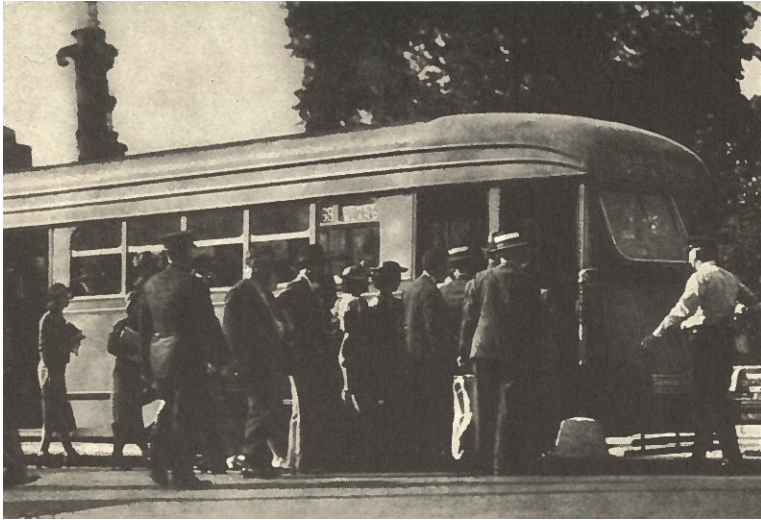# All-Door Boarding Evaluation

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 | • Rotate Transit Fare Inspector deployment to different police districts |
| Having ticket vending machines at every stop and incurring installation, servicing and maintenance costs | • Permit customers to enter at the front to pay<br>• Promote Clipper® and pilot mobile ticketing to reduce cash transactions (only about 10% of rush-hour boardings at busy stops) |

# 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


Car Cards in English, Spanish and Chinese


"Professor Muni" YouTube Video


Language-Neutral Vehicle Decals


Transit Operator Bulletin

# Evaluation Methodology

| Goal | Performance Metric | Data Sources |
|------|-------------------|--------------|
| Shorter Stops | • Dwell Times<br>• Percentage of Customers Entering through Rear Door | • Physical Observations at Busy Stops<br>• Ride-Along Observations |
| Faster Trips | • System Speed | • Automatic Passenger Counter (APC) Travel Time Data |
| Maintained or Improved Fare Compliance | • Fare Compliance Levels<br>• Total Fare Revenue | • On-Board Fare Surveys<br>• Financial Records |

# 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



Percentage of Rear-Door Boardings by Stop Type

# Dwell Time Reductions



**Average Dwell Times by Stop Type**

Data are for high-floor two-door standard buses and streetcars except where noted.
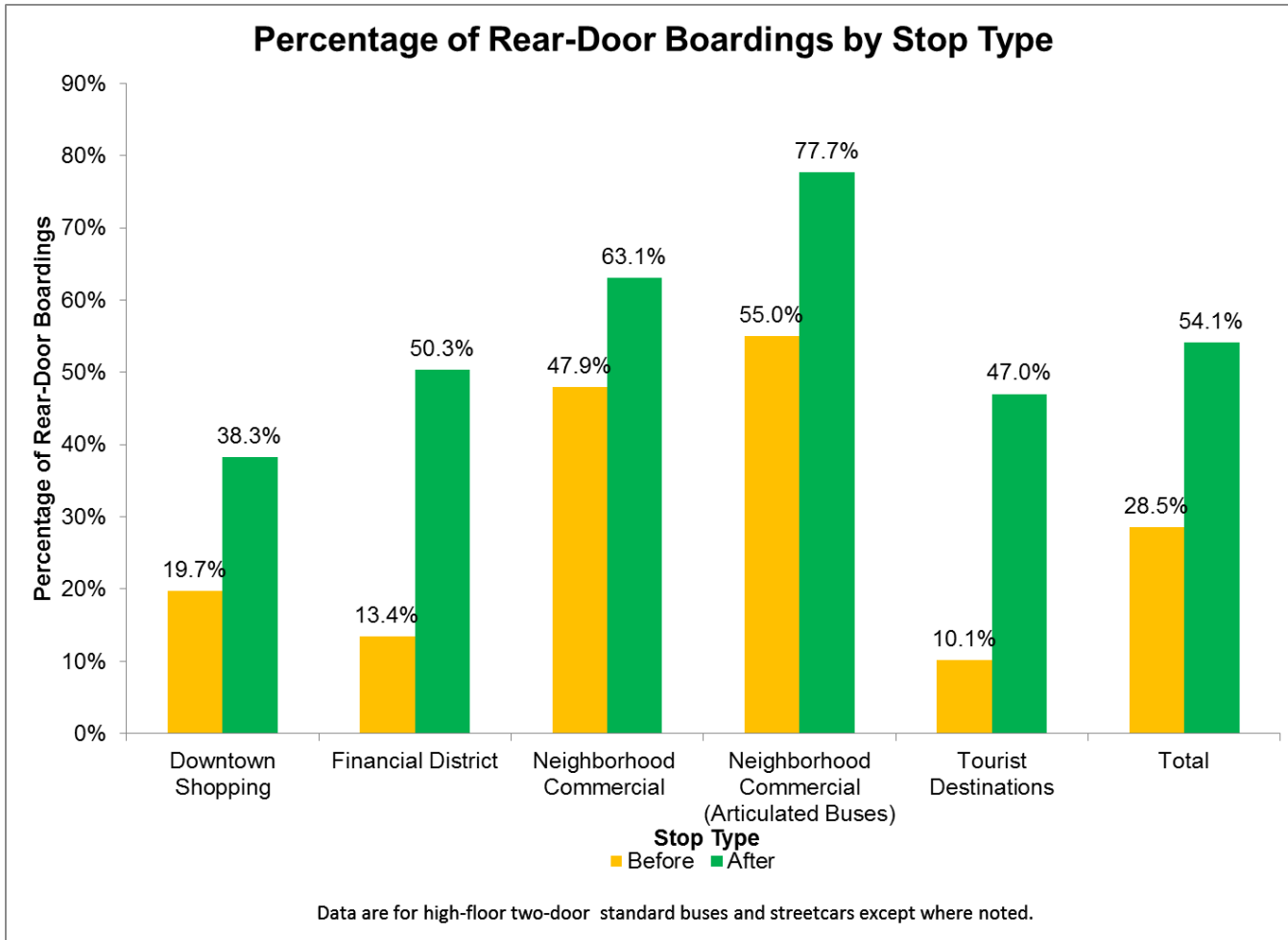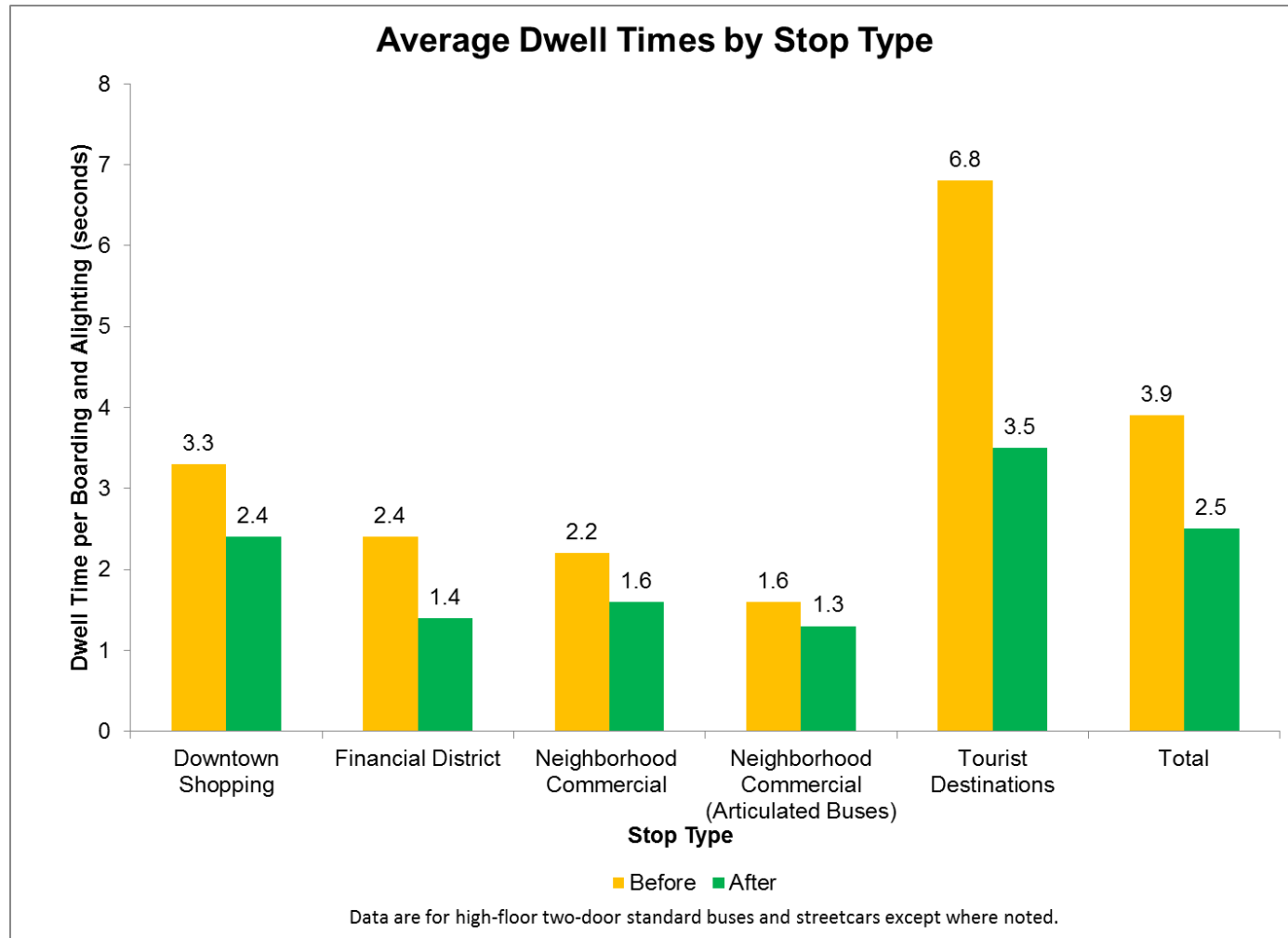
# Travel Times

- 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
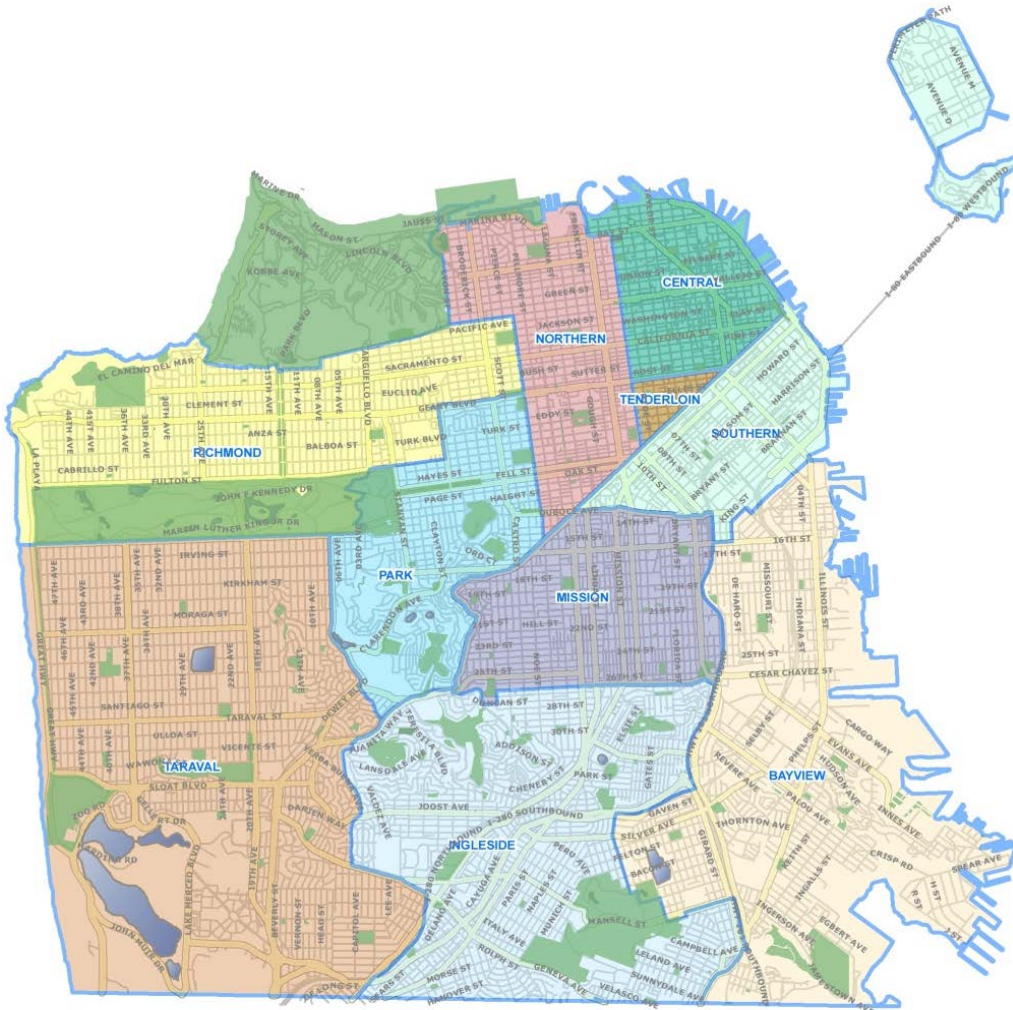


- Expanded Proof-of-Payment from light rail to buses and streetcars in 2010
- With All-Door Boarding, Transit Fare Inspector FTEs increased from approximately 41 to 54
- Police District deployment model ensures all customers have a reasonable expectation of being checked

# Fare Compliance



**SFMTA Surveyed Fare Evasion Rate**

- 9.5%
- 8.6%
- 8.4%
- 7.9%

All-Door Boarding Implementation

- Comprehensive Fare Surveys (2009, 2014)
- Abbreviated Fare Surveys (2010, 2012)

Fare Evasion Rate

Year
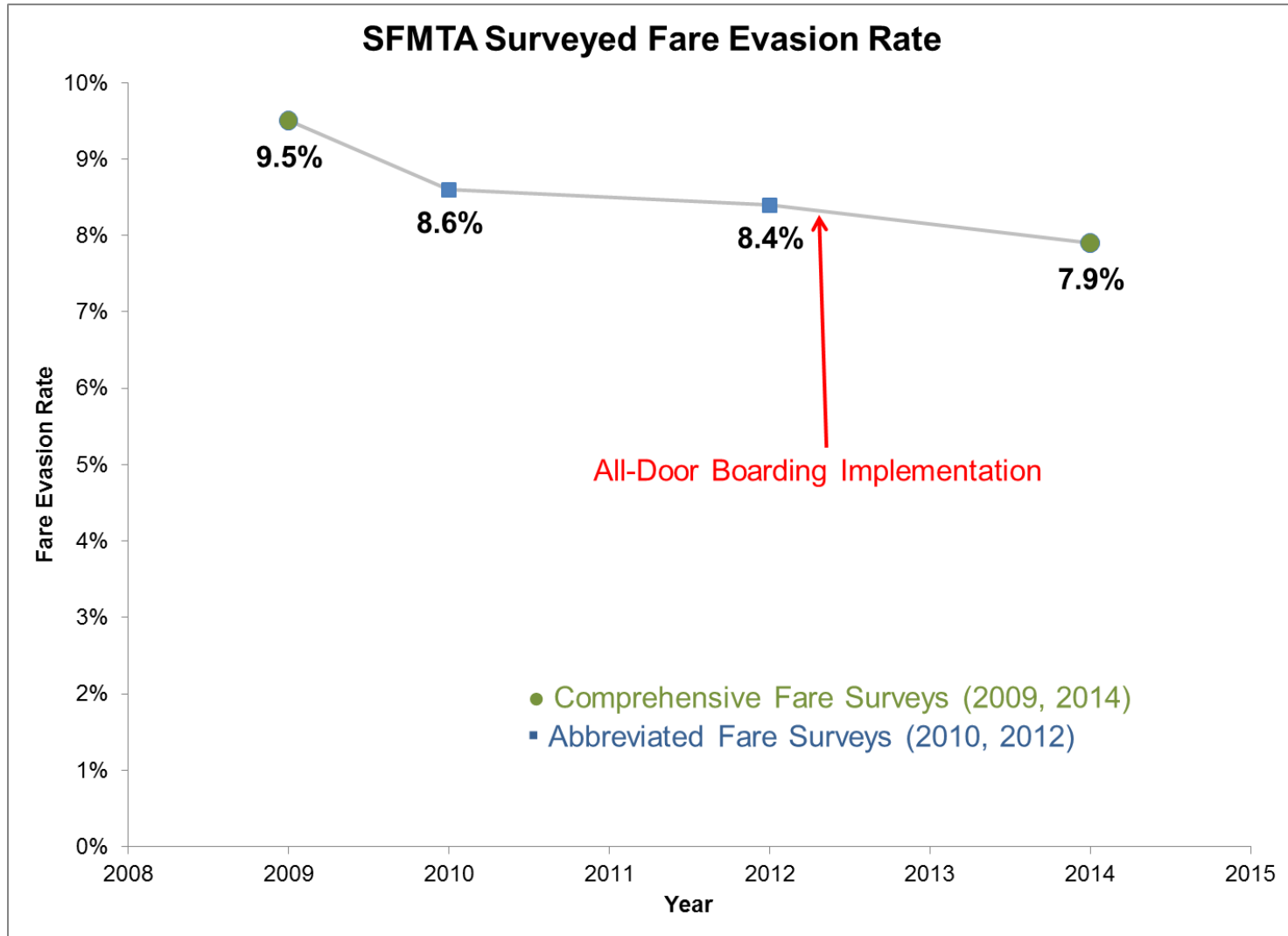
# Fare Revenues

- 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 |
| **Total** | **$17.1 million** |

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

# Summary

| Shorter Stops | Faster Trips | Improved Fare Compliance |
|---|---|---|
| • More even boarding distribution<br>• Reduced dwell times per entry and exit (1.5 sec less, or 38%)<br>• More predictable dwell times | • Modest speed improvement (8.41 to 8.56 mph) despite rapid growth in San Francisco | • Continued reductions in estimated fare evasion (9.5% to 7.9%)<br>• 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.