



**SFMTA**  
Municipal  
Transportation  
Agency

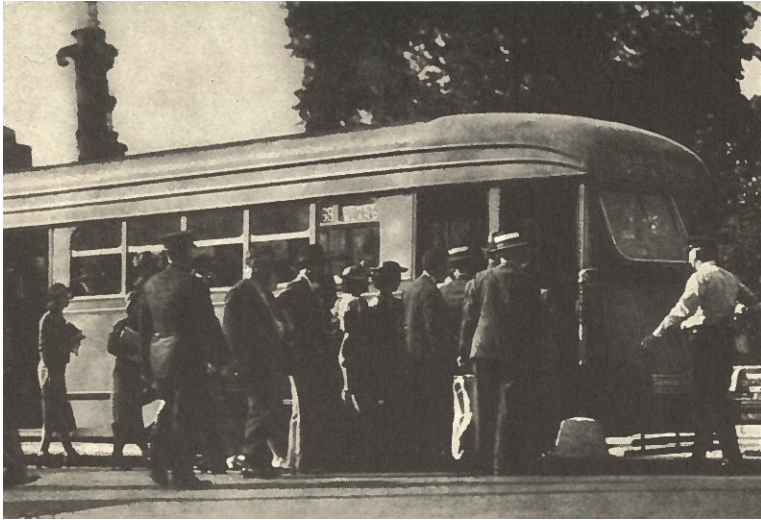
# All-Door Boarding Evaluation

December 2, 2014

SFMTA Board of Directors

San Francisco, CA

# All-Door Boarding



Brooklyn, NY (1937)



Akron, OH (1945)

- For generations, the transit industry has had to balance service speed with fare revenues
- Fare collection by the operator has required front-door boarding
- On July 1, 2012, the SFMTA became the first multimodal transit operator in North America to implement All-Door Boarding system-wide after many years of an informal practice

# SFMTA's Approach

- Many cities have All-Door Boarding and Proof-of-Payment on selected light rail and BRT lines, but not a system-wide policy
- The SFMTA overcame two main challenges that have precluded system-wide implementation elsewhere

Challenge	SFMTA Approach
Enforcing fares over a large geographical transit network cost-effectively	<ul style="list-style-type: none"><li>• Rotate Transit Fare Inspector deployment to different police districts</li></ul>
Having ticket vending machines at every stop and incurring installation, servicing and maintenance costs	<ul style="list-style-type: none"><li>• Permit customers to enter at the front to pay</li><li>• Promote Clipper® and pilot mobile ticketing to reduce cash transactions (only about 10% of rush-hour boardings at busy stops)</li></ul>

# An Agency-wide Implementation Effort

Supported by the SFMTA Board, the six-month coordinated implementation effort involved most SFMTA divisions

- Finance & Information Technology
- Sustainable Streets
  - Security, Investigations and Enforcement
- System Safety
- Taxi & Accessible Services
- Transit
  - Transit Management
  - Operations Planning & Schedules

# Implementation Steps

## Transit Fare Inspector Staffing Increase

- Increased active TFIs from 44 to 63 over two years

## Transportation Code Amendments

- Requested that Board of Supervisors to legalize rear-door entries

## Fare Survey

- Conducted abbreviated fare survey to benchmark fare compliance levels

## Vehicle Preparation

- Removed “Stop” signs and affixed language-neutral decals illustrating policy

## Public Outreach

- Installed car cards, outreached to community groups, held media event and created YouTube videos

## Internal Communications

- Issued bulletins to Transit Operators explaining protocols and safety procedures

# Communication Initiatives

## Muni Opens Its Doors for Faster, More Reliable Service

Muni customers may enter through the rear doors of any bus or streetcar using the following Proof of Payment:



Clipper Card, Limited Use Ticket, Valid Paper Pass, Valid Transfer/Fare Receipt

Please note: Customers paying with cash must board through the front doors.

All-door boarding: Another way we're making your Muni better.

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## Muni abre sus puertas para un servicio más rápido y más confiable

Los clientes de Muni pueden ingresar a través de las puertas traseras de cualquier autobús o tranvía utilizando las siguientes pruebas de pago:

Abordaje a través de todas las puertas: Otra forma en la que estamos mejorando su Muni.

啟開其門，為大眾提供更快捷更可靠的服務

乘客可使用下述的票類收據證明，從任何一輛公車或路軌車的后門上車。

請注意：用現金購票的乘客必須在前門上車。

願您所有車門以供上車，我們以另一種方式改善您的Muni旅程。



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## Car Cards in English, Spanish and Chinese



## Language-Neutral Vehicle Decals



## All-door boarding by SFMTA Muni Taxi Streets



## All Aboard with Professor Muni

## "Professor Muni" YouTube Video



### ALL DOOR BOARDING

Operators shall make use of the following tips when operating in revenue service and loading customers.

Ensure mirrors are properly set to see clearly along the entire length of the vehicle and beyond the rear bumper.

When pulling into the transit stop make sure the bus is parallel to the curb and that you can see all doors clearly. Be sure that no customer aboard the coach is leaning against the doors before opening them.

Park the bus so that there are no obstacles, such as puddles, mailboxes, or poles by the door. If you cannot place the bus within a foot of the curb, then for customer safety, raise the bus four feet out and parallel to the curb.

Watch for vehicles that may start up and attempt to pass on the right side of the bus.

The interlock is actuated by an electrical solenoid and is subject to failure. Always apply the Park Brake when taking on large loads, especially on hills.

If your bus is not parallel to the curb and you cannot see traffic in your mirror, move out very slowly until you can check safely for traffic.

Take extra care when servicing stops for disabled customers. Position the coach as close as possible to the curb and use the kneeling feature. Encourage disabled customers to board through the front doors in order to utilize the kneeling feature.

The following instructions explain the opening of front, middle and rear doors for all coaches and P-Line cars regardless of their home divisions.

## Transit Operator Bulletin

# Evaluation Methodology

Goal	Performance Metric	Data Sources
Shorter Stops	<ul style="list-style-type: none"><li>• Dwell Times</li><li>• Percentage of Customers Entering through Rear Door</li></ul>	<ul style="list-style-type: none"><li>• Physical Observations at Busy Stops</li><li>• Ride-Along Observations</li></ul>
Faster Trips	<ul style="list-style-type: none"><li>• System Speed</li></ul>	<ul style="list-style-type: none"><li>• Automatic Passenger Counter (APC) Travel Time Data</li></ul>
Maintained or Improved Fare Compliance	<ul style="list-style-type: none"><li>• Fare Compliance Levels</li><li>• Total Fare Revenue</li></ul>	<ul style="list-style-type: none"><li>• On-Board Fare Surveys</li><li>• Financial Records</li></ul>

# Transitioning to Official All-Door Boarding



- More even boarding distribution
- Less crowding at front



# Overall Dwell Time Findings

*All-Door Boarding has shifted more customers to the rear doors, reducing average dwell times.*

Metric	Before	After	Change
Rear-Door Boardings	29%	54%	+28%
Average Dwell Times per Customer	3.93 s	2.45 s	-1.48 s (-38%)

*All-Door Boarding has also increased dwell time consistency and lowered variability, an important component of service reliability.*

Metric	Before	After	Change
Standard Deviation of Dwell Times	3.5 s	2.0 s	-1.5 s

# Impacts on Diverse Ridership Markets



Downtown Shopping



Financial District

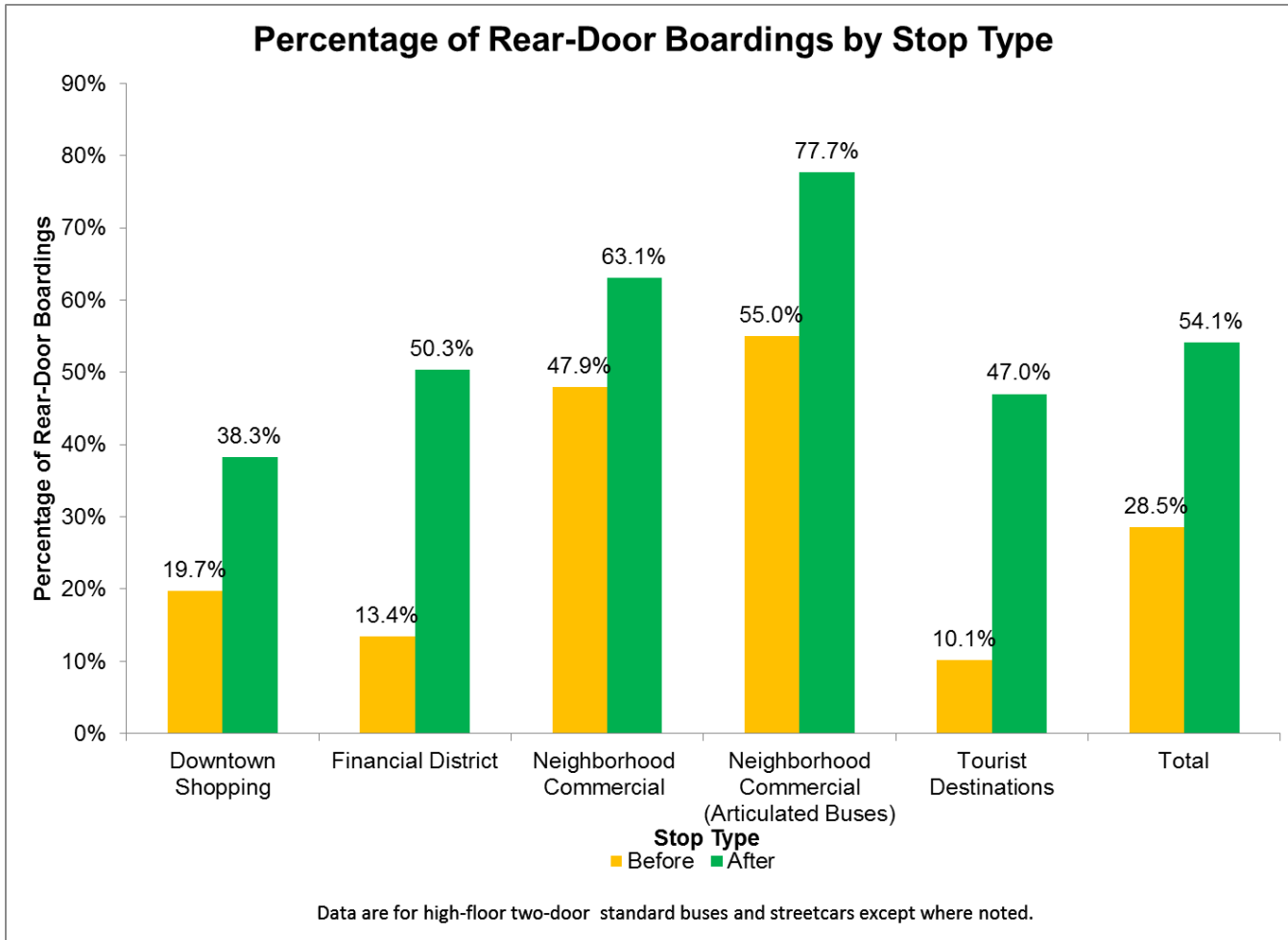


Neighborhood Commercial

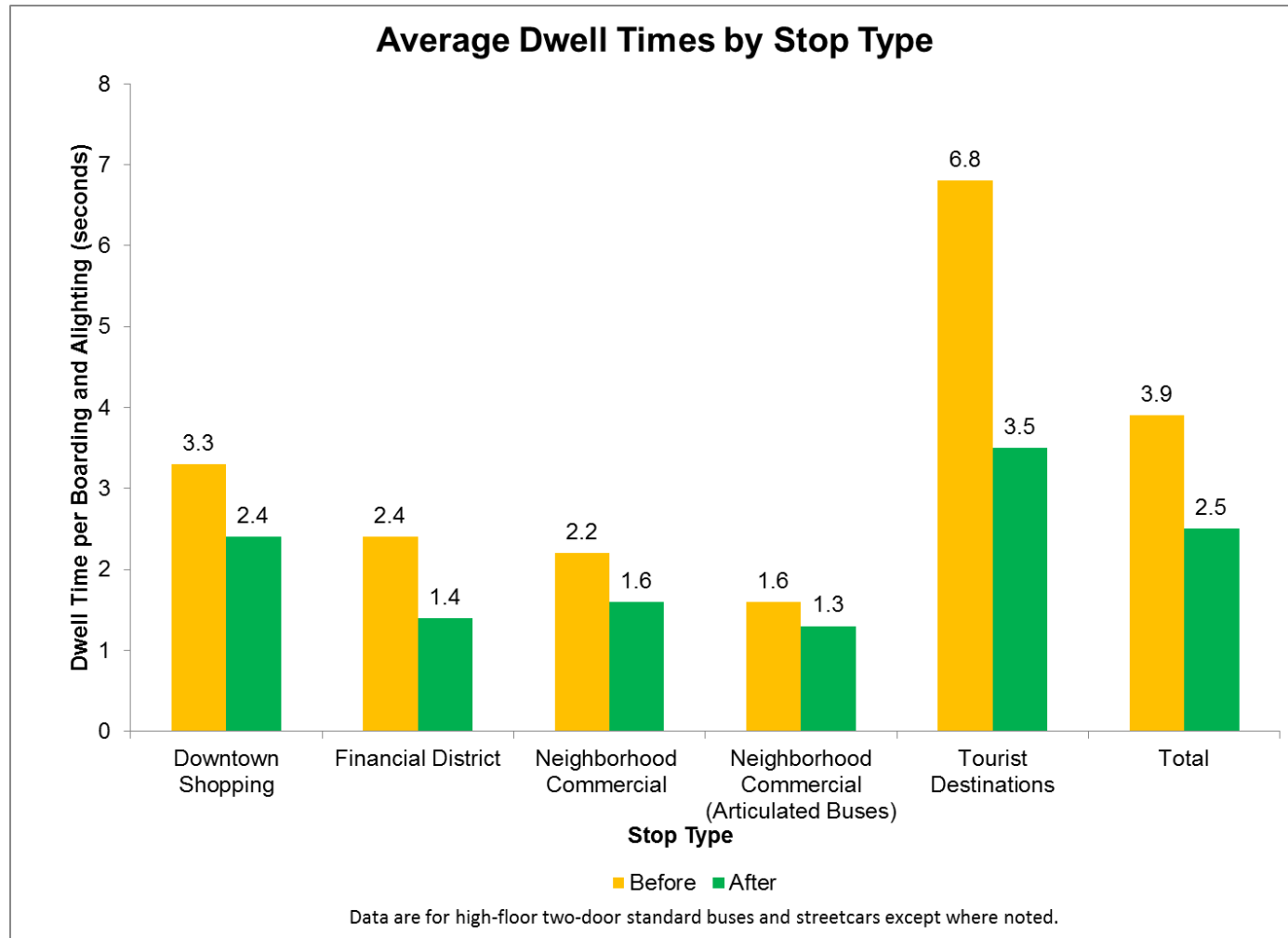


Tourist Destinations

# Rear-Door Boarding Increases



# Dwell Time Reductions

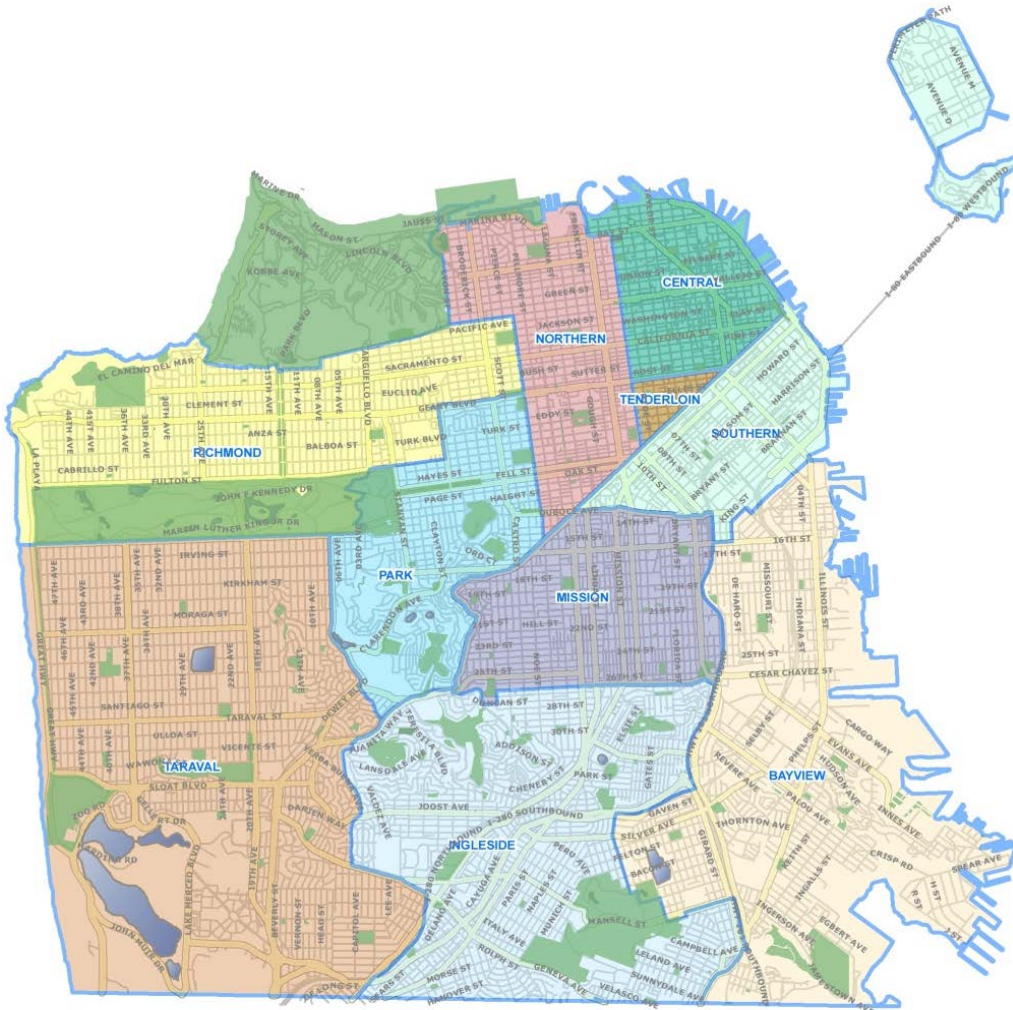


# Travel Times

- Average systemwide bus speeds (including stops) have increased 8.41 to 8.56 mph from FY 2011 through FY 2014
- Several factors may be limiting overall speed gains despite significant time savings at a stop level
- Approximately 80% of travel time is between stops

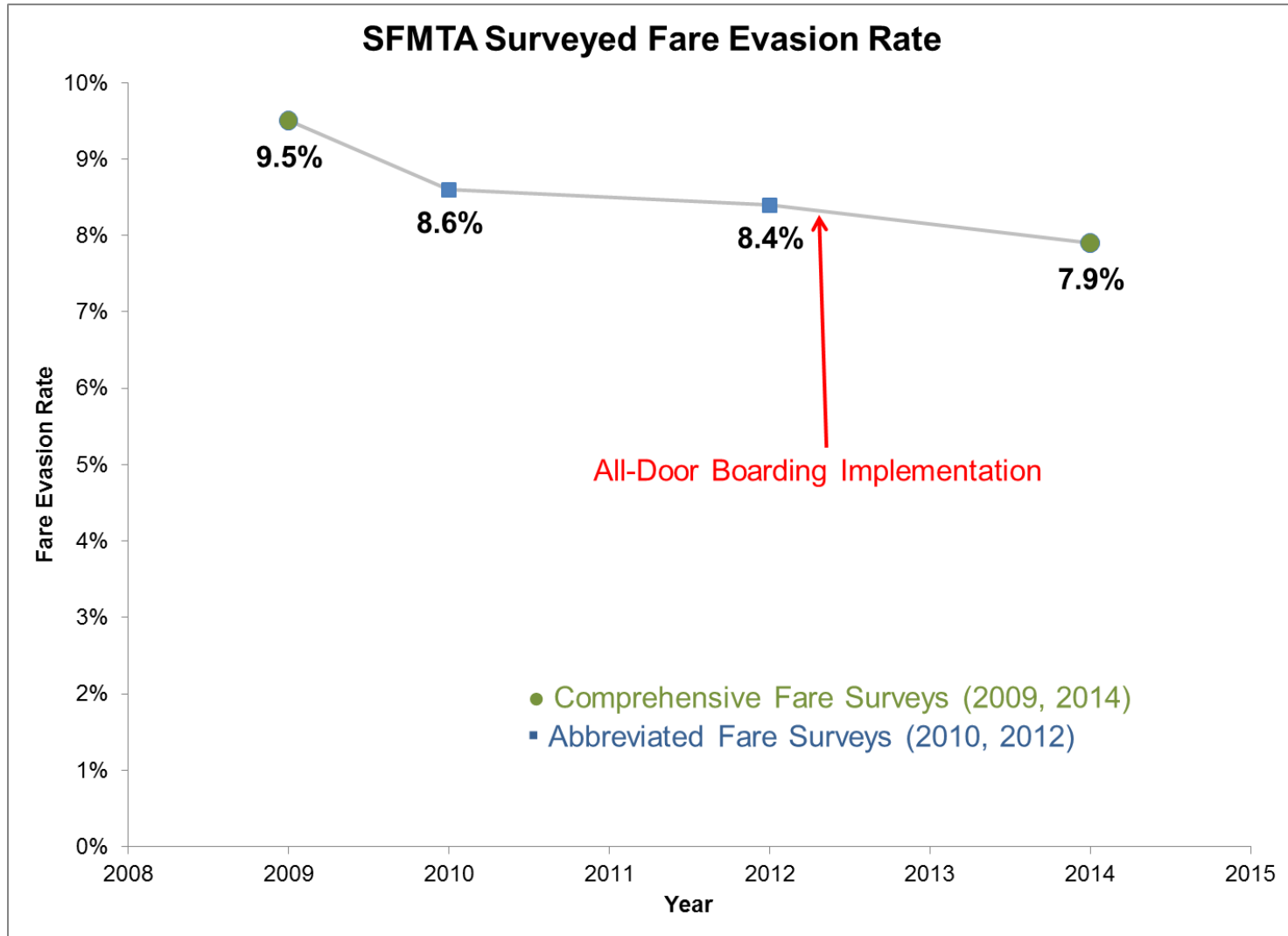
External Factors	Change
Population	+32,000 (+4.0%)
Employment	+70,000 (+12.6%)
Bus & Streetcar Ridership	+26,000 (+5.3%)
Motor Vehicle Registrations	+15,000 (+3.2%)

# Transit Fare Inspector Deployment



- Expanded Proof-of-Payment from light rail to buses and streetcars in 2010
- With All-Door Boarding, Transit Fare Inspector FTEs increased from approximately 41 to 54
- Police District deployment model ensures all customers have a reasonable expectation of being checked

# Fare Compliance



# Fare Revenues

- Estimated Uncaptured Fare Revenue from non-compliance has decreased from \$19.2 million in 2009 to \$17.1 million in 2014

Fare Category	Estimated Uncaptured Fare Revenue
No Ticket, Transfer or Pass, Invalid Transfers/Fare Receipts, Walk Away	\$14.1 million
Underpayment	\$2.8 million
Misused Youth Pass	\$0.2 million
<b>Total</b>	<b>\$17.1 million</b>

- Non-cable car fare revenues increased from \$171.6 million in FY 2012 to \$179.1 million in FY 2013



# Summary

## Shorter Stops

- More even boarding distribution
- Reduced dwell times per entry and exit (1.5 sec less, or 38%)
- More predictable dwell times

## Faster Trips

- Modest speed improvement (8.41 to 8.56 mph) despite rapid growth in San Francisco

## Improved Fare Compliance

- Continued reductions in estimated fare evasion (9.5% to 7.9%)
- Fare revenues up

All-Door Boarding is one of many tools such as exclusive transit lanes, transit signal priority and parking management that together can help reduce travel time significantly.