AGENDA

Transit Committee Meeting

Committee Members
Tim Shaw, Chairman
Al Murray, Vice Chairman
Andrew Do
Steve Jones
Miguel Pulido
Tom Tait
Gregory T. Winterbottom

Orange County Transportation Authority
Headquarters
550 South Main Street
Board Room – Conf. Room 07
Orange, California
Thursday, December 14, 2017 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.

Call to Order

Pledge of Allegiance
Director Do

1. Public Comments

Special Calendar

There are no Special Calendar matters.

Consent Calendar (Items 2 through 4)

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 November 9, 2017.

3. Amendment to Agreement for Project Management Consultant Services for Rail Programs

Dinah Minteer/James G. Beil

Overview

On August 12, 2013, the Orange County Transportation Authority Board of Directors approved an agreement with Mott MacDonald, LLC, to provide program management consultant services to support program management and delivery of rail programs. An amendment to the existing agreement is needed for the consultant to continue providing these services for rail programs.

Recommendation

Authorize the Chief Executive Officer to negotiate and execute Amendment No. 8 to Agreement No. C-3-1587 between the Orange County Transportation Authority and Mott MacDonald, LLC, in the amount of $1,125,156, for continued program management consultant support services for rail programs. This will increase the maximum cumulative payment obligation of the agreement to a total contract value of $7,320,512.

4. Project V Community-Based Transit Circulators Program Ridership Report

Christina Moore/Kia Mortazavi

Overview

Measure M2 establishes a competitive program through Project V to fund local transit services that complement regional transit. Since inception, the Orange County Transportation Authority Board of Directors approved 23 projects for a total of $36.5 million in Project V funds. A ridership report on Project V services currently operating is provided for information purposes.

4. (Continued)

Recommendation

Receive and file as an information item.

Regular Calendar

5. Central Harbor Boulevard Transit Corridor Study
Eric Carlson/Kia Mortazavi

Overview

In August 2015, the Orange County Transportation Authority initiated the Central Harbor Boulevard Transit Corridor Study to analyze transit options in the Harbor Boulevard corridor. The study scope was amended in October 2016 to also evaluate transit connections between the Anaheim Resort and the Anaheim Regional Transportation Intermodal Center. In February 2017, 12 draft conceptual alternatives were presented for review and comment, and this update presents the results of the conceptual alternatives analysis.

Recommendations

A. Direct staff to offer presentations of the study results to the city councils in the study area, and return to the Board of Directors with a status report when completed.

B. Direct staff to continue to work with technical staff from each of the corridor cities and the California Department of Transportation to identify key issues that would need to be addressed during any subsequent study efforts.

6. Transit Division Performance Measurements Report for the First Quarter of Fiscal Year 2017-18
Johnny Dunning, Jr. /Beth McCormick

Overview

The Orange County Transportation Authority operates fixed-route bus and demand-response paratransit service throughout Orange County and into neighboring counties. This report summarizes the performance measures for the transit services provided during the first quarter of fiscal year 2017-18. These performance measures gauge the safety, courtesy, reliability, and overall quality of the public transit services provided.

6. (Continued)

Recommendation

Receive and file as an information item.

Discussion Items

7. Chief Executive Officer's Report

8. Committee Members' Reports

9. Closed Session

There are no Closed Session items scheduled.

10. Adjournment

The next regularly scheduled meeting of this Committee will be held at **9:00 a.m. on Thursday, January 11, 2018**, at the Orange County Transportation Authority Headquarters, 550 South Main Street, Board Room - Conference Room 07, Orange, California.

Committee Members Present	Staff Present
Tim Shaw, Chairman	Darrell Johnson, Chief Executive Officer
Al Murray, Vice Chairman	Ken Phipps, Deputy Chief Executive Officer
Steve Jones	Laurena Weinert, Clerk of the Board
Miguel Pulido	Sara Meisenheimer, Deputy Clerk of the Board
Tom Tait	James Donich, General Counsel
Gregory T. Winterbottom	OCTA Staff and members of the General Public

Committee Members Absent
Andrew Do

Call to Order

The November 9, 2017 meeting of the Transit Committee was called to order by Committee Chairman Shaw at 9:02 a.m.

Pledge of Allegiance

Committee Vice Chairman Murray 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 7)

2. Approval of Minutes

A motion was made by Committee Vice Chairman Murray, seconded by Director Winterbottom, to approve the minutes of the Transit Committee meeting of October 12, 2017.

Directors Pulido and Tait were not present to vote on this item.

3. Rail Programs and Facilities Engineering Quarterly Report

A motion was made by Committee Vice Chairman Murray, seconded by Director Winterbottom, and declared passed by those present, to receive and file as an information item.

Directors Pulido and Tait were not present to vote on this item.

4. Agreement for Pavement Striping and Markings at the Garden Grove Bus Base

A motion was made by Committee Vice Chairman Murray, seconded by Director Winterbottom, and declared passed by those present, to authorize the Chief Executive Officer to negotiate and execute Agreement No. C-7-1925 between the Orange County Transportation Authority and PCI, the lowest responsive, responsible bidder, in the amount of $74,500, for pavement striping and markings at the Garden Grove Bus Base.

Directors Pulido and Tait were not present to vote on this item.

5. Agreement for Liquefied Natural Gas Storage Tank Removal at the Anaheim and Garden Grove Bus Bases

A motion was made by Committee Vice Chairman Murray, seconded by Director Winterbottom, and declared passed by those present, to authorize the Chief Executive Officer to negotiate and execute Agreement No. C-7-1756 between the Orange County Transportation Authority and Gems Environmental Management Services, Inc., the lowest responsive, responsible bidder, in the amount of $1,791,306, for removal of liquefied natural gas storage tanks at the Anaheim and Garden Grove bus bases.

Directors Pulido and Tait were not present to vote on this item.

6. Agreement for the Construction, Operation, and Maintenance of a Hydrogen Fuel Station, and the Purchase and Delivery of Liquid Hydrogen for the Santa Ana Bus Base

A motion was made by Committee Vice Chairman Murray, seconded by Director Winterbottom, and declared passed by those present, to:

A. Authorize the Chief Executive Officer to negotiate and execute Agreement No. C-7-1577 between the Orange County Transportation Authority and Trillium USA Company LLC, in the amount of $6,472,127, for the construction, operation, and maintenance of a hydrogen fuel station and liquid hydrogen deliveries for a three-year term, with two, one-year option terms.

B. Amend the Orange County Transportation Authority's Fiscal Year 2017-18 Budget, in the amount of $4,777,732, to accommodate the construction of a liquid hydrogen fuel station at the Santa Ana Bus Base.

Directors Pulido and Tait were not present to vote on this item.

7. Amendment to Agreement for Schedule Checking Activities

A motion was made by Committee Vice Chairman Murray, seconded by Director Winterbottom, and declared passed by those present, to authorize the Chief Executive Officer to negotiate and execute Amendment No. 3 to Agreement No. C-3-1855 between the Orange County Transportation Authority and National Data and Surveying Services, doing business as Southland Car Counters, in the amount of $244,184, to exercise the second, one-year option term of the agreement through December 31, 2018, for schedule checking services. This will increase the maximum obligation of the agreement to a total contract value of $1,273,483.

Directors Pulido and Tait were not present to vote on this item.

Regular Calendar

8. Sole Source Agreement for the Purchase of Ten Hydrogen Fuel Cell Electric Buses

Sue Zuhlke, Director of Maintenance and Motorist Services, gave an overview on the background, procurement approach, funding grant, and timelines for this item.

A motion was made by Committee Vice Chairman Murray, seconded by Director Jones, and declared passed by those present, to:

A. Authorize the Chief Executive Officer to negotiate and execute sole source Agreement No. C-7-1701 between the Orange County Transportation Authority and New Flyer Industries, Inc., in the amount of $13,307,125, for the purchase of ten hydrogen fuel cell electric buses.

B. Amend the Orange County Transportation Authority's Fiscal Year 2017-18 Adopted Budget, in the amount of $13,307,125, to accommodate the purchase of ten hydrogen fuel cell electric buses.

9. OC Bus 360° Update

Kurt Brotcke, Director of Strategic Planning, gave an update on OC Bus 360° and showed/referenced Attachment A of the Staff Report on the screen. Mr. Brotcke reported on the following:

- To address bus ridership declines and increase ridership, efforts include:
  - Faster bus routes
  - Re-deployment of services
  - Working with local agencies for Project V
  - New technologies
  - Public outreach and Marketing
- Ridership is down 4.2 percent nationwide and OCTA is down three percent.
- Positive results have resulted from the OC Bus 360° efforts.
- Mobile ticketing application with over 67,000 downloads.
- During the launch of the Santa Ana College Pass program, over 3,000 students signed up in the first eight weeks, which resulted in 170,000 boardings.
- Bravo 560 has improved its travel time.
- Staff was asked to seek letters of interests from local agencies related to a future Project V call for projects.
- Special events services have exceeded the performance target.
- Staff is encouraged to provide outreach about the mobile application information to the city councils.
- The 19.5 percent increase in ridership was happening before the Santa Ana College Pass program began.
- To continue increasing ridership, OCTA needs to continue reviewing its resources and focus on the central core of the county.
- Attachment B of the Staff Report is created by the American Public Transportation Association and notes the nationwide declines in bus ridership.
- In regards to transportation, each community has different needs.

A motion was made by Director Pulido, seconded by Committee Vice Chairman Murray, and declared passed by those present, to by those present, to direct staff to request letters of interest from local agencies related to a future Project V call for projects, and return with an update in January 2018.

10. Transit Master Plan - Corridor Line Evaluation

Darrell Johnson, Chief Executive Officer (CEO), provided opening comments and introduced Gary Hewitt, Manager of Transit Planning. Mr. Hewitt introduced Steve Bolan, Senior Associate of Nelson Nygaard, and provided a PowerPoint presentation as follows:

- Context of Transit Master Plan (Plan)
- Opportunity Corridor Evaluation
- Potential Transit Modes
- Corridor Evaluation – Modes
- Corridor Evaluation: Criteria
- Corridor Evaluation: Assumptions
- Key Findings: Streetcar/BRT
- Key Findings: BRT/Rapid Bus
- Corridor Potential Next Steps
- Other Potential Next Steps
- Upcoming Study Timeline

Director Tait requested the ridership numbers for the Plan's potential corridor lines. Mr. Nygaard gave an example of what a queue jump is and how it can save time at an intersection.

A public comment was heard from Roy Shahbazian, Chairman of the Citizens Advisory Committee (CAC). Mr. Shahbazian commented that at the CAC's October meeting, the CAC discussed concerns about the Plan's priority transit lanes, efficiency of car travel, bikes lanes, and the importance of cities being on board with those lanes. Mr. Shahbazian also stated that the members had a positive reaction to the potential upgrades to Beach Boulevard, Westminster Avenue, Main Street, and Harbor Boulevard; however, they did not take a position on the potential next steps to the Plan.

A discussion ensued regarding:

- Los Angeles County Metropolitan Transportation Authority (LACMTA) and OCTA had a joint meeting over the extension of the Gold Line into Orange County for the Olympics in 2028.
- The connection between the Gold Line and the West Santa Ana bridge not scoring high enough, as compared to other corridors.
- The Pacific Electric Right-of-Way would not make sense to be a standalone, but when things change, OCTA would reevaluate it.
- Transportation opportunities present themselves not only with Olympics, but with the Los Angeles Rams stadium.

10. (Continued)

- The Olympics Transportation Council being established in the middle of 2018, and Mayor Garcetti seeking at least one member from the OCTA's Board of Directors to participate.
- The 2028 Olympics will have events in Orange County.
- A differentiation between the capital investment changes and how OCTA approaches it.
- OCTA will engage with the Beach Boulevard corridor coalition.

A motion was made by Director Winterbottom, seconded by Committee Vice Chairman Murray, and declared passed by those present, to direct staff to seek public/stakeholder input and return to the Board of Directors in January 2018 with an action plan.

Discussion Items

11. Chief Executive Officer's Report

Darrell Johnson, CEO, reported on the following:

- On Tuesday, November 7th, OCTA hosted its annual Veteran's Day event. There were 95 employees who were recognized for serving in the military; as well as, 15 employees with children or grandchildren who served our country. Directors Shaw and Winterbottom also participated in the event.
- On Saturday, November 11th at 9:00 a.m., OCTA is hosting a wilderness hike at the Ferber Ranch Preserve in Trabuco Canyon to give the public an opportunity to view the open space property.
- OCTA and LACMTA had a joint meeting to discuss transit, express lanes, and the Olympics in 2028.

12. Committee Members' Reports

- Committee Vice Chairman Murray announced that the City of Tustin received two new buses, which came out of the Federal Transit Administration 5310 funding. Each bus is worth $75,000 and will be used for seniors and those with special needs. Committee Vice Chairman Murray thanked OCTA for their partnership.
- Committee Chairman Shaw stated he enjoyed participating in OCTA's Veteran's Day event.

13. Closed Session

There were no Closed Session items scheduled.

14. Adjournment

The meeting adjourned at 9:49 a.m.

The next regularly scheduled meeting of this Committee will be held at **9:00 a.m. on Thursday, December 14, 2017**, at the Orange County Transportation Authority Headquarters, 550 South Main Street, Board Room - Conference Room 07, Orange, California.

ATTEST

Sahara Meisenheimer
Deputy Clerk of the Board

Tim Shaw
Committee Chairman

December 14, 2017

To: Transit Committee

From: Darrell Johnson, Chief Executive Officer

Subject: Amendment to Agreement for Program Management Consultant Services for Rail Programs

Overview

On August 12, 2013, the Orange County Transportation Authority Board of Directors approved an agreement with Mott MacDonald, LLC, to provide program management consultant services to support program management and delivery of rail programs. An amendment to the existing agreement is needed for the consultant to continue providing these services for rail programs.

Recommendation

Authorize the Chief Executive Officer to negotiate and execute Amendment No. 8 to Agreement No. C-3-1587 between the Orange County Transportation Authority and Mott MacDonald, LLC, in the amount of $1,125,156, for continued program management consultant support services for rail programs. This will increase the maximum cumulative payment obligation of the agreement to a total contract value of $7,320,512.

Discussion

The Orange County Transportation Authority (OCTA) Board of Directors (Board) selected Mott MacDonald, LLC (MM), to provide program management consultant (PMC) services to assist OCTA in overseeing and managing the planning, environmental, design, right-of-way, utility coordination, and construction of rail-related projects for the regional rail department.

As part of its services, MM provides staff resources to support the rail programs. MM provides functional support in the areas of project management, program planning, grant funding coordination and reporting, project controls, cost estimating, cost control, progress reporting, quality management, construction management support, contract management, engineering support, construction

planning, schedule delay and claims review, document control, and administrative expertise.

Since commencement of services under this agreement in February 2014, MM staff has been assigned project management duties and technical support responsibilities for track and signal projects, station improvements, new station development, and various phases of project development for future rail projects. In addition to project management duties anticipated at the time of the initial procurement of services, MM was tasked with the development of a Project Management Plan and a Construction Management Plan for the Rail Programs and Facilities Engineering Department to conform to Federal Transit Administration best practices. Document control procedures for use with Measure M2 projects were also established and implemented for the regional rail programs. These tasks required more resources from MM than originally contemplated under the existing MM agreement. Substantial resources were also allocated towards new PMC efforts, including OCTA's lead role of the Metrolink projects and the design alternatives and environmental evaluations for a rail/highway grade crossing in the City of San Juan Capistrano.

To continue required support for rail programs, an amendment to the agreement is necessary to increase the authorized funding amount. Staff intends to return to the Board in early 2018 to seek authorization to issue a request for proposals (RFP) for regional rail PMC services. Consistent with Board policy to leverage the use of external funding, the proposed RFP would require the agreement to be federalized, thereby reducing future use of local funding, where possible.

Procurement Approach

The procurement was handled in accordance with OCTA's Board-approved procedures for architectural and engineering services, which conform to both federal and state laws. The original agreement, awarded on August 12, 2013, was in the amount of $6,000,356, and has been previously amended in accordance with Attachment A.

Staff requested a price proposal from MM to provide continued services. The proposal was reviewed by OCTA staff and found to be fair and reasonable for the work to be performed. Proposed Amendment No. 8 includes continued PMC services for rail programs in the amount of $1,125,156, for a total contract value of $7,320,512.

Fiscal Impact

The project was approved in OCTA's Fiscal Year 2017-18 Budget, Capital Programs, Regional Rail Account, 0017-7519-TR212-06P and is funded through local transportation funds.

Summary

Staff recommends Board approval for the Chief Executive Officer to negotiate and execute Amendment No. 8 to Agreement No. C-3-1587 with Mott MacDonald, LLC, in the amount of $1,125,156, for program management consultant services for rail programs.

Attachment

A. Mott MacDonald, LLC, Agreement No. C-3-1587 Fact Sheet

Prepared by:

Dinah Minteer
Manager, Regional Rail
(714) 560-5740

Virginia Abadessa
Director, Contracts Administration and
Materials Management
(714) 560-5623

Approved by:

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

ATTACHMENT A

Mott MacDonald, LLC
Agreement No. C-3-1587 Fact Sheet

1. August 12, 2013, Agreement No. C-3-1587, $6,000,356, approved by the Board of Directors (Board).

   - Agreement was executed on February 17, 2014 to provide program management consultant (PMC) services for rail programs.

2. May 31, 2014, Amendment No. 1 to Agreement No. C-3-1587, $0, approved by the Contracts Administration and Materials Management (CAMM) Department.

   - To revise the hourly rate schedule for subconsultant HDR Engineering, Inc., to add classifications and rate ranges.

3. October 6, 2014, Amendment No. 2 to Agreement No. C-3-1587, $0, approved by the CAMM Department.

   - To revise the hourly rates for the prevailing wage classifications on the hourly rate schedule for subconsultant Project Design Consultants.

4. February 2, 2015, Amendment No. 3 to Agreement No. C-3-1587, $0, approved by the CAMM Department.

   - To revise key personnel and the hourly rate schedule for replacement of the program/project manager.

5. June 15, 2015, Amendment No. 4 to Agreement No. C-3-1587, $0, approved by the CAMM Department.

   - To revise key personnel and the hourly rate schedule for project personnel.

6. August 10, 2016, Amendment No. 5 to Agreement No. C-3-1587, $0, approved by the CAMM Department.

   - To change the name of the prime consultant from Hatch Mott MacDonald to Mott MacDonald, LLC.

7. March 9, 2017, Amendment No. 6 to Agreement No. C-3-1587, $0, approved by the CAMM Department.

   - To update other direct cost schedules.

8. August 21, 2017, Amendment No. 7 to Agreement No. C-3-1587, $195,000, approved by the CAMM Department.

    - For continued PMC services.

9. January 8, 2017, Amendment No. 8 to Agreement No. C-3-1587, $1,125,156, pending Board approval.

Total commitment to Mott MacDonald, LLC after approval of Amendment No. 8 to Agreement No. C-3-1587: $7,320,512.

December 14, 2017

To: Transit Committee

From: Darrell Johnson, Chief Executive Officer

Subject: Project V Community-Based Transit Circulators Program Ridership Report

Overview

Measure M2 establishes a competitive program through Project V to fund local transit services that complement regional transit. Since inception, the Orange County Transportation Authority Board of Directors approved 23 projects for a total of $36.5 million in Project V funds. A ridership report on Project V services currently operating is provided for information purposes.

Recommendation

Receive and file as an information item.

Background

Project V is a competitive program under Measure M2 (M2) that provides funding to develop and implement local transit services. Services eligible for this program include community-based circulators, shuttles, trolleys, and demand-responsive services that complement regional bus and rail services, and better suit local needs in areas not adequately served by regional transit. This competitive program provides funding for both capital and operations. Year-round services and seasonal/special event shuttles are eligible to compete for funding.

The Orange County Transportation Authority (OCTA) Board of Directors (Board) approved six projects for $9.8 million in Project V funds in June 2013. The Board subsequently approved $26.7 million for 17 projects in June 2016. Local agencies must provide a minimum match of ten percent for the capital costs. M2 Project V contributions towards the operations costs are capped at a maximum of 90 percent of total service cost, or $9 per boarding, whichever is less.

Consistent with the approved Project V Guidelines, all Project V-funded services must achieve a performance standard of six passenger boardings per revenue vehicle hour (B/RVH) within the first 12 months of operations, and must achieve the ten B/RVH within the first 24 months of operations, and maintain ten B/RVH every year thereafter.

In August 2015, the Board directed staff to provide ridership reports to the OCTA Transit Committee for active Project V services. This report includes ridership for the 17 projects in operation through September 2017. The remaining projects will be included in the ridership report as additional services begin.

Discussion

Through September 2017, 17 services were in operation using approved Project V grants. These services include a mixture of special event, fixed-route, and on-demand projects that meet a variety of community needs. In October 2017, the City of La Habra's community circulator was cancelled due to low productivity; and 16 services remain in operation today.

The special event services are especially successful. Productivity for the special event services averages approximately 21 B/RVH for this reporting period. For example, the cities of Laguna Beach, Newport Beach, and San Clemente ranged from 20 to 46 B/RVH, well exceeding their respective minimum performance standards.

The fixed-route services are not performing at the same level. For example, the Mission Viejo community circulator began service October 2016, and experienced difficulties meeting the minimum performance standard. The City of Mission Viejo has implemented route changes and additional marketing efforts to improve productivity and was able to meet the performance target in September 2017. The City of Mission Viejo must reach the performance target of ten B/RVH by October 2018. The City of Costa Mesa and the City of Huntington Beach services recently launched in July 2017 and ridership is expected to increase over time. OCTA staff will continue to monitor these services, as well as meet with city staff on ideas and concepts to improve productivity.

The City of San Clemente (San Clemente) is providing demand-responsive rideshare services along the area formerly served by OCTA bus routes 191 and 193. These two routes were eliminated as part of OC Bus 360° during the October 2016 service change. As this was the first project of this nature in Orange County, the Board approved this concept as a pilot program for two years. On October 9, 2016, San Clemente executed an agreement with LYFT, INC (Lyft) to provide on-demand rideshare services. OCTA staff is working with San Clemente and Lyft to obtain the necessary information to verify usage for this service.

The ridership information for Project V-funded services is provided in Attachment A. Staff will continue to work with the local agencies and monitor these services. The next update will be provided to the Board in June 2018.

Summary

A status report on Project V services is provided for information purposes. Information on additional projects services starting this year will be provided in future reports.

Attachments

A. Project V Services – Ridership Report
B. Project V Services – Project Details

Prepared by:

Christina Moore
Transportation Funding Analyst
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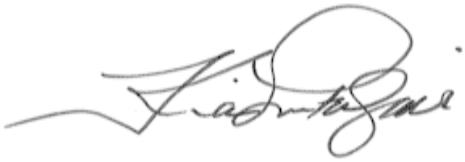
Approved by:



Kia Mortazavi
Executive Director, Planning
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ATTACHMENT A

Project V Services - Ridership Report

Agency	Service Description	Project V Funding	Service Type	Service Start Month/Year	[1] Boardings Per Revenue Vehicle Hour (B/RVH)
Costa Mesa	Local Circulator From Costa Mesa To Anaheim	$ 2,790,638	Local Circulator	July 2017	1
Dana Point	Summer Trolley and Seasonal Shuttle	$ 2,456,511	Seasonal Service	June 2015	16
Dana Point	Pacific Coast Highway and Special Event Trolley	$ 905,968	Seasonal Service	June 2017	17
Huntington Beach	Holiday and Event Shuttle	$ 93,287	Special Event	July 2015	12
Huntington Beach	Seasonal Local Transit Service	$ 917,700	Seasonal Service	July 2017	2
La Habra [2]	Local Community Circulator	$ 1,719,839	Local Circulator	August 2014	6
La Habra	Special Event Service	$ 96,810	Special Event	Novemeber 2016	7
Laguna Beach	Summer Weekend Trolley and Seasonal Service	$ 3,559,860	Special Event	March 2015	34
Laguna Beach	Year Round and Seasonal Service	$ 1,967,400	Year Round and Seasonal Service	July 2017	8
Lake Forest	Commuter Vanpool Service Irvine Station and Ossur	$ 148,855	Commuter Service	July 2015	10
Lake Forest	Commuter Shuttle Service Irvine Station and Panasonic	$ 1,226,862	Commuter Service	June 2017	21
Mission Viejo [3]	Local Community Circulator	$ 3,332,879	Local Circulator	October 2016	4
Newport Beach	Balboa Peninsula Seasonal Trolley	$ 685,454	Seasonal Service	June 2017	20
County of Orange	Local Circulator and Special Event Service	$ 2,041,547	Local Circulator and Special Event	June 2017	7
San Clemente	Summer Weekend Trolley and Seasonal Service	$ 1,181,393	Seasonal and Special Event	May 2017	46
San Clemente [4]	On-Demand Rideshare	$ 914,400	Rideshare Service	October 2016	--
San Juan Capistrano	Summer Trolley Service	$ 95,486	Seasonal and Special Event	June 2017	18

2017 Ridership reported for the period ending September 30, 2017.

1. Rounded to the nearest whole number.

2. This service has been cancelled by the City of La Habra effective October 2017, due to low productivity.

3. Mission Viejo has experienced an upward trend in boardings per revenue vehicle hour in recent months and achieved nine B/RVH in September.

4. The average ridership for this service cannot be confirmed at this time. Awaiting confirmation from the service provider, LYFT, INC.

ATTACHMENT B

Project V Services - Project Details

Costa Mesa (Local Circulator): Project V provides $2.79 million in funding for capital costs, including bus stop improvements, signage, furniture and shelter upgrades, and operation costs over seven years. The service will connect the City of Costa Mesa (Costa Mesa) to the City of Anaheim Resort Area. The bus will circulate through the two cities picking up passengers at various hotels and attractions. Costa Mesa will provide a 10.74 percent match for the capital improvements and a minimum ten percent match for operations.

Dana Point (Seasonal Service): Project V provides over $2.45 million over seven years for the capital and operational cost to provide summer trolley and seasonal shuttle services. The City of Dana Point (Dana Point) provides a match of 11 percent for capital improvements that cover the leasing cost of the vehicles. For the service, Dana Point provides a ten percent match in the first year of service, 20 percent in the second year, and 28.68 percent for the remaining years (fiscal years 2016-17-2021).

Dana Point (Seasonal Service): Project V provides $905,968 to cover operational cost over seven years. Dana Point expanded their current Trolley Service adding stops at Costco, Ralphs and Albertsons Shopping Center, Senior Center, and Community Center, providing connections to cities of San Juan Capistrano and Laguna Niguel. New stop locations have been added to fill the service gaps of discontinued Orange County Transportation Authority (OCTA) bus routes 187 and 191. For the service, Dana Point provides at minimum an 11 percent match.

Huntington Beach (Special Event Shuttle): Project V provides $93,287 for the Huntington Beach Holiday and Event Shuttle over seven years. The City of Huntington Beach (Huntington Beach) is paying a minimum 30 percent match, and the service cost is estimated to be $12,000 per year. Services consist of operating five shuttles on the 4th of July between 8:00 am and 11:00 pm, and five shuttles during the U.S. Open Event from 8:00 am to 11:00 pm.

Huntington Beach (Seasonal Service): Project V provides $917,700 in funding for capital costs including planned shuttle stop improvements, signage, amenities repair, and covers operation costs over seven years. This is a seasonal local transit service that will both supplement current OCTA services by providing additional connection opportunities to existing routes and provide local circulation connecting many of Huntington Beach's key destinations and target communities. The service will operate for approximately 12-14 hours per day. Huntington Beach provides at minimum a ten percent match.

La Habra (Local Circulator) Cancelled: Project V provides $1.7 million over seven years for capital and operations costs, which includes the purchase of two buses and related bus stop amenities including shelters, benches, sidewalks, and curb and gutter ramps. La Habra Express Service provided weekday service within the City of La Habra (La Habra), with additional stops at St. Jude Medical Center and the Fullerton Transportation Center for approximately ten hours per day. In August 2015, the OCTA Board of Directors reduced La Habra’s Project V funding due to the cancellation

of one of the routes. La Habra match is at least ten percent. The service was unable to reach the required performance goal and was cancelled effective October 2017.

La Habra (Special Event Service): Project V provides $96,810 in funds for La Habra Special Event Shuttle services for seven years. La Habra will provide ten percent in match, and service cost is estimated to be approximately $15,000 per year. Service consists of operating three shuttles for the special events La Habra identified in their Project V application. The service operated for La Habra's Tamale Festival in November 2016 and the Citrus Fair in May 2017.

Laguna Beach (Special Event Service): Project V provides $3.56 million in funding for vehicle purchase and operational cost over seven years. The City of Laguna Beach (Laguna Beach) started this service in 2015. The project provides seasonal service for 24 weekends through the year, and can increase up to 42 weekends based on the demand. This service operates on Fridays from 4:00 p.m. to 11:00 p.m., Saturdays from 9:00 a.m. to 11:00 p.m., and on Sundays from 11:00 a.m. to 8:00 p.m., with six trolleys on a fixed-route. Laguna Beach's match for this project is ten percent for the purchase of trolleys, 42 percent for the first year of service, and then 20 percent for the remaining time period.

Laguna Beach (Year Round and Seasonal Service): Project V provides $1.97 million in funding for the purchase of one trolley, transportation technology systems, and operational cost over seven years. The service is a year-round weekend residential trolley service that supplements Laguna Beach's Project V-funded weekend trolley service along Pacific Coast Highway. Routes interconnect and meet at the Transit Depot on 20-30 minute intervals connecting to OCTA routes 1 and 89 and Laguna Beach's "Coastal" and "Canyon" routes during the summer festival season. The special event services will be provided for President's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Patriots Day Parade, Taste of Laguna, Rotary Car Show, Oak Street Halloween Festival, KX93.5 Fall Concert, Sawdust Winter Fantasy, Montage Holiday Tree Lighting, and Hospitality Night. For the service, Laguna Beach provides a ten percent match, at minimum.

Lake Forest (Commuter Service): Project V provides $148,855 over seven years to support vanpool services for Ossur. The City of Lake Forest (Lake Forest) is providing a minimum match of ten percent. This service, which was implemented in 2015, runs two passenger shuttles between Metrolink Train Station and Ossur Americas.

Lake Forest (Commuter Service): Project V provides $1.23 million in funding to cover operational cost over seven years. The service runs three passenger shuttles between Metrolink Train Station and Panasonic Avionics. This service operates 251 days of the year during the commute hours in the morning and afternoon. Lake Forest is providing a minimum match of ten percent.

Mission Viejo (Local Circulator): Project V provides $3.33 million in funding for capital costs including bus stop shelters, signage, vehicle branding, and covers operational cost

over seven years. The City of Mission Viejo (Mission Viejo) provides a minimum match of 30 percent for capital improvements and a minimum ten percent match for the operating costs. On behalf of Mission Viejo, OCTA started operating the service in October 2016. The local community circulator connects Laguna Niguel/Mission Viejo Metrolink Station, The Shops at Mission Viejo, Mission Hospital, Saddleback College, residential areas, community center, and Capistrano Valley High School. This service operates for approximately 12 hours a day during the week, Monday through Friday.

Newport Beach (Seasonal Service): Project V provides $685,454 in funds over seven years for the capital and operational cost to operate the Balboa Peninsula Trolley. Capital improvements will cover the leasing cost of the vehicle and shuttle wrap. The service operates during the summer weekends connecting Hoag Hospital, Balboa Pier on the Balboa Peninsula via Pacific Coast Highway, Newport Boulevard and Balboa Boulevard. The service will operate for a total of 21 days, approximately 11-12 hours a day, and will also provide service for the 4th of July event. The City of Newport Beach is providing a minimum match of 12 percent.

County of Orange (Local Circulator and Special Event Service): Project V provides $2.04 million in funding to cover operational cost over seven years. The local community transit circulator service connects Metrolink Stations at San Juan Capistrano and Laguna Niguel/Mission Viejo, Saddleback Community College, The Shops at Mission Viejo, Mission Hospital, and downtown San Juan Capistrano. Additional special event services provides connecting Sendero residential areas to the recreation center and commercial areas, as well as the Esencia recreation centers and Ladera commercial centers. The County of Orange is providing a minimum match of ten percent.

San Clemente (Seasonal and Special Event Service): Project V provides $1.18 million in funding for the purchase of three trolley vehicles and operational cost over seven years. This service connects the new Outlets, San Clemente Pier, Metrolink Station, El Camino Real, and Avenida Del Mar. Service operates during the summer weekends on Fridays, Saturdays, and Sundays for approximately ten hours day and provides special event service on 4th of July, Memorial Day, and Labor Day. The minimum match is 11 percent.

San Clemente (Rideshare Service): Project V provides $914,400 to support on demand rideshare services in The City of San Clemente (San Clemente). San Clemente provides a minimum match of ten percent. San Clemente contracted with LYFT, INC to implement a year-round rideshare program. The On Demand Rideshare Program service is provided within 500 feet of Route 191/193 bus stops previously served by OCTA.

San Juan Capistrano (Seasonal and Special Event Service): Project V provides $95,486 for one year in capital and operational cost to operate the Summer Trolley Service. Service circulates throughout the City of San Juan Capistrano and connects to the City of Dana Point Summer Trolley Service. This service operates for 40 days throughout the year from June to September on Fridays, Saturdays, and Sundays, providing service for approximately five to 11 hours a day. The minimum match is ten percent.

December 14, 2017

To: Transit Committee

From: Darrell Johnson, Chief Executive Officer

Subject: Central Harbor Boulevard Transit Corridor Study

Overview

In August 2015, the Orange County Transportation Authority initiated the Central Harbor Boulevard Transit Corridor Study to analyze transit options in the Harbor Boulevard corridor. The study scope was amended in October 2016 to also evaluate transit connections between the Anaheim Resort and the Anaheim Regional Transportation Intermodal Center. In February 2017, 12 draft conceptual alternatives were presented for review and comment, and this update presents the results of the conceptual alternatives analysis.

Recommendations

A. Direct staff to offer presentations of the study results to the city councils in the study area, and return to the Board of Directors with a status report when completed.

B. Direct staff to continue to work with technical staff from each of the corridor cities and the California Department of Transportation to identify key issues that would need to be addressed during any subsequent study efforts.

Background

Harbor Boulevard is one of the Orange County Transportation Authority's (OCTA) most productive transit corridors with eight percent of the countywide daily bus boardings. While OCTA operates a high frequency of service in the study area, much more could be done to improve the quality, convenience, and visibility of the service for residents, employees, and tourists alike. The study area is characterized by some of the highest population and employment densities in the county. Moreover, the Anaheim Resort is home to the county's largest employer (Disneyland), and is an international tourist destination that attracts 27 million annual visitors. Despite the large number of

daily visitors, existing OCTA bus routes serve a relatively small number of these trips. In addition, the Anaheim Transit Network system shuttles visitors and some employees between parking structures, hotels, and major attractions in the Anaheim Resort area. OCTA currently provides high frequency Bravo! service in the corridor with high ridership. Increasing transit ridership further requires more transit capacity and better travel times.

The Central Harbor Boulevard Transit Corridor Study (Harbor Study) evaluates 12 conceptual transit alternatives that include a variety of alignment, mode, and feature options in order to identify the concepts that offer the most significant transportation benefits and also receive the widest community support. The draft alternatives were presented to the OCTA Board of Directors (Board) in February 2017. The modes evaluated include enhanced bus, bus rapid transit (BRT), streetcar, and rapid streetcar. These transit modes cover a range of implementation costs and ridership levels.

For example, bus and BRT options would provide operational flexibility and lower implementation costs, while the streetcar options would attract more riders due to improved quality and comfort. Two study objectives were to estimate the ridership for these modes within the study area, and to estimate the travel time improvements that could be achieved by various modes and features. The rapid streetcar and BRT options would operate in a dedicated transit lane for at least 50 percent of the alignment.

The project development team included representatives from OCTA, the California Department of Transportation, and technical staff from each of the corridor cities (Anaheim, Fullerton, Garden Grove, and Santa Ana). Over the past two years, the team analyzed the study corridor and identified mobility needs, established evaluation criteria, developed 12 conceptual alternatives, and conducted two rounds of outreach to solicit feedback from the public and stakeholders.

Discussion

The summary of evaluation results are presented in two parts: (1) the performance evaluation and (2) city and community input. An executive summary (Attachment A) and maps of the alignments (Attachment B) are included in the attachments.

For the performance evaluation, a set of 24 evaluation criteria (Attachment C) was used to determine how each alternative performed in terms of ridership, cost-effectiveness, travel-time improvement, and ability to reduce vehicle miles traveled (VMT). The evaluation criteria was based on well defined and accepted planning practice. The performance metrics also indicated how well the conceptual alternatives were supported by local land uses, as well as how many physical constraints or land-use impacts there might be.

The planning-level benefits and impacts of the alternatives were evaluated for a future year (2035) and compared to a 2035 baseline scenario in which no capital or service improvements were made to the corridor. Any benefits that were measured above and beyond the baseline are considered the net benefits that result from project implementation. Planning-level cost estimates were developed for each alternative. These included both the capital costs needed to implement the project and the estimated increase to annual operating and maintenance costs. The cost estimates were used to evaluate cost-effectiveness for each alternative.

Below are the total scores for each conceptual alternative, ranked from highest to lowest.

Overall Performance Scores Based on 24 Evaluation Criteria

Alternative	Length (Miles)	Performance Score
H3: Harbor Rapid Streetcar[1]	8.0	74
H2: Harbor Long Streetcar	8.0	73
H5: Harbor Bus Rapid Transit[1]*	12.0	73
L1: Anaheim-Lemon Streetcar	8.5	68
L4: Anaheim-Lemon Bus Rapid Transit[1]*	12.5	66
L2: Anaheim-Lemon Rapid Streetcar[1]	8.5	65
K1: Harbor-Katella Streetcar	5.9	65
H1: Harbor Short Streetcar	3.4	64
K2: Katella + Anaheim-Lemon Enhanced Bus	10.5	57
L3: Anaheim-Lemon Enhanced Bus*	12.5	56
K3: Katella + Harbor Hybrid	10.5	56
H4: Harbor Enhanced Bus*	12.0	55

[1] Operates in a dedicated transit lane for approximately 50 percent of the alignment.
* Extends to MacArthur Boulevard, consistent with existing Bravo! Route 543 service area.

The three highest scoring projects all included Harbor Boulevard alignments, which provided direct connections between Harbor/Westminster (future terminus of the OC Streetcar), and the Fullerton Transportation Center (FTC). The next three highest scoring projects included Anaheim-Lemon alignments, which also made direct connections between Harbor/Westminster and the FTC. Ability to attract ridership was the most important factor in determining how well an alternative performed because ridership was considered in multiple criteria.

Ridership

In terms of ridership, the top performing alternatives included rapid streetcar, streetcar, and BRT alternatives that connected Harbor/Westminster and the FTC via Harbor Boulevard or Anaheim-Lemon. Ridership for the top performing alternatives is listed below.

Alternatives with Highest Estimated Ridership
(See Attachment D for a complete list)

Alternative	Average Weekday Boardings	Per-Mile Boardings
H3: Harbor Rapid Streetcar[1]	15,200	1,900
H2: Harbor Long Streetcar	14,700	1,800
H5: Harbor Bus Rapid Transit[1]*	14,600	1,200
L2: Anaheim-Lemon Rapid Streetcar[1]	12,500	1,500
L4: Anaheim-Lemon Bus Rapid Transit[1]*	12,000	1,000
L1: Anaheim-Lemon Streetcar	11,300	1,300

[1] Operates in a dedicated transit lane for approximately 50 percent of the alignment.
* Extends to MacArthur Boulevard, consistent with existing Bravo! Route 543 service area.

The Harbor-Katella streetcar alignment, which connected Harbor/Westminster with the Anaheim Regional Transportation Intermodal Center via Disney Way, had an estimated 5,500 average weekday boardings, approximately 900 boardings per mile of service. This was comparatively lower than the other streetcar projects that operated on Harbor Boulevard or Anaheim-Lemon and connected to the FTC. The Ridership Summary Table (Attachment D) provides the ridership estimates for all alternatives.

Comparing the per-mile boardings by mode and alignment, the Harbor Boulevard alignments had the highest estimated per-mile boardings for both the bus rapid transit and the streetcar modes. The Anaheim-Lemon alignments had the next highest per-mile boardings for these modes. The enhanced bus alternatives averaged between 430 and 470 boardings per-mile.

Per-Mile Boardings by Mode and Alignment

Alignment	Enhanced Bus	BRT	Streetcar	Rapid Streetcar
Harbor to FTC	430	1,200	1,800	1,900
Anaheim-Lemon	430	1,000	1,300	1,500
Harbor to Katella	470	n/a	900	n/a

n/a – not applicable

Travel Time Improvement:

Travel time improvement was measured two ways: by estimating average decrease in travel time for trips taken between common destinations, and by estimating the improvement to the 2035 average operating speeds. For the best performing alternatives, the average decrease in travel time for trips to/from common destinations ranged from nine to 17 percent, compared to the 2035 baseline scenario:

- H5 Harbor BRT (16.7 percent),
- H3 Harbor Rapid Streetcar (15.1 percent),
- L4 Anaheim-Lemon BRT (12.8 percent),
- H4 Harbor Enhanced Bus (12.0 percent),
- H2 Harbor Long Streetcar (8.9 percent),
- L2 Anaheim-Lemon Rapid Streetcar (8.8 percent).

The other travel time improvement measure estimated the percentage improvement in 2035 average operating speeds (in miles per hour {mph}) compared to the 2035 no-build scenario. Below are the estimated changes in average operating speeds for the four long Harbor alternatives. Although the Harbor alignments performed slightly better than other alignments, the average operating speeds are indicative of those for each mode:

- H4 Harbor enhanced bus: improved from 14.9 to 16.4 mph (ten percent),
- H5 Harbor BRT: improved from 14.9 to 17.5 mph (17 percent),
- H2 Harbor long streetcar: improved from 10.4 to 13.2 mph (27 percent),
- H3 Harbor rapid streetcar: improved from 10.4 to 14.2 mph (36 percent).

While the change in mph may seem nominal at first glance, improvement in average operating speeds has significant implications for transit operating costs. A ten percent improvement in average operating speeds, for example, represents a ten percent decrease in the costs of operating that service.

Cost-Effectiveness

Cost-effectiveness was evaluated using four measures: (1) annual project cost per annual linked trip on the project, (2) annual project cost per new linked trip on the system, (3) farebox recovery ratio**,** and (4) financial feasibility. The Cost and Cost-Effectiveness Table (Attachment E) includes the cost information for each alternative, as well as the annual cost per annual linked trip on the project.

The BRT alternatives (which operated on Harbor and Anaheim-Lemon) achieved the highest overall cost-effectiveness ratings. They had the best combined cost-ratios for "cost per annual linked trips on project" and "cost per annual new system trips." They also ranked among the top in farebox recovery and received high financial feasibility scores. The Harbor Rapid Streetcar, Anaheim-Lemon Enhanced Bus, and Katella + Anaheim-Lemon Enhanced Bus scored the next best for overall cost-effectiveness.

The Harbor BRT and Harbor Rapid Streetcar tied for the highest farebox recovery ratio (31 percent); followed by the Harbor Streetcar (30 percent), and the Anaheim-Lemon BRT (29 percent).

Land Use

For the land-use evaluation, population and employment densities, transit supportive land-use plans and zoning, percentage of affordable housing, economic development potential, reduced daily VMT, and physical constraints were all analyzed. While population and employment densities were fairly similar for all alternatives, the measures with the most significant differences were the reduced daily VMT and the physical constraints. The top performing alternatives for this measure reduced daily VMT by an estimated 102,000 to 104,000, compared to the No-Build scenario. While the short streetcar alignments (H1 and K1) generated much smaller daily VMT reductions due to the shorter alignments, they registered the best scores for physical constraints and potential land-use impacts. At the other end of the spectrum, the long streetcar alternatives on Harbor and Anaheim-Lemon had the highest estimated daily VMT reductions, but also encountered the most physical constraints. While most of the alternatives received similar scores overall, the Harbor BRT and Harbor Rapid Streetcar scored about a point higher than the rest of the field in this category.

Performance Evaluation Conclusion

Based on the performance evaluation there are five conceptual alternatives that have the potential to perform well, provide significant ridership benefits, and rate competitively against the Federal Transit Administration New Starts evaluation criteria. For the purposes of any further evaluation and analysis it is recommended that focus be narrowed to the following five alternatives:

- H3 Harbor Rapid Streetcar: from Harbor/Westminster to FTC,
- H2 Harbor Long Streetcar: from Harbor/Westminster to FTC,
- H5 Harbor BRT: from Harbor/MacArthur to FTC,
- L1 Anaheim-Lemon Streetcar: from Harbor/Westminster to FTC via Anaheim-Lemon,
- L4 Anaheim-Lemon BRT: from Harbor/MacArthur to FTC via Anaheim-Lemon.

City Input and Key Issues

Some of the key issues identified by the cities that would require additional analysis in the next study phase or would need to be addressed prior to more study include:

- Dedicated transit lanes - a thorough analysis of the benefits and impacts of dedicated transit lanes, as well as identification of performance measures for evaluating appropriate locations, is needed before city staff can consider these.
- Master Plan of Arterials and Highways (MPAH) Guidelines - the path and process for amending the MPAH plan to allow for a change in transit corridor status will need to be outlined and made available to city staff considering any changes to existing traffic operations.
- Center-running alignments with center stations - there is little support among the jurisdictions for center-running alignments with center stations due to the likelihood that this configuration would require additional right-of-way and reconfiguration of left-turn pockets to accommodate the stations.
- Harbor Boulevard constraints - a portion of Harbor Boulevard in northern Anaheim has not been built out to the full capacity and is limited to four traffic lanes in width. This is a potential physical constraint which must be considered with various improvement strategies. Because of the close proximity of the residences, this is also an area of increased community sensitivity sites must also be taken into consideration. For these reasons, further evaluation of both the Harbor and Anaheim-Lemon alignments is recommended.
- Underlying changes to bus service south of Westminster Avenue - with the implementation of some streetcar and bus alternatives a corresponding reduction in bus service frequencies on Harbor Boulevard south of Westminster Avenue is assumed. Staff from the City of Santa Ana (City) have indicated that this would be an issue of concern for the City.
- Evaluation of the streetcar mode option - the Anaheim City Council adopted a resolution in January 2017 stating opposition to a streetcar system in the City of Anaheim. Among the reasons stated in the resolution were concerns over the expense of a streetcar system, disruptions to traffic and potential added congestion, and lack of flexibility of the system. The City of Anaheim accounts for a considerable part of the project study area, and all 12 of the study alternatives travel into or through the city.

An important next step will be identifying the specific strategies and concepts that each city council is open to evaluating. The final round of outreach will take place after the January 2018 Board update and provide another opportunity to receive input from each city.

Community Input

The Public Outreach Summary Report (Attachment F {full report with appendices is available at www.octa.net/harbordocuments}) provides a summary of the public and stakeholder input that was received during the course of the study via four public open houses, two stakeholder working group meetings, online surveys, and on-board surveys. Some of the key points of the online survey were:

- The great majority of survey respondents (92 percent) supported making improvements to transit in the Harbor corridor.
- Rapid streetcar was the preferred mode option with 24 percent support, followed by enhanced bus (20 percent), BRT (17 percent), and streetcar (13 percent).
- Respondents were evenly split in their support of bus and streetcar mode options, with 37 percent supporting the enhanced bus and BRT options and 37 percent supporting the streetcar or rapid streetcar options.
- More respondents chose mode options that included a dedicated transit lane (41 percent).
- The most popular alignment choice was Harbor Boulevard (37 percent), followed by the Anaheim-Lemon alignment (20 percent), and the Katella + Anaheim-Lemon alignment (19 percent).

Next Steps

The next steps include offering council presentations to each of the corridor cities to receive comments. The team will continue to work with the corridor cities' staff to identify key issues to be addressed in the next study phase. The Harbor Study reports will be made available on the study webpage for public review and comment. Input received from the cities, public, and stakeholders will be incorporated into the final report and help inform next steps. The feedback received will be reported back to the Board.

The top ranked alternatives have the potential to provide significant transportation benefits and compete well in state and federal funding programs. As the county transit agency, OCTA cannot move alternatives forward without support from the cities. With Board approval, OCTA staff will be presenting the study results to the local city councils and the stakeholder working group for feedback. If sufficient support develops around a few alternatives, OCTA could recommend those be advanced to the next step of the process, which would be a detailed environmental review.

However, if consensus is not developed, OCTA may need to spend additional time discussing project concerns with cities and refining alternatives to develop sufficient support. OCTA may also consider making lower cost, lower impact transit improvements in the study area which are more under OCTA's direct control.

Summary

The project team has completed the conceptual alternatives evaluation for the Central Harbor Boulevard Transit Corridor Study. This report provides a summary of the performance evaluation results of the 12 draft conceptual alternatives and also provides a summary of the city and community input received to date. A final round of outreach is proposed, to present the evaluation results to each of the cities in the study area and to receive comments.

Attachments

A. Central Harbor Boulevard Transit Corridor Study, Executive Summary, December 2017
B. Maps of the Alignments
C. Central Harbor Boulevard Transit Corridor Study, Evaluation Criteria
D. Ridership Summary Table
E. Cost and Cost-Effectiveness Table
F. Orange County Transportation Authority, Central Harbor Boulevard Transit Corridor Study, Public Outreach Summary Report

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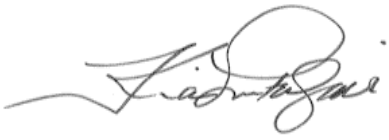

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CENTRAL HARBOR BOULEVARD TRANSIT CORRIDOR STUDY

ATTACHMENT A

OCTA

EXECUTIVE SUMMARY

DECEMBER 2017

Prepared by:

STV 100 Years

In association with:

KITTELSON & ASSOCIATES HNTB CITYWORKSdesign

VMA COMMUNICATIONS Green Grass COMMUNICATIONS

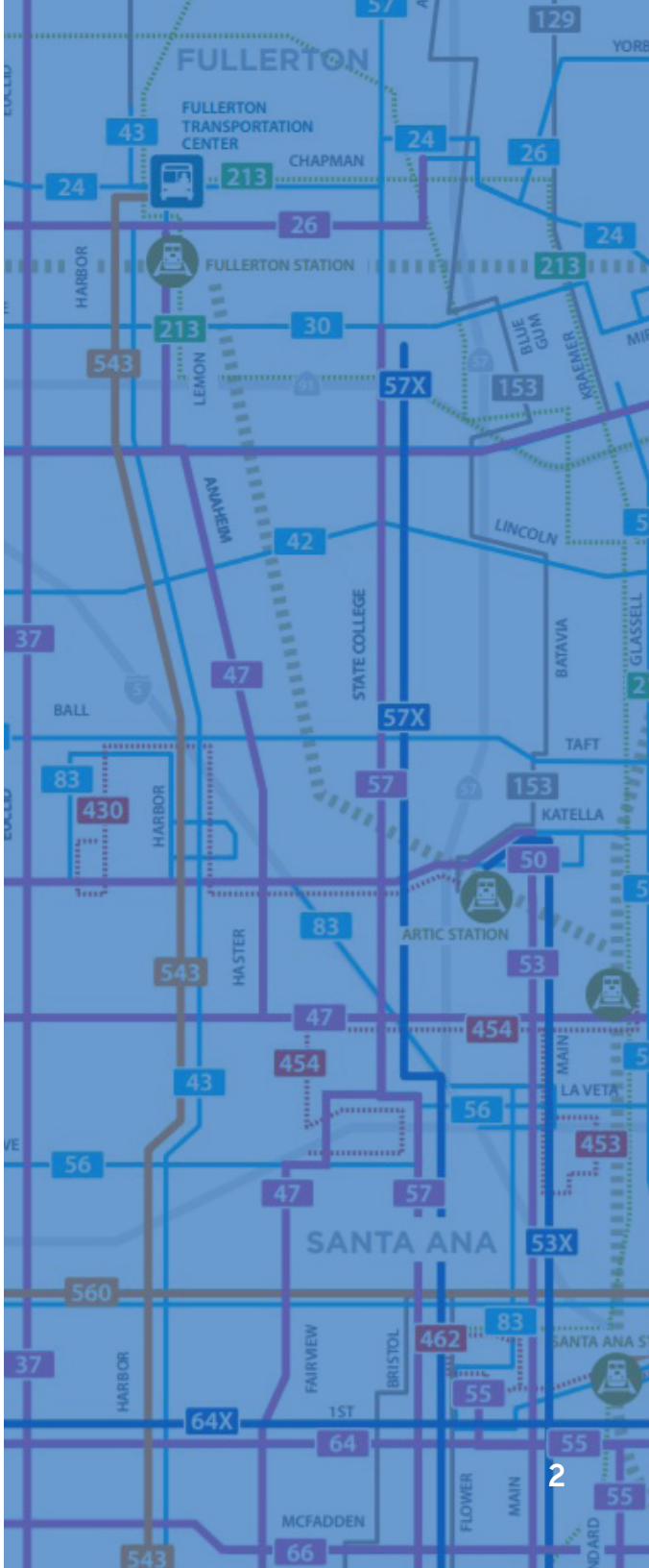

Harbor Blvd

CENTRAL HARBOR BOULEVARD TRANSIT CORRIDOR STUDY
EXECUTIVE SUMMARY

CONTENTS

1 Background

Harbor Boulevard is Orange County's busiest north-south transit corridor. On a typical weekday, OCTA buses average more than 12,800 boardings up and down Harbor Boulevard. OCTA buses operating on the parallel Anaheim Boulevard/Lemon Street corridor collect an additional 9,200 average weekday boardings between the cities of Fullerton and Newport Beach. Additionally, buses operating along Katella Avenue collect over 4,200 boardings on an average weekday. The three corridors combined account for a significant share of OCTA's total ridership.



Harbor Boulevard

This study focuses on an eight-mile segment of Harbor Boulevard from the Fullerton Transportation Center (FTC) in Downtown Fullerton, through the cities of Anaheim and Garden Grove to Westminster Avenue, on the border of Garden Grove and the City of Santa Ana.

Anaheim Boulevard/Lemon Street

This study also considers connections along a parallel five-mile segment of Lemon Street and Anaheim Boulevard from the FTC in Downtown Fullerton to Katella Avenue in Anaheim.

Katella Avenue

An additional 2.2-mile segment of Katella Avenue, from Harbor Boulevard to the Anaheim Regional Transportation Intermodal Center (ARTIC) in Anaheim's Platinum Triangle district has also been added for consideration in this study.

1.1 Study Goals

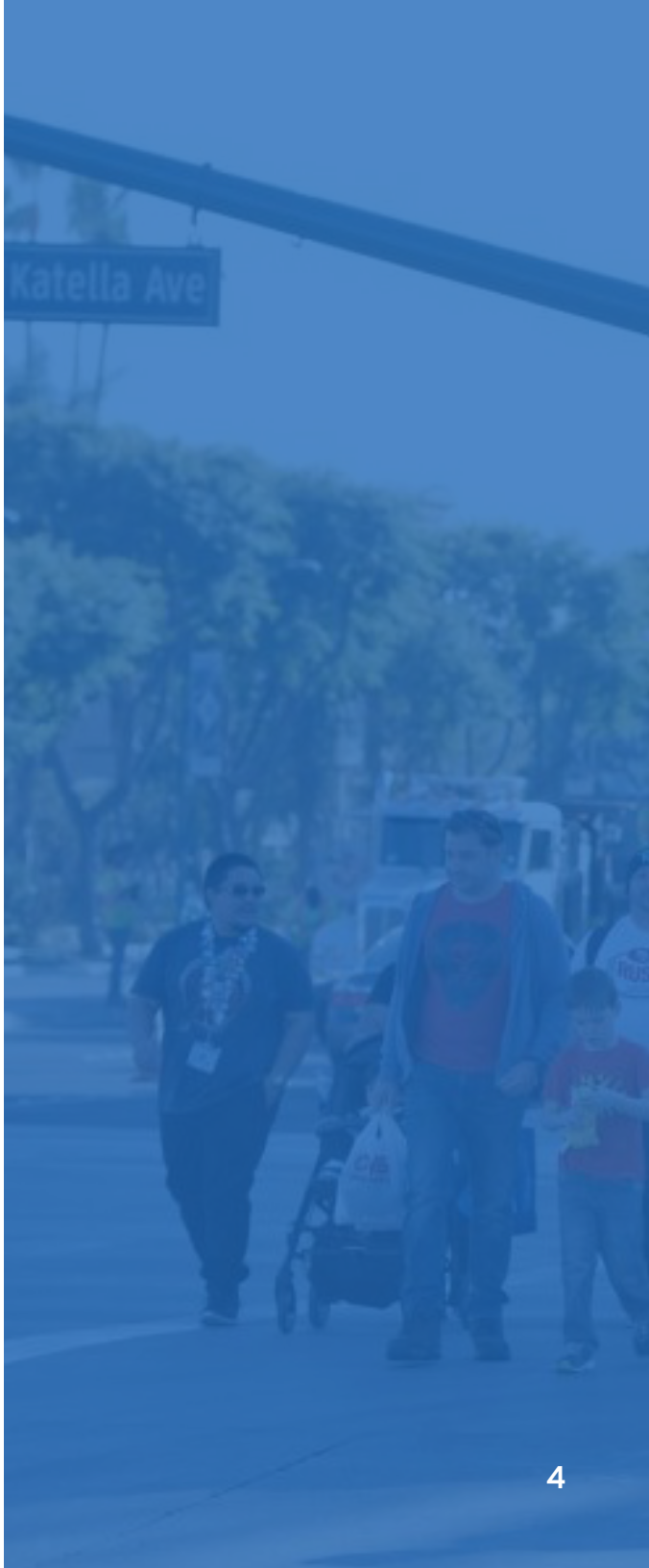
Since beginning the study in 2015, OCTA has worked in close coordination with the cities of Anaheim, Fullerton, Garden Grove, and Santa Ana to:

1. Analyze and develop strategies for improving transit along these important corridors.

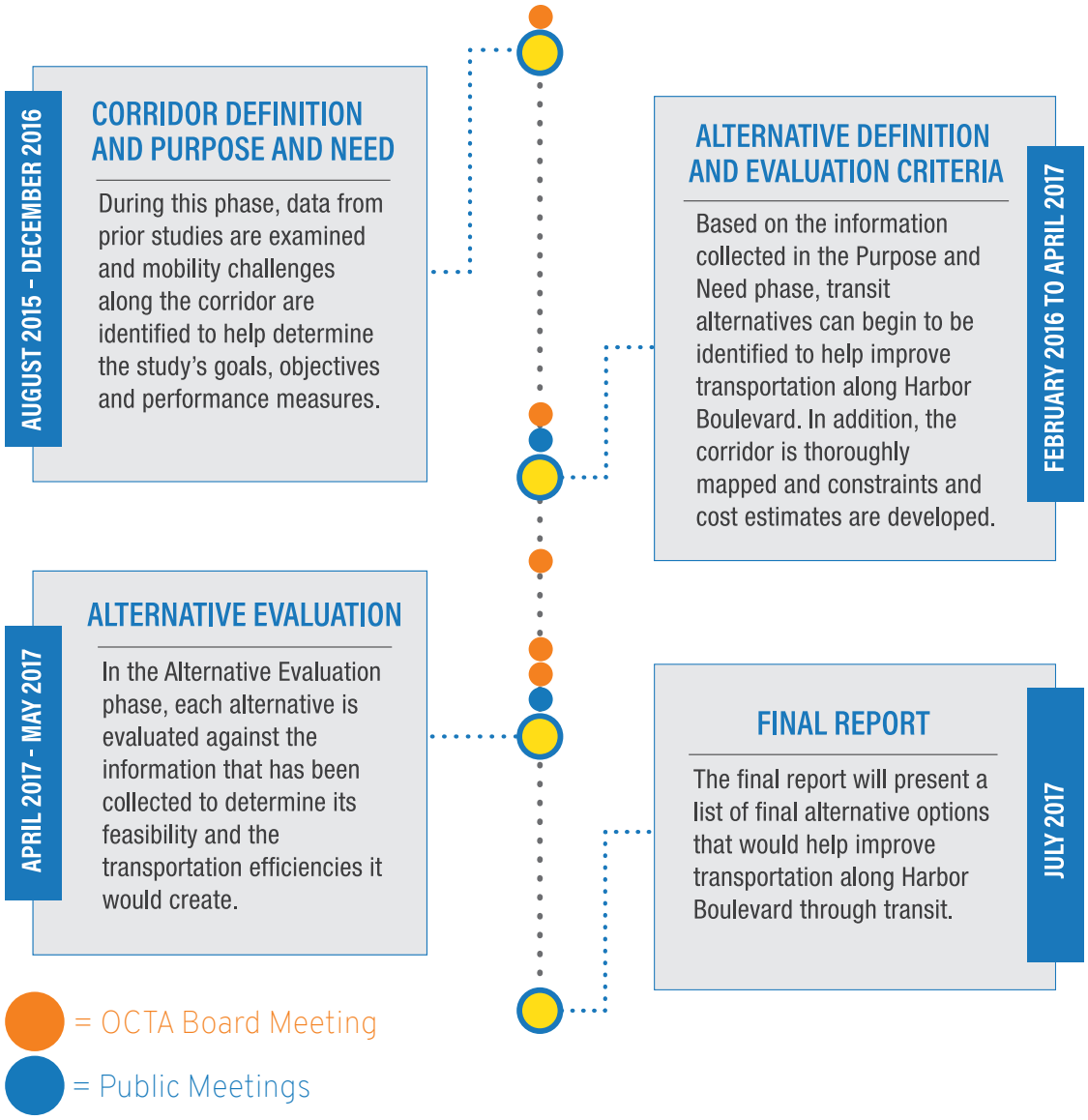
2. Establish goals, objectives, and evaluation criteria for evaluating transit improvements.

3. Develop 12 project alternatives and evaluate each alternative against comprehensive criteria.

4. Recommend next steps that serve OCTA's core mission of moving more people and supporting each corridor city's long-term plans.



1.2 Study Timeline



In 2015, OCTA initiated the *Central Harbor Boulevard Transit Corridor Study* to analyze transit options along an eight-mile segment of Harbor Boulevard—Orange County's busiest north/south transit corridor.

The study was intended to analyze up to nine alternatives, including alignment, mode technology, stop locations, ridership/cost estimates, and feedback from stakeholders. This would allow OCTA and corridor cities to move forward and analyze a locally preferred alternative, prepare an environmental assessment, and seek further public participation during subsequent project phases.

In October 2016, the OCTA Board of Directors, per an agreement with the City of Anaheim, amended the scope of the *Central Harbor Boulevard Transit Corridor Study* to also evaluate three addtional alternatives that provide connections between The Anaheim Resort® and the Anaheim Regional Transportation Intermodal Center (ARTIC).

2 Why Harbor?

2.1 Key Themes

Harbor Boulevard is an important north-south transit spine and is served by the highest-frequency bus service in the entire OCTA system.

Population densities and employment densities in the study area are double and triple the county averages.

Investments in the corridor ensure that resources are being placed where the demand is greatest.

Improvements on the corridor coincide with improvements on other major corridors such as Westminster Avenue.

Improvements also enhance connections to regional rail hubs in Fullerton, Anaheim, and Santa Ana.

2.2 Key Challenges

1. Performance: Current traffic conditions limit the speed and reliability of transit service.

2. Land Uses: Some land uses prioritize automobile access over transit and pedestrian options.

3. Connectivity: Connections to and from major activity centers are often inconvenient and time-consuming.

4. Infrastructure: The built-out nature of Harbor Boulevard means that most roads cannot be expanded to meet increased demand.

5. Mode Choice & User Experience: For many trips, few modes are competivie with the automboile.

6. Cost: OCTA must balance benefits with overall project costs to ensure the best use of public funds.

3 Alternatives

The study analyzes 12 alternatives across a combination of four modes and corridor options.

Mode Options

Enhanced Bus

- Shares lanes with other cars
- Receives priority at traffic signals and uses bypass lanes at select intersections
- Includes state-of-the art stops with ticket machines
- Carries up to 70 people per bus
- Project Cost: $

Bus-Rapid Transit

- Includes all Enhanced Bus features, but travels on a dedicated bus-only lane
- Carries around 120 people in a longer, 60-foot bus
- Project Cost: $$

Streetcar

- Shares lanes with cars but travels on its own track embedded in the road
- Powered by overhead wires
- Includes modern stops with ticket machines
- Carries up to 150 people per streetcar (3x as much as regular buses)
- Project cost: $$$

"Rapid" Streetcar

- Includes all Streetcar features, but uses a dedicated streetcar-only lane
- Faster than a regular streetcar or bus
- Project Cost: $$$$

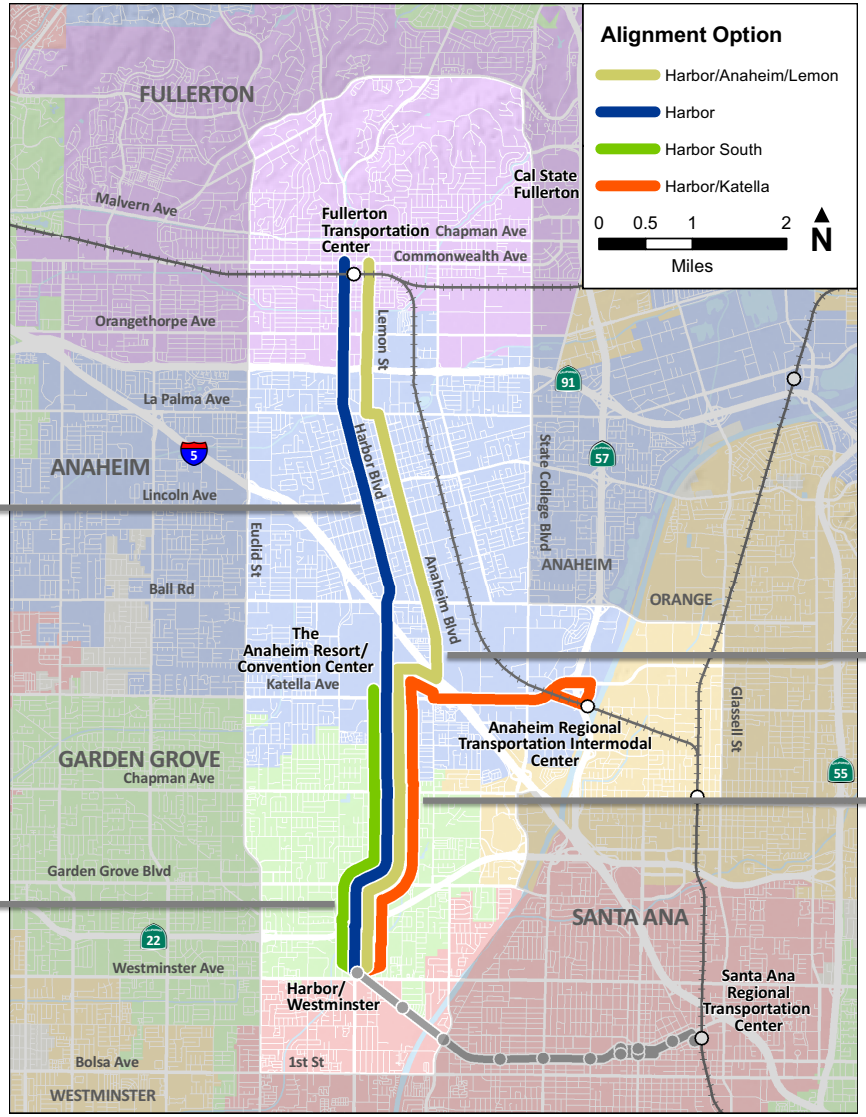
Four Alignment Options, Twelve Alternatives

HARBOR LONG

H-2: Harbor Long Streetcar
H-3: Harbor Rapid Streetcar
H-4: Harbor Enhanced Bus
H-5: Harbor Bus Rapid Transit

HARBOR SHORT

H-1: Harbor Short Streetcar



ANAHEIM/LEMON

L-1: Anaheim/Lemon Streetcar
L-2: Anaheim/Lemon Rapid Streetcar
L-3: Anaheim/Lemon Enhanced Bus
L-4: Anaheim/Lemon BRT

KATELLA

K-1: Katella Streetcar
K-2: Katella+ Anaheim/Lemon Enhanced Bus
K-3: Katella + Harbor Hybrid

4 Results

4.1 Evaluation Criteria

OCTA evaluated each of the 12 alternatives according to the criteria below.

Transit Performance

- *How long does it take to get to my destination?*
- *Is the bus or streetcar usually on time?*
- *Does it encourage more people to ride?*

Land Use

- *Does project complement nearby land uses?*
- *Does it support the local economy and help create jobs?*
- *Is it environmentally-friendly?*

Connectivity

- *Does the bus or streetcar take me to major destinations?*
- *Can I reach my destination within one transfer?*
- *Can I walk or ride my bike to/from a station?*

Corridor Constraints

- *Does the project affect our roads and traffic?*
- *Does it make our streets safer?*
- *Does it complement my neighborhood?*

Mode Choice/User Experience

- *Does the project encourage more people to ride transit and drive less?*
- *Does it benefit people without cars?*
- *Are stops/stations safe and attractive?*

Cost Effectiveness

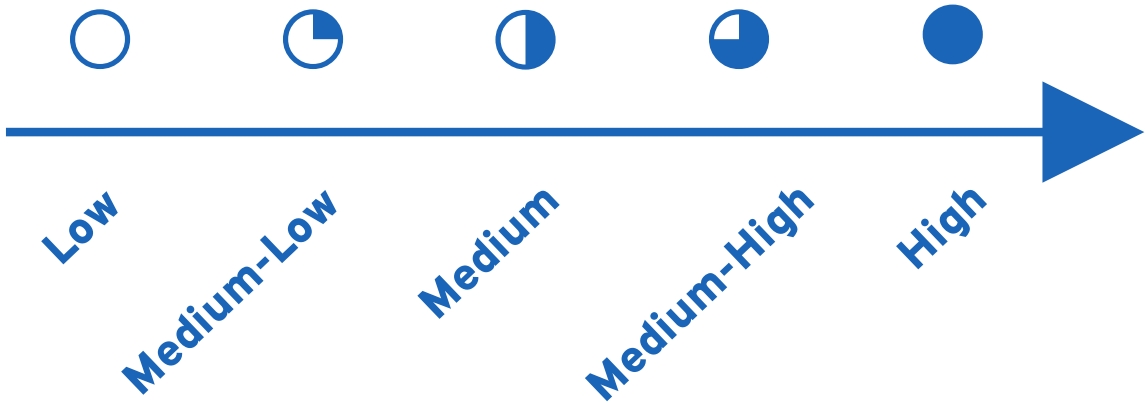
- *Is the project a good use of local public funds?*
- *Does it do a good job of balancing costs and benefits?*
- *Are there other sources of funding available?*

Community Support

OCTA will pursue a project that has broad support from public and all stakeholders.

4.2 Scoring Methodology

Each alternative received an overall score between 0 and 100, according to four qualitative and quantitative measures under the criterion on page 11.[1] The four scores under each criterion were aggregated on a scale from low to high, where "low" = 0 and "high" = 5.



Each criteria was then weighted according to established preferences of the the corridor cities.

The following pages show a detailed scoring breakdown for each alternative ranked by their overall total score.

1 Community support was factored in separately into the evaluation of alternatives. See next section for results from community surveys.

H-3: HARBOR RAPID STREETCAR

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
18/20	11/15	14/18	7/15	14/17	11/15	74

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$690M	$1.9M	15,200	15%

H-2: HARBOR LONG STREETCAR

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
17/20	11/15	12/18	10/15	14/17	10/15	73

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$610M	$3M	14,700	9%

*Total scores and Harvey Ball ratings may vary slightly across alternative and criteria due to rounding and weighting.
** Net Operations & Maintenance costs per year.

H-5: HARBOR BUS RAPID TRANSIT

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
17/20	11/15	12/18	8/15	11/17	14/15	73

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$230M	$1.1M	14,600	17%

L-1: ANAHEIM/LEMON STREETCAR

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
17/20	10/15	12/18	8/15	13/17	8/15	68

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$660M	$4M	11,300	2%

*Total scores and Harvey Ball ratings may vary slightly across alternative and criteria due to rounding and weighting.
** Net Operations & Maintenance costs per year.

L-4: ANAHEIM/LEMON BRT

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
14/20	11/15	12/18	6/15	12/17	12/15	66

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$250M	$1.8M	12,000	13%

L-2: ANAHEIM/LEMON RAPID STREETCAR

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
15/20	10/15	14/18	5/15	14/17	8/15	65

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$740M	$3M	12,500	9%

*Total scores and Harvey Ball ratings may vary slightly across alternative and criteria due to rounding and weighting.
**Net Operations & Maintenance costs per year.

K-1: KATELLA STREETCAR

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
15/20	11/15	10/18	11/15	12/17	6/15	65

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$450M	$5.2M	5,500	3%

H-1: HARBOR SHORT STREETCAR

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
16/20	9/15	8/18	13/15	10/17	8/15	64

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$260M	$3.1M	3,700	3%

*Total scores and Harvey Ball ratings may vary slightly across alternative and criteria due to rounding and weighting.
** Net Operations & Maintenance costs per year.

K-2: KATELLA+ANAHEIM/LEMON ENHANCED BUS

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
8/20	11/15	11/18	11/15	7/17	11/15	57

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$60M	$1.7M	4,900	6%

L-3: ANAHEIM/LEMON ENHANCED BUS

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
10/20	10/15	9/18	11/15	5/17	11/15	56

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$67M	$1M	5,400	7%

*Total scores and Harvey Ball ratings may vary slightly across alternative and criteria due to rounding and weighting.
**Net Operations & Maintenance costs per year.

K-3: KATELLA+HARBOR HYBRID

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
10/20	11/15	11/18	10/15	9/17	7/15	56

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$300M	$3M	7,000	N/A

H-4: HARBOR ENHANCED BUS

Performance	Land Use	Connectivity	Constraints	Choice/Experience	Cost	TOTAL
9/20	10/15	10/18	13/15	4/17	9/15	55

Capital Cost	Net Operations & Maintenance Cost	Boardings	Travel Time Savings
$64M	$1M	5,200	12%

* Total scores may vary slightly from sum of listed category scores due to weighting and rounding calculations.
** Net Operations & Maintenance costs per year.

Evaluation Results Summary

Alternative	Mode	Description	Transit Performance	Land Use	Connectivity	Constraints	Mode Choice/User Experience	Cost	Weighted Total
H-3	**Rapid Streetcar**	Harbor Rapid Streetcar from Harbor Blvd/Westminster Ave to FTC	18	11	14	7	14	11	***74***
H-2	**Streetcar**	Harbor Long Streetcar from Harbor Blvd/Westminster Ave to FTC	17	11	12	10	14	10	***73***
H-5	**BRT**	Harbor Bus Rapid Transit from Harbor Blvd/MacArthur Blvd to FTC	17	11	12	8	11	14	***73***
L-1	**Streetcar**	Anaheim/Lemon Streetcar from Harbor Blvd/Westminster Ave to FTC	17	10	12	8	13	8	***68***
L-4	**BRT**	Anaheim/Lemon Bus Rapid Transit from Harbor Blvd/MacArthur Blvd to FTC	14	11	12	6	12	12	***66***
L-2	**Rapid Streetcar**	Anaheim/Lemon Rapid Streetcar from Harbor Blvd/Westminster Ave to FTC	15	10	14	5	14	8	***65***
K-1	**Streetcar**	Katella Streetcar from Harbor Blvd/Westminster Ave to ARTIC	15	11	10	11	12	6	***65***
H-1	**Streetcar**	Harbor Short Streetcar from Harbor Blvd/Westminster Ave to Anaheim Resort	16	9	8	13	10	8	***64***
K-2	**Bus**	Katella + Anaheim/Lemon Enhanced Bus from Harbor Blvd/Westminster Ave to FTC, every other trip to ARTIC	8	11	11	11	7	11	***57***
L-3	**Bus**	Anaheim/Lemon Enhanced Bus from Harbor Blvd/MacArthur Blvd to FTC	10	10	9	11	5	11	***56***
K-3	**Hybrid**	Harbor Short Streetcar from Harbor Blvd/Westminter Ave to Anaheim Resort + Enhanced Bus from FTC to ARTIC via Anaheim/Lemon	10	11	11	10	9	7	***56***
H-4	**Bus**	Harbor Enhanced Bus from Harbor Blvd/MacArthur Blvd to FTC	9	10	10	13	4	9	***55***

Note: Individual subtotals may not equal weighted total due to rounding.

Harbor Short Harbor Long Anaheim/Lemon Katella

4 Outreach

4.1 Outreach Activies

Open Houses: OCTA held two open houses each in February 2016 and March/April 2017, respectively. Approximately 50 stakeholders attended the open houses.

Stakeholder Workshops: OCTA held two stakeholder workshops, in January 2016 and March 2017. The workshops provided an opportunity for community leaders to provide early feedback. Approximately 40 leaders participated in both workshops.

OCTA Board of Directors: The OCTA Board of Directors provided input on the study during five regular monthly board meetings: Jul 2015, Jan 2016, Oct 2016, Feb 2017, and Mar 2017.

4.2 Public Feedback

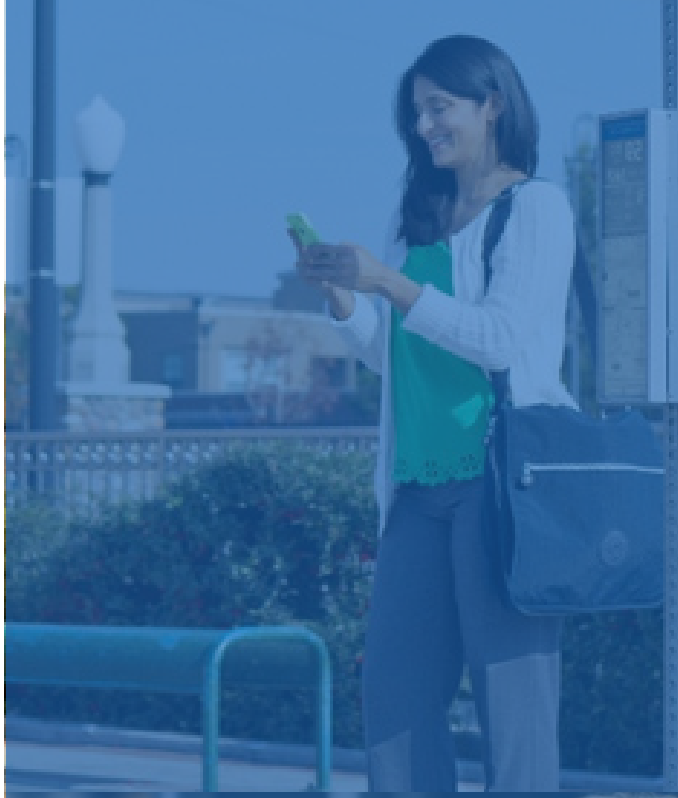
OCTA conducted two rounds of surveys in Winter 2016 and Spring 2017 to gauge the community's thoughts on the study. Surveys were conducted onboard OCTA buses and administered online. Respondents were asked to express a prefence for mode and corridor. Over 1,000 responses were recorded. Below is a summary of results from the survey.

Mode Preference

24% Rapid Streetcar
20% Enhanced Bus
17% BRT
13% Streetcar
10% Bus/Streetcar Hybrid

Corridor Preference

37% Harbor "Long"
23% Katella
20% Anaheim-Lemon
2% Harbor "Short"



5 NEXT STEPS

This Executive Summary presents the performance evaluation results for the *Central Harbor Boulevard Transit Corridor Study.* A total of twelve conceptual transit alternatives were evaluated against 24 evaluation criteria to help determine which alignments, modes, and features best met the study objectives. These results will be considered along with the city and community input received during the course of the study. This information will help inform decisions about potential advancement of a small group of alternatives into a subsequent study phase. The next study phase would likely include a detailed environmental review, public engagement, and selection of a preferred alternative.

A final round of outreach is proposed in early 2018, to present the evaluation results to each of the cities in the study area and to receive their comments. The study reports will also be available on the study webpage for public review and comment. The input received from the cities, public, and stakeholders will be incorporated into the Final Report and inform the study recommendations.

Study webpage: ***octa.net/harborgetinvolved***

Westminster Avenue looking south

Image Sources

All images are OCTA property unless listed below.

Inside Cover: City of Garden Grove. September 2015. www.ci.garden-grove.ca.us/econdev/grove-district-new-website

Table of Contents: The Hornet. Fullerton College. 2013. http://hornet.fullcoll.edu/new-bravo-buses-zip-through-harbor-blvd/

Page 2, left to right:

Flickr user Jonathan Riley. January 2015. www.flickr.com/photos/125733295@N07/15820452853/in/photostream

Yiu, Chaffee. www.chaffeeyiu.com/photo/octa/octa-5634-47.jpg

CPTDB user "RagingRapid," October 2016. http://farm9.staticflickr.com/8577/29534197413_7c314c57ae_b.jpg

Page 3, bottom: Blogspot user "Gorgim," May 2011. http://gorgim.blogspot.com/2011/05/

Page 4: Marroquin, Art. OC Register. December, 2015. www.ocregister.com/2015/12/10/octa-to-consider-derailing-anaheim-streetcar/

Page 7: top to bottom:

"Up And Down" by Star and Anchor Design; "Briefcase" by Alex Auda Samora; "Give" by Joel Olson, "Direction Signs" AlfredoCreates.com; "Dot Chart" by Hea Poh Lin. All images licensed under CC BY 3.0 US

Page 8: Marroquin, Art. OC Register. December, 2015. www.ocregister.com/2015/12/10/octa-to-consider-derailing-anaheim-streetcar/

Page 9, left to right:

Flickr user "crown426," July 2013. www.flickr.com/photos/crown426/9281634508/

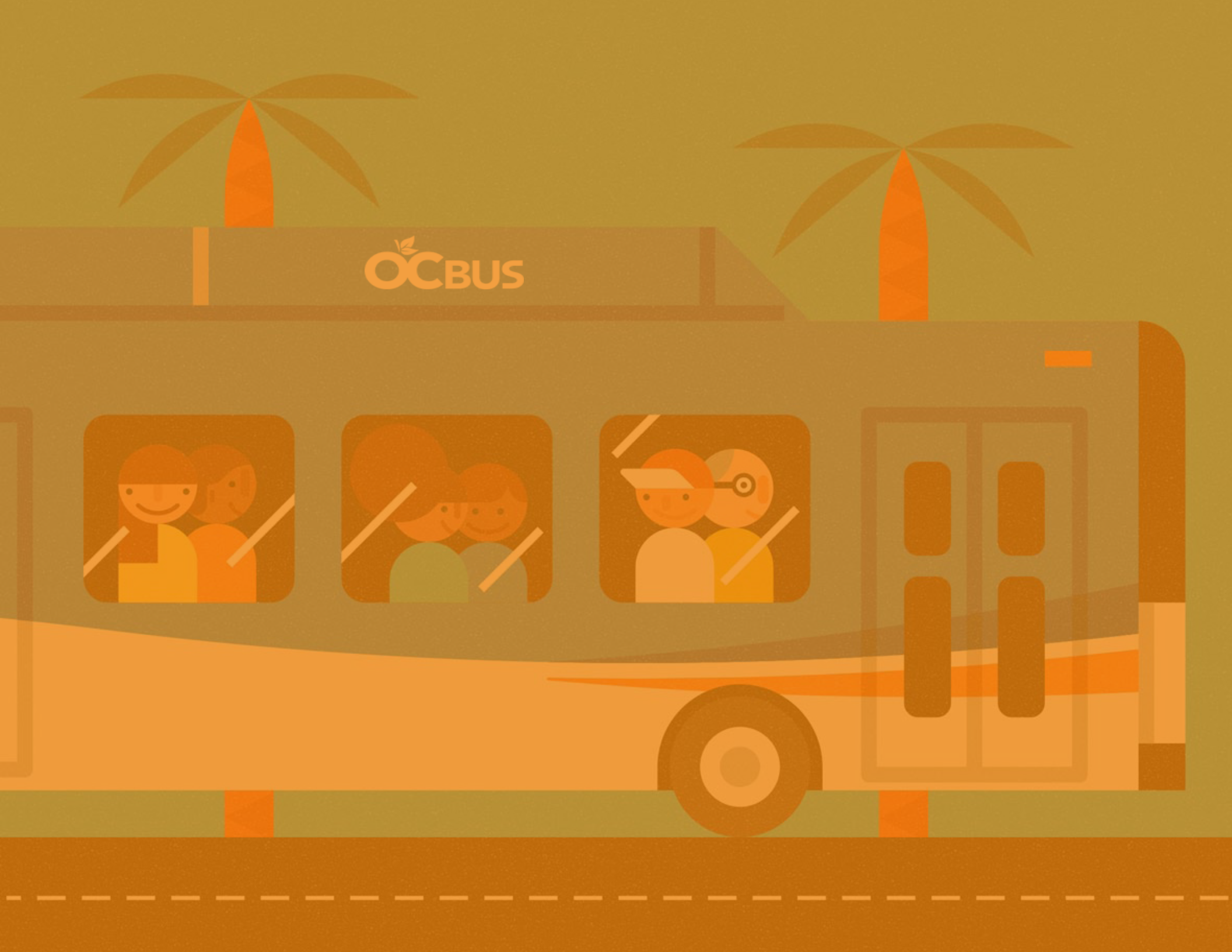
Flickr user "John Greenfield," October 2009. www.flickr.com/photos/24858199@N00/8664722908

Harrison, Mark. The Seattle Times. August 2015. http://static.seattletimes.com/wp-content/uploads/2015/08/145595_Trolley_mh372-1024x1024.jpg

Flickr user "Garrett," August 2011. www.flickr.com/photos/33970903@N02/6024098878

Page 12, bottom: City of Santa Ana, *Harbor Mixed Use Transit Corridor Specific Plan*. October 2014. www.santa-ana.org/harborplan/documents/web_HCP_Adopted_Oct2014.pdf

Page 22: City of Santa Ana, *Harbor Mixed Use Transit Corridor Specific Plan*. October 2014. www.santa-ana.org/harborplan/documents/web_HCP_Adopted_Oct2014.pdf


OCBUS


OCTA

Maps of the Alignments

ATTACHMENT B

No Build Alternative

Alignment:

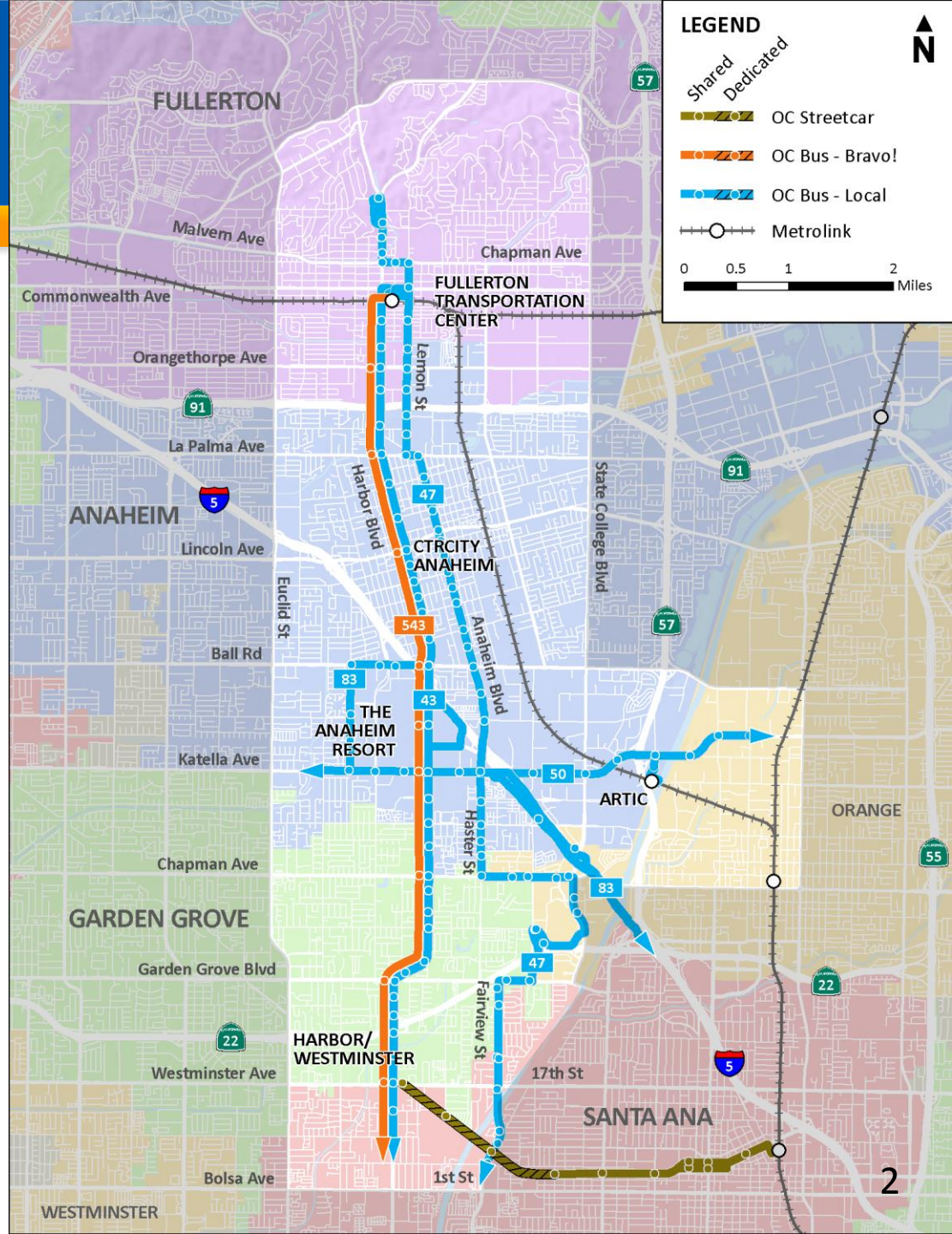
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Unchanged	Unchanged
Harbor Bravo! 543	Katella Local 50
Unchanged	Unchanged



H-1: Harbor Short Streetcar

Alignment:

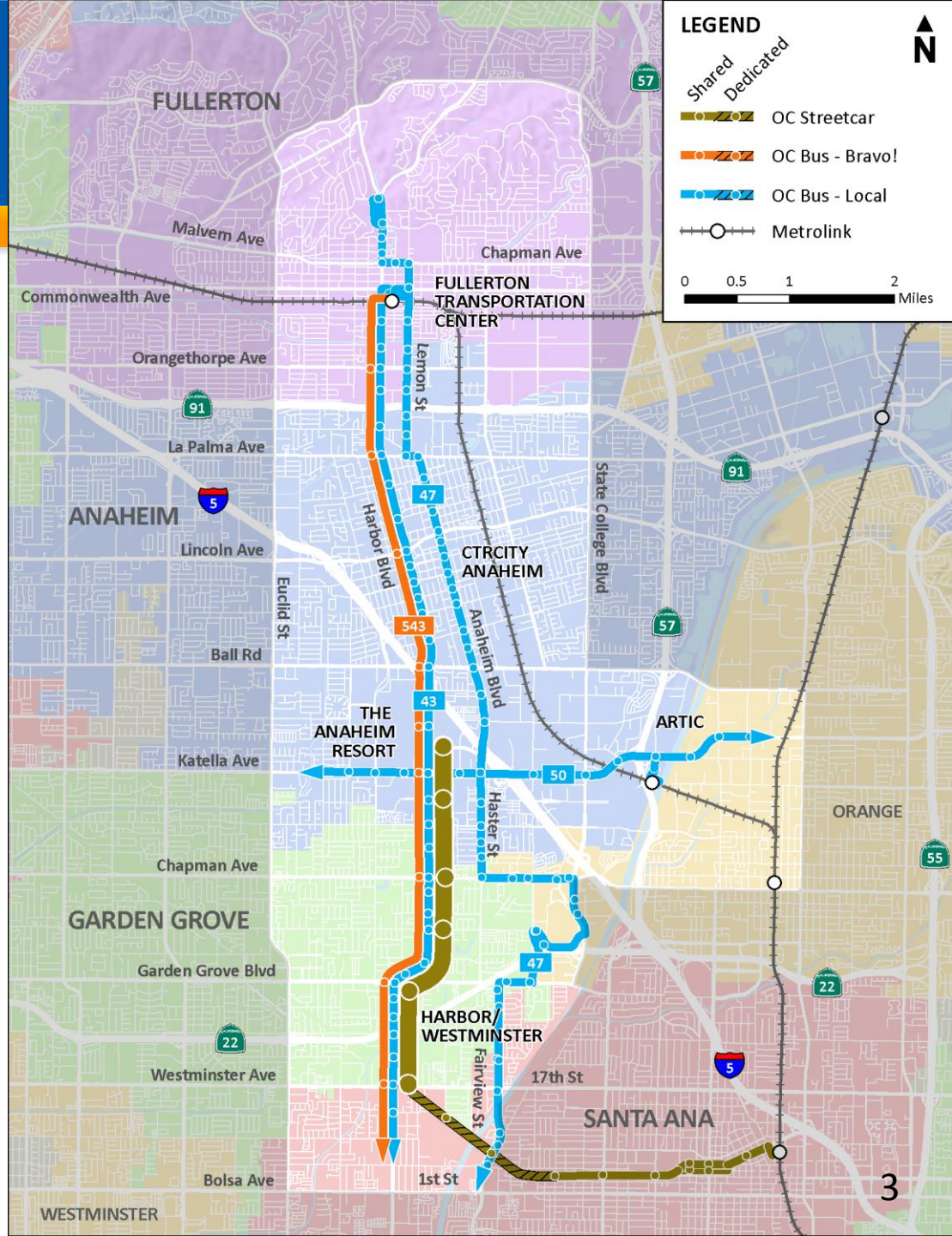
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Unchanged	Unchanged
Harbor Bravo! 543	Katella Local 50
Unchanged	Unchanged



H-2: Harbor Long Streetcar

Alignment:

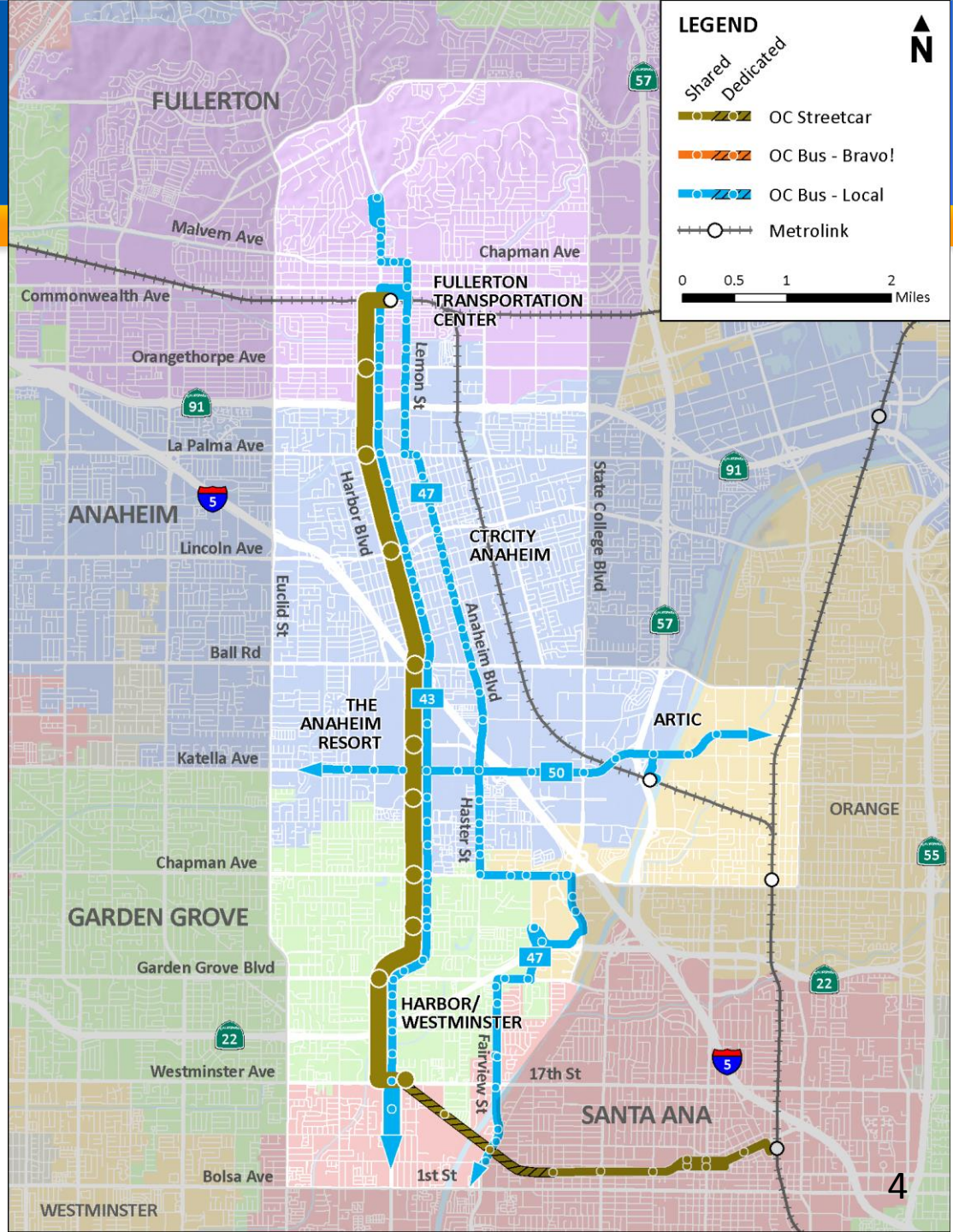
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Enhanced S of Westminster	Unchanged
Harbor Bravo! 543	Katella Local 50
Discontinued	Unchanged



H-3: Harbor Rapid Streetcar

Alignment:

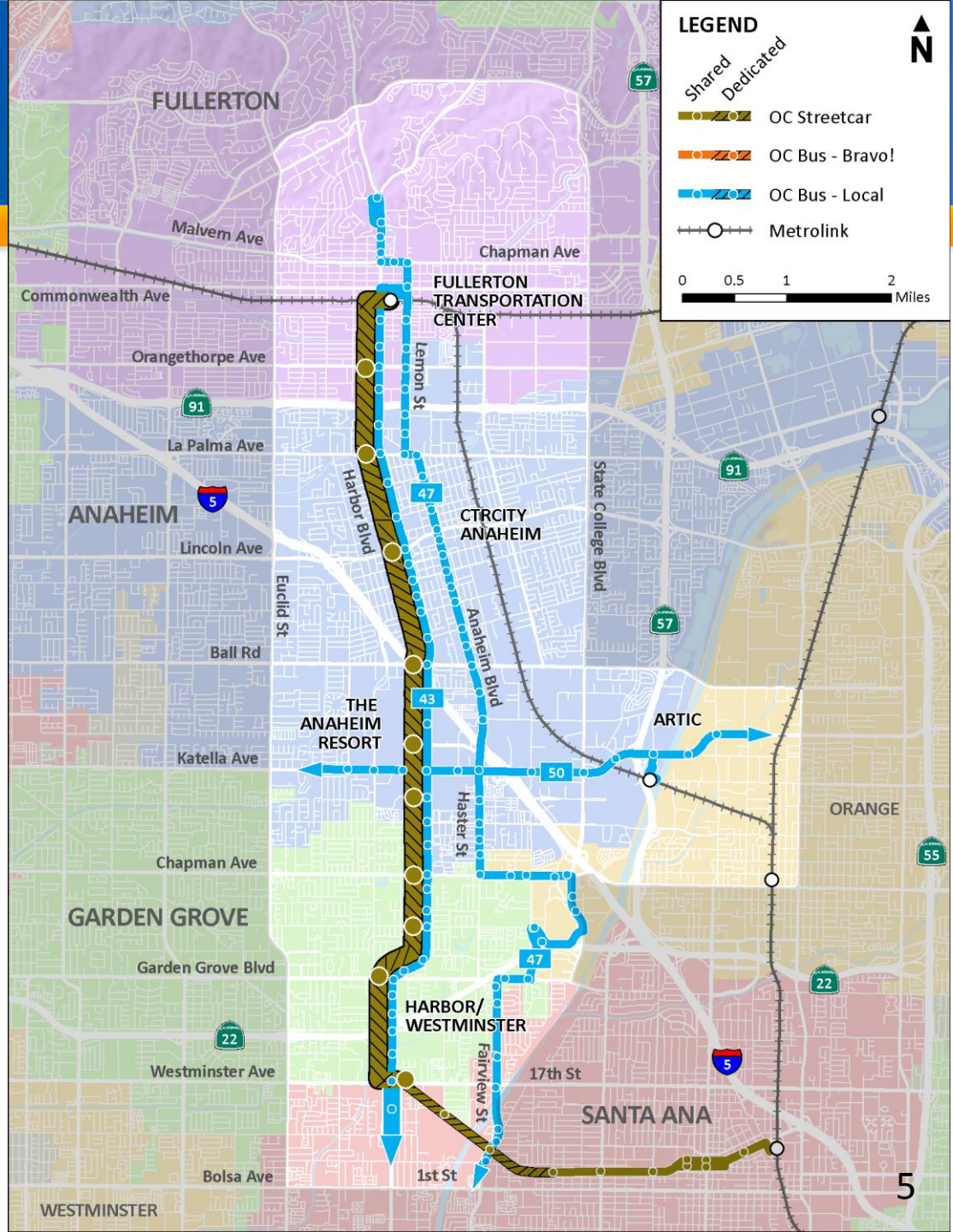
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Enhanced S of Westminster	Unchanged
Harbor Bravo! 543	Katella Local 50
Discontinued	Unchanged



H-4: Harbor Enhanced Bus

Alignment:

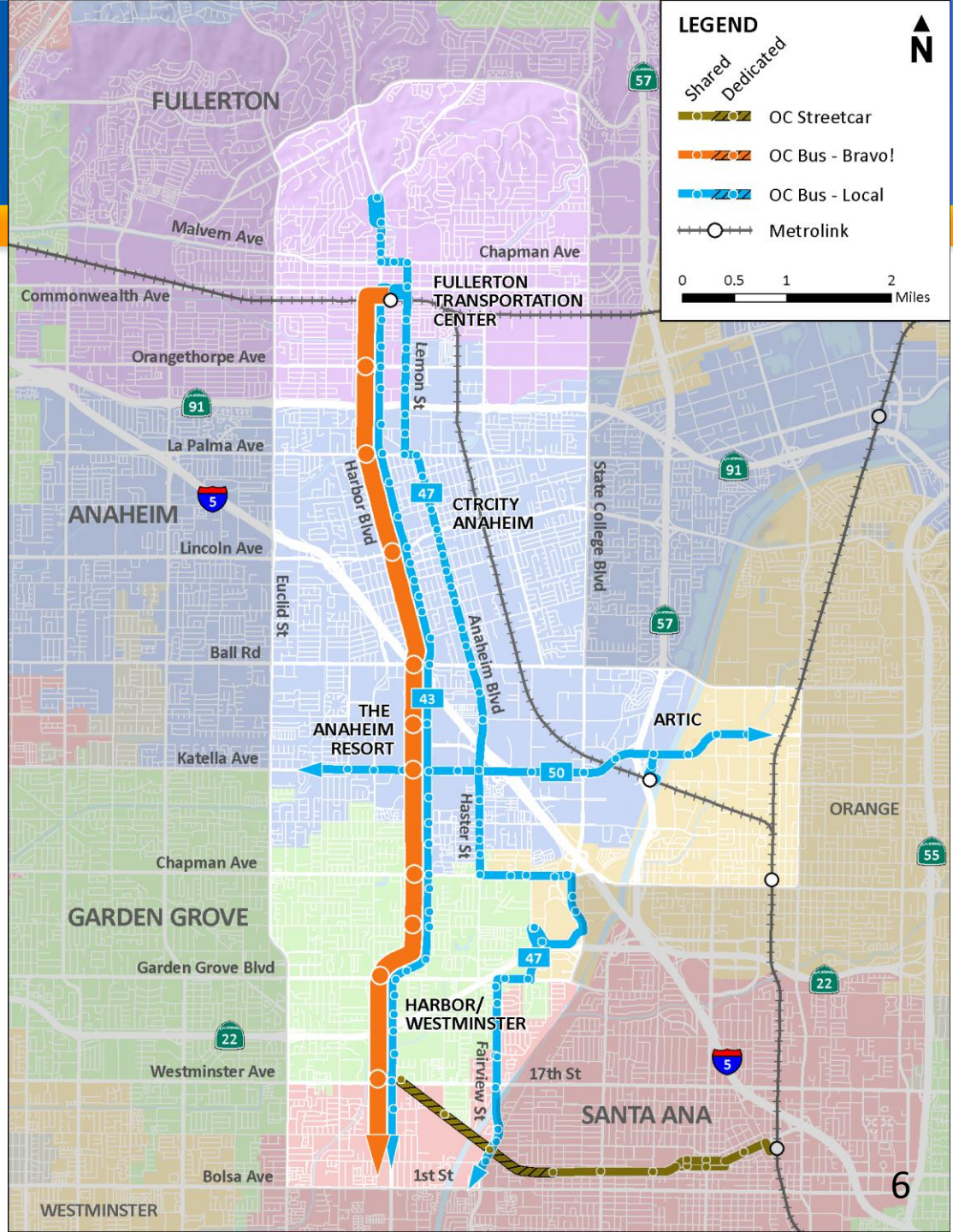
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Unchanged	Unchanged
Harbor Bravo! 543	Katella Local 50
Enhanced	Unchanged



H-5: Harbor Bus Rapid Transit

Alignment:

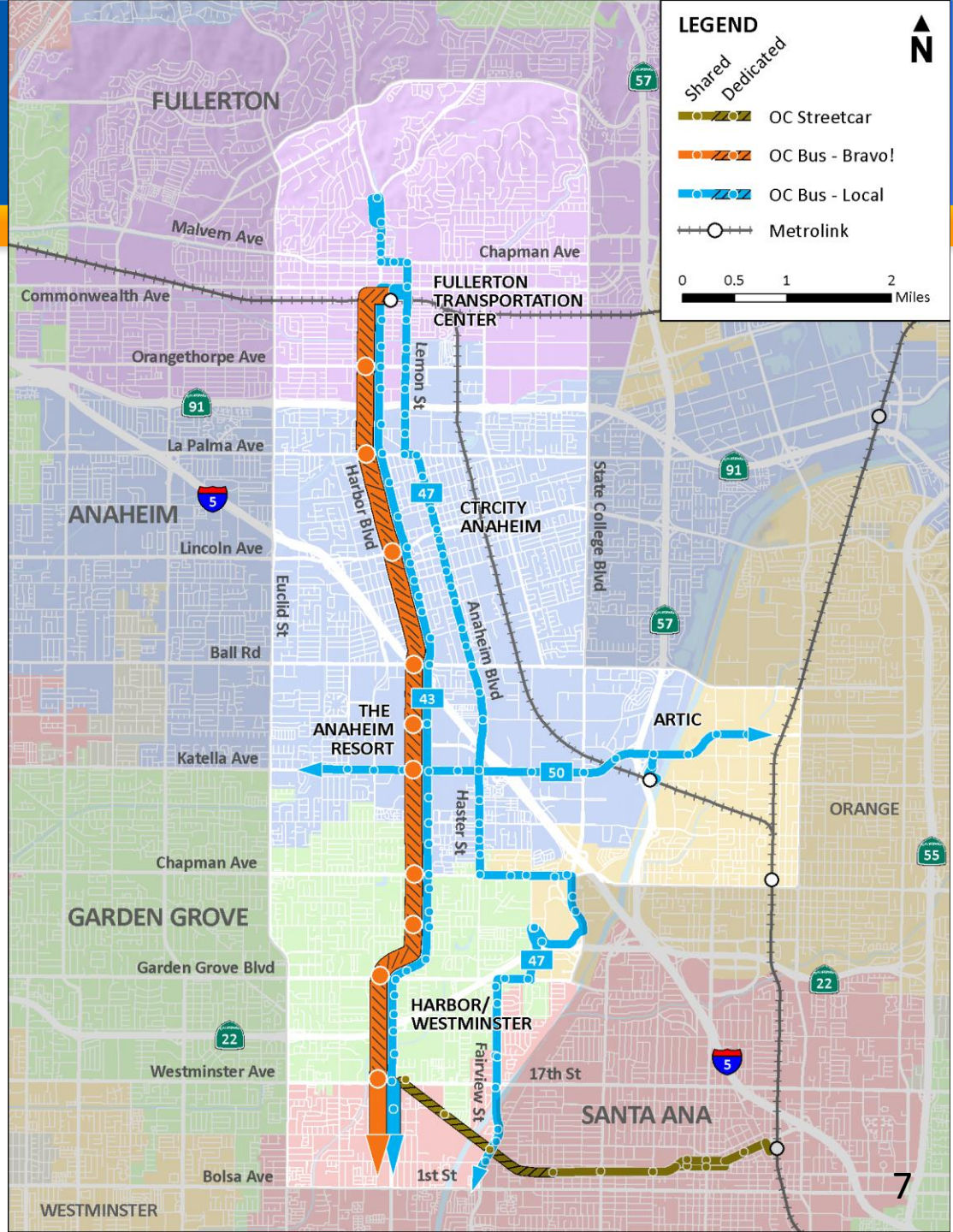
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Unchanged	Unchanged
Harbor Bravo! 543	Katella Local 50
Discontinued	Unchanged



L-1: Anaheim/Lemon Streetcar

Alignment:

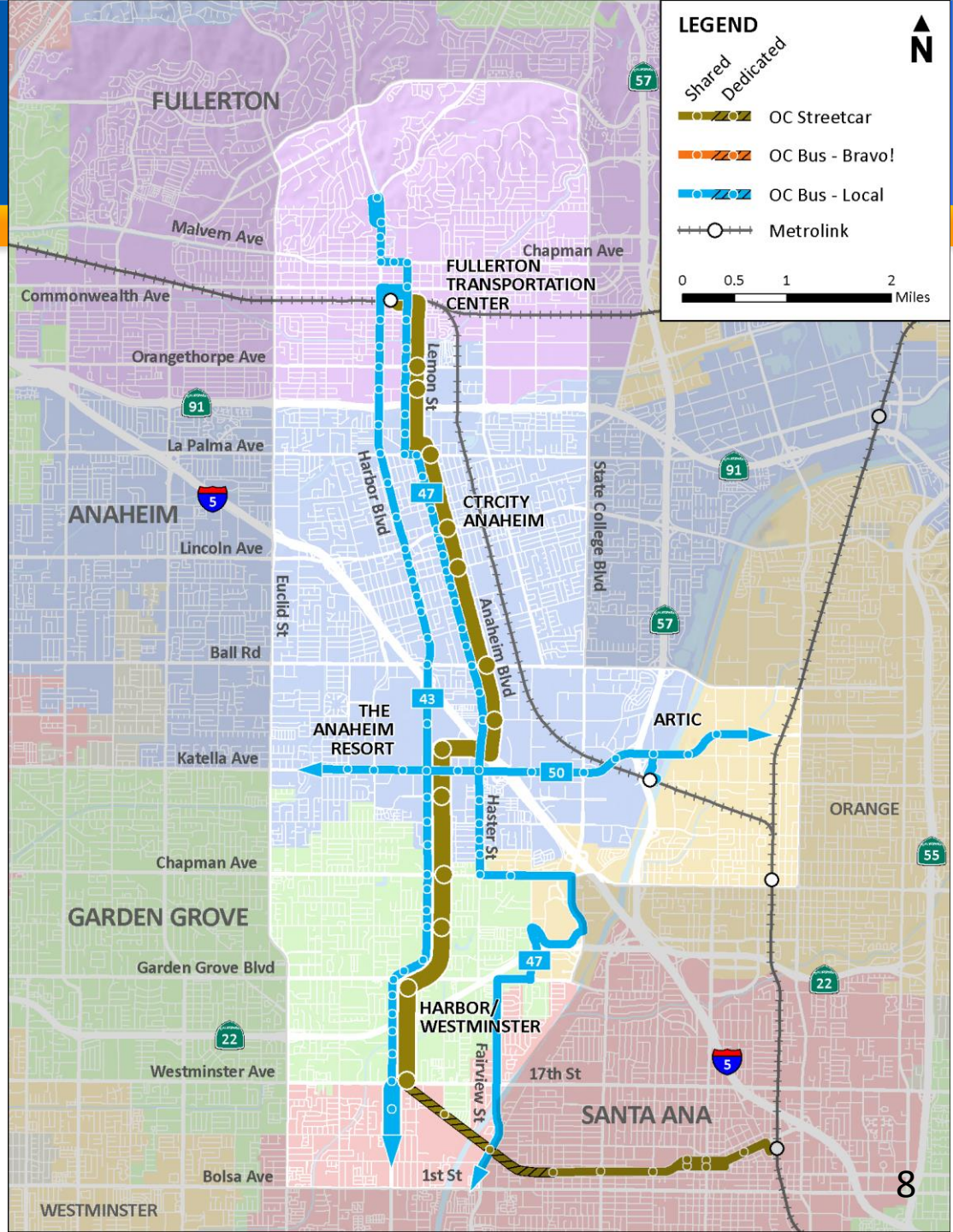
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Enhanced S of Westminster	Unchanged
Harbor Bravo! 543	Katella Local 50
Discontinued	Unchanged



L-2: Anaheim/Lemon Rapid Streetcar

Alignment:

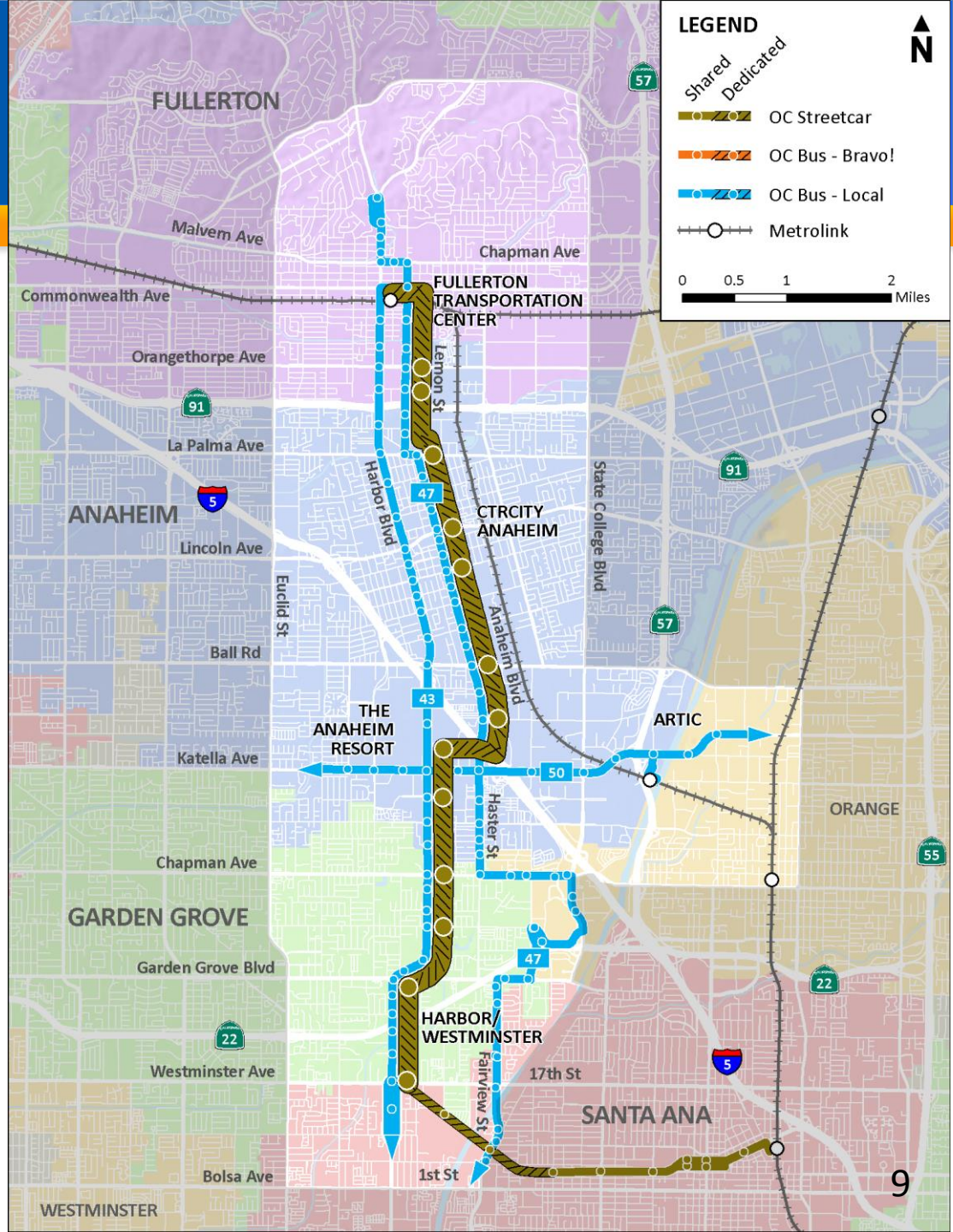
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Enhanced S of Westminster	Unchanged
Harbor Bravo! 543	Katella Local 50
Discontinued	Unchanged



L-3: Anaheim/Lemon Enhanced Bus

Alignment:

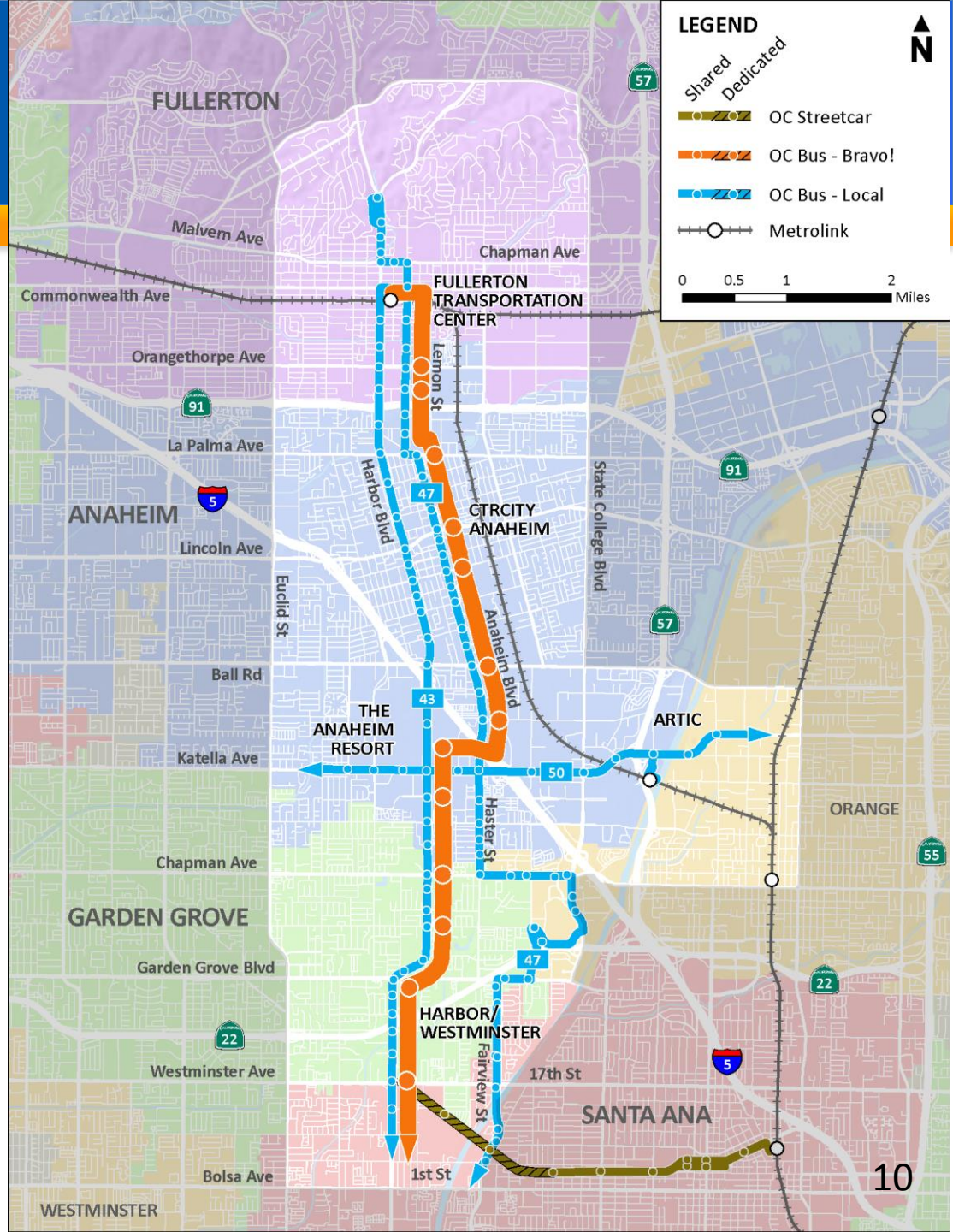
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Unchanged	Unchanged
Harbor Bravo! 543	Katella Local 50
Enhanced / Rerouted	Unchanged



L-4: Anaheim/Lemon Bus Rapid Transit

Alignment:

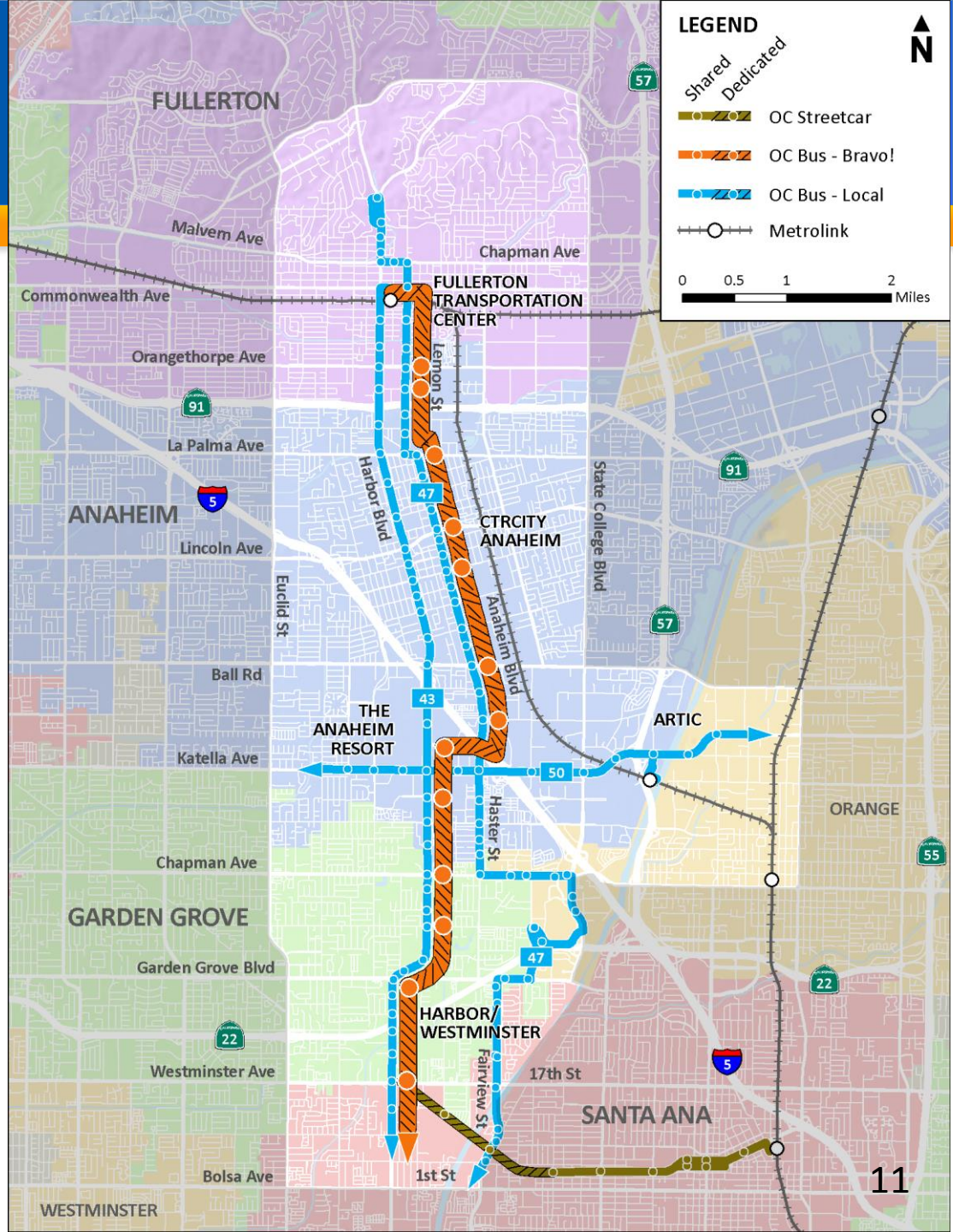
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Unchanged	Unchanged
Harbor Bravo! 543	Katella Local 50
Discontinued	Unchanged



K-1: Harbor-Katella Streetcar

Alignment:

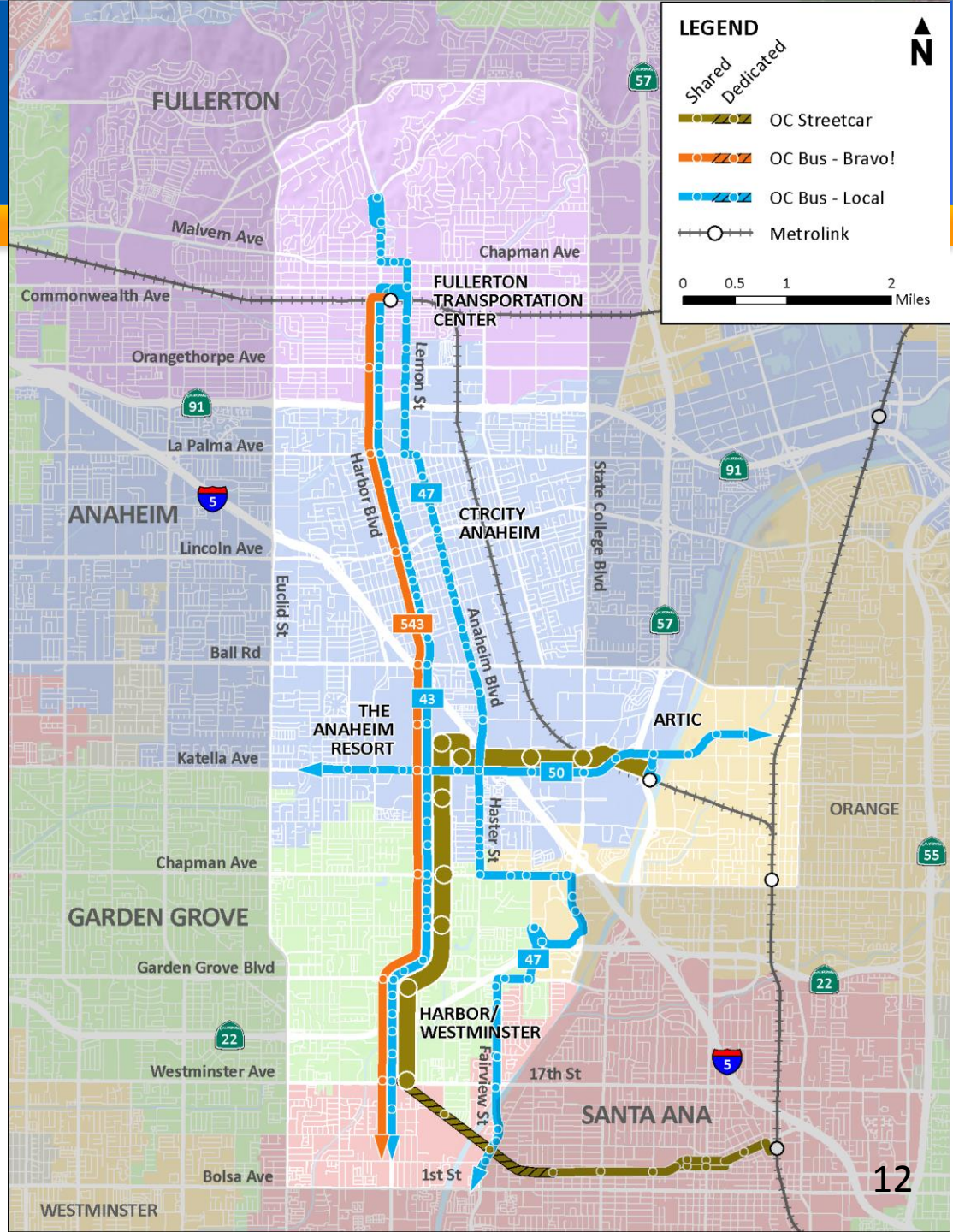
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Unchanged	Unchanged
Harbor Bravo! 543	Katella Local 50
Unchanged	Unchanged



K-2: Katella + Anaheim/ Lemon Enhanced Bus

Alignment:

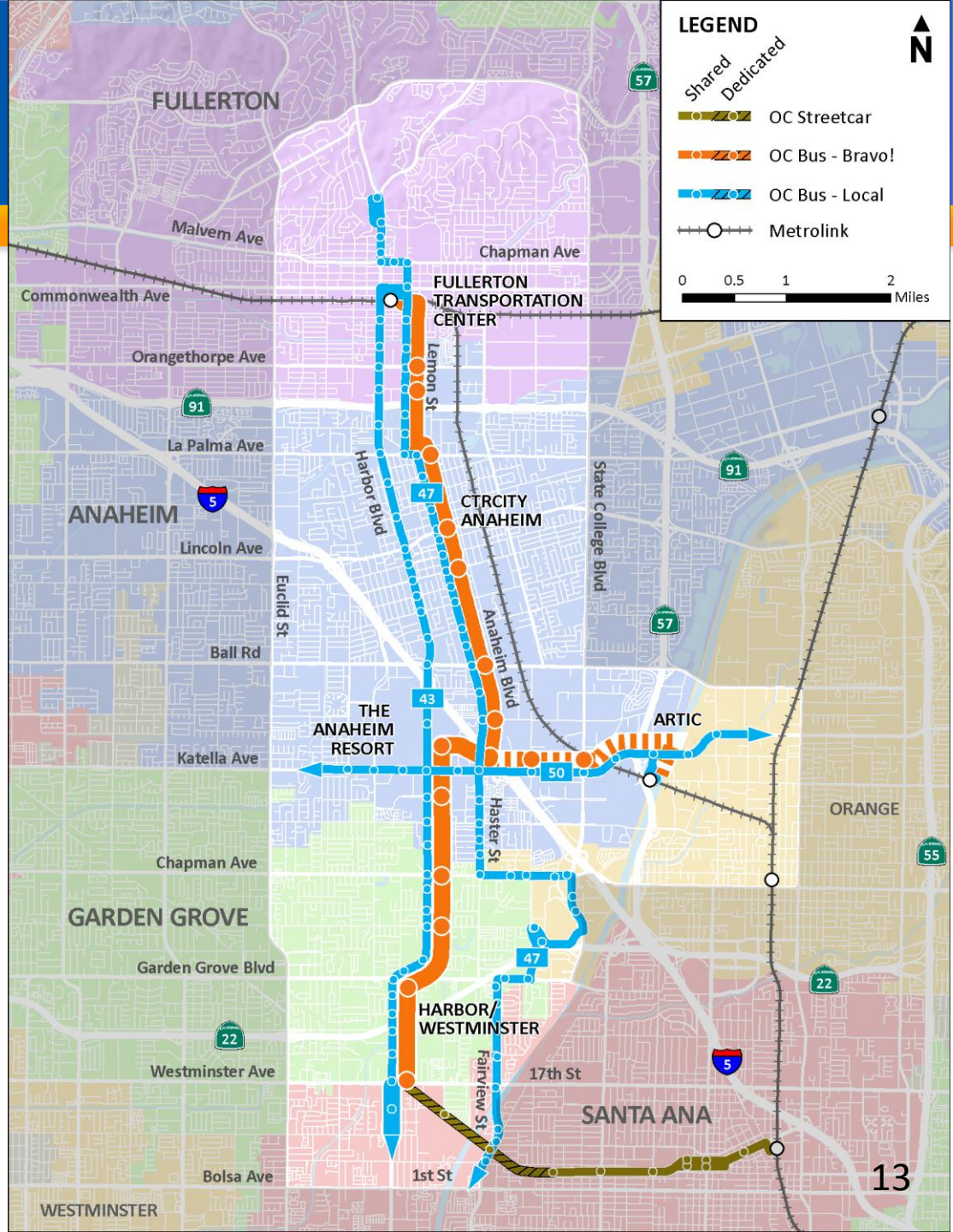
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Enhanced S of Westminster	Unchanged
Harbor Bravo! 543	Katella Local 50
Enhanced / Rerouted	Unchanged



K-3: Katella + Harbor Hybrid

Alignment:

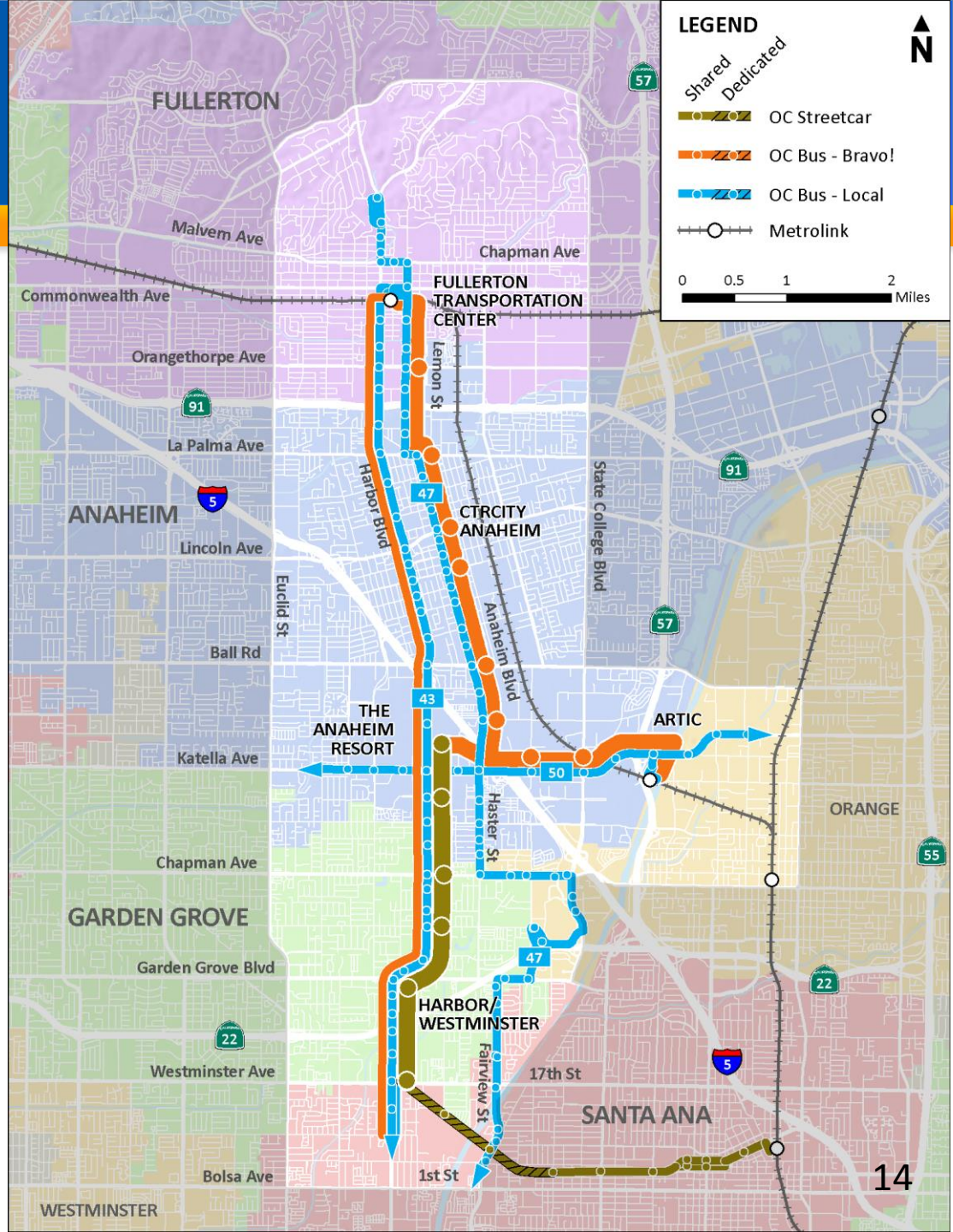
Harbor South	Anaheim/Lemon
Harbor North	Katella

Mode:

Enhanced Bus	Streetcar
Bus Rapid Transit	Rapid Streetcar

Changes to Bus Service:

Harbor Local 43	Anaheim/Lemon Local 47
Unchanged	Unchanged
Harbor Bravo! 543	Katella Local 50
Enhanced / Rerouted	Unchanged



ATTACHMENT C

Central Harbor Boulevard Transit Corridor Study
Evaluation Criteria

#	Criteria
1. Transit Performance	
a	Average Transit Operating Speed
b	Person Throughput
c	Travel Time Reliability / On-Time Performance
d*	Congestion Relief - New Linked Project Trips
2. Land Use	
a*	Transit-Compatible Land Uses - Station Area Population / Employment Density
b*	Economic Development - Transit Supportive Plans and Policies
c*	Environmental Benefits and Impacts - Vehicle Miles Traveled - Related (Traffic, Air Quality)
d*	Other Environmental Benefits and Impacts (Noise, Historic, etc.)
3. Connectivity	
a	Activity Center Connectivity
b	Zero and One Transfer Rides
c*	Compliance with Long Range Regional Mobility Goals
d*	First / Last Mile Connections - Bike / Pedestrian Amenities and Linkages
4. Corridor Constraints	
a	Optimally Allocate Roadway Infrastructure
b	Overall Safety / Collision Hot Spots
c	Optimize Traffic Operations
d	Physical Corridor Constraints (Bridges, Rail Crossings, etc.)
5. Mode Choices / User Experience	
a	New Riders (System-Wide)
b	Mode Share
c*	Mobility Improvement - Linked Trips on Project
d	Station User experience / Level of Amenities
6. Cost-Effectiveness	
a*	Cost-Effectiveness - Capital + Operations and Maintenance Costs / Project Trips
b	Incremental Cost per New Transit Trip
c	Farebox Recovery
d	Financial Feasibility (Cost, Suitability for Funding, etc.)

*Starred criteria match Federal Transit Administration New Starts evaluation criteria

7. Community Input	
a	Description of Outreach Plan Activities including Dates and Times
b	Summary of Comments Received and Key Issues

Ridership Summary Table

Alternative	Average Weekday Boardings	Per-Mile Boardings	New Systemwide Boardings	Systemwide Increase (%)
H3: Harbor Long Rapid Streetcar[1]	15,200	**1,900**	15,500	9.8%
H2: Harbor Long Streetcar	14,700	**1,800**	15,200	9.6%
H5: Harbor Bus Rapid Transit[1]*	14,600	**1,200**	15,500	9.8%
L2: Anaheim-Lemon Rapid Streetcar[1]	12,500	**1,500**	12,000	7.6%
L4: Anaheim-Lemon Bus Rapid Transit[1]*	12,000	**1,000**	11,500	7.3%
L1: Anaheim-Lemon Streetcar	11,300	**1,300**	10,300	6.5%
K3: Katella + Harbor Hybrid	7,000	**700**	3,100	2.0%
K1: Harbor-Katella Streetcar*	5,500	**900**	7,500	4.7%
L3: Anaheim-Lemon Enhanced Bus*	5,400	**430**	400	0.3%
H4: Harbor Enhanced Bus*	5,200	**430**	500	0.3%
K2: Katella + Anheim-Lemon Enhanced Bus	4,900	**470**	400	0.3%
H1: Harbor Short Streetcar*	3,700	**1,100**	7,500	4.7%

[1]Operates in a dedicated transit lane for at least 50% of the alignment.

*Extends to MacArthur Boulevard, consistent with existing Bravo! Route 543 service area.

ATTACHMENT D

Cost and Cost-Effectiveness Table

Alternative	Capital Cost (YOE$)[2]	Annual O&M Cost[3]	Annual Linked Trips on Project	Annual Cost/Rider
H1: Harbor Short Streetcar	$ 260,000,000	$ 3,093,161	821,277	$11.73
H2: Harbor Long Streetcar	$ 610,000,000	$ 2,973,797	3,261,832	$5.58
H3: Harbor Long Rapid Streetcar[1]	$ 690,000,000	$ 1,942,744	3,377,764	$5.54
H4: Harbor Enhanced Bus*	$ 64,000,000	$ 1,039,770	1,141,807	$2.68
H5: Harbor Bus Rapid Transit[1]*	$ 230,000,000	$ 1,095,776	3,242,547	$2.72
L1: Anaheim-Lemon Streetcar	$ 660,000,000	$ 4,004,851	2,504,395	$8.18
L2: Anaheim-Lemon Rapid Streetcar[1]	$ 740,000,000	$ 2,973,797	2,780,814	$7.60
L3: Anaheim-Lemon Enhanced Bus*	$ 67,000,000	$ 1,039,770	1,200,771	$2.62
L4: Anaheim-Lemon Bus Rapid Transit[1]*	$ 250,000,000	$ 1,752,130	2,669,537	$3.78
K1: Harbor-Katella Streetcar*	$ 450,000,000	$ 5,155,268	1,210,524	$13.69
K2: Katella + Anheim-Lemon Enhanced Bus	$ 60,000,000	$ 1,672,356	1,081,292	$3.40
K3: Katella + Harbor Hybrid	$ 300,000,000	$ 2,990,736	1,545,685	$6.89

[1]Operates in a dedicated transit lane for at least 50% of the alignment.

*Extends to MacArthur Boulevard, consistent with existing Bravo! Route 543 service area.

[2]YOE assumes a 2025 implementation date.

[3]Net Change in O&M from 2035 Baseline.

YOE - Year of expenditure
O&M - Operation and maintenance

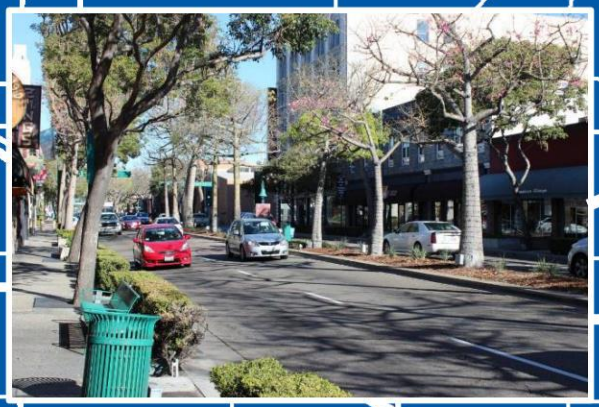
ATTACHMENT E

ATTACHMENT F

Orange County Transportation Authority

Central Harbor Boulevard Transit Corridor Study

Public Outreach Summary Report



FULLERTON

ANAHEIM

GARDEN GROVE

SANTA ANA

EXECUTIVE SUMMARY

The Orange County Transportation Authority (OCTA) is charged with maintaining and improving the complex transportation network that serves the residents, workers and visitors in California's third largest county. As car travel is ever more constrained by the growing population and increasing development densities, OCTA is working to identify and study opportunities to enhance multi-modal transit solutions.

Few corridors are as uniquely positioned for consideration of a multi-modal transit approach as the portion of Harbor Boulevard that travels through the cities of Santa Ana, Garden Grove, Anaheim and Fullerton from Westminster Avenue to Chapman Avenue. Today, Harbor Blvd. bears the distinction of being a major north-south connector for car traffic, is one of the busiest bus corridors in the County and demonstrates a unique mix of small business, resort, residential, industrial, education and mobility features. Additionally, Harbor Blvd. at Westminster Ave. will serve as the terminus for the OC Streetcar, slated to enter construction in 2018.

With this in mind, in 2015, OCTA launched the Central Harbor Blvd. Transit Corridor Study to consider how transit could be improved and enhanced in this vital area. The public outreach for the study was conducted in two phases, Phase 1 focused on introducing the Study and its goals, and establishing the criteria that would be used to develop and consider preliminary alternatives including transit technologies and routes. Phase 2 provided additional details on transit technologies/modes and its features, and options related to route alignments both on and adjacent to Harbor Blvd. including the Anaheim/Lemon route and an east-west connection along Katella Ave. to/from the Anaheim Regional Transportation Intermodal Center (ARTIC) and packaged them into 12 preliminary alternatives for consideration.

OCTA developed a comprehensive outreach strategy to provide stakeholders with the choice to engage in the manner most convenient for them. The outreach team facilitated meetings focused on the Study via key stakeholder workshops and open house meetings, presented to stakeholders via city council presentations and speakers bureau engagements, and reached out to transit users on buses along the corridor and nearby Metrolink stations. In addition, OCTA conducted online and social media outreach emphasizing the option of feedback through online surveys, which combined yielded more than 1,000 responses.

KEY FINDINGS

The overall feedback confirmed that Harbor Blvd. should be a focus for transit improvements. Following are the key findings:

- Stakeholders could see the benefit of offering transit options that are more efficient and convenient.
- Transit mode preference was mixed with an almost even split between streetcar and bus options.
- Route preference also was mixed and dependent on stakeholders' individual mobility needs and interests. However, the online survey results indicated the Harbor Blvd. corridor from Westminster Ave. to the Fullerton Transportation Center was most preferred.
- Most important transit characteristics are frequency of service, travel time compared to other modes, and convenient service hours, respectively.
- Primary activities participated in the study area included working, dining, and shopping, respectively.
- Attracting non-transit users is dependent on significant improvements that make transit more competitive with the ease of car travel.
- Generally, stakeholders are interested and generally supportive of transit investment, but need more information on the alternatives being considered to better indicate future preferences.

STUDY BACKGROUND

Harbor Boulevard is Orange County's busiest north/south transit corridor, carrying approximately eight percent of countywide bus ridership through some of the most densely populated and diverse areas of the County. Throughout the region and in close proximity to this corridor, efforts to improve transit service and mobility connections are taking place. Directly adjacent to this study is the OC Streetcar, connecting the Santa Ana Regional Transit Center (SARTC) through downtown Santa Ana to a planned terminus in Garden Grove at the intersection of Harbor Blvd. and Westminster Ave. OC Streetcar is in the development phase with design activities under way and construction anticipated to start in spring 2018. At the northern end of the Harbor Blvd. study area, the City of Fullerton completed the College Connector Study to evaluate options to improve connections between the transportation center, Downtown Fullerton and local college campuses, most notably Fullerton College and California State University, Fullerton.

Given the current and planned transit service in the corridor, the Study – through technical evaluation and stakeholder engagement – identified numerous alternatives to improve mobility. The alternatives include alignment options both on and adjacent to Harbor Blvd. and consider a variety of transit technologies. The Study Team, through technical evaluation and stakeholder feedback, will narrow down the initial 12 alternatives and will continue to study and refine these options during the next year.

During the course of the Study, traditional outreach opportunities were combined with a digital communication and social media program in order to reach the diverse stakeholder population interested in the future of transit on Harbor Blvd. Outreach was conducted in two phases based upon the technical milestones; Phase 1 - introducing and defining the study and its evaluation criteria and Phase 2 - presenting draft alternatives, including: alignment and technology options. During each outreach phase, a key stakeholder workshop was convened, open house meetings hosted and online survey offered. Stakeholder feedback has helped shape and further develop the alternatives being considered.

Targeted stakeholder audiences included: elected officials; representatives from the environmental, business, education, community, faith, transit and tourism industries; neighborhood and community based groups; transit users; social media audiences; and the general public.

OUTREACH: PHASE 1

TACTICS

Public outreach efforts supporting the first phase of the Harbor Study focused on introducing stakeholders to the study, establishing expectations related to the goals of the study, highlighting areas of study and what they could expect to learn, and identifying opportunities for their feedback to be heard.

Study Overview:

- OCTA is committed to improving transit in the Harbor Blvd. study area.
- As Orange County continues to grow along Harbor Blvd. mobility options need to be considered.
- This study is the first step in determining the future of transit in the corridor; alternatives will be developed for further study and later environmental review.

Introducing the Harbor Study:

- Defining the Corridor:
    - Harbor Blvd. is a unique corridor connecting the cities of Santa Ana, Garden Grove, Anaheim and Fullerton (and beyond).
    - Reflects the diversity of Orange County, with significant population density, busiest bus corridor, land uses including: multi-family units, single family homes, historic properties, small businesses and resort properties.
- Study Goals and Objectives
    - Develop a set of alternatives to improve transit on Harbor Blvd.

- Purpose and Need
- Route Options and Transit Modes
    - Consider both a Harbor Blvd. only route and a hybrid route that travels north on Harbor Blvd. and then veers east to run parallel traveling north on Anaheim Blvd./Lemon St.
    - Identify the transit modes being considered, including bus, bus rapid transit and streetcar options
- Public Participation
    - Stakeholder feedback from partner cities, key stakeholder organizations and the public is important in shaping the alternatives to improve transit and mobility in the study area.

To best share the Phase 1 tactics, the following outreach activities took place:

- Key Stakeholder Workshop
- City Council Presentations
- Open House Meetings
- Speaker Bureau Presentations
- Online Survey
- Earned Media and Email Blasts

KEY STAKEHOLDER WORKSHOP

In an effort to engage a diverse group of stakeholders in the study process, OCTA hosted a Key Stakeholder Workshop (KSW) on January 28, 2016. The KSW provides an opportunity for community leaders to receive information in advance of the general public and provide early feedback. This helped the study team confirm assumptions, identify possible areas of concern and reach deeper into the community by asking participants to share information with their constituents. Specifically, participants are asked to assist OCTA by sharing information about upcoming public meetings and online survey opportunities, and are encouraged to schedule a Speakers Bureau presentation to provide their members with study information.

OCTA invited more than 75 leaders to participate in the KSW representing organizations from the following fields: business, tourism, education, faith, neighborhood/HOA, community, health, multicultural, etc. Invitees received both a letter via mail and email, as well as a follow up phone call(s) to solicit RSVP. Approximately 19 stakeholders participated.

During the meeting, the study was introduced and information supporting the tactics outlined earlier in this report was shared. A PowerPoint presentation was provided and stakeholders were encouraged to ask questions and provide feedback throughout the workshop.
Feedback from the KSW focused on:

- Congestion challenges facing Harbor Blvd. today, lack of existing capacity to accommodate what's there now.
- Heavy pedestrian traffic delaying vehicle traffic in the Resort Area (Garden Grove and Anaheim).
- Improvements to enhance active transportation options.

The KSW invitee list, invitation letter, meeting agenda, PowerPoint presentation and meeting notes can be found in Appendix A.

OPEN HOUSES

OCTA hosted two open houses in February 2016 to provide the public with an opportunity to learn about the Study, ask questions and provide feedback.

OCTA is committed to conducting comprehensive public outreach programs that inform and engage stakeholders. Given the diversity of the corridor, a variety of noticing strategies were utilized to reach and engage interested stakeholders including: mailing notices, counter flyer distribution, on-bus noticing, emails blasts, social media, media coverage, and study and community partner resources.

A. Mailing of Notices

Bilingual (English and Spanish) postcard notices with additional text in Vietnamese and Korean offering language services were developed to publicize the Community Open Houses. Meeting notices were mailed to approximately 7,600 owner/occupants. Addresses were identified based on proximity to Harbor Boulevard, and the Lemon Avenue/Anaheim Boulevard corridor option.

B. Counter Distribution and Extended Notification Efforts

Bilingual (English and Spanish) meeting notices were distributed at the public counters of all four city halls (Santa Ana, Garden Grove, Anaheim and Fullerton). Additional notices were provided to the City of Santa Ana's Com-Link Council and the City of Anaheim's Central and West Neighborhood District meetings. Meeting flyers were also designed and distributed on buses serving the Harbor Boulevard Study Area.

The four partner cities, elected official district offices, and more than 100 key stakeholder organizations were asked for their support to promote the meetings as well as the online survey through their respective electronic communication tools, including websites, e-newsletters, social media sites, and membership e-blasts. Sample language was provided for possible e-blasts and/or newsletter articles, as well as Facebook posts. In addition, an announcement about the open houses took place at two Anaheim Neighborhood Services meetings in January.

C. E-Blasts/Social Media

The electronic version of the flyer was distributed via OCTA's *On the Move* Blog to more than 3,000 email contacts included in OCTA's stakeholder database. The notice was sent out two weeks in advance of the start of the Open Houses and a reminder notice was sent out prior to the meetings. The second e-blast distribution also included an additional 1,179 stakeholders identified as Harbor Boulevard bus riders during outreach conducted for OCTA's bus service changes.

OCTA's Facebook page was also utilized to build awareness for the project and the open houses, with posts on February 16, 18 and 22. Facebook ads were also created utilizing images of proposed transit technologies and key destinations. The ads linked back to information on the open house meetings and later to the online survey. 11,647 stakeholders had access to the ads and 209 clicked for more information.

Copies of the meeting notices, flyers, emails blasts, Facebook posts can be found in Appendix B.

Meeting Format

The two Open Houses took place from 5:00 to 8:00 p.m. and featured information stations staffed by project team members. Each meeting provided Spanish language support by having a bilingual technical and outreach team member available to engage with stakeholders. A looping PowerPoint presentation was displayed throughout the meeting. Approximately 25 stakeholders attended the meetings.

A virtual meeting was made available following the meetings via the OCTA website and featured the full complement of information boards and looping presentation. Open House location information is shown below.

Open House Locations

Community	Date	Location/Address
Fullerton	Wednesday, February 24, 2016	Fullerton Community Center 340 W. Commonwealth Fullerton, CA
Garden Grove	Thursday, February 25, 2016	Garden Grove High School 11271 Stanford Ave. Garden Grove, CA

Project team members staffed the information stations based on their technical expertise. An overview of the stations, PowerPoint and materials can be found in Appendix C.

Media Coverage

OCTA Media Relations drafted and distributed a press release (Appendix D) introducing the project and publicizing the open houses. The release was distributed to the following media outlets:

- Orange County Register
- Fullerton News Tribune
- Anaheim Bulletin
- La Habra Star/Brea Progress
- Patch.com
- Los Angeles Times
- Daily Pilot
- Huntington Beach Independent
- Voice of OC
- Nguoi Viet Daily News
- La Opinión
- Rumores
- Excelsior
- KPCC
- KCRW
- KFI
- KNX

ONLINE SURVEY

OCTA provided stakeholders with an online survey option so the public could participate, gather additional information from the website and provide their thoughts related to the Study's goal of developing transit options for Harbor Blvd.

A link to the online survey was shared via the study website, email blasts, on tablets at the open house meetings, distributed by ride share coordinators for large employers and via Facebook ads.

The online survey, was provided in English, Spanish and Vietnamese. The survey garnered 603 unique visits and 413 responses, which equates to a 68.5 percent completion rate. The majority of respondents were commuters, employees and/or residents within the study area, with more than 60 percent using transit on a daily, weekly or monthly basis. Out of these individuals, 69 percent were between the ages of 25 and 54.

Survey Results

The following is a summary of the feedback received via the online survey.

Topic	Responses		
Biggest challenges for transit in the study area	Transit/roadway performance (27%)	Mode choices (25%)	Connectivity (17%)
Average rating for mode option preferences (Out of 10)	7.07 for streetcar	6.60 for bus rapid transit	6.10 for limited-stop bus
Most important transit characteristics (Able to choose multiple)	Frequency of service (59%)	Travel time compared to other modes (54%)	Convenient service hours (52%)
Most important connection within the study area	Disneyland Resort (39%)	Downtown Anaheim (17%)	Fullerton Transportation Center (13%)
Major activities participated within the study area (Able to choose multiple)	Working (64%)	Dining (54%)	Shopping (38%)

A copy of the online survey is provided in Appendix E.

IMPORTANT CONSIDERATIONS OF PHASE 1 PUBLIC FEEDBACK

Feedback from the aforementioned outreach activities yielded the following themes:

- Improve connectivity of transit services locally and regionally, first/last mile connection particularly important
- Maintain or improve pedestrian and bicycle access in the corridor
- Provide efficient linkages to key destinations
- Make sure service is expanded to serve the hours of Disneyland and sporting events
- Signal synchronization between jurisdictions to improve traffic flow for all vehicles
- Address congestion during peak times on Harbor Blvd., including long waits at intersections and behind buses

OUTREACH: PHASE 2

TACTICS

Public outreach efforts supporting the second phase of the Harbor Study focused on sharing and receiving feedback on the 12 draft alternatives developed to improve transit in the Study area. To help stakeholders better differentiate their alternative preference, messaging is focused on the two main differentiating factors: route and transit technology.

Study Overview:

- Remained consistent with what is identified in Phase 1.

12 Alternatives:

- The Alignment Options:
  - Harbor Long - connecting from Westminster Ave. in the south to Chapman Ave. in the north
  - Harbor Short - connecting from Westminster Ave. in the south to the Resort area in Anaheim
  - Anaheim/Lemon - connecting from Harbor Blvd. at Westminster Ave. in the south then traveling east to travel north on Anaheim/Lemon to the Fullerton Station area
  - Katella - connecting from Harbor Blvd. at Westminster Ave. in the south then traveling east on Katella Avenue to ARTIC
  - Katella/Anaheim/Lemon - connecting from Harbor Blvd. at Westminster Ave. in the south then traveling east on Katella Avenue to ARTIC then traveling west to travel north on Anaheim/Lemon to the Fullerton Station area
- Transit Modes:
  - Enhanced Bus
  - Bus Rapid Transit
  - Streetcar
  - Rapid Streetcar
- Public Participation
  - Stakeholder feedback from partner cities, key stakeholder organizations, and the public is important in shaping the alternatives to improve transit and mobility in the study area.

To best share the Phase 1 tactics, the following outreach activities took place:

- Key Stakeholder Workshop
- City Council Presentations
- Open House Meetings
- Speaker Bureau Presentations
- Online Survey
- Earned Media and Email Blasts

KEY STAKEHOLDER WORKSHOP

The second Key Stakeholder Workshop (KSW) was convened on March 9, 2017. Approximately 100 key stakeholders were invited to participate in the KSW, including stakeholders invited to

participate in the first meeting and additional stakeholders identified as representing the Katella corridor area were added to the invitation list. 21 stakeholders participated.

To share the 12 Alternatives, a PowerPoint presentation was used and stakeholders were encouraged to review a roll plot of the study area and information boards displaying route and transit technology options. Stakeholders were encouraged to ask questions and provide feedback throughout the Workshop.

Feedback from the KSW focused on:

- Developing additional information to weigh the benefit of adding transit that could impact or reduce the number of lanes available for other vehicle traffic.
- Consider improving pedestrian and bicycle access and use.
- Explore elevated transit or pedestrian corridor, particularly in the Resort Area in Anaheim.
- Partner with law enforcement agencies to improve safety at existing and future transit stops.

The KSW invitee list, invitation email, meeting agenda, PowerPoint presentation, information boards, sign-in sheet and meeting notes can be found in Appendix F.

OPEN HOUSES

OCTA hosted two Open Houses on March 30 and April 5, 2017 to provide the public with a Study update and an opportunity to ask questions and provide feedback. The notification approach used for Phase 1 was duplicated for this round of meetings. With the addition of mailing notices to those owner/occupants located in proximity to the Lemon Ave./Anaheim Blvd. and Katella Ave. corridor options.

E-Blasts/Social Media

The electronic version of the flyer and online survey link was distributed via OCTA's *On the Move* Blog to more than 3,000 email contacts included in OCTA's stakeholder database. The notice was sent out two times: the first notice was shared over one month in advance of the start of the Open Houses on February 18, the second meeting notice was distributed again on March 21 as a reminder for the following week's meeting in Garden Grove. A separate e-blast to the Harbor database's 4,800 contacts comprised of past survey respondents, Anaheim Rapid Connection contacts and bus customers was distributed on March 22 and April 11.

Facebook ads were also created utilizing images of proposed transit technologies and key destinations. The ads linked back to information on the open houses and later to the online

survey. More than 6,000 stakeholders had access to the ads and more than 320 users "clicked" for more information.

Copies of the meeting notices, flyers and emails blasts can be found in Appendix G.

Meeting Format

The two Open Houses took place from 5:00 to 7:00 p.m. and featured a large roll out of the (satellite) image of the corridor. Presentation boards focusing on the four route alignments and transit technologies were displayed and a comment station offered stakeholders the opportunity to complete the online survey, and/or a paper/electronic comment form. A presentation was provided and brief question and answer session took place. Team members were available to engage with stakeholders one-on-one throughout the meeting. Additionally, attendees were encouraged to indicate route, transit mode and origin/destination preferences using colored dot stickers; they were also invited to leave notes on the roll out for any location specific issues the study team should consider.

Unique to the meeting offered in Anaheim, a copy of the Anaheim City Council resolution opposing streetcar technology was available for stakeholders to review.

Since a presentation was provided, a Spanish language translator was available to assist non-English speakers. Approximately 25 stakeholders attended the meetings.

A virtual meeting was made available following the meetings via the OCTA website and featured the full complement of information boards and a presentation. Open House location information is shown below.

Open House Locations

Community	Date	Location/Address
Garden Grove	Thursday, March 30, 2017	Garden Grove Community Center 11300 Stanford Ave. Garden Grove, CA
Anaheim	Wednesday, April 5, 2017	Anaheim City Hall West Gordon Hoyt Conf. Rm. 201 S. Anaheim Blvd. Anaheim, CA

ONLINE SURVEY

Given the levels of response received during Phase 1 Outreach to the online survey, two surveys were developed for Phase 2 to share information about route and transit technology choice and solicit feedback. Two surveys were offered, a shorter version and a longer, more technical version that stakeholders could self-select based on their level of interest and time. A link to the online survey was shared via the open house notification efforts mentioned above, the study website, email blasts, on tablets at the open house meetings, rideshare coordinators for large employers, and Facebook ads. Online survey information was also shared with OCTA's Citizens Advisory Committee and Diversity Community Leaders Group during outreach presentations to both groups.

Survey Results

The survey garnered 683 responses, with 518 people completing the short survey and 165 respondents for the long survey. The overwhelming majority believe that transit should be improved and were evenly split between streetcar and bus, however rapid streetcar stood out as most preferred, as did the Harbor long route option.

Topic	Responses		
Mode preference	Rapid Streetcar (24%)	Enhanced Bus (20%)	Bus Rapid Transit (17%)
Route Preference	Harbor from Westminster Ave. to Chapman Ave (37%)	Harbor/Anaheim/ Lemon (20%)	Harbor/Katella/ Anaheim/Lemon (19%)
Most important transit characteristics (Able to choose multiple)*	Frequency of service (68%)	Hours of Operation (49%)	Overall Travel Time (41%)
How often transit is used	Never but would consider if improved (38%)	Daily (20%)	Weekly (9%)
Why travel along Harbor?	Work (26%)	Live (24%)	Commute (14%)
Major activities participated within the study area (Able to choose multiple)*	Dining (73%)	Working (63%)	Shopping/Recreational Activities (58%)

*Percentage of total respondents.

A copy of the online survey and survey results are provided in Appendix H.

Transit User Outreach

Transit users, especially those reliant on bus service, may face unique challenges to attend an open house meeting. To raise awareness for the Study and gather their valuable perspective on improving transit along the Harbor Blvd. Corridor, additional in person outreach was conducted on board several buses serving Harbor Blvd. and at the Fullerton Metrolink Station and ARTIC. Bus outreach was also supported by bilingual staff in Spanish and Vietnamese, study information shared and online surveys were completed.

Additional Outreach

To supplement the programmed outreach activities, OCTA also provided briefings and presentations to interested stakeholders and organizations. The following activities took place during Phase 2 outreach, from January through July 2017.

Date	Organization
January 15, 2017	Anaheim City Council
February 28, 2017	Garden Grove City Council
March 9, 2017	OCTA Diversity Community Leaders Group
March 22, 2017	Anaheim Resort Transportation Board of Directors
April 1, 2017	Garden Grove Open Streets Event
April 18, 2017	Santa Ana City Council
April 18, 2017	OCTA Citizen's Advisory Committee

Important Considerations of Phase 2 Public Feedback

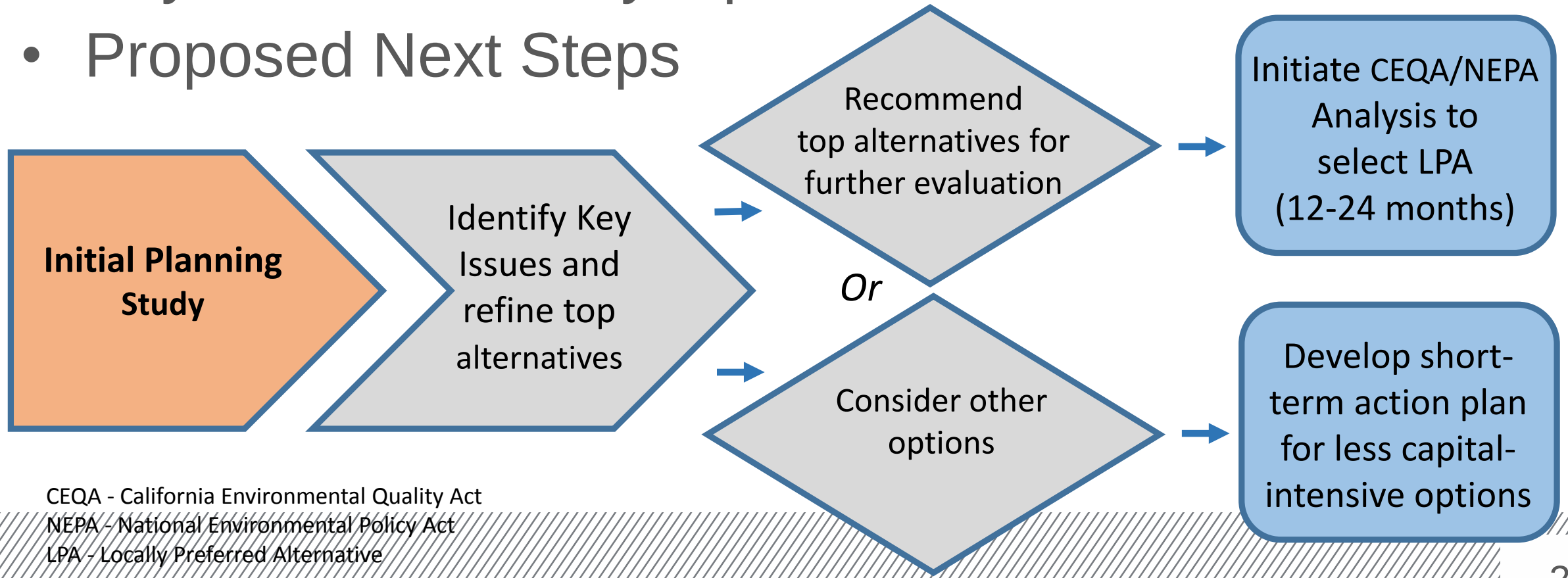
Feedback from these activities yielded the following themes, some reiterated from Phase 1:

- Improve connectivity of transit services locally and regionally, first/last mile connection particularly important
- Maintain or improve pedestrian and bicycle access in the corridor
- Provide efficient linkages to key destinations
- Expand hours of service
- Concern regarding balancing stop amenities with homeless challenges
- Signal synchronization between jurisdictions to improve traffic flow for all vehicles
- Address congestion during peak times on Harbor Blvd., including long waits at intersections and behind buses, and east-west traffic flow
- Technology preference indicates significant interest in both streetcar and bus options
- Route preference focused on north-south connections

Central Harbor Boulevard Transit Corridor Study

Today's Update

- Performance Results for the 12 Alternatives
- City and Community Input Received to Date
- Proposed Next Steps



CEQA - California Environmental Quality Act
NEPA - National Environmental Policy Act
LPA - Locally Preferred Alternative

Study Phases and Schedule

• Purpose and Need	August 2015 - December 2016
• Outreach 1	February - April 2016
• Alternatives Development	February 2016 - April 2017
• Outreach 2	February - April 2017
• Alternatives Evaluation	April - September 2017
• Draft Final Report	December 2017
• Final Report	Early 2018

Mode/Feature Options

Enhanced Bus

- Shares lanes with other cars
- Receives priority at traffic signals and uses bypass lanes at intersections
- Includes state-of-the art stops with ticket machines
- Carries around 70 people
- Project Cost: $

Bus Rapid Transit

- Includes all Enhanced Bus features, but travels on a dedicated bus-only lane
- Carries around 120 people in a longer, 60-foot bus
- Project Cost: $$

Streetcar

- Shares lanes with cars but travels on its own track embedded in the road
- Powered by overhead wires
- Includes modern stops with ticket machines and allows riders to board from front or rear doors
- Carries up to 150 people (3x as much as regular buses)
- Project Cost: $$$

"Rapid" Streetcar

- Includes all Streetcar features, but uses a dedicated streetcar-only lane
- Faster than a regular streetcar or bus
- Project Cost: $$$$

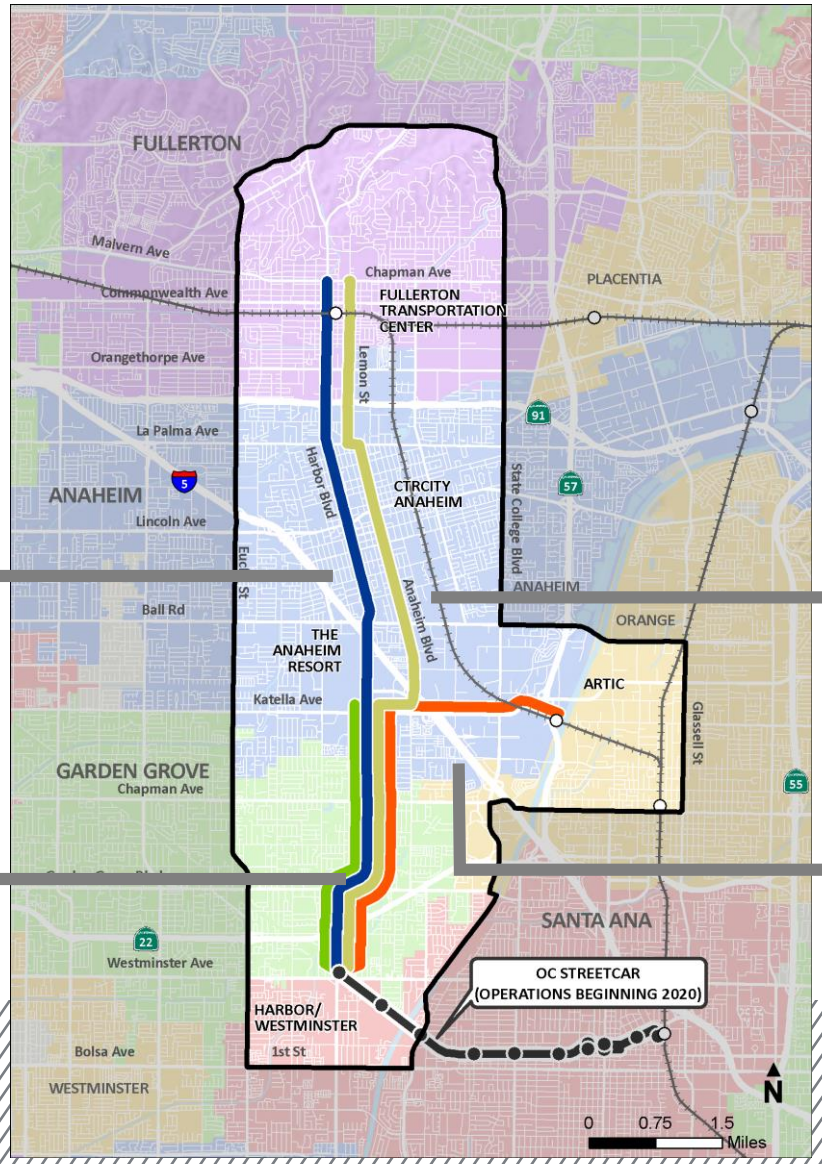
12 Conceptual Alternatives

HARBOR LONG

- H-2: Harbor Long Streetcar
- H-3: Harbor Rapid Streetcar
- H-4: Harbor Enhanced Bus
- H-5: Harbor Bus Rapid Transit (BRT)

HARBOR SHORT

- H-1: Harbor Short Streetcar



ANAHEIM/LEMON

- L-1: Anaheim/Lemon Streetcar
- L-2: Anaheim/Lemon Rapid Streetcar
- L-3: Anaheim/Lemon Enhanced Bus
- L-4: Anaheim/Lemon BRT

KATELLA

- K-1: Katella Streetcar
- K-2: Katella+ Anaheim/Lemon Enhanced Bus
- K-3: Katella + Harbor Hybrid

Evaluation Criteria

- Transit Performance (20%)
- Land Use (15%)
- Connectivity (18%)
- Constraints (15%)
- Mode Choices/User Experience (17%)
- Cost-Effectiveness (15%)
- City and Community Input (Qualitative)

Evaluation Scores

ALTERNATIVE	DESCRIPTION	Average Score						Total Score[2]
		Transit Performance	Land Use	Connectivity	Constraints	Choice/User Experience	Cost Effectiveness	
H3	Harbor Rapid Streetcar[1]	18	11	14	7	14	11	**74**
H2	Harbor Long Streetcar	17	11	12	10	14	10	**73**
H5	Harbor BRT[1]*	17	11	12	8	12	14	**73**
L1	Anaheim-Lemon Streetcar	17	10	12	8	13	8	**68**
L4	Anaheim-Lemon BRT[1]*	14	11	12	6	12	12	**66**
L2	Anaheim-Lemon Rapid Streetcar[1]	15	10	14	5	14	8	**65**
K1	Harbor-Katella Streetcar*	16	11	10	11	12	6	**65**
H1	Harbor Short Streetcar*	17	9	8	13	10	8	**64**
K2	Katella + Anheim-Lem Enhanced Bus	7	11	11	11	7	11	**57**
L3	Anaheim-Lemon Enhanced Bus*	10	10	9	11	5	11	**56**
K3	Katella + Harbor Hybrid	9	11	11	10	9	7	**56**
H4	Harbor Enhanced Bus*	9	10	10	13	4	9	**55**

[1]Operates in a dedicated transit lane for at least 50% of the alignment.

[2]Due to rounding, the total scores may not equal the sum of the category scores.

*Extends to MacArthur Boulevard, consistent with existing Bravo! Route 543 service area.

Technical Evaluation Summary

- Higher-capacity, higher-visibility modes offer significant ridership benefits and travel time improvements
  - Rapid streetcar, streetcar, and bus rapid transit
- Top five scoring alternatives:
  - H3 Harbor Rapid Streetcar
  - H2 Harbor Long Streetcar
  - H5 Harbor BRT
  - L1 Anaheim-Lemon Streetcar
  - L4 Anaheim-Lemon BRT

Technical Input on Alternatives

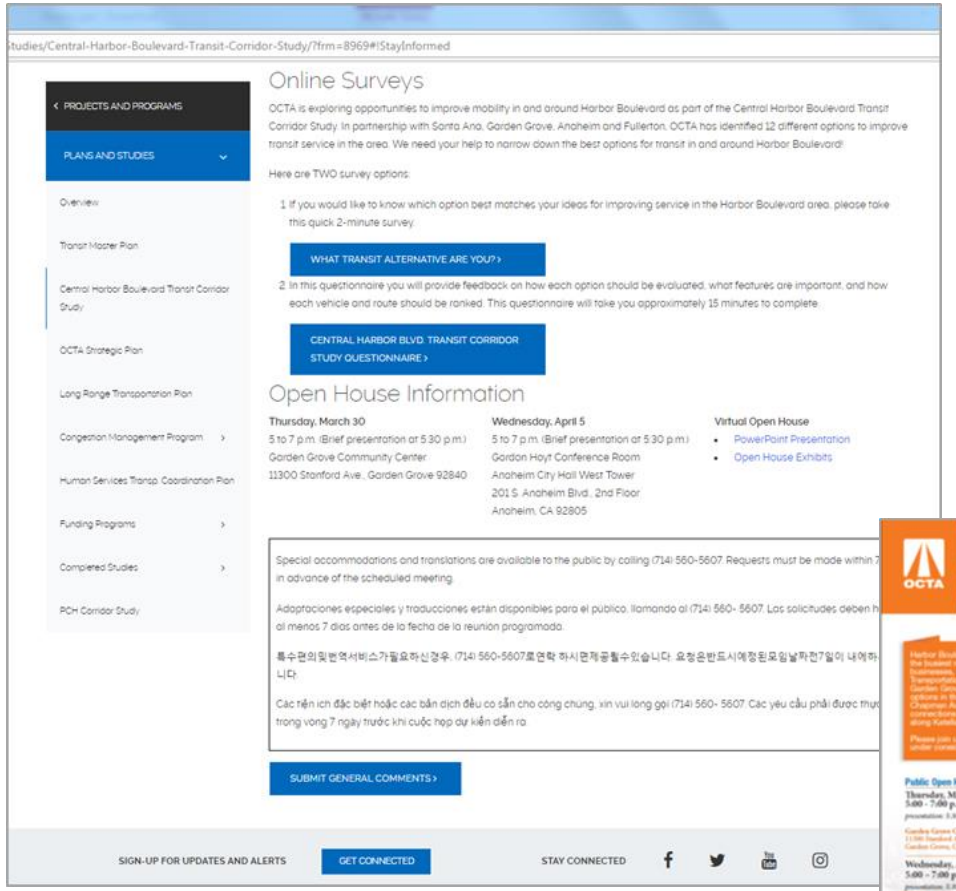
Key technical issues identified by city staff:

- Dedicated transit lanes
- Current and future street capacity *(Master Plan of Arterial Highways)*
- Center-running alignments with center stations – not supported
- Anaheim-Lemon as a viable transit corridor
- Underlying changes to bus service south of Westminster Avenue
- Consideration of complete streets concepts/avoidance of impacts to bike lanes

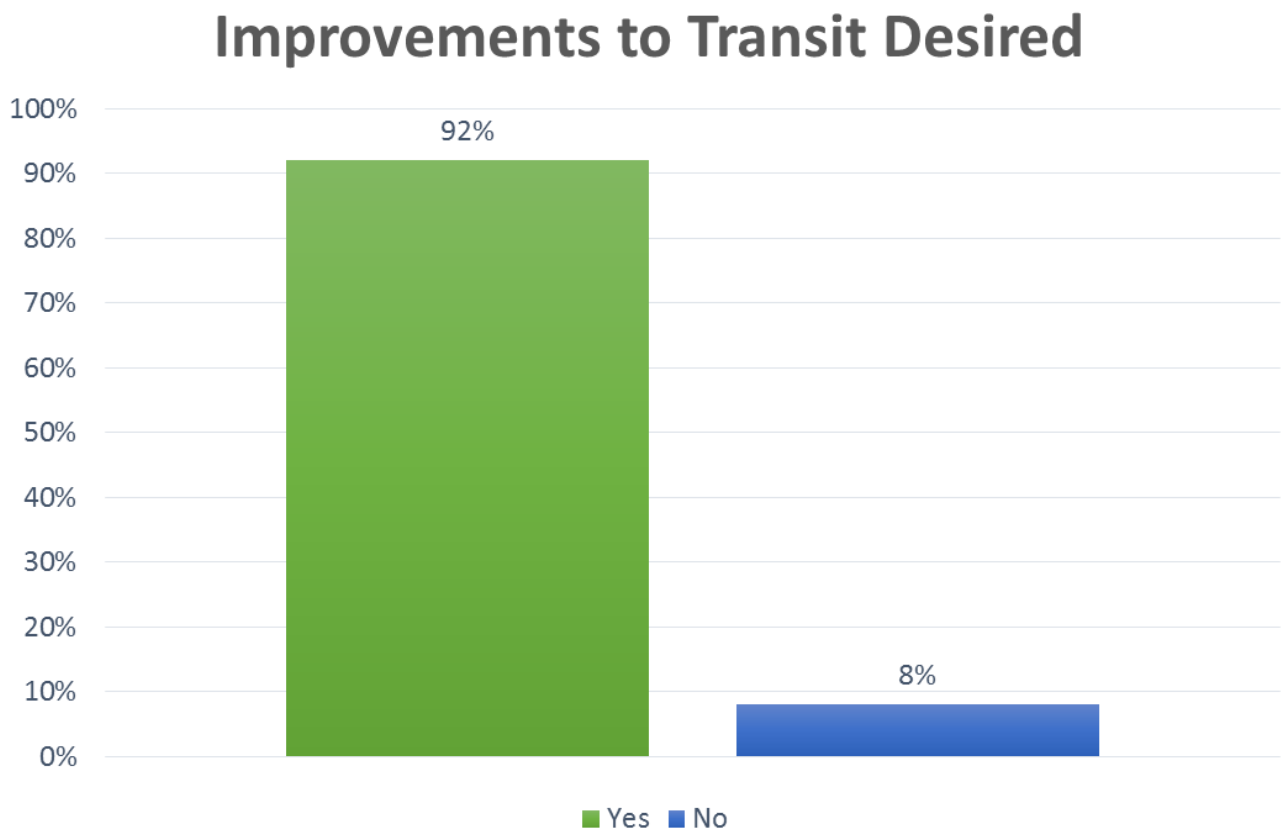
Council Input on Alternatives

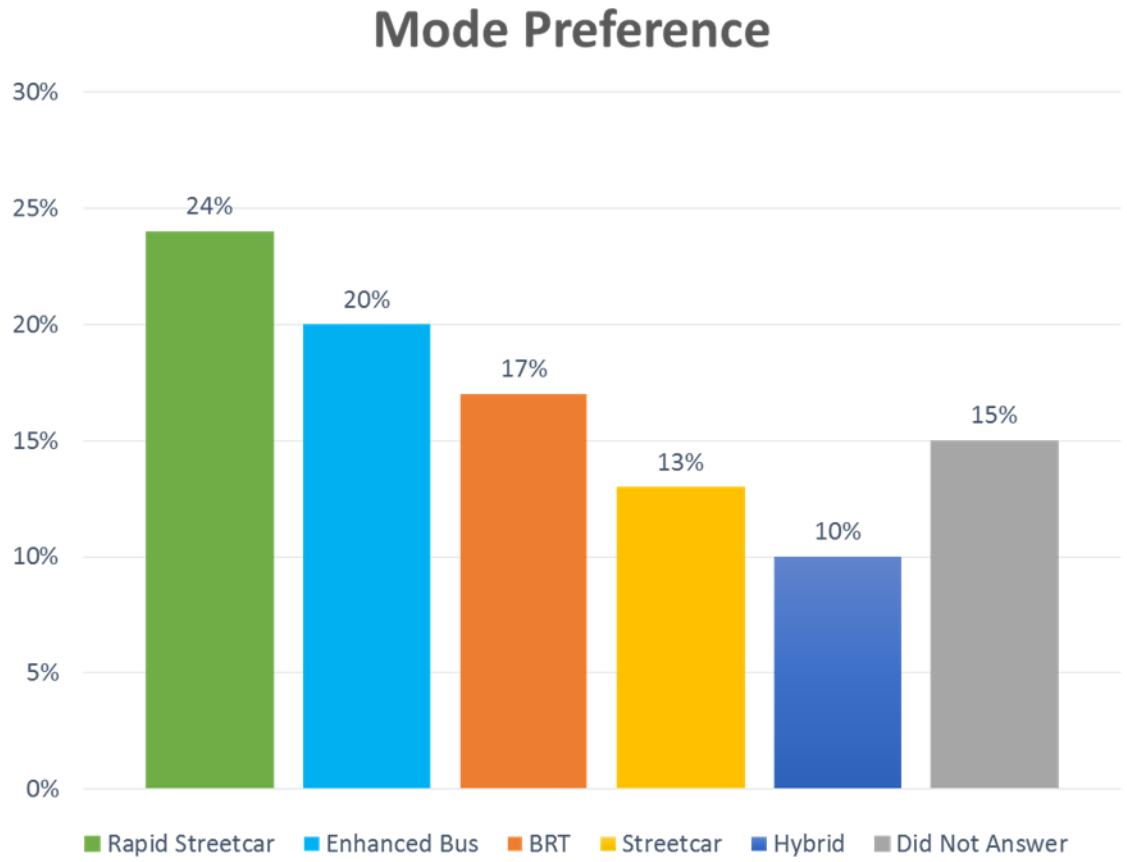
- **Fullerton** –Requested a council presentation for January 2018
- **Anaheim** – Adopted Resolution in January 2017 stating opposition to a streetcar system
- **Garden Grove** – Council presentation provided in February, and general support for the study was noted
- **Santa Ana** – Council presentation provided in April, and general support for the study was noted

Community Input

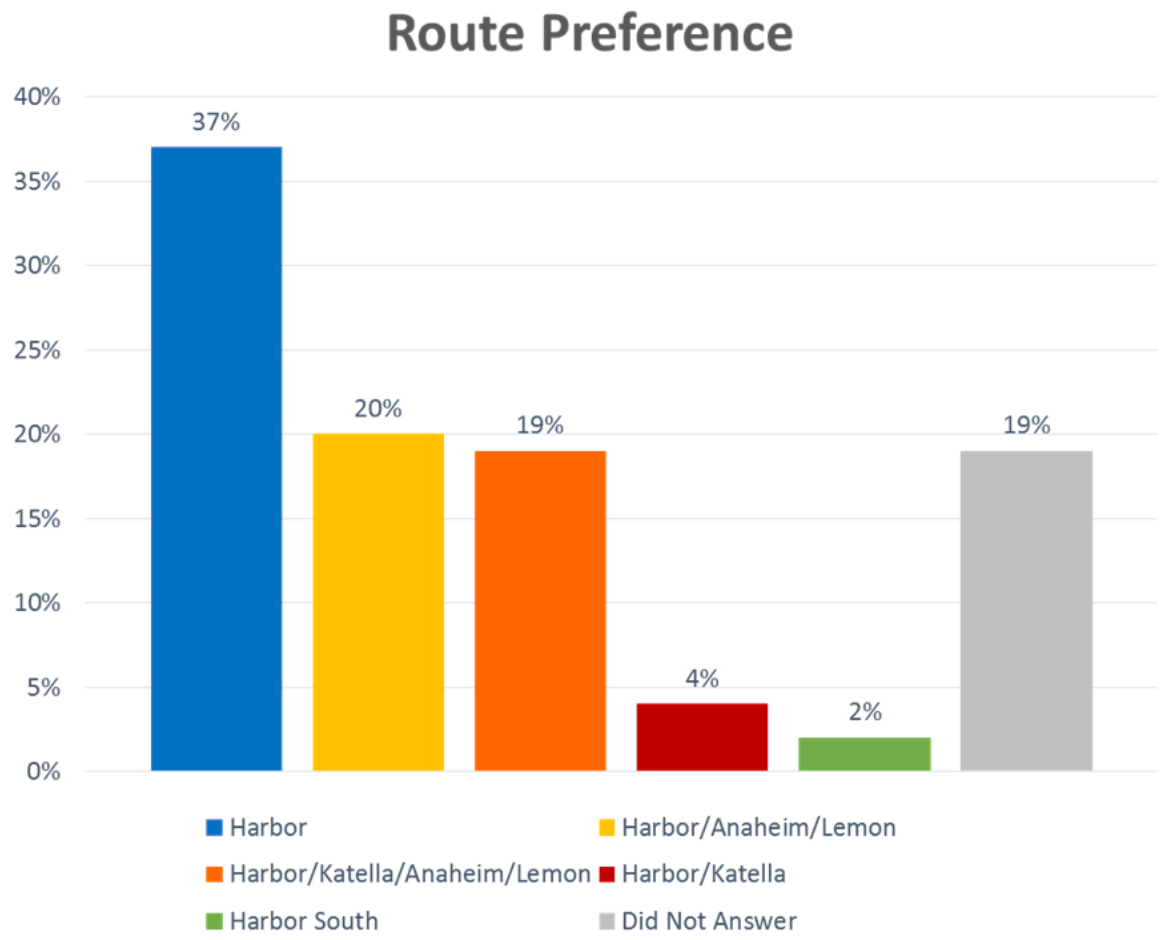


Online Survey





Online Survey



Most Preferred Transit Characteristics

Frequency of Service	(68%)
Hours of Operation	(49%)
Overall Travel Time	(41%)
Stop Locations	(29%)
Cost to Ride	(28%)
Real-Time Information	(24%)

Next Steps

A. Offer council presentations to each of the corridor cities for further input
B. Continue to work with corridor cities technical staff to identify key issues for any subsequent efforts
C. Finalize the report and incorporate feedback received from the cities, stakeholders, and public; and report feedback to the Board of Directors

December 14, 2017

To: Transit Committee

From: Darrell Johnson, Chief Executive Officer

Subject: Transit Division Performance Measurements Report for the First Quarter of Fiscal Year 2017-18

Overview

The Orange County Transportation Authority operates fixed-route bus and demand-response paratransit service throughout Orange County and into neighboring counties. This report summarizes the performance measures for the transit services provided during the first quarter of fiscal year 2017-18. These performance measures gauge the safety, courtesy, reliability, and overall quality of the public transit services provided.

Recommendation

Receive and file as an information item.

Background

The Orange County Transportation Authority (OCTA) operates a countywide network of local, community, rail connector, and express bus routes serving over 5,000 bus stops. Fixed-route service operates in a 798 square mile area, serving more than three million residents in 34 cities and unincorporated areas, with connections to transit service in Orange, Los Angeles, and Riverside counties. Fixed-route bus service operated by OCTA is referred to as directly-operated fixed-route service (DOFR), while routes operated under contract are referred to as contracted fixed-route service (CFR). OCTA also operates a federally mandated paratransit service (ACCESS), which is a shared-ride program available for people unable to use the regular fixed-route bus service because of functional limitations. Performance measures for both the fixed-route and the ACCESS program are summarized and reported quarterly.

Discussion

This report summarizes the performance measurements through the first quarter of fiscal year (FY) 2017-18. The report looks at performance standards for transit system safety, courtesy, and reliability in the areas of preventable vehicle accidents, customer complaints, on-time performance (OTP), and miles between road calls (MBRC). Along with these metrics, industry-standard measurements are tracked to assess OCTA transit operations; these measurements are ridership, productivity, farebox recovery ratio, subsidy per boarding, and cost per revenue vehicle hour. In an effort to maintain transparency with the public, these reports are shared on the Transit dashboard found on the OCTA website and are reported to the Board of Directors on a quarterly basis.

Safety – Maintaining a good safety record is one of the most important standards measured, and all three modes of service (DOFR, CFR, ACCESS) continue to exhibit strong performance in this area, exceeding accident frequency standards.

Customer Service – One of OCTA's goals is to ensure all transit services meet performance standards, and that customers receive high-quality service. DOFR, CFR, and ACCESS services continued to exceed the standard through the first quarter.

Reliability – For OTP, overall, the system was within 0.5 percent of the standard, with DOFR service performing at approximately 0.3 percent shy of the standard and CFR performing within one percent of the standard. ACCESS performed above the standard in the first quarter.

MBRC is the measure used for vehicle reliability. Through the first quarter, ACCESS exceeded the standard while DOFR and CFR service were below the standard. However, DOFR and CFR services showed improvement compared to the same quarter last year by 4.4 percent and nearly 19 percent, respectively.

Ridership and Productivity – Through the first quarter, ridership and productivity for total fixed-route and ACCESS services exceeded the budgeted projection. The OC Bus 360° Plan adjustments implemented in October 2016 continue to show improved ridership and productivity on those routes modified as part of the plan. Routes improved in October 2016 showed an increase in average weekday ridership, up 16.4 percent over the same quarter in FY 2016-17. Routes reduced or eliminated in October 2016 have shown a 44 percent increase in productivity, as measured by boardings per revenue vehicle hour, when compared to the first quarter of FY 2016-17. OCTA staff continues to

monitor the impact of these changes on route performance and identify other strategies for implementation to address system wide performance.

Farebox Recovery Ratio – A minimum farebox recovery ratio (FRR) of 20 percent for all service is required by the California Transportation Development Act (TDA) in order for transit agencies to receive their full share of state sales tax available for public transit purposes. The passage of Senate Bill 508 in October 2015 allows transit agencies to include local funds when calculating their TDA FRR. These local funds consist of property tax revenue, advertising revenue, and Measure M fare stabilization. While OCTA's traditional passenger FRR, now referred to as National Transit Database FRR, came in under 20 percent through the first quarter, after incorporating the local funds, the FRR exceeded the TDA requirement of 20 percent.

Subsidy per Boarding – When considered route by route, this measure may be used to compare the performance of routes within the system relative to the cost effectiveness of each route. The type of route influences the subsidy per boarding, for example, longer distance routes with fewer stops (i.e., express routes) likely have a higher subsidy per boarding when compared to local routes that have frequent stops allowing passengers to board and alight more often, which turns seats over to multiple riders compared to a longer distance route. On a single route, subsidy per boarding may vary during the service day, with lower subsidies per boarding during peak travel times and higher subsidies per boarding at other times. This measure is helpful when considering opportunities to improve overall system performance. The attached report includes two sets of charts, one sorted by subsidy per boarding and one sorted by boardings; other route level data is also provided. When considering adjustments to the overall service plan, this information is critical to the development of the plan.

Operating Cost per Revenue Vehicle Hour – This is one of the industry standards used to measure the cost efficiency of transit service. Through the first quarter, DOFR and ACCESS service operated at a lower cost than prior year actuals for this measure. CFR service operated four and one-half percent higher.

This report also provides information on unclassified revenue, contractor performance, and quarterly ridership and productivity trends related to service adjustments implemented under the OC Bus 360° Service Plan in October 2016.

Summary

Through the first quarter of FY 2017-18, the ACCESS program showed good performance in all areas. Fixed-route services also achieved the safety and customer service standards. DOFR and CFR services were below the standard with respect to reliability; however, the performance of both services notably improved compared to the first quarter of FY 2016-17. Staff continues to take actions to maintain continuous quality improvement in service reliability. Additionally, the service changes implemented in October 2016 under the OC Bus 360° Plan continue to show signs of improvement in ridership and productivity. Staff continues to monitor key indicators, manage the service contracts pursuant to contract requirements, and work to identify other strategies to improve overall system performance.

Attachment

A. Transit Division Performance Measurements, Fiscal Year 2017-18 First Quarter Report

Prepared by:

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(714) 560-5710

Approved by:

Beth McCormick
General Manager, Transit Division
714-560-5694

ATTACHMENT A

Transit Division Performance Measurements

OCTA

Fiscal Year 2017-18 First Quarter Report

About This Report

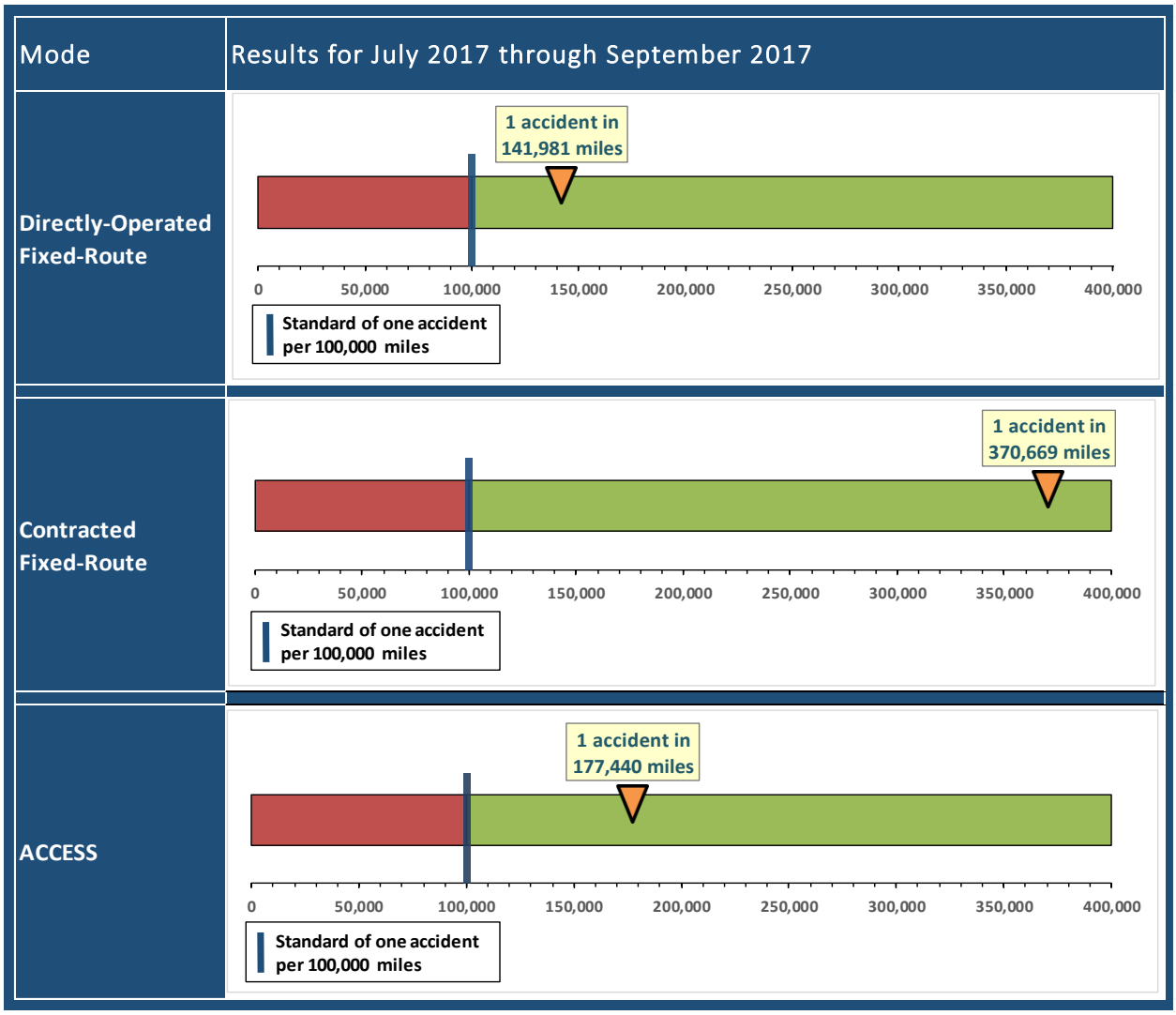
The Orange County Transportation Authority (OCTA) operates a countywide network of local, community, rail connector, and express bus routes serving over 5,000 bus stops. OCTA also operates federally-mandated paratransit service (ACCESS), a shared-ride program available for people unable to use the regular fixed-route bus service because of functional limitations. Fixed-route bus service operated by OCTA is referred to as directly-operated fixed-route (DOFR) service, while routes operated under contract are referred to as contracted fixed-route (CFR) service. The ACCESS program is a contract-operated demand-response service mandated 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 three services make up the bus transit system and are evaluated by the performance measurements summarized in this report.

This report tracks transit system safety, courtesy, and reliability in the areas of preventable vehicle accidents, customer complaints, on-time performance (OTP), and miles between road calls (MBRC). Along with these metrics, industry-standard measurements are tracked to assess OCTA transit operations; these measurements are 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 DOFR, CFR, and ACCESS services.

Safety: Preventable Vehicle Accidents

Preventable vehicle accidents are counts of incidents concerning physical contact between vehicles used for public transit and other vehicles, objects, or pedestrians, where a coach operator failed to do everything reasonable to prevent the accident. Safety is a top priority in the delivery of public transit services. The safety standard for DOFR, CFR, and ACCESS services is no more than one vehicle accident per 100,000 miles.

All three modes of service exceeded the safety standard through the first quarter of fiscal year (FY) 2017-18.

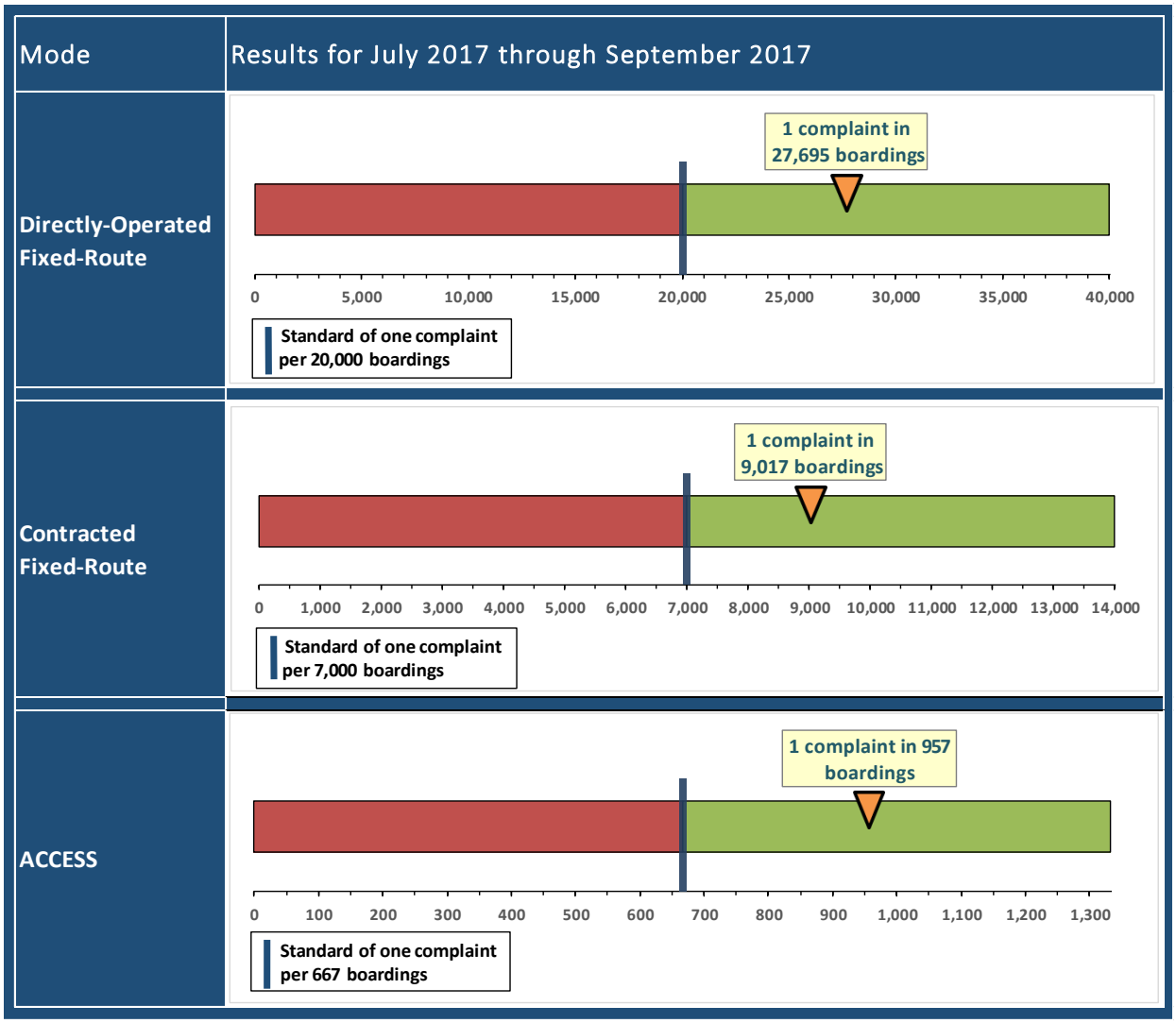


Courtesy: Customer Complaints

Customer complaints are counts of incidents when a rider reports dissatisfaction with the service. The standard adopted by OCTA for DOFR service is no more than one customer complaint per 20,000 boardings; the contractual standard for CFR service is no more than one complaint per 7,000 boardings; and the contractual standard for ACCESS is no more than one complaint per 667 boardings.

All three modes of service exceeded the courtesy standard through the first quarter of FY 2017-18.

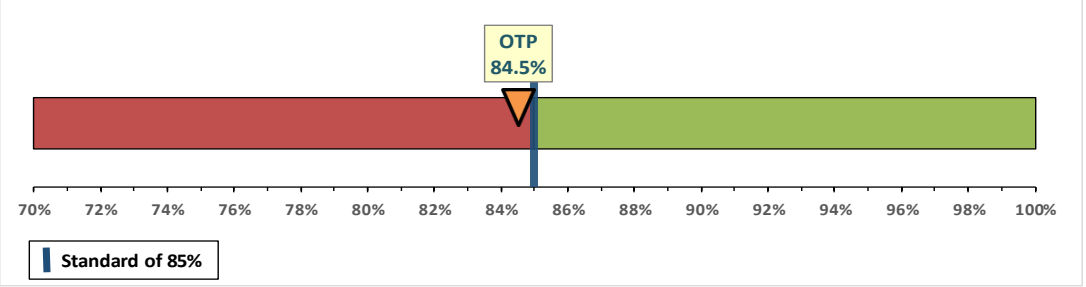
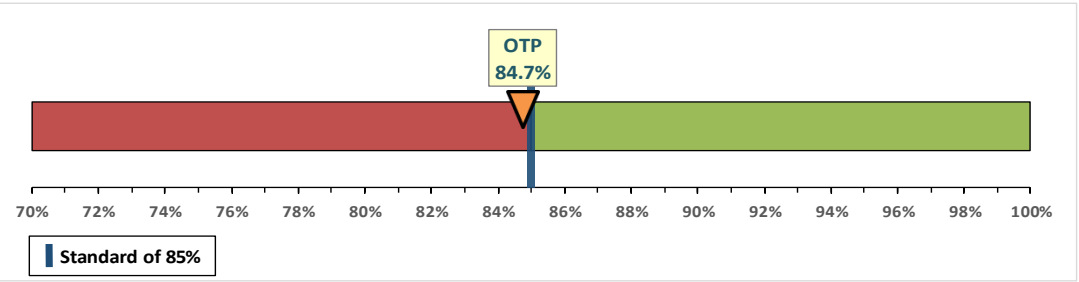
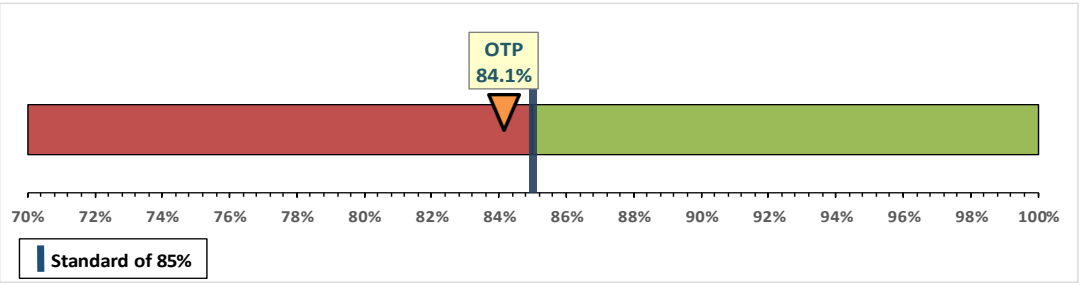
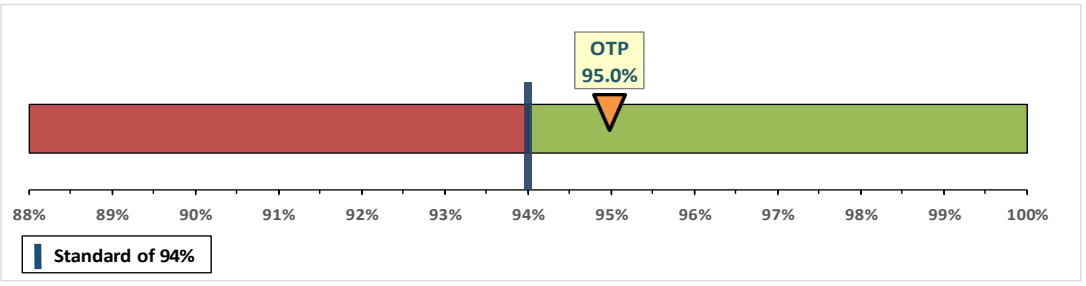
For CFR service, OCTA staff continues to review customer comments weekly with our service provider to identify areas for improvement and tracking of action plans developed to ensure OTP performance levels are maintained at one complaint per 7,000 boardings. The practices and procedures implemented by OCTA and our service provider were key for CFR service meeting courtesy standards.



Reliability: On-Time Performance

OTP is a measure of performance evaluating a revenue vehicle's adherence to a planned schedule. For fixed-route service, a trip is considered on-time if it departs the time-point no more than five minutes late. OCTA's system standard for OTP is 85 percent. For 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 as long as the vehicle arrives within a 30-minute window. The ACCESS OTP standard is 94 percent.

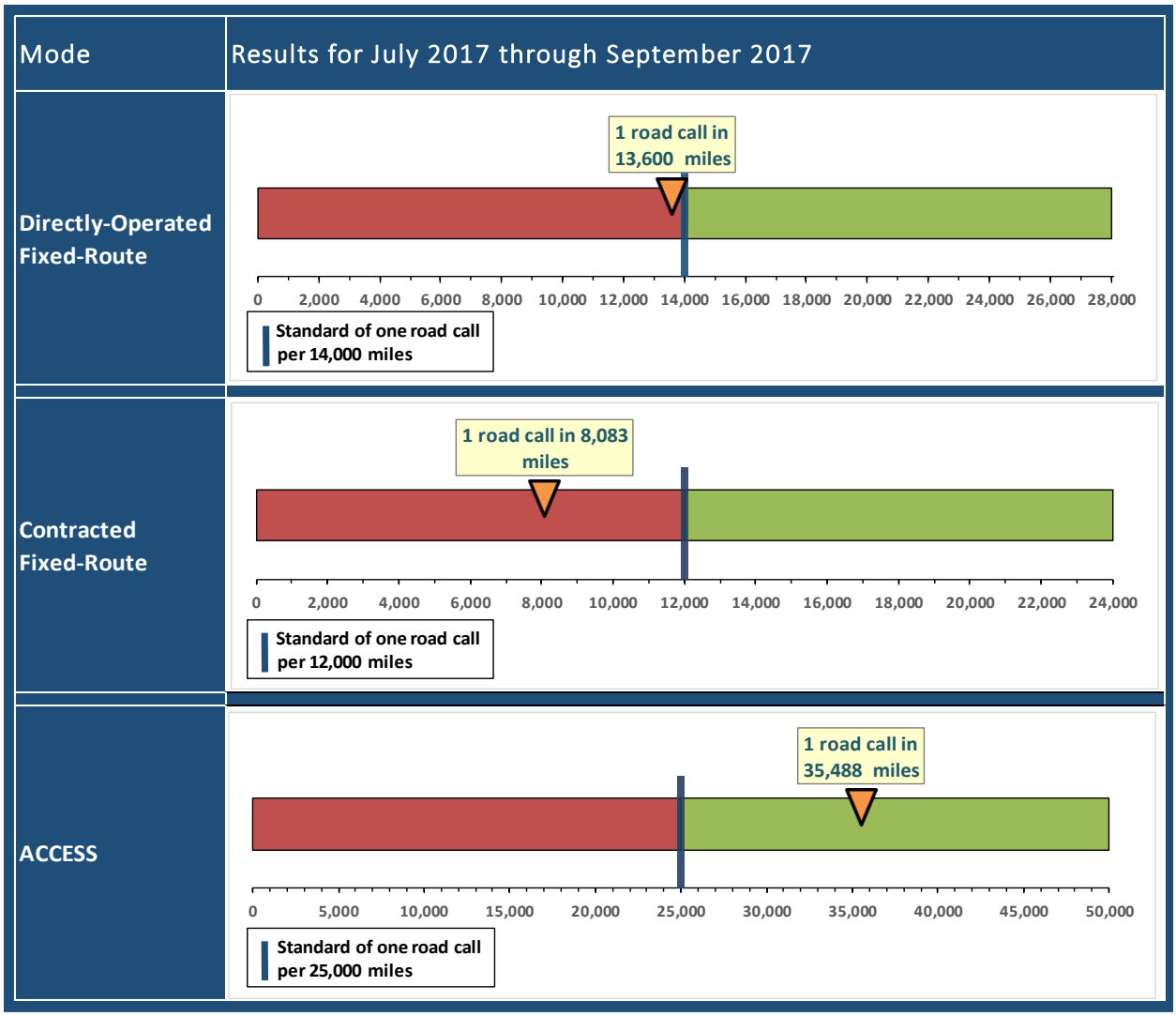
Through the first quarter of FY 2017-18, systemwide fixed-route OTP was 84.5 percent, over a percent better than last quarter and over the same quarter last year. OTP for the DOFR service dropped by two-tenths of a percent from 84.9 percent to 84.7 percent, slightly below the 85 percent standard. CFR service, trending closer to the 85 percent standard, improved notably by 3.1 percent over last quarter and 2.1 percent over the same quarter last year. OCTA staff continued to work closely with the contract operator to improve OTP. Actions taken included identifying low performing routes, enhanced management counseling with coach operators, and adding performance indicator standards to safety meeting agendas. These actions were instrumental in increasing OTP by 3.1 percent from the previous quarter. ACCESS service operated at an OTP rate above the standard, at 95 percent.

Mode	Results for July 2017 through September 2017
Systemwide Fixed-Route	
Directly-Operated Fixed-Route	
Contracted Fixed-Route	
ACCESS	

Reliability: Miles Between Road Calls

MBRC is a vehicle reliability performance indicator that measures the average distance in miles that a transit vehicle travels before failure of a vital component forces removal of the vehicle from service. Valid mechanical road calls usually cause a delay in service. The standard adopted by OCTA for DOFR service is 14,000 MBRC; the contractual standard for CFR service is 12,000 MBRC; and the contractual standard for ACCESS is 25,000 MBRC.

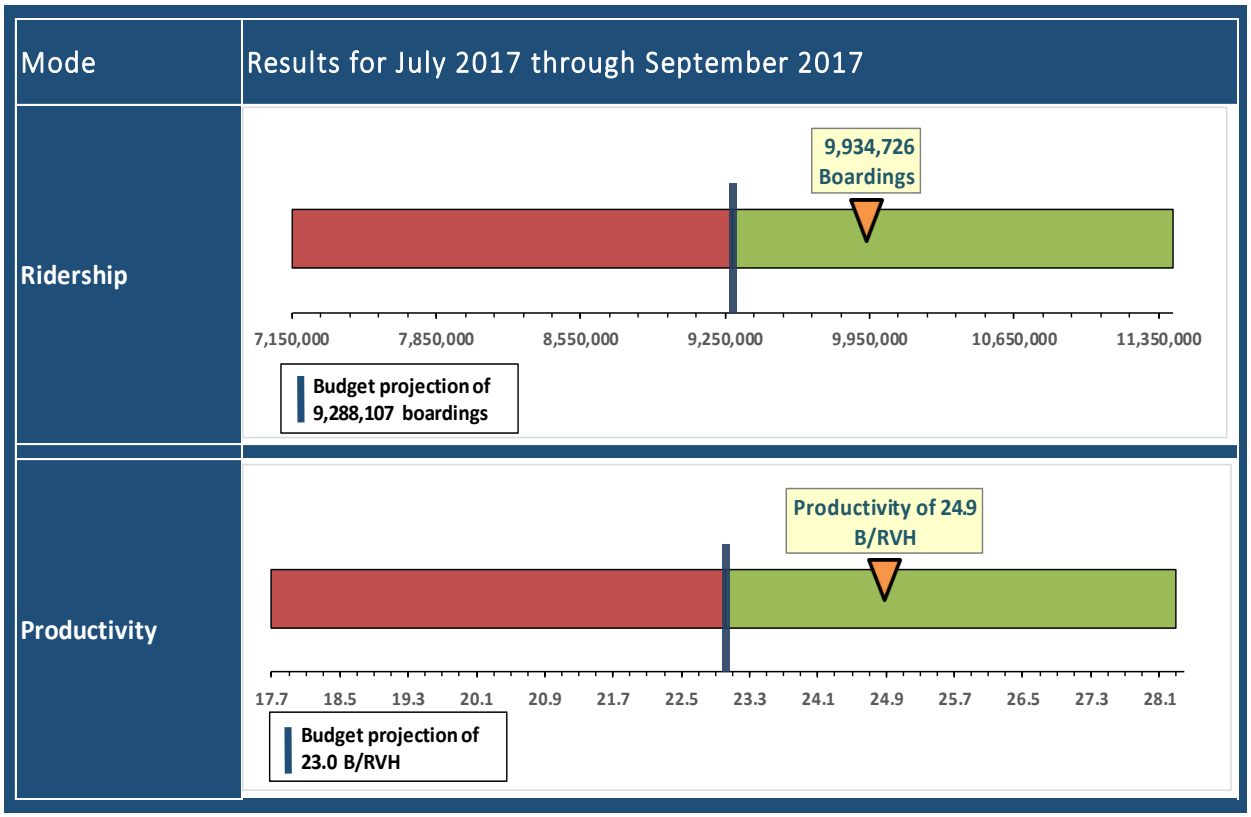
Through the first quarter of FY 2017-18, DOFR did not meet the standard for MBRC by 2.9 percent with 13,600, which is a 4.4 percent improvement over the same quarter last FY. A significant number of recent road calls are related to a defective coolant sensor in the new buses. Staff has tested two sensors and is working with the manufacturer to replace the defective sensors. CFR service improved by one percent over last quarter, but remains below the standard with 8,083 MBRC. The MBRC for ACCESS service came in at 35,488 miles, meeting the standard.



Ridership and Productivity – Fixed-Route

Ridership (or boardings) is the number of rides taken by passengers using public transit and is influenced by the 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. This metric is calculated by taking the boardings and dividing it by the number of RVH (B/RVH).

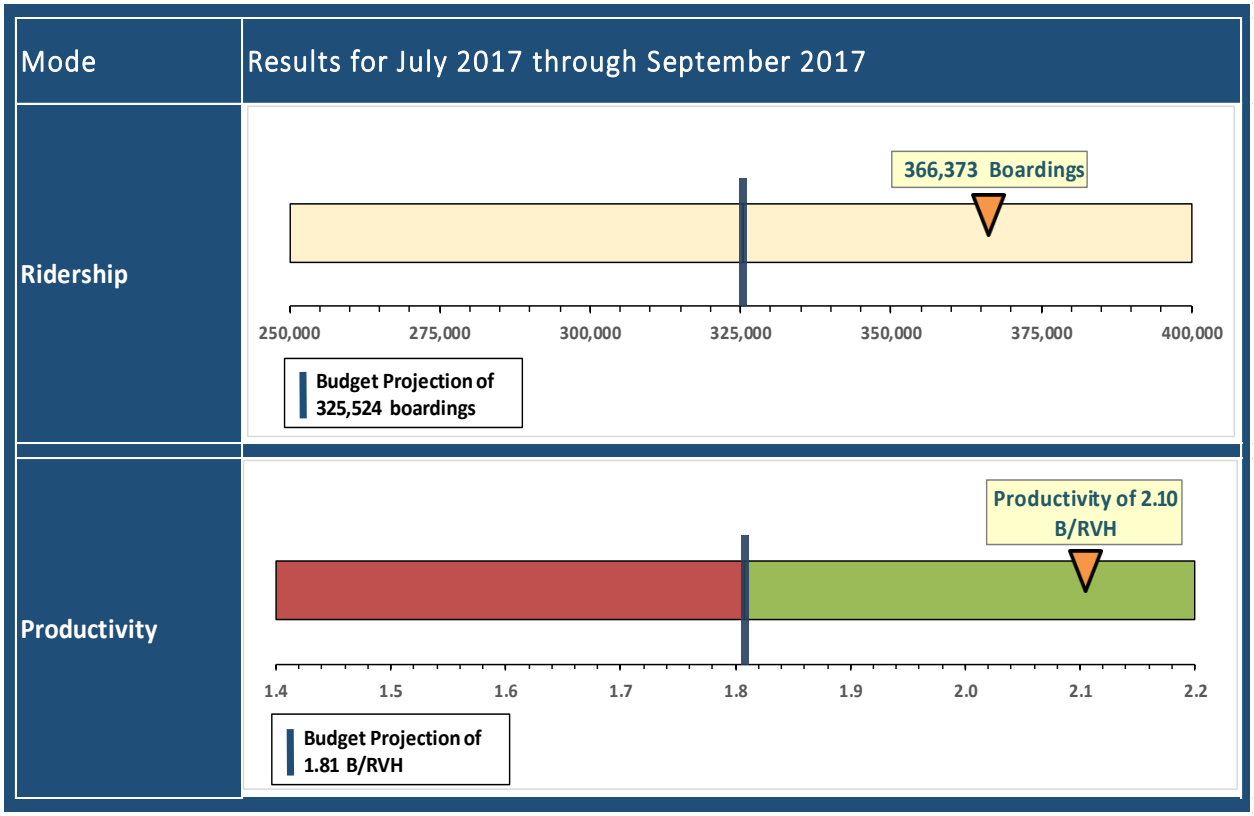
Through the first quarter of FY 2017-18, ridership and productivity for total fixed-route service exceeded the budgeted projection as the prolonged ridership decline appears to be slowing. Comparatively, ridership was down by 4.2 percent over the first quarter last year, but only down by 0.5 percent over the previous quarter (fourth quarter of FY 2016-17). Productivity was also down compared to the first quarter of last year and the previous quarter by 0.4 percent and 1.6 percent, respectively. The actions taken as part of the OC Bus 360° Plan initiated in June 2016, are having a sustained impact in slowing the ridership decline while improving service efficiency.



Ridership and Productivity – ACCESS

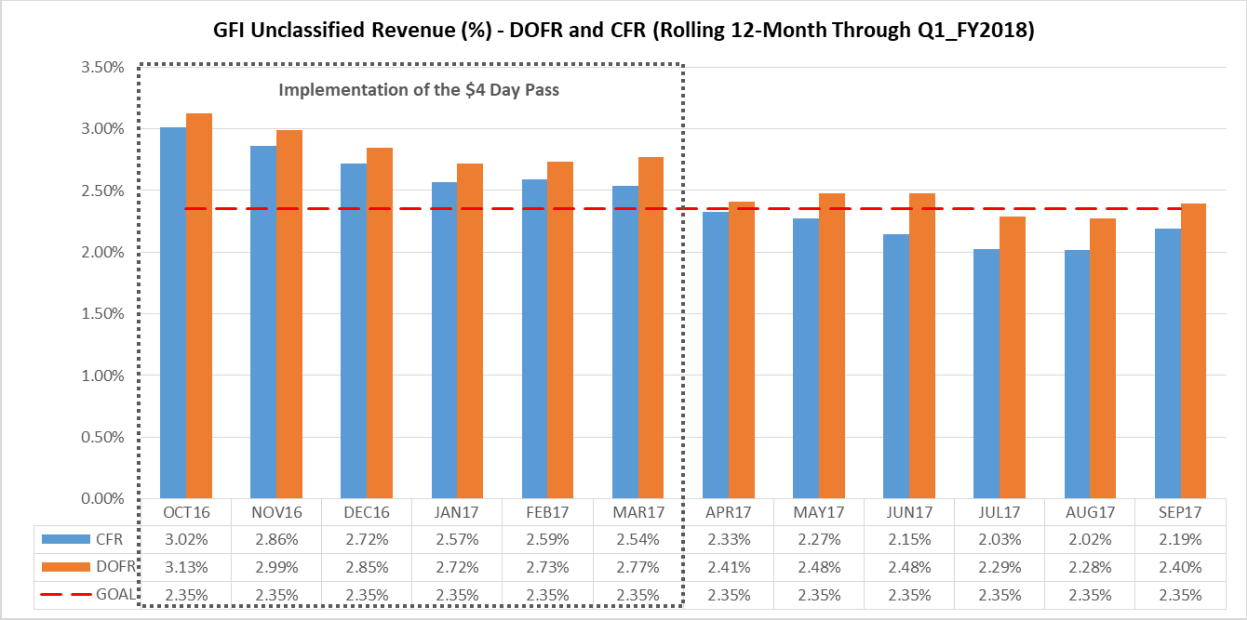
(Primary Service Provider and Supplemental Taxi)

Through the first quarter of FY 2017-18, ridership and productivity for ACCESS service continue to exceed projections.



Unclassified Revenue

Unclassified revenue, as reported here, is that revenue collected on all OCTA bus service that is not properly recorded through the farebox. This can occur through a variety of ways, including overpayment of fare or the incorrect input of fare information by the operator. The OCTA monthly standard or threshold for unclassified revenue is 2.35 percent or less. In the chart below, the monthly unclassified revenue for the last 12 months is presented by operator type. Over the last quarter, the average unclassified revenue for the DOFR service was slightly below the maximum at 2.32 percent, while the CFR service was significantly below 2.35 percent standard with an average unclassified revenue of 2.08 percent. Training campaigns were conducted at the DOFR bases during the last quarter to review/remind operators to avoid unclassified revenue through better use of the farebox.



	OCT16	NOV16	DEC16	JAN17	FEB17	MAR17	APR17	MAY17	JUN17	JUL17	AUG17	SEP17
CFR	3.02%	2.86%	2.72%	2.57%	2.59%	2.54%	2.33%	2.27%	2.15%	2.03%	2.02%	2.19%
DOFR	3.13%	2.99%	2.85%	2.72%	2.73%	2.77%	2.41%	2.48%	2.48%	2.29%	2.28%	2.40%
GOAL	2.35%	2.35%	2.35%	2.35%	2.35%	2.35%	2.35%	2.35%	2.35%	2.35%	2.35%	2.35%

Contractor Performance: Fixed-Route

Through the first quarter of FY 2017-18, the performance of CFR service was above standard for the measures of safety and courtesy. With respect to reliability, the performance of the contractor is below standard, but steadily improving. Table 1 below provides the penalties and incentives assessed to the contractor, by quarter. The paid incentives, a total of $23,900, reflect the excellent performance related to safety and courtesy, while the penalties, a total of 95,900, indicate the improvement still needed with respect to reliability. The net penalty paid by the Contractor through Quarter 1 of FY 2017-18 is $72,000.

Table 1: Performance Categories	FY18 Q1	FY18 Q2	FY18 Q3	FY18 Q4	FYTD 18
On-Time Performance	$ (1,000)				$ (1,000)
Valid Complaints: Per 7,000 boardings	$ 8,900				$ 8,900
Unreported Accident	$ (15,000)				$ (15,000)
Accident Frequency Ratio	$ 15,000				$ 15,000
Key Positions	$ -				$ -
CHP Terminal Inspections	$ -				$ -
Reports	$ -				$ -
Preventative Maintenance	$ (26,900)				$ (26,900)
Road Calls	$ (12,700)				$ (12,700)
Vehicle Damage: Per vehicle per day	$ -				$ -
Missed Trips	$ (40,000)				$ (40,000)
Prior Periods Adjustment	$ (300)				$ (300)
Total	**$ (72,000)**	**$ -**	**$ -**	**$ -**	**$ (72,000)**

Contractor Performance: ACCESS

(Primary Service Provider and Supplemental Taxi)

As presented in this report, the overall performance of the contractor providing ACCESS service through the first quarter of FY 2017-18 is above standard for all measures. Table 2 below lists, by quarter, the penalties assessed to the ACCESS Service Contractor. Through the first quarter of FY 2017-18, there were no incentives awarded to the contractor, but a $5,000 penalty was assessed for the untimely reporting of an accident (over 24 hours).

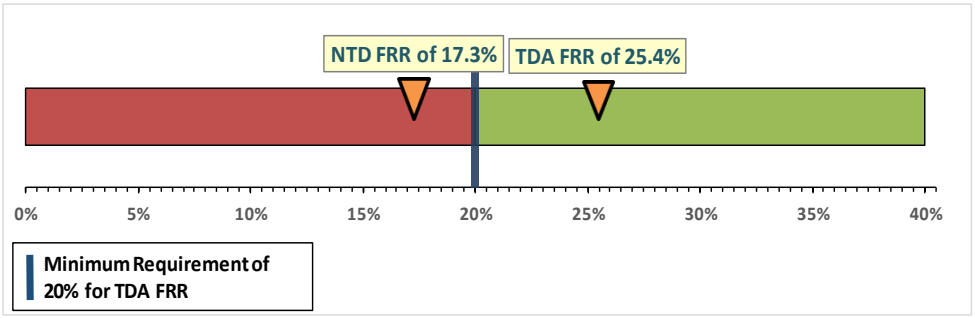
Table 2: Performance Categories	FY18 Q1	FY18 Q2	FY18 Q3	FY18 Q4	FYTD 18
Passenger Productivity	$ -				$ -
On-Time Performance	$ -				$ -
Customer Comments	$ -				$ -
Call Center Hold Times	$ -				$ -
Excessively Late Trips	$ -				$ -
Missed Trips	$ -				$ -
Unreported Accident	$ (5,000)				$ (5,000)
Road calls	$ -				$ -
Reports	$ -				$ -
Preventive Maintenance	$ -				$ -
Key Positions	$ -				$ -
CHP Terminal Inspections	$ -				$ -
Vehicle Damage	$ -				$ -
Prior Periods Adjustment	$ -				$ -
Total	**$ (5,000)**	**$ -**	**$ -**	**$ -**	**$ (5,000)**

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 minimize seasonal fluctuations, data shown below reflects actuals over the last 12 months from October 2016 through September 2017.

FRR, based on the National Transit Database 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 Senate Bill No. 508 (SB 508), 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" means 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 25.4 percent.

Mode	Results for October 2016 through September 2017
Systemwide	

Note:

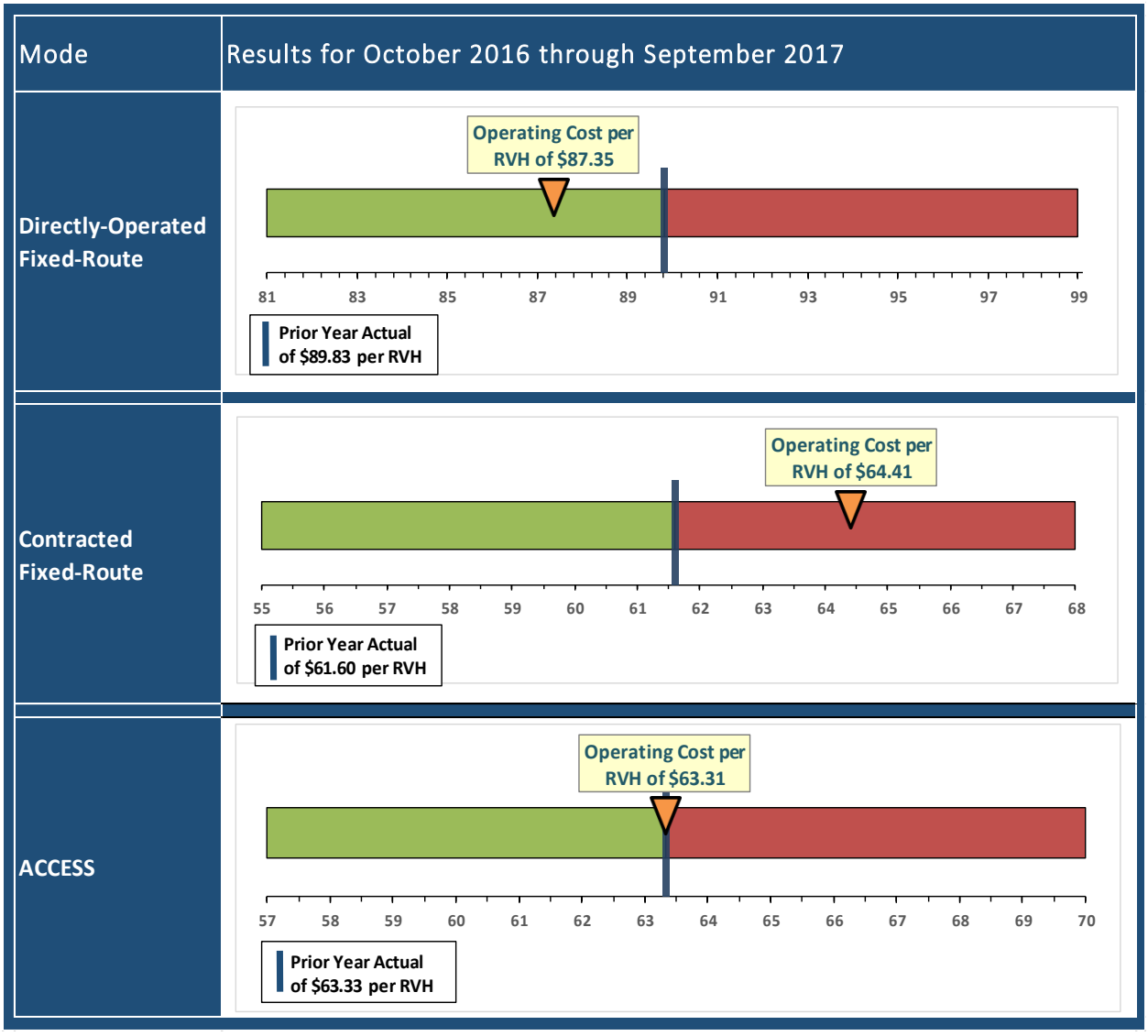
- National Transit Database(NTD) FRR consists of only passenger fares

- Transportation Development Act (TDA) FRR includes passenger fares, property tax revenue, advertising revenue and Measure M fare stabilization

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, statistics below depict actuals over the last 12 months. DOFR service and ACCESS service both operated at a lower cost per RVH than the same 12 months period of the prior year. On the other hand, CFR service experienced a 4.6 percent increase in cost per RVH. This was associated with the increase in the contract rate for CFR service starting on July 1, 2017. In addition, three percent of the RVHs were shifted from DOFR service to CFR service from October 2016 to February 2017. The re-allocation of RVH caused an increase in the direct operating expenses and other associated direct overhead expenses for CFR service.



Performance Evaluation by Route

Continuing efforts are underway to better understand and address ridership trends. The OC Bus 360° Plan, approved by the Board of Directors in March 2016, and implemented over the last 19 months, included several strategies to stimulate fixed-route ridership. These strategies include targeted marketing, a discounted summer youth pass, development of a mobile ticketing application, re-branding the fixed-route fleet, and improved travel time through the use of express-type service on local routes. Major route adjustments were implemented in both June and October 2016 as part of the OC Bus 360° service plan. All adjustments to date under the plan were developed on the basis of route-level performance. Staff will continue to monitor the impact of these adjustments on ridership and productivity. Staff continues to consider other strategies to further improve service 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 first quarter in FY 2017-18. 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 on the last page of this report. Route types are grouped by route numbers as follows:

- Routes 1 to 99: Local routes
- Routes 100 to 199: Community routes
- Routes 200 to 299: Intra-county express routes
- Routes 400 to 499: Stationlink routes
- Routes 500 to 599: Bravo! routes
- *Routes 600 to 699: Seasonal routes (these are not included on the following charts)*
- Routes 700 to 799: Inter-county express routes

OCTA Operating Statistics By Route for Local and Community Services (Sort by Subsidy per Boarding)

Fiscal Year 2017-18 Through Q1

															Bus Count		
Route	Zone	Submode	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	40 FT	32 FT	60 FT
021	N	LCL	9.6%	$ 10.37	$ 5.35	$ 3.63	$ 1.39	$ 0.95	17,952	$ 100.87	$ 64.70	$ 7.24	10.15	1,768	3	-	-
001	S	LDL	9.8%	9.05	5.31	3.22	0.52	0.92	160,767	133.13	86.72	8.13	14.08	11,418	10	-	-
076	C	LCL	10.5%	8.50	4.85	2.94	0.71	0.92	23,479	125.39	81.07	10.67	14.41	1,630	2	-	-
085	S	CCL	11.7%	8.32	4.51	3.06	0.75	1.01	22,281	93.62	63.15	7.49	10.91	2,042	2	-	-
178	C	LDL	10.6%	8.09	4.39	2.90	0.80	0.87	31,445	94.59	63.31	7.43	11.60	2,711	3	-	-
153	N	CCL	11.3%	8.07	4.56	3.01	0.50	0.96	33,131	92.38	62.99	7.29	10.83	3,059	2	-	-
167	C	CCL	11.7%	7.63	4.13	2.73	0.77	0.91	43,514	92.65	62.92	7.82	11.92	3,650	4	-	-
087	S	CCL	13.2%	7.15	3.82	2.59	0.75	0.98	22,177	94.48	63.42	6.39	12.80	1,733	2	-	-
079	C	LCL	11.4%	6.89	3.79	2.57	0.53	0.82	94,470	92.82	63.00	8.14	12.93	7,306	6	-	-
177	S	LCL	14.6%	6.87	3.74	2.47	0.65	1.06	25,447	92.62	63.01	7.20	12.73	1,999	2	-	-
086	C	LCL	13.5%	6.29	3.38	2.29	0.63	0.89	39,550	92.92	63.03	7.16	14.19	2,788	3	-	-
083	C	LDL	13.9%	6.16	3.57	2.16	0.43	0.93	174,421	134.37	87.51	7.45	20.17	8,650	9	-	-
024	N	LDL	14.7%	6.16	3.36	2.28	0.53	0.97	31,454	92.14	62.83	7.50	13.95	2,254	2	-	-
082	S	LCL	18.8%	5.94	2.74	1.86	1.34	1.06	18,640	103.51	65.24	7.20	18.26	1,021	3	-	-
560	C	LCL	14.5%	5.80	3.25	1.97	0.58	0.89	186,097	134.65	87.17	11.30	22.05	8,441	13	-	-
143	N	CCL	15.4%	5.78	3.26	2.15	0.36	0.98	46,516	92.51	62.97	8.18	14.45	3,219	2	-	-
072	C	CCL	15.8%	5.37	3.13	1.89	0.35	0.94	117,576	125.86	81.49	10.03	21.12	5,567	5	-	-
037	N	CCL	15.6%	5.35	3.12	1.89	0.35	0.93	265,676	152.73	98.84	10.72	25.76	10,315	11	-	-
150	C	LCL	17.6%	5.25	2.70	1.78	0.77	0.96	43,235	95.59	63.39	9.43	17.59	2,458	4	-	-
090	S	LCL	18.4%	5.15	2.69	1.82	0.64	1.01	78,076	100.35	64.66	6.54	18.17	4,297	6	-	-
091	S	LDL	20.0%	5.00	2.69	1.82	0.48	1.13	104,043	94.63	63.51	6.52	16.76	6,208	6	-	-
056	N	LCL	16.1%	5.00	2.86	1.73	0.40	0.88	105,373	127.32	82.32	11.78	23.25	4,532	5	-	-
050	N	LCL	15.7%	4.99	2.85	1.72	0.42	0.85	305,606	134.60	87.14	11.71	24.81	12,318	3	-	8
071	N	LDL	17.4%	4.97	2.71	1.83	0.43	0.96	175,415	93.32	63.16	7.47	16.98	10,331	9	-	-
129	N	LCL	18.5%	4.95	2.72	1.80	0.43	1.03	58,470	98.46	64.11	7.25	17.74	3,297	3	-	-
026	N	LDL	16.8%	4.93	2.71	1.83	0.39	0.91	106,174	93.33	63.01	9.30	17.12	6,202	5	-	-
054	N	LDL	16.9%	4.90	2.86	1.74	0.30	0.93	301,205	134.40	86.91	11.76	24.29	12,402	11	-	-
059	C	LDL	18.5%	4.85	2.56	1.74	0.55	0.98	136,302	98.73	64.13	7.87	18.71	7,285	9	-	-
055	C	LDL	19.0%	4.83	2.75	1.67	0.41	1.04	341,570	129.55	83.79	11.46	23.75	14,384	17	-	-
543	N	LCL	19.7%	4.11	2.34	1.42	0.35	0.92	286,354	132.90	86.06	11.38	28.36	10,098	12	-	-
030	N	LCL	19.6%	4.06	2.18	1.48	0.40	0.89	165,245	92.90	63.07	7.19	20.40	8,100	8	-	-
025	N	LCL	21.3%	4.02	2.21	1.50	0.31	1.00	108,493	93.56	63.18	7.77	19.87	5,460	4	-	-
089	S	LDL	22.1%	3.97	2.16	1.46	0.35	1.02	96,321	93.25	63.14	7.31	20.07	4,799	4	-	-
029	N	LCL	20.7%	3.90	2.25	1.37	0.28	0.94	517,456	133.92	86.71	11.44	29.36	17,626	13	-	3
047	C	LDL	22.1%	3.86	2.21	1.34	0.31	1.01	557,074	133.21	86.19	11.69	29.21	19,069	21	-	-
070	C	LDL	22.1%	3.82	2.01	1.36	0.45	0.96	240,126	96.93	63.91	7.80	22.42	10,708	13	-	-
033	N	LCL	20.9%	3.65	1.92	1.30	0.42	0.85	99,573	92.92	63.04	7.50	22.78	4,372	5	-	-
035	N	LDL	21.9%	3.63	1.86	1.26	0.50	0.88	215,819	97.48	63.87	8.09	24.33	8,871	13	-	-
057	C	LDL	22.4%	3.58	2.03	1.23	0.33	0.94	546,935	144.86	93.80	12.47	34.54	15,836	3	-	12
053X	C	LCL	22.0%	3.40	2.05	1.24	0.10	0.93	159,113	119.05	76.85	11.33	28.20	5,643	2	-	-
046	N	LCL	24.9%	3.35	1.73	1.17	0.46	0.96	164,452	93.25	63.09	8.04	24.21	6,794	9	-	-
057X	C	LCL	24.5%	3.23	1.79	1.08	0.36	0.93	276,808	119.24	77.04	10.57	31.35	8,828	1	-	7
053	C	LDL	24.3%	3.22	1.79	1.08	0.35	0.92	376,306	135.29	87.42	14.41	35.73	10,532	16	-	-
043	N	LDL	24.3%	3.22	1.88	1.14	0.20	0.97	541,026	136.18	87.97	12.54	34.16	15,837	13	-	-
060	C	LDL	22.7%	3.16	1.86	1.13	0.18	0.88	504,246	130.55	84.53	11.34	33.81	14,913	11	-	-
038	N	LDL	26.2%	2.87	1.51	1.03	0.33	0.90	303,704	94.52	63.38	7.68	27.46	11,060	12	-	-
066	C	LDL	26.6%	2.84	1.65	1.00	0.20	0.96	531,305	130.56	84.41	12.19	36.22	14,667	13	-	-
042	N	LCL	27.1%	2.60	1.41	0.96	0.23	0.88	402,978	94.64	63.38	8.46	29.10	13,846	11	-	-
064	C	LDL	27.4%	2.54	1.48	0.90	0.16	0.90	412,277	132.12	85.37	13.64	40.35	10,218	8	-	-
064X	C	LDL	28.4%	2.42	1.41	0.85	0.16	0.90	152,846	119.06	76.85	11.32	37.71	4,053	3	-	-

(1) Total bus count (528) is based on PM weekday equipment requirements.

(2) Bus count for spares is estimated to be 89.

(3) Bus count for routes 53X, 57X and 64X are estimated based on total route 53, 57 and 64 equipment requirements.

(4) C under Zone is Central County, N is North County and S is South County.

OCTA Operating Statistics By Route for Express Service (Sort by Subsidy per Boarding)

Fiscal Year 2017-18 Through Q1

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	Bus Count 32 FT	Bus Count 60 FT
216	S	1.2%	$ 90.22	$ 35.44	$ 32.31	$ 22.46	$ 0.82	318	$ 147.29	$ 89.51	$ 6.54	2.15	148	-	1	-
212	S	1.8%	46.68	18.43	16.80	11.44	0.66	1,249	132.20	78.36	6.76	3.68	339	-	2	-
211	C	1.6%	43.53	18.41	16.78	8.33	0.58	5,005	104.17	66.30	6.09	2.91	1,719	5	-	-
721	N	4.5%	38.28	21.59	12.41	4.28	1.60	5,847	192.45	126.48	7.30	5.41	1,082	3	-	-
213	N	2.5%	34.58	13.65	12.44	8.50	0.67	3,922	119.38	70.56	6.80	4.46	879	4	-	-
701	C	5.5%	32.27	17.36	9.98	4.93	1.58	5,066	232.91	152.88	9.66	8.05	629	3	-	-
206	C	3.8%	28.93	10.56	9.63	8.74	0.79	2,859	139.04	80.77	6.96	6.62	432	3	-	-
794	C	11.8%	28.92	11.94	10.89	6.09	3.05	8,204	156.60	102.01	5.96	6.05	1,356	6	-	-

(1) Total bus count (528) is based on PM weekday equipment requirements.
(2) Bus count for spares is estimated to be 89.
(3) Bus count for routes 53X, 57X and 64X are estimated based on total route 53, 57 and 64 equipment requirements.
(4) C under Zone is Central County, N is North County and S is South County.

OCTA Operating Statistics By Route for Stationlink Service (Sort by Subsidy per Boarding)

Fiscal Year 2017-18 Through Q1

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	Bus Count 32 FT	Bus Count 60 FT
430	N	1.7%	$ 67.90	$ 26.36	$ 26.37	$ 15.17	$ 0.91	942	$ 118.82	$ 68.01	$ 13.95	2.22	425	-	2	-
490	S	3.8%	29.56	11.12	11.12	7.33	0.87	1,949	121.50	68.75	11.52	5.26	371	-	2	-
463	C	4.5%	20.66	7.26	7.26	6.14	0.69	6,784	117.95	68.15	10.94	7.76	875	5	-	-
411	N	2.6%	18.53	7.01	7.01	4.52	0.37	1,581	106.68	65.60	11.94	7.42	213	-	1	-
462	C	7.4%	11.62	4.25	4.25	3.12	0.68	5,341	112.45	66.86	15.58	12.26	436	2	-	-
473	C	11.6%	9.40	3.20	3.20	3.00	0.84	8,340	120.13	68.26	11.18	16.58	503	3	-	-
480	C	11.5%	9.19	3.34	3.34	2.51	0.87	6,632	117.74	68.16	10.15	15.60	425	2	-	-
453	N	13.2%	8.21	2.97	2.97	2.28	0.91	7,312	121.45	68.75	18.40	17.76	412	2	-	-
454	N	13.8%	7.88	2.76	2.76	2.36	0.88	10,574	122.20	68.75	16.93	19.07	554	3	-	-
472	C	14.2%	7.73	2.49	2.49	2.74	0.82	9,120	114.20	67.42	9.29	19.65	464	3	-	-

(1) Total bus count (528) is based on PM weekday equipment requirements.
(2) Bus count for spares is estimated to be 89.
(3) Bus count for routes 53X, 57X and 64X are estimated based on total route 53, 57 and 64 equipment requirements.
(4) 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 (Sort by Boardings)

Fiscal Year 2017-18 Through Q1

														Bus Count		
Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	40 FT	32 FT	60 FT
047	C	22.1%	$ 3.86	$ 2.21	$ 1.34	$ 0.31	$ 1.01	557,074	$ 133.21	$ 86.19	$ 11.69	29.21	19,069	21	-	-
057	C	22.4%	3.58	2.03	1.23	0.33	0.94	546,935	144.86	93.80	12.47	34.54	15,836	3	-	12
043	N	24.3%	3.22	1.88	1.14	0.20	0.97	541,026	136.18	87.97	12.54	34.16	15,837	13	-	-
066	C	26.6%	2.84	1.65	1.00	0.20	0.96	531,305	130.56	84.41	12.19	36.22	14,667	13	-	-
029	N	20.7%	3.90	2.25	1.37	0.28	0.94	517,456	133.92	86.71	11.44	29.36	17,626	13	-	3
060	C	22.7%	3.16	1.86	1.13	0.18	0.88	504,246	130.55	84.53	11.34	33.81	14,913	11	-	-
064	C	27.4%	2.54	1.48	0.90	0.16	0.90	412,277	132.12	85.37	13.64	40.35	10,218	8	-	-
042	N	27.1%	2.60	1.41	0.96	0.23	0.88	402,978	94.64	63.38	8.46	29.10	13,846	11	-	-
053	C	24.3%	3.22	1.79	1.08	0.35	0.92	376,306	135.29	87.42	14.41	35.73	10,532	16	-	-
055	C	19.0%	4.83	2.75	1.67	0.41	1.04	341,570	129.55	83.79	11.46	23.75	14,384	17	-	-
050	N	15.7%	4.99	2.85	1.72	0.42	0.85	305,606	134.60	87.14	11.71	24.81	12,318	3	-	8
038	N	26.2%	2.87	1.51	1.03	0.33	0.90	303,704	94.52	63.38	7.68	27.46	11,060	12	-	-
054	N	16.9%	4.90	2.86	1.74	0.30	0.93	301,205	134.40	86.91	11.76	24.29	12,402	11	-	-
543	N	19.7%	4.11	2.34	1.42	0.35	0.92	286,354	132.90	86.06	11.38	28.36	10,098	12	-	-
057X	C	24.5%	3.23	1.79	1.08	0.36	0.93	276,808	119.24	77.04	10.57	31.35	8,828	1	-	7
037	N	15.6%	5.35	3.12	1.89	0.35	0.93	265,676	152.73	98.84	10.72	25.76	10,315	11	-	-
070	C	22.1%	3.82	2.01	1.36	0.45	0.96	240,126	96.93	63.91	7.80	22.42	10,708	13	-	-
035	N	21.9%	3.63	1.86	1.26	0.50	0.88	215,819	97.48	63.87	8.09	24.33	8,871	13	-	-
560	C	14.5%	5.80	3.25	1.97	0.58	0.89	186,097	134.65	87.17	11.30	22.05	8,441	13	-	-
071	N	17.4%	4.97	2.71	1.83	0.43	0.96	175,415	93.32	63.16	7.47	16.98	10,331	9	-	-
083	C	13.9%	6.16	3.57	2.16	0.43	0.93	174,421	134.37	87.51	7.45	20.17	8,650	9	-	-
030	N	19.6%	4.06	2.18	1.48	0.40	0.89	165,245	92.90	63.07	7.19	20.40	8,100	8	-	-
046	N	24.9%	3.35	1.73	1.17	0.46	0.96	164,452	93.25	63.09	8.04	24.21	6,794	9	-	-
001	S	9.8%	9.05	5.31	3.22	0.52	0.92	160,767	133.13	86.72	8.13	14.08	11,418	10	-	-
053X	C	22.0%	3.40	2.05	1.24	0.10	0.93	159,113	119.05	76.85	11.33	28.20	5,643	2	-	-
064X	C	28.4%	2.42	1.41	0.85	0.16	0.90	152,846	119.06	76.85	11.32	37.71	4,053	3	-	-
059	C	18.5%	4.85	2.56	1.74	0.55	0.98	136,302	98.73	64.13	7.87	18.71	7,285	9	-	-
072	C	15.8%	5.37	3.13	1.89	0.35	0.94	117,576	125.86	81.49	10.03	21.12	5,567	5	-	-
025	N	21.3%	4.02	2.21	1.50	0.31	1.00	108,493	93.56	63.18	7.77	19.87	5,460	4	-	-
026	N	16.8%	4.93	2.71	1.83	0.39	0.91	106,174	93.33	63.01	9.30	17.12	6,202	5	-	-
056	N	16.1%	5.00	2.86	1.73	0.40	0.88	105,373	127.32	82.32	11.78	23.25	4,532	5	-	-
091	S	20.0%	5.00	2.69	1.82	0.48	1.13	104,043	94.63	63.51	6.52	16.76	6,208	6	-	-
033	N	20.9%	3.65	1.92	1.30	0.42	0.85	99,573	92.92	63.04	7.50	22.78	4,372	5	-	-
089	S	22.1%	3.97	2.16	1.46	0.35	1.02	96,321	93.25	63.14	7.31	20.07	4,799	4	-	-
079	C	11.4%	6.89	3.79	2.57	0.53	0.82	94,470	92.82	63.00	8.14	12.93	7,306	6	-	-
090	S	18.4%	5.15	2.69	1.82	0.64	1.01	78,076	100.35	64.66	6.54	18.17	4,297	6	-	-
129	N	18.5%	4.95	2.72	1.80	0.43	1.03	58,470	98.46	64.11	7.25	17.74	3,297	3	-	-
143	N	15.4%	5.78	3.26	2.15	0.36	0.98	46,516	92.51	62.97	8.18	14.45	3,219	2	-	-
167	C	11.7%	7.63	4.13	2.73	0.77	0.91	43,514	92.65	62.92	7.82	11.92	3,650	4	-	-
150	C	17.6%	5.25	2.70	1.78	0.77	0.96	43,235	95.59	63.39	9.43	17.59	2,458	4	-	-
086	C	13.5%	6.29	3.38	2.29	0.63	0.89	39,550	92.92	63.03	7.16	14.19	2,788	3	-	-
153	N	11.3%	8.07	4.56	3.01	0.50	0.96	33,131	92.38	62.99	7.29	10.83	3,059	2	-	-
024	N	14.7%	6.16	3.36	2.28	0.53	0.97	31,454	92.14	62.83	7.50	13.95	2,254	2	-	-
178	C	10.6%	8.09	4.39	2.90	0.80	0.87	31,445	94.59	63.31	7.43	11.60	2,711	3	-	-
177	S	14.6%	6.87	3.74	2.47	0.65	1.06	25,447	92.62	63.01	7.20	12.73	1,999	2	-	-
076	C	10.5%	8.50	4.85	2.94	0.71	0.92	23,479	125.39	81.07	10.67	14.41	1,630	2	-	-
085	S	11.7%	8.32	4.51	3.06	0.75	1.01	22,281	93.62	63.15	7.49	10.91	2,042	2	-	-
087	S	13.2%	7.15	3.82	2.59	0.75	0.98	22,177	94.48	63.42	6.39	12.80	1,733	2	-	-
082	S	18.8%	5.94	2.74	1.86	1.34	1.06	18,640	103.51	65.24	7.20	18.26	1,021	3	-	-
021	N	9.6%	10.37	5.35	3.63	1.39	0.95	17,952	100.87	64.70	7.24	10.15	1,768	3	-	-

(1) Total bus count (528) is based on PM weekday equipment requirements.

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OCTA Operating Statistics By Route for Express Service (Sort by Boardings)

Fiscal Year 2017-18 Through Q1

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	Bus Count 32 FT	Bus Count 60 FT
794	C	11.8%	$ 28.92	$ 11.94	$ 10.89	$ 6.09	$ 3.05	8,204	$ 156.60	$ 102.01	$ 5.96	6.05	1,356	6	-	-
721	N	4.5%	38.28	21.59	12.41	4.28	1.60	5,847	192.45	126.48	7.30	5.41	1,082	3	-	-
701	C	5.5%	32.27	17.36	9.98	4.93	1.58	5,066	232.91	152.88	9.66	8.05	629	3	-	-
211	C	1.6%	43.53	18.41	16.78	8.33	0.58	5,005	104.17	66.30	6.09	2.91	1,719	5	-	-
213	N	2.5%	34.58	13.65	12.44	8.50	0.67	3,922	119.38	70.56	6.80	4.46	879	4	-	-
206	C	3.8%	28.93	10.56	9.63	8.74	0.79	2,859	139.04	80.77	6.96	6.62	432	3	-	-
212	S	1.8%	46.68	18.43	16.80	11.44	0.66	1,249	132.20	78.36	6.76	3.68	339	-	2	-
216	S	1.2%	90.22	35.44	32.31	22.46	0.82	318	147.29	89.51	6.54	2.15	148	-	1	-

(1) Total bus count (528) is based on PM weekday equipment requirements.
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OCTA Operating Statistics By Route for Stationlink Service (Sort by Boardings)

Fiscal Year 2017-18 Through Q1

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	Bus Count 32 FT	Bus Count 60 FT
454	N	13.8%	$ 7.88	$ 2.76	$ 2.76	$ 2.36	$ 0.88	10,574	$ 122.20	$ 68.75	$ 16.93	19.07	554	3	-	-
472	C	14.2%	7.73	2.49	2.49	2.74	0.82	9,120	114.20	67.42	9.29	19.65	464	3	-	-
473	C	11.6%	9.40	3.20	3.20	3.00	0.84	8,340	120.13	68.26	11.18	16.58	503	3	-	-
453	N	13.2%	8.21	2.97	2.97	2.28	0.91	7,312	121.45	68.75	18.40	17.76	412	2	-	-
463	C	4.5%	20.66	7.26	7.26	6.14	0.69	6,784	117.95	68.15	10.94	7.76	875	5	-	-
480	C	11.5%	9.19	3.34	3.34	2.51	0.87	6,632	117.74	68.16	10.15	15.60	425	2	-	-
462	C	7.4%	11.62	4.25	4.25	3.12	0.68	5,341	112.45	66.86	15.58	12.26	436	2	-	-
490	S	3.8%	29.56	11.12	11.12	7.33	0.87	1,949	121.50	68.75	11.52	5.26	371	-	2	-
411	N	2.6%	18.53	7.01	7.01	4.52	0.37	1,581	106.68	65.60	11.94	7.42	213	-	1	-
430	N	1.7%	67.90	26.36	26.37	15.17	0.91	942	118.82	68.01	13.95	2.22	425	-	2	-

(1) Total bus count (528) is based on PM weekday equipment requirements.
(2) Bus count for spares is estimated to be 89.
(3) Bus count for routes 53X, 57X and 64X are estimated based on total route 53, 57 and 64 equipment requirements.
(4) C under Zone is Central County, N is North County and S is South County.

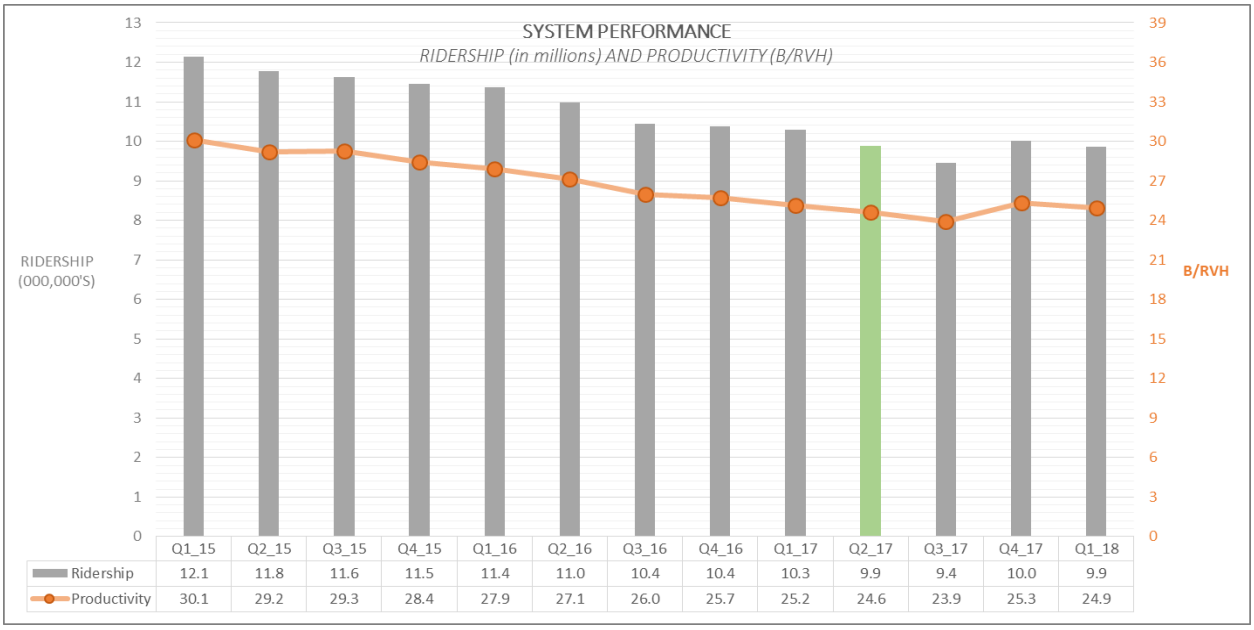
Route Reference Table

Route	Route Description	Main Street	Route Category
1	Long Beach - San Clemente	via Pacific Coast Hwy	LOCAL
21	Buena Park - Sunset Beach	via Valley View St/ Bolsa Chica Rd	LOCAL
24	Buena Park - Orange	via Malvern Ave/ Chapman Ave/ Tustin Ave	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	Los Alamitos - 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
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
211	Huntington Beach - Irvine Express	via 405 Fwy	EXPRESS BUS
212	Irvine - San Juan Capistrano Express	via 405 Fwy	EXPRESS BUS
213	Brea - Irvine Express	via 55 Fwy	EXPRESS BUS
216	San Juan Capistrano - Costa Mesa Express	via 405 Fwy	EXPRESS BUS
411	Anaheim Canyon Metrolink Station - Canyon Corporate Center	via Miraloma Ave/ La Palma Ave	STATIONLINK
430	Anaheim Regional Transportation Intermodal Center - Anaheim Resort Area	via Katella Ave/ Harbor Blvd/ Ball Rd	STATIONLINK
453	Orange Transportation Center - St. Joseph's Hospital	via Chapman Ave/ Main St/ La Veta Ave	STATIONLINK
454	Orange Transportation Center - Garden Grove	via Chapman Ave/ Metropolitan Dr	STATIONLINK
462	Santa Ana Regional transportation Center - Civic Center	via Santa Ana Blvd/ Civic Center Dr	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
490	Laguna Niguel / Mission Viejo Metrolink Station - Aliso Viejo	via Crown Valley Pkwy/ Moulton Pkwy/ Aliso Viejo	STATIONLINK
543	Fullerton Transportation Center - Santa Ana	via Harbor Blvd	BRAVO
560	Santa Ana - Long Beach	via 17th St/ Wesminster 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

OC Bus 360° Plan: Performance to Date

The last series of approved bus service changes under the OC Bus 360° Plan were implemented in October 2016. Provided below is a series of charts that show overall system performance over the last 13 quarters and the impact of the route adjustments implemented in October 2016 *(marked by green bar on all charts)*. In this review, performance is measured by change in average weekday boardings for routes that were improved and average B/RVH for routes that were reduced. This analysis is necessary and on-going to gauge the effectiveness of the recommended changes and overall plan.

The trend of overall system ridership and productivity is provided on the following chart.

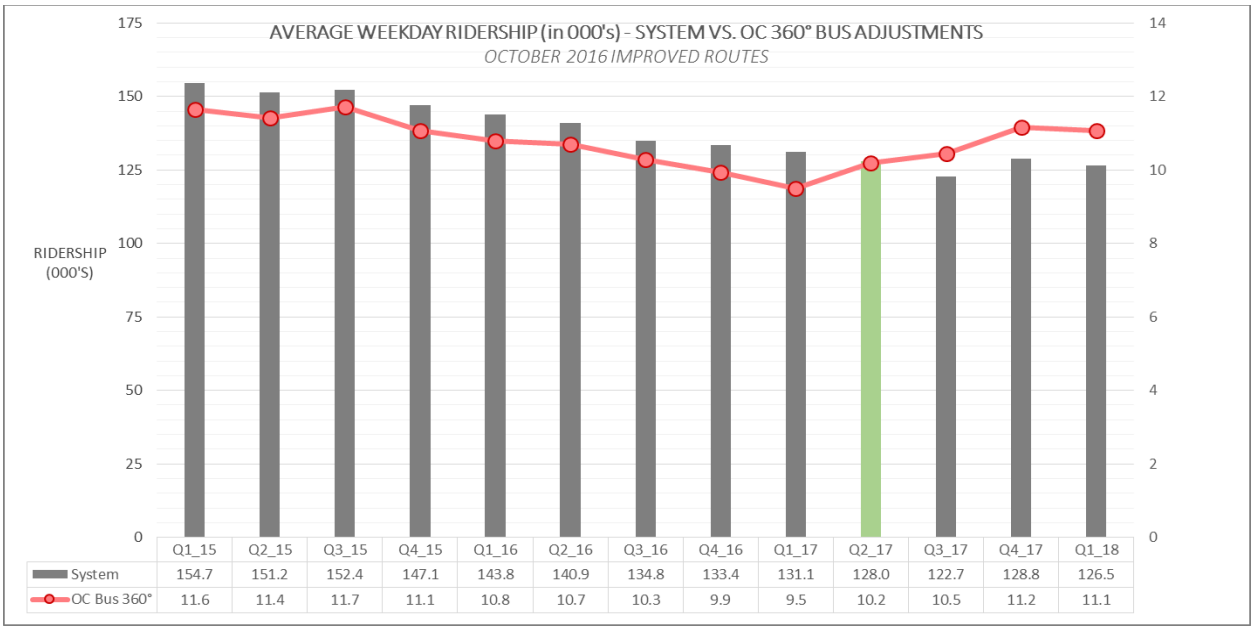


	Q1_15	Q2_15	Q3_15	Q4_15	Q1_16	Q2_16	Q3_16	Q4_16	Q1_17	Q2_17	Q3_17	Q4_17	Q1_18
Ridership	12.1	11.8	11.6	11.5	11.4	11.0	10.4	10.4	10.3	9.9	9.4	10.0	9.9
Productivity	30.1	29.2	29.3	28.4	27.9	27.1	26.0	25.7	25.2	24.6	23.9	25.3	24.9

Ridership through the first quarter of FY 2017-18 continues to reflect a slowing of the ridership decline since the October 2016 Service Change Program.

- **First Quarter ridership was 0.5 percent lower than the previous quarter**, and 4.2 percent lower than the first quarter of the last FY.
- **Quarterly ridership remains near 10 million,** approximately the same as when the October 2016 Service Change program was implemented.
- **Productivity** (*orange line in chart*) over the first quarter is consistent with the ridership, **dropping slightly** to just below 25 boardings per revenue vehicle hour, at 24.9 B/RVH.

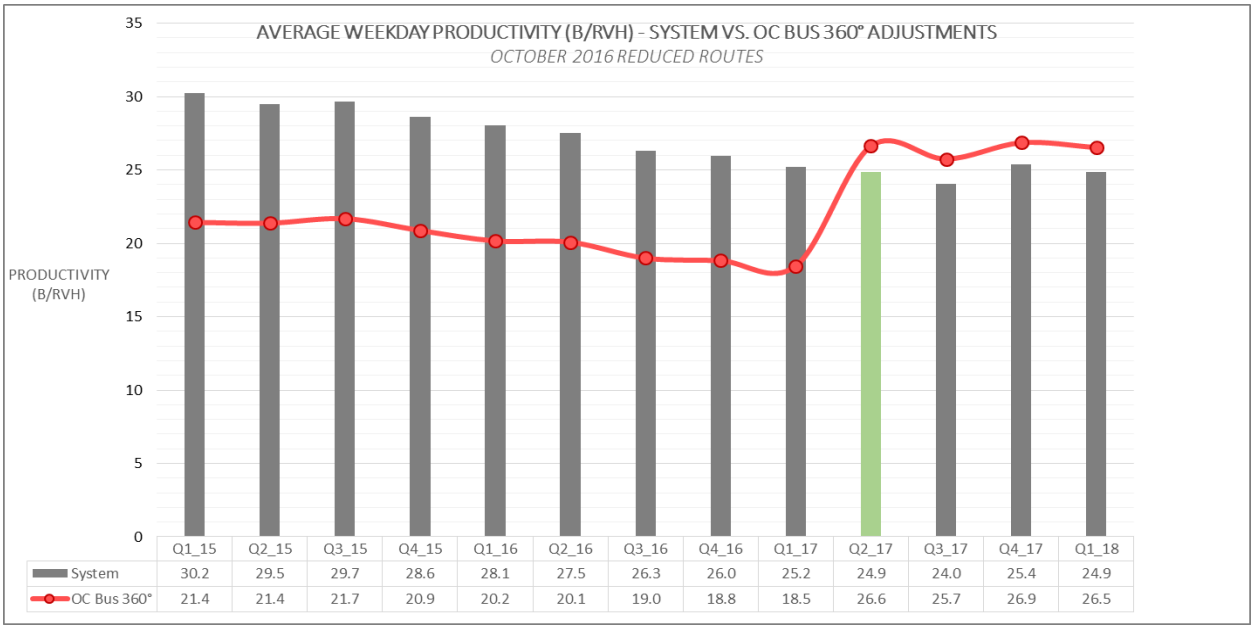
The impact of the adjustments implemented under the OC Bus 360° Plan continue to yield positive trends. The following chart compares the system trend against the group of routes improved under the initiative. The performance on these specific routes, the red line on the chart, is consistent with the system-wide trend, a slight decrease of 0.9 percent with respect to average weekday ridership.



	Q1_15	Q2_15	Q3_15	Q4_15	Q1_16	Q2_16	Q3_16	Q4_16	Q1_17	Q2_17	Q3_17	Q4_17	Q1_18
System	154.7	151.2	152.4	147.1	143.8	140.9	134.8	133.4	131.1	128.0	122.7	128.8	126.5
OC Bus 360°	11.6	11.4	11.7	11.1	10.8	10.7	10.3	9.9	9.5	10.2	10.5	11.2	11.1

- During the first quarter of FY 2016-17, before the service changes, the total average weekday ridership on these routes was approximately 9,500 daily riders. During the first quarter of FY 2017-18, the average daily ridership on these routes were a reported 11,064, sustaining a significant increase of 16.4 percent.

Improved system and route productivity are the goals for services that are reduced or eliminated under the OC Bus 360° Plan. As of the first quarter of FY 2017-18, the services that were reduced remain more efficient than prior to the changes, though the boardings per RVH dropped by 1.2 percent. The impacts on productivity, immediate and more significant as they were, were sustained through the first quarter of the new FY. The following chart compares the system productivity trend against the productivity of the group of routes that were reduced/eliminated.



	Q1_15	Q2_15	Q3_15	Q4_15	Q1_16	Q2_16	Q3_16	Q4_16	Q1_17	Q2_17	Q3_17	Q4_17	Q1_18
System	30.2	29.5	29.7	28.6	28.1	27.5	26.3	26.0	25.2	24.9	24.0	25.4	24.9
OC Bus 360°	21.4	21.4	21.7	20.9	20.2	20.1	19.0	18.8	18.5	26.6	25.7	26.9	26.5

- Routes reduced under the plan in October 2016 continue to show improved efficiency through the first quarter of FY18
- First quarter productivity for these routes on the average weekday dropped in comparison to the previous quarter, but remains nearly 44 percent over the first quarter of last year.
- Through the first quarter of FY18, these reduced resources collect over 26 boardings per revenue vehicle hour, exceeding than the system average of 24.9 RVH.

Next Steps

Staff will continue to work with the operator of OCTA's CFR to improve service reliability. This includes on-going focus on the OTP plan and vehicle reliability.

The Planning, External Affairs, and Transit Divisions will continue to coordinate the development and implementation of strategies under the OC Bus 360° Plan that are innovative, including the launch of the Santa Ana College Pass Program and piloting a demand response service. Staff will continue to report on the impacts of these programs and service changes on an on-going basis as appropriate.

TRANSIT DIVISION PERFORMANCE MEASUREMENTS REPORT

For the First Quarter of

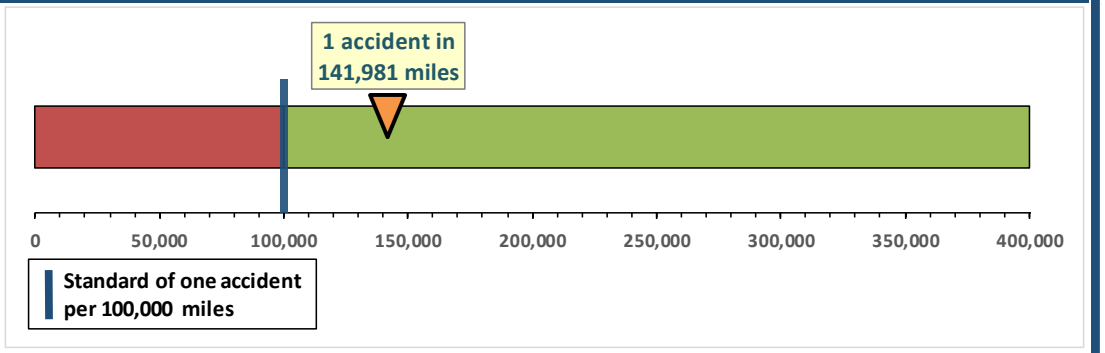
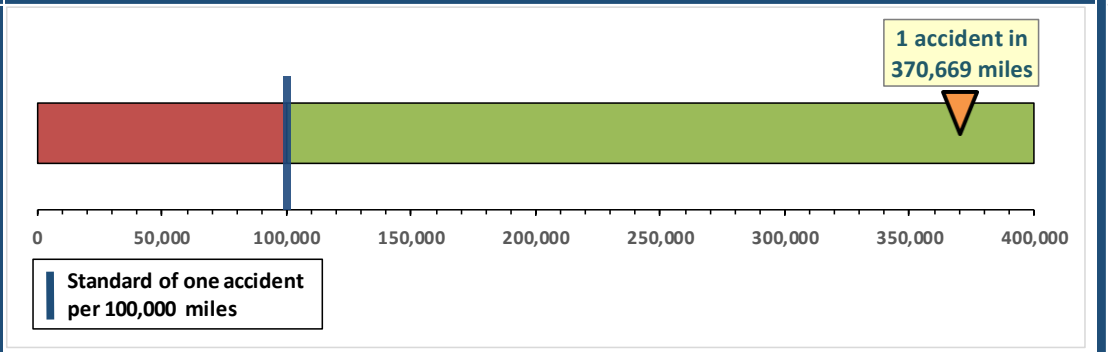
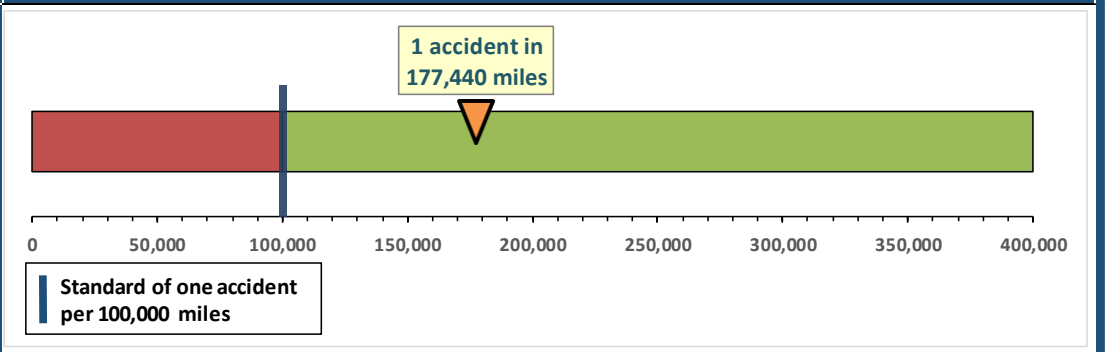
Fiscal Year 2017-18

OCTA

Performance Measurements

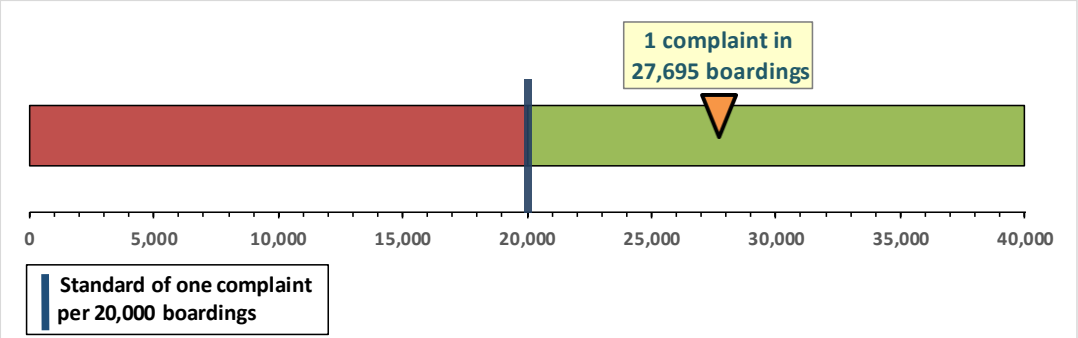
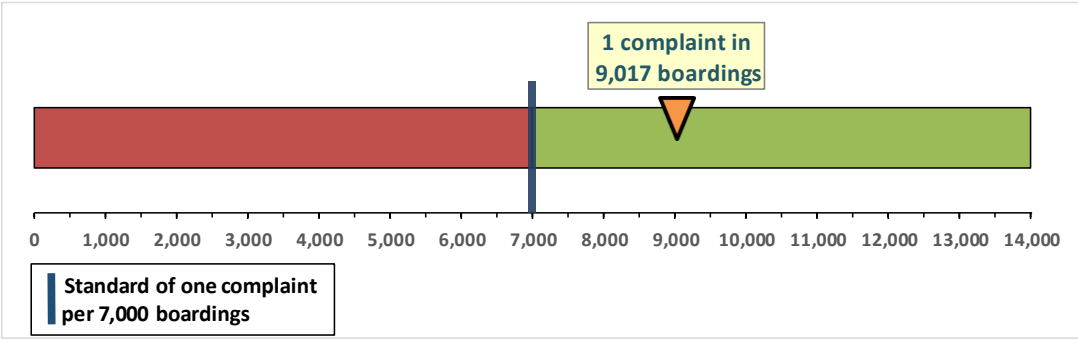
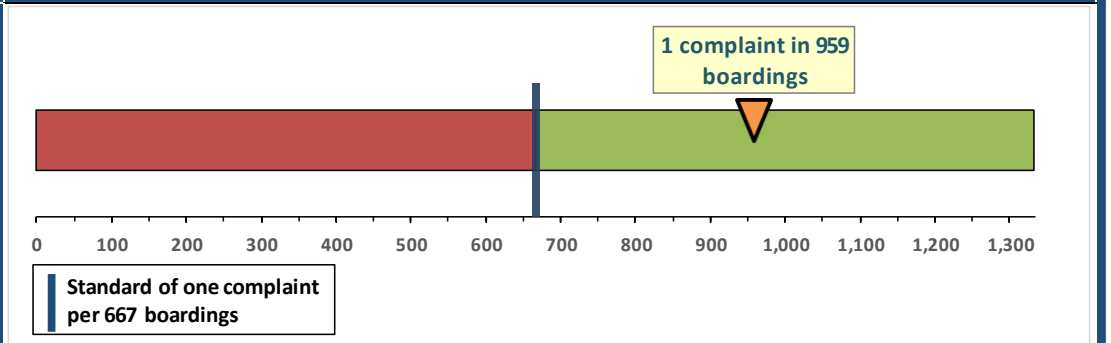
- Safety – Preventable Vehicle Accidents
- Courtesy – Customer Complaints
- Reliability – On-Time Performance (OTP) and Miles Between Road Calls (MBRC)
- Ridership and Productivity
- Farebox Recovery Ratio (FRR)
- Operating Cost per Revenue Vehicle Hour (RVH)
- Performance by Route

Safety

Mode	Results for July 2017 through September 2017
Directly-Operated Fixed-Route	
Contracted Fixed-Route	
ACCESS	

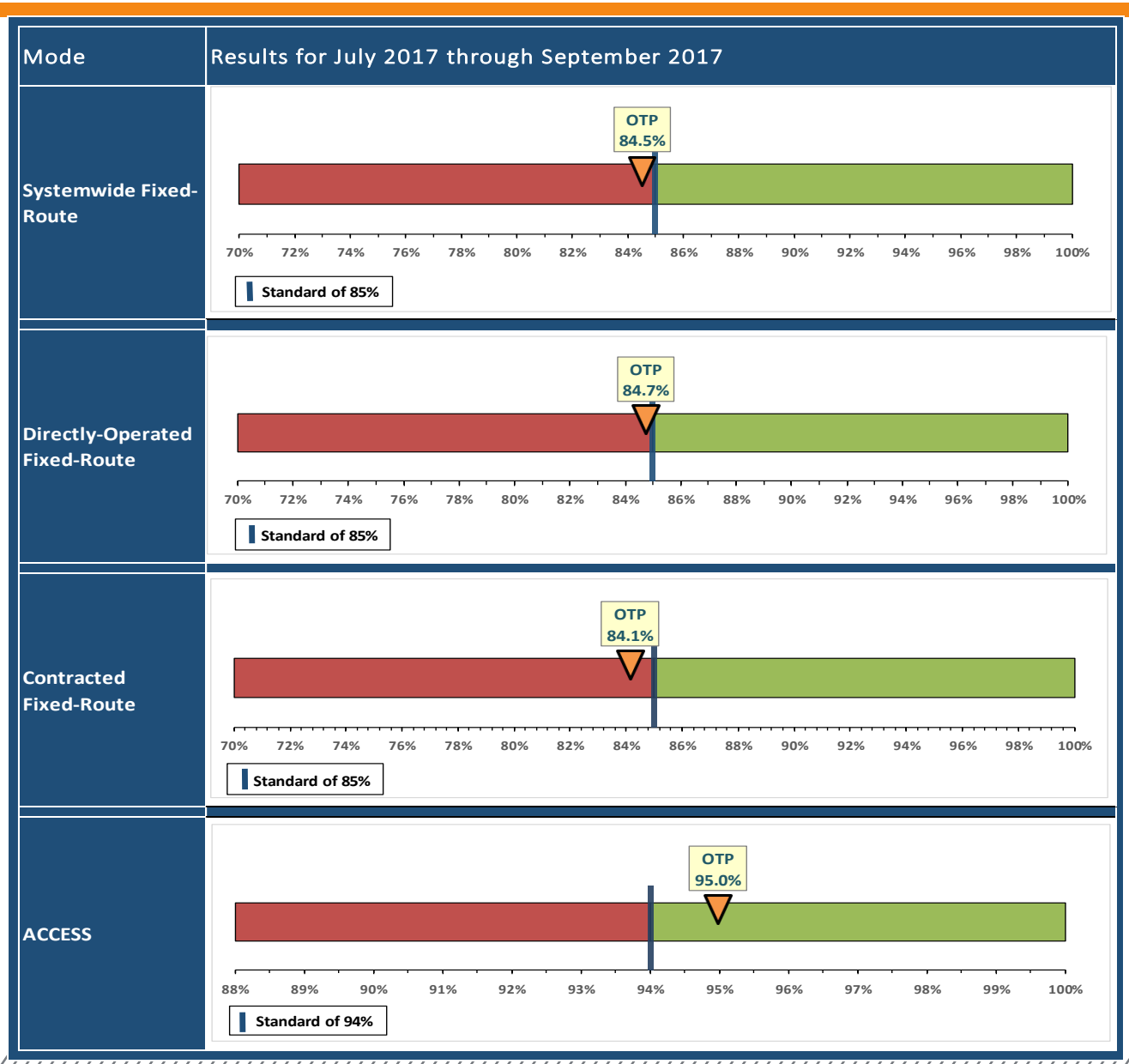
- All three modes of service exceeded the safety standard

Courtesy

Mode	Results for July 2017 through September 2017
Directly-Operated Fixed-Route	
Contracted Fixed-Route	
ACCESS	

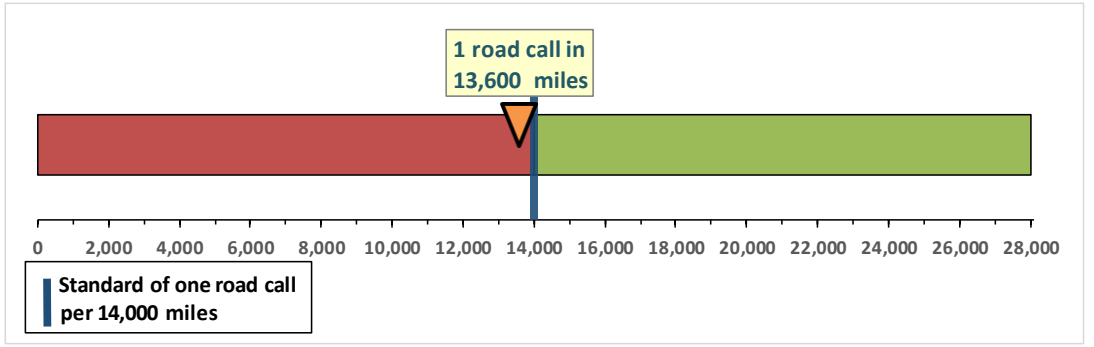
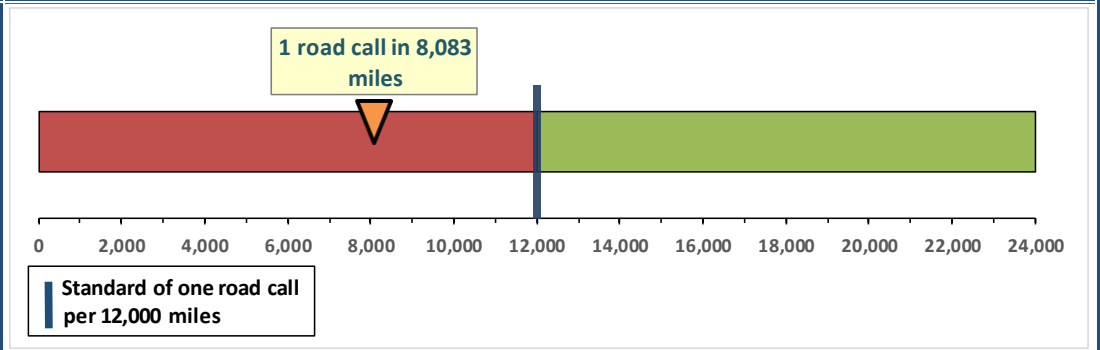
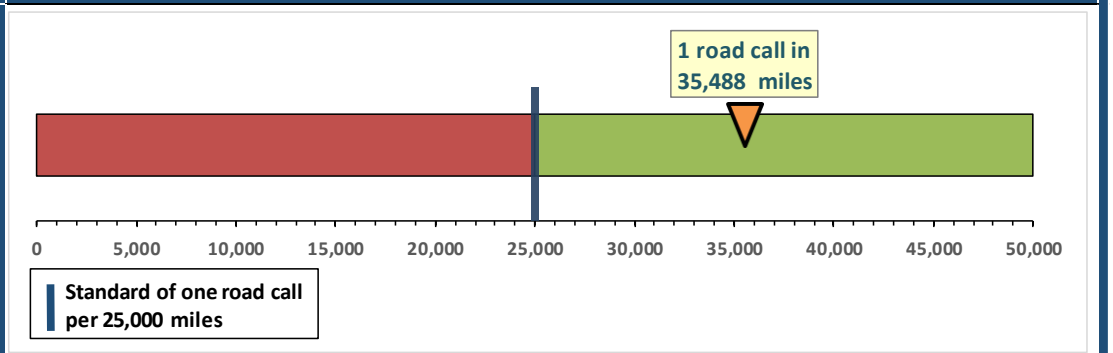
- All three modes of service exceeded the courtesy standard

Reliability-OTP



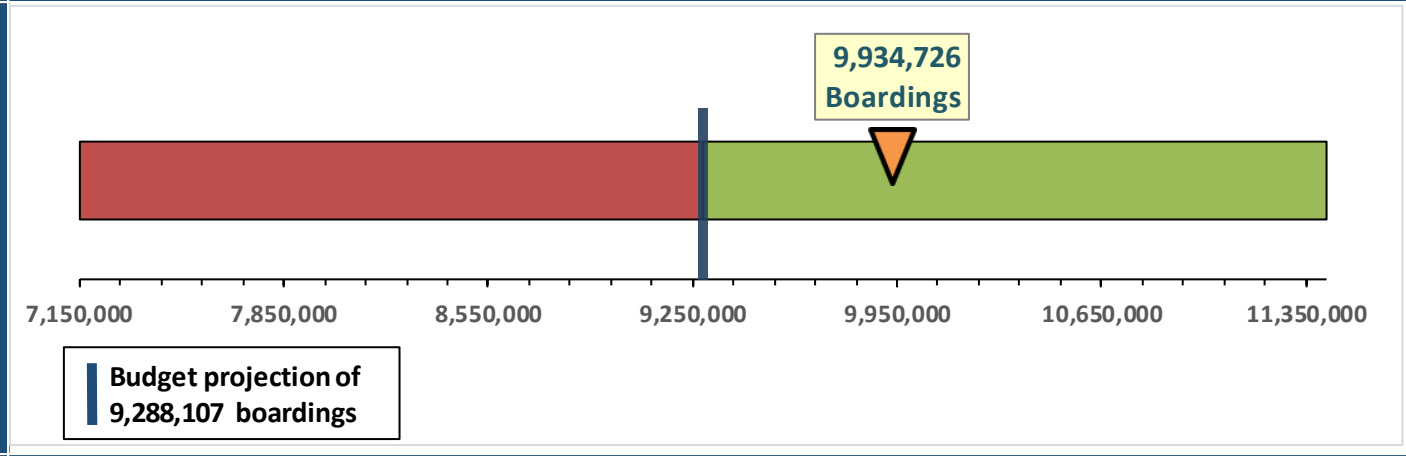
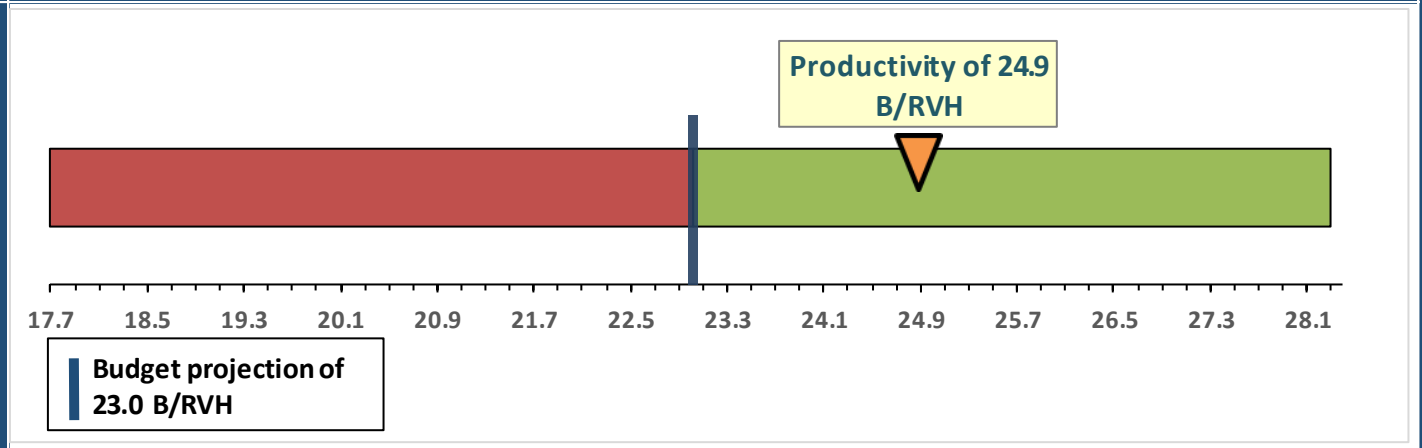
- System wide fixed-route service was within 0.6 percent of the standard
  - DOFR service was within 0.3 percent of the standard
  - CFR service was within 0.9 percent of the standard
- ACCESS service was at 95%.
- Continue to focus on OTP improvement in the next year

Reliability-MBRC

Mode	Results for July 2017 through September 2017
Directly-Operated Fixed-Route	
Contracted Fixed-Route	
ACCESS	

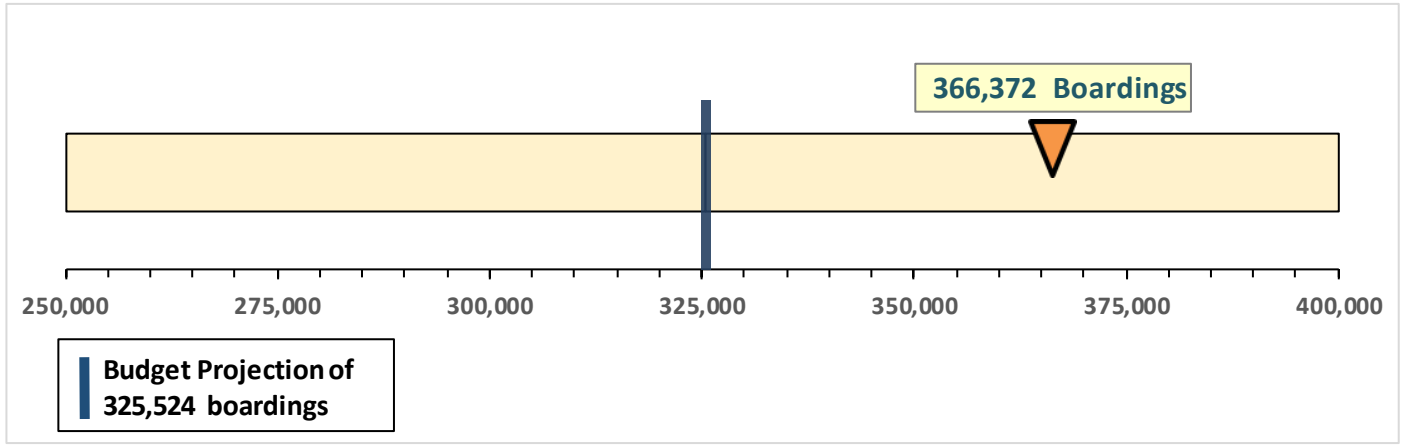
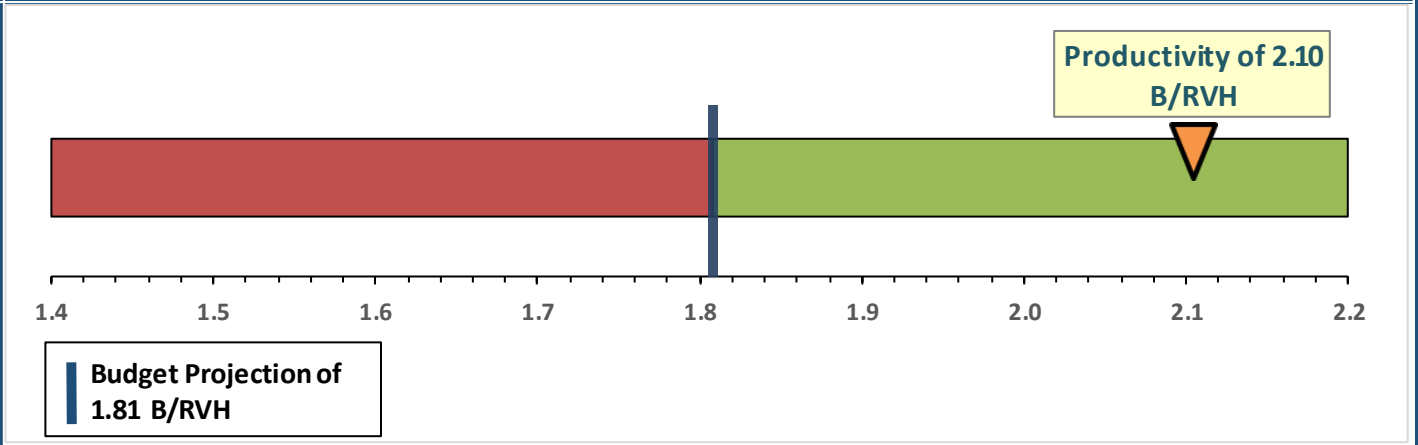
- ACCESS services exceeded the MBRC standard
- DOFR and CFR did not meet the standard
- Improvements have been seen in this metric over the past 12 months
- Continue to focus on vehicle reliability in the next year

Fixed-Route-Ridership and Productivity

Mode	Results for July 2017 through September 2017
Ridership	
Productivity	

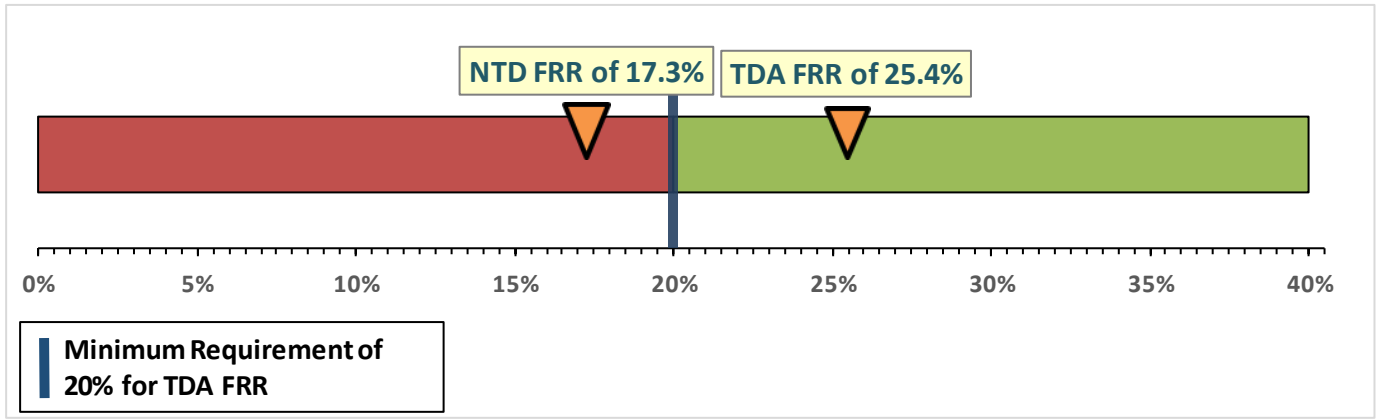
- Fixed-route service was above the budget projection for ridership and productivity

ACCESS-Ridership and Productivity

Mode	Results for July 2017 through September 2017
Ridership	
Productivity	

- ACCESS service exceeded budget projections for ridership and productivity

Farebox Recovery Ratio

Mode	Results for October 2016 through September 2017
Systemwide	

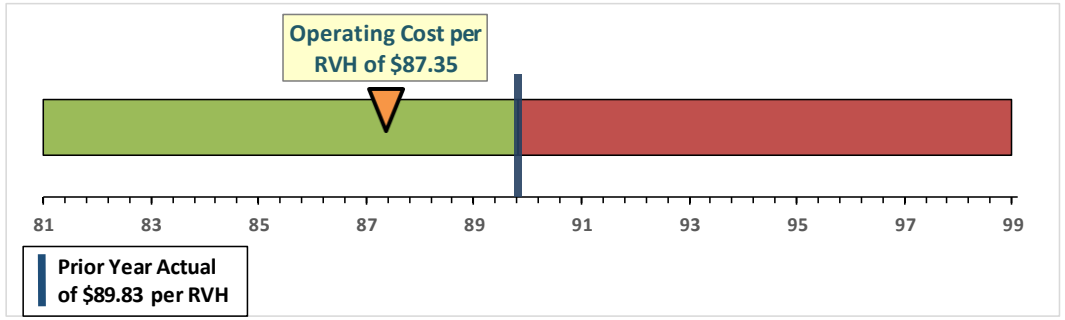
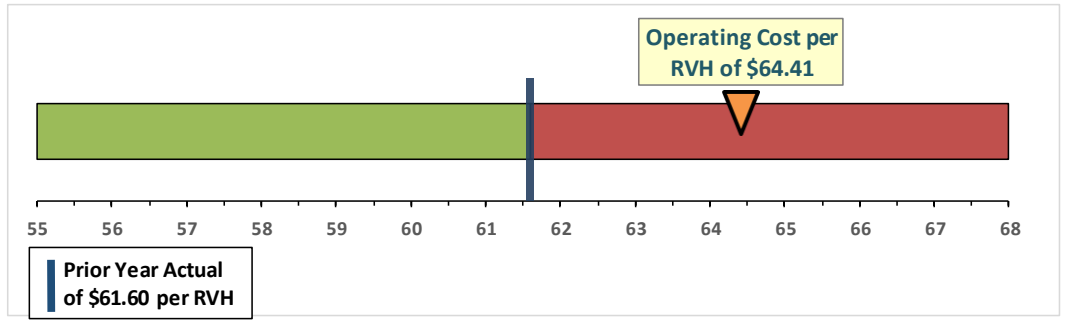
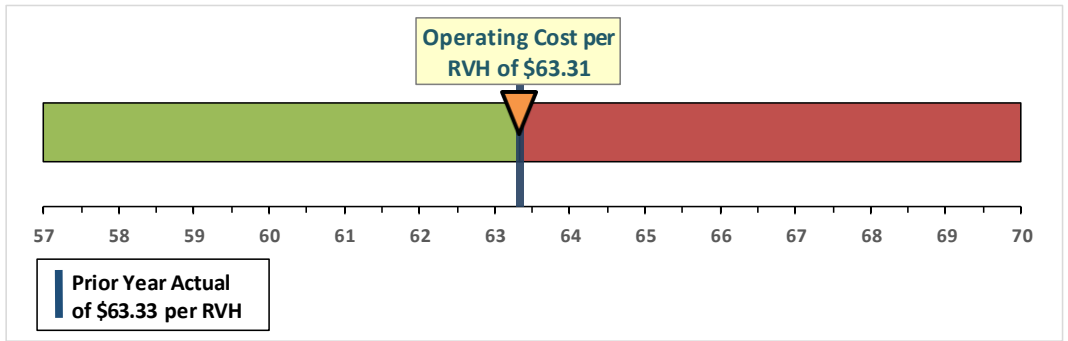
Note:

- National Transit Database(NTD) FRR consists of only passenger fares

- Transportation Development Act (TDA) FRR includes passenger fares, property tax revenue, advertising revenue and Measure M fare stabilization

- NTD FRR was 2.7 percent under the standard, and
- TDA FRR exceeded the standard by 5.4 percent.

Cost per RVH

Mode	Results for October 2016 through September 2017
Directly-Operated Fixed-Route	
Contracted Fixed-Route	
ACCESS	

- DOFR and ACCESS services operated at a lower cost than the target, which is based on prior year actuals
- CFR operating cost increased 4.6 percent from the prior year actuals

Performance: Local Routes

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	40 FT	32 FT	60 FT
021	N	9.6%	$ 10.37	$ 5.35	$ 3.63	$ 1.39	$ 0.95	17,952	$ 100.87	$ 64.70	$ 7.24	10.15	1,768	3	-	-
001	S	9.8%	9.05	5.31	3.22	0.52	0.92	160,767	133.13	86.72	8.13	14.08	11,418	10	-	-
076	C	10.5%	8.50	4.85	2.94	0.71	0.92	23,479	125.39	81.07	10.67	14.41	1,630	2	-	-
085	S	11.7%	8.32	4.51	3.06	0.75	1.01	22,281	93.62	63.15	7.49	10.91	2,042	2	-	-
087	S	13.2%	7.15	3.82	2.59	0.75	0.98	22,177	94.48	63.42	6.39	12.80	1,733	2	-	-
079	C	11.4%	6.89	3.79	2.57	0.53	0.82	94,470	92.82	63.00	8.14	12.93	7,306	6	-	-
086	C	13.5%	6.29	3.38	2.29	0.63	0.89	39,550	92.92	63.03	7.16	14.19	2,788	3	-	-
083	C	13.9%	6.16	3.57	2.16	0.43	0.93	174,421	134.37	87.51	7.45	20.17	8,650	9	-	-
024	N	14.7%	6.16	3.36	2.28	0.53	0.97	31,454	92.14	62.83	7.50	13.95	2,254	2	-	-
082	S	18.8%	5.94	2.74	1.86	1.34	1.06	18,640	103.51	65.24	7.20	18.26	1,021	3	-	-
560	C	14.5%	5.80	3.25	1.97	0.58	0.89	186,097	134.65	87.17	11.30	22.05	8,441	13	-	-
072	C	15.8%	5.37	3.13	1.89	0.35	0.94	117,576	125.86	81.49	10.03	21.12	5,567	5	-	-
037	N	15.6%	5.35	3.12	1.89	0.35	0.93	265,676	152.73	98.84	10.72	25.76	10,315	11	-	-
090	S	18.4%	5.15	2.69	1.82	0.64	1.01	78,076	100.35	64.66	6.54	18.17	4,297	6	-	-
091	S	20.0%	5.00	2.69	1.82	0.48	1.13	104,043	94.63	63.51	6.52	16.76	6,208	6	-	-
056	N	16.1%	5.00	2.86	1.73	0.40	0.88	105,373	127.32	82.32	11.78	23.25	4,532	5	-	-
050	N	15.7%	4.99	2.85	1.72	0.42	0.85	305,606	134.60	87.14	11.71	24.81	12,318	3	-	8
071	N	17.4%	4.97	2.71	1.83	0.43	0.96	175,415	93.32	63.16	7.47	16.98	10,331	9	-	-
026	N	16.8%	4.93	2.71	1.83	0.39	0.91	106,174	93.33	63.01	9.30	17.12	6,202	5	-	-
054	N	16.9%	4.90	2.86	1.74	0.30	0.93	301,205	134.40	86.91	11.76	24.29	12,402	11	-	-
059	C	18.5%	4.85	2.56	1.74	0.55	0.98	136,302	98.73	64.13	7.87	18.71	7,285	9	-	-
055	C	19.0%	4.83	2.75	1.67	0.41	1.04	341,570	129.55	83.79	11.46	23.75	14,384	17	-	-
543	N	19.7%	4.11	2.34	1.42	0.35	0.92	286,354	132.90	86.06	11.38	28.36	10,098	12	-	-
030	N	19.6%	4.06	2.18	1.48	0.40	0.89	165,245	92.90	63.07	7.19	20.40	8,100	8	-	-
025	N	21.3%	4.02	2.21	1.50	0.31	1.00	108,493	93.56	63.18	7.77	19.87	5,460	4	-	-
089	S	22.1%	3.97	2.16	1.46	0.35	1.02	96,321	93.25	63.14	7.31	20.07	4,799	4	-	-
029	N	20.7%	3.90	2.25	1.37	0.28	0.94	517,456	133.92	86.71	11.44	29.36	17,626	13	-	3
047	C	22.1%	3.86	2.21	1.34	0.31	1.01	557,074	133.21	86.19	11.69	29.21	19,069	21	-	-
070	C	22.1%	3.82	2.01	1.36	0.45	0.96	240,126	96.93	63.91	7.80	22.42	10,708	13	-	-
033	N	20.9%	3.65	1.92	1.30	0.42	0.85	99,573	92.92	63.04	7.50	22.78	4,372	5	-	-
035	N	21.9%	3.63	1.86	1.26	0.50	0.88	215,819	97.48	63.87	8.09	24.33	8,871	13	-	-
057	C	22.4%	3.58	2.03	1.23	0.33	0.94	546,935	144.86	93.80	12.47	34.54	15,836	3	-	12
053X	C	22.0%	3.40	2.05	1.24	0.10	0.93	159,113	119.05	76.85	11.33	28.20	5,643	2	-	-
046	N	24.9%	3.35	1.73	1.17	0.46	0.96	164,452	93.25	63.09	8.04	24.21	6,794	9	-	-
057X	C	24.5%	3.23	1.79	1.08	0.36	0.93	276,808	119.24	77.04	10.57	31.35	8,828	1	-	7
053	C	24.3%	3.22	1.79	1.08	0.35	0.92	376,306	135.29	87.42	14.41	35.73	10,532	16	-	-
043	N	24.3%	3.22	1.88	1.14	0.20	0.97	541,026	136.18	87.97	12.54	34.16	15,837	13	-	-
060	C	22.7%	3.16	1.86	1.13	0.18	0.88	504,246	130.55	84.53	11.34	33.81	14,913	11	-	-
038	N	26.2%	2.87	1.51	1.03	0.33	0.90	303,704	94.52	63.38	7.68	27.46	11,060	12	-	-
066	C	26.6%	2.84	1.65	1.00	0.20	0.96	531,305	130.56	84.41	12.19	36.22	14,667	13	-	-
042	N	27.1%	2.60	1.41	0.96	0.23	0.88	402,978	94.64	63.38	8.46	29.10	13,846	11	-	-
064	C	27.4%	2.54	1.48	0.90	0.16	0.90	412,277	132.12	85.37	13.64	40.35	10,218	8	-	-
064X	C	28.4%	2.42	1.41	0.85	0.16	0.90	152,846	119.06	76.85	11.32	37.71	4,053	3	-	-

Performance: Community Routes

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	40 FT	32 FT	60 FT
178	C	10.6%	$ 8.09	$ 4.39	$ 2.90	$ 0.80	$ 0.87	31,445	$ 94.59	$ 63.31	$ 7.43	11.60	2,711	3	-	-
153	N	11.3%	8.07	4.56	3.01	0.50	0.96	33,131	92.38	62.99	7.29	10.83	3,059	2	-	-
167	C	11.7%	7.63	4.13	2.73	0.77	0.91	43,514	92.65	62.92	7.82	11.92	3,650	4	-	-
177	S	14.6%	6.87	3.74	2.47	0.65	1.06	25,447	92.62	63.01	7.20	12.73	1,999	2	-	-
143	N	15.4%	5.78	3.26	2.15	0.36	0.98	46,516	92.51	62.97	8.18	14.45	3,219	2	-	-
150	C	17.6%	5.25	2.70	1.78	0.77	0.96	43,235	95.59	63.39	9.43	17.59	2,458	4	-	-
129	N	18.5%	4.95	2.72	1.80	0.43	1.03	58,470	98.46	64.11	7.25	17.74	3,297	3	-	-

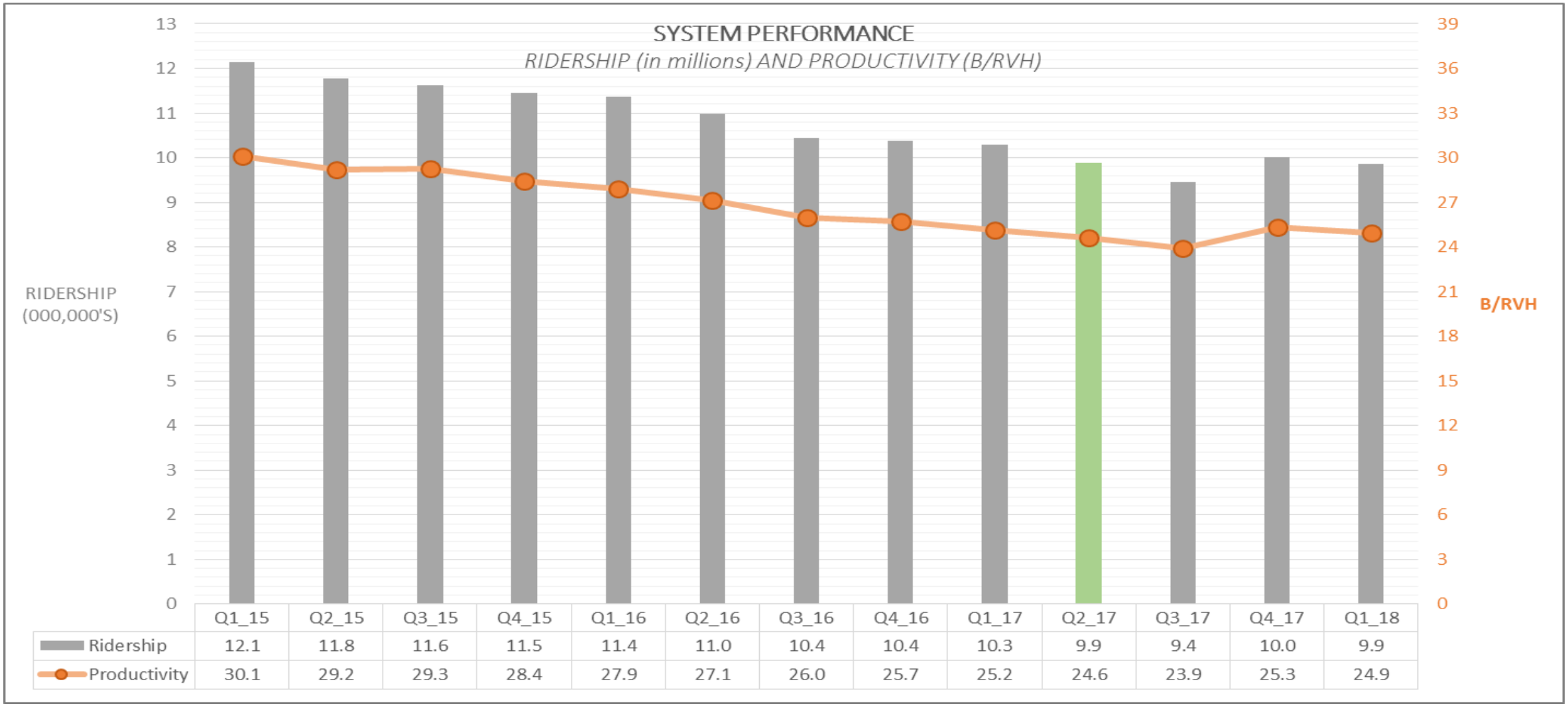
Performance: Express/Stationlink Routes

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	40 FT	32 FT	60 FT
216	S	1.2%	$ 90.22	$ 35.44	$ 32.31	$ 22.46	$ 0.82	318	$ 147.29	$ 89.51	$ 6.54	2.15	148	-	1	-
212	S	1.8%	46.68	18.43	16.80	11.44	0.66	1,249	132.20	78.36	6.76	3.68	339	-	2	-
211	C	1.6%	43.53	18.41	16.78	8.33	0.58	5,005	104.17	66.30	6.09	2.91	1,719	5	-	-
721	N	4.5%	38.28	21.59	12.41	4.28	1.60	5,847	192.45	126.48	7.30	5.41	1,082	3	-	-
213	N	2.5%	34.58	13.65	12.44	8.50	0.67	3,922	119.38	70.56	6.80	4.46	879	4	-	-
701	C	5.5%	32.27	17.36	9.98	4.93	1.58	5,066	232.91	152.88	9.66	8.05	629	3	-	-
206	C	3.8%	28.93	10.56	9.63	8.74	0.79	2,859	139.04	80.77	6.96	6.62	432	3	-	-
794	C	11.8%	28.92	11.94	10.89	6.09	3.05	8,204	156.60	102.01	5.96	6.05	1,356	6	-	-

Route	Zone	Farebox	Subsidy per Boarding	Direct Subsidy	Indirect Subsidy	"Capital Subsidy" Per Boarding	Revenue per Boarding	Boardings	CostVSH	Direct CostVSH	CostVSM	BoardVSH	VSH	40 FT	32 FT	60 FT
430	N	1.7%	$ 67.90	$ 26.36	$ 26.37	$ 15.17	$ 0.91	942	$ 118.82	$ 68.01	$ 13.95	2.22	425	-	2	-
490	S	3.8%	29.56	11.12	11.12	7.33	0.87	1,949	121.50	68.75	11.52	5.26	371	-	2	-
463	C	4.5%	20.66	7.26	7.26	6.14	0.69	6,784	117.95	68.15	10.94	7.76	875	5	-	-
411	N	2.6%	18.53	7.01	7.01	4.52	0.37	1,581	106.68	65.60	11.94	7.42	213	-	1	-
462	C	7.4%	11.62	4.25	4.25	3.12	0.68	5,341	112.45	66.86	15.58	12.26	436	2	-	-
473	C	11.6%	9.40	3.20	3.20	3.00	0.84	8,340	120.13	68.26	11.18	16.58	503	3	-	-
480	C	11.5%	9.19	3.34	3.34	2.51	0.87	6,632	117.74	68.16	10.15	15.60	425	2	-	-
453	N	13.2%	8.21	2.97	2.97	2.28	0.91	7,312	121.45	68.75	18.40	17.76	412	2	-	-
454	N	13.8%	7.88	2.76	2.76	2.36	0.88	10,574	122.20	68.75	16.93	19.07	554	3	-	-
472	C	14.2%	7.73	2.49	2.49	2.74	0.82	9,120	114.20	67.42	9.29	19.65	464	3	-	-

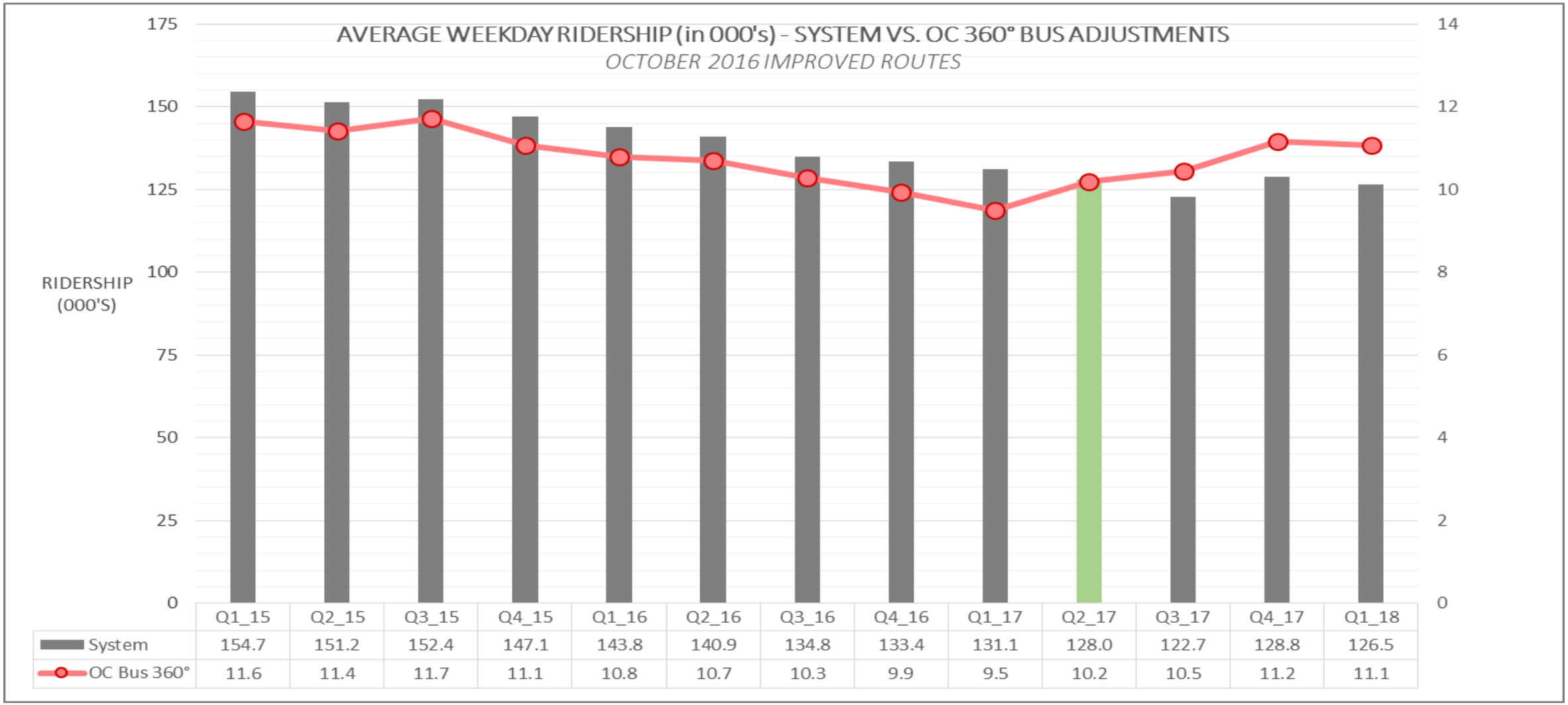
TRANSIT PERFORMANCE AND OC BUS 360°

Performance: System-wide Trends



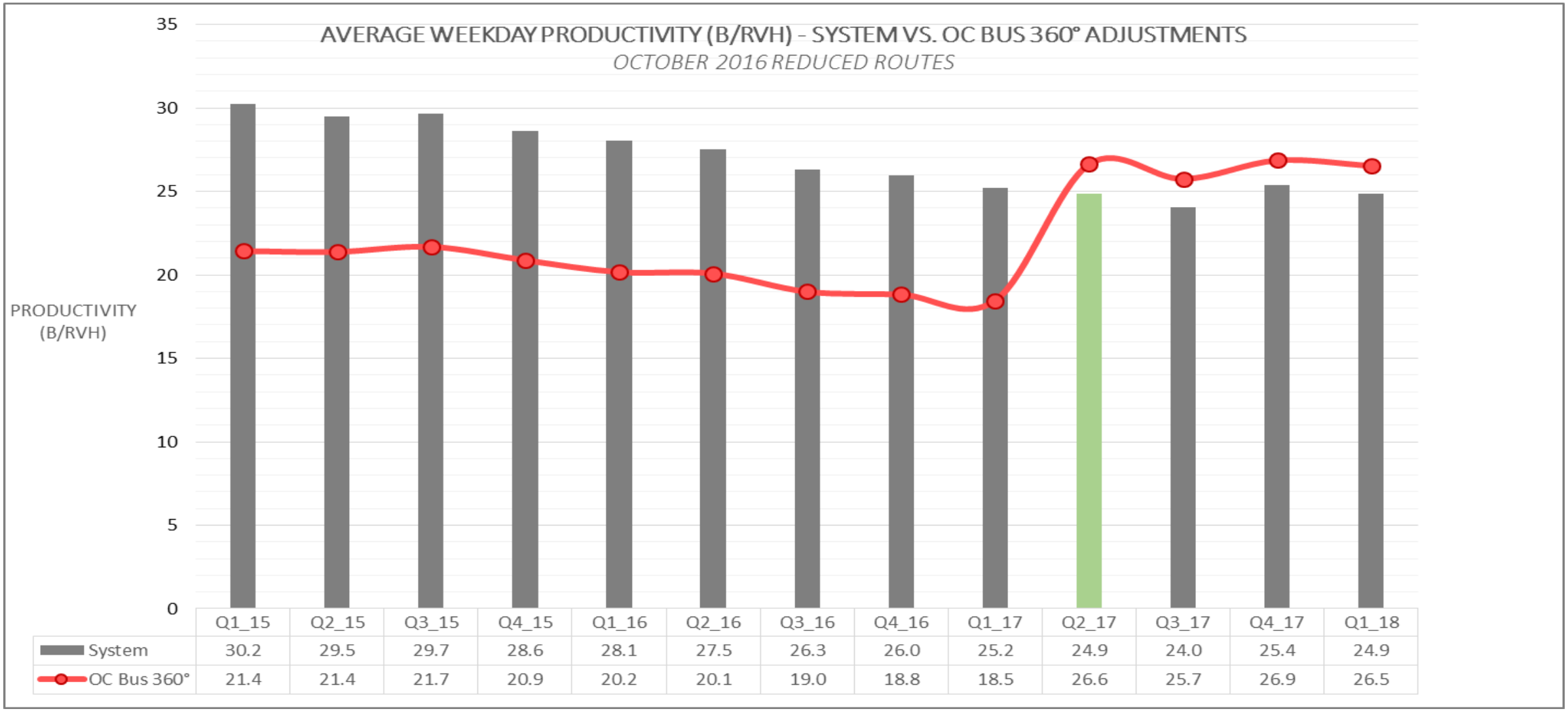
	Q1_15	Q2_15	Q3_15	Q4_15	Q1_16	Q2_16	Q3_16	Q4_16	Q1_17	Q2_17	Q3_17	Q4_17	Q1_18
Ridership	12.1	11.8	11.6	11.5	11.4	11.0	10.4	10.4	10.3	9.9	9.4	10.0	9.9
Productivity	30.1	29.2	29.3	28.4	27.9	27.1	26.0	25.7	25.2	24.6	23.9	25.3	24.9

Performance: OC Bus 360° Improvements



	Q1_15	Q2_15	Q3_15	Q4_15	Q1_16	Q2_16	Q3_16	Q4_16	Q1_17	Q2_17	Q3_17	Q4_17	Q1_18
System	154.7	151.2	152.4	147.1	143.8	140.9	134.8	133.4	131.1	128.0	122.7	128.8	126.5
OC Bus 360°	11.6	11.4	11.7	11.1	10.8	10.7	10.3	9.9	9.5	10.2	10.5	11.2	11.1

Performance: OC Bus 360° Reductions



	Q1_15	Q2_15	Q3_15	Q4_15	Q1_16	Q2_16	Q3_16	Q4_16	Q1_17	Q2_17	Q3_17	Q4_17	Q1_18
System	30.2	29.5	29.7	28.6	28.1	27.5	26.3	26.0	25.2	24.9	24.0	25.4	24.9
OC Bus 360°	21.4	21.4	21.7	20.9	20.2	20.1	19.0	18.8	18.5	26.6	25.7	26.9	26.5

Next Steps

- Continue to work with CFR operator to improve performance and reliability
- Continue to monitor route performance, and assess the impact of the OC Bus 360° Plan
- Continue to pursue other strategies to improve overall system performance