24	98	0	265	33	298	5	2	5	12
04:45 PM	67	0	30	97	0	288	41	329	2	1	6	9
05:00 PM	75	0	23	98	0	288	38	326	7	1	6	14
05:15 PM	67	0	21	88	1	313	41	355	2	0	4	6
05:30 PM	80	1	24	105	0	277	50	327	4	3	3	10
05:45 PM	79	0	20	99	1	266	37	304	9	1	8	18
Total	300	0	108	408	2	1112	166	1280	9	6	17	32
% App. Total	74.5	0.3	25.3		0.1	87.2	12.7		38.5	12.8	48.7	
PHF	.893	.000	.900		.936	.417	.792		.696	.830	.912	

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City of Fullerton
N/S: Auto Center Drive
E/W: Orangethorpe Avenue
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File Name : 01_FLN_Auto Center_Orangethorpe PM
Site Code : 20218690
Start Date : 9/19/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:45 PM				05:00 PM				05:45 PM			
+0 mins.	84	0	25	109	0	288	41	329	7	1	6	14	18	217	1	236
+15 mins.	75	0	29	104	0	288	38	326	2	0	4	6	25	212	3	240
+30 mins.	74	0	24	98	1	313	41	355	4	3	3	10	21	217	0	238
+45 mins.	67	0	30	97	0	277	50	327	9	1	8	18	19	244	3	266
Total Volume	300	0	108	408	1	1166	170	1337	22	5	21	48	83	890	7	980
% App. Total	73.5	0	26.5		0.1	87.2	12.7		45.8	10.4	43.8		8.5	90.8	0.7	
PHF	.893	.000	.900		.936	.417	.792		.611	.417	.656		.667	.830	.912	

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City of Fullerton
N/S: Magnolia Avenue
E/W: Orangethorpe Avenue
Weather: Clear

File Name : 02_FLN_Magnolia_Orangethorpe AM
Site Code : 20218690
Start Date : 9/19/2018
Page No : 1

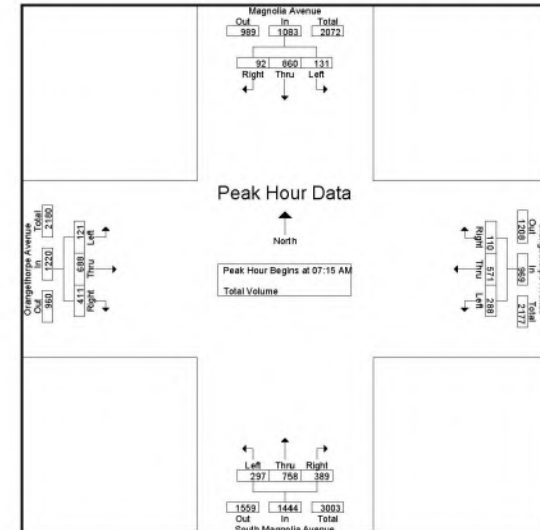
Groups Printed- Total Volume																	
	Magnolia Avenue Southbound				Orangethorpe Avenue Westbound				South Magnolia Avenue Northbound				Orangethorpe Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	22	225	11	258	69	107	7	183	69	177	69	315	18	143	93	254	1010
07:15 AM	26	222	12	260	85	129	25	239	75	205	78	358	32	175	118	325	1182
07:30 AM	41	189	36	266	76	160	46	282	68	165	96	329	37	183	88	308	1185
07:45 AM	37	214	33	284	59	155	20	244	91	205	117	413	29	167	99	295	1236
Total	126	850	92	1068	289	561	98	948	303	752	360	1415	116	668	398	1182	4613
08:00 AM	27	235	11	273	68	117	19	204	63	183	98	344	23	163	106	292	1113
08:15 AM	26	224	16	266	48	98	17	163	55	170	103	328	19	152	79	250	1007
08:30 AM	18	228	17	263	45	86	19	150	49	126	88	263	22	125	86	233	909
08:45 AM	19	194	19	232	45	90	14	149	48	178	59	285	12	104	68	184	850
Total	90	881	63	1034	206	391	69	666	215	657	348	1220	76	544	339	959	3879
Grand Total	216	1731	155	2102	495	952	167	1614	518	1409	708	2635	192	1212	737	2141	8492
Apprch %	10.3	82.4	7.4		30.7	59	10.3		19.7	53.5	26.9		9	56.6	34.4		
Total %	2.5	20.4	1.8	24.8	5.8	11.2	2	19	6.1	16.6	8.3	31	2.3	14.3	8.7	25.2	

Magnolia Avenue Southbound				Orangethorpe Avenue Westbound				South Magnolia Avenue Northbound				Orangethorpe Avenue Eastbound				Int. Total	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	26	222	12	260	85	129	25	239	75	205	78	358	32	175	118	325	1182
07:30 AM	41	189	36	266	76	160	46	282	68	165	96	329	37	183	88	308	1185
07:45 AM	37	214	33	284	59	165	20	244	91	205	117	413	29	167	99	295	1236
08:00 AM	27	235	11	273	68	117	19	204	63	183	98	344	23	163	106	292	1113
Total Volume	131	860	92	1063	288	571	110	969	297	755	389	1444	121	688	411	1220	4716
% App. Total	12.1	79.4	8.5		29.7	58.9	11.4		20.6	52.5	26.9		9.9	56.4	33.7		
PHF	.799	.915	.639	.953	.847	.865	.598	.859	.816	.924	.831	.874	.818	.940	.871	.938	.954

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City of Fullerton
N/S: Magnolia Avenue
E/W: Orangethorpe Avenue
Weather: Clear

File Name : 02_FLN_Magnolia_Orangethorpe AM
Site Code : 20218690
Start Date : 9/19/2018
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	41	189	36	266	85	129	25	239	75	205	78	358	32	175	118	325
+15 mins.	37	214	33	284	76	160	46	282	68	165	96	329	37	183	88	308
+30 mins.	27	235	11	273	59	165	20	244	91	205	117	413	29	167	99	295
+45 mins.	26	224	16	266	68	117	19	204	63	183	98	344	23	163	106	292
Total Volume	131	862	96	1089	288	571	110	969	297	758	389	1444	121	688	411	1220
% App. Total	12	79.2	8.8		29.7	58.9	11.4		20.6	52.5	26.9		9.9	56.4	33.7	
PHF	.799	.917	.667	.959	.847	.865	.598	.859	.816	.924	.831	.874	.818	.940	.871	.938

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City of Fullerton
N/S: South Magnolia Avenue
E/W: SR-91 Westbound Ramps
Weather: Clear

File Name : 03_FLN_Magnolia_91WAM
Site Code : 20218690
Start Date : 9/19/2018
Page No : 1

Groups Printed- Total Volume																
	South Magnolia Avenue Southbound				SR-91 Westbound Off Ramp Westbound				South Magnolia Avenue Northbound				SR-91 Westbound On Ramp Eastbound			
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
07:00 AM	0	267	112	379	75	1	29	105	66	270	0	336	0	0	0	0
07:15 AM	0	327	109	436	96	6	47	149	47	316	0	363	0	0	0	0
07:30 AM	0	277	81	358	110	4	37	151	47	317	0	364	0	0	0	0
07:45 AM	0	305	74	379	94	2	41	137	45	367	0	412	0	0	0	0
Total	0	1176	376	1552	375	13	154	542	205	1270	0	1475	0	0	0	0
08:00 AM	0	335	74	409	87	2	32	121	55	304	0	359	0	0	0	0
08:15 AM	0	268	83	351	74	2	29	105	39	306	0	345	0	0	0	0
08:30 AM	0	267	97	364	86	0	21	107	43	234	0	277	0	0	0	0
08:45 AM	0	244	72	316	92	1	28	121	34	261	0	295	0	0	0	0
Total	0	1114	326	1440	339	5	110	454	171	1105	0	1276	0	0	0	0
Grand Total	0	2290	702	2992	714	18	264	996	376	2375	0	2751	0	0	0	0
Apprch %	0	76.5	23.5		71.7	1.8	26.5		13.7	86.3	0		0	0	0	
Total %	0	34	10.4	44.4	10.6	0.3	3.9	14.8	5.6	35.2	0	40.8	0	0	0	0

	South Magnolia Avenue Southbound				SR-91 Westbound Off Ramp Westbound				South Magnolia Avenue Northbound				SR-91 Westbound On Ramp Eastbound			
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:15 AM																
07:15 AM	0	327	109	436	96	6	47	149	47	316	0	363	0	0	0	0
07:30 AM	0	277	81	358	110	4	37	151	47	317	0	364	0	0	0	0
07:45 AM	0	305	74	379	94	2	41	137	45	367	0	412	0	0	0	0
08:00 AM	0	335	74	409	87	2	32	121	55	304	0	359	0	0	0	0
Total Volume	0	1244	338	1582	387	14	157	558	194	1304	0	1498	0	0	0	0
% App. Total	0	78.6	21.4		69.4	2.5	28.1		13	87	0		0	0	0	
PHF	.000	.928	.775	.907	.880	.583	.835	.924	.882	.888	.000	.909	.000	.000	.000	.959

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City of Fullerton
N/S: South Magnolia Avenue
E/W: SR-91 Westbound Ramps
Weather: Clear

File Name : 03_FLN_Magnolia_91WPM
Site Code : 20218690
Start Date : 9/19/2018
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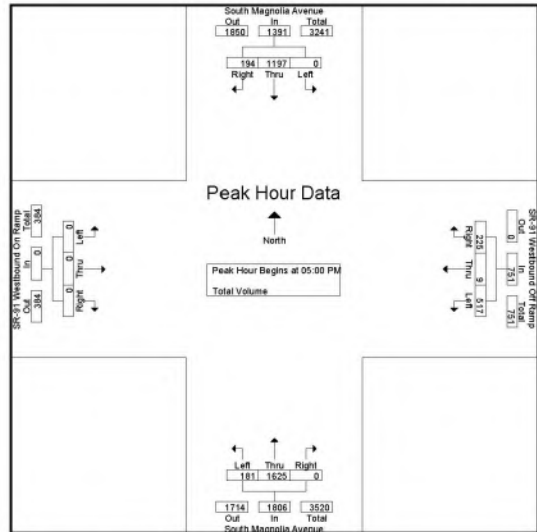
Groups Printed- Total Volume																
	South Magnolia Avenue Southbound				SR-91 Westbound Off Ramp Westbound				South Magnolia Avenue Northbound				SR-91 Westbound On Ramp Eastbound			
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
04:00 PM	0	272	55	327	108	1	54	163	53	360	0	413	0	0	0	0
04:15 PM	0	289	54	343	112	1	58	171	45	366	0	411	0	0	0	0
04:30 PM	0	281	39	320	126	2	50	178	51	386	0	437	0	0	0	0
04:45 PM	0	301	39	340	109	1	53	163	38	397	0	435	0	0	0	0
Total	0	1143	187	1330	455	5	215	675	187	1509	0	1696	0	0	0	0
05:00 PM	0	288	48	336	111	2	45	158	59	419	0	478	0	0	0	0
05:15 PM	0	307	59	366	129	1	59	189	52	435	0	487	0	0	0	0
05:30 PM	0	317	45	362	132	3	62	197	33	365	0	398	0	0	0	0
05:45 PM	0	285	42	327	145	3	59	207	37	408	0	443	0	0	0	0
Total	0	1197	194	1391	517	9	225	751	181	1625	0	1806	0	0	0	0
Grand Total	0	2340	381	2721	972	14	440	1426	368	3134	0	3502	0	0	0	0
Apprch %	0	86	14		68.2	1	30.9		10.5	89.5	0		0	0	0	
Total %	0	30.6	5	35.6	12.7	0.2	5.8	18.6	4.8	41	0	45.8	0	0	0	0

	South Magnolia Avenue Southbound				SR-91 Westbound Off Ramp Westbound				South Magnolia Avenue Northbound				SR-91 Westbound On Ramp Eastbound			
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 05:00 PM																
05:00 PM	0	288	48	336	111	2	45	158	59	419	0	478	0	0	0	0
05:15 PM	0	307	59	366	129	1	59	189	52	435	0	487	0	0	0	0
05:30 PM	0	317	45	362	132	3	62	197	33	365	0	398	0	0	0	0
05:45 PM	0	285	42	327	145	3	59	207	37	408	0	443	0	0	0	0
Total Volume	0	1197	194	1391	517	9	225	751	181	1625	0	1806	0	0	0	0
% App. Total	0	86.1	13.9		68.8	1.2	30		10	90	0		0	0	0	
PHF	.000	.944	.822	.950	.891	.750	.907	.907	.767	.934	.000	.927	.000	.000	.000	.947

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City of Fullerton
N/S: South Magnolia Avenue
E/W: SR-91 Westbound Ramps
Weather: Clear

File Name : 03_FLN_Magnolia_91WPM
Site Code : 20218690
Start Date : 9/19/2018
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:30 PM				04:00 PM			
+0 mins.	0	301	39	340	111	2	45	158	51	366	0	437	0	0	0	0
+15 mins.	0	288	46	336	129	1	59	189	38	397	0	435	0	0	0	0
+30 mins.	0	307	59	366	132	3	62	197	59	419	0	478	0	0	0	0
+45 mins.	0	317	45	362	145	3	59	207	52	435	0	487	0	0	0	0
Total Volume	0	1213	191	1404	517	9	225	751	200	1637	0	1837	0	0	0	0
% App. Total	0	86.4	13.6	10.0	68.8	1.2	3.0	10.9	89.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	.000	.957	.809	.959	.891	.750	.907	.907	.847	.941	.000	.943	.000	.000	.000	.000

Location: Fullerton
N/S: Auto Center Drive
E/W: Orangether Avenue



Date: 9/19/2018
Day: Wednesday

PEDESTRIANS

	North Leg Auto Center Drive Pedestrians	East Leg Orangether Avenue Pedestrians	South Leg Auto Center Drive Pedestrians	West Leg Orangether Avenue Pedestrians	
7:00 AM	4	21	2	0	27
7:15 AM	4	24	4	0	32
7:30 AM	11	52	2	0	65
7:45 AM	4	8	1	0	13
8:00 AM	0	5	0	0	5
8:15 AM	0	7	2	0	9
8:30 AM	0	11	0	0	11
8:45 AM	0	2	0	0	2
TOTAL VOLUMES	23	130	11	0	164

	North Leg Auto Center Drive Pedestrians	East Leg Orangether Avenue Pedestrians	South Leg Auto Center Drive Pedestrians	West Leg Orangether Avenue Pedestrians	
4:00 PM	0	2	0	0	2
4:15 PM	3	8	0	0	11
4:30 PM	1	3	0	0	4
4:45 PM	0	1	1	0	2
5:00 PM	2	6	1	0	9
5:15 PM	0	1	2	0	3
5:30 PM	0	1	0	0	1
5:45 PM	0	5	0	0	5
TOTAL VOLUMES	6	27	4	0	37

Location: Fullerton
N/S: Auto Center Drive
E/W: Orangether Avenue



Date: 9/19/2018
Day: Wednesday

BICYCLES

	Southbound Auto Center Drive			Westbound Orangether Avenue			Northbound Auto Center Drive			Eastbound Orangether Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES	0	0	0	0	4	0	0	0	0	0	2	0	6

	Southbound Auto Center Drive			Westbound Orangether Avenue			Northbound Auto Center Drive			Eastbound Orangether Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	1	0	0	0	0	1	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL VOLUMES	0	1	0	0	0	2	1	1	0	0	0	0	5

Location: Fullerton
N/S: Magnolia Avenue
E/W: Orangethorpe Avenue



Date: 9/19/2018
Day: Wednesday

PEDESTRIANS

	North Leg Magnolia Avenue Pedestrians	East Leg Orangethorpe Avenue Pedestrians	South Leg Magnolia Avenue Pedestrians	West Leg Orangethorpe Avenue Pedestrians	
7:00 AM	0	3	0	0	3
7:15 AM	6	7	2	2	17
7:30 AM	19	35	5	5	64
7:45 AM	2	7	0	0	9
8:00 AM	5	15	3	2	25
8:15 AM	2	1	1	0	4
8:30 AM	2	1	2	0	5
8:45 AM	2	3	0	0	5
TOTAL VOLUMES	38	72	13	9	132

	North Leg Magnolia Avenue Pedestrians	East Leg Orangethorpe Avenue Pedestrians	South Leg Magnolia Avenue Pedestrians	West Leg Orangethorpe Avenue Pedestrians	
4:00 PM	8	36	2	1	47
4:15 PM	2	13	5	4	24
4:30 PM	5	9	1	3	18
4:45 PM	8	13	2	1	24
5:00 PM	8	13	4	4	29
5:15 PM	4	11	7	2	24
5:30 PM	3	5	5	3	16
5:45 PM	2	5	5	0	12
TOTAL VOLUMES	36	100	31	18	185

Location: Fullerton
N/S: Magnolia Avenue
E/W: Orangethorpe Avenue



Date: 9/19/2018
Day: Wednesday

BICYCLES

	Southbound Magnolia Avenue			Westbound Orangethorpe Avenue			Northbound Magnolia Avenue			Eastbound Orangethorpe Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	1	1
7:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
7:45 AM	1	0	0	0	0	0	0	0	1	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	2
8:30 AM	0	0	0	0	3	0	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES	1	0	0	0	4	0	1	3	1	0	0	1	11

	Southbound Magnolia Avenue			Westbound Orangethorpe Avenue			Northbound Magnolia Avenue			Eastbound Orangethorpe Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	1	0	1	0	0	0	0	1	0	0	1	0	4
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
4:45 PM	0	0	0	0	1	0	1	0	0	0	1	0	3
5:00 PM	0	1	0	0	1	0	1	0	0	0	0	0	3
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	1	0	0	0	0	0	0	1	0	3
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL VOLUMES	1	3	1	1	3	0	3	1	0	0	5	0	18

OCTOBER 2019

50

Location: Fullerton
N/S: Magnolia Avenue
E/W: SR-91 Westbound Ramps



Date: 9/19/2018
Day: Wednesday

PEDESTRIANS

	North Leg Magnolia Avenue Pedestrians	East Leg SR-91 Westbound Ramps Pedestrians	South Leg Magnolia Avenue Pedestrians	West Leg SR-91 Westbound Ramps Pedestrians	
7:00 AM	0	0	0	1	1
7:15 AM	0	4	0	1	5
7:30 AM	0	1	0	0	1
7:45 AM	0	2	0	0	2
8:00 AM	0	2	0	0	2
8:15 AM	0	1	0	0	1
8:30 AM	0	3	0	0	3
8:45 AM	0	3	0	0	3
TOTAL VOLUMES	0	13	0	2	15

	North Leg Magnolia Avenue Pedestrians	East Leg SR-91 Westbound Ramps Pedestrians	South Leg Magnolia Avenue Pedestrians	West Leg SR-91 Westbound Ramps Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	6	0	1	7
4:30 PM	0	2	0	2	4
4:45 PM	0	1	0	0	1
5:00 PM	0	3	0	1	4
5:15 PM	0	0	0	0	0
5:30 PM	0	3	0	2	5
5:45 PM	0	1	0	0	1
TOTAL VOLUMES	0	16	0	6	22

Location: Fullerton
N/S: Magnolia Avenue
E/W: SR-91 Westbound Ramps



Date: 9/19/2018
Day: Wednesday

BICYCLES

	Southbound Magnolia Avenue			Westbound SR-91 Westbound Ramps			Northbound Magnolia Avenue			Eastbound SR-91 Westbound Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
7:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	1	0	0	0	1	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	2
TOTAL VOLUMES	0	2	0	1	0	0	0	5	0	0	0	1	10

	Southbound Magnolia Avenue			Westbound SR-91 Westbound Ramps			Northbound Magnolia Avenue			Eastbound SR-91 Westbound Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
TOTAL VOLUMES	0	6	0	0	0	0	0	3	0	0	0	0	9

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7.1.2 CIVIL SITE ASSESSMENT

Data Source: VCA

2.1.1 DOMESTIC WATER

There is one existing 8" Cast Iron City water main fronting the property on Orangethorpe Avenue as shown in Exhibit C1.1.

During our site visit, four existing water meters and four existing 2" domestic water backflow preventers were located along Orangethorpe Avenue. In addition, one existing 2" irrigation backflow preventer was located along Orangethorpe Avenue. An existing water meter was also located near the existing on-site restrooms. See Exhibits C4.1, C4.2 and C4.3 for the location of these existing on-site utilities. All existing domestic and irrigation water utilities are marked in cyan.

2.1.2 FIRE WATER

There is one existing 8" Cast Iron City water main fronting the property on Orangethorpe Avenue as shown in Exhibit C1.1.

One existing fire hydrant was located during our site visit on the south east corner of the intersection of Orangethorpe Avenue and Auto Center Drive. The location of the existing fire hydrant is shown in red in Exhibit C4.2. Currently, there are no existing fire water lines on the project site.

2.1.3 SANITARY SEWER

There is one existing 39" Vitrified Clay sanitary sewer main line on Magnolia Avenue, one existing 39" Vitrified Clay sanitary sewer main line on Orangethorpe Avenue and one existing 24" Vitrified Clay sanitary sewer main line that runs along Magnolia Avenue, crosses into the project site at the western edge and continues under the I-5 Freeway. All of the existing sanitary sewer main lines surrounding the project site belong to the Orange County Sanitation District. Information gathered from the City of Fullerton and Orange County Sanitation District is shown in Exhibits C2.1 and C2.2.

During our site visit, two sanitary sewer cleanouts were located near the existing restrooms. Also, two existing sanitary sewer manholes were located during the site visit. One sewer manhole is located at the west end of the project site and the other sewer manhole is located on the public right of way along Orangethorpe Avenue. See Exhibits C4.1 and C4.2 for the location of these existing on-site utilities. All existing sanitary sewer utilities are marked in green.

2.1.4 STORM WATER

There are no existing off-site storm water lines fronting the project site. There is an existing flood channel that belongs to the Orange County Flood Control District (OCFCD) that runs from the north, underneath Orangethorpe Avenue and the project site and underneath Magnolia Avenue. Exhibit C3.1 shows the location of the existing flood channel that is labeled "Carbon Creek". Because the existing flood channel runs underneath the project site, no structures shall be built within the flood channel's easement. All proposed foundation type and location shall be designed to avoid surcharging the existing flood channel. Four (4) off-site side-opening catch basins were located during our site visit. The location of the off-site side-opening catch basins are shown on Exhibits C4.1 and C4.2. All storm water utilities are marked in blue.

Within the project site, one existing stormwater manhole, existing catch basins, existing v-gutters, and existing parkway drains were located during our site visit. The locations of these existing on-site utilities are shown in Exhibits C4.1, C4.2 and C4.3. All storm water utility features are marked in blue. The existing

catch basins on the west end of the project site are connected by an 18" reinforced concrete pipe. The existing stormwater lines are shown in Exhibit C3.1.

2.2 EXISTING DRAINAGE

Existing grades on the project site were verified in the field. The existing site utilizes gutters, ridges, and catch basins located throughout the site to capture stormwater. Exhibits C5.1, 5.2, and 5.2 shows the existing flow paths and grades that were verified at the project site.

3.0 PROPOSED IMPROVEMENT

3.1 PROPOSED UTILITIES

This section discusses all proposed wet utilities for the OCTA Fullerton Park & Ride Joint Development. This includes the following: domestic water, fire water, and sanitary sewer. All proposed schematic utility plans are based on information was obtained from the City of Fullerton Public Works Engineering Department and the Orange County Sanitation District, our site visit and limited as-built information. There was no underground utility survey performed at this site.

3.1.1 DOMESTIC WATER

The proposed domestic water system shall provide adequate water supply for operation of the buildings' domestic water requirements. Each proposed building shall have its own domestic water line and connection to the existing 8" water main line on Orangethorpe Avenue that belongs to the City of Fullerton. The existing domestic water backflow preventers are not sized to meet the demands of the proposed buildings. Thus, the existing domestic water backflow preventers cannot be used for the new development. All proposed domestic water lines will require the installation of a new water lateral, water meter and backflow preventer per the local water purveyor. Exhibit C6.0 shows the proposed utilities. Proposed domestic water lines are shown in Cyan.

3.1.2 FIRE WATER

The proposed fire water system shall provide adequate water supply for operation of the buildings' fire water requirements for sprinklers. Each proposed building shall have its own fire water line and connection to the existing 8" water main line on Orangethorpe Ave that belongs to the City of Fullerton. All proposed fire water lines will require the installation of a new water lateral, water meter and Double Check Detector Assembly backflow preventer per the local water purveyor. Exhibit C6.0 shows the proposed utilities. Proposed fire water lines are shown in Red. The proposed fire water system shall be coordinated with the local fire department.

3.1.3 SANITARY SEWER

The proposed sanitary sewer system shall be sized to meet the sewer demands of each building. A new sanitary sewer connection is proposed for each new building. Each proposed on-site sanitary sewer line will connect to an existing County sanitary sewer line per Orange County Sanitation District. Exhibit C6.0 shows the proposed utilities. Proposed sanitary sewer lines are shown in Green.

3.2 PROPOSED DEMOLITION

The proposed demolition plan for the project is shown in Exhibit CD1.0.

3.3 PROPOSED DRAINAGE

All site drainage shall be collected and controlled in non-erosive drainage devices. Drainage shall not be allowed to pond anywhere on the site, and especially not against any foundation or retaining wall. The site shall be graded and maintained such that surface drainage is directed away from structures in accordance with 2016 CBC 1804.4 or other applicable standards. In addition, drainage shall not be allowed to flow uncontrolled over any descending slope. Discharge from downspouts, roof drains and scuppers are not recommended onto unprotected soils within 5 feet of the building perimeter. Landscape irrigation shall not be within 5 feet of the building perimeter footings except when enclosed in protected planters.

Positive site drainage shall be provided away from structures, pavement, and the tops of slopes to swales or other controlled drainage structures. The building pad and pavement areas shall be fine graded such that water is not allowed to pond.

Landscaping planters immediately adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. Either a subdrain, which collects excess irrigation water and transmits it to drainage structures, or an impervious above-grade planter box shall be used.

Proposed grading shall comply with the following grading design guidelines:

- a. Planes shall be sloped for drainage, typically between 1% and 1.8%, with 1.5% considered optimum.
- b. Entrance walks and ramps will not be designed to maximum allowable slope requirements, to minimize potential non-compliant as built conditions. If the space allows, slopes will be reduced as much as possible, or grading will be designed to avoid the need for ramps.
- c. Door landings, paved lunch areas, and similar areas will be graded between 0.5% to 1.8% maximum slopes. Planes will be shaped to accommodate tables and benches.
- d. Asphalt paving flow lines will be 1% minimum to accommodate construction tolerances. If less, concrete gutter will be used with a flow line minimum slope of 0.5% to accommodate construction tolerances.

4.0 WATER QUALITY MANAGEMENT PLAN

Per the City of Fullerton, a WQMP (Water Quality Management Plan) is required if there is an addition or replacement of 5,000 or more square feet of impervious surface on an already developed site. This project site exceeds 5,000 square feet; therefore a WQMP is required. This will be accomplished by the implementation of Best Management Practices (BMPs). The determination of the type and size of BMPs will occur during the design phase of the project. A percolation test shall be performed to assess the infiltration feasibility of the site.

5.0 STORMWATER POLLUTION PREVENTION PLAN

An SWPPP (Stormwater Pollution Prevention Plan) will be required, per the State of California, if the construction area of the project exceeds 1 acre. The construction area of this project site does exceed 1 acre; therefore, SWPPP is required for this project.

6.0 DESIGN GUIDELINES

1. Demolition

- a. Perform investigation of existing conditions to assure full extent of demolition work, especially with regard to sub-surface conditions such as concrete paving overlain with asphalt, foundations of demolished buildings, and utility lines. If existing data is insufficient, additional information will be requested such as potholing, underground utility survey, or other investigation from the District.
- b. All existing site features that are to remain or to be removed will be clearly identified and defined in the demolition documents.

2. Grading

- a. Grading will be designed to facilitate staking and construction; plane grades shall be uniform to avoid warped surfaces and grade changes minimized.
- b. All areas will be graded for drainage. Walks, stairways, ramps, and other surfaces will slope away from buildings.
- c. Planes shall be sloped for drainage, typically between 1% and 1.8%, with 1.5% considered optimum.
- d. Entrance walks and ramps will not be designed to maximum allowable slope requirements, to minimize potential non-compliant as built conditions. If the space allows, slopes will be reduced as much as possible, or grading will be designed to avoid the need for ramps.
- e. Door landings, paved lunch areas, and similar areas will be graded between 0.5% to 1.8% maximum slopes. Planes will be shaped to accommodate tables and benches.
- f. Asphalt paving flow lines will be 1% minimum to accommodate construction tolerances. If less, concrete gutter will be used with a flow line minimum slope of 0.5% to accommodate construction tolerances.

7. Storm Drainage Design

- a. Site will be designed using WQMP storm water mitigation requirements.

5. Sanitary Sewers

- a. Sanitary sewers fixture units will be shown at building and street points of connection. Sewer lines will be sized per code, or hydraulic calculations shall be provided.

6. Surface Drainage

- a. Sheet flow will be directed from paved areas onto planted areas.
- b. Flow lines will be located to avoid concentration on pedestrian walks.
- c. Flow lines will be located to avoid tree wells and other objects that might obstruct drainage flow and cause ponding.
- d. Drainage from planting areas across paved areas will be avoided.
- e. Drainage over public sidewalks will be avoided. Concentrated flow over driveways and pedestrian walkways will be avoided.

7. Catch Basins, Floor Drains and Parkway Drain:

- a. Catch basins grate will be called out to withstand the load to which it will be subjected. Grate openings will be minimum opening 1/4" to 1/2" inch maximum within the direction of travel.
- b. Catch basin will be offset from main line to minimize its size and depth, and to minimize blockage of system.

- c. Cast-in-place or precast concrete catch basins will be used.
- d. If possible, drains and swales will not be located in the accessible parking areas and path of travel. If this is unavoidable, grates will be oriented 90 degrees to the direction of travel, or will be multidirectional if there is no predominant direction of travel.

8. Underground Drainage

- a. Design of drainage structures and piping systems will be based on hydrologic and hydraulic calculations. Minimum flow velocity will be 3 feet per second.
- b. Cleanouts will be installed in yard boxes at maximum spacing of 100 feet in straight runs and at each aggregate change of direction exceeding 135 degrees.

9. Water Distribution

- a. Meter Protection
 - i. An approved reduced pressure principal backflow assembly will be installed at service connection for domestic and irrigation services.
 - ii. An approved double detector assembly will be installed at service connection for fire services.

10. Water Service

- a. One meter will be provided for each domestic water, fire-protection water, and irrigation water service.
- b. The local water supplier shall be contacted for main, pressure and flow information.
- c. Meter locations shall be indicated on drawings and require approval by the water supplier.
- d. Service Control (Shut off) valve, strainers, pressure reducing valves, backflow prevention assemblies, etc. will be installed as a dual (parallel) configuration to avoid service interruptions during testing and servicing of devices. Devices will be designed and installed in an above ground, compact, low profile and serviceable valve station.

11. Piping and Design

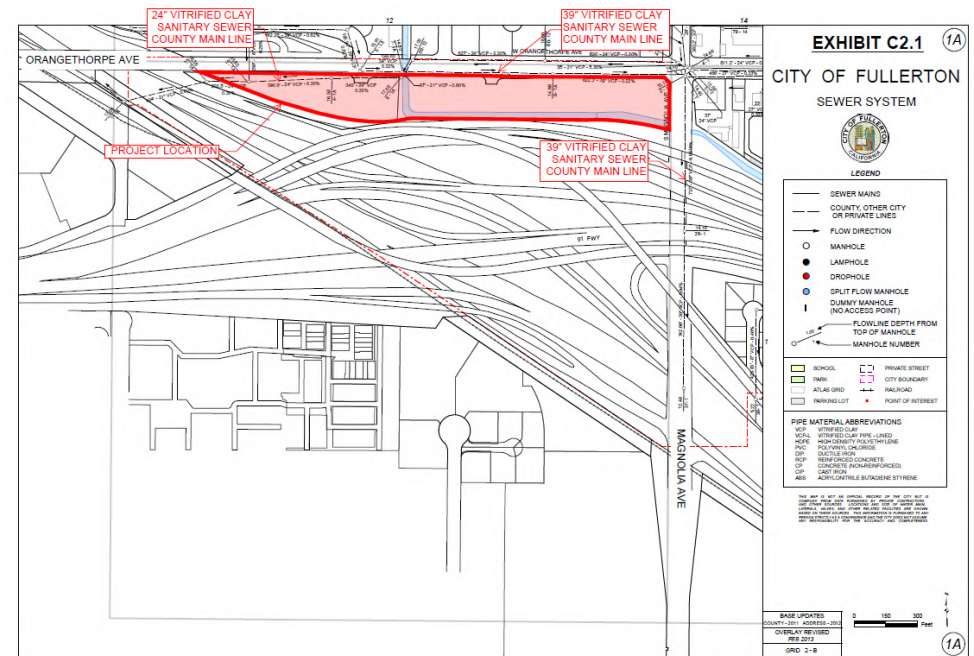
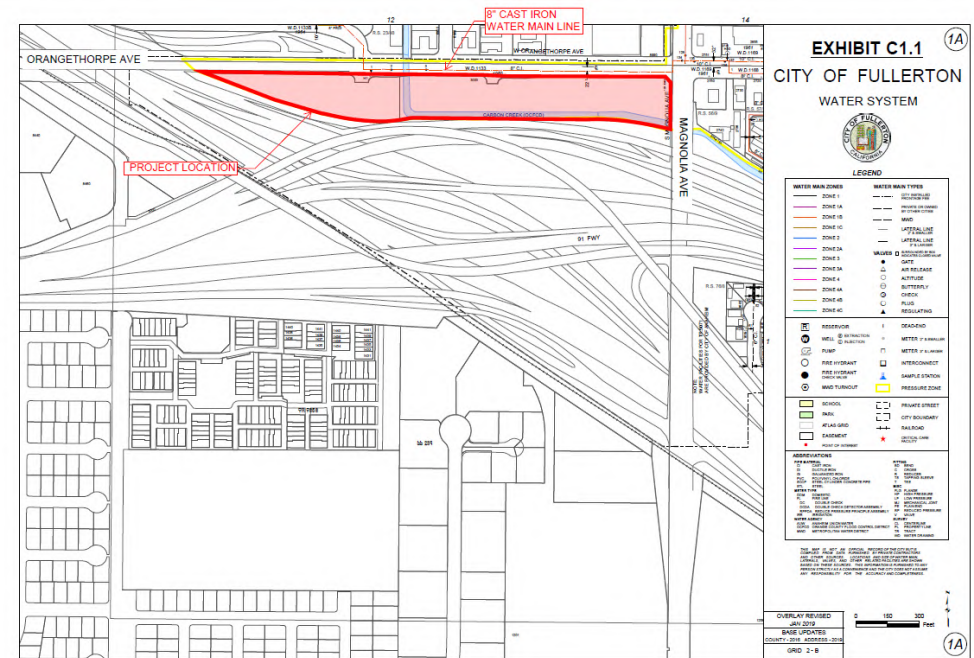
- a. Location of pressure-reducing valves will be coordinated with plumbing engineer.
- b. Tandem installations will be provided for pressure regulators, backflow preventers and strainers, to avoid shut-down testing and servicing of equipment.

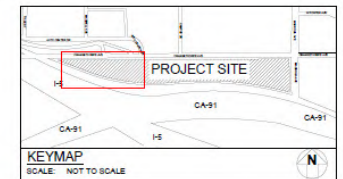
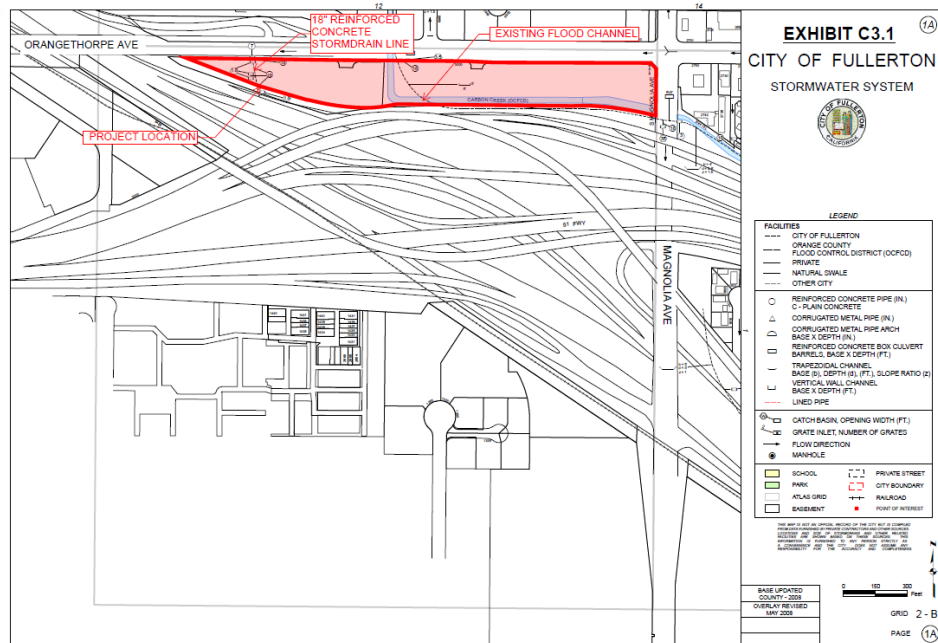
12. Flood Channel

- a. No structures shall be constructed within the existing flood channel easement.
- b. Foundation type and location shall be designed to avoid surcharging the existing flood channel.

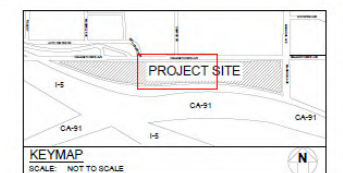
13. Code Requirements

- a. ADA Standards for Accessible Design
- b. 2019 California Building Code
- c. 2019 California Plumbing Code
- d. Water Quality Management Plan Requirements per the County of Orange National Pollutant Discharge Elimination System (NPDES) Stormwater Program
- e. Stormwater Pollution Prevention Plan per the California State Water Resources Control Board



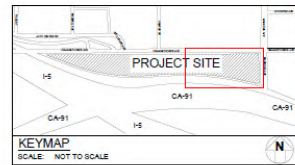
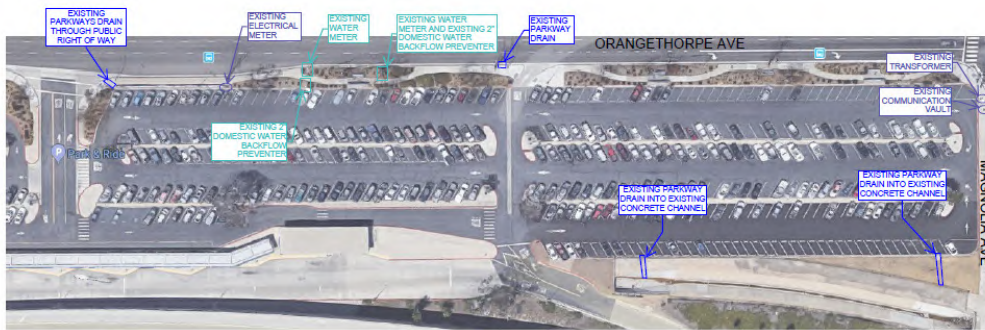
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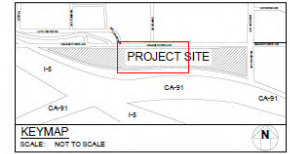
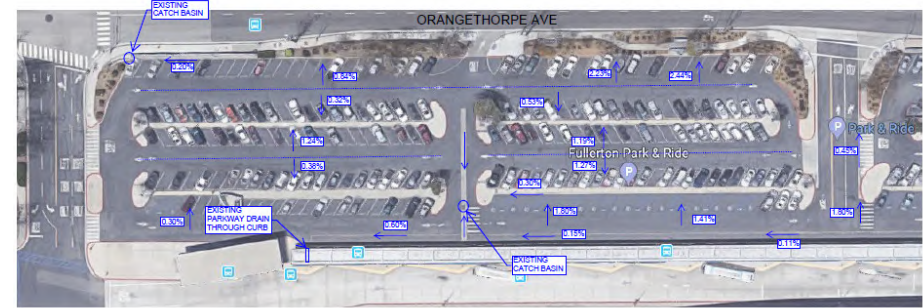
EXHIBIT C4.3: EXISTING UTILITIES



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EXHIBIT C5.2: EXISTING DRAINAGE PATTERNS

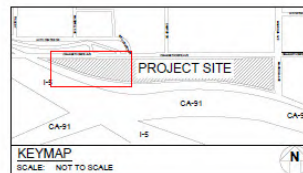
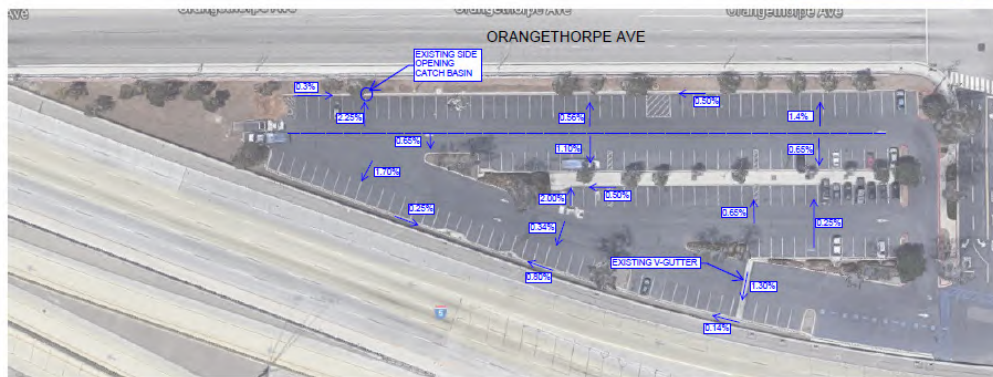
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EXHIBIT C5.1: EXISTING DRAINAGE PATTERNS

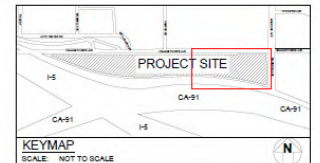
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EXHIBIT C5.3: EXISTING DRAINAGE PATTERNS

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7.2.1 MARKET STUDY AND FEASIBILITY ANALYSIS

Data Source: EPS

Case Study: Crest Apartments (13604 Sherman Way, Van Nuys)

Crest Apartments is a 64-unit PSH building located in the Van Nuys community of the City of Los Angeles. The building was developed by Skid Row Housing Trust, a non-profit focused on developing PSH units. The organization has developed 26 PSH properties, with the majority located in Downtown Los Angeles. Crest Apartments is one of only three of the organization’s properties located outside of Downtown, and the only one in the San Fernando Valley.

Crest Apartments was designed by Michael Maltzan Architects, which has designed a number of buildings for Skid Row Housing Trust. The buildings have been featured in architectural blogs and magazines, and demonstrate the possibility and potential of architectural sophistication in affordable housing development. With this approach, buildings can be designed in a thoughtful way that fit the site and surrounding area, and also create a space that is nurturing and supportive of its residents.

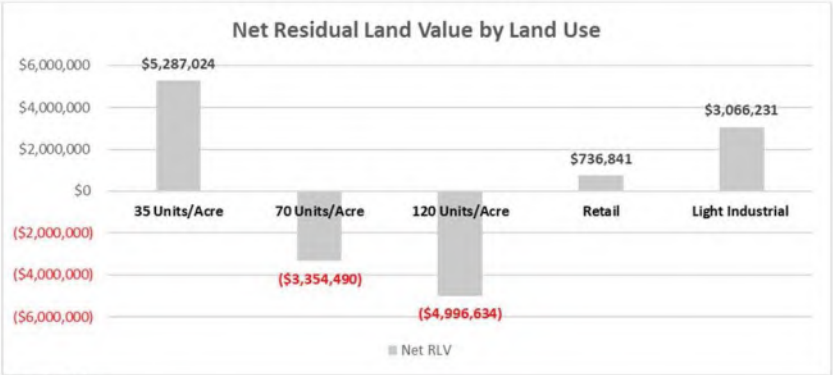
The development of the project was financed through a variety of public programs, including the Low-Income Housing Tax Credit program and the HOME Investment Partnership program administered by the city’s Housing and Community Investment Department. Funding for support services came from the Los Angeles County Department of Health Services, and are being administered by L.A. Family Housing. Subsidies for residents’ rent is being provided through project-based vouchers from the Housing Authority of the City of Los Angeles.

Table 1. Summary of Land Uses

Item	LAND USE				
	35 Units/Acre	Multifamily Residential 70 Units/Acre	120 Units/Acre	Nonresidential Retail	Light Industrial
Ability to Generate Revenue: Net Residual Land Value	\$5,287,024	(\$3,354,490)	(\$4,996,634)	\$736,841	\$3,066,231
Potential to Increase OCTA Ridership	Medium	High	High	Low	Low
Mixed-Use and Pedestrian-Friendly Development	High	High	High	Medium	Low
Provides Community Amenity	Medium	Medium	Medium	Medium	Low
Compatibility with Park & Ride Function	High	High	High	Medium	Low

Source: EPS.

Figure 1. Net Residual Land Value by Land Use



Source: EPS.

Methodology

EPS made several key assumptions to ensure that the market overview focuses on use-types that are consistent with the OCTA’s goals for developing the Fullerton Park & Ride Site. Specifically, this memorandum focuses on existing market conditions affecting demand for multifamily housing, small-scale retail, office, hotel, and small-scale industrial uses near the project site. To review these conditions, EPS evaluated residential and commercial development and pricing information to analyze market trends affecting North Orange County, including the following steps:

- Evaluated current demographics, economic activity, and growth trends in areas surrounding the OCTA Fullerton Park & Ride Site to understand opportunities and constraints associated with onsite development potential;
- Reviewed pricing, vacancy, and absorption data for various land uses in North Orange County;
- Used pro forma models to provide range of achievable residual land values for uses deemed to have market demand;
- Assessed development prototypes according to economic feasibility as well as potential to meet OCTA goals.

Site Context

The Site sits at two important intersections in North Orange County. On a regional level, the Site's location on the northern side of the I-5 and SR-91 interchange provides great access to employment and population centers as well as commercial destinations in Orange County and beyond. Additionally, the Site is located at the southwest intersection of Orangethorpe Avenue and Magnolia Avenue, two major thoroughfares in North Orange County.

Although the Site is within the city limits of Fullerton, it borders the City of Buena Park to the west. Just across the I-5/SR-91 interchange to the south and southeast is the City of Anaheim.

Map 1. Site Context



Source: Google Earth; EPS.

Map 2. Regional Context



Source: Google Earth; EPS.

Area Demographics

A review of the area's demographics indicates that the area immediately surrounding the Site is home to lower income residents when compared to the County as a whole. As shown in the table below, the median household income within 1 mile of the site is approximately \$58,000 and the median household income increases as you move farther away from the Site. The median household income within 5 miles of the Site is approximately \$71,000, roughly 83 percent of Orange County's median household income of approximately \$85,000.

Homeownership rates also increase with distance from the site. Owner-occupied units comprise 42 percent of the occupied housing stock within 1 mile from the site and 51 percent within 5 miles from the site. This compares to a County-wide homeownership rate of 54 percent. Despite lower incomes and property values near the Site, vacancy rates are consistent with regional levels at 4 percent.

North County's distance from the major employment hubs in Orange County and its historically affordable rents relative to other submarkets both play a prominent role in the more blue-collar demographic profile. However, developers are turning to in-fill sites throughout Orange County as the availability of greenfield land diminishes. Collectively, Fullerton, Buena Park, and Anaheim have had collective population growth slower than the rest of the County since 2000, as seen in **Table 3**. However, these three cities, as well as the County, have seen an accelerated rate of growth since the year 2010, and are projected to have an even higher average annual rate of population growth through 2023. This acceleration of growth in the adjacent cities will require a continued emphasis on densifying existing neighborhoods in light of an urban condition that is nearly built out.

Table 2. Demographic Profile

Demographic Variable	1-Mile	3-Mile	5-Mile	Orange County
Population	29,061	249,543	636,886	3,132,211
Households	7,550	71,296	185,654	1,017,012
Total Housing Units	7,840	74,462	193,621	1,072,121
Owner-Occupied Units	3,315	33,760	99,708	581,506
% of Homes Owner-Occupied	42%	45%	51%	54%
Renter-Occupied Units	4,234	37,536	85,947	435,506
% of Homes Renter-Occupied	54%	50%	44%	41%
Vacant Units	291	3,166	7,966	55,109
% of Homes Vacant	4%	4%	4%	5%
Owner-occupied Housing Unit Median Value [1]	\$454,244	\$489,889	\$531,750	\$666,984
Renter-occupied Housing Unit Median Contract Rent	\$1,280	\$1,288	\$1,288	\$1,499
Median Household Income	\$57,776	\$63,798	\$70,948	\$85,323
Average Household Income	\$74,407	\$84,465	\$93,604	\$119,319
Per Capital Income	\$20,614	\$24,885	\$27,804	\$39,365

Source: ESRI Business Analyst Online; US Census Bureau, 2012-2016 American Community Survey.

[1] ESRI 2018 Estimate

Table 3. Historical and Projected Population

Area [1]	2000	2010	2018	2023	Avg. Annual Growth %		
					2000-18	2010-18	2018-23
Fullerton	126,003	135,108	144,214	151,258	0.75%	0.82%	0.96%
Buena Park	77,962	80,477	83,995	88,501	0.41%	0.54%	1.05%
Anaheim	328,014	336,208	357,084	375,151	0.47%	0.76%	0.99%
Subtotal	531,979	551,793	585,293	614,910	0.53%	0.74%	0.99%
Orange County	2,846,289	3,008,855	3,221,103	3,396,718	0.69%	0.86%	1.07%

Source: California Department of Finance Historical Population Estimates; EPS.

[1] Historical population estimated for January 1 of each year according to California DOF. Projected 2023 population provided by ESRI Business Analyst.

Employment and Commercial Market Trends

According to the California Economic Development Department, Orange County had an extremely low unemployment rate of 2.8 percent in September 2018, 110 basis points lower than California's unemployment rate of 3.9 percent. Over the course of the year, Orange County had large employment gains in the business and financial service industries. However, North County is heavily reliant on the industrial and service sectors, while most white-collar employment is located in South County submarkets such as Irvine, Newport Beach, and Costa Mesa as well as north in LA. The largest employment declines over the year in Orange County were in manufacturing, with a decrease of over 3,000 jobs.

The Site sits at the convergence of two office submarkets—Fullerton and Buena Park/La Habra — neither of which are particularly choice locations for Class A Office in Orange County, and both of which have significant industrial tenant bases. In Fullerton, it has been years since office developers have brought a project of any size to market, with little in the pipeline to change this course. Developers have focused on adding apartments in this submarket instead. There is no 4 & 5 Star office inventory in Fullerton, and little likely to be added to the pipeline in the near term—there has not been any new office product delivered in the Fullerton submarket since 2008 and negative net absorption over this same period.

Although Buena Park/La Habra has seen positive absorption for office product in the submarket, rents have been flat. Buena Park/La Habra received its first injection of speculative development this cycle with the arrival of The Source Tower in 2016. The 450,000-sf project includes a mall, various entertainment and dining options, a hotel (under construction), and 96,000 sf of office. The office space is designed with tech and creative office users in mind, but as of August 2018, the project was still looking for an anchor tenant.

Cal State Fullerton (CSUF) provides a pipeline of educated employees, and supports the overall demand for commercial and rental residential real estate around the university. With an undergraduate student body of over 30,000 students, and only about 2,000 residents living in college housing, the university provides a steady stream of employees and renters. In addition to CSUF, other major office tenants and employers in Fullerton include Raytheon and St. Jude Medical Group. As such, Fullerton has become a focus for multifamily developers as these demand drivers generate strong fundamentals not found in other North County cities where employment is heavily comprised of lower paying retail, hospitality, and service jobs.

Real Estate Market Conditions

Orange County's strong economy is reflected in its real estate market. However, the prospects for certain land uses vary by submarket and site-specific characteristics. Given the Site's location and basic market indicators, EPS conducted market analysis for office, hotel, multifamily residential, retail, and light industrial uses. This section describes the market conditions for office and hotel uses, two land uses that EPS did not continue to evaluate due to our market findings of inferior site suitability for such uses.

This section provides more detail on key real estate performance indicators for multifamily residential, retail, and light industrial land uses, uses that have been judged to have potential market support on the Site. A 3-mile radius from the center of the site is used to define the trade area for multifamily residential and retail uses. The trade area for light industrial uses is comprised of the city limits of Fullerton, Buena Park, and La Palma.

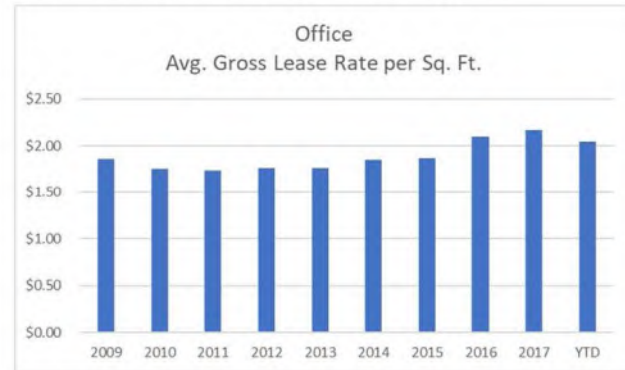
Office

Despite the strength of the County's economy, much of the development activity has centered in submarkets not near the Site area, with strong activity in South County submarkets, Anaheim's Platinum Triangle, and the areas immediately surrounding major tourist destinations. For example, over the last several years, Orange County has experienced heavy commercial development, completing 2.7 million square feet of office space countywide. Nearly all of this development occurred in South County, with 2.1 million square feet of Class A office space located in Irvine Spectrum alone.

Although the County boasts low unemployment and major office development, Fullerton and Buena Park are not choice locations for new speculative Class A office development relative to other areas in the County. Overall, the two submarkets have a dated office stock. Fullerton has office rents that are among the bottom half of the County overall, even with healthy annual rent growth. Within 3-miles of the Site, historical rent growth has been modest for office space over the last three years, as seen in **Figure 2**. Office vacancy rates within 3-miles of the Site have been trending downward from 2009 to 2016, however, negative absorption in 2017 and 2018 has caused vacancy rates to approach 9 percent, as shown in **Figure 3**.

Additionally, the site's relatively small size and its distance from other Class A office parks are not in line with the characteristics typically found in the new highly-amenitized campus-like office developments being delivered in South County, whose larger footprints offer proximity to clusters of firms and landscaped open spaces to their tenants. For these reasons, EPS concludes that the OCTA site would not attract as much developer and investor interest for office use as it would for other uses.

Figure 2. Historical Rent for Office within 3-Miles of Site



Source: CoStar

Figure 3. Historical Submarket Trends for Office within 3-Miles of Site



Source: CoStar

Hotel

According to CBRE, national lodging demand has grown every quarter since the beginning of 2010, a trend reflected in California's record-breaking year for hotel development in 2017. Demand for hotel uses in Orange County is particularly strong, buoyed by major tourist destinations such as the County's numerous theme parks and world-famous beaches. According to Atlas Hospitality Group, in Orange County there were 1,194 rooms under construction midway through 2017 compared to 2,391 rooms under construction midway through 2018, nearly doubling the number of hotel rooms under construction¹. Midway through 2018, there were 72 hotels with 13,150 rooms planned or under construction in Orange County. Most of this activity is taking place near major tourist destinations, with the cities of Anaheim and Garden Grove jointly accounting for 7,600 rooms being planned or built in the County, or approximately 58 percent of the County's expected growth.

Consistent with this robust development activity, lenders and developers have been characterized as being bullish on new California hotel construction, as they see a very positive long-term outlook, in spite of hotel construction costs that are up 20-25 percent over the last 12 months, according to the Atlas Survey. However, hotel values continue to climb due to rising per-room prices.

Southern California hotel performance metrics, including occupancy and room pricing, remain historically strong, thanks in part to a nationwide travel economy that is still humming on both the leisure and corporate sides, along with group meetings and convention business. However, certain market conditions and site specifics draw questions about the OCTA Site's suitability for such uses. Countywide occupancy is between 79 percent to 82 percent, depending on the time of

¹ "California Hotel Development Survey 2018 Mid-Year" by Atlas Hospitality Group.

year (an 80 percent occupancy rate market-wide is generally considered full-utilization)². Of the County's submarkets, North County actually had the highest rate—83 percent to 85 percent, depending on timeframe. Despite its high occupancy rate, North County had the lowest Revenue per Available Room (RevPAR) in the County at \$99 to \$103, compared to the Countywide RevPAR of \$155 to \$161, a gap likely due to a family travel market rather than being driven by business and luxury-driven hotel stays more common closer to the Class A office parks and main resort attractions³. The Site's distance from major tourist destinations and employment centers relative to competing existing and pipeline hotel supply are additional characteristics that are not particularly conducive to new hotel development in Orange County.

For these reasons, EPS concludes that the OCTA site would not attract as much developer and investor interest for hotel use as it would for other uses.

Multifamily Residential

Market research indicates that multifamily residential is in high demand—demonstrated by healthy rent growth and low vacancy rates. Market-rate units in the cities of Buena Park, Fullerton, and Anaheim have a collective vacancy currently below 4 percent, with multifamily developments selling at cap rates below 5 percent. For multifamily residential units within 3-miles of the Site, average asking rents have grown by 25 percent over the last five years, as seen in **Figure 4** below. **Figure 5** shows downward trending vacancy rates over the last ten years, with little new supply being delivered in the same time frame.

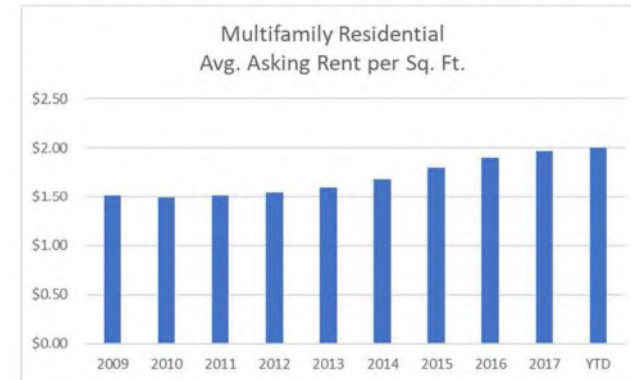
Within the North County, Buena Park, and North Anaheim Submarkets defined by CoStar, four market-rate multifamily projects have been delivered in the last five years. Project details for these projects are summarized in **Table 4**, showing monthly rents ranging from a high of \$3.05 per square foot to a low of \$1.97 per square foot.

In addition to healthy rent growth and growing demand for more housing throughout southern California, the Site seems well-suited for residential development because it is located in a predominantly residential area that is already connected to regional transportation. Multifamily residential development would be consistent with the apartments found across the street and in adjacent blocks. The Site is also near Buena Park High School, which is one block to the north. Residential land uses directly along freeways is common in the area and should not deter the marketability of residential development on the Site, especially in the current market of high demand for rental residential.

² "Hotel Markets Strong in April; CBRE Ups Outlook" by Paul Hughes. Orange County Business Journal. June 1, 2018.

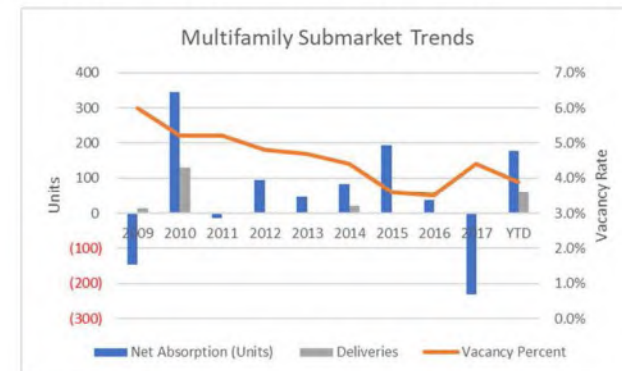
³ Ibid.

Figure 4. Historical Rent for Multifamily Residential within 3-Miles of Site



Source: CoStar

Figure 5. Historical Submarket Trends for Multifamily Residential within 3-Miles of Site



Source: CoStar

Table 4. Comparable Market-Rate Multifamily Residential Developments

Property Name	Address	City	Year Built	Land (acres)	Total Units	Units per Acre	Asking Rent Per Sq. Ft.				
							Studio	1-Bed	2-Bed	3-Bed	Total
Pearl La Floresta	420 La Cresenta Dr	Brea	2018	2.9	204	70	\$0.00	\$3.05	\$2.76	\$2.70	\$2.94
Alexan Aspect	251 Orangefair Mall	Fullerton	2017	6.4	323	51	\$2.91	\$2.73	\$2.33	\$0.00	\$2.55
On Beach	5832 Beach Blvd	Buena Park	2018	0.8	60	75	\$2.65	\$2.06	\$1.87	\$0.00	\$2.25
Parkview Apartments	6785 Knott Ave	Buena Park	2014	1.1	22	20	\$0.00	\$0.00	\$1.97	\$0.00	\$1.97
Weighted Average							\$2.73	\$2.79	\$2.41	\$2.70	\$2.63

Source: CoStar Online

Homelessness is an important issue throughout southern California and the Site's redevelopment may present an opportunity to provide housing specific to the needs of homeless populations. EPS identified two types of housing programs for the homeless that may be appropriate to incorporate as a component of the redevelopment: Transitional/Bridge Housing and Permanent Supportive Housing. Such housing concepts develop and operate outside of market conditions, with substantial financial support from public entities, non-profit organizations, and other outside resources.

Transitional (or Bridge) housing is a medium-term model of providing housing to the homeless and unstably housed. Unlike crisis housing, where individuals are provided a bed on a night-to-night basis, residents in transitional housing typically have their own room or dwelling unit, and stay anywhere from a few weeks to a few years, depending on the facility. Many transitional housing facilities are developed and operated by non-profit and faith-based organizations.

Permanent Supportive Housing (PSH) is a long-term model of housing those who are homeless or unstably housed. The model includes providing affordable dwelling units along with support services that assist residents in areas such as mental and physical health, addiction treatment, education, and job training. Many PSH buildings are developed and/or operated by non-profit entities who can provide or coordinate the provision of supportive services. The units are rented in a manner similar to other forms of affordable housing, where the residents pay some portion of their income towards rent, typically Social Security disability income, with the remainder of the rent funded by public subsidies.

Given the non-market forces that support such developments, EPS did not quantitatively evaluate these housing concepts, but a qualitative discussion of these concepts as well as relevant development case studies are included in **Appendix A**.

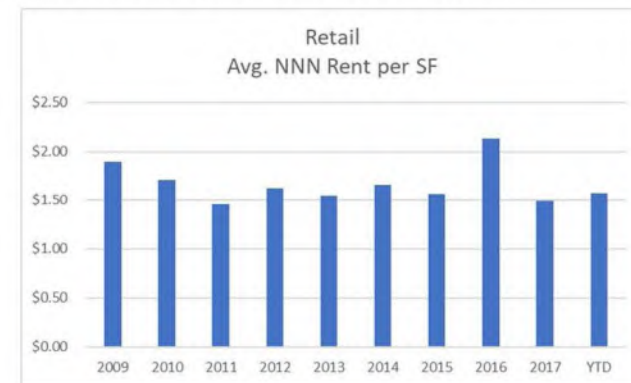
Retail

The Site's location along two major thoroughfares, as well as its continuing function as a multi-modal transit hub, suggests that a retail component may be suitable at the intersection of Magnolia Avenue and Orangethorpe Avenue. For comparably sized retail properties within 3-miles of the site, asking rent growth has been flat while net absorption has been barely positive with very little new development over the last five years, as seen in **Figures 6 and 7** below. However, the high-traffic intersection and current vacancy rates nearing 6 percent within the trade area pose some promise for including some retail uses on site. Still, the site's small size will certainly limit the ability for on-site retail uses to compete with and/or cannibalize the area's existing retail offerings, especially with more robust retail destinations nearby such as Buena

Park Place (an approximately 250,000 square foot mall) and The Source at Beach (a 450,000 square foot mixed-use complex with substantial retail and entertainment offerings).

The rise of e-commerce has changed consumer behavior in regards to retail, marked by a noticeable closure of traditional retailers (e.g. clothes, consumer products) and an increase in merchants focused on providing experiences such as food and beverage establishments. Population growth has accelerated modestly in the area since 2010 and although average incomes are lower in the area immediately surrounding the site compared to the rest of the County, the average household income within 3-miles of the site is a healthy \$84,000. These market fundamentals, combined with the Site's visibility from the freeways and access to transit through the Park & Ride, suggest potential for viable retail uses on the Site. Nontraditional retail concepts such as small-scale fitness studios and/or coffee shops may find the Site particularly appealing for the commuting customer.

Figure 6. Historical Rent for Retail within 3-Miles of Site



Source: CoStar

Figure 7. Historical Submarket Trends for Retail within 3-Miles of Site



Source: CoStar

Light Industrial

Throughout southern California, there is a shortage of industrial properties, whose uses include everything from logistics and warehousing to a whole host of light to heavy manufacturing. The demand for industrial uses and warehouse space is strong throughout southern California, driven by high population concentration, shifting consumer buying patterns related to e-commerce, and the region's role as a logistics hub. This shortage of supply, caused by both increasing demand as well as diminishing availability of land for industrial uses, has pushed vacancies way down while also putting upward pressure on rents. The scarcity of available supply and developable sites in the best locations has pushed distributors to edge cities such as those in the Inland Empire, farther and farther from customers. Orange County's 200 million square feet is 97.6 percent occupied with 1.2 million more square feet in the pipeline.

Activity related to several large buildings in the Fullerton and Buena Park industrial market can have significant impact on vacancy rates and absorption, such as the Buena Park JC Penney west coast logistics hub, which totals approximately 1 million square feet and which JC Penney sold in 2017 and plans to vacate. Given the vast difference in size between these much larger industrial properties and the Site, this analysis evaluates the real estate performance metrics for industrial properties under 10 acres in land size, which is comparable to the Site's acreage.

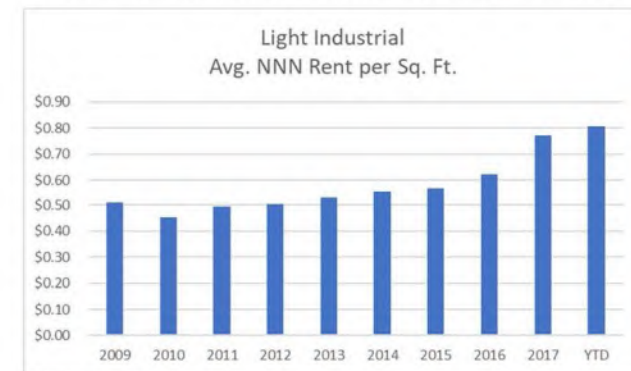
Historical rent growth for properties 10 acres and under in the cities of Fullerton and Buena Park are shown in **Figure 8** below. Industrial vacancy rates in the area have experienced a corresponding drop over the last ten years, as seen in **Figure 9**. Recent strength in the industrial sector has brought new supply to the area, with nearly 800,000 square feet delivered since 2017. The influx in new inventory explains the increase in vacancy rates over the last two years.

The Site's location in North County at the intersection of two arterial freeways, the I-5 and SR-91, makes it well-positioned to take advantage of traffic to and from LA's ports, supported by the area's industrial and service sectors. The Union Pacific Railroad also passes through a dense industrial node north of the Site in Buena Park—one of Orange County's densest concentrations of high-bay (28-foot clear height) warehouse space. For industrial uses, the Site is strategically

accessible to Los Angeles, the ports of LA and Long Beach to the west, and the Inland Empire to the east.

While the Site's location and surrounding uses and infrastructure are supportive of industrial uses, the Site's relatively small size may not be the most ideal for the type of large-scale warehouses typical of new light industrial development. Still, EPS has determined that strong regional and sub-regional demand for industrial space presents a development opportunity for OCTA's site, and thus has carried forward for feasibility and land value analysis below.

Figure 8. Historical Rent for Light Industrial Uses in Fullerton and Buena Park



Source: CoStar

Figure 9. Historical Submarket Trends for Industrial in Buena Park and Fullerton



Source: CoStar

Residual Land Value Analysis

The following section details the pro forma analysis conducted to assess the feasibility of land uses judged to have potential market support at the Site. Multifamily residential land uses were evaluated at three densities: 35 units per acre, 70 units per acre, and 120 units per acre. Nonresidential land uses evaluated include retail and light industrial development prototypes.

Methodology

Based on market information summarized in the previous section, EPS conducted a Residual Land Value (RLV) Analysis using static pro forma models. The analysis starts with five development prototypes. Residential development at 35 and 70 units per acre are representative of densities built in recently delivered multifamily developments in the area. Residential development at a higher density (120 units per acre) was also tested for feasibility purposes. Retail and industrial prototypes were tested according to site size and common floor to area ratios (FAR) for their respective land uses. The retail prototype is tested for 15,000 gross square feet of retail space at an FAR of 0.25. Feasibility of industrial uses were tested using a prototype based on an FAR of 0.4 on 3 acres of land.

The retail and industrial prototypes use parking standards consistent with the City of Fullerton Zoning Ordinance, which requires 1 parking space per 250 gross square feet of retail space and 1 parking space per 1,000 square feet of industrial space. The residential prototypes assume a City Conditional Use Permit to allow for the reduction of parking requirements to one space per unit.

Using lease rates based on market research of the surrounding area and cap rates on recent sales transactions, EPS estimated the capitalized market value of each prototype. These building values are compared to the costs to construct these development prototypes, resulting in residual land values for each prototype.

RLV Analysis Results

The results of the RLV analysis are summarized in **Table 5** below, and indicate that lower-density housing, retail, and light industrial uses may yield positive land value for OCTA, while higher density housing (70 or more units per acre) faces a feasibility challenge in the near term. **Figure 9** further illustrates the building values, developments costs, and resulting residual land values for each of the development prototypes evaluated.

For residential development, the least dense multifamily prototype has the highest residual land value due to the lower cost to construct 2-3 story residential projects relative to residential projects taller than 3 stories. This analysis assumes that residential development at 70 units per acre and 120 units per acre on the Site would require 4-7 stories, resulting in the higher costs associated with that construction type. Additionally, residential development at 35 and 70 units per acre are assumed to be surface parked, whereas development of 120 units per acre requires structured parking. Given the high cost of structured parking, assumed to be \$25,000 per space compared to \$5,000 per space for surface parking, EPS assumed a parking strategy of half surface space and half structured spaces to improve the project economics of this particular prototype. However, the resulting residual land value remained negative.

This analysis also assumes the same residential rental rate per square foot for each of the three residential prototypes. The two denser residential prototypes would have to achieve higher rents in order to support their more expensive construction costs. If the two denser communities were able to command a premium over the achievable rent for the 35 unit per acre prototype, then

their respective residual land values would rise. However, such premiums are typically associated with better views, which the adjacent freeway greatly curtails at this Site.

Retail presents a positive residual land value, indicating that the rents achievable for this prototype can support the cost of new retail construction. The light industrial use commands a much lower lease rate than the retail prototype, but the significantly lower cost to build relatively simple industrial buildings results in a positive residual land value.

Although the modest residual land value for retail might raise concerns regarding the viability of new retail construction, on-site retail offerings can also serve as a community asset. The assumed monthly lease rate for the retail prototype of \$2.00 per square foot is based on historical rent trends and current market rents for retail uses within 3-miles of the Site. However, the Site's unique setting situated at a Park & Ride location may allow retail uses to attain a modest rent premium due to its increased visibility and exposure from the Park & Ride, freeways, and access to transit. Another potential way to improve the viability of retail is to include ground-floor retail as a component of a vertical mixed-use building, which may provide opportunities for cutting retail construction costs.

Non-traditional retail concepts that complement the function of the Park & Ride, such as a car wash or fitness center that transit-riders can use before or after their commutes, may be an appropriate fit for the site. The unique nature of these concepts may alter the economic viability for a potential retail component of the Site, but have not been considered in this analysis, which has focused on more traditional "strip" or "pad" retail.

Details of commercial land sales that have sold since 2015 and within 3-miles of the Site are summarized in **Table 6**. The properties proposed for residential uses sold at a range of \$40-\$119 per square foot of land. On the OCTA Site, only the residential prototype at 35 units per acre achieved a residual land value approaching this range. Considerable increases in lease rates or a reduction in total development costs would be needed to improve the residual land values of the denser residential prototypes.

Table 6 also shows that properties proposed for retail uses sold at a range of \$21-73 per square foot of land. EPS has estimated retail rents for the OCTA Site to be \$2.00 per square foot, but on-site retail rents would have to reach \$2.50 per square foot in order to push residual land values within the range of these comparable recent commercial land sales. In the second quarter of 2018, retail rents in the Buena Park and Fullerton submarkets overall were \$2.44 per square foot and \$2.33 per square foot, respectively. However, these average submarket rents include larger retail development typologies that are not appropriate for the relatively small OCTA Site — such as malls, power centers, and neighborhood centers.

A reduction in parking requirements would alleviate the cost burden of parking and improve residual land values across all development prototypes evaluated, residential and nonresidential.

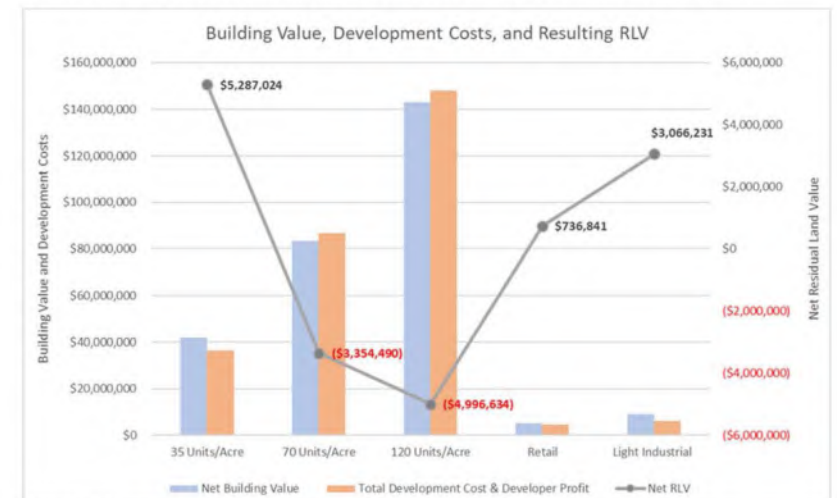
Table 5. Residual Land Value Analysis Summary

Item	LAND USE					
	Multifamily Residential			Nonresidential		
	35 Units/Acre	70 Units/Acre	120 Units/Acre	Retail	Light Industrial	
Development Assumptions						
Site Size (acres)	3.00	3.00	3.00	1.38	3.00	
Site Size (sq. ft.)	130,680	130,680	130,680	60,000	130,680	
Number of Residential Units	105	210	360			
Avg. Net Unit Size (sq. ft.)	900	900	900			
Building Efficiency Ratio	85%	85%	85%	100%	95%	
Gross Building Area	111,176	222,353	381,176	15,000	52,272	
Parking Spaces per Unit/per 1,000 SF nonresidential [1]	1.0	1.0	1.0	4.0	1.0	
Operating Assumptions						
Rent per Sq. Ft. per Month [2]	\$2.95	\$2.95	\$2.95	\$2.00	\$1.00	
Vacancy Rate	5%	5%	5%	5%	5%	
Operating Expenses	30%	30%	30%	4%	2%	
Cost Assumptions						
Hard Costs						
Basic Site Work per Sq. Ft. Land	\$5	\$5	\$5	\$5	\$5	
Building Direct Cost per gross Sq. Ft. [3]	\$194	\$222	\$222	\$169	\$62	
Soft Costs (% of Hard Costs)	30%	30%	30%	20%	20%	
Other Costs						
Development Contingency (% of Hard & Soft Costs)	5%	5%	5%	5%	5%	
Developer Fee (% of Hard and Soft Costs)	4%	4%	4%	4%	4%	
Structured Parking per Space [4]	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	
Surface Parking per Space	\$5,000	\$25,000	\$5,000	\$5,000	\$5,000	
Revenues						
Annual Net Operating Income	\$2,148,214	\$4,296,427	\$7,368,732	\$328,320	\$568,463	
Exit Cap Rate [5]	5%	5%	5%	5%	5%	
Net Building Value [6]	\$41,694,742	\$83,389,484	\$142,953,401	\$5,307,840	\$9,157,823	
Net Building Value per Unit/Building SF	\$397,093	\$397,093	\$397,093	\$354	\$175	
Costs						
Hard Costs	\$22,167,675	\$49,993,793	\$85,236,931	\$2,836,123	\$3,895,430	
Soft Costs	\$6,650,302	\$14,998,138	\$25,571,079	\$567,225	\$777,096	
Other Costs	\$3,118,618	\$11,099,274	\$18,972,721	\$606,301	\$880,988	
Total Development Costs (TDC)	\$31,936,595	\$76,091,205	\$129,780,732	\$4,009,648	\$5,343,502	
TDC per Residential Unit/Nonresidential Sq. Ft.	\$304,158	\$362,339	\$360,502	\$267	\$102	
Land Value						
Gross Residual Land Value	\$9,758,147	\$7,298,279	\$13,172,669	\$1,298,192	\$3,814,321	
Less Developer Profit of 14% [7]	(\$4,471,123)	(\$10,652,789)	(\$18,169,302)	(\$561,351)	(\$748,090)	
Net Residual Land Value	\$5,287,024	(\$3,354,490)	(\$4,996,634)	\$736,841	\$3,066,231	
RLV per Acre	\$1,762,341	(\$1,118,163)	(\$1,665,545)	\$534,946	\$1,022,077	
RLV per Land Sq. Ft.	\$40	(\$26)	(\$38)	\$12	\$23	

- [1] Residential uses assume City of Fullerton
[2] Based on CoStar market research.
[3] All Building Direct Costs assume a 10 percent premium to account for prevailing wage requirements. Direct costs based on the following sources:
Residential at 35 units per acre based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 2-3 stories.
Residential at 70 units per acre based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.
Residential at 120 units per acre based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.
Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail 2-3.
Industrial Tiltup Construction 2015 Cost Estimate
for a 50,000 sq ft building with 28 ft. clearance.
[4] Residential development at 70 units and 120 units per acre are assumed to have all structured parking. All other prototypes are assume surface parking.
[5] Based on recent property sale transactions in the area.
[6] Includes a 3% disposition cost for the sale.
[7] Net Residual Land Value is calculated as Net Building Value minus Total Development Costs minus a Developer Profit assumed at 14% of Total Development Costs.

Source: CoStar; City of Fullerton; Saylor's Current Construction Cost; Millie and Severson Industrial Tiltup Construction; EPS.

Figure 9. Building Values, Development Costs, and Resulting Residual Land Values



Source: EPS.

Table 6. Commercial Land Sales Since 2015

Address	City	Sale Date	Proposed Use	Land Area		Sale Price		
				Acres	Sq. Ft.	Total	Per Acre Land	Per SF Land
Proposed Residential Uses								
8572 Stanton Ave	Buena Park	7/31/2018	Apartment	1.40	60,984	\$7,227,500	\$5,162,500	\$119
600 W Commonwealth Ave (Part of Multi-Property Sale)	Fulleton	7/31/2018	Apartment	4.79	208,652	\$19,770,000	\$4,127,349	\$95
2730 W Ball Rd	Anaheim	8/1/2017	Townhomes	1.84	80,150	\$4,000,000	\$2,173,924	\$50
8572 Stanton Ave	Buena Park	4/13/2017	Apartment	1.40	60,984	\$2,410,000	\$1,721,429	\$40
1007-1035 N Magnolia Ave	Anaheim	5/8/2015	Apartment	2.90	126,324	\$5,525,000	\$1,905,172	\$44
8242 Orangethorpe Ave	Buena Park	2/20/2015	Condominiums	2.90	126,324	\$5,000,000	\$1,724,138	\$40
Weighted Average						\$2,894,803	\$66	
Proposed Retail Uses								
7881 Beach Blvd	Buena Park	9/13/2017	Retail, F&B	2.92	127,195	\$8,400,000	\$2,876,712	\$68
7113 Firestone Blvd	Buena Park	8/23/2016	Retail, auto	4.00	174,240	\$3,700,000	\$925,000	\$21
924-926 S Beach Blvd	Anaheim	6/3/2016	Retail, car wash	1.07	46,809	\$3,400,000	\$3,177,570	\$73
7640 Beach Blvd	Buena Park	1/15/2016	Retail, F&B	1.85	80,751	\$1,976,000	\$1,065,919	\$24
Weighted Average						\$1,776,016	\$41	

Source: CoStar Online; EPS.

Conclusion

The OCTA Fullerton Park and Ride Site offers economically feasible redevelopment potential for several land use prototypes, presenting OCTA with the opportunity to generate revenue and unlock the value of the Site's land. EPS evaluated the development feasibility of three prototypes for multifamily residential development at varying densities as well as nonresidential uses such as retail and light industrial uses. The results of the feasibility analysis are summarized in **Table 7** below, showing promise for residential development at 35 units per acre. Light industrial prototype also achieved a positive residual land value, while retail land uses resulted in a modest residual land value.

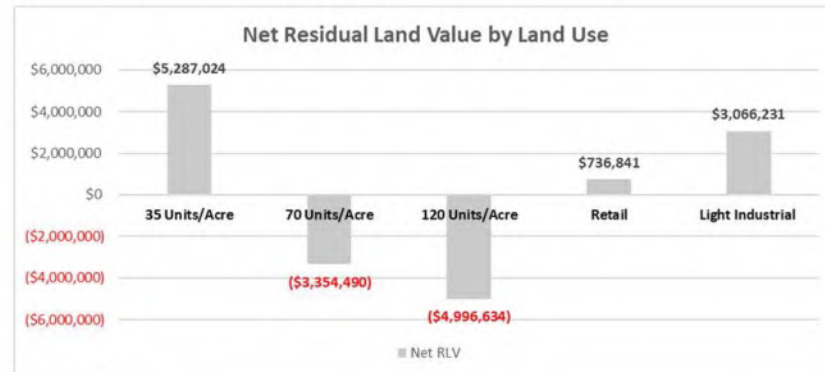
In addition to generating revenue, OCTA can also use the redevelopment of the Site to achieve a number of other goals. These goals range from increasing OCTA and transit ridership to creating a mixed-use and pedestrian-friendly environment. These goals are also listed in **Table 7**, along with the likelihood for each land use to be able to meet each goal. **Figure 10** displays the net residual value for each land use prototype analyzed.

Table 7. Ability to Achieve OCTA Goals by Land Use

Item	LAND USE			Nonresidential	
	35 Units/Acre	Multifamily Residential 70 Units/Acre	120 Units/Acre	Retail	Light Industrial
Ability to Generate Revenue: Net Residual Land Value	\$5,287,024	(\$3,354,490)	(\$4,996,634)	\$736,841	\$3,066,231
Potential to Increase OCTA Ridership	Medium	High	High	Low	Low
Mixed-Use and Pedestrian-Friendly Development	High	High	High	Medium	Low
Provides Community Amenity	Medium	Medium	Medium	Medium	Low
Compatibility with Park & Ride Function	High	High	High	Medium	Low

Source: EPS.

Figure 10. Net Residual Land Value by Land Use



Source: EPS.

Recommendations

Redevelopment of the OCTA Fullerton Park & Ride Site has the potential to generate financial value for OCTA as well as meet a number of placemaking and economic development goals. These are near-term recommendations for OCTA to guide the implementation process so as to maximize the value unlocked from the Site's redevelopment:

Prioritize Goals for Project Site. Although generating revenue for OCTA is a priority, the Site's ability to meet OCTA's non-financial goals should be considered relative to the potential to achieve those goals by other means. For example, other OCTA redevelopment sites may be better suited for and more efficient at achieving certain goals (e.g. providing housing or community assets) than the development options being contemplated at the Fullerton Site.

Evaluate Strategic Public Investment. EPS conducted a pro forma analysis demonstrating that current market conditions produce a marginally feasible project for certain land uses. To the extent that OCTA, the City of Fullerton and the City of Buena Park have goals that can be achieved through the Site's redevelopment, a collaborative public investment strategy may help certain desired land use programs overcome development feasibility hurdles. Ultimately, the need to discount land, waive or defer impact fees, and contribute outside funding/grants to achieve public sector and community objectives should be based on a refined financial assessment.

Initiate Developer Selection and Negotiations. As similar infill development projects emerge and as other redevelopment opportunities for public-private partnerships are considered for other sites throughout the County, an important next step will be to evaluate specific attributes of such a project at the Fullerton Site and initiate developer discussions.

APPENDIX A

Multifamily Housing Concepts for the Homeless

Homelessness is an important issue throughout southern California and the Site's redevelopment may present an opportunity to provide housing specific to the needs of homeless populations. EPS identified two types of housing programs for the homeless that may be appropriate to incorporate as a component of the redevelopment: Transitional/Bridge Housing and Permanent Supportive Housing. Such housing concepts develop and operate outside of market conditions, with substantial financial support from public entities, non-profit organizations, and other outside resources. Given the non-market forces that support such developments, EPS did not quantitatively evaluate these housing concepts, but provided a qualitative discussion in its place. Below are descriptions of two types of housing solutions for the homeless, followed by three case studies of successful projects.

Transitional/Bridge Housing

Transitional (or Bridge) housing is a medium-term model of providing housing to the homeless and unstably housed. Unlike crisis housing, where individuals are provided a bed on a night-to-night basis, residents in transitional housing typically have their own room or dwelling unit, and stay anywhere from two weeks to two years, depending on the facility. The housing is also combined with the provision of support services, to help transition residents into a more permanent housing situation. Transitional housing facilities often target specific segments of the homeless population, such as women, youth, LGBT individuals, or veterans.

Many transitional housing facilities are developed and operated by non-profit and faith-based organizations. While in the past they have received funding through HUD, local housing authorities, and foundations, the model is beginning to fall out of favor, with a preference being given to funding Housing First Initiatives and Permanent Supportive Housing development (see below). As a result, many transitional housing facilities are losing funding and are unable to house and support as many individuals. According to organizations that operate transitional housing, losing this model, especially before a much greater number of PSH units become available, will have (and is already having) the effect of increasing the number of people living on the street.

Permanent Supportive Housing

Permanent Supportive Housing (PSH) is a long-term model of housing those who are homeless or unstably housed. The model includes providing affordable dwelling units along with support services that assist residents in areas such as mental and physical health, addiction treatment, education, and job training.

Many PSH buildings are developed and/or operated by non-profit entities who can provide or coordinate the provision of supportive services. The units are rented in a manner similar to other forms of affordable housing, where the residents pay some portion of their income towards rent, typically Social Security disability income, with the remainder of the rent funded by public subsidies. Development of PSH buildings is also typically financed through public or institutional and corporate philanthropic sources, including grants and tax credit programs. While providing much-needed capital, these sources often come with many bureaucratic requirements and have a finite amount of funding available. Therefore, there is an interest in finding other ways to finance PSH that can complement and expand the capacity of these traditional sources.

Developers have also utilized innovative approaches to building design and construction to help save time and cost.

Case Study: Potter's Lane

Located in Orange County's Midway City, Potter's Lane is a 15-unit housing development targeting chronically homeless veterans. The project was developed by American Family Housing, a non-profit providing housing and support services to homeless and low-income individuals and families in Los Angeles, Orange, and San Bernardino counties. Monthly rent is \$1,200, but tenants only pay up to 30% of their income towards it, with the rest subsidized through HUD's Veterans Affairs Supportive Housing Voucher program administered by the Orange County Housing Authority.

The innovation at Potter's Lane was the use of shipping containers as the raw materials for the building. GrowthPoint Structures, a Los Angeles-based company that manufactures modular buildings fabricated around used shipping containers, provided the pieces, and SVA Architects designed units utilizing three containers for a total size of 480 square feet. The use of GrowthPoint's containers were not only more cost-effective than traditional materials, but the prefabricated nature of the containers and the factory's proximity to the site reduced construction time to just five months.

Just over half of the financing for the project came from a variety of public funding sources, including, the State Veteran's Housing and Homeless Prevention Program, Orange County Housing Successor Agency funds, and the Federal Home Loan Bank (FHLB) Affordable Housing Program. The remainder of the financing came from the Home Depot Foundation, a conventional loan, and American Family Housing's own funding sources.

Case Study: PSH Colden

PSH Colden, located in South Los Angeles, is an eight-unit building under development by FlyAwayHomes targeting the chronically homeless. Like Potter's Lane, the building is being constructed using the modular fabricated shipping containers from GrowthPoint Structures. The eight four-bedroom units will each house four individuals, where residents have their own bedroom and share common living and kitchen space with the other three.

FlyAwayHomes is a social benefit organization founded by a local development company and property management company, in partnership with The People Concern, a Los Angeles social services agency. The innovation with PSH Colden is that, unlike the vast majority of PSH and other affordable housing projects, the development is being financed through private investment. FlyAwayHomes will lease the building to The People Concern, generating a cash flow and providing a modest return to investors. The People Concern will in turn find qualified residents, operate the building, and provide support services. It is anticipated that about one-third of the tenants will pay rent of \$550/month from their Social Security disability income, while the remaining two-thirds will have their rent of \$800/month paid for through LA County's Housing for Health project.

By using private financing, the developer did not need to go through the application process and adhere to all of the standards and requirements dictated by public financing, such as paying a prevailing wage. This led to a less expensive and accelerated development process. More importantly, the success of this model will significantly open up funding sources and lead to more PSH development than could be supported through the sole use of the finite funds available through public programs.

Case Study: Crest Apartments (13604 Sherman Way, Van Nuys)

Crest Apartments is a 64-unit PSH building located in the Van Nuys community of the City of Los Angeles. The building was developed by Skid Row Housing Trust, a non-profit focused on developing PSH units. The organization has developed 26 PSH properties, with the majority located in Downtown Los Angeles. Crest Apartments is one of only three of the organization's properties located outside of Downtown, and the only one in the San Fernando Valley.

Crest Apartments was designed by Michael Maltzan Architects, which has designed a number of buildings for Skid Row Housing Trust. The buildings have been featured in architectural blogs and magazines, and demonstrate the possibility and potential of architectural sophistication in affordable housing development. With this approach, buildings can be designed in a thoughtful way that fit the site and surrounding area, and also create a space that is nurturing and supportive of its residents.

The development of the project was financed through a variety of public programs, including the Low-Income Housing Tax Credit program and the HOME Investment Partnership program administered by the city's Housing and Community Investment Department. Funding for support services came from the Los Angeles County Department of Health Services, and are being administered by L.A. Family Housing. Subsidies for residents' rent is being provided through project-based vouchers from the Housing Authority of the City of Los Angeles.

7.2.2 MARKET STUDY AND FEASIBILITY ANALYSIS SUMMARY

Data Source: EPS

EXECUTIVE SUMMARY

To: Ray Whitchurch, IBI Group
From: Darin Smith and Julie Cooper
Subject: OCTA Fullerton Park & Ride Joint Development Market Study and Feasibility Analysis; EPS #184011
Date: July 11, 2019

The Orange County Transportation Authority (OCTA) is considering development options on its Fullerton Park & Ride property (Site) at the southwest corner of Orangethorpe and Magnolia Avenues. Although the Site is a functioning Park & Ride facility servicing several OCTA and Metro bus routes, the property's parking lots are underutilized, presenting the potential for development while retaining its role as a multi-modal transit hub. OCTA's goals for the site include a development that generates revenue as well as increases transit ridership.

As part of a consulting team led by IBI Group, Economic & Planning Systems, Inc. (EPS) has evaluated the market viability and financial feasibility of a variety of uses, including multifamily residential at various densities, retail, office, hotel, and light industrial uses. EPS produced a detailed memorandum on December 10, 2018, and the firm's conclusions are summarized in this Executive Summary.

Summary of Findings

1. OCTA's Fullerton Park & Ride property's market position is strengthened by its strong accessibility and visibility due to its transit service and adjacency to the region's freeway system (the I-5 / SR 91 interchange) as well as frontage on significant surface streets.
2. Residential development appears to be in demand at and around the OCTA site, given regional and local growth patterns, and can yield strong benefits to OCTA in terms of transit ridership. However, local market-rate rents are modest compared to some other areas, which will affect the financial feasibility of new housing, particularly at higher densities that cost more to construct (due to structured parking, life safety requirements, etc.).
3. Office development does not appear to be in high demand in the vicinity of the OCTA property, and is not recommended as a prioritized land use.

Executive Summary
OCTA Fullerton Park & Ride Joint Development Market Study and Feasibility Analysis

July 11, 2019
Page 2

4. Hotel use is also not recommended as a prioritized use, as the local area commands relatively low room rates and the site is not competitive in terms of convenience with the many other hotels serving tourist destinations in the vicinity.
5. Retail development does appear to be in demand, given the site's strong accessibility and visibility, and should be considered a viable use as a stand-alone development or as part of a mixed-use development.
6. Light industrial development is also in demand, though such use may not be optimally compatible with the typical ridership and placemaking goals of transit-oriented development.
7. The OCTA site could also be an appropriate location for affordable housing or various housing solutions meant to serve the County's homeless population, but would not be expected to generate significant land revenues for OCTA.
8. EPS prepared financial analysis that compares the value of potential market-supported developments to their construction costs, and yields "residual land values" estimating what OCTA might expect to receive for the sale or lease of the property. This analysis indicated that lower-density multifamily may yield the highest land values, followed by light industrial uses. Higher-density housing with structured parking appears to have feasibility challenges in the near term, as they have higher construction costs while the value of the units does not increase proportionately.
9. When considering the potential disposition of its property at the Fullerton Park & Ride, OCTA will account for a variety of factors including transit ridership impacts, placemaking and community compatibility, and local and regional needs in addition to maximizing revenue from the land disposition. **Table 1** below characterizes how each land use tested for the Site addresses a variety of OCTA goals.

Table 1. Summary of Land Uses and OCTA Objectives

OCTA Objective	LAND USE				
	Multifamily Residential			Nonresidential	
	35 Units/Acre	70 Units/Acre	120 Units/Acre	Retail	Light Industrial
Potential Land Value to OCTA	High	Low	Low	Medium	High
Potential OCTA Ridership Gains	Medium	High	High	Low	Low
Mixed-Use & Pedestrian-Friendly	High	High	High	Medium	Low
Provides Community Amenity	Medium	Medium	Medium	Medium	Low
Compatible with Park & Ride	High	High	High	Medium	Low

Source: EPS.

10. As market conditions evolve, developers may be more optimistic about higher density housing or other uses than this analysis suggests. EPS recommends that OCTA be realistic in their expectations regarding financial returns from the land itself, but also aspirational about the long-term use of the property. A developer solicitation process that encourages creativity to meet a variety of objectives, rather than simply maximizing land value, may yield very positive results for OCTA and the local community.

The Economics of Land Use



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FULLERTON PARK-AND-RIDE JOINT DEVELOPMENT STUDY (REPORT)

Orange County Transportation Authority

7.3 PROFORMAS

Data Source: EPS

OCTA Fullerton Joint Development
Land Use Prototypes and Residual Land Value Summary

LINEAR PLAN

Item	LAND USE						
	Apartments	Micro Units	Permanent Supportive Housing	Office	Retail	Private Structured Parking	OCTA Structured Parking
Development Assumptions							
Number of Residential Units	130	86	28				
Avg. Net Unit Size (sq. ft.)	603	300	394				
Rentable Sq. Ft.	78,447	25,806	11,042	62,595	18,000		
Building Efficiency Ratio	85%	85%	85%	90%	100%		
Gross Building Area	92,290	30,360	12,990	69,550	18,000		
Parking Spaces per Unit/per 1,000 SF nonresidential	0.00	0.00	0.00	0.00	0.00		
Total Parking Spaces	0	0	0			494	56
Net New Parking Spaces [1]	0	0	0	0	0	494	56
Operating Assumptions							
Rent per Sq. Ft. per Month [2]	\$3.05	\$3.50	\$1.23	\$2.25	\$2.00		
Vacancy Rate	5%	5%	5%	5%	5%		
Operating Expenses	30%	30%	100%	20%	4%		
Cost Assumptions							
Hard Costs							
Basic Site Work per gross Sq. Ft.	\$5	\$5	\$5	\$5	\$5		
Building Direct Cost per gross Sq. Ft. [3]	\$222	\$244	\$222	\$169	\$144		
Structured Parking per Space [3]	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Soft Costs (% of Hard Costs)	30%	30%	30%	20%	20%	20%	20%
Other Costs							
Development Contingency (% of Hard & Soft Costs)	5%	5%	5%	5%	5%	5%	5%
Developer Fee (% of Hard and Soft Costs)	4%	4%	4%	4%	4%	4%	4%
Revenues							
Annual Net Operating Income	\$1,909,309	\$720,762	\$0	\$1,284,449	\$393,984		
Desired Yield on Cost [4]	5.50%	5.50%	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$34,714,716	\$13,104,756	\$0	\$17,125,992	\$5,253,120		
Net Building Value per Unit/Building SF	\$267,036	\$152,381	\$0	\$246.24	\$291.84	N/A	N/A
Costs							
Hard Costs (including Parking)	\$20,940,715	\$7,562,414	\$2,947,447	\$12,101,700	\$2,683,347	\$12,350,000	\$1,400,000
Soft Costs	\$6,262,215	\$2,268,724	\$884,234	\$2,420,340	\$536,569	\$2,470,000	\$280,000
Other Costs	\$2,450,064	\$884,802	\$344,851	\$1,306,984	\$289,801	\$1,333,800	\$151,200
Total Development Costs (TDC)	\$29,672,994	\$10,715,940	\$4,176,533	\$15,829,024	\$3,509,818	\$16,153,800	\$1,831,200
TDC per Residential Unit/Commercial SF/Stall	\$228,254	\$124,604	\$149,162	\$227.59	\$194.99	\$32,700	\$32,700
Land Value							
Supportable Residual Land Value	\$5,041,722	\$2,388,816	\$0	\$1,296,968	\$1,743,302	-\$16,153,800	-\$1,831,200
Land Value per Unit or Bldg SF	\$38,782	\$27,777	\$0	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				PRIVATE	\$10,470,808	PARKING	-\$17,985,000
Starting Annual Ground Lease at 6% of Value					\$628,248		
Annual Debt Service on Parking Costs [5]							-\$1,169,950
Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]							38
NPV of OCTA Revenues over 50 Years at 5% Discount Rate							-\$1,958,727

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 550 structured parking spaces and 363 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction. Micro-units get another 10% premium. PSH units are priced at 30% AMI for a 1-person household.

[3] All building Direct Costs assume prevailing wage requirements and are based on the following sources:

Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories, plus a 10% premium per sq. ft. for micro units.

Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking.

[4] Based on recent property sale transactions in the area and LPS professional judgment.

[5] Assumes OCTA issues debt for full structured parking cost at 6% interest with 30-year amortization.

[6] Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

Source: IBI Group; CoStar; Saylor's Current Construction Costs 2018; EPS.

OCTA Fullerton Joint Development
Land Use Prototypes and Residual Land Value Summary

LAYERED PLAN

Item	LAND USE						
	Apartments	Micro Units	Permanent Supportive Housing	Office	Retail	Private Structured Parking	OCTA Structured Parking
Development Assumptions							
Number of Residential Units	200	20	16				
Avg. Net Unit Size (sq. ft.)	600	306	383				
Rentable Sq. Ft.	119,969	6,120	6,120	35,901	32,170		
Building Efficiency Ratio	85%	85%	85%	90%	100%		
Gross Building Area	141,140	7,200	7,200	39,690	32,170		
Parking Spaces per Unit/per 1,000 SF nonresidential	0.00	0.00	0.00	0.00	0.00		
Total Parking Spaces	0	0	0			519	272
Net New Parking Spaces [1]	0	0	0	0	0	519	272
Operating Assumptions							
Rent per Sq. Ft. per Month [2]	\$3.05	\$3.50	\$1.27	\$2.25	\$2.00		
Vacancy Rate	5%	5%	5%	5%	5%		
Operating Expenses	30%	30%	100%	20%	4%		
Cost Assumptions							
Hard Costs							
Basic Site Work per gross Sq. Ft.	\$5	\$5	\$5	\$5	\$5		
Building Direct Cost per gross Sq. Ft. [3]	\$222	\$244	\$222	\$169	\$144		
Structured Parking per Space [3]	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Soft Costs (% of Hard Costs)	30%	30%	30%	20%	20%	20%	20%
Other Costs							
Development Contingency (% of Hard & Soft Costs)	5%	5%	5%	5%	5%	5%	5%
Developer Fee (% of Hard and Soft Costs)	4%	4%	4%	4%	4%	4%	4%
Revenues							
Annual Net Operating Income	\$2,919,925	\$170,932	\$0	\$736,689	\$704,137		
Desired Yield on Cost [4]	5.50%	5.50%	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$53,089,554	\$3,107,847	\$0	\$9,822,514	\$9,388,493		
Net Building Value per Unit/Building SF	\$265,448	\$155,392	\$0	\$246.24	\$291.84	N/A	N/A
Costs							
Hard Costs (including Parking)	\$32,024,841	\$1,793,458	\$1,633,689	\$6,940,860	\$4,795,738	\$12,975,000	\$6,800,000
Soft Costs	\$9,507,452	\$538,037	\$490,107	\$1,388,172	\$959,148	\$2,595,000	\$1,360,000
Other Costs	\$3,746,906	\$209,835	\$191,142	\$749,613	\$517,940	\$1,401,300	\$734,400
Total Development Costs (TDC)	\$45,279,200	\$2,541,330	\$2,314,937	\$9,078,645	\$6,272,825	\$16,971,300	\$8,894,400
TDC per Residential Unit/Commercial SF/Stall	\$228,896	\$127,066	\$144,684	\$227.59	\$194.99	\$32,700	\$32,700
Land Value							
Supportable Residual Land Value	\$7,710,355	\$566,518	\$0	\$743,869	\$3,115,668	-\$16,971,300	-\$8,894,400
Land Value per Unit or Bldg SF	\$38,552	\$28,326	\$0	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				PRIVATE	\$12,136,409	PARKING	-\$25,865,700
Starting Annual Ground Lease at 6% of Value					\$728,185		
Annual Debt Service on Parking Costs [5]							-\$1,682,601
Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]							44
NPV of OCTA Revenues over 50 Years at 5% Discount Rate							-\$7,290,113

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 791 structured parking spaces and 140 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction. Micro-units get another 10% premium. PSH units are priced at 30% AMI for a 1-person household.

[3] All building Direct Costs assume prevailing wage requirements and are based on the following sources:

Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories, plus a 10% premium per sq. ft. for micro units.

Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking.

[4] Based on recent property sale transactions in the area and LPS professional judgment.

[5] Assumes OCTA issues debt for full structured parking cost at 6% interest with 30-year amortization.

[6] Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

Source: IBI Group; CoStar; Saylor's Current Construction Costs 2018; EPS.

OCTA Fullerton Joint Development
Land Use Prototypes and Residual Land Value Summary

HORSESHOE PLAN

Item	LAND USE						
	Apartments	Micro Units	Permanent Supportive Housing	Office	Retail	Private Structured Parking	OCTA Structured Parking
Development Assumptions							
Number of Residential Units	50	70	26				
Avg. Net Unit Size (sq. ft.)	592	304	383				
Rentable Sq. Ft.	29,597	21,250	9,945	53,496	32,365		
Building Efficiency Ratio	85%	85%	85%	90%	100%		
Gross Building Area	34,820	25,000	11,700	59,440	32,365		
Parking Spaces per Unit/per 1,000 SF nonresidential	0.00	0.00	0.00	0.00	0.00		
Total Parking Spaces	0	0	0	0	0	421	129
Net New Parking Spaces [1]	0	0	0	0	0	421	129
Operating Assumptions							
Rent per Sq. Ft. per Month [2]	\$3.05	\$3.50	\$1.27	\$2.25	\$2.00		
Vacancy Rate	5%	5%	5%	5%	5%		
Operating Expenses	30%	30%	100%	20%	4%		
Cost Assumptions							
Hard Costs							
Basic Site Work per gross Sq. Ft.	\$5	\$5	\$5	\$5	\$5		
Building Direct Cost per gross Sq. Ft. [3]	\$222	\$244	\$222	\$169	\$144		
Structured Parking per Space [3]	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Soft Costs (% of Hard Costs)	30%	30%	30%	20%	20%	20%	20%
Other Costs							
Development Contingency (% of Hard & Soft Costs)	5%	5%	5%	5%	5%	5%	5%
Developer Fee (% of Hard and Soft Costs)	4%	4%	4%	4%	4%	4%	4%
Revenues							
Annual Net Operating Income	\$720,361	\$593,513	\$0	\$1,097,738	\$708,405		
Desired Yield on Cost [4]	5.50%	5.50%	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$13,097,480	\$10,791,136	\$0	\$14,636,506	\$9,445,402		
Net Building Value per Unit/Building SF	\$261,950	\$154,159	\$0	\$246.24	\$291.84	N/A	N/A
Costs							
Hard Costs (including Parking)	\$7,900,701	\$6,227,284	\$2,654,745	\$10,342,560	\$4,824,807	\$10,525,000	\$3,225,000
Soft Costs	\$2,370,210	\$1,868,185	\$796,423	\$2,068,512	\$964,951	\$2,105,000	\$645,000
Other Costs	\$924,382	\$729,592	\$310,695	\$1,116,998	\$521,078	\$1,136,700	\$348,300
Total Development Costs (TDC)	\$11,195,294	\$8,824,062	\$3,761,773	\$13,528,068	\$6,310,848	\$13,766,700	\$4,218,300
TDC per Residential Unit/Commercial SF/Stall	\$223,906	\$126,058	\$144,684	\$227.59	\$194.99	\$32,700	\$32,700
Land Value							
Supportable Residual Land Value	\$1,902,186	\$1,967,075	\$0	\$1,108,437	\$3,134,554	-\$13,766,700	-\$4,218,300
Land Value per Unit or Bldg SF	\$38,044	\$28,101	\$0	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES							
Starting Annual Ground Lease at 6% of Value				PRIVATE	\$8,112,252	PARKING	-\$17,985,000
Annual Debt Service on Parking Costs [5]					\$486,735		
Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]							46
NPV of OCTA Revenues over 50 Years at 5% Discount Rate							-\$5,568,655

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 550 structured parking spaces and 281 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction. Micro-units get another 10% premium. PSH units are priced at 30% AMI for a 1-person household.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories, plus a 10% premium per sq. ft. for micro units.

Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for store, retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking

[4] Based on recent property sale transactions in the area and LPS professional judgment.

[5] Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

[6] Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

Source: IBI Group; CoStar; Saylor's Current Construction Costs 2018; EPS.

OCTA Fullerton Joint Development
Land Use Prototypes and Residual Land Value Summary

DEVELOPER'S OPTION 1 PLAN

Item	LAND USE			
	Apartments	Commercial	Private Structured Parking	OCTA Structured Parking
Development Assumptions				
Number of Residential Units	424			
Avg. Net Unit Size (sq. ft.)	528			
Rentable Sq. Ft.	223,720	24,100		
Building Efficiency Ratio	85%	100%		
Gross Building Area	263,200	24,100		
Parking Spaces per Unit/per 1,000 SF nonresidential	0.00	0.00		
Total Parking Spaces	0	0	506	88
Net New Parking Spaces [1]	0	0	506	88
Operating Assumptions				
Rent per Sq. Ft. per Month [2]	\$3.05	\$2.00		
Vacancy Rate	5%	5%		
Operating Expenses	30%	4%		
Cost Assumptions				
Hard Costs				
Basic Site Work per gross Sq. Ft.	\$5	\$5		
Building Direct Cost per gross Sq. Ft. [3]	\$222	\$144		
Structured Parking per Space [3]	\$25,000	\$25,000	\$25,000	\$25,000
Soft Costs (% of Hard Costs)	30%	20%	20%	20%
Other Costs				
Development Contingency (% of Hard & Soft Costs)	5%	5%	5%	5%
Developer Fee (% of Hard and Soft Costs)	4%	4%	4%	4%
Revenues				
Annual Net Operating Income	\$5,445,121	\$527,501		
Desired Yield on Cost [4]	5.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$99,002,201	\$7,033,344		
Net Building Value per Unit/Building SF	\$233,496	\$291.84	N/A	N/A
Costs				
Hard Costs (including Parking)	\$59,720,406	\$3,592,704	\$12,650,000	\$2,200,000
Soft Costs	\$17,916,122	\$718,541	\$2,530,000	\$440,000
Other Costs	\$6,987,288	\$388,012	\$1,366,200	\$237,600
Total Development Costs (TDC)	\$84,623,816	\$4,699,256	\$16,546,200	\$2,877,600
TDC per Residential Unit/Commercial SF/Stall	\$199,584	\$194.99	\$32,700	\$32,700
Land Value				
Supportable Residual Land Value	\$14,378,386	\$2,334,088	-\$16,546,200	-\$2,877,600
Land Value per Unit or Bldg SF	\$33,911	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				
Starting Annual Ground Lease at 6% of Value	PRIVATE	\$16,712,473	PARKING	-\$19,423,800
Annual Debt Service on Parking Costs [5]		\$1,002,748		
Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]				24
NPV of OCTA Revenues over 50 Years at 5% Discount Rate				\$6,155,760

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 594 structured parking spaces and 325 retained surface spaces.

OCTA Fullerton Joint Development
Land Use Prototypes and Residual Land Value Summary

DEVELOPER'S OPTION 2 PLAN

Item	LAND USE			
	Apartments	Commercial	Private Structured Parking	OCTA Structured Parking
Development Assumptions				
Number of Residential Units	466			
Avg. Net Unit Size (sq. ft.)	534			
Rentable Sq. Ft.	248,829	19,310		
Building Efficiency Ratio	85%	100%		
Gross Building Area	292,740	19,310		
Parking Spaces per Unit/per 1,000 SF nonresidential	0.00	0.00		
Total Parking Spaces	0	0	533	266
Net New Parking Spaces [1]	0	0	533	266
Operating Assumptions				
Rent per Sq. Ft. per Month [2]	\$3.05	\$2.00		
Vacancy Rate	5%	5%		
Operating Expenses	30%	4%		
Cost Assumptions				
Hard Costs				
Basic Site Work per gross Sq. Ft.	\$5	\$5		
Building Direct Cost per gross Sq. Ft. [3]	\$222	\$144		
Structured Parking per Space [3]	\$25,000	\$25,000	\$25,000	\$25,000
Soft Costs (% of Hard Costs)	30%	20%	20%	20%
Other Costs				
Development Contingency (% of Hard & Soft Costs)	5%	5%	5%	5%
Developer Fee (% of Hard and Soft Costs)	4%	4%	4%	4%
Revenues				
Annual Net Operating Income	\$6,056,249	\$422,657		
Desired Yield on Cost [4]	5.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$110,113,619	\$5,635,430		
Net Building Value per Unit/Building SF	\$236,295	\$291.84	N/A	N/A
Costs				
Hard Costs (including Parking)	\$66,423,069	\$2,878,635	\$13,325,000	\$6,650,000
Soft Costs	\$19,926,921	\$575,727	\$2,665,000	\$1,330,000
Other Costs	\$7,771,499	\$310,893	\$1,439,100	\$718,200
Total Development Costs (TDC)	\$94,121,489	\$3,765,255	\$17,429,100	\$8,698,200
TDC per Residential Unit/Commercial SF/Stall	\$201,977	\$194.99	\$32,700	\$32,700
Land Value				
Supportable Residual Land Value	\$15,992,130	\$1,870,176	-\$17,429,100	-\$8,698,200
Land Value per Unit or Bldg SF	\$34,318	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES				
Starting Annual Ground Lease at 6% of Value	PRIVATE	\$17,862,306	PARKING	-\$26,127,300
Annual Debt Service on Parking Costs [5]		\$1,071,738		
Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]				-1,699,618
NPV of OCTA Revenues over 50 Years at 5% Discount Rate				34
				\$1,212,155

[1] For these calculations, the parking costs for housing and commercial spaces are assumed to be provided as structured parking. Site plan shows 799 structured parking spaces and 160 retained surface spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.

Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking

[4] Based on recent property sale transactions in the area and EPS professional judgment.

[5] Assumes OCTA issues debt for full structured parking cost at 5% interest with 30-year amortization.

[6] Assumes ground lease payments escalate 2% annually while debt service payment remain constant.

Source: IBI Group, CoStar, Saylor's Current Construction Costs 2018; EPS.

OCTA Fullerton Joint Development
Land Use Prototypes and Residual Land Value Summary

PHASED PLAN

Item	LAND USE				
	Apartments	Office	Retail	Private Structured Parking	OCTA Structured Parking
Development Assumptions					
Number of Residential Units	82				
Avg. Net Unit Size (sq. ft.)	522				
Rentable Sq. Ft.	42,840	27,900	10,800		
Building Efficiency Ratio	85%	90%	100%		
Gross Building Area	50,400	31,000	10,800		
Parking Spaces per Unit/per 1,000 SF nonresidential	0.00	0.00	0.00		
Total Parking Spaces	0	0	0	0	0
Net New Parking Spaces [1]	0	0	0	0	0
Operating Assumptions					
Rent per Sq. Ft. per Month [2]	\$3.05	\$2.25	\$2.00		
Vacancy Rate	5%	5%	5%		
Operating Expenses	30%	20%	4%		
Cost Assumptions					
Hard Costs					
Basic Site Work per gross Sq. Ft.	\$5	\$5	\$5		
Building Direct Cost per gross Sq. Ft. [3]	\$222	\$169	\$144		
Structured Parking per Space [3]	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Soft Costs (% of Hard Costs)	30%	20%	20%	20%	20%
Other Costs					
Development Contingency (% of Hard & Soft Costs)	5%	5%	5%	5%	5%
Developer Fee (% of Hard and Soft Costs)	4%	4%	4%	4%	4%
Revenues					
Annual Net Operating Income	\$1,042,683	\$572,508	\$236,390		
Desired Yield on Cost [4]	5.50%	7.50%	7.50%		
Net Building Value (Supportable Development Costs)	\$18,957,868	\$7,833,440	\$3,151,872		
Net Building Value per Unit/Building SF	\$231,194	\$246.24	\$291.84	N/A	N/A
Costs					
Hard Costs (including Parking)	\$11,435,822	\$5,394,000	\$1,610,008	\$0	\$0
Soft Costs	\$3,430,747	\$1,078,800	\$322,002	\$0	\$0
Other Costs	\$1,337,991	\$582,552	\$173,881	\$0	\$0
Total Development Costs (TDC)	\$16,204,560	\$7,055,352	\$2,105,891	\$0	\$0
TDC per Residential Unit/Commercial SF/Stall	\$197,617	\$227.59	\$194.99		
Land Value					
Supportable Residual Land Value	\$2,753,308	\$578,088	\$1,045,981	\$0	\$0
Land Value per Unit or Bldg SF	\$33,577	\$18.65	\$96.85		
SUM OF TOTAL PROGRAM LAND VALUES					
Starting Annual Ground Lease at 6% of Value		PRIVATE	\$4,377,377	PARKING	\$0
Annual Debt Service on Parking Costs [5]			\$262,643		
Years of Ground Lease Payment until OCTA Parking Costs are Repaid [6]					\$0
NPV of OCTA Revenues over 50 Years at 5% Discount Rate					\$6,699,869

[1] For these calculations, the housing, office, and retail developments are assumed to utilize existing spaces.

[2] Based on CoStar market research for smaller units, with 10% premium for new construction.

[3] All Building Direct Costs assume prevailing wage requirements and are based on the following sources:

Residential based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Apartment, 4-7 stories.

Office based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles.

Retail based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Store, Retail, less an assumed savings of \$25 because the proposed retail is in the ground floor of residential and garage buildings.

Structured parking based on Saylor's Current Construction Costs 2018 in Zone 4 and Los Angeles for Garage, Parking

[4] Based on recent property sale transactions in the area and EPS professional judgment.



Fullerton Park-and-Ride Joint Development Study

OCTA's Joint Development Policy

- Purpose
 - Increase transit ridership
 - Generate transit-supportive revenue
 - Promote ridesharing
 - Support local community goals
 - Supplement OCTA transit services
- Policy Actions
 - Develop market feasibility studies and site assessments
 - Collaborate with local jurisdictions and public stakeholders
 - Pursue opportunities supported by the OCTA Board



FTA Guidance/Limitations

- Promote joint development to:
 - Maximize utility of FTA-funded projects
 - Encourage transit agencies to generate program income
- Asset must retain function as a transit and rideshare facility



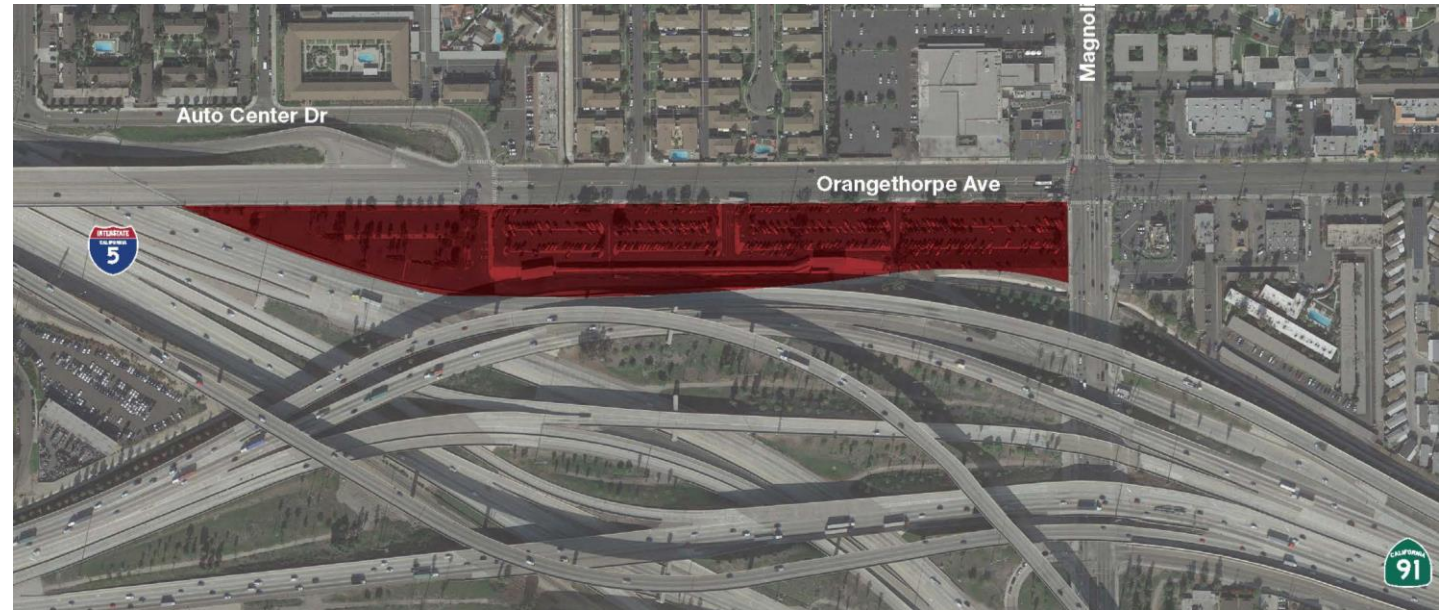
Joint Development Process Overview



*Dates are approximations

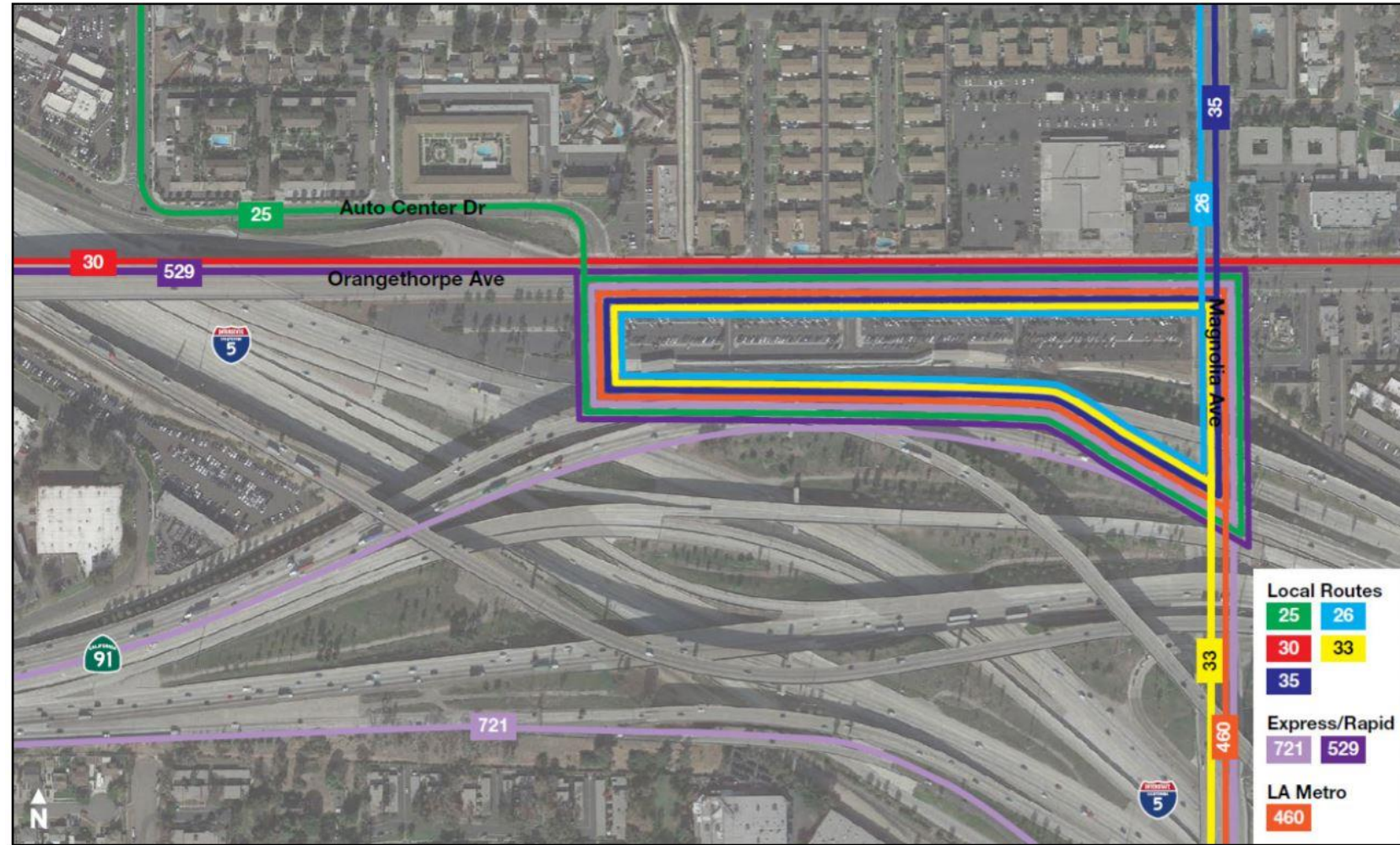
Site History: Fullerton Park-and-Ride

- 11.1-acre site
- Acquired with FTA grant
- Opened in 1974
- Primarily served commuters to LA
- Metrolink service reduced site demand
- Continues to serve carpoolers and express bus users



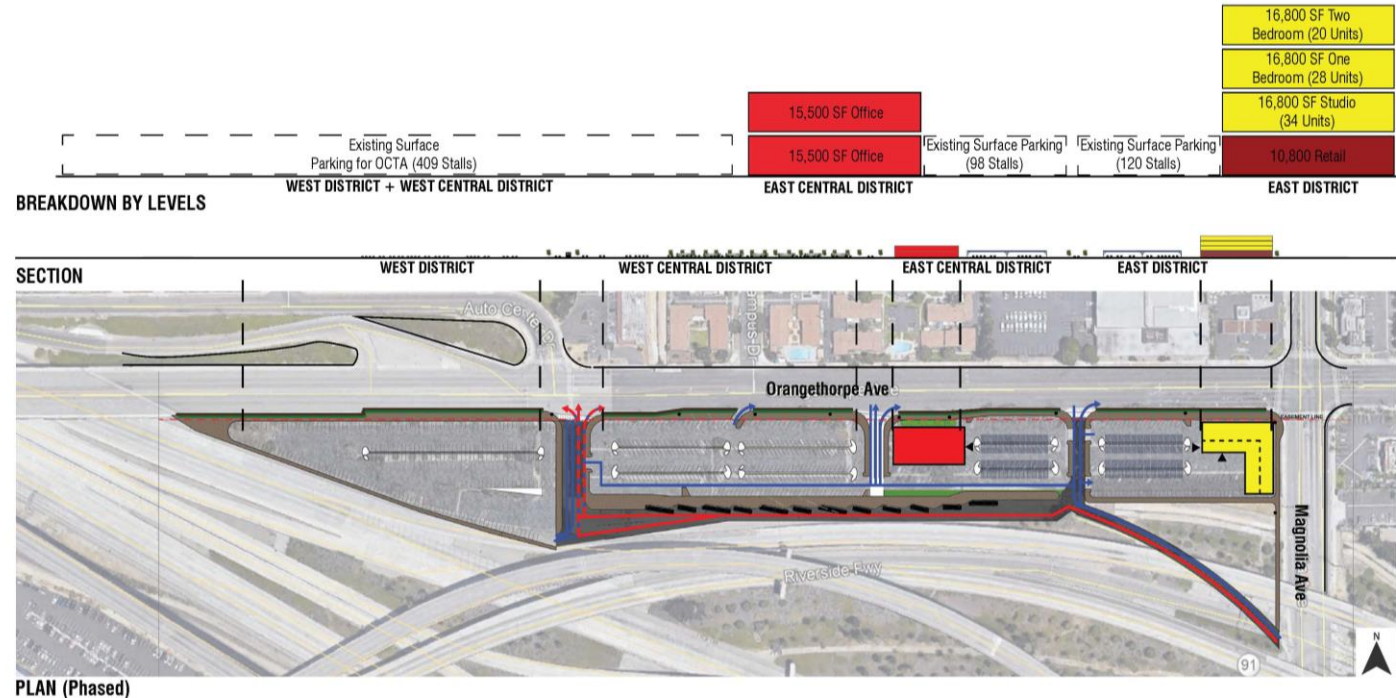
Current Conditions

- Transit
 - 14 bus docks
 - Eight bus routes (OCTA and LA Metro)
 - Key transfer location
- Parking
 - 745 public parking spaces
 - Up to 55 percent utilized on weekdays
 - 20 percent on weekends



Phase 1 Study

- Initiated in summer 2018
- Goals
 - Evaluate conceptual joint development scenarios
 - Determine if further analysis is merited
- Findings
 - Joint development is feasible and could provide significant value
 - Scenarios with limited or no structured parking perform best financially based on initial assumptions



Phase 1 Assumptions

- 400 of 750 spaces needed to maintain transit and rideshare functions
- Scenarios assume a range of conceptual land-use mixes and densities
- Net present value used to determine merit of site for further consideration
 - Subsequent phases will analyze additional criteria



City of Fullerton

- City staff input during Phase 1
 - Support exploring site development opportunities
 - Supportive of housing units in particular
 - Zoning adjustments would be required
 - Staff input to date and future city council direction required



Future Phase 2 Study

- Purpose
 - Define a vision that addresses needs of:
 - OCTA/Customers
 - City/Community
 - FTA
 - Gauge developer interest in delivering on vision
- Approach
 - Establish internal guidelines
 - Identify alternatives
 - Stakeholder engagement
 - Developer engagement



Joint Development Process Overview



*Dates are approximations



October 8, 2020

To: Transit Committee

From: Darrell E. Johnson, Chief Executive Officer

Subject: Bus Operations Performance Measurements Report for the Fourth Quarter of Fiscal Year 2019-20

Overview

The Orange County Transportation Authority operates fixed-route bus and demand-response paratransit service throughout Orange County and into neighboring counties. The established measures of performance for these services assess the safety, courtesy, reliability, and overall quality of the services. This report highlights proposed changes to the method for counting passengers, measuring on-time performance, and summarizes the year-to-date performance of the fixed-route and paratransit services through the fourth quarter of fiscal year 2019-20.

Recommendation

Receive and file as an information item.

Background

The Orange County Transportation Authority (OCTA) operates a countywide network of 60 routes, including local, community, rail connector, and express bus routes serving over 5,000 bus stops. Fixed-route bus (OC Bus) service operates in a 798-square mile area, serving more than three million residents in 34 cities and unincorporated areas, with connections to transit services in Orange, Los Angeles, and Riverside counties. OCTA provides these services through both directly operated fixed-route (DOFR) and contracted fixed-route (CFR) service. OCTA also provides OC ACCESS, a federally-mandated paratransit service, which is a shared-ride program available for people unable to use the OC Bus service because of functional limitations. Performance measures for both OC Bus and OC ACCESS services are summarized and reported quarterly (Attachment A).

Discussion

This report provides an update on the performance of the OC Bus and OC ACCESS services through the fourth quarter, including the months of April, May, and June of fiscal year (FY) 2019-20 by presenting the current trends and comparisons with OCTA-established performance standards for transit system safety, courtesy, and reliability. OCTA counts preventable vehicle accidents to evaluate system safety, customer complaints to assess courtesy, and uses both on-time performance (OTP) and miles between road calls (MBRC) to measure service reliability. This report also discusses proposed changes to the method for counting passengers and the calculation and goal for OTP.

The performance trends identified for the fourth quarter reflect the impact of the coronavirus (COVID-19) pandemic, and subsequent national guidelines and state order put in place to reduce the spread. The state's "stay-at-home" order and the guidelines for social distancing significantly impacted travel patterns, leading to the need to reduce service and implement other safety measures, including rear-door boarding and capacity limits on buses.

- Safety – DOFR OC Bus and OC ACCESS services both remain below the accident frequency standard of one preventable accident per 100,000 service miles. DOFR remained below standard, between April and June, as the number of preventable accidents was approximately the same compared to last quarter and the same time last year, with less miles operated due to COVID-19. OCTA Operations staff continues to focus on and stress the importance of safety, conduct safety-related campaigns, and promote the safe driving award program. In particular, trend analysis indicates right side clearance has been an issue and recent safety campaigns have focused on preventing this type of accident. For OC ACCESS service, the number of preventable accidents reported between April and June was six. This represents an 81 percent decrease from the 33 accidents reported the previous quarter and an 86 percent increase in miles between preventable accidents compared to the third quarter. This yielded a slight improvement in the year-to-date average of 3.6 percent, but still below the standard. CFR OC Bus service continued to perform above standard.
- Customer Service – Customer service is measured by evaluating the number of valid customer complaints received compared to boardings. Through the fourth quarter, all modes of service performed above the respective standards.

- Reliability – Cumulative OTP for OC Bus and OC ACCESS for the FY remained below target. However, for the fourth quarter, April through June, OC Bus OTP averaged 88.1 percent, with DOFR and CFR averaging 89 percent and 86.1 percent, respectively. OTP for OC ACCESS was 0.1 percent higher than last quarter, and 0.6 percent lower than the 93.1 percent reported during the same period last year.

The MBRC for all modes of service exceeded the standard through the reporting period. OCTA staff will continue to monitor performance in this area and work with the contractor to sustain or improve overall performance.

The report also includes:

- An assessment of the efficiency of OCTA transit operations based on industry standards for ridership, productivity, farebox recovery, and cost per revenue vehicle hour;
- A review of contractor performance for CFR and OC ACCESS services;
- A route-level performance evaluation that includes subsidy per boarding, revenue per boarding, and resource allocation (buses);
- A status on the initiatives implemented under the OC Bus 360° Program, including OC Flex and the College Pass Program; and
- Updates regarding the use of automated passenger counters for the collection of ridership data and a modification to the metric for OTP beginning with the new FY.

In an effort to more effectively measure and assess the performance of OC Bus and OC ACCESS services both during the pandemic and in a post-COVID-19 environment, staff has thoroughly evaluated the manner in which passengers are counted and OTP is calculated. As a result of this evaluation, staff is proposing an adjustment to both the method for counting passengers and OTP, which will bring OCTA closer to standard industry practice with respect to data collection, and performance measurement and reporting as described below and more thoroughly discussed in Attachment A.

Passenger Counts – Automatic Passenger Counters (APC)

OCTA has historically utilized the farebox as the method for reporting and recording boarding data, or passenger counts. In response to COVID-19 and efforts to minimize non-essential contact, passengers were diverted from the front, where the farebox is located, to the rear door for boarding. APCs are located at both the front and rear doors of all OCTA buses and capture boarding data automatically. OCTA has been evaluating the expanded use of APCs over

the past few years; this data has been helpful for planning purposes as you can determine passenger loads at various points along a route. With the change in the boarding process in early April, staff began utilizing the APC data to capture all boarding information since the farebox would not be able to capture the rear door boarding. Utilizing the APCs has a proven and effective method for capturing boarding data, and staff is proposing to utilize the APCs as the primary data source moving forward.

OTP

The current methodology used for tracking and reporting OTP accounts for the late departures from scheduled time points on a route as printed in the bus route schedule. After evaluating similar data collected and reported by peer agencies and through OCTA's participation in the American Bus Benchmarking Group (ABBG) collaborative, staff proposes to modify OCTA's current OTP methodology to include early departures from scheduled time points in addition to late trips in the calculation of OTP. An early departure is one in which the bus leaves an established timepoint more than 59 seconds ahead of the posted schedule. Including the early departures will provide for a more thorough overall measure of OTP.

In connection with this proposed change, staff is also recommending an adjustment to the OTP standard of 85 percent to 80 percent. In considering this adjustment, staff reviewed OTP data from ABBG for 23 other transit properties. It should be noted that only six of 23 agencies included in the ABBG collaborative have been able to meet an OTP of 85 percent, while 11 of the 23 agencies were able to achieve an OTP standard of 80 percent. In evaluating the historical trend of OTP for both DOFR and CFR, recent performance trends have been below the current standard of 85 percent, primarily driven by traffic impacts and construction-related activities. Adjusting the standard to 80 percent is consistent with performance of the ABBG collaborative. Staff will continue to monitor OTP and report quarterly, including any recommendations to further adjust the OTP standard.

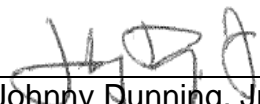
Summary

Through the fourth quarter of FY 2019-20, the performance of OC Bus and OC ACCESS services exceeded performance in the areas of courtesy and reliability (MBRC) but was below the standard for safety (except CFR) and OTP. OCTA staff continues to focus on continuous quality improvement in safety and reliability as detailed in the report. In addition to tracking the established key performance indicators, staff will continue to manage the service contracts pursuant to contract requirements and work to identify other strategies to improve overall system performance.

Attachment

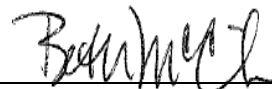
- A. Bus Operations Performance Measurements Report, Fourth Quarter, Fiscal Year 2019-20

Prepared by:

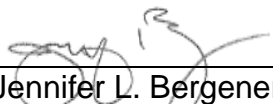


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Bus Operations Performance Measurements Report



Fourth Quarter
Fiscal Year 2019-20

About This Report

The Orange County Transportation Authority (OCTA) operates a countywide bus transportation network of 60 routes including local, community, rail connector, and express bus routes serving over 5,000 bus stops known as OC Bus. OCTA also operates demand-responsive paratransit service (OC ACCESS), a shared-ride program available for people unable to use the standard OC Bus service because of functional limitations. OC Bus service is provided through both direct operations by OCTA referred to as directly-operated fixed-route (DOFR) and contracted operations referred to as contracted fixed-route (CFR). The OC ACCESS service is a contract-operated demand-response service required by the Americans with Disabilities Act that is complementary to the fixed-route service and predominately accounts for the overall paratransit services operated by OCTA. These services make up the bus transit system in Orange County and are evaluated by the performance measurements summarized in this report.

This report tracks bus system safety, as measured by vehicle accidents, courtesy, as measured by customer complaints, and reliability, as measured by on-time performance (OTP) and miles between road calls (MBRC). Along with these metrics, industry-standard measurements are tracked to assess OCTA bus operations; these measurements include ridership, productivity, farebox recovery ratio (FRR), and cost per revenue vehicle hour (RVH). Graphs accompany the details of each indicator showing the standards or goals and the values for the current reporting period. The following sections provide performance information for OC Bus service, DOFR and CFR, and OC ACCESS service.

It is important to note that OCTA implemented a reduced service schedule for OC Bus on March 23, 2020 in response to the coronavirus (COVID-19) pandemic. The impact that COVID-19 has had on both OC Bus and OC ACCESS has been significant as reflected in the performance to be discussed in this report.

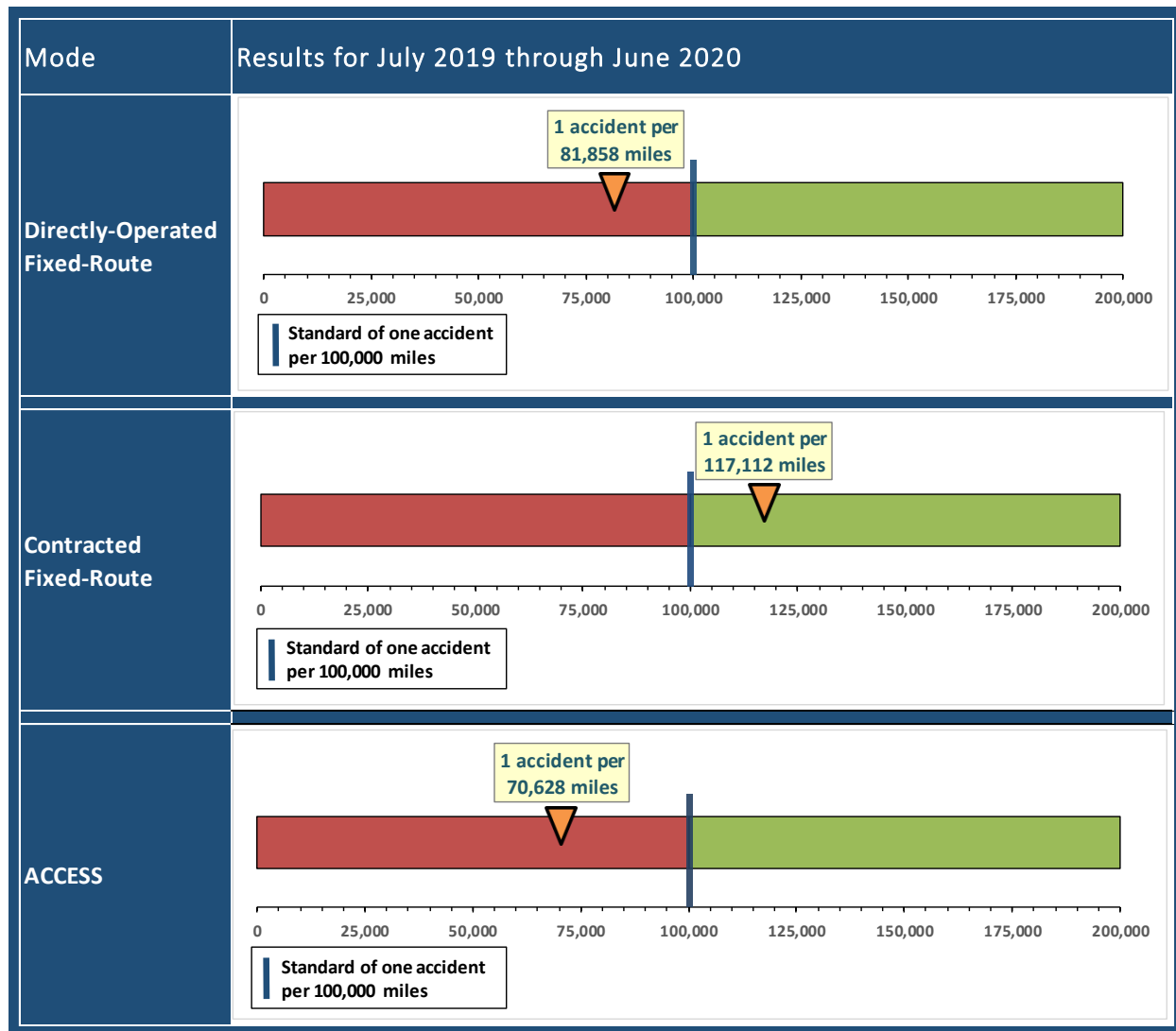
FY2019-20 Q4 SUMMARY

- **Safety:**
 - DOFR - ▼
 - CFR - ▲
 - OC ACCESS - ▼
- **Courtesy:**
 - DOFR - ▲
 - CFR - ▲
 - OC ACCESS - ▲
- **On-Time Performance (OTP):**
 - DOFR - ▼
 - CFR - ▼
 - OC ACCESS - ▼
- **Miles Between Road Calls (MBRC):**
 - DOFR - ▲
 - CFR - ▲
 - OC ACCESS - ▲

Safety: Preventable Vehicle Accidents

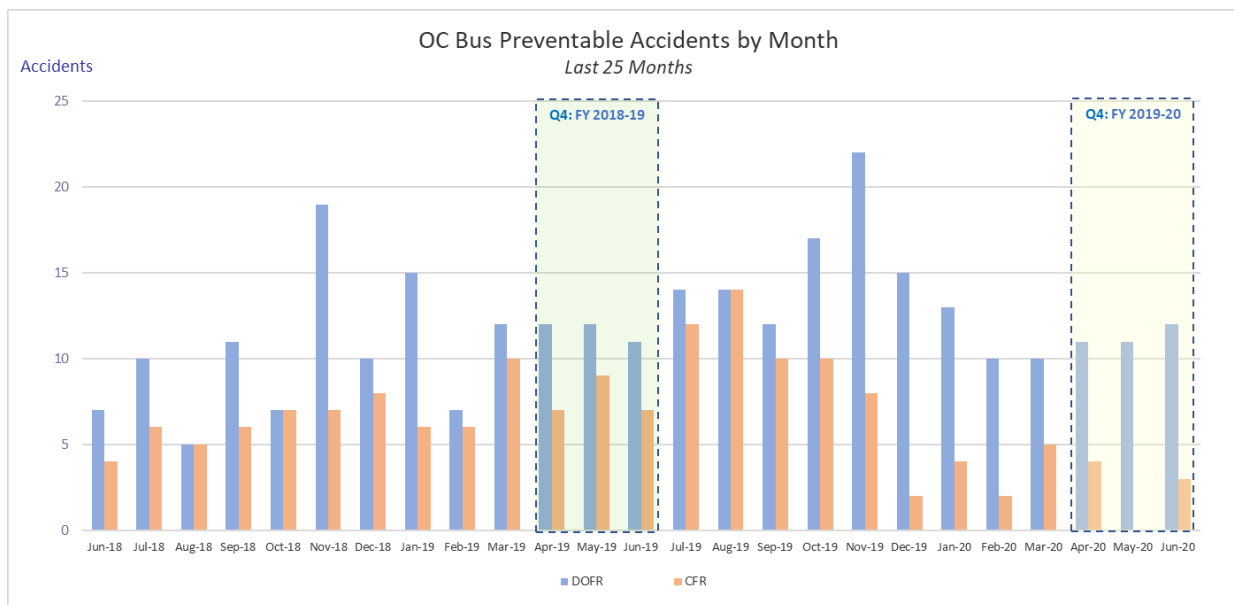
OCTA is committed to the safe delivery of the OC Bus service. The safety standard for DOFR, CFR, and OC ACCESS services is no more than one vehicle accident per 100,000 miles. Preventable vehicle accidents are defined as incidents when physical contact occurs between vehicles used for public transit and other vehicles, objects, or pedestrians, and where a coach operator failed to do everything reasonable to prevent the accident.

Through the fourth quarter of fiscal year (FY) 2019-20, both DOFR and OC ACCESS performed below the safety standard, operating less than 100,000 miles between preventable accidents. CFR exceeded the standard through the fourth quarter.



DOFR OC Bus and OC ACCESS services both remain below the accident frequency standard, as the number of preventable accidents recorded for each mode exceeded one preventable accident per 100,000 service miles for the year-to-date numbers. During the fourth quarter, April through June, the number of preventable accidents for DOFR was approximately the same compared to last quarter and the same time

last year. However, due to the reduced service associated with COVID-19, fewer miles were operated during this period. This resulted in a reduction in the miles between preventable accidents of over 23.6 percent for a year-to-date average of 81,858. To sustain this trend, OCTA Operations staff will continue to focus on and stress the importance of safety, conduct safety-related campaigns, and promote the safe driving award program. The following chart shows the trend of preventable accidents for fixed-route service over the last two years.

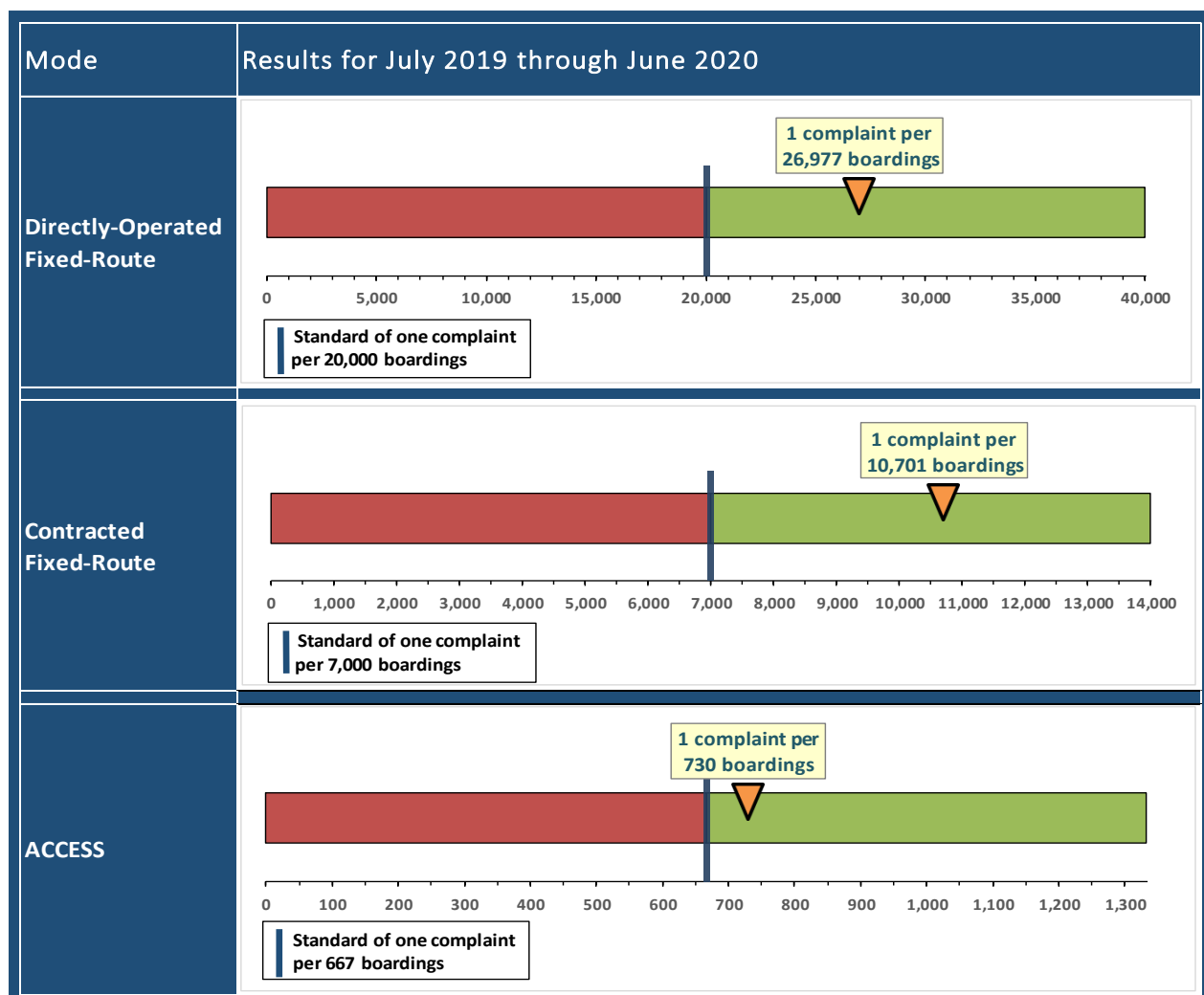


For OC ACCESS, the number of preventable accidents reported during the fourth quarter was six. This represents an 81.8 percent decrease from 33 accidents reported the previous quarter. This resulted in an 86.3 percent increase in miles between preventable accidents compared to the third quarter, which yielded a slight improvement in the year-to-date average of 3.6 percent. This improvement is likely the result of the onsite presence of the Regional Director of Safety for Southern California early last spring.

Courtesy: Customer Complaints

OCTA strives to achieve a high level of customer satisfaction in the delivery of OC Bus services. The performance standard for customer satisfaction is courtesy as measured by the number of valid complaints received. Customer complaints are the count of incidents when a rider reports dissatisfaction with the service. The standard adopted by OCTA for DOFR OC Bus is no more than one customer complaint per 20,000 boardings, the standard for CFR OC Bus service is no more than one complaint per 7,000 boardings, and the contractual standard for OC ACCESS is no more than one complaint per 667 boardings.

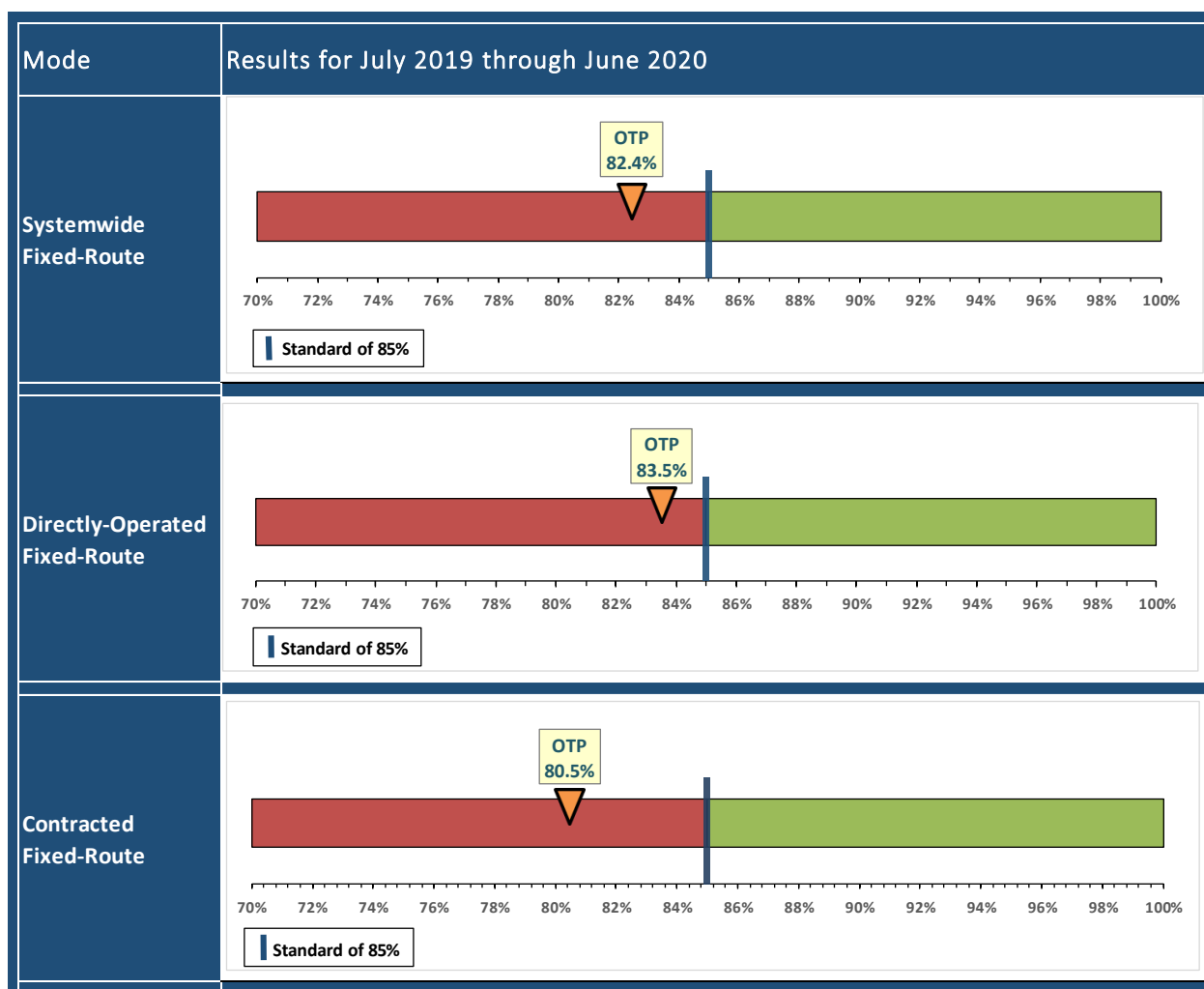
Through the fourth quarter of FY 2019-20, all modes of service continue to perform well, exceeding the courtesy standard with less than one valid complaint per 20,000, 7,000, and 667 boardings, respectively.



Reliability: On-Time Performance

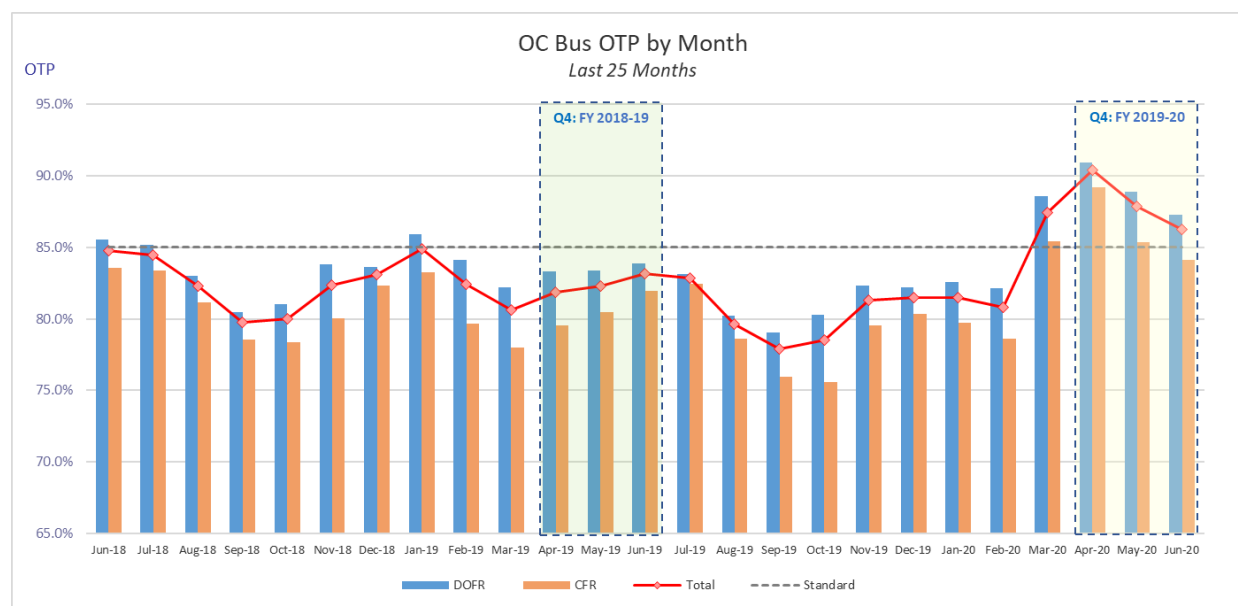
Reliability is vital to a successful transportation network. Reliability for OCTA is measured in part by OTP. OTP is a measure of performance which evaluates the schedule adherence of a bus operating in revenue service according to a published schedule. Schedule adherence is tracked by monitoring the departure of vehicles from time points, which are designated locations on a route used to control vehicle spacing as shown in the published schedule. For OC Bus service, a trip is considered on-time if it departs the time point no more than five minutes late. OCTA's fixed-route system standard for OTP is 85 percent. For OC ACCESS service, OTP is a measure of performance evaluating a revenue vehicle's adherence to a scheduled pick-up time for transportation on a demand response trip. A trip is considered on-time if the vehicle arrives within a 30-minute window. The OC ACCESS OTP standard is 94 percent.

OTP for OC Bus and OC ACCESS remain below target but showed improvement during the fourth quarter, April through June, attaining OTP rates of 82.4 percent and 92.5 percent, respectively, for the FY, up from 81.2 percent and 92.4 in the third quarter.



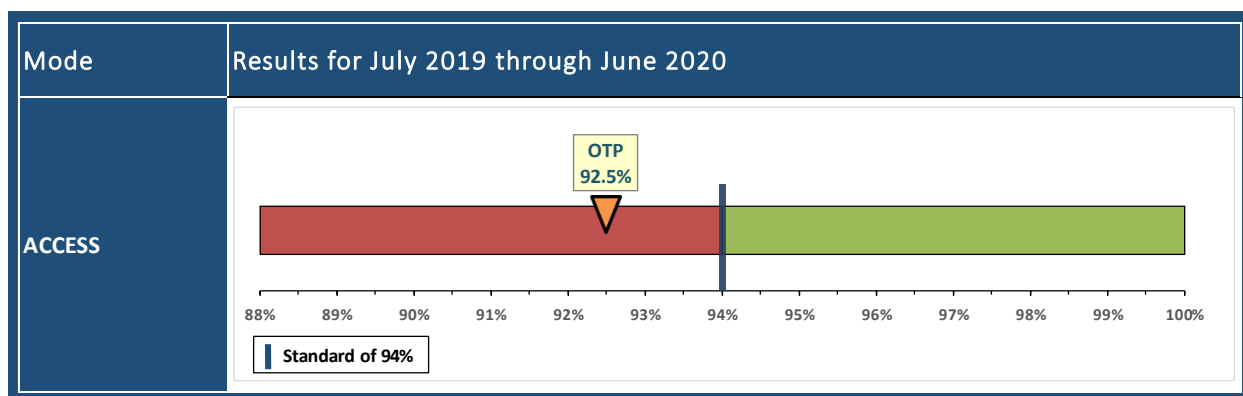
OTP for the DOFR OC Bus service through the fourth quarter was at 83.5 percent, a 1.3 percent increase from last quarter and two tenths of a percent higher than the same time last year. The OTP for the CFR OC Bus service through the fourth quarter showed improvement, reaching 80.5 percent, a one percent increase from last quarter.

The cumulative improvement in OTP during the fourth quarter is largely a result of the changes in travel patterns due to COVID-19. During the fourth quarter, April through June, OTP for fixed-route services was 88.1 percent, with DOFR and CFR services performing at 89 percent and 86.1 percent, respectively.



In the near term, OCTA Operations staff will continue to monitor the dynamic traffic conditions as travel restrictions are lifted to ensure the current overall OTP is maintained and monitor the need for bus running time adjustments needed to reflect traffic associated with ongoing construction projects. The contractor management team continues to focus on coach operator behavior, performing route-level checks, and coaching and counseling as appropriate.

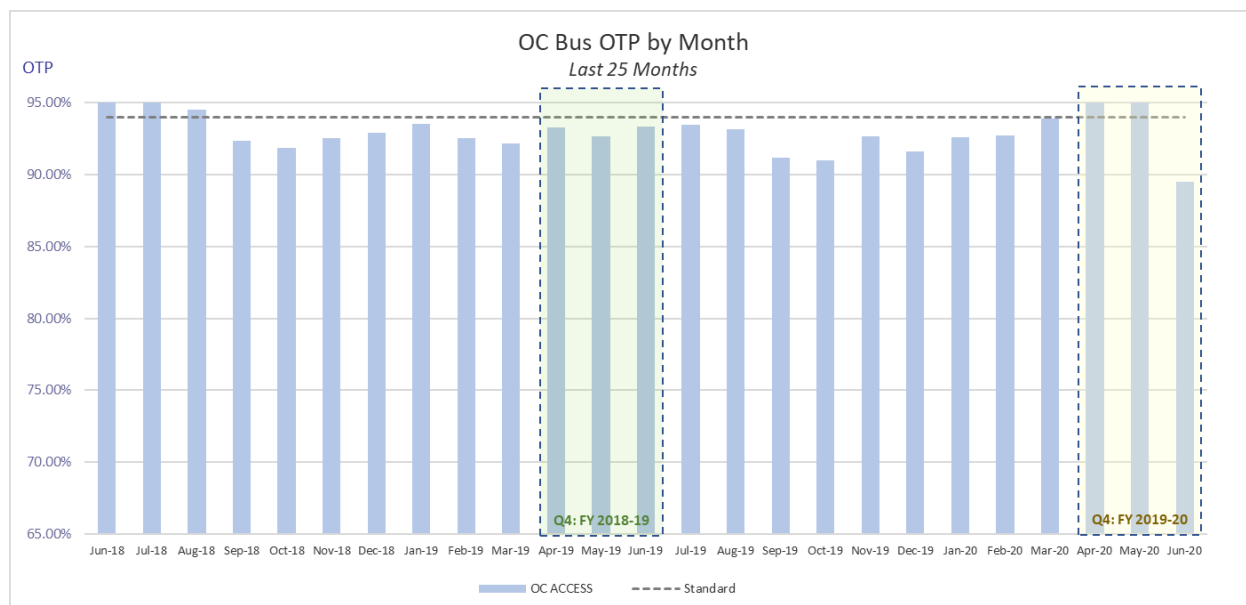
Prior to COVID-19, traffic had been a primary factor impacting OTP. Over the next year, staff will be monitoring traffic and the impacts on OTP. As necessary, adjustments to route schedules will be considered to improve OTP. In addition to schedule adjustments, staff is also able to drill down into the OTP to see if there are trends related to coach operators. Issues related to coach operator schedule adherence are also being addressed as necessary for both DOFR and CFR.



OTP for OC ACCESS service (primary service and supplemental taxi) through the fourth quarter was 92.5 percent, 1.5 percent below the standard, 0.1 percent higher than last quarter, and 0.6 percent lower than the 93.1 percent reported during the same period last year. The following chart shows the OTP trend for OC ACCESS service over the last two years. The decreasing trend during the fourth quarter from May to June is likely due to the closure of Yellow Cab of Greater Orange County (Yellow Cab). In a subcontracting role, Yellow Cab provided overflow capacity allowing for better schedule adherence.

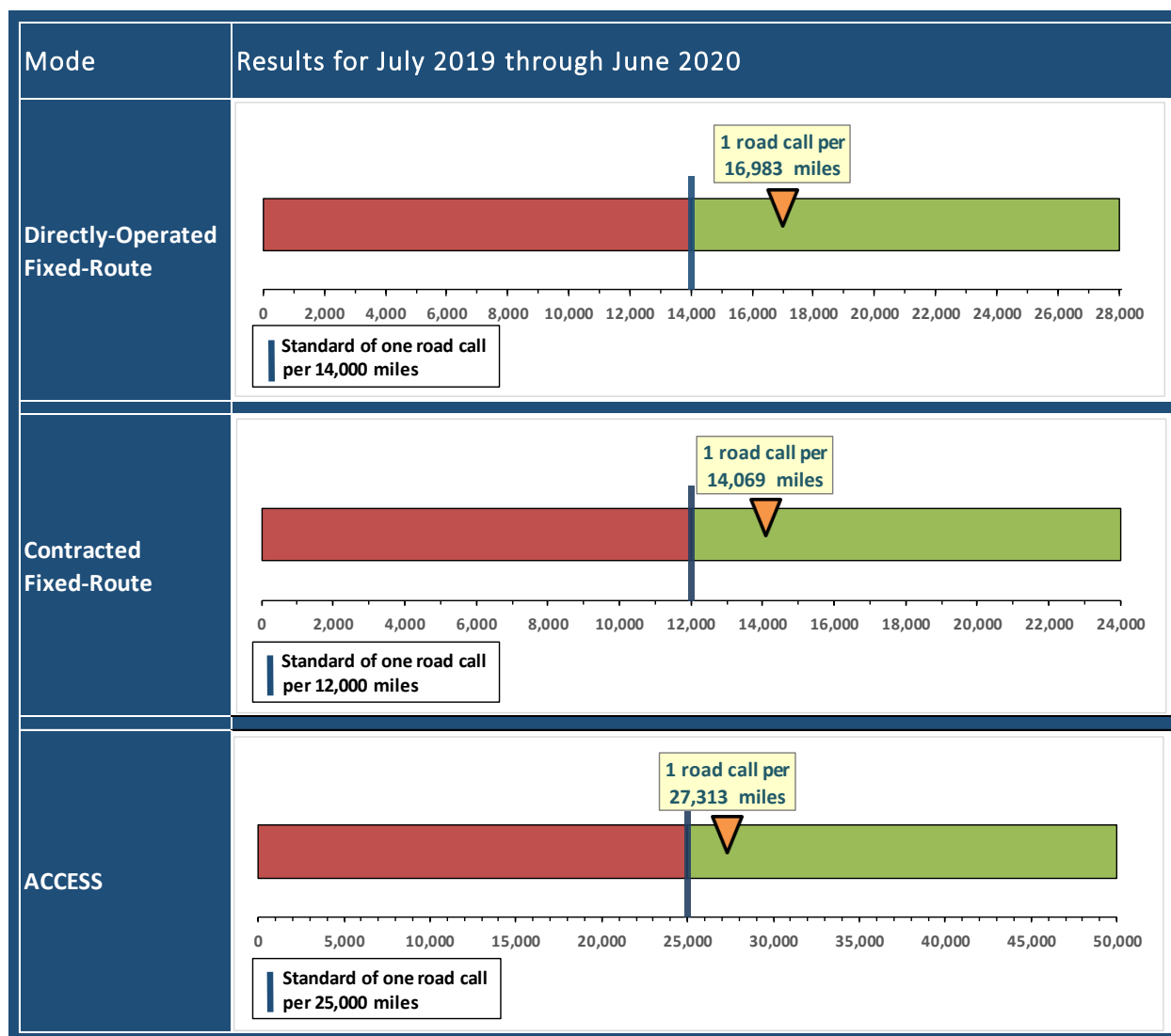
The contractor continued their work, making modifications to subscription trip routing/scheduling for individuals traveling to adult day programs. These changes were implemented in early-March 2020 but did not have the level of impact that was expected as a result of COVID-19.

OCTA staff will be working closely with the contractor to ensure plans are in place to meet performance standards during and after stay-at-home orders are lifted.



Reliability: Miles Between Road Calls

MBRC is a vehicle reliability performance indicator that measures the average distance in miles that a transit vehicle travels without failure of a vital component forces removal of the vehicle from service. OCTA has adopted standards for the MBRC for DOFR, CFR, and OC ACCESS services. These standards vary to align with the specific type of service being provided and account for the variability inherent to each of these services including the vehicles assigned. The specific standards as adopted by OCTA are 14,000 MBRC for DOFR OC Bus service, 12,000 MBRC for CFR OC Bus service, and 25,000 MBRC for OC ACCESS.



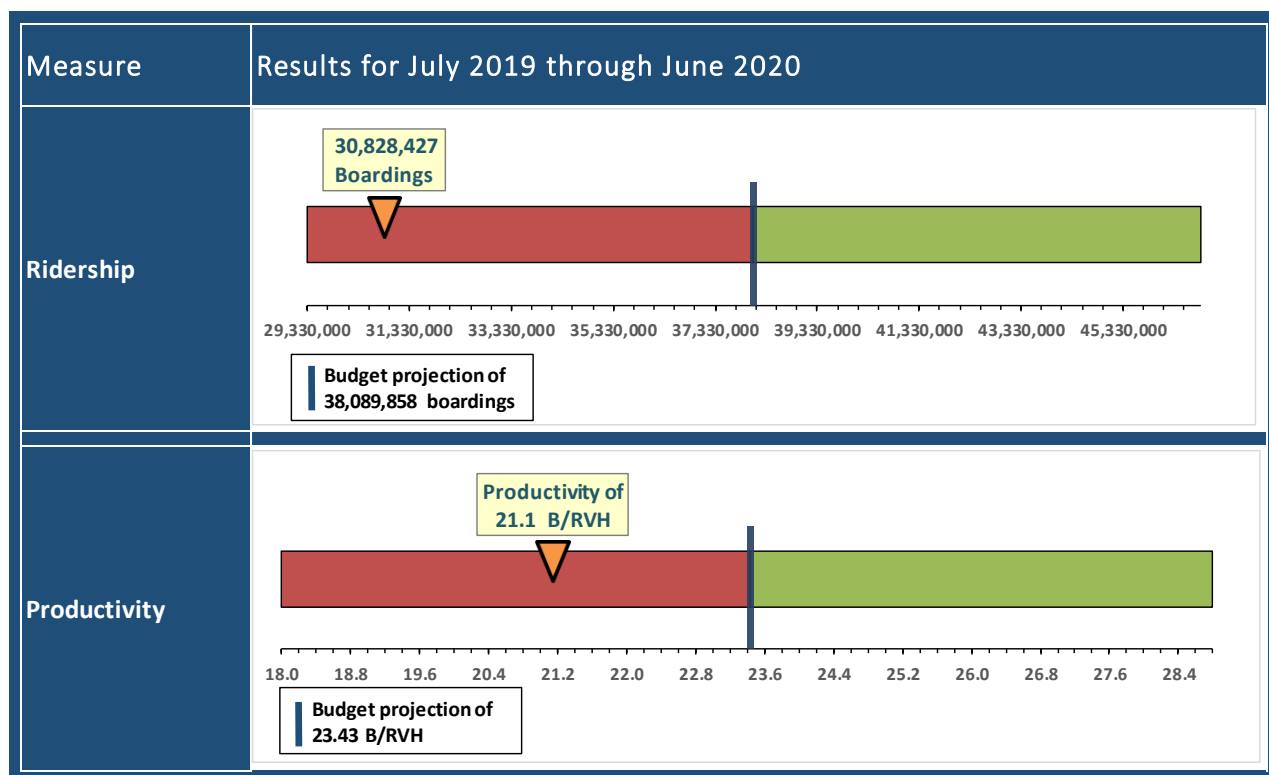
Through the fourth quarter of FY 2019-20, OC Bus services performed above standard across all modes.

OCTA staff will continue to monitor performance in this area and work with the contractor to sustain or improve overall performance.

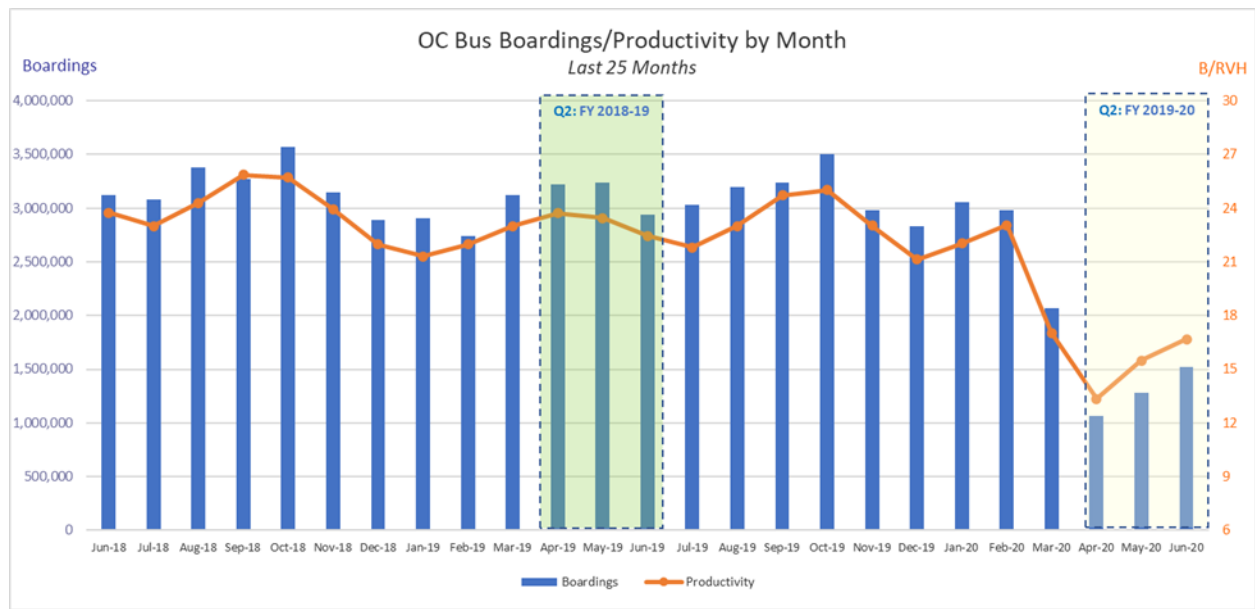
Ridership and Productivity – OC Bus

Ridership (or boardings) is the number of rides taken by passengers using public transit and is influenced by the level of service provided, weather, economy, and seasonal variations in demand. Productivity is an industry measure that counts the average number of boardings for each RVH that is operated. RVH is any 60-minute increment of time that a vehicle is available for passengers within the scheduled hours of service, excluding deadhead (a non-revenue movement of a transit vehicle to position it for service). Boardings per RVH (B/RVH) is calculated by taking the boardings and dividing it by the number of RVH operated.

Through the fourth quarter of FY 2019-20, both ridership and productivity for OC Bus service were lower than budgeted projections, with ridership down more significantly.



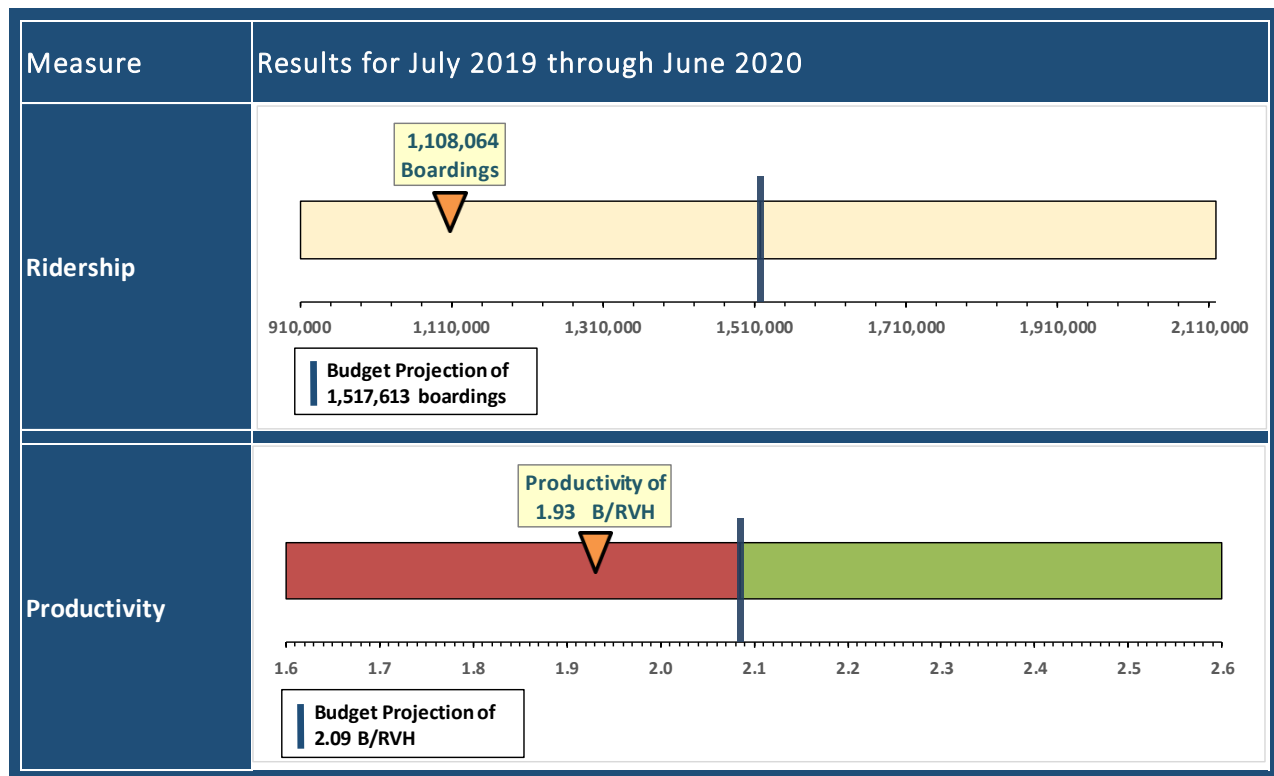
The ridership and productivity for the fourth quarter, as shown on the following chart, reflects the significant impact of COVID-19. The pandemic brought on significant changes to travel patterns, and coupled with the national and state-level orders related to COVID-19, caused a substantial drop in ridership and productivity. Average weekday ridership at the close of the FY was approximately 57,000, nearly 50 percent of the average weekday ridership before the “stay-at-home” orders went into effect. Ridership and productivity levels, down by 19.1 percent and 9.9 percent, respectively, are expected to remain below pre-COVID-19 levels until well after the travel restrictions are lifted.



Ridership and Productivity – OC ACCESS

(Primary Service Provider and Supplemental Taxi)

Through the fourth quarter of FY 2019-20, the ridership and productivity for OC ACCESS are trending below budgeted projections by 27 percent and 7.7 percent, respectively. As with the fixed-route service, ridership and productivity for OC ACCESS was impacted by the initial stages of COVID-19. With recommendations in place that persons 65 years or older or having underlying health issues stay home, many individuals who typically use OC ACCESS service made fewer trips, causing a drop in average daily ridership of 90 percent. Additionally, productivity has been impacted by the requirement for social distancing on OC ACCESS vehicles, as shared rides have been limited.



Contractor Performance: Fixed-Route

Per Agreement No. C-4-1737 between OCTA and First Transit, Inc. (First Transit), additional measures are tracked to ensure the CFR OC Bus service meets specified standards for safety, customer service, and reliability. When the contractor's monthly performance exceeds the standard as set forth in the agreement, financial incentives are paid to the contractor; conversely, when the monthly performance of the contractor is below the standard as set forth in the agreement, penalties are assessed and are paid to OCTA by the contractor.

Through the fourth quarter of FY 2019-20, the overall performance of the contracted OC Bus service as determined by the performance categories outlined in the contract was below standard for an unreported accident and missed trips.

Table 1 provides the penalties and incentives assessed to the contractor by quarter for FY 2019-20. The incentives paid in the fourth quarter relate to OTP, courtesy, and accident frequency, which totaled \$15,100. This brings the year-to-date total up to \$67,200. The total penalties assessed to the contractor during the quarter total \$23,000 resulting in a year-to-date total of \$588,989.

Table 1: Performance Categories		FY20 Q1	FY20 Q2	FY20 Q3	FY20 Q4	FYTD 20
Penalties	On-Time Performance	\$ (6,000)	\$ (12,000)	\$ (7,000)	\$ -	\$ (25,000)
	Valid Complaints: Per 7,000 boardings	\$ -	\$ -	\$ -	\$ -	\$ -
	Unreported Accident	\$ (85,000)	\$ (20,000)	\$ (30,000)	\$ (10,000)	\$ (145,000)
	Accident Frequency Ratio	\$ (20,000)	\$ -	\$ -	\$ -	\$ (20,000)
	Key Positions	\$ -	\$ -	\$ -	\$ -	\$ -
	CHP Terminal Inspections	\$ -	\$ -	\$ -	\$ -	\$ -
	Reports	\$ -	\$ -	\$ -	\$ -	\$ -
	Preventive Maintenance	\$ -	\$ (382)	\$ (1,207)	\$ -	\$ (1,589)
	Road Calls	\$ (1,400)	\$ -	\$ -	\$ -	\$ (1,400)
	Vehicle Damage: Per vehicle per day	\$ -	\$ -	\$ -	\$ -	\$ -
	Missed Trips	\$ (166,000)	\$ (98,000)	\$ (119,000)	\$ (13,000)	\$ (396,000)
	Total	\$ (278,400)	\$ (130,382)	\$ (157,207)	\$ (23,000)	\$ (588,989)
Incentives	On-Time Performance	\$ -	\$ -	\$ -	\$ 3,000	\$ 3,000
	Valid Complaints: Per 7,000 boardings	\$ 14,500	\$ 7,400	\$ 15,200	\$ 7,100	\$ 44,200
	Accident Frequency Ratio	\$ -	\$ 5,000	\$ 10,000	\$ 5,000	\$ 20,000
	Total	\$ 14,500	\$ 12,400	\$ 25,200	\$ 15,100	\$ 67,200
Prior Periods Adjustment	Accident Frequency Ratio	\$ -	\$ (5,000)	\$ -	\$ -	\$ (5,000)
	Complaints	\$ -	\$ -	\$ 1,500	\$ -	\$ 1,500
	Missed Trips	\$ -	\$ -	\$ -	\$ 9,000	\$ 9,000
	Total	\$ -	\$ (5,000)	\$ 1,500	\$ 9,000	\$ 5,500
All	Total	\$ (263,900)	\$ (122,982)	\$ (130,507)	\$ 1,100	\$ (516,289)

Contractor Performance: OC ACCESS

(Primary Service Provider and Supplemental Taxi)

Per Agreement No. C-2-1865 between OCTA and MV Transportation, Inc., additional measures are tracked to ensure OC ACCESS meets the standards for safety, customer service, and reliability. When the contractor's monthly performance exceeds the standard as set forth in the agreement, financial incentives are paid to the contractor; conversely, when the monthly performance of the contractor is below the standard as set forth in the agreement, penalties are assessed and must be paid to OCTA by the contractor.

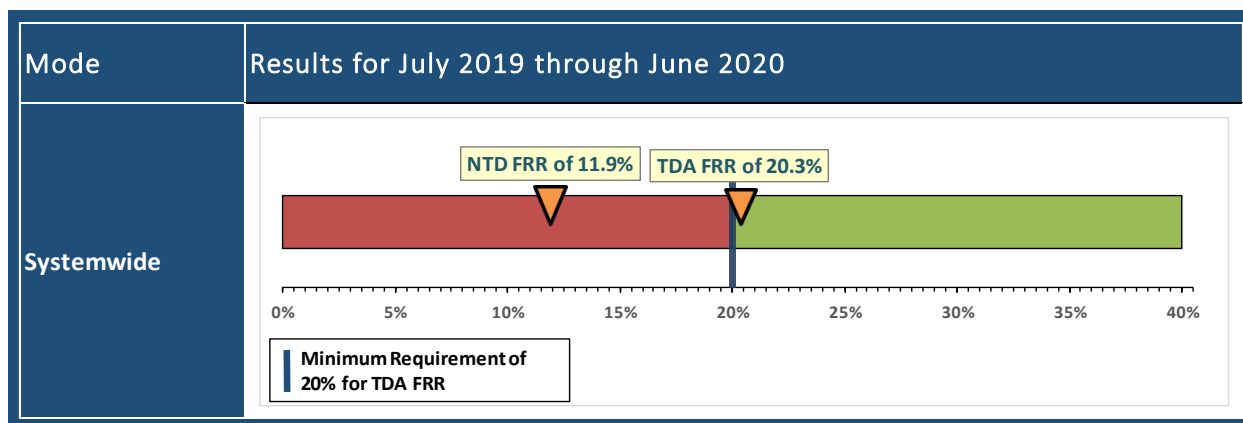
As presented in this report, the overall performance of the contractor providing OC ACCESS service through the fourth quarter of FY 2019-20 is above standard with respect to courtesy, while below standard for safety and on-time performance. Table 2 below lists, by quarter, the penalties and incentives assessed to the OC ACCESS contractor as established in the agreement. Through the fourth quarter, there were no incentives awarded to the contractor, but \$99,100 in penalties were assessed. Most of the penalties waived in the fourth quarter were related to the inability to meet performance standards as the result of the reduced level of service and ridership occurring in response to the COVID-19 pandemic. With the need to keep passenger loads low to allow social distancing and the lower level of revenue vehicles hours operated, productivity was severely impacted. This brings the gross year-to-date total for penalties to \$371,107. Penalties assessed to the contractor were related to performance for passenger productivity, OTP, excessively late trips, missed trips, and customer comments.

Table 2: Performance Categories		FY20 Q1	FY20 Q2	FY20 Q3	FY20 Q4	FYTD 20
Penalties	Passenger Productivity	\$ (10,000)	\$ (20,000)	\$ (30,000)	\$ (30,000)	\$ (90,000)
	On-Time Performance	\$ (15,000)	\$ (30,000)	\$ (10,000)	\$ (20,000)	\$ (75,000)
	Customer Comments	\$ (2,800)	\$ (3,000)	\$ -	\$ (7,400)	\$ (13,200)
	Call Center Hold Times	\$ (5,000)	\$ -	\$ -	\$ (11,000)	\$ (16,000)
	Excessively Late Trips	\$ (20,000)	\$ (30,000)	\$ (30,000)	\$ (15,000)	\$ (95,000)
	Missed Trips	\$ (5,000)	\$ (30,000)	\$ (15,000)	\$ (15,000)	\$ (65,000)
	Unreported Accident	\$ (5,000)	\$ (5,000)	\$ (5,000)	\$ -	\$ (15,000)
	Preventive Maintenance	\$ -	\$ -	\$ -	\$ -	\$ -
	Road calls	\$ (700)	\$ -	\$ -	\$ (700)	\$ (1,400)
	Reports	\$ -	\$ -	\$ -	\$ -	\$ -
	Key Positions	\$ -	\$ -	\$ -	\$ -	\$ -
	CHP Terminal Inspections	\$ -	\$ -	\$ -	\$ -	\$ -
	Vehicle Damage	\$ -	\$ -	\$ -	\$ -	\$ -
	Fare Variance	\$ -	\$ (507)	\$ -	\$ -	\$ (507)
	Total	\$ (63,500)	\$ (118,507)	\$ (90,000)	\$ (99,100)	\$ (371,107)
Incentives	Passenger Productivity	\$ -	\$ -	\$ -	\$ -	\$ -
	On-Time Performance	\$ -	\$ -	\$ -	\$ -	\$ -
	Excessively Late Trips	\$ -	\$ -	\$ -	\$ -	\$ -
	Missed Trips	\$ -	\$ -	\$ -	\$ -	\$ -
	Total	\$ -	\$ -	\$ -	\$ -	\$ -
Prior Periods Adjustment	Unreported Accident	\$ 10,000	\$ -	\$ -	\$ -	\$ 10,000
	Waived	\$ -	\$ 5,000	\$ 60,000	\$ 62,000	\$ 127,000
	Total	\$ 10,000	\$ 5,000	\$ 60,000	\$ 62,000	\$ 137,000
All	Total	\$ (53,500)	\$ (113,507)	\$ (30,000)	\$ (37,100)	\$ (234,107)

Farebox Recovery Ratio

FRR is a measure of the proportion of operating costs recovered by passenger fares, calculated by dividing the farebox revenue by total operating expenses. A minimum FRR of 20 percent for all service is required by the Transportation Development Act in order for transit agencies to receive the state sales tax available for public transit purposes. In an effort to normalize seasonal fluctuations, data shown below reflects actuals over the last 12 months from July 2019 through June 2020.

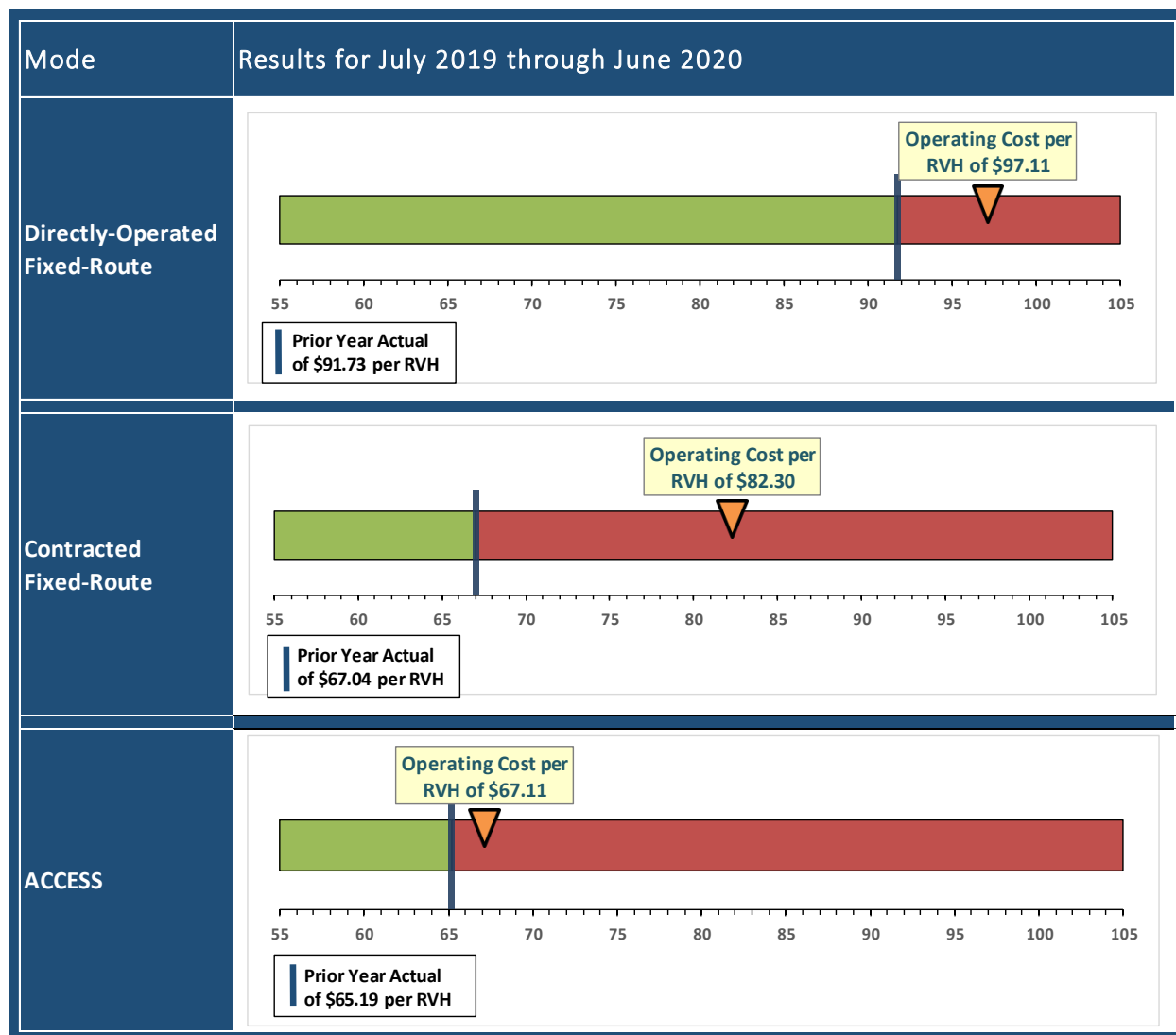
FRR, based on the National Transit Database (NTD) definition in which only passenger fares are included under revenue, did not meet the 20 percent goal. However, as a result of the passage of SB 508 (Chapter 716, Statutes of 2015), OCTA was able to adjust the FRR to include local funds. SB 508 states, "If fare revenues are insufficient to meet the applicable ratio of fare revenues to operating cost required by this article, an operator may satisfy that requirement by supplementing its fare revenues with local funds. As used in this section, "local funds" are any non-federal or non-state grant funds or other revenue generated by, earned by, or distributed to an operator." After incorporating property tax revenue, advertising revenue, and Measure M fare stabilization, the adjusted FRR was 20.3 percent, an increase of 0.3 percent from the previous quarter and a 3.4 percent drop from the same quarter last year.



Operating Cost per Revenue Vehicle Hour

Cost per RVH is one of the industry standards used to measure the cost efficiency of transit service. It is derived by dividing operating expenses by RVH. In order to provide a more comparable illustration, all metrics below are calculated based on direct operating cost, which excludes capital, general administrative, and other overhead costs.

Similar to the FRR, the statistics below depict actuals over the last 12 months. All modes operated at a higher cost per RVH than the same 12-month period last year due to a decrease in service levels provided in response to COVID-19. CFR cost per RVH increased significantly because the contractor earned far less penalties in FY 2019-20 compared to those earned for missed trips in FY 2018-19, accruals of \$1.7M in June for COVID-19 expenses, and contract rate increase from Amendment No. 9. The difference in cost per RVH from the prior FY was a 5.9 percent increase in DOFR, 22.8 percent increase in CFR, and 2.9 percent increase in OC ACCESS.



Performance Evaluation by Route

Continuing efforts are underway to better understand, evaluate, and improve route performance. Performance evaluation is important because it provides:

- A better understanding of where resources are being applied;
- A measure of how well services are being delivered;
- A measure of how well these services are used; and
- An objective basis for decisions regarding future service changes and service deployment.

The tables on the following pages summarize route-level performance through the fourth quarter. The first three tables present the route-level performance sorted by routes with the highest net subsidy per boarding to routes with a lower net subsidy per boarding, and the remaining three tables present the same information sorted by routes that have the highest boardings to routes with a lower level of boardings.

A route guide listing all of the routes and their points of origins and destinations is provided after the route-level performance tables. Route types are grouped by route numbers as follows:

- **Routes 1 to 99** - Local routes include two sub-categories:
 - **Major:** These routes operate as frequent as every 15 minutes during peak times. Major routes operate seven days a week throughout the day. Together, the Major routes form a grid on arterial streets throughout the highest transit propensity portions of the OC Bus service area, primarily in northern parts of the county.
 - **Local:** These routes operate on arterials within the grid created by the Major routes, but at lower frequencies. Local routes also operate in parts of Orange County with lower transit demand. Most Local routes operate seven days per week, however some operate on weekdays only.
- **Routes 100 to 199:** Community routes to connect pockets of transit demand with major destinations and offer local circulation. Routes tend to be less direct than Local routes, serving neighborhoods and destinations off the arterial grid. Approximately half of Community routes operate seven days per week.
- **Routes 200 to 299:** Intracounty express routes operate on weekdays only at peak times and connect riders over long distances to destinations within Orange County, using freeways to access destinations.
- **Routes 400 to 499:** Stationlink routes are rail feeder services designed to connect Metrolink stations to nearby employment destinations. These routes have relatively short alignments, with schedules tied to Metrolink arrivals and departures. They operate during weekday peak hours only, in the peak direction, from the station to destinations in the morning and the reverse in the evening.
- **Routes 500 to 599:** Bravo! routes are limited-stop services operated with branded vehicles.
- **Routes 600 to 699:** *Seasonal or Temporary routes (these are not included on the following charts)* such as the OC Fair Express.
- **Routes 700 to 799:** Intercounty express routes that operate on weekdays only at peak times and connects riders over long distances to destinations outside of Orange County, often using freeways to access destinations.



OCTA Operating Statistics By Route for Local and Community Services (Sorted by Subsidy per Boarding)
Fiscal Year 2019-20 Through Q4

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	Bus Count		
														40 FT	32 FT	60 FT
862	C	3.7%	\$ 22.84	\$ 14.63	\$ 7.41	\$ 0.80	\$ 0.84	45,106	\$ 162.80	\$ 94.31	\$ 19.85	7.12	6,339	2	-	-
123	N	4.6%	22.33	11.28	7.64	3.41	0.92	21,017	156.99	101.36	11.92	7.91	2,655	4	-	-
153	N	5.2%	14.80	8.60	5.83	0.37	1.05	96,317	130.13	83.16	10.65	8.54	11,272	2	-	-
085	S	7.1%	14.45	8.12	5.64	0.69	1.05	52,237	123.93	82.72	10.01	8.37	6,241	2	-	-
001	S	5.7%	13.96	8.12	5.45	0.39	0.83	458,294	162.74	99.52	10.12	11.30	40,549	10	-	-
087	S	7.4%	12.58	7.03	4.87	0.68	0.95	52,530	126.06	83.79	8.43	9.81	5,353	2	-	-
178	C	7.6%	12.29	6.99	4.74	0.56	0.97	63,504	122.56	82.40	9.86	9.65	6,578	2	-	-
076	C	7.9%	11.53	6.55	4.40	0.58	0.94	62,249	144.01	88.49	12.37	12.12	5,136	2	-	-
529	C	7.5%	11.44	6.40	4.30	0.74	0.87	243,868	153.02	93.15	13.38	13.24	18,420	10	-	-
177	S	9.8%	10.67	5.86	3.97	0.84	1.07	63,909	123.70	82.50	9.65	11.34	5,634	3	-	-
083	C	7.9%	10.49	6.07	4.08	0.34	0.87	473,504	165.32	101.13	8.69	15.00	31,558	9	-	-
091	S	9.9%	10.30	5.81	4.03	0.46	1.08	315,205	130.58	83.43	9.14	11.96	26,349	8	-	-
129	N	9.2%	9.78	5.63	3.82	0.33	0.96	160,748	131.87	83.58	11.20	12.67	12,688	3	-	-
143	N	8.5%	9.55	5.48	3.72	0.35	0.85	155,708	129.42	81.90	11.34	12.88	12,089	3	-	-
086	C	9.7%	9.52	5.31	3.69	0.52	0.97	103,736	122.42	82.56	9.46	12.28	8,448	3	-	-
090	S	11.0%	9.02	4.98	3.46	0.58	1.04	248,979	128.35	81.35	8.49	13.54	18,394	8	-	-
167	C	10.4%	8.93	4.96	3.36	0.61	0.96	147,237	124.92	82.83	10.11	13.45	10,946	5	-	-
079	C	10.1%	8.51	4.84	3.36	0.31	0.92	343,734	125.25	80.20	11.07	13.74	25,011	6	-	-
056	N	9.3%	8.26	4.78	3.21	0.27	0.82	337,349	157.23	94.44	14.53	17.84	18,915	5	-	-
059	C	11.3%	7.55	4.29	2.97	0.29	0.92	437,567	126.89	80.34	11.75	15.51	28,217	7	-	-
025	N	10.9%	7.52	4.33	3.01	0.18	0.90	299,911	127.89	81.43	10.60	15.53	19,315	3	-	-
089	S	12.3%	7.23	4.08	2.83	0.32	0.97	282,565	125.64	80.53	9.99	15.94	17,730	5	-	-
055	C	12.2%	7.19	4.17	2.80	0.22	0.97	1,065,394	157.04	94.49	14.13	19.76	53,903	13	-	-
026	N	11.1%	7.16	4.04	2.81	0.31	0.86	350,972	124.56	79.49	12.32	16.16	21,717	6	-	-
050	N	10.2%	7.05	4.08	2.74	0.23	0.77	1,081,157	159.14	96.11	13.94	20.95	50,662	5	-	6
071	N	11.7%	7.03	3.99	2.77	0.27	0.90	588,274	127.99	81.71	10.16	16.73	35,164	9	-	-
082	S	15.1%	6.81	3.66	2.54	0.61	1.10	58,415	134.04	83.90	9.33	18.35	3,183	2	-	-
029	N	11.3%	6.81	3.97	2.66	0.18	0.84	1,522,420	167.00	100.65	14.03	22.35	68,122	5	-	7
072	C	11.8%	6.76	3.92	2.63	0.21	0.88	413,271	152.14	91.94	12.12	20.47	20,188	4	1	-
037	N	12.1%	6.51	3.71	2.49	0.31	0.86	888,177	161.41	97.90	13.05	22.89	37,928	15	-	-
054	N	12.2%	6.48	3.70	2.49	0.29	0.86	977,610	154.12	93.11	13.75	21.87	44,705	16	-	-
057	C	12.0%	6.46	3.74	2.51	0.21	0.85	1,730,735	182.72	109.91	16.84	25.71	67,315	4	-	11
560	C	12.9%	6.41	3.57	2.40	0.44	0.89	533,867	147.85	90.06	12.91	21.57	24,746	13	-	-
070	C	13.1%	6.15	3.49	2.42	0.24	0.89	732,855	132.10	83.09	11.12	19.44	37,690	10	-	-
150	C	15.4%	6.14	3.33	2.25	0.56	1.02	126,949	115.54	73.72	11.45	17.50	7,253	4	-	-
543	N	12.7%	6.00	3.44	2.31	0.25	0.84	726,602	158.07	95.22	14.39	24.01	30,262	10	-	-
035	N	12.5%	5.85	3.29	2.28	0.28	0.80	647,987	129.14	81.54	11.16	20.29	31,934	10	-	-
047	C	14.2%	5.79	3.34	2.25	0.20	0.93	1,723,659	157.62	95.04	13.91	24.18	71,273	19	-	-
033	N	12.7%	5.70	3.19	2.21	0.30	0.78	294,234	122.54	79.37	9.79	19.82	14,843	5	-	-
030	N	12.9%	5.68	3.22	2.23	0.23	0.80	555,483	125.46	80.59	9.76	20.05	27,710	7	-	-
060	C	12.6%	5.66	3.31	2.22	0.13	0.79	1,647,095	164.68	99.13	14.04	26.03	63,269	12	-	-
038	N	13.3%	5.66	3.16	2.19	0.31	0.82	821,807	134.45	83.48	10.85	21.75	37,783	14	-	-
046	N	14.0%	5.60	3.14	2.18	0.28	0.87	509,693	127.18	81.25	11.08	20.56	24,789	8	-	-
053	C	13.2%	5.52	3.21	2.16	0.15	0.82	1,230,116	171.78	103.13	18.10	27.74	44,342	10	-	-
043	N	15.5%	4.88	2.85	1.92	0.11	0.87	1,781,035	157.45	94.58	15.56	27.92	63,796	11	-	-
042	N	14.2%	4.81	2.73	1.90	0.18	0.77	1,261,278	132.50	82.91	11.83	24.55	51,369	13	-	-
064	C	15.1%	4.56	2.65	1.78	0.13	0.79	1,349,122	169.37	101.50	17.17	32.49	41,528	10	-	-
066	C	17.0%	4.51	2.62	1.76	0.13	0.90	1,698,471	160.83	96.70	16.06	30.49	55,700	12	-	-
053X	C	20.3%	3.82	2.17	1.46	0.19	0.92	483,523	130.57	79.09	12.62	28.73	16,832	5	-	-
057X	C	22.4%	3.53	1.95	1.31	0.27	0.94	775,154	130.86	79.39	11.99	31.09	24,931	3	-	6
064X	C	24.2%	2.87	1.62	1.09	0.16	0.87	435,532	130.63	79.18	12.46	36.46	11,947	4	-	-

(1) Total bus count (429) is based on PM weekday equipment requirements.
 (2) Bus count for routes 53X, 57X and 64X are estimated based on total route 53, 57 and 64 equipment requirements.
 (3) C under Zone is Central County, N is North County and S is South County.



OCTA Operating Statistics By Route for Express Service (Sorted by Subsidy per Boarding)
Fiscal Year 2019-20 Through Q4

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	Bus Count		
														40 FT	32 FT	60 FT
213	N	2.5%	\$ 48.68	\$ 22.98	\$ 14.04	\$ 11.66	\$ 0.96	7,691	\$ 148.74	\$ 88.06	\$ 7.43	3.92	1,963	5	-	-
721	N	4.7%	43.31	24.44	15.34	3.53	1.97	15,223	229.05	143.76	8.85	5.49	2,775	3	-	-
701	C	9.9%	26.69	14.61	9.17	2.91	2.62	18,464	263.84	165.17	11.02	10.00	1,847	3	-	-
206	C	6.6%	23.16	9.36	5.72	8.08	1.06	8,881	146.16	84.93	7.44	9.05	981	4	-	-
794	C	22.5%	20.80	11.89	7.26	1.65	5.57	21,681	183.99	119.02	6.89	7.44	2,913	2	-	-

(1) Total bus count (429) is based on PM weekday equipment requirements.

(2) C under Zone is Central County, N is North County and S is South County.



OCTA Operating Statistics By Route for Stationlink Service (Sorted by Subsidy per Boarding)
Fiscal Year 2019-20 Through Q4

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	Bus Count		
														40 FT	32 FT	60 FT
463	C	2.2%	\$ 42.67	\$ 23.08	\$ 15.56	\$ 4.03	\$ 0.89	13,360	\$ 178.19	\$ 99.97	\$ 16.59	4.51	2,963	3	-	-
480	C	5.4%	19.24	9.71	6.55	2.98	0.93	18,021	176.74	99.74	15.44	10.28	1,752	3	-	-
472	C	6.4%	15.72	7.93	5.35	2.44	0.91	22,001	164.75	96.93	14.40	11.61	1,895	3	-	-
453	N	4.8%	15.02	8.05	5.42	1.55	0.68	23,201	177.03	99.22	29.48	12.51	1,854	2	-	-
473	C	9.1%	11.18	5.69	3.84	1.65	0.96	32,665	187.90	100.55	16.39	17.92	1,822	3	-	-

(1) Total bus count (429) is based on PM weekday equipment requirements.

(2) C under Zone is Central County, N is North County and S is South County.



OCTA Operating Statistics By Route for Local and Community Services (Sorted by Boardings)
Fiscal Year 2019-20 Through Q4

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	Bus Count		
														40 FT	32 FT	60 FT
043	N	15.5%	\$ 4.88	\$ 2.85	\$ 1.92	\$ 0.11	\$ 0.87	1,781,035	\$ 157.45	\$ 94.58	\$ 15.56	27.92	63,796	11	-	-
057	C	12.0%	6.46	3.74	2.51	0.21	0.85	1,730,735	182.72	109.91	16.84	25.71	67,315	4	-	11
047	C	14.2%	5.79	3.34	2.25	0.20	0.93	1,723,659	157.62	95.04	13.91	24.18	71,273	19	-	-
066	C	17.0%	4.51	2.62	1.76	0.13	0.90	1,698,471	160.83	96.70	16.06	30.49	55,700	12	-	-
060	C	12.6%	5.66	3.31	2.22	0.13	0.79	1,647,095	164.68	99.13	14.04	26.03	63,269	12	-	-
029	N	11.3%	6.81	3.97	2.66	0.18	0.84	1,522,420	167.00	100.65	14.03	22.35	68,122	5	-	7
064	C	15.1%	4.56	2.65	1.78	0.13	0.79	1,349,122	169.37	101.50	17.17	32.49	41,528	10	-	-
042	N	14.2%	4.81	2.73	1.90	0.18	0.77	1,261,278	132.50	82.91	11.83	24.55	51,369	13	-	-
053	C	13.2%	5.52	3.21	2.16	0.15	0.82	1,230,116	171.78	103.13	18.10	27.74	44,342	10	-	-
055	C	12.2%	7.19	4.17	2.80	0.22	0.97	1,065,394	157.04	94.49	14.13	19.76	53,903	13	-	-
050	N	10.2%	7.05	4.08	2.74	0.23	0.77	1,061,157	159.14	96.11	13.94	20.95	50,662	5	-	6
054	N	12.2%	6.48	3.70	2.49	0.29	0.86	977,610	154.12	93.11	13.75	21.87	44,705	16	-	-
037	N	12.1%	6.51	3.71	2.49	0.31	0.86	868,177	161.41	97.90	13.05	22.89	37,928	15	-	-
038	N	13.3%	5.66	3.16	2.19	0.21	0.82	821,807	134.45	83.48	10.85	21.75	37,783	14	-	-
057X	C	22.4%	3.53	1.95	1.31	0.27	0.94	775,154	130.86	79.39	11.99	31.09	24,931	3	-	6
070	C	13.1%	6.15	3.49	2.42	0.24	0.89	732,855	132.10	83.09	11.12	19.44	37,690	10	-	-
543	N	12.7%	6.00	3.44	2.31	0.25	0.84	726,602	158.07	95.22	14.39	24.01	30,262	10	-	-
035	N	12.5%	5.85	3.29	2.28	0.28	0.80	647,987	129.14	81.54	11.16	20.29	31,934	10	-	-
071	N	11.7%	7.03	3.99	2.77	0.27	0.90	588,274	127.99	81.71	10.16	16.73	35,164	9	-	-
030	N	12.9%	5.68	3.22	2.23	0.23	0.80	555,483	125.46	80.59	9.76	20.05	27,710	7	-	-
560	C	12.9%	6.41	3.57	2.40	0.28	0.89	533,867	147.85	90.06	12.91	21.57	24,746	13	-	-
046	N	14.0%	5.60	3.14	2.18	0.24	0.87	509,693	127.18	81.25	11.08	20.56	24,789	8	-	-
053X	C	20.3%	3.82	2.17	1.46	0.19	0.92	483,523	130.57	79.09	12.62	28.73	16,832	5	-	-
083	C	7.9%	10.49	6.07	4.08	0.34	0.87	473,504	165.32	101.13	8.69	15.00	31,558	9	-	-
001	S	5.7%	13.96	8.12	5.45	0.39	0.83	458,294	162.74	99.52	10.12	11.30	40,549	10	-	-
059	C	11.3%	7.55	4.29	2.97	0.29	0.92	437,567	126.89	80.34	11.75	15.51	28,217	7	-	-
064X	C	24.2%	2.87	1.62	1.09	0.16	0.87	435,532	130.63	79.18	12.46	36.46	11,947	4	-	-
072	C	11.8%	6.76	3.92	2.63	0.21	0.88	413,271	152.14	91.94	12.12	20.47	20,188	4	1	-
026	N	11.1%	7.16	4.04	2.81	0.31	0.86	350,972	124.56	79.49	12.32	16.16	21,717	6	-	-
079	C	10.1%	8.51	4.84	3.36	0.31	0.92	343,734	125.25	80.20	11.07	13.74	25,011	6	-	-
056	N	9.3%	8.26	4.78	3.21	0.27	0.82	337,349	157.23	94.44	14.53	17.84	18,915	5	-	-
091	S	9.9%	10.30	5.81	4.03	0.46	1.08	315,205	130.58	83.43	9.14	11.96	26,349	8	-	-
025	N	10.9%	7.52	4.33	3.01	0.18	0.90	299,911	127.89	81.43	10.60	15.53	19,315	3	-	-
033	N	12.7%	5.70	3.19	2.21	0.30	0.78	294,234	122.54	79.37	9.79	19.82	14,843	5	-	-
089	S	12.3%	7.23	4.08	2.83	0.32	0.97	282,565	125.64	80.53	9.99	15.94	17,730	5	-	-
090	S	11.0%	9.02	4.98	3.46	0.58	1.04	248,979	128.35	81.35	8.49	13.54	18,394	8	-	-
529	C	7.5%	11.44	6.40	4.30	0.74	0.87	243,868	153.02	93.15	13.38	13.24	18,420	10	-	-
129	N	9.2%	9.78	5.63	3.82	0.33	0.96	160,748	131.87	83.58	11.20	12.67	12,688	3	-	-
143	N	8.5%	9.55	5.48	3.72	0.35	0.85	155,708	129.42	81.90	11.34	12.88	12,089	3	-	-
167	C	10.4%	8.93	4.96	3.36	0.61	0.86	147,237	124.92	82.83	10.11	13.45	10,946	5	-	-
150	C	15.4%	6.14	3.33	2.25	0.56	1.02	126,941	115.54	73.72	11.45	17.50	7,253	4	-	-
086	C	9.7%	9.52	5.31	3.69	0.52	0.97	103,736	122.42	82.56	9.46	12.28	8,448	3	-	-
153	N	5.2%	14.80	8.60	5.83	0.37	0.80	96,317	130.13	83.16	10.65	8.54	11,272	2	-	-
177	S	9.8%	10.67	5.86	3.97	0.84	1.07	63,909	123.70	82.50	9.65	11.34	5,634	3	-	-
178	C	7.6%	12.29	6.99	4.74	0.56	0.97	63,504	122.56	82.40	9.86	9.65	6,578	2	-	-
076	C	7.9%	11.53	6.55	4.40	0.58	0.94	62,249	144.01	88.49	12.37	12.12	5,136	2	-	-
082	S	15.1%	6.81	3.66	2.54	0.61	1.10	58,415	134.04	83.90	9.33	18.35	3,183	2	-	-
087	S	7.4%	12.58	7.03	4.87	0.68	0.95	52,530	126.06	83.79	8.43	9.81	5,353	2	-	-
085	S	7.1%	14.45	8.12	5.64	0.69	1.05	52,237	123.93	82.72	10.01	8.37	6,241	2	-	-
862	C	3.7%	22.84	14.63	7.41	0.80	0.84	45,106	162.80	94.31	19.85	7.12	6,339	2	-	-
123	N	4.6%	22.33	11.28	7.64	3.41	0.92	21,017	156.99	101.36	11.92	7.91	2,655	4	-	-

(1) Total bus count (429) is based on PM weekday equipment requirements.

(2) Bus count for routes 53X, 57X and 64X are estimated based on total route 53, 57 and 64 equipment requirements.

(3) C under Zone is Central County, N is North County and S is South County.



OCTA Operating Statistics By Route for Express Service (Sorted by Boardings)
Fiscal Year 2019-20 Through Q4

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	Bus Count		
														40 FT	32 FT	60 FT
794	C	22.5%	\$ 20.80	\$ 11.89	\$ 7.26	\$ 1.65	\$ 5.57	21,681	\$ 183.99	\$ 119.02	\$ 6.89	7.44	2,913	2	-	-
701	C	9.9%	26.69	14.61	9.17	2.91	2.62	18,464	263.84	165.17	11.02	10.00	1,847	3	-	-
721	N	4.7%	43.31	24.44	15.34	3.53	1.97	15,223	229.05	143.76	8.85	5.49	2,775	3	-	-
206	C	6.6%	23.16	9.36	5.72	8.08	1.06	8,881	146.16	84.93	7.44	9.05	981	4	-	-
213	N	2.5%	48.68	22.98	14.04	11.66	0.96	7,691	148.74	88.06	7.43	3.92	1,963	5	-	-

(1) Total bus count (429) is based on PM weekday equipment requirements.

(2) C under Zone is Central County, N is North County and S is South County.



OCTA Operating Statistics By Route for Stationlink Service (Sorted by Boardings)
Fiscal Year 2019-20 Through Q4

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	Bus Count		
														40 FT	32 FT	60 FT
473	C	9.1%	\$ 11.18	\$ 5.69	\$ 3.84	\$ 1.65	\$ 0.96	32,665	\$ 187.90	\$ 100.55	\$ 16.39	17.92	1,822	3	-	-
453	N	4.8%	15.02	8.05	5.42	1.55	0.68	23,201	177.03	99.22	29.48	12.51	1,854	2	-	-
472	C	6.4%	15.72	7.93	5.35	2.44	0.91	22,001	164.75	96.93	14.40	11.61	1,895	3	-	-
480	C	5.4%	19.24	9.71	6.55	2.98	0.93	18,021	176.74	99.74	15.44	10.28	1,752	3	-	-
463	C	2.2%	42.67	23.08	15.56	4.03	0.89	13,360	178.19	99.97	16.59	4.51	2,963	3	-	-

(1) Total bus count (429) is based on PM weekday equipment requirements.

(2) C under Zone is Central County, N is North County and S is South County.

Route Reference Table

Route	Route Description	Main Street	Route Category
1	Long Beach - San Clemente	via Pacific Coast Hwy	LOCAL
25	Fullerton - Huntington Beach	via Knott Ave/ Goldenwest St	LOCAL
26	Fullerton - Placentia	via Commonwealth Ave/ Yorba Linda Blvd	LOCAL
29	La Habra - Huntington Beach	via Beach Blvd	LOCAL
30	Cerritos - Anaheim	via Orangethorpe Ave	LOCAL
33	Fullerton - Huntington Beach	via Magnolia St	LOCAL
35	Fullerton - Costa Mesa	via Brookhurst St	LOCAL
37	La Habra - Fountain Valley	via Euclid St	LOCAL
38	Lakewood - Anaheim Hills	via Del Amo Blvd/ La Palma Ave	LOCAL
42	Seal Beach - Orange	via Seal Beach Blvd/ Los Alamitos Blvd/ Lincoln Ave	LOCAL
43	Fullerton - Costa Mesa	via Harbor Blvd	LOCAL
46	Long Beach - Orange	via Ball Road/ Taft Ave	LOCAL
47	Fullerton - Balboa	via Anaheim Blvd/ Fairview St	LOCAL
50	Long Beach - Orange	via Katella Ave	LOCAL
53/53X	Anaheim - Irvine	via Main St	LOCAL
54	Garden Grove - Orange	via Chapman Ave	LOCAL
55	Santa Ana - Newport Beach	via Standard Ave/ Bristol St/ Fairview St/ 17th St	LOCAL
56	Garden Grove - Orange	via Garden Grove Blvd	LOCAL
57/57X	Brea - Newport Beach	via State College Blvd/ Bristol St	LOCAL
59	Anaheim - Irvine	via Kraemer Blvd/ Glassell St/ Grand Ave/ Von Karman Ave	LOCAL
60	Long Beach - Tustin	via Westminster Ave/ 17th St	LOCAL
64/64X	Huntington Beach - Tustin	via Bolsa Ave/ 1st St	LOCAL
66	Huntington Beach - Irvine	via McFadden Ave/ Walnut Ave	LOCAL
70	Sunset Beach - Tustin	via Edinger Ave	LOCAL
71	Yorba Linda - Newport Beach	via Tustin Ave/ Red Hill Ave/ Newport Blvd	LOCAL
72	Sunset Beach - Tustin	via Warner Ave	LOCAL
76	Huntington Beach - John Wayne Airport	via Talbert Ave/ MacArthur Blvd	LOCAL
79	Tustin - Newport Beach	via Bryan Ave/ Culver Dr/ University Ave	LOCAL
82	Foothill Ranch - Rancho Santa Margarita	via Portola Pkwy/ Santa Margarita Pkwy	LOCAL
83	Anaheim - Laguna Hills	via 5 Fwy/ Main St	LOCAL
85	Mission Viejo - Laguna Niguel	via Marguerite Pkwy/ Crown Valley Pkwy	LOCAL
86	Costa Mesa - Mission Viejo	via Alton Pkwy/ Jeronimo Rd	LOCAL
87	Rancho Santa Margarita - Laguna Niguel	via Alicia Pkwy	LOCAL
89	Mission Viejo - Laguna Beach	via El Toro Rd/ Laguna Canyon Rd	LOCAL
90	Tustin - Dana Point	via Irvine Center Dr/ Moulton Pkwy/ Golden Lantern St	LOCAL
91	Laguna Hills - San Clemente	via Paseo de Valencia/ Camino Capistrano/ Del Obispo St	LOCAL
123	Anaheim - Huntington Beach	via Malvern Ave/ Valley View / Bolsa Chica	COMMUNITY
129	La Habra - Anaheim	via La Habra Blvd/ Brea Blvd/ Birch St/ Kraemer Blvd	COMMUNITY
143	La Habra - Brea	via Whittier Blvd/ Harbor Blvd/ Brea Blvd/ Birch St	COMMUNITY
150	Santa Ana - Costa Mesa	via Fairview St/ Flower St	COMMUNITY
153	Brea - Anaheim	via Placentia Ave	COMMUNITY
167	Orange - Irvine	via Irvine Ave/ Hewes St/ Jeffrey Rd	COMMUNITY
177	Foothill Ranch - Laguna Hills	via Lake Forest Dr/ Muirlands Blvd/ Los Alisos Blvd	COMMUNITY
178	Huntington Beach - Irvine	via Adams Ave/ Birch St/ Campus Dr	COMMUNITY
206	Santa Ana - Lake Forest Express	via 5 Fwy	EXPRESS BUS
213	Brea - Irvine Express	via 55 Fwy	EXPRESS BUS
453	Orange Transportation Center - St. Joseph's Hospital	via Chapman Ave/ Main St/ La Veta Ave	STATIONLINK
463	Santa Ana Regional transportation Center - Hutton Centre	via Grand Ave	STATIONLINK
472	Tustin Metrolink Station - Irvine Business Complex	via Edinger Ave/ Red Hill Ave/ Campus Dr/ Jamboree Rd	STATIONLINK
473	Tustin Metrolink Station - U.C.I.	via Edinger Ave/ Harvard Ave	STATIONLINK
480	Irvine Metrolink Station - Lake Forest	via Alton Pkwy/ Bake Pkwy/ Lake Forest Dr	STATIONLINK
529	Fullerton - Huntington Beach	via Beach Blvd	BRAVO
543	Fullerton Transportation Center - Santa Ana	via Harbor Blvd	BRAVO
560	Santa Ana - Long Beach	via 17th St/ Westminster Blvd	BRAVO
701	Huntington Beach - Los Angeles Express	via 405 Fwy/ 605 Fwy/ 105 Fwy/ 110 Fwy	EXPRESS BUS
721	Fullerton - Los Angeles Express	via 110 Fwy/ 91 Fwy	EXPRESS BUS
794	Riverside / Corona - South Coast Metro Express	via 91 Fwy/ 55 Fwy	EXPRESS BUS
862	Downtown Santa Ana Shuttle	via Civic Center Dr	COMMUNITY

Highlights for FY 2020-21

As OCTA reimagines mobility during the current pandemic and into a post-COVID-19 environment, there are two initiatives related to data collection and reporting that will move forward during this FY. These initiatives include an adjustment to both the method for counting passengers and OTP, which will bring OCTA closer to standard industry practice with respect to data collection and performance measurement and reporting.

Certification of Automatic Passenger Counters (APC) for Reporting

OCTA buses are equipped with both fareboxes and automatic passenger counters to count the passengers boarding OC Bus vehicles. Fareboxes on buses are located at the front entrance and are accurate, as long as passengers pass through and pay the fare to board or swipe their pass at the farebox. This has traditionally been the method OCTA has used for reporting boarding data. With the onset of COVID-19, passengers were diverted to boarding through the rear door of the bus as a health and safety measure for OC Bus coach operators. APCs are installed at both front and rear doors and capture boarding and alighting information automatically. OCTA has been evaluating the expanded use of APCs over the past few years; this data has been helpful for planning purposes as you can determine passenger loads at various points along a route. With the change in the boarding process in early April, staff began utilizing the APC data to capture all boarding information since the farebox would not be able to capture the rear door boarding.

The use of APCs is an acceptable process for counting boardings per the Federal Transit Administration and is widely used throughout the industry.

In addition, OCTA is in the process of receiving certification for using APC data for official NTD reporting. Since using APCs provide a more accurate count for boardings data than using farebox data, OCTA intends to use this method for counting boardings going forward, even after front-door boarding is reinstated. The OCTA Board of Directors (Board) will be notified if staff changes this methodology in the future. In addition to counting boardings, APCs also count alightings (disembarkation), which provides the additional benefit of knowing the actual number of passengers on a bus at any given time.

OTP Reporting Methodology

OTP for OC Bus service is tracked daily and reported to the Board on a quarterly basis. The current methodology used for tracking and reporting OTP only accounts for the late departures from scheduled time points on a route as printed in the bus route schedule. After evaluating similar data collected by peer agencies and through OCTA's participation in the American Bus Benchmarking Group (ABBG) collaborative, staff proposes to modify OCTA's current OTP methodology to include early departures from scheduled time points in addition to late trips in the calculation of OTP. An early departure is one in which the bus leaves an established timepoint more than 59 seconds ahead of the posted schedule. Including the early departures will provide for a more thorough overall measure of OTP.

ABBG was established in 2011 to provide a confidential forum for mid-sized bus organizations in the United States to learn from each other by comparing performance, sharing experiences, and identifying best practices. OCTA joined ABBG in May 2019 and has been an active participant in both the fixed-route and paratransit groups. Utilizing the data provided through ABBG, OCTA has been able to evaluate

performance with peer agencies and identify areas of high performance and those requiring additional review and action.

In connection with this proposed change, staff is also recommending an adjustment to the OTP standard of 85 percent to 80 percent. In considering this adjustment, staff reviewed OTP data from ABBG for 23 other transit properties. It should be noted that only six of 23 agencies included in the ABBG collaborative have been able to meet an OTP of 85 percent, while 11 of the 23 agencies were able to achieve an OTP standard of 80 percent. In evaluating the historical trend of OTP for both DOFR and CFR, recent performance trends have been below the current standard of 85 percent, primarily driven by traffic impacts and construction-related activities. As restrictions are lifted and more business, jobs, schools, and other establishments reopen, traffic patterns will continue to change. Adjusting the standard also provides an opportunity to account for these dynamic changes and allow staff to continue to evaluate the performance and OCTA's desired result for service reliability. Additionally, adjusting the standard to 80 percent is consistent with performance of the ABBG collaborative. Staff will continue to monitor OTP and report quarterly, including any recommendations to further adjust the OTP standard through the COVID-19 recovery period.

OC Bus 360° Initiatives

OC Flex Pilot Program

OC Flex service launched in October 2018 in two zones under a one-year pilot program. The Board approved five primary goals and performance metrics to evaluate the pilot program. Upon approval of the pilot program, the Board directed staff to provide updates on the performance metrics as part of quarterly Bus Operations Performance Measurements Report.

For the fourth quarter of FY 2019-20, ridership experienced a severe decrease due to the impacts associated with COVID-19. At the onset of the pandemic, the OC Flex service in the Blue Zone, serving parts of Huntington Beach and Westminster, was suspended on March 23, 2020, due to low demand. Service in the Orange Zone was sustained, but at a lower level – two vehicles all day. Staff is developing options for the near and long-term options for the OC Flex service post-COVID-19 and will return to the Board with recommendations.

OC Flex Ridership – Through Q4-FY2019-20



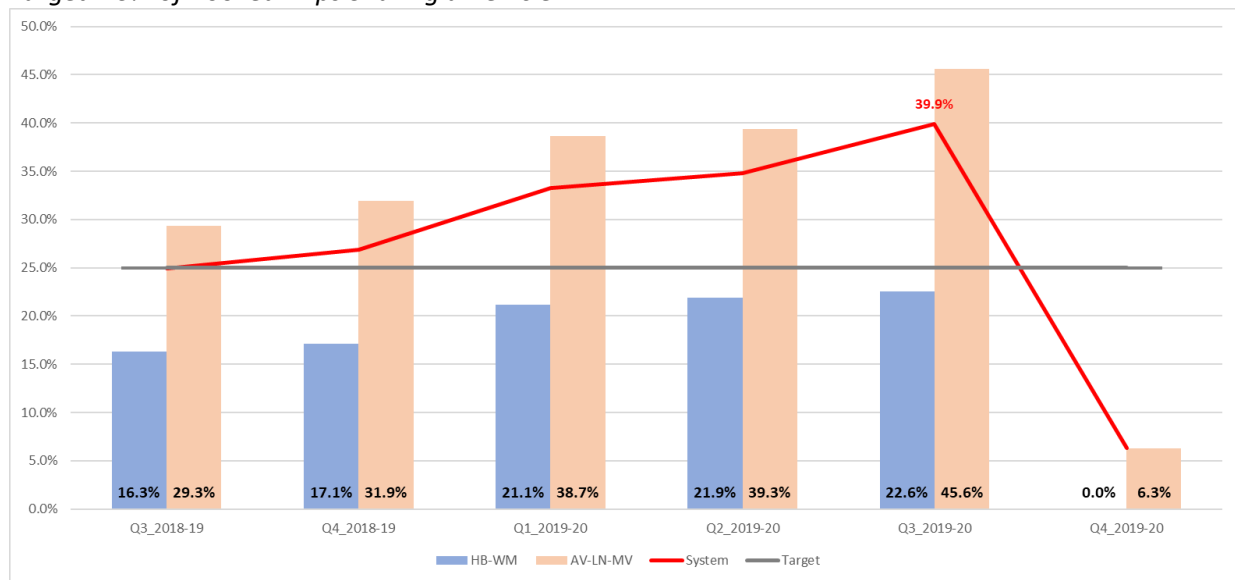
OC Flex Productivity (B/RVH) and Direct Subsidy per Boarding – Through Q4-FY2019-20

Targets: Productivity – 6 B/RVH; Direct Subsidy per Boarding - \$9 per Boarding



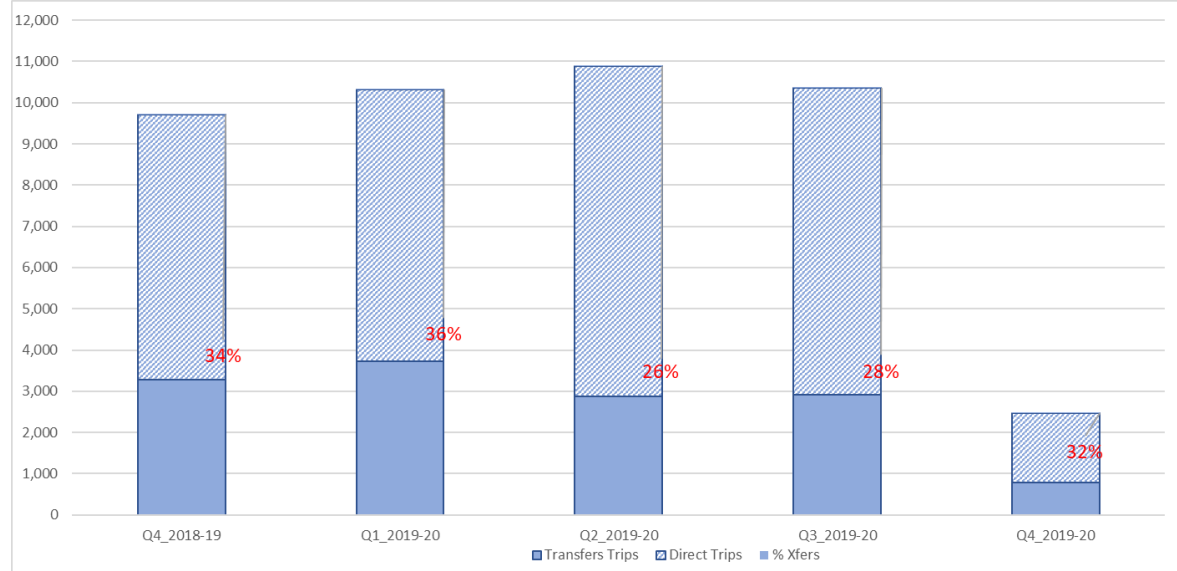
OC Flex Shared Trips – Through Q4-FY2019-20

Target: 25% of Booked Trips Sharing a Vehicle



OC Flex Connecting Trips (Transfers) – Through Q4-FY2019-20

Target: 25% of Trips Transfer to OC Bus or Metrolink Service



College Pass Program

The College Pass Program started in August 2017 with students from Santa Ana College and continuing education students from Santa Ana College and Santiago Canyon College.

In August 2018, the program expanded to include all students from Santiago Canyon College. In Fall 2019, both Golden West and Fullerton colleges joined the College Pass Program.

The College Pass Program has been very successful and popular among students and colleges. Even with the then-possibility of remote instruction in the fall 2020 term, interest to join the program remained high.

During this quarter, staff worked with the Rancho Santiago Community College District to continue the College Pass Program as both Santa Ana College and the district's School of Continuing Education approached the end of their three-year long pilot programs. Staff also worked to prepare for addition of Saddleback College to the College Pass Program in fall 2020.

OCTA continues to work with other interested colleges to expand the College Pass program with college-provided funding or student fees and available Low Carbon Transit Operations Program grant funds.

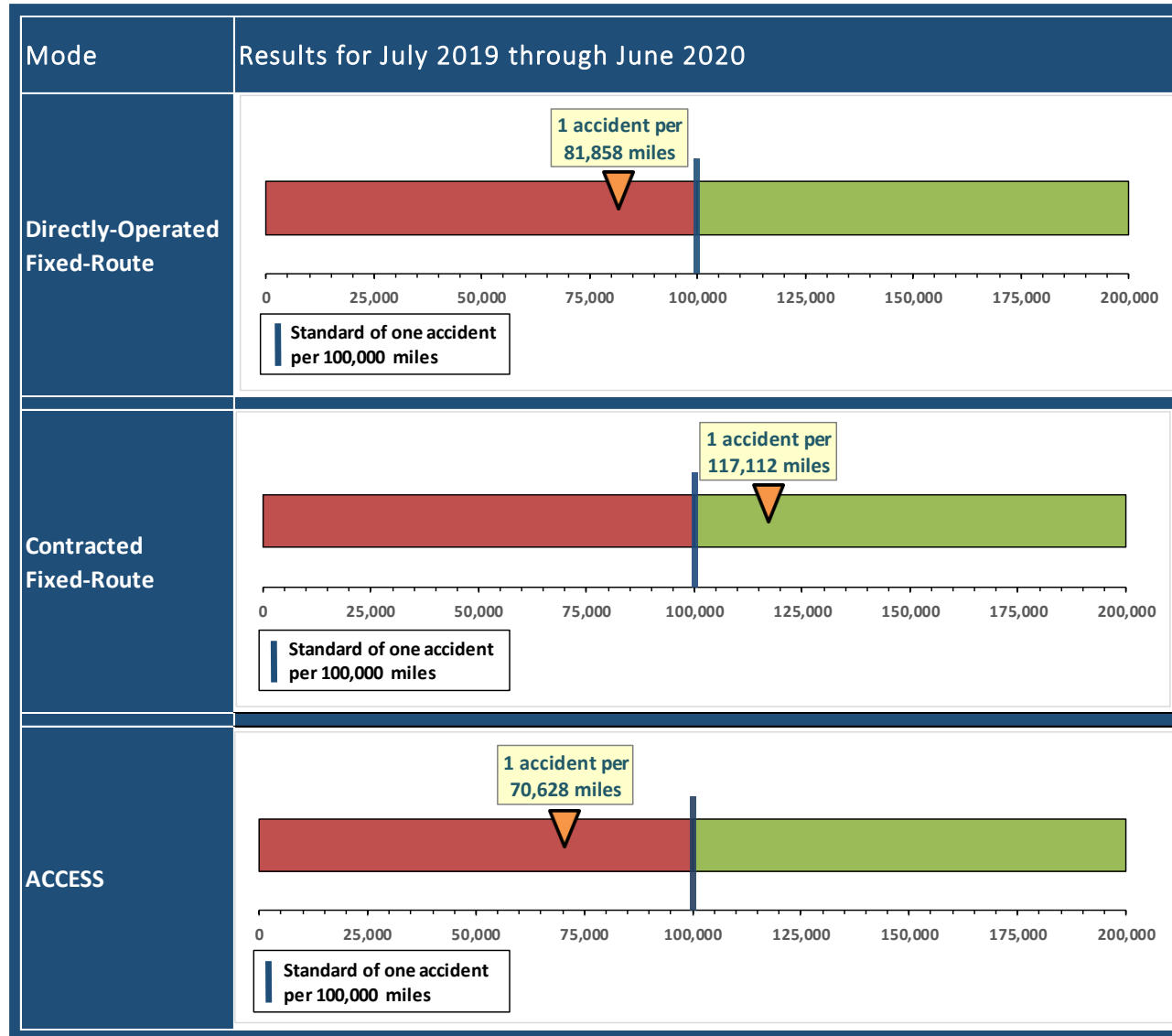
BUS OPERATIONS PERFORMANCE MEASUREMENTS REPORT

**Fourth Quarter
Fiscal Year 2019-20**

Performance Measurements

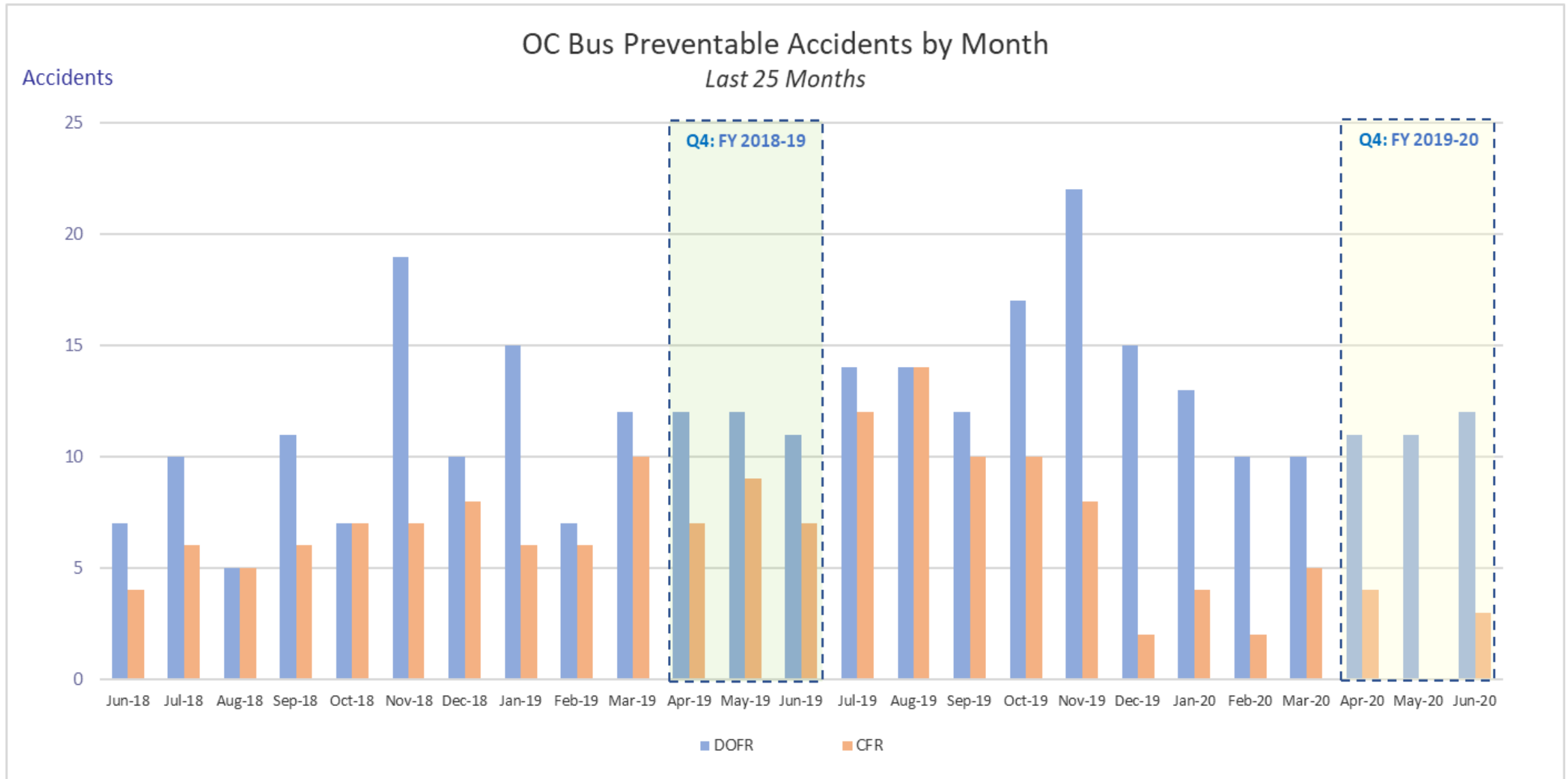
- Safety – Preventable Vehicle Accidents
- Courtesy – Customer Complaints
- Reliability – On-Time Performance (OTP) and Miles Between Road Calls (MBRC)
- Ridership and Productivity
- Farebox Recovery Ratio (FRR)
- Operating Cost per Revenue Vehicle Hour (RVH)
- Performance by Route

Safety

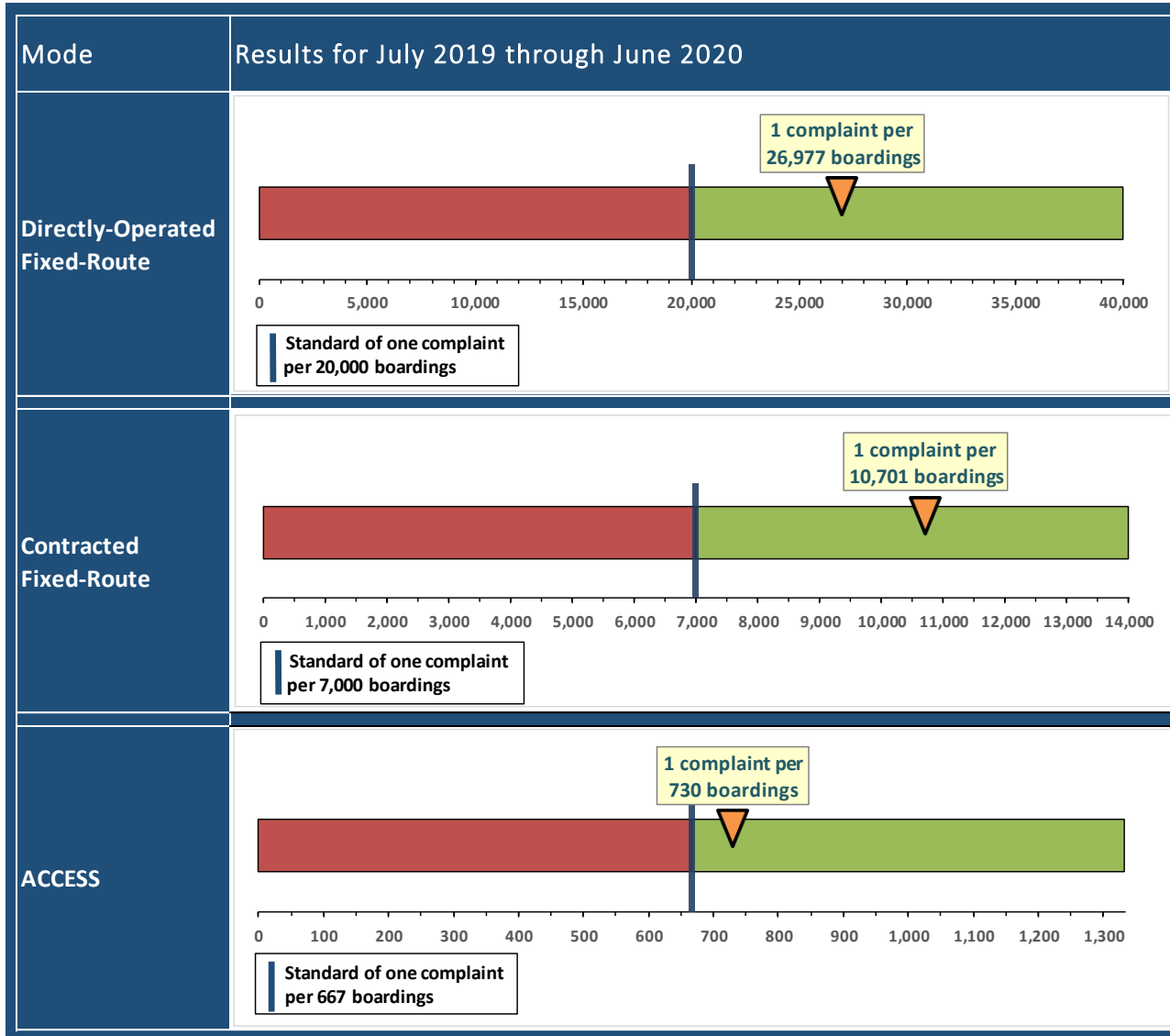


- Directly-operated fixed-route (DOFR) and OC ACCESS were both below the safety standard
- DOFR
 - Number of preventable accidents between April and June was approximately the same compared to last quarter and the same time last year
 - Operations staff continues to conduct safety-related campaigns and promote the safe driving award program
- OC ACCESS
 - Six preventable accidents reported during the fourth quarter was
 - An 81 percent decrease from 33 reported the previous quarter
 - Regional Director of Safety onsite

Preventable Accidents – Last 25 Months



Courtesy



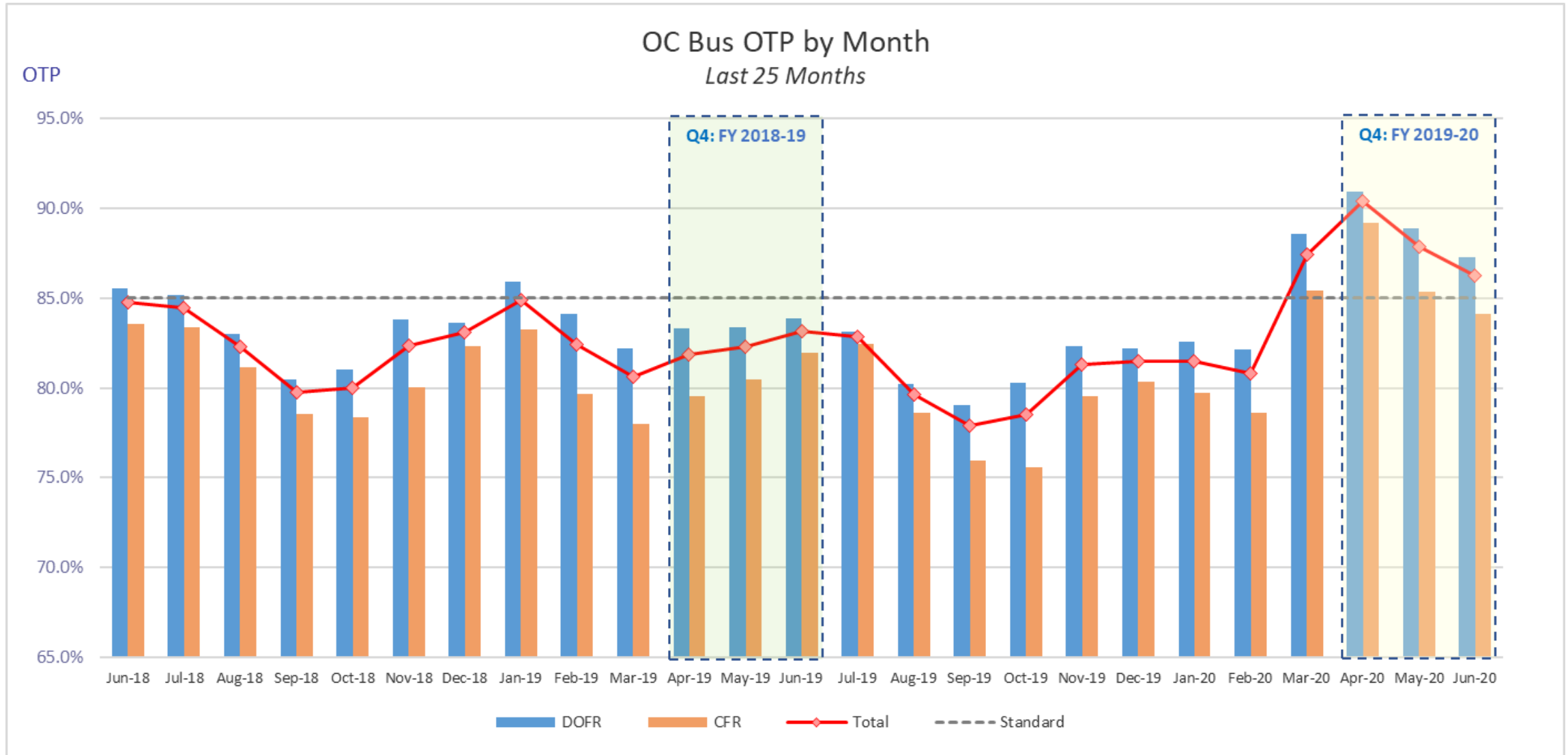
- All three modes of service exceeded the courtesy standard

Reliability-OTP

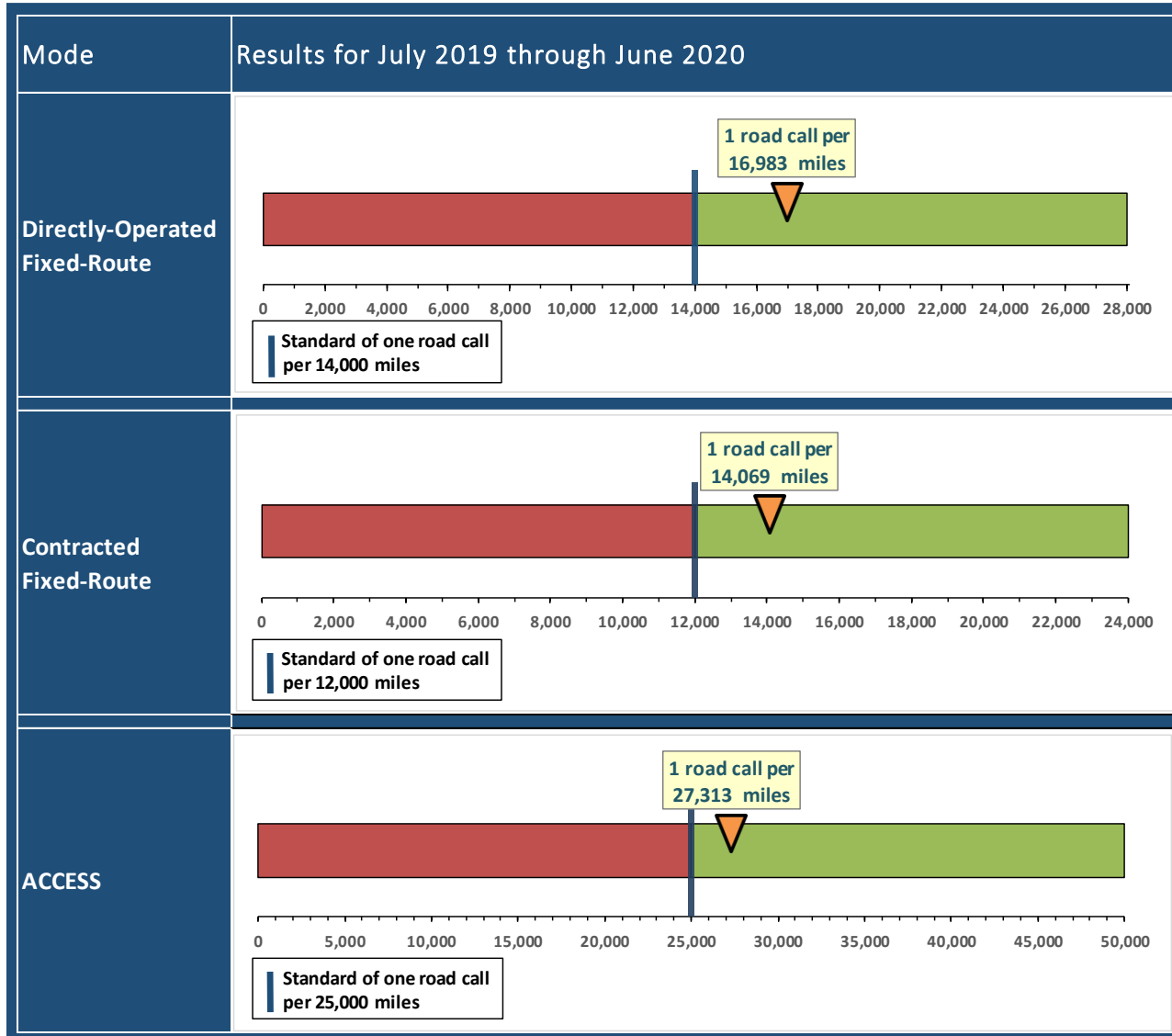


- Systemwide fixed-route service was 2.6 percent below the standard
- DOFR service was 1.5 percent below the standard
 - 1.3 percent improvement over last quarter
 - 89 percent between April and June
- Contracted fixed-route (CFR) service was 4.5 percent below the standard
 - 1.0 percent increase over last quarter
 - 86.1 percent between April and June
- OC ACCESS service was 1.5 percent below the standard

OTP – Last 25 Months

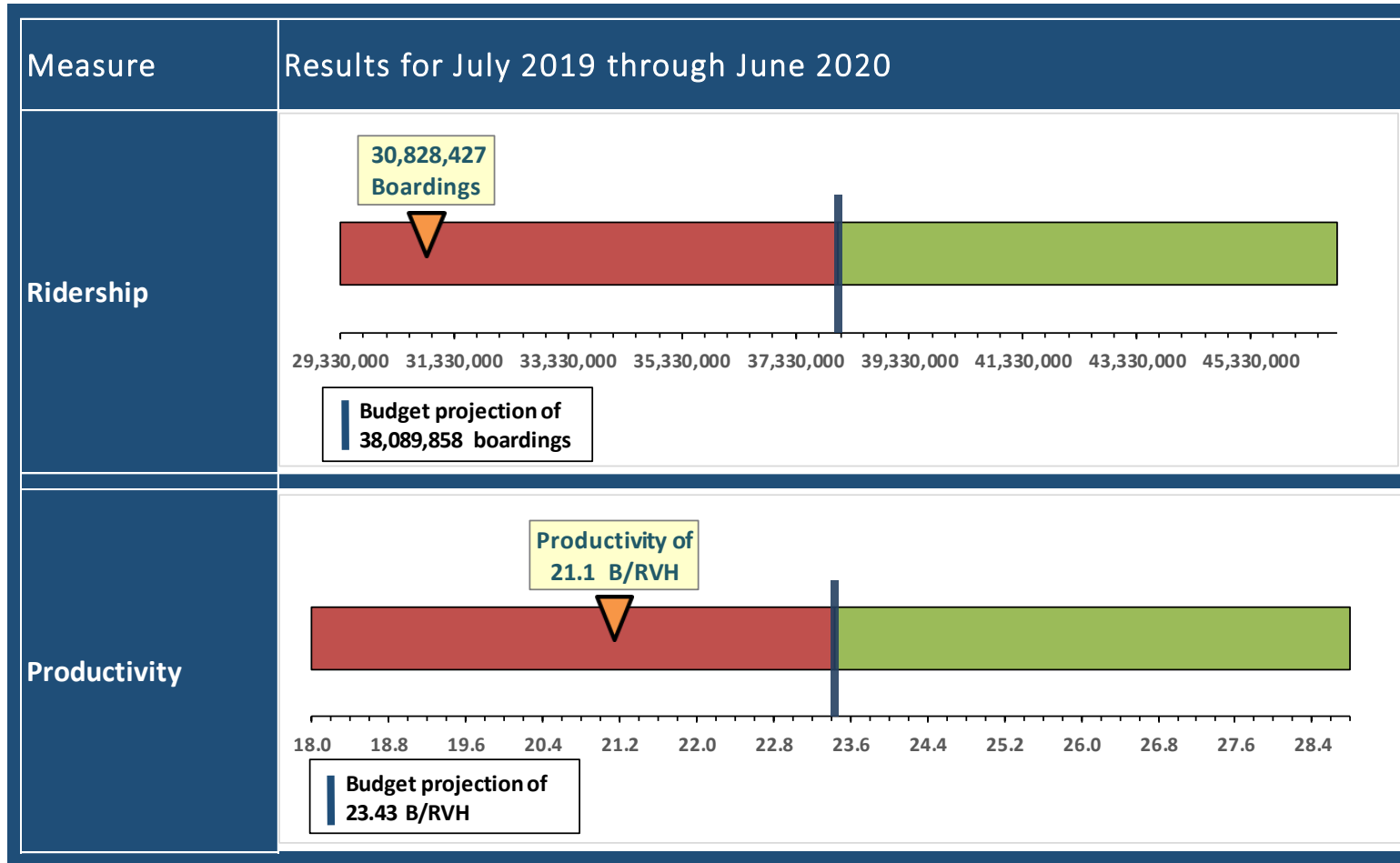


Reliability-MBRC



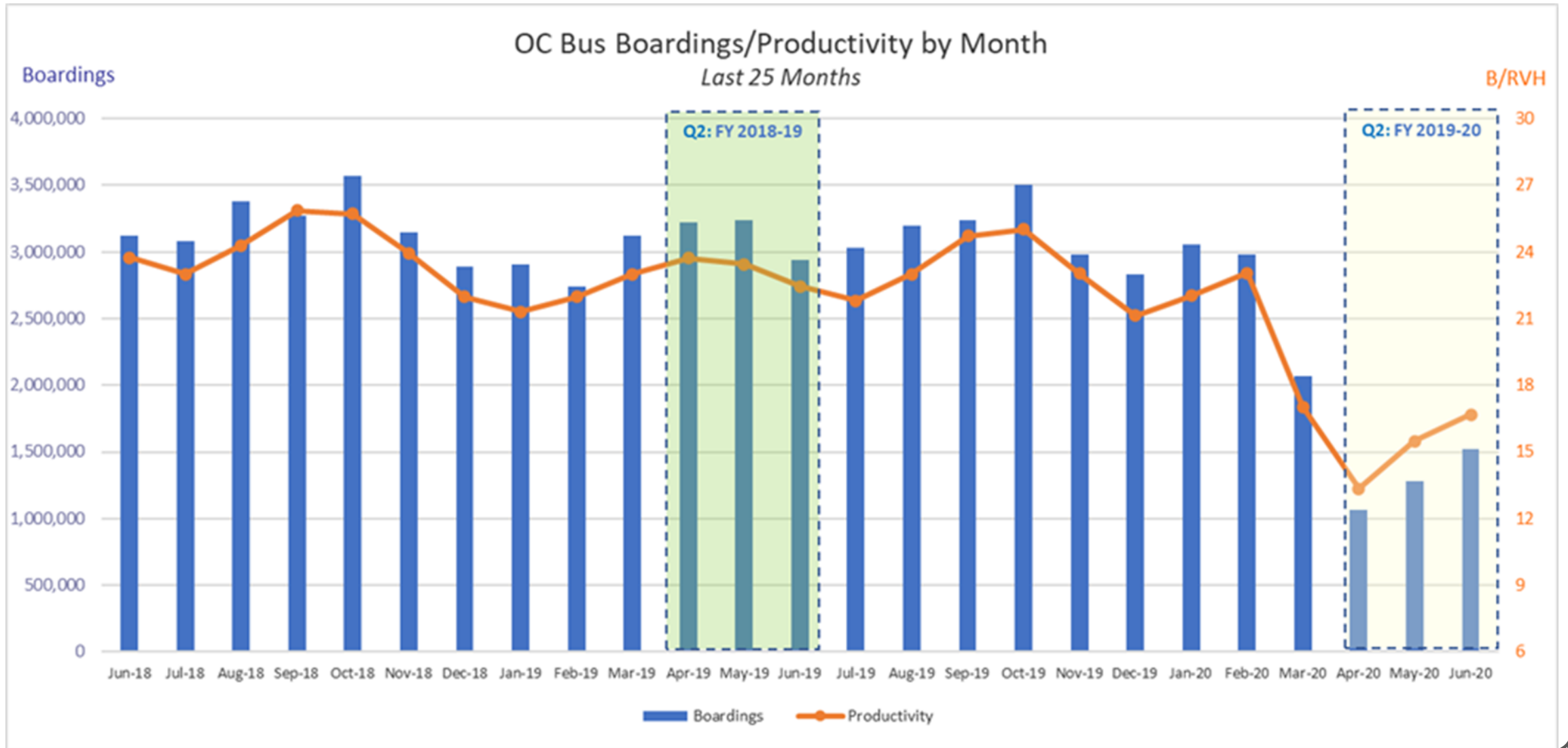
- All modes of service exceeded the MBRC standard

Fixed-Route-Ridership and Productivity

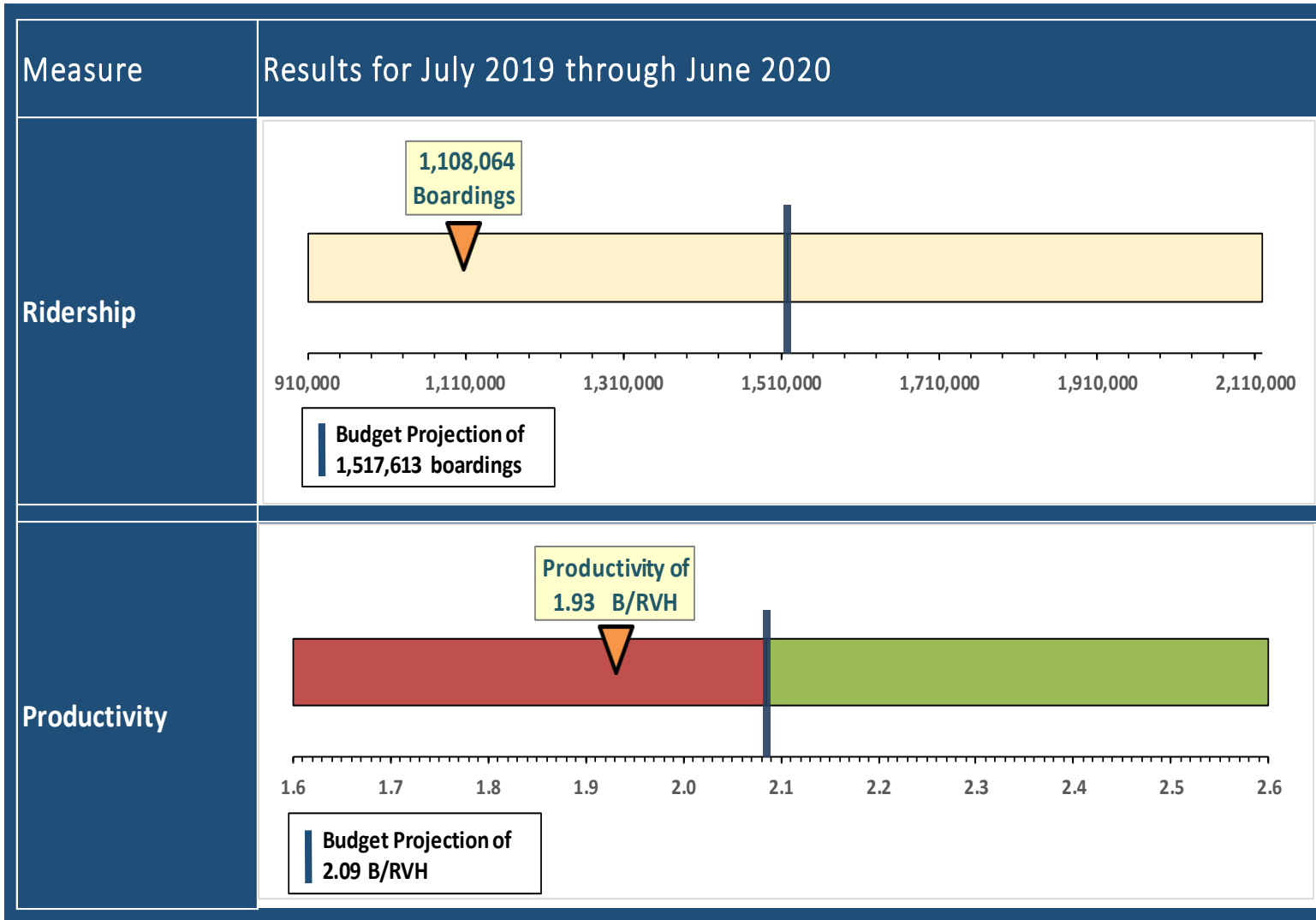


- Fixed-route service was below the budget projection for ridership and productivity
 - Ridership and productivity for down significantly lower from budgeted projections
 - 19.1 percent and 9.8 percent, respectively.

Ridership/Productivity – Last 25 Months

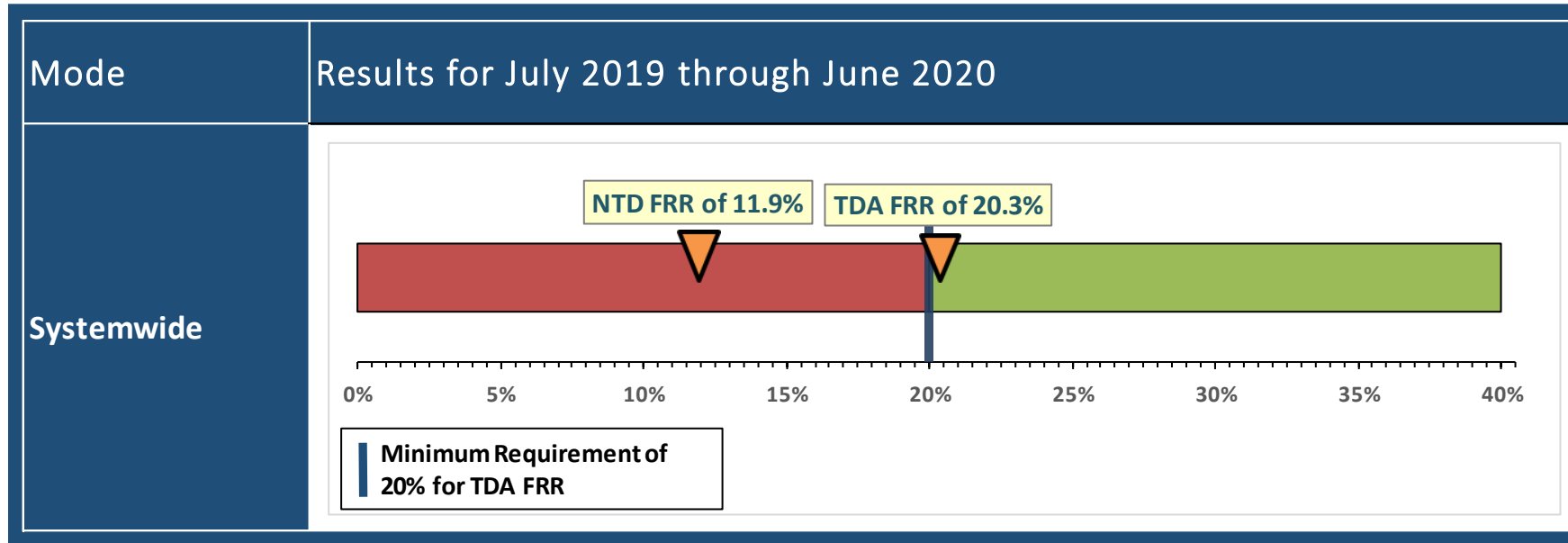


OC ACCESS-Ridership and Productivity



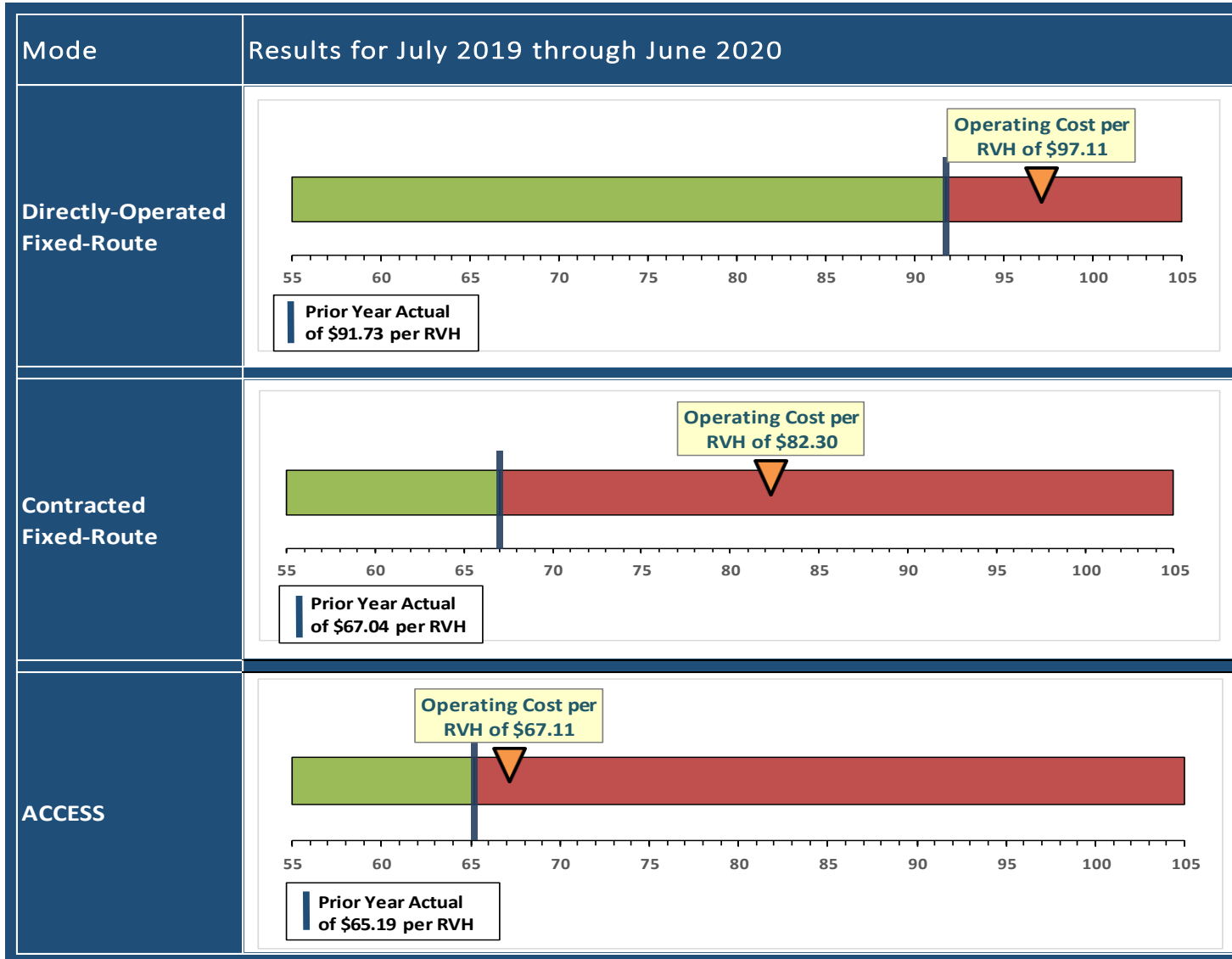
- OC ACCESS service was 27 percent below the budget projection for ridership.
- Productivity is 7.6 percent below the budgeted projections.

Farebox Recovery Ratio (FRR)



- National Transit Database (NTD) FRR was 6.9 percent under the standard, and
- Transportation Development Act FRR was 0.8 percent under the standard.

Cost per RVH



- DOFR operating cost increased 8.0 percent from the prior year actuals
- CFR operating cost increased 24.6 percent from the prior year actuals
- OC ACCESS operating cost increased 2.9 percent from the prior year actuals

Performance: Local Routes

Route	Farebox	Subsidy per Boarding	Boardings	BoardVSH	VSH	40 FT	32 FT	60 FT
085	7.1%	\$ 14.45	52,237	8.37	6,241	2	-	-
001	5.7%	13.96	458,294	11.30	40,549	10	-	-
087	7.4%	12.58	52,530	9.81	5,353	2	-	-
076	7.9%	11.53	62,249	12.12	5,136	2	-	-
529	7.5%	11.44	243,868	13.24	18,420	10	-	-
083	7.9%	10.49	473,504	15.00	31,558	9	-	-
091	9.9%	10.30	315,205	11.96	26,349	8	-	-
086	9.7%	9.52	103,736	12.28	8,448	3	-	-
090	11.0%	9.02	248,979	13.54	18,394	8	-	-
079	10.1%	8.51	343,734	13.74	25,011	6	-	-
056	9.3%	8.26	337,349	17.84	18,915	5	-	-
059	11.3%	7.55	437,567	15.51	28,217	7	-	-
025	10.9%	7.52	299,911	15.53	19,315	3	-	-
089	12.3%	7.23	282,565	15.94	17,730	5	-	-
055	12.2%	7.19	1,065,394	19.76	53,903	13	-	-
026	11.1%	7.16	350,972	16.16	21,717	6	-	-
050	10.2%	7.05	1,061,157	20.95	50,662	5	-	6
071	11.7%	7.03	588,274	16.73	35,164	9	-	-
082	15.1%	6.81	58,415	18.35	3,183	2	-	-
029	11.3%	6.81	1,522,420	22.35	68,122	5	-	7
072	11.8%	6.76	413,271	20.47	20,188	4	1	-

Route	Farebox	Subsidy per Boarding	Boardings	BoardVSH	VSH	40 FT	32 FT	60 FT
037	12.1%	\$ 6.51	868,177	22.89	37,928	15	-	-
054	12.2%	\$ 6.48	977,610	21.87	44,705	16	-	-
057	12.0%	\$ 6.46	1,730,735	25.71	67,315	4	-	11
560	12.9%	\$ 6.41	533,867	21.57	24,746	13	-	-
070	13.1%	\$ 6.15	732,855	19.44	37,690	10	-	-
543	12.7%	\$ 6.00	726,602	24.01	30,262	10	-	-
035	12.5%	\$ 5.85	647,987	20.29	31,934	10	-	-
047	14.2%	\$ 5.79	1,723,659	24.18	71,273	19	-	-
033	12.7%	\$ 5.70	294,234	19.82	14,843	5	-	-
030	12.9%	\$ 5.68	555,483	20.05	27,710	7	-	-
060	12.6%	\$ 5.66	1,647,095	26.03	63,269	12	-	-
038	13.3%	\$ 5.66	821,807	21.75	37,783	14	-	-
046	14.0%	\$ 5.60	509,693	20.56	24,789	8	-	-
053	13.2%	\$ 5.52	1,230,116	27.74	44,342	10	-	-
043	15.5%	\$ 4.88	1,781,035	27.92	63,796	11	-	-
042	14.2%	\$ 4.81	1,261,278	24.55	51,369	13	-	-
064	15.1%	\$ 4.56	1,349,122	32.49	41,528	10	-	-
066	17.0%	\$ 4.51	1,698,471	30.49	55,700	12	-	-
053X	20.3%	\$ 3.82	483,523	28.73	16,832	5	-	-
057X	22.4%	\$ 3.53	775,154	31.09	24,931	3	-	6
064X	24.2%	\$ 2.87	435,532	36.46	11,947	4	-	-

VSH - vehicle service hour

BoardVSH - boardings per vehicle service hour

Performance: Community Routes

Route	Farebox	Subsidy per Boarding	Boardings	BoardVSH	VSH	40 FT	32 FT	60 FT
862	3.7%	\$ 22.84	45,106	7.12	6,339	2	-	-
123	4.6%	22.33	21,017	7.91	2,655	4	-	-
153	5.2%	14.80	96,317	8.54	11,272	2	-	-
178	7.6%	12.29	63,504	9.65	6,578	2	-	-
177	9.8%	10.67	63,909	11.34	5,634	3	-	-
129	9.2%	9.78	160,748	12.67	12,688	3	-	-
143	8.5%	9.55	155,708	12.88	12,089	3	-	-
167	10.4%	8.93	147,237	13.45	10,946	5	-	-
150	15.4%	6.14	126,949	17.50	7,253	4	-	-

Performance: Express/Stationlink Routes

Route	Farebox	Subsidy per Boarding	Boardings	BoardVSH	VSH	40 FT	32 FT	60 FT
213	2.5%	\$ 48.68	7,691	3.92	1,963	5	-	-
721	4.7%	43.31	15,223	5.49	2,775	3	-	-
701	9.9%	26.69	18,464	10.00	1,847	3	-	-
206	6.6%	23.16	8,881	9.05	981	4	-	-
794	22.5%	20.80	21,681	7.44	2,913	2	-	-

Route	Farebox	Subsidy per Boarding	Boardings	BoardVSH	VSH	40 FT	32 FT	60 FT
463	2.2%	\$ 42.67	13,360	4.51	2,963	3	-	-
480	5.4%	19.24	18,021	10.28	1,752	3	-	-
472	6.4%	15.72	22,001	11.61	1,895	3	-	-
453	4.8%	15.02	23,201	12.51	1,854	2	-	-
473	9.1%	11.18	32,665	17.92	1,822	3	-	-

Highlights for Fiscal Year 2020-21

Federal Transit Administration (FTA) Certification of Automatic Passenger Counters (APC)

- OCTA buses are equipped with both fareboxes and APCs to count the passengers boarding our vehicles
 - APC sensors located at front and rear doors vs. one farebox at front door
- APCs are an acceptable means for counting boardings per the FTA
- Provides a more accurate count for boardings data than using farebox data
- OCTA is in the process of receiving certification for using APC data for official NTD reporting

Highlights for Fiscal Year (FY) 2020-21

OTP Reporting Methodology

- OTP for OC Bus service is tracked daily and reported to the Board of Directors on a quarterly basis.
- Current methodology for tracking and reporting OTP only accounts for late departures
- Recent peer review suggests including early departures into overall OTP calculation
- Staff proposes moving OTP standard from 85 percent to 80 percent

Future Reports

December 10, 2020, Transit Committee

- Revised format for Performance reporting for FY 2020-21
- Changes to data collection
- Change OTP standard
- First Quarter Bus Operations Performance Measurements Report

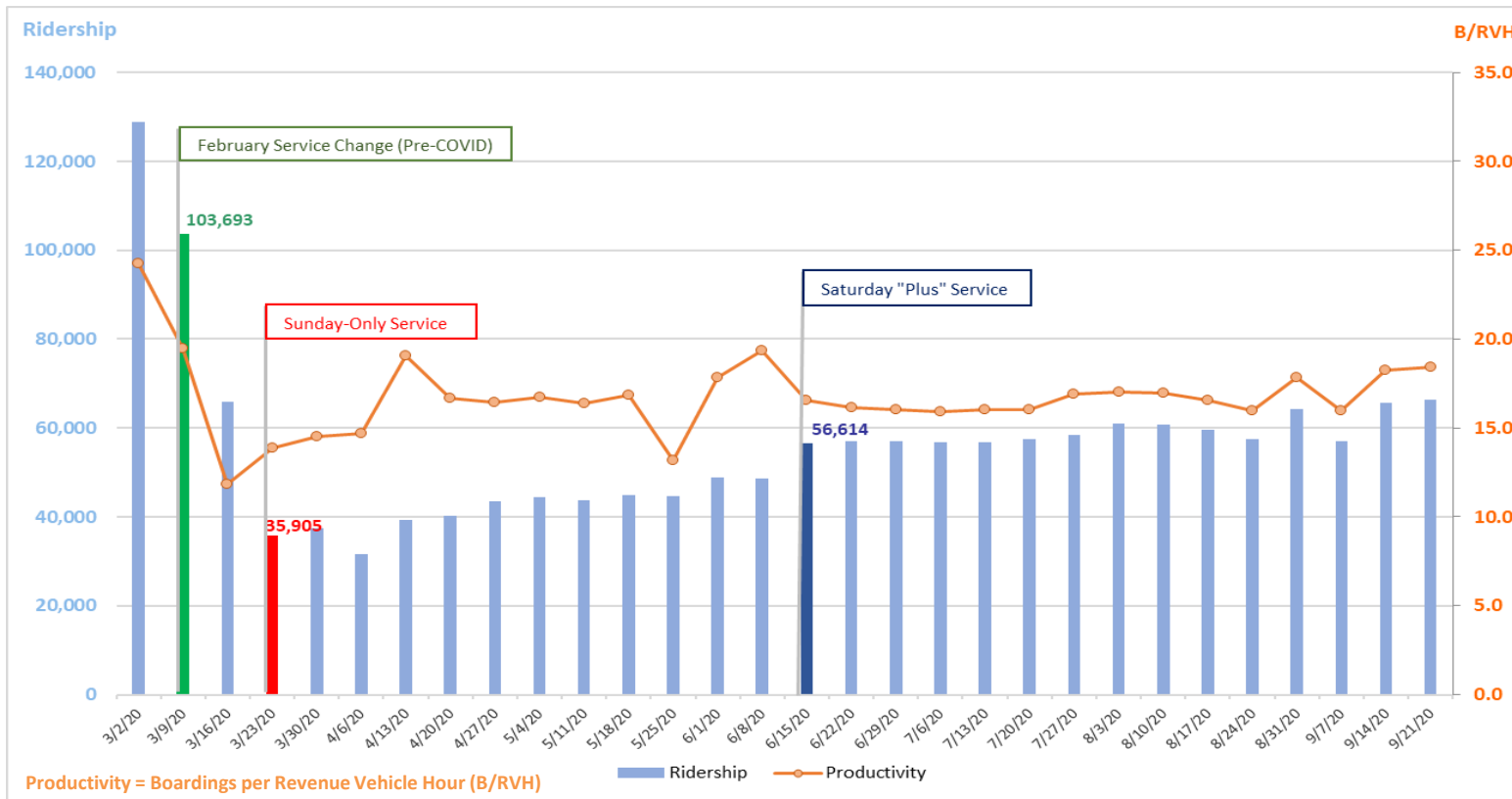
OC Bus Service Update

Key Metrics:

- Ridership
 - Trending at 50 percent or less of the average weekday ridership
- Pass-Bys
 - Occurs when passenger loads on a 40-foot bus reach 15 or more (20 passengers on a 60-foot bus)
- Trippers
 - Unscheduled trips dispatched to provide more capacity and prevent overloads (15+ passengers)
 - Deployed based on data, coach operator input, and customer comment
- On-Time Performance
 - Measuring service quality as impacted by the pandemic
- Customer Comments
 - Trends, feedback, and issues reported

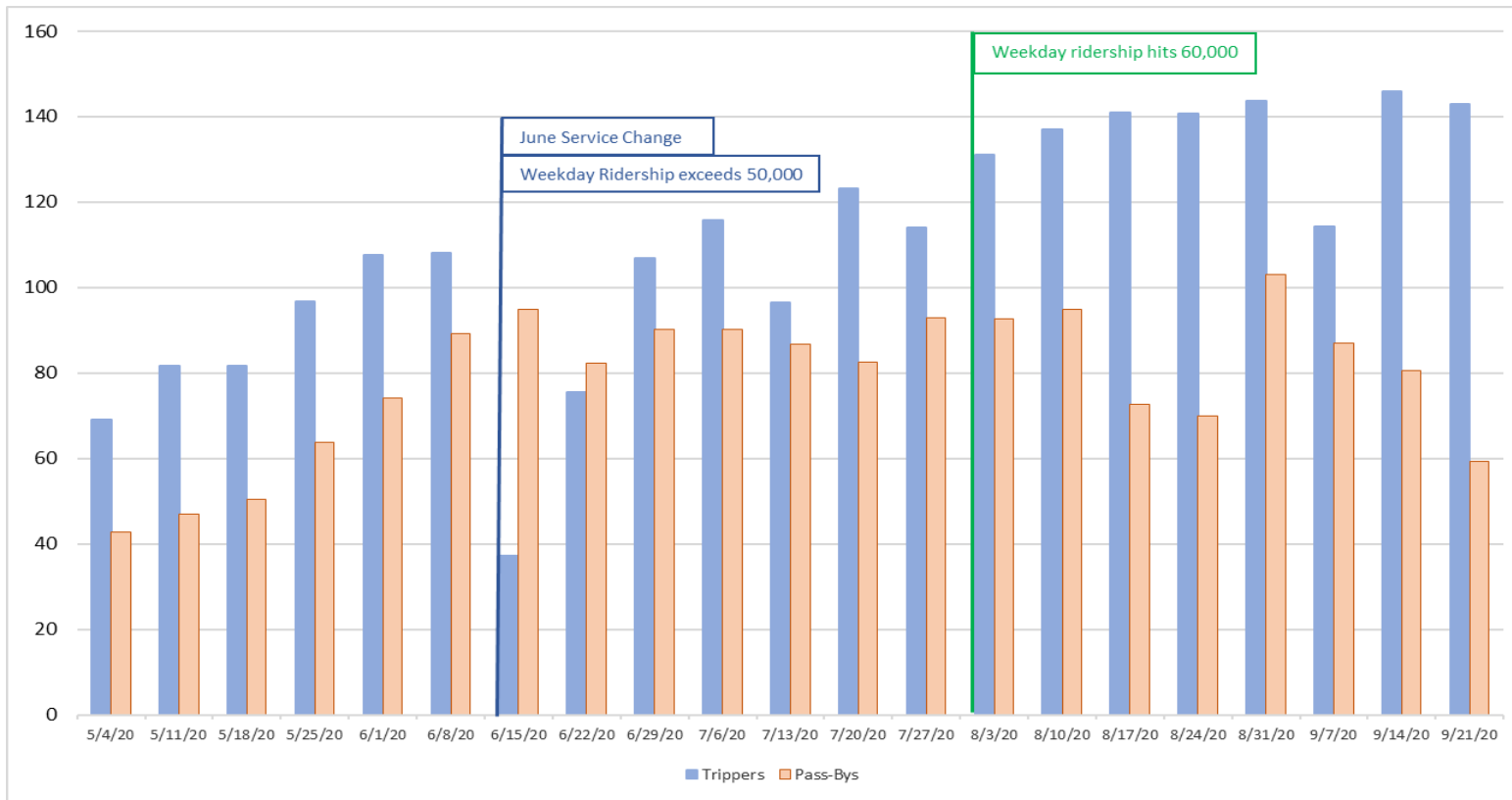
OC BUS RIDERSHIP AND PRODUCTIVITY

(AVERAGE WEEKDAY)



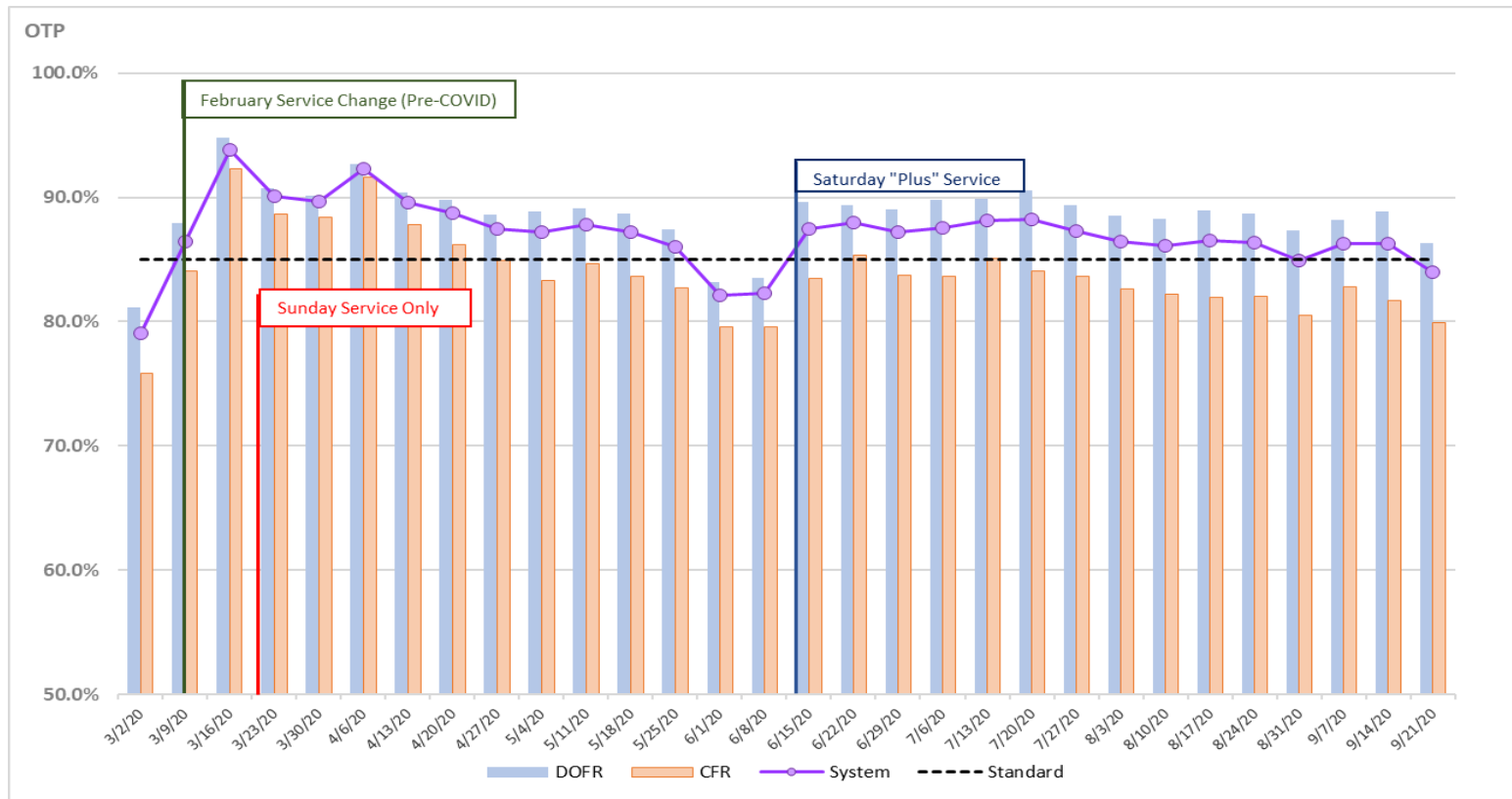
OC BUS TRENDS: TRIPPERS VS. PASS-BYS

(AVERAGE WEEKDAY)



OC BUS TRENDS: ON-TIME PERFORMANCE

(AVERAGE WEEKDAY)



CUSTOMER COMMUNICATION AND FEEDBACK

COVID-19 Safety Measure

Face Covering Partnerships

- Orange County Healthcare Agency and social service agencies



Customer Comments

Face Coverings

- Continuing decrease in number of customer complaints over limited mask enforcement and/or unmasked passengers (20 comments as of Sept. 26)



CUSTOMER COMMUNICATION AND FEEDBACK

COVID-19 Safety Measure

Front Door Boarding



Customer Comments

Bus Pass-bys

- Slight increase in customer complaints on pass-bys per week from an average of 11 in August to 11.8 complaints as of September 26.

Overcrowding Complaints

- Passenger overcrowding complaints per week have decreased from an average of five complaints in August to three complaints as of September 26.

Front Door Boarding Comments

- Few front door comments, focused on increased fare enforcement as of September 26.



NEXT STEPS

- Continue to track service performance and COVID-19 impacts
- Monitor changes to stay-at-home orders, school, and business activities
- Maintain current service level (“Saturday+” service) through October