



OC Bus Mobile
Ticketing Application
Final Report
AB2766/MS16093

Prepared for the Mobile Source Air Pollution Review Committee (MSRC) under the AB 2766 Discretionary Fund Work Program.

Acknowledgments

The completion of the Mobile Ticketing Application project required collaboration between OCTA, Mobile Source Air Pollution Reduction Review Committee, Transit and Intercity Rail Capital Program (TIRCP), Innovations in Transportation (INIT), MOOVEL North America, and CDCE.

This report was submitted in fulfillment of MS16093 and Mobile Ticketing Application project by the Orange County Transportation Authority (OCTA) under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of February 11, 2018 (open for use).

Disclaimer

The statements and conclusions in this report are those of the contractor and not necessarily those of the Mobile Source Air Pollution Reduction Review Committee (MSRC) or the South Coast Air Quality Management District (SCAQMD). The mention of commercial products, their sources or their uses in connection with material reported herein is not to be construed as either an actual or implied endorsement of such products.

Project Description

The scope of the project included (1) the design and development of a mobile ticketing application, (2) purchasing reader hardware, (3) installing, configuring, testing electronic readers, (4) integrating mobile ticketing application with electronic readers, and (5) implementing Public Outreach Plan. Features of the new mobile software include:

- Allowing users to purchase tickets for OCTA entire fare catalog using their smart phones
- Using the smart phone to display valid fare payment on OCTA's buses using dynamic bar codes
- Viewing route maps and schedules
- Locking/Blocking a rider account if fraudulent activity is suspected (OCTA staff)
- A robust back-office system that allowed OCTA staff to effectively assist OCTA riders when they need assistance with their OC Bus mobile applications



Problems Encountered

Development of the OC Bus Mobile App presented many challenges to ensure goals of the program were met, and that the mobile app provided a positive customer user experience. It was important to ensure that the app functionality met core objectives and created content for app, online portal and stores.

In late October 2016, there was a two-day period in which users were not able to add or edit payment methods in their user profile which prevented users from purchasing tickets. This issue was resolved by Braintree, who is the payment processing vendor for the mobile ticketing application, as there was a connection issue between Braintree and our mobile ticketing application.

The hardware manufacturer for the Electronic Readers ran into a delay with building our devices. In an unforeseen circumstance the manufacturer was put in a position where they had to fulfill large orders for three different agencies during the same quarter. This resulted in a one-month delay from our original schedule, which OCTA was ok to accept.

Benefits

As of September 2018, there are just over 78,800 registered users on the Mobile Ticketing app with roughly 950,000 fare purchases since the launch of the application. There have been electronic readers installed on OCTA's entire fixed route fleet and OCTA has activated the readers for production use during OCTA's February Service Change on February 11, 2018.

Additional benefits of mobile ticketing include:

- Increasing ease of use for customers to promote customer self-service
- Giving OCTA the ability to accept fare media from neighboring agencies through electronic readers
- Stimulating growth in ridership
- Decreasing emissions from personal motor vehicles
- Eliminating the hassle of carrying paper passes or exact change
- Storing multiple passes on your phone for future use
- Allowing payment of a single fare or multiple fares for a group of riders
- Speeding up boarding times

OC Bus Mobile App Development & Marketing



Program Overview

OCTA's existing fare collection system has been in operation for nearly 15 years. New payment technologies such as mobile phone apps allow transit agencies to adopt a variety of innovative fare collection methods incorporating the use of mobile phones, contactless credit cards and debit cards. OCTA studied ways to improve fare collection and identified three goals:

- Modernize OCTA's fare collection system and move towards the next generation in fare collection
- Create a better user experience for bus riders and coach operators
- Improve regional integration

OCTA conducted several fare collection pilot project projects and found customers favored a mobile ticketing application for fare purchases. In 2015 OCTA secured a vendor to develop and maintain a mobile ticketing solution for the fixed-route bus service. The development of the OC Bus Mobile App occurred in several phases:

- Express Riders – May 2016
- OC Fair Express Riders – July 2016
- System-wide and College Fares – October 2016
- Senior and Disabled Reduced Fares – March 2017
- Reader Validation Hardware – February 2018

Mobile App Development

Development of the OC Bus Mobile App presented many challenges to ensure goals of the program were met, and that the mobile app provided a positive customer user experience.

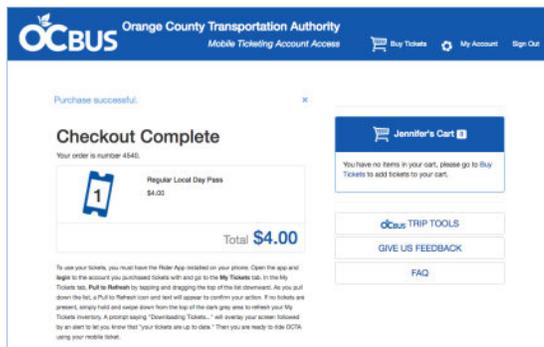
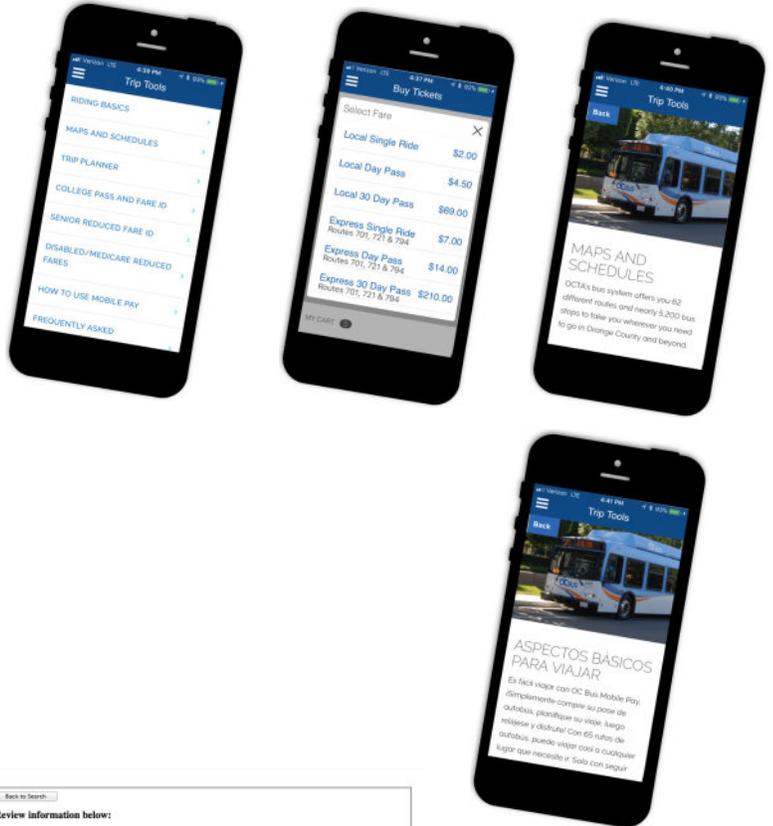
- Ensured app functionality met core objectives and created content for app, online portal and stores.
- Development of bus customer information as an “in-app” experience, in English and Spanish
- Built a back-end solution to provide reduced fares on the mobile app while preventing fraud opportunities.

Apple/Google Store

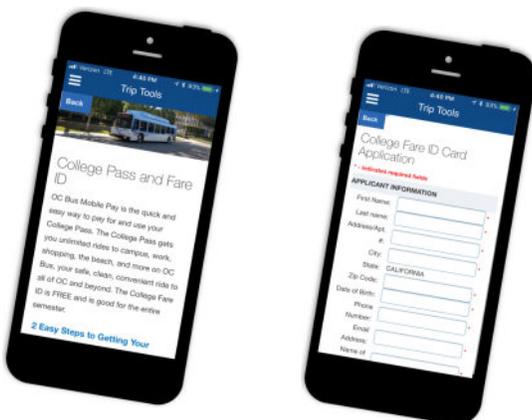


Moovel
Customer
Online Portal

OC Bus Mobile Content



Reduced Fare Solution



Review information below:

Request ID: 201890

Requested by: Mobile ID | Physical Card

Date of Birth: 10/07/1994

Phone Number: 714662388

Email Address: jason@ocbus.net

First Name: jason

Last Name: O'Connor

Name of School: OCTA

Address/Apt. #: 600 N. Main St

City: Orange

State: CALIFORNIA

Zip Code: 92667

of Enrolled: 12

Do you currently ride the bus? Yes No

Are you receiving your College Pass ID? Yes No

Uploaded document: uploaded document is in pdf format View Uploaded File

Uploaded photo: uploaded photo is in pdf format View Uploaded File

Click a pass: College Pass | Senior Pass

select response message: APPROVED - New ID

Response Email Content: Congratulations on being approved for an OCTA College Fare ID Card! This entitles you to board OCTA fixed route buses with our 30, 75, and 120 day fare passes. Your ID number is: 8502681588888888. Enter your ID number into our OCTA Mobile Ticketing app to purchase your college pass today! College Pass ID's expire on June 30th for the Spring Semester and December 31st for the Fall. To renew, simply re-apply at 800-800-8000.

OCTA Customer Relations
714-658-8888

Auto generated ID: C201890 (Clear textfield) (Refresh ID)

Official Remark:

Process Request

Marketing Strategy and Tactics

Brand the mobile ticketing as part of OC Bus to carry forward the new branding. Each rollout phase included a targeted campaign engaging current riders, while bringing new riders to trial through a compelling value proposition for regular and destination services.

- Express Bus Riders: Download/use the app, take the survey for a chance to win a 30-day mobile ticket.
- OC Fair Express Riders: Download/use the app, take the survey and win prizes.
- System-wide Regular Fare: Introduce current customer base to mobile via a multi-tactical media campaign, including a video, social media, print and digital ads, billboards, and printed flyers.
- College Fares: Download and purchase reduced fare college passes. Promote during summer registration periods for awareness; send targeted email to current college pass users.
- Senior/Disabled Fares: Conduct outreach in the senior/disabled community to increase OCTA RFID cards, target community with email, newspaper ads.
- Reader Validation Hardware: Introduce current mobile users, and potential new users, to newly installed mobile app validator hardware and how to scan their QR code upon entering bus.



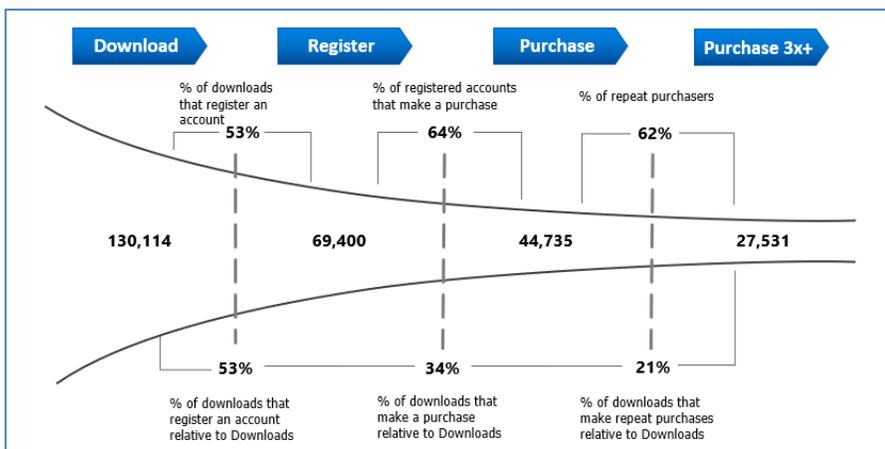
Results

In the first six months that mobile ticketing was offered as fare payment, 32% of downloads resulted in ticket purchases. Industry average of conversions from download to purchase within the first year is 20%-40%. OCTA's mobile ticketing achieved the mid-point of this average in only 6 months.

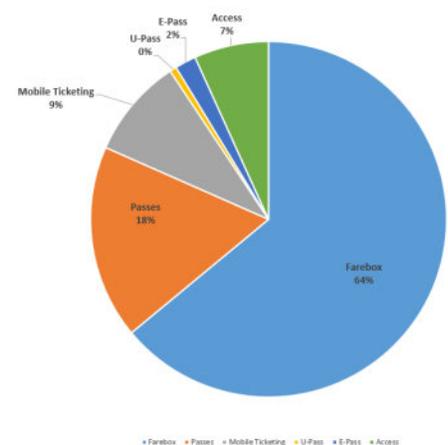
As of August 2018

- Registered users increase on average 3-5% monthly
- 64% are repeat purchasers
- Achieved 7% of sales on mobile within 1 year (industry stand is 2% in 2 years)

User Acquisition Funnel



Sales Penetration (June 2018)



Campaign Tactics

Express Routes 701/721 – June 2016

Targeted campaign included bus interior cards, on board flyers, Facebook ads, email and website, as well as integration into existing materials, such as individual route maps, online ebusbook, and website pop up ads.

Onboard Flyer

Email

Route Map

Digital Pop Up Ad

Interior Card

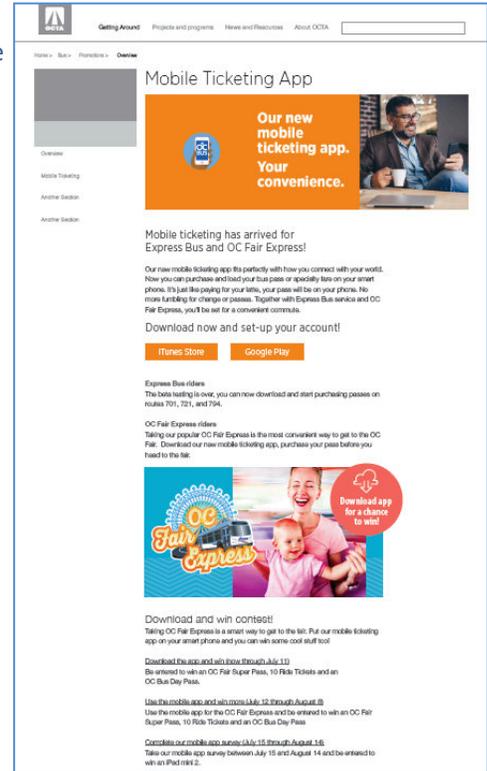
OC Fair Express – July 2016

Campaign targeted existing riders and those interested in going to the fair utilizing bus interior ads, website information and banner ads and social media engagement. Additional messaging was integrated into OC Fair Express ridership materials, such as bus ads, print ads, direct mail, outdoor signage, in mall signage, website ads and pop up ads in bus section.



Online Ad

Website



Interior Card



Facebook Ads

Brochure



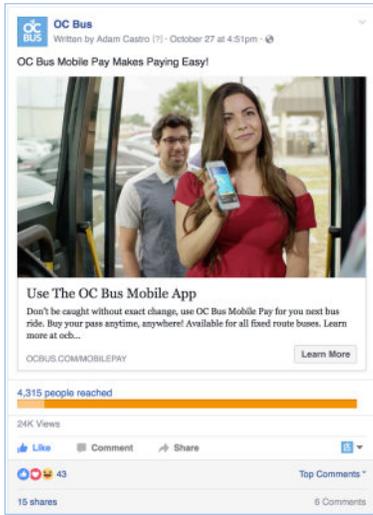
System-wide – October 2016

Introduced current customer base to mobile via a multi-tactical media campaign, including a video, social media, print and digital ads, billboards, and printed flyers.

A variety of tactics were implemented through:

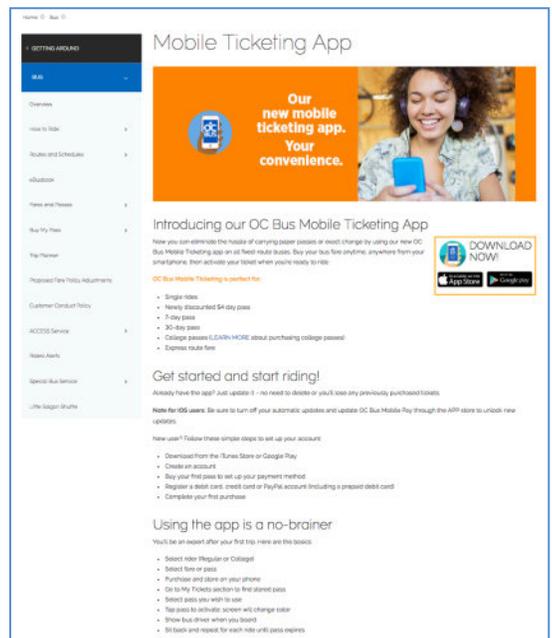
- Baseline customer communications and integration into existing materials.
- Diversity marketing reaching Hispanic community

Social Engagement

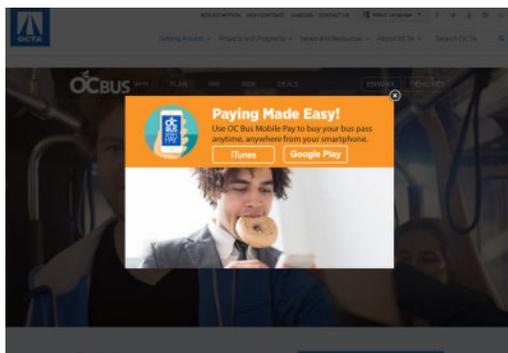


Email

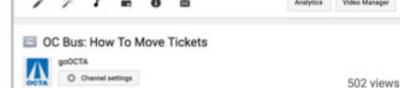
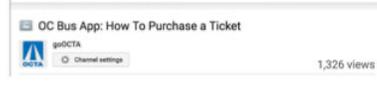
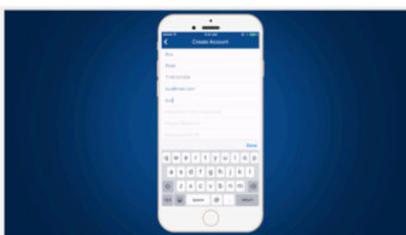
Website



Website & Mobile Pop Up Ads

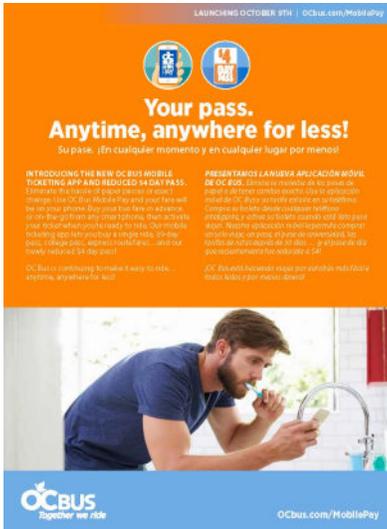


How To Use Video Series

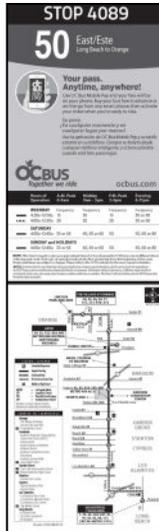


System-wide – October 2016 (continued)

Print Ad



Bus Stop Signage



Outdoor Billboards



OnBoard Fliers



Interior Cards



Bus Window Signs



Bus Exterior Ads



Senior & Disabled Reduced Fares – March 2017

Targeted communications and outreach to the senior/disabled community creating awareness and education of purchasing reduced fares on OC Bus Mobile.

Flyers



OC Bus Mobile Pay Now Available for Senior and Disabled Reduced Fares!

Purchase your bus fare or pass anytime, anywhere from your smartphone. All you need is an OCTA Senior or Disabled Reduced Fare ID card. Need a card? Visit ocbus.com/mobilepay for information.

Using OC Bus Mobile Pay Is Easy

- 1 Download OC Bus Mobile Pay from the iTunes Store or Google Play
- 2 Create an account and enter your OCTA Senior or Disabled Reduced Fare ID number in the "Reduced Fare ID" section (include all zeros)
 - For Senior ID, enter an S before your number.
 - For Disabled ID, enter a D before your number.
- 3 Select rider type (Senior or Disabled/Medicare)
- 4 Select your fare
- 5 Register a debit card, credit card or PayPal account (including a prepaid debit card)
- 6 Complete your first purchase
- 7 Go to My Tickets to find your purchased pass
- 8 Select the pass you want to use
- 9 Tap the pass to activate; screen changes color
- 10 Show to coach operator when you board

Mobile App Facts

- Be sure to activate your ticket prior to boarding the bus.
- Single ride tickets expire 1 hour after activation.
- All purchased, unactivated tickets are valid for 1 year.
- Reduced fares only available with OCTA Reduced Fare ID number.
- All sales are final.



For more information, visit OCbus.com/mobilepay

Direct Mail



OC Bus Mobile Pay Now Available for Senior and Disabled Reduced Fares!

Purchase your bus fare or pass anytime, anywhere from your smartphone. All you need is an OCTA Senior or Disabled Reduced Fare ID card. You'll be an expert after your first trip.

Just register your current ID card number in the OC Bus Mobile App to get started. See back for details.





Newspaper Ads



RIDE THE FREEDOM BUS

IT IS TIME FOR A GRAND ADVENTURE!

Enjoy a fun escape to a cool restaurant, museum, or funky art gallery on OC Bus. We make it easy to plan, pay, and ride using your smartphone and our app. The latest version of the OC Bus Mobile app includes a trip planner plus senior and disabled fares. Bus fare for those 60 or older is just 75¢ each way or \$1.50 to ride all day. To take advantage of this reduced fare, senior and disabled riders must provide valid ID.

Learn more at OCbus.com/Mobile



Reader Hardware Validation – February 2018

Beginning in February 2018, mobile users switched from visual validation to validation through on-board reader hardware utilizing a QR code. Provided customer education materials focusing on how and when to use the QR code to validate tickets with the reader and what constitutes a valid scan. Developed a multi-tactical media campaign, including outdoor ads, social media, email, print and digital ads, and printed flyers.

Bus Book Ad

February 11, 2018
BUS BOOK 51
EFFECTIVE THROUGH JUNE 30, 2018
REPLACE PREVIOUS EDITIONS

OCBUS
OCBus.com

Starting February 11, 2018
OC BUS MOBILE VALIDATORS ARE HERE!
Another way OC Bus is making riding even easier!
For more information on how to use our back cover!

CHANGE HIGHLIGHTS
Conducta: Prohibido...
Schedule Adjustments...
Route Adjustments...
Fares...
For more information...
OCBus.com

Print Ad

OCBUS
OCBus.com

Easy just got easier!
¡Fácil ahora es súper fácil!

Starting February 11th, OC Bus will be activating new Mobile Pay validators located at the front of each bus. These will be used to validate your mobile ticket when boarding. You'll be paying with the back cover of your activated mobile ticket. Here's what you need to know:

1. Activate your ticket.
2. Tap the QR code on bottom right.
3. Hold your activated QR code screen under the validator when you see the blue ready screen.
4. Once your mobile ticket has been validated, a screen with a check mark will appear.

For more information, visit ocbus.com/mobile.

Mobile validators make riding even easier!

¡A partir del 11 de febrero OC Bus activará nuevos validadores de billetes móviles. Estos se utilizarán en la parte delantera de cada autobús. Lo validador usará de manera digital los billetes. De no pagar, podrá pagar fácilmente cuando esté en cualquier momento o al abordar el autobús. Lo que necesita saber:

1. Activa tu billete.
2. Toca el código de barras en la parte inferior derecha.
3. Pon tu QR activado con el código de barras en el validador cuando veas un pantalla azul lista.
4. Espera que la pantalla de chequeo aparezca.

Para mayor información, visita ocbus.com/mobile.

¡Los validadores móviles hacen que sea más fácil que nunca viajar en autobús!

DOWNLOAD. TRY. WIN!
Download the OC Bus Mobile ticketing app, pay for and use your first ticket, and you'll automatically be entered for a chance to win one of five mobile 30-Day passes. You can find the OC Bus app at the App Store or Google Play. Contest ends February 28, 2018.

DESCÁRGUELA. ¡GÁÑATE!
Descarga la aplicación de billetes móviles de OC Bus, paga por y usa tu primer boleto, y automáticamente serás elegible para ganar uno de cinco pases móviles de 30 días. Puedes encontrar la OC Bus app en la App Store o Google Play. El concurso termina el 28 de febrero de 2018.

Service Change Brochure

OCBUS

Bus Service Change Improvements Effective February 11, 2018

The Bus Service Change Improvements provides a summary of the upcoming service improvements to OC Bus. This service change will provide minor schedule and routing adjustments to several routes, as well as providing frequency improvements on several routes and the elimination of Routes 212, 216, 454 and Sunday on Route 177 due to low ridership. Schedule Adjustments were made to the following routes: 21, 29, 30, 33, 35, 43, 46, 47, 50, 53, 54, 56, 57, 59, 66, 66, 67, 71, 83, 86, 89, 90, 91, 143, 153, 178, 211, 463, 543, 563, 721 and 794.

Route Adjustments 155, 463, 794
Route Eliminations 177 (Sunday only), 212, 216, 454

BUS NEWS

New Senior and Disabled Passes – Effective February 11, 2018 there will be new pass designs as well as the separation of prepaid passes for seniors and persons with disabilities. Current combined senior/disabled passes will still be valid for use until June 30, 2018.

New Mobile App Readers on OC Bus – Beginning February 11, 2018 OC Bus app users will begin using the onboard ticket validators to scan their valid mobile ticket. Once you activate your ticket, tap on the QR code on the bottom right of your activated ticket to reveal the QR code to scan. For more information on how to use the readers, visit ocbus.com/mobile.

College 75 and 120-Day Passes eliminated – Effective January 1, 2018 college 75-day and 120-day passes will no longer be sold. Previously purchased passes are still valid for use until June 30, 2018.

For more information: www.ocbus.com/February2018

Interior Card

COMING FEBRUARY 11
OC BUS MOBILE VALIDATORS

STARTING FEBRUARY 11 OC Bus Mobile customers must use our new ticket validators located at the front of each bus when validating their ticket.
For more information visit OCBus.com/Mobile

OCBUS
OCBus.com/Mobile

Kiosk Panel and OnBoard Flyer

OC BUS MOBILE VALIDATORS ARE HERE!

OC BUS MOBILE Validator Instructions

- Activate your mobile ticket before boarding.
- Tap the QR code on bottom right of your activated ticket to reveal QR code for scanning.
- Locate the ticket validator mounted to the right of the fare box.
- Hold your activated QR code screen under the validator when you see the blue ready screen.
- Once your mobile ticket has been validated, a screen with a check mark will appear.
- Proceed to your seat.

Facebook

OC Bus
Published by Sprinklr Prod2 (7) - January 30

New OC Bus mobile validators are coming February 11 to make boarding easier. To help us help you, please have your ticket ready before you board by tapping the QR code in the lower right corner of your activated ticket. Thanks!

READY!
BE PREPARED TO SCAN WHEN BOARDING

797 people reached

Like Comment Share



DOWNLOAD. BUY. WIN!

Download the OC Bus Mobile ticketing app, pay for and use your first ticket, and you'll automatically be entered for a chance to win one of five mobile 30-Day passes. You can find the OC Bus app at the App Store or Google Play. Contest ends February 28, 2018.

Learn more at OCBus.com/Mobile

OCBUS

Generated News Clippings

There were several news clippings generated by this project. The Orange County Register, Metro Magazine, ITS International, and Mass Transit also released articles to promote the new mobile ticketing system-wide.

NEWS

OCTA to add mobile ticketing system-wide and will implement route changes, beginning Feb. 11





Riders board an OCTA bus on Harbor Boulevard in Garden Grove on Friday, Jan. 25, 2018. Beginning Sunday, the agency's entire fleet will accept mobile tickets. (Photo by Paul Bersebach, Orange County Register/SCNG)

By LOUIS CASIANO | Orange County Register
PUBLISHED: February 8, 2018 at 4:30 pm | UPDATED: February 8, 2018 at 4:32 pm

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Management & Operations

INIT, OCTA team for mobile ticketing project

Posted on January 10, 2017

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[INIT Innovations in Transportation Inc.](#) partnered with Calif.'s Orange County Transportation Authority (OCTA) for the implementation of electronic fare readers and a back-office revenue management system.

[OCTA](#) operates countywide bus and paratransit services, as well as the planning, financing, and coordinating of Orange County's freeway, street, and rail development and operation of the 91 Express Lanes.

[Link to article](#)



ITS International

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11 January 2017

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- Associations
- Events
- General
- San Francisco to have all-electric bus fleet by 2035

OCTA partners with Init for mobile ticketing project

First published on www.ITSInternational.com

Init Innovations in Transportation has partnered with the Orange County Transportation Authority (OCTA) in California for the implementation of electronic fare readers and a back-office revenue management system for the agency's 556 fixed-route vehicle fleet.

OCTA operates countywide bus and paratransit services, as well as the planning, financing and coordinating of Orange County's freeway, street and rail development and operation of the 91 Express Lanes.

Init will install its PROXmobili3 fare readers, which are able to accept open payments, contactless credit cards, debit EMV and near-field communication devices, for use with the recently-integrated moovel mobile ticketing app.

In addition, Init will implement a back-end, multi-client capable revenue management system to process mobile tickets onboard the OCTA fleet, monitor field devices, configuration and reporting. The modular structure of the system will allow OCTA to expand or extend at any time to meet the needs of new technology or new functionalities.

The readers and back-end system will provide an open architecture as well as application programming interfaces (APIs) that support OCTA's core system functions.

Register for your FREE COPY

[Link to article](#)



init
initsusa.com

The Future of Mobility

TECHNOLOGY

OCTA Partners with Init for Mobile Ticketing Project

SOURCE: INIT, INNOVATIONS IN TRANSPORTATION INC. JAN 18, 2017

Share | Share | Share | Share

init Innovations in Transportation Inc. has partnered with the Orange County Transportation Authority (OCTA) for the implementation of electronic fare readers and a back-office revenue management system.

OCTA operates countywide bus and paratransit services, as well as the planning, financing and coordinating of Orange County's freeway, street and rail development and operation of the 91 Express Lanes.

The recent integration of a **moovel** mobile ticketing app necessitated the use of fare readers across the agency's 556 fixed-route vehicle fleet. Init's PROXmobili3 readers are fully capable of accepting open payments — contactless credit cards, debit EMV, and near-field communication devices, a goal that aligns with OCTA's future plans.

In addition, Init will implement a back-end, multi-client capable revenue management system to process mobile tickets onboard the OCTA fleet, monitor field devices, configuration and reporting. The modular structure of the system will allow OCTA to expand or extend at any time to meet the needs of new technology or new functionalities.

The readers and back-end system will provide an open architecture as well as application programming interfaces (APIs) that support OCTA's core system functions.

The fare system is expected to improve the customer experience by providing a convenient option for riders, simplifying transit use, and allowing for future regional fare integration. The partnership with Init ensures these goals can become reality.

ABOX-5000G1
Featureless NVIDIA® GPU Onboard Computer

Share | Share | Share | Share

TECHNOLOGY

OCTA Partners with Init for Mobile Ticketing Project

TRANSIT AUTHORITY

Orange County Transportation Authority (OCTA)

PASSENGER INFORMATION SYSTEMS

init INIT, Innovations In Transportation Inc.

Rails

WAVE partnership with BYD and Pinellas Suncoast Transit Authority

TECHNOLOGY

New Study by DePaul University Explores Partnerships between Transit Providers and Lyft, Uber

TECHNOLOGY

Connectivity Solutions Make Fleet Management More Efficient

[Link to article](#)