



Memorandum

TO: Regional Advisory Working Group

DATE: January 6, 2015

FR: Dave Vautin, Planning

RE: Vital Signs Performance Monitoring Initiative

In order to support the implementation of Plan Bay Area, MTC has been working to reboot its work in the area of performance monitoring, building upon the performance measures incorporated in the adopted Plan. This effort, known as the Vital Signs initiative, focuses on tracking regional performance for key transportation, land use, environmental, and economic policy goals. Equity issues are cross-cutting and are therefore included within each of the four performance areas. By measuring performance, Vital Signs seeks to inform policymakers and the public about critical regional trends. This initiative will also support the development of future long-range plans by establishing a clear picture of baseline performance and informing the selection of performance targets.

Overview of Vital Signs

Vital Signs emphasizes aggregation and analysis of on-the-ground performance data, rather than relying on long-range travel and land use forecasting models. By focusing on observed data, it will be possible to identify progress in relation to regional goals on an annual basis. The initiative analyzes each monitoring measure from three distinct perspectives:

- **Historical trajectory:** How do recent trends compare with decades of past regional performance?
- **Intraregional analysis:** What differences exist between counties, cities, and neighborhoods?
- **Metropolitan area comparison:** How is the Bay Area performing compared to other major metro areas across the country?

The complete list of monitoring measures for the Vital Signs initiative is included in **Attachment A**.

Vital Signs' top priority is to provide timely analytical results to inform the general public. Instead of a traditional paper report, Vital Signs will be an online effort based on a new interactive portal for performance monitoring. Maps, graphs, and tables are being developed to supplement the narrative; these data summary elements will be able to be personalized to highlight specific counties, cities, neighborhoods, and transportation facilities of interest. With the data collection and analysis now complete for the initial phase of the project, MTC staff are focusing on the design and development of the new performance monitoring website, including the development of interactive charts and maps for each issue area.

MTC is closely collaborating with the Association of Bay Area Governments (ABAG) on the data aggregation and analysis efforts for the land use and economic monitoring measures. MTC will

also be working closely with the Bay Area Air Quality Management District (BAAQMD) and the San Francisco Bay Conservation and Development Commission (BCDC) on environmental metrics to be released later this year.

Vital Signs is relying upon a rolling release schedule, with performance monitoring results slated to become available in several phases. MTC intends to release a subset of measures every few months beginning with transportation data in early 2015. All of the monitoring measures will be available to the public by mid-2015. As the Vital Signs website can be updated on a rolling basis going forward, new and refreshed datasets, as well as additional regional, state, and federal performance measures, can be integrated over the coming years.

Key Findings from Phase 1A of Vital Signs

Phase 1A, which addresses transportation monitoring measures, examined nearly twenty distinct performance monitoring measures. The key findings from this analysis will be discussed in greater detail as part of the presentation to the working group.

Next Steps

As discussed earlier in this memorandum, the results from the first phase of the Vital Signs initiative are scheduled to be released to the public in early 2015 via a new performance monitoring website. MTC staff will be taking this item to the Planning Committee this month and plans on launching the website this winter. Staff will return to the Regional Advisory Working Group with the preliminary results from Phases 1B, 2A, and 2B of the project in the coming months.

Attachment A: Vital Signs Monitoring Measures

- **Phase 1A: Transportation** (*slated for release in January 2015*)
 - Commute mode share by residential location
 - Commute mode share by employment location
 - Commute time by residential location
 - Commute time by employment location
 - Intraregional and interregional commute flows
 - Interregional traffic patterns at key points of entry
 - Minutes of freeway delay due to significant congestion
 - Share of freeway VMT in significantly congested conditions
 - Freeway buffer time index
 - Transit ridership by system and mode
 - Per-capita transit ridership by system and mode
 - Cost per transit boarding by system and mode
 - Fare box recovery by system and mode
 - Vehicle miles traveled
 - Per-capita vehicle miles traveled
 - Pavement condition index by jurisdiction and segment
 - Share of distressed highway lane-miles by jurisdiction and segment
 - Share of bridge deck area that is structurally deficient
 - Share of transit assets past their useful life by system and mode

- **Phase 1B: Land Use** (*slated for release in March 2015*)
 - Residential location by jurisdiction, place type, transit proximity, and PDA
 - Employment location by jurisdiction, place type, transit proximity, and PDA
 - Housing construction by jurisdiction and place type
 - Greenfield development by jurisdiction and by parcel

- **Phase 2A: Economy** (*slated for release in March 2015*)
 - Jobs by industry
 - Job creation by industry
 - Unemployment rate by industry
 - Household income distribution by residential location
 - Individual income distribution by employment location
 - Workforce participation by age
 - Median housing unit price by jurisdiction and by neighborhood
 - Mean rent by jurisdiction and by neighborhood
 - Share of income expended on housing + transportation
 - Share of income expended on housing
 - Poverty rate by jurisdiction and by neighborhood
 - Concentration of poverty by jurisdiction and by neighborhood
 - Gross regional product
 - Per-capita gross regional product
 - Freight activity in TEUs
 - Freight activity in tons
 - Freight activity in dollars
 - Freight share of total VMT

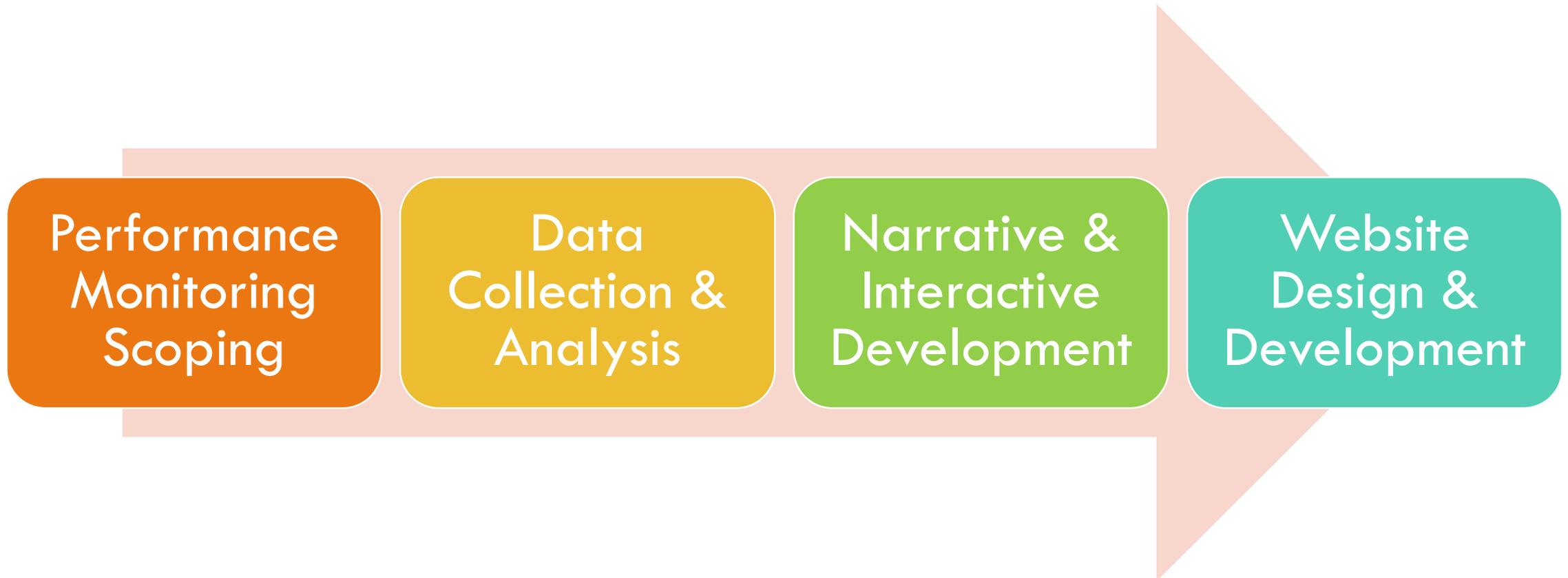
- **Phase 2B: Environment** (*slated for release in June 2015; preliminary measures*)
 - Fine particulate concentrations by sensor location
 - Coarse particulate concentrations by sensor location
 - Gasoline sales (*proxy for greenhouse gas emissions*)
 - Total traffic fatalities by mode and location
 - Per-capita traffic fatalities by mode and location
 - Per-VMT traffic fatalities by mode and location
 - Total serious traffic injuries by mode and location
 - Per-capita serious traffic injuries by mode and location
 - Per-VMT serious traffic injuries by mode and location
 - Housing growth in areas vulnerable to sea level rise
 - Commercial growth in areas vulnerable to sea level rise
 - Bay fill/restoration by jurisdiction

BAY AREA VITAL SIGNS



PHASE 1A RESULTS: TRANSPORTATION
REGIONAL ADVISORY WORKING GROUP – JANUARY 2015

OVERALL PROCESS FOR VITAL SIGNS



ANALYSES CONDUCTED

1

Historical Trend

2

Regional Context

3

Metro Comparison

METRO COMPARISON



New York MSA
19.9 million residents



Dallas MSA
6.8 million residents



Washington MSA
5.9 million residents



Los Angeles MSA
13.1 million residents



Houston MSA
6.3 million residents



Miami MSA
5.8 million residents



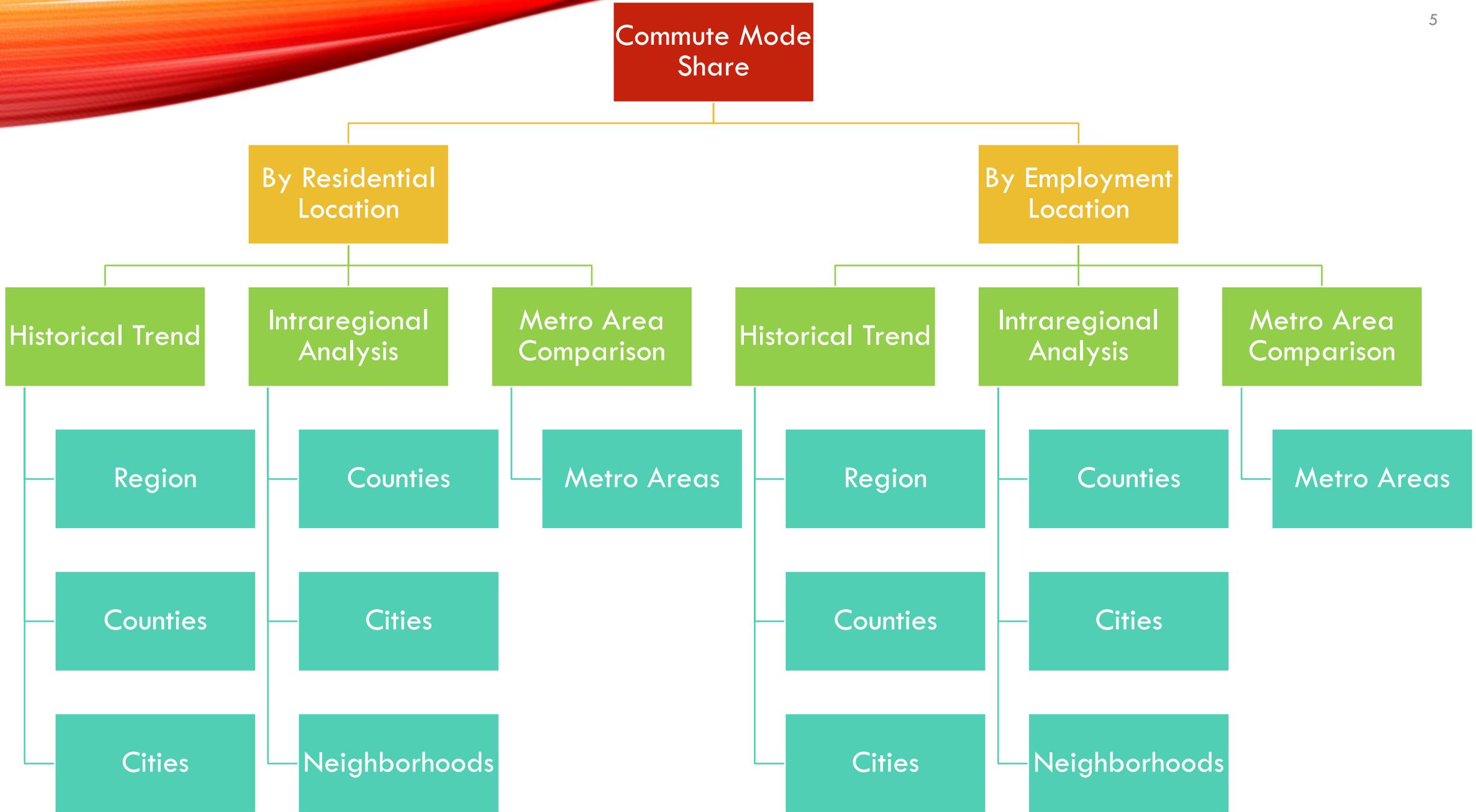
Chicago MSA
9.5 million residents



Philadelphia MSA
6.0 million residents



Atlanta MSA
5.5 million residents



PROJECT SCHEDULE

Spring 2014

- Project Kickoff
- Measure Selection & Scoping

Summer 2014

- Transportation Analysis (Phase 1A)
- Land Use Analysis (Phase 1B)

Autumn 2014

- Website and Narrative Development (Phases 1A & 1B)
- Economic Analysis (Phase 2A)

Winter 2015

- Launch Phase 1A
- Environmental Analysis (Phase 2B)

Spring 2015

- Website & Narrative Development (Phases 2A & 2B)
- Launch Phases 1B, 2A, and 2B

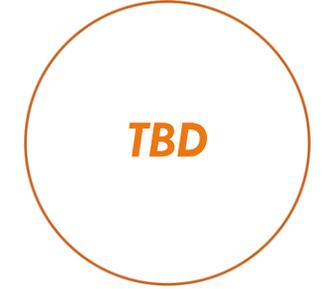
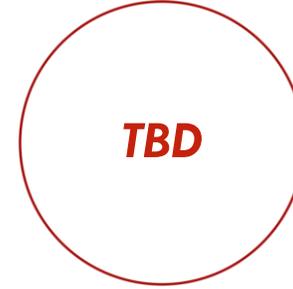
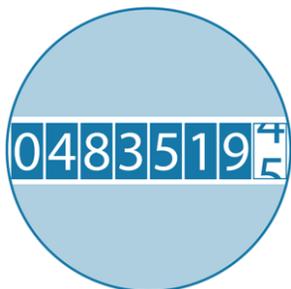
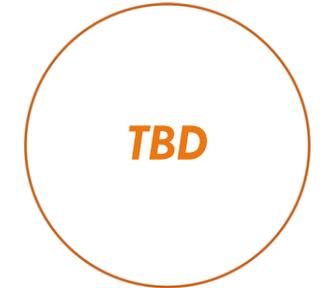
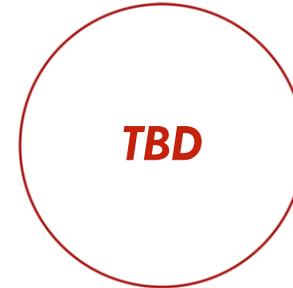
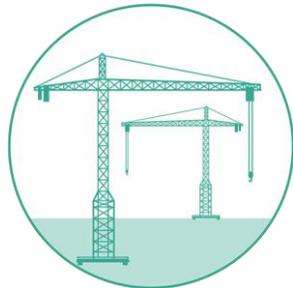
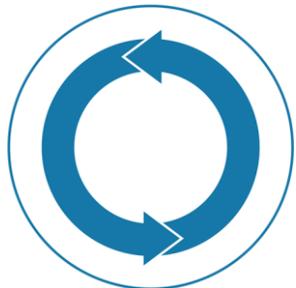
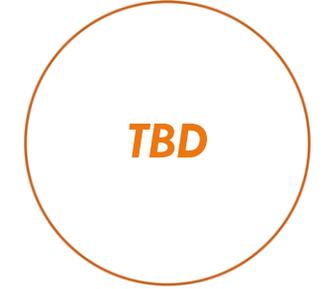
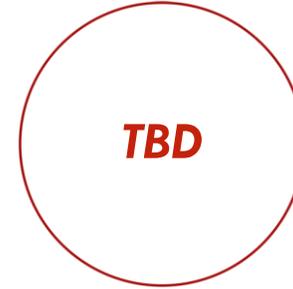
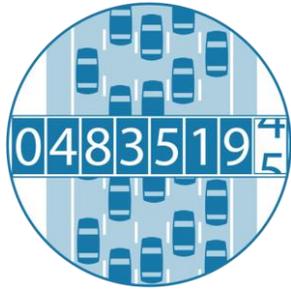
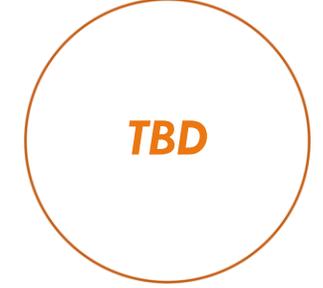
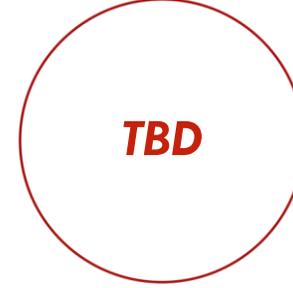
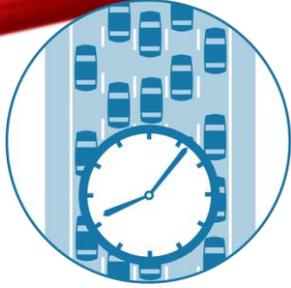
OUTREACH TO OUR PARTNERS

-
- CMA Planning Directors
 - Regional Advisory Working Group
 - Local Streets Working Group
 - Transit Finance Working Group
 - Policy Advisory Council
 - Planning Committee

PHASE 1 A

PHASE 1 B

PHASES 2A AND 2B ⁸

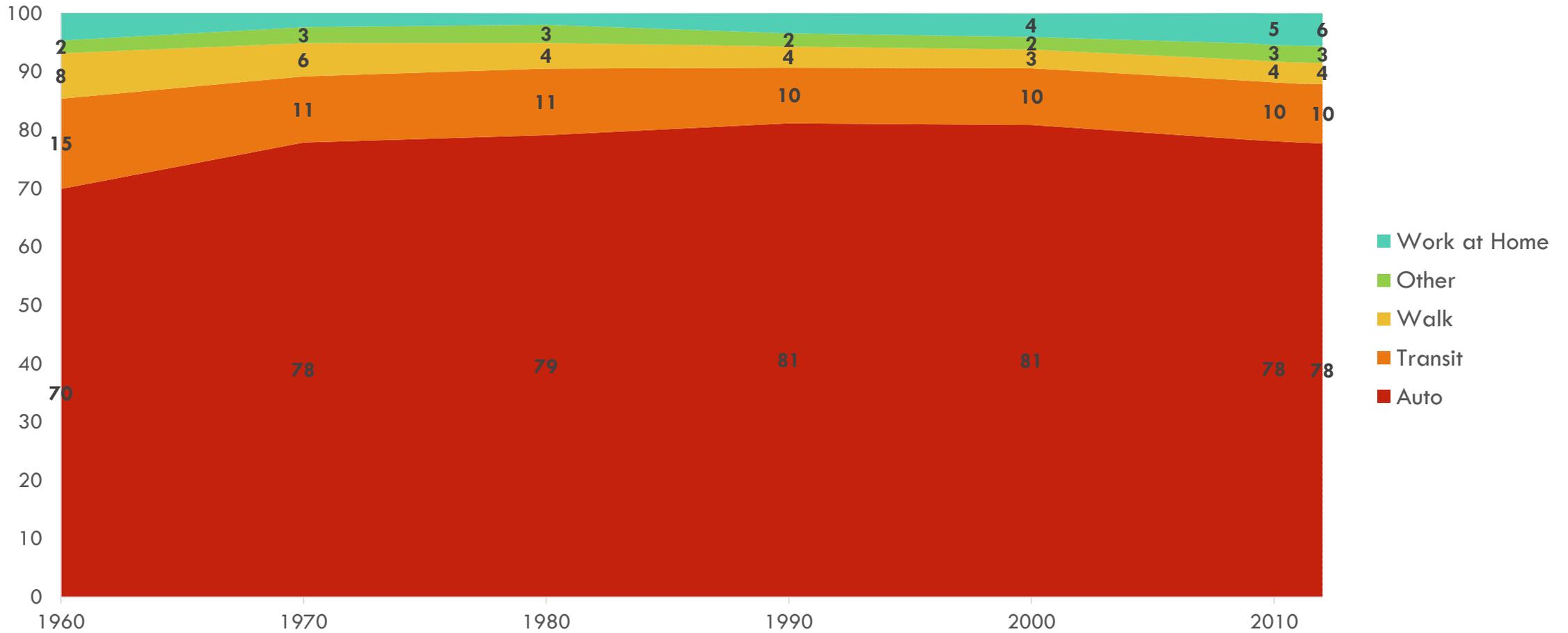


KEY FINDINGS ⁹

1. Regional commute **mode shares and commute times have remained remarkably stable** over the past few decades.
2. Most commuters live and work in the same county, although the **counties of Santa Clara and San Francisco do “import” significant numbers of workers.**
3. Both **traffic congestion and transit demand are highly concentrated** in the central Bay Area.
4. When compared to other metros, the Bay Area has higher-than-average levels of freeway congestion but has the most reliable freeway travel times – in other words, **we are “reliably congested”.**
5. Conditions of Bay Area bridges and highways have measurably improved; unfortunately, **local road pavement conditions have stagnated** over the same time period.
6. While total regional transit ridership is increasing, **per capita transit use has decreased over time.**



COMMUTE MODE SHARE: HISTORICAL TREND



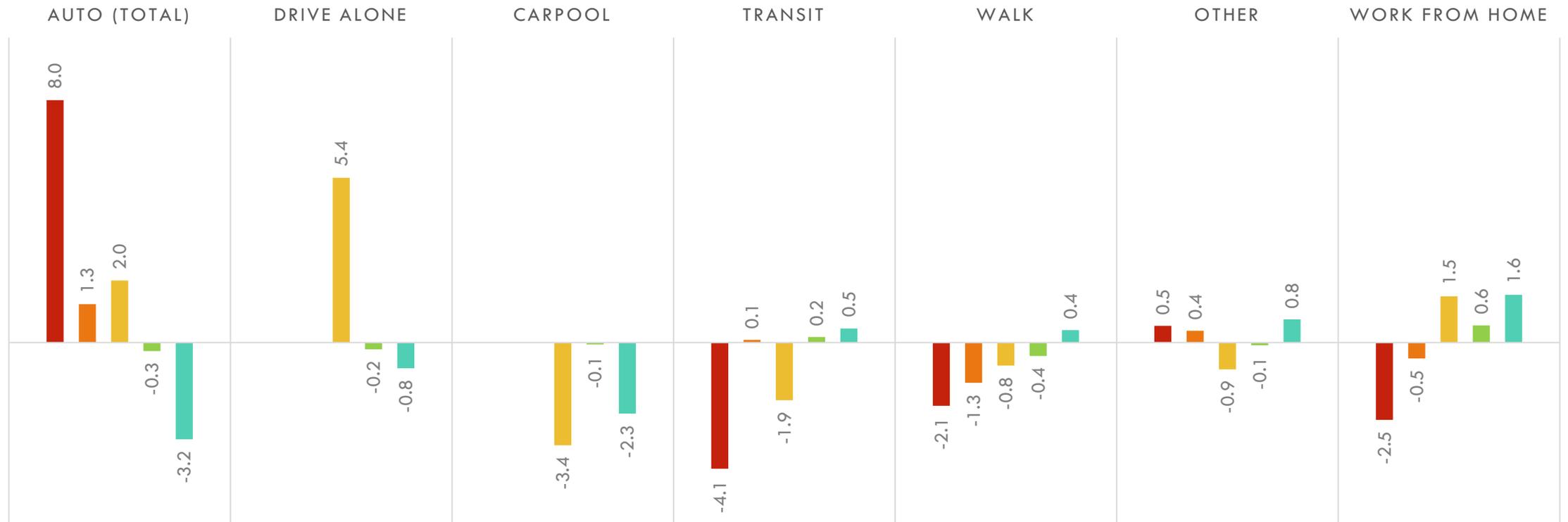
Source: US Census/American Community Survey



COMMUTE MODE SHARE: HISTORICAL TREND

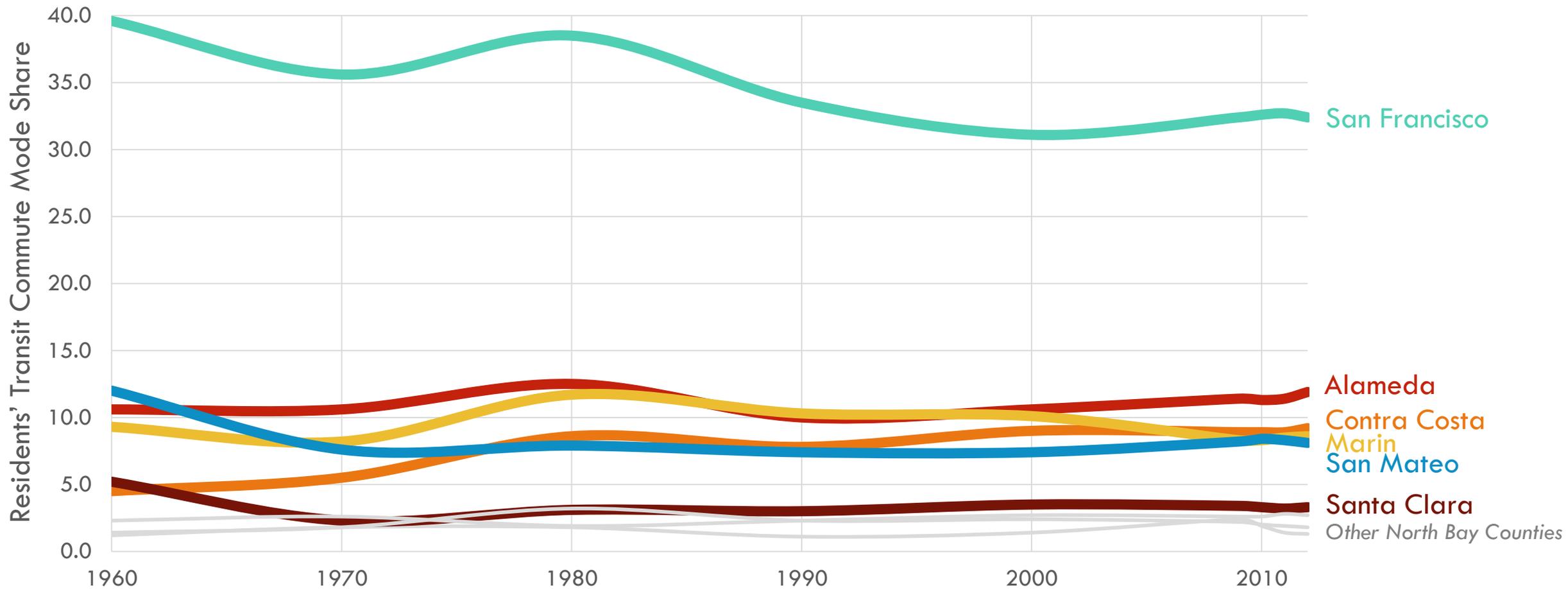
CHANGES IN MODE SHARES BY DECADE

■ 1960 to 1970 ■ 1970 to 1980 ■ 1980 to 1990 ■ 1990 to 2000 ■ 2000 to 2012

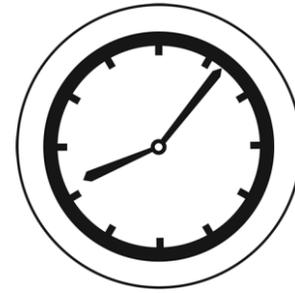




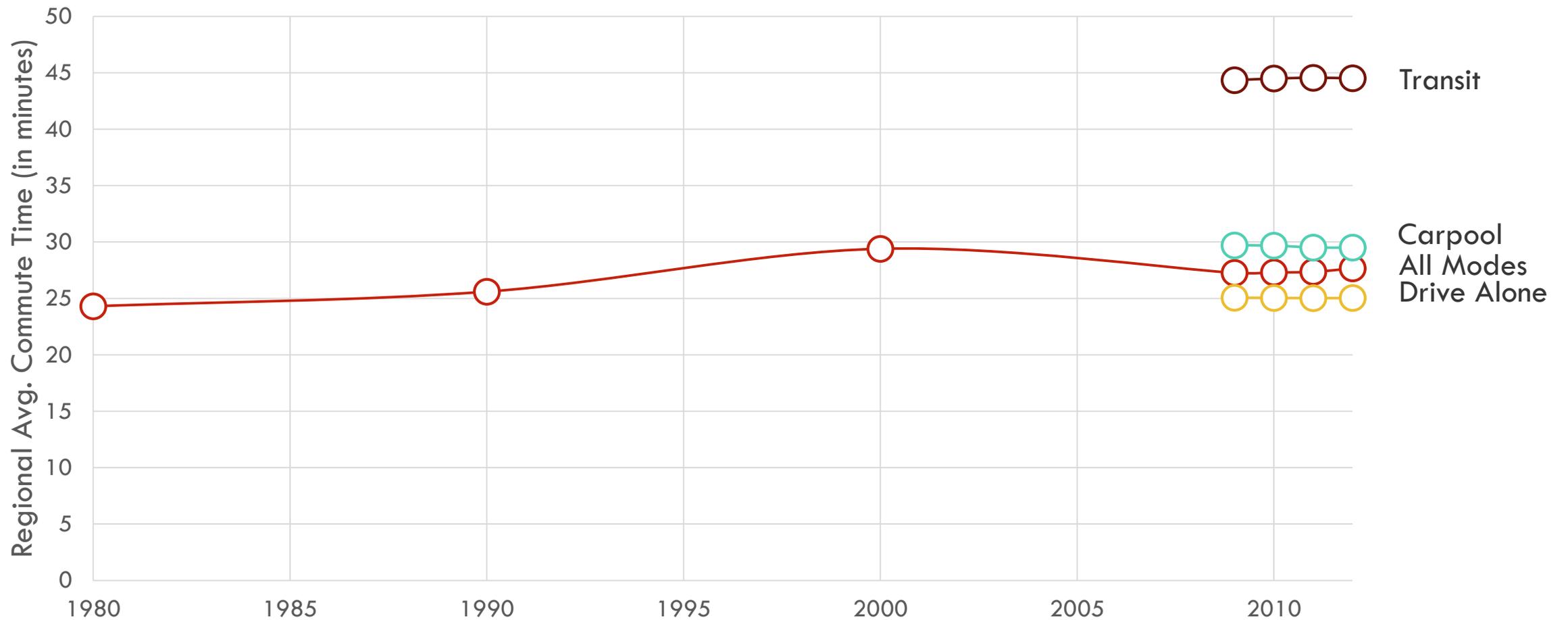
COMMUTE MODE SHARE: REGIONAL CONTEXT



Source: US Census/American Community Survey

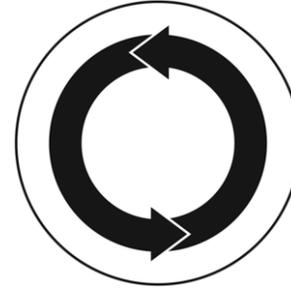


COMMUTE TIME: HISTORICAL TREND



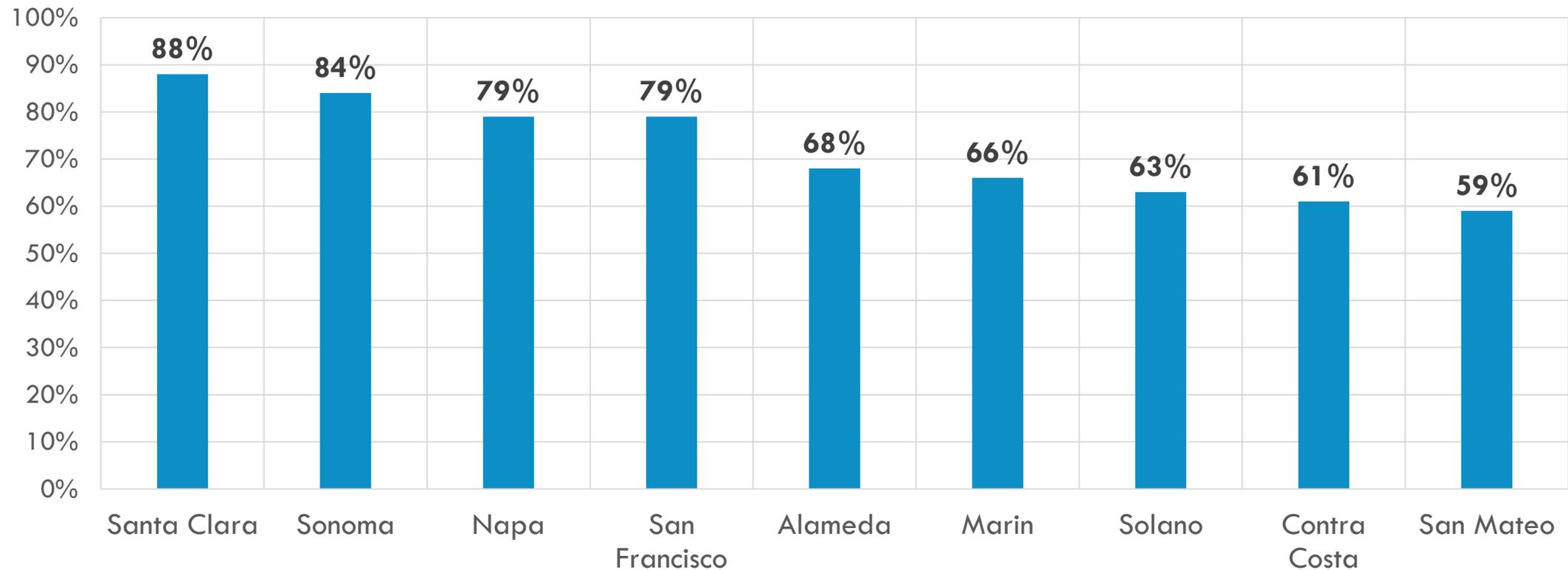
KEY FINDINGS ¹⁴

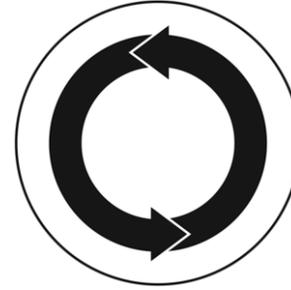
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COMMUTE FLOWS: REGIONAL CONTEXT

SHARE OF RESIDENTS THAT LIVE AND WORK IN THE SAME COUNTY

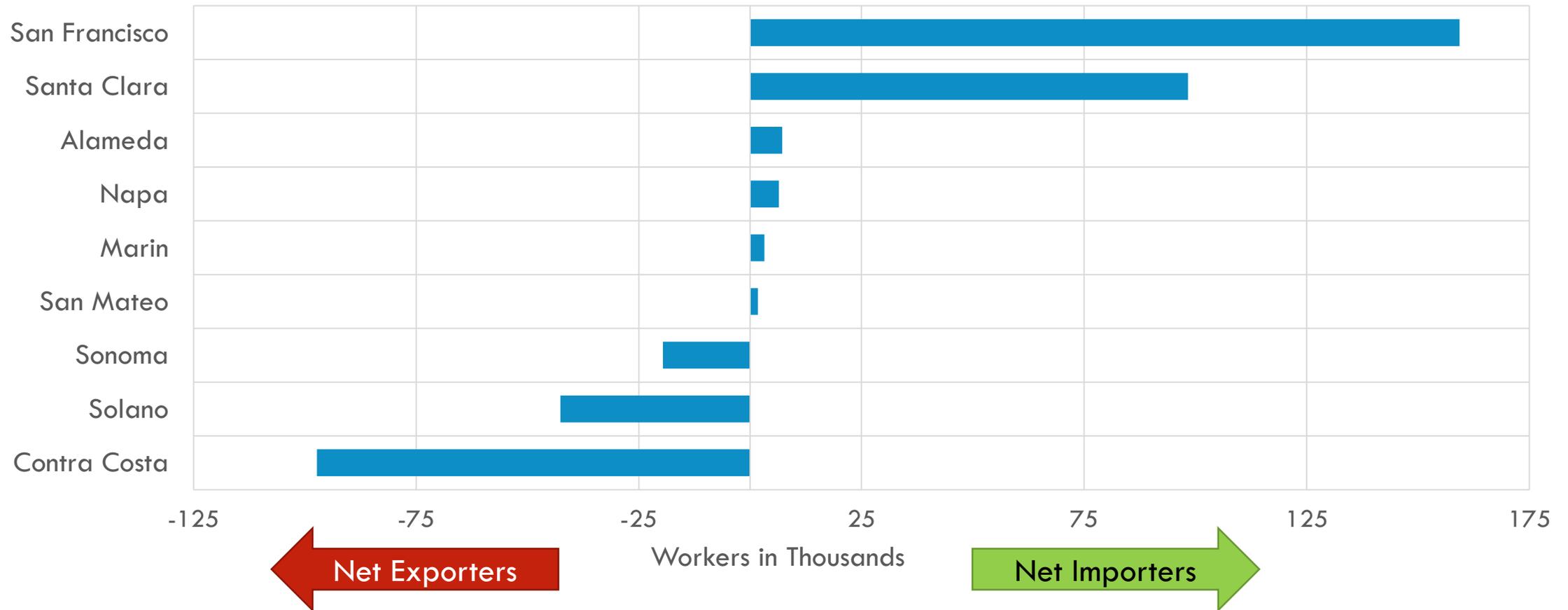




COMMUTE FLOWS: REGIONAL CONTEXT

Source: Census Transportation Planning Package, 2006-2010

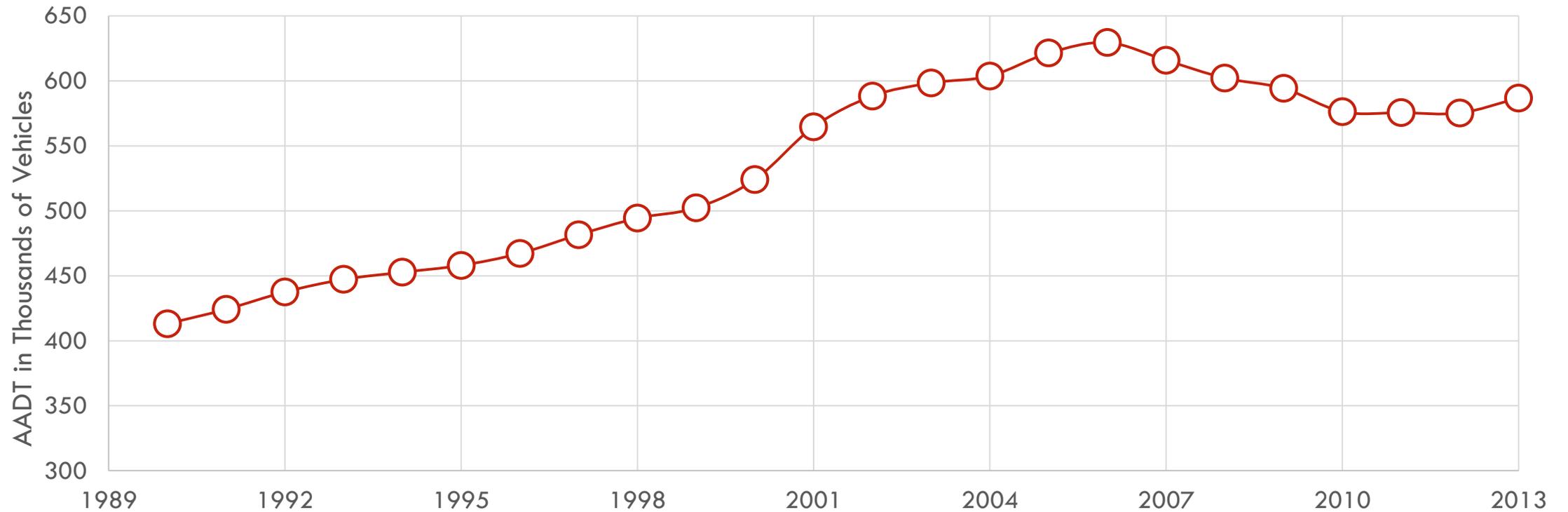
NET NUMBER OF COMMUTERS





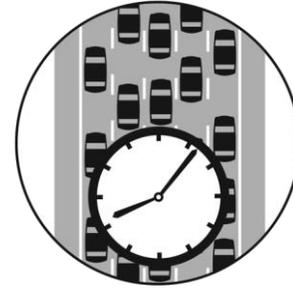
INTERREGIONAL TRAFFIC: HISTORICAL TREND

AVERAGE ANNUAL DAILY TRAFFIC (AADT) THROUGH REGIONAL GATEWAYS

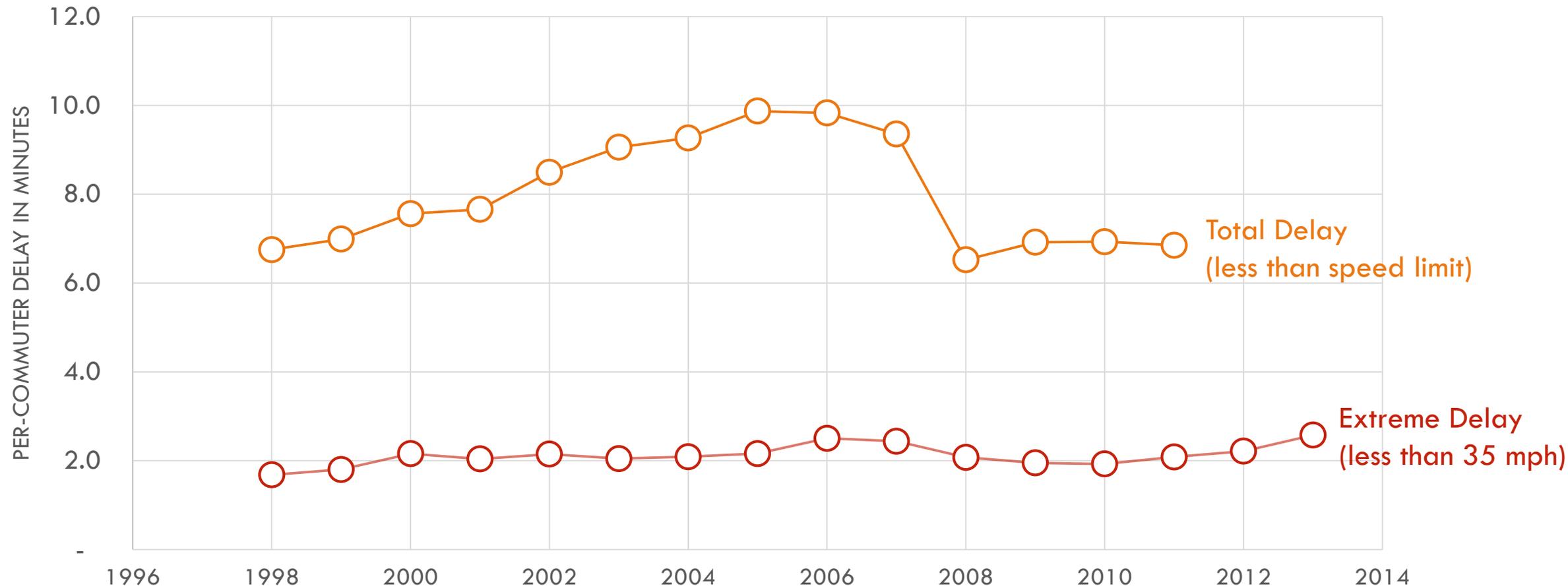


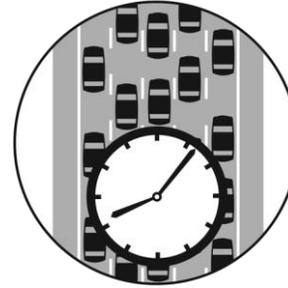
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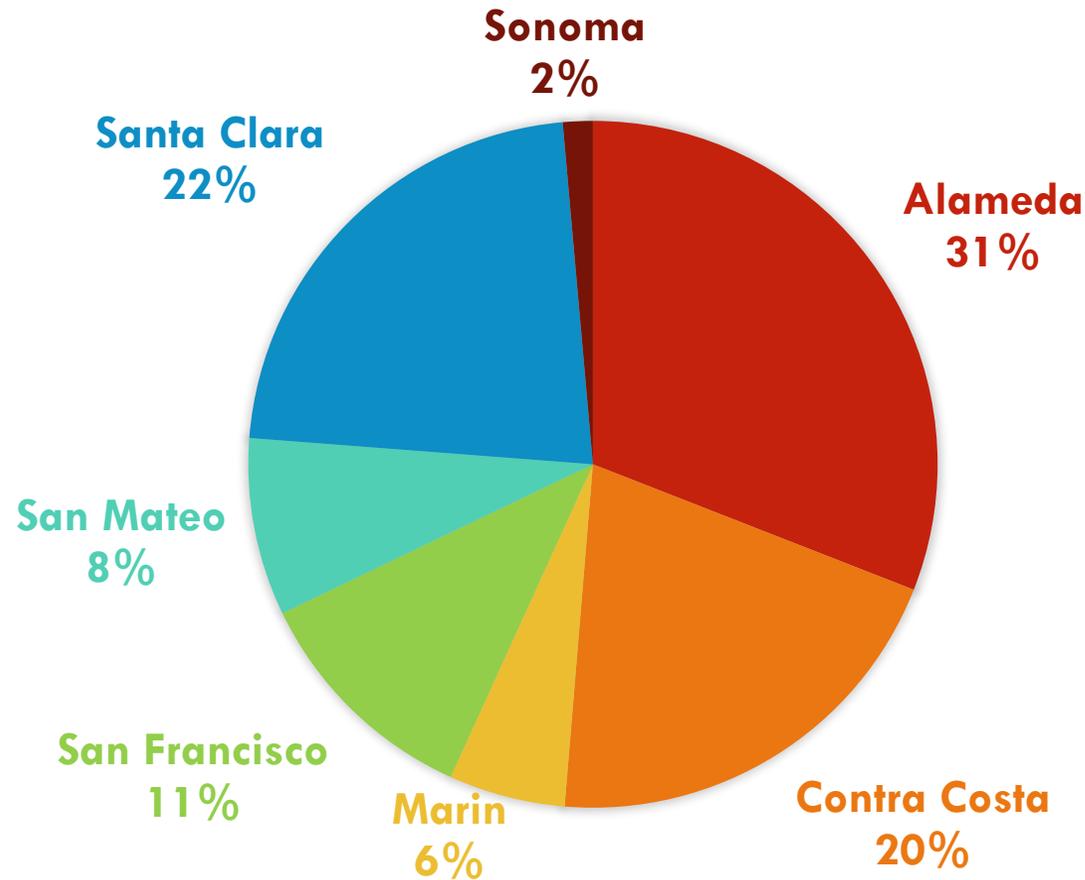
FREEWAY DELAY: HISTORICAL TREND





FREEWAY DELAY: REGIONAL CONTEXT

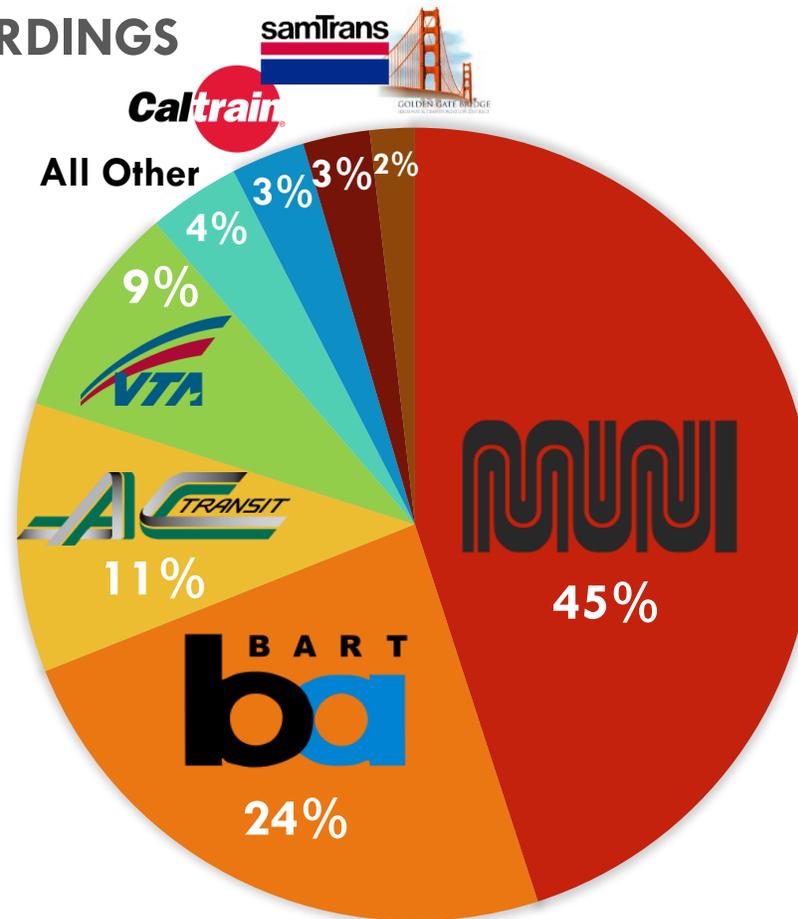
BREAKDOWN OF CONGESTED DELAY BY COUNTY





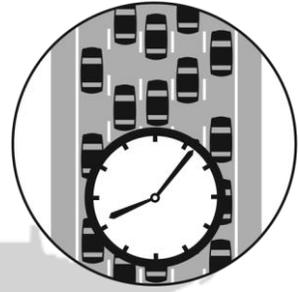
TRANSIT RIDERSHIP: REGIONAL CONTEXT

SHARE OF DAILY TRANSIT BOARDINGS BY OPERATOR

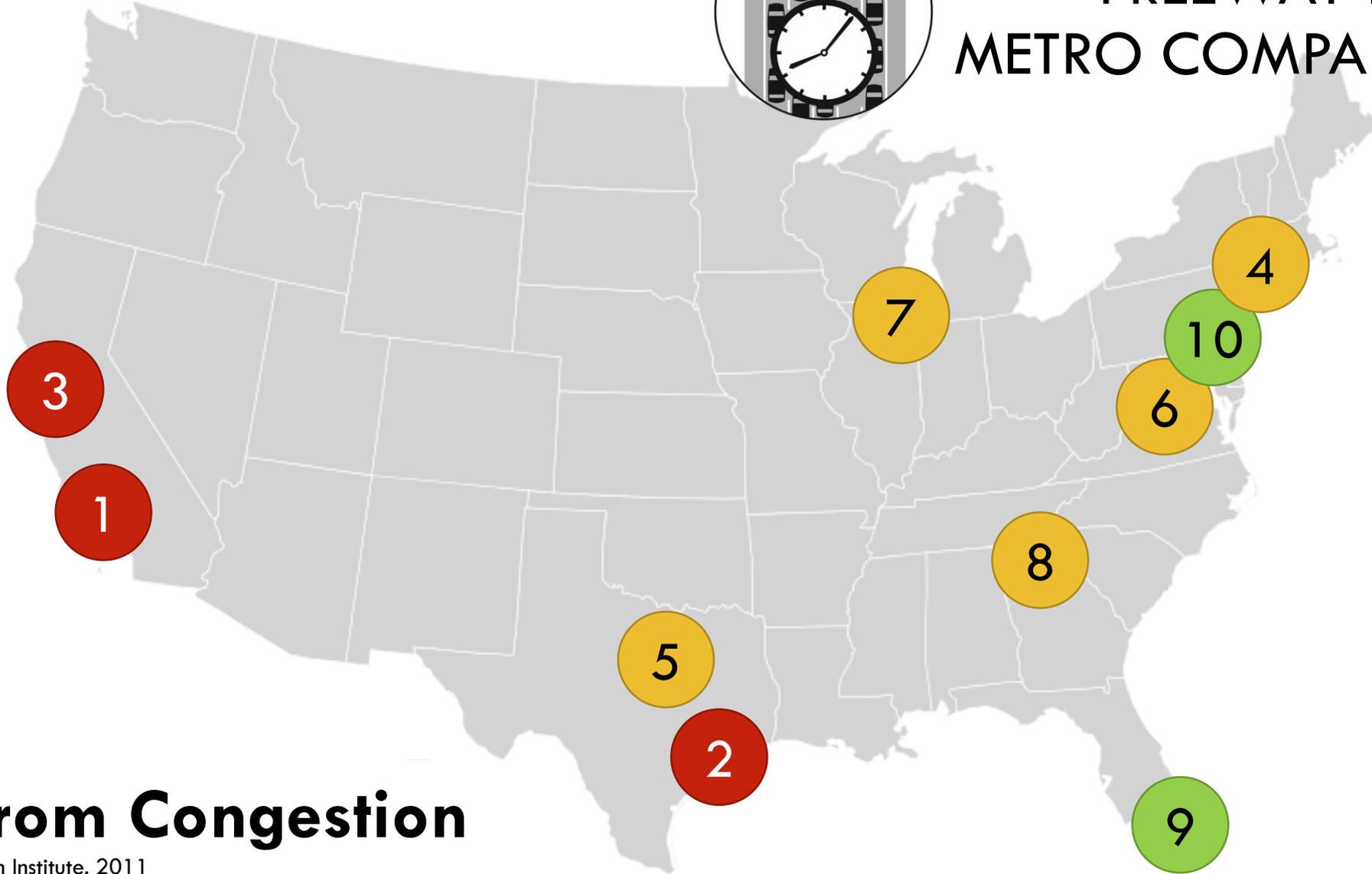


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FREEWAY DELAY: METRO COMPARISON

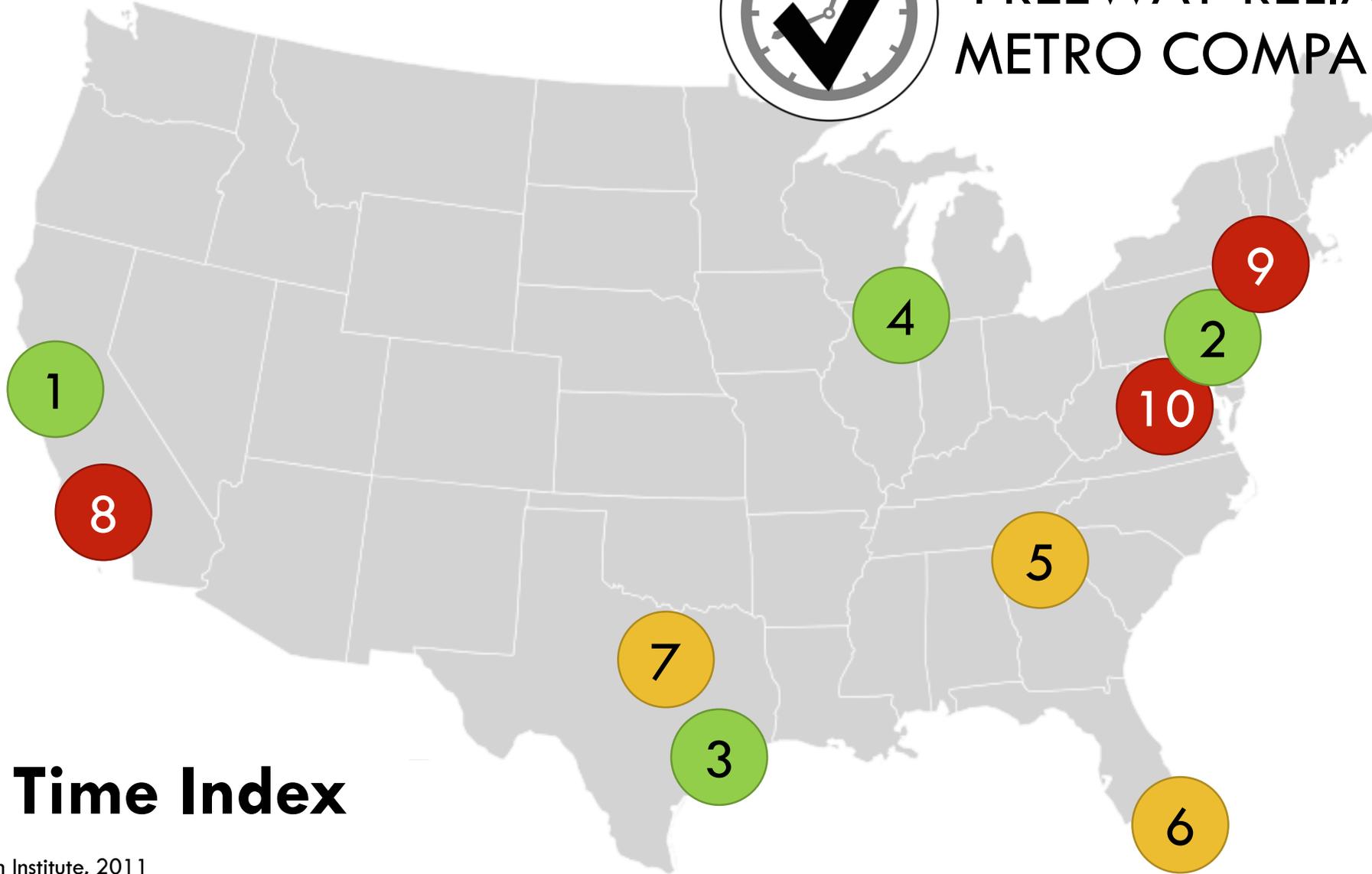


Delay from Congestion

Source: Texas Transportation Institute, 2011



FREEWAY RELIABILITY: METRO COMPARISON



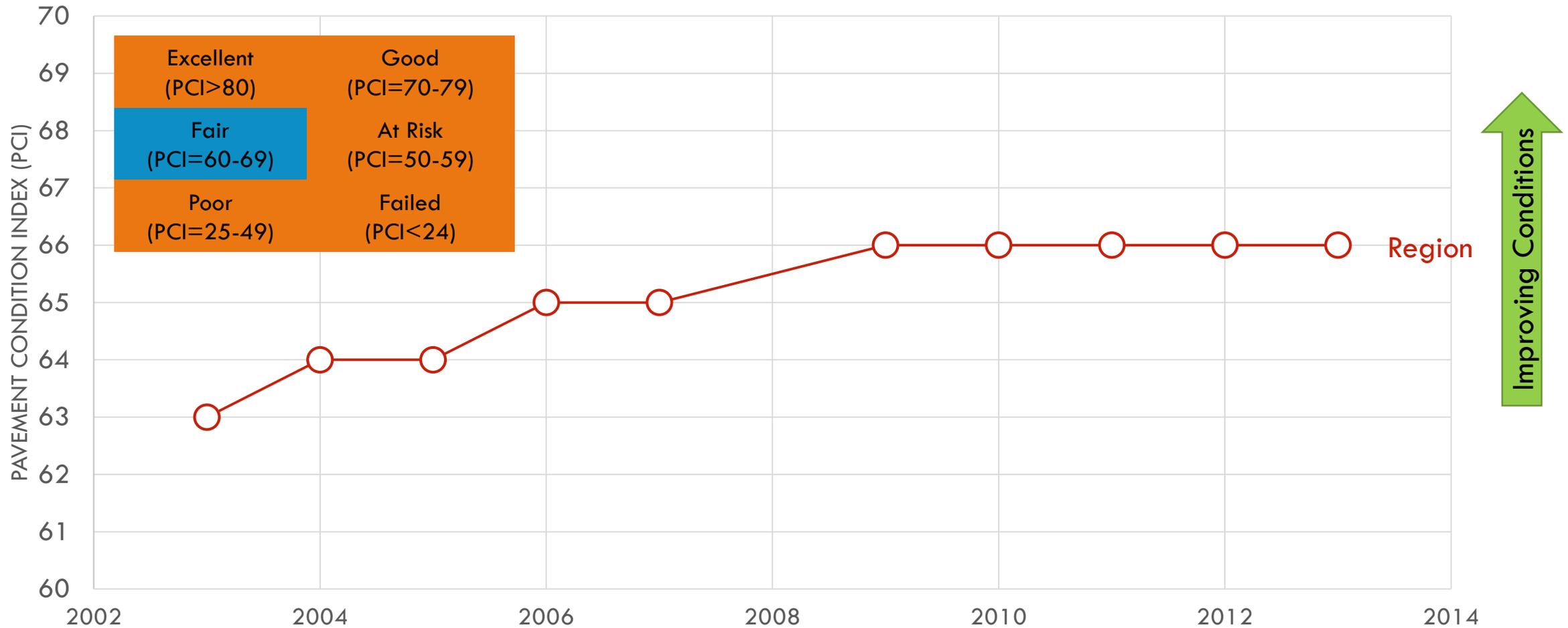
Buffer Time Index

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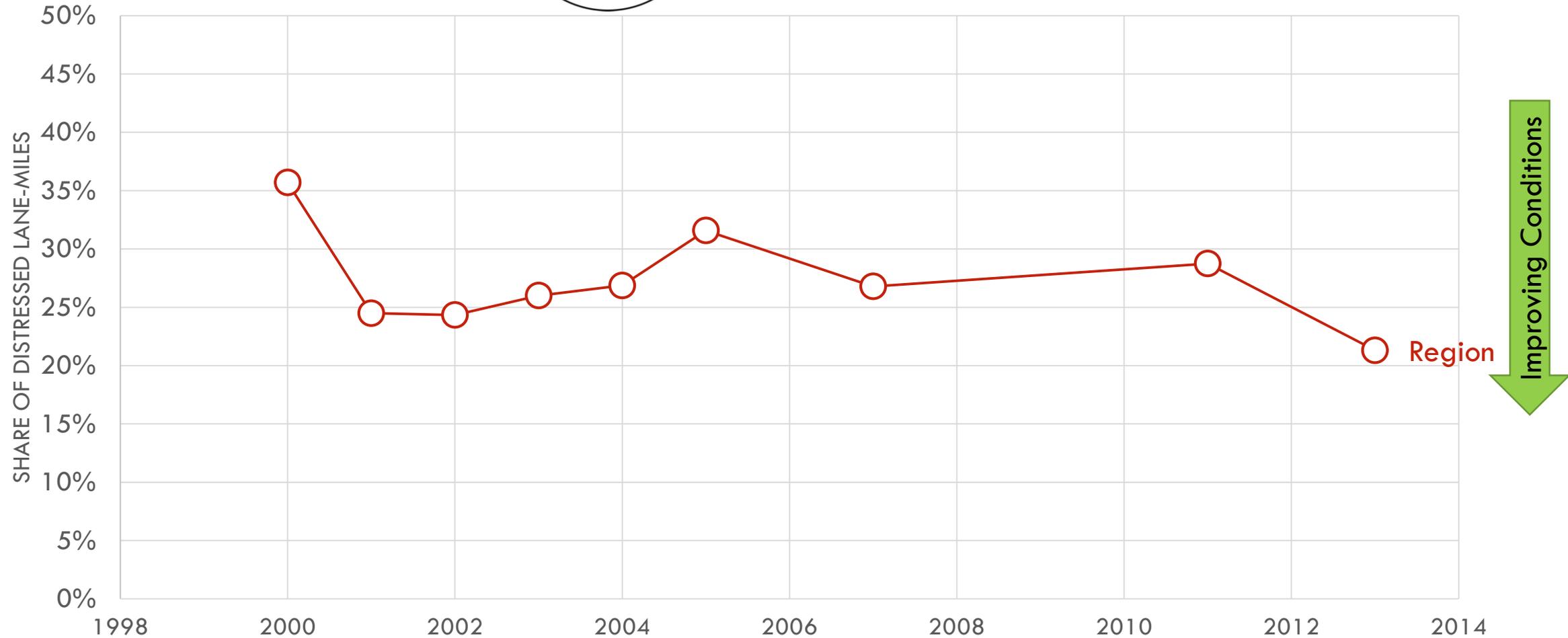


LOCAL STREET MAINTENANCE: HISTORICAL TREND



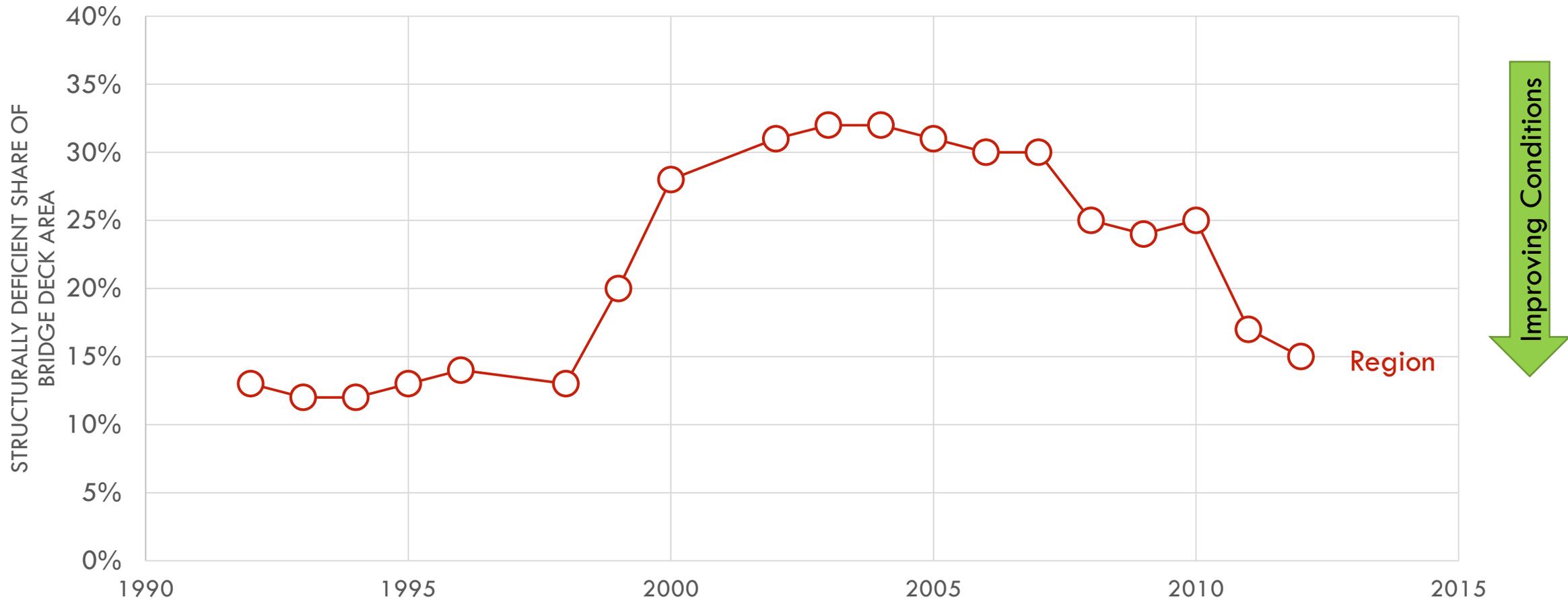


STATE HIGHWAY MAINTENANCE: HISTORICAL TREND





BRIDGE MAINTENANCE: HISTORICAL TREND

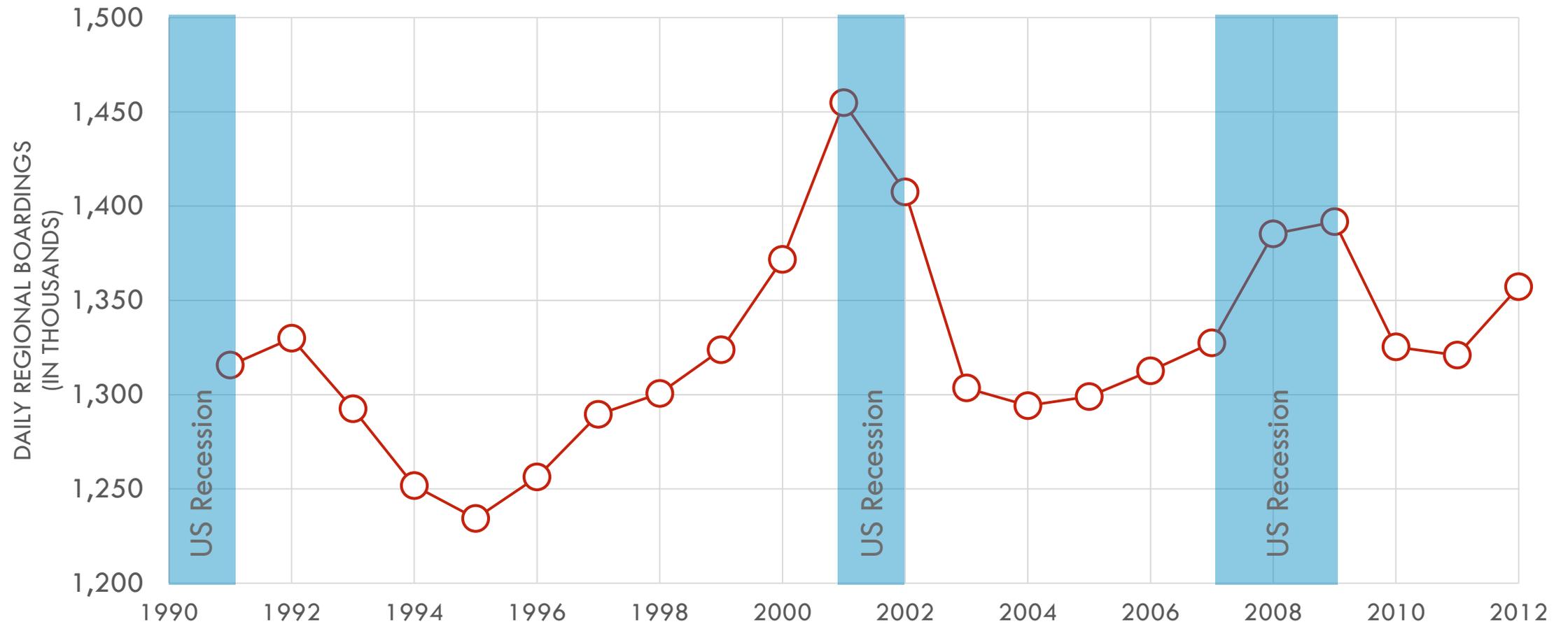


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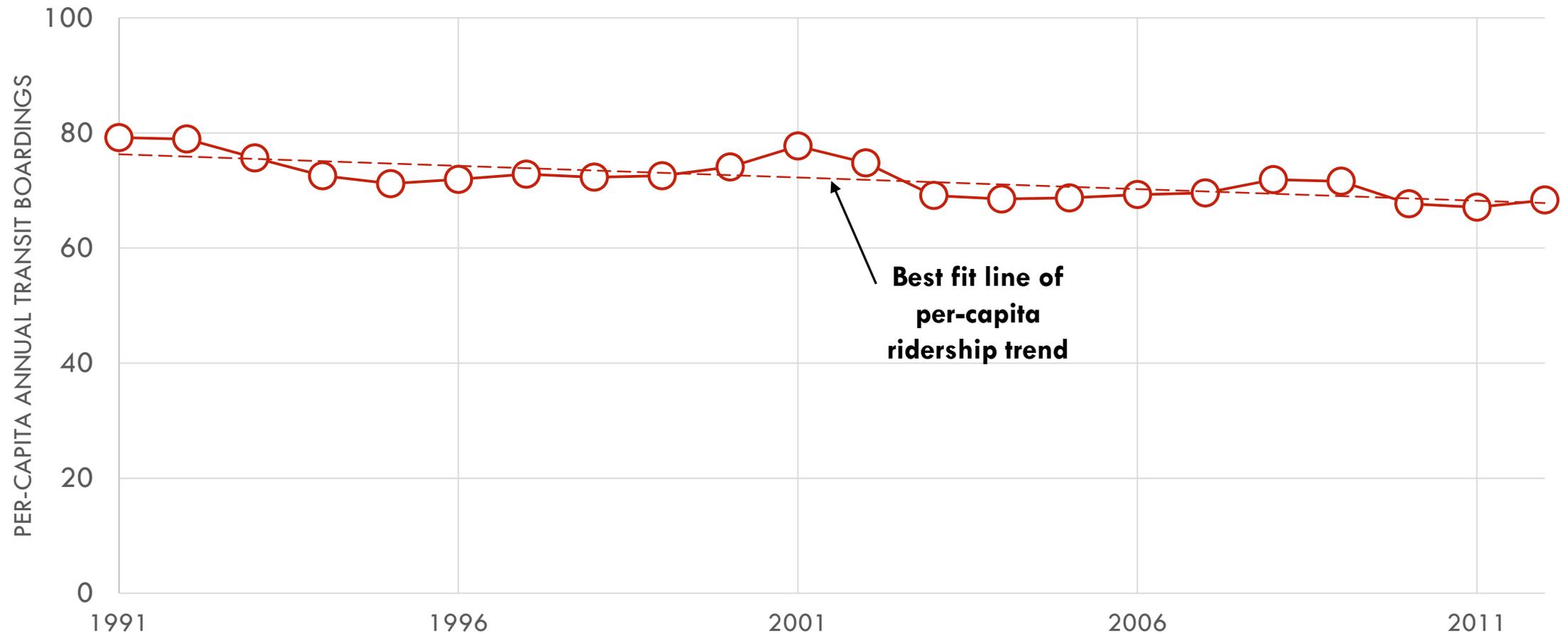


TRANSIT RIDERSHIP: HISTORICAL TREND

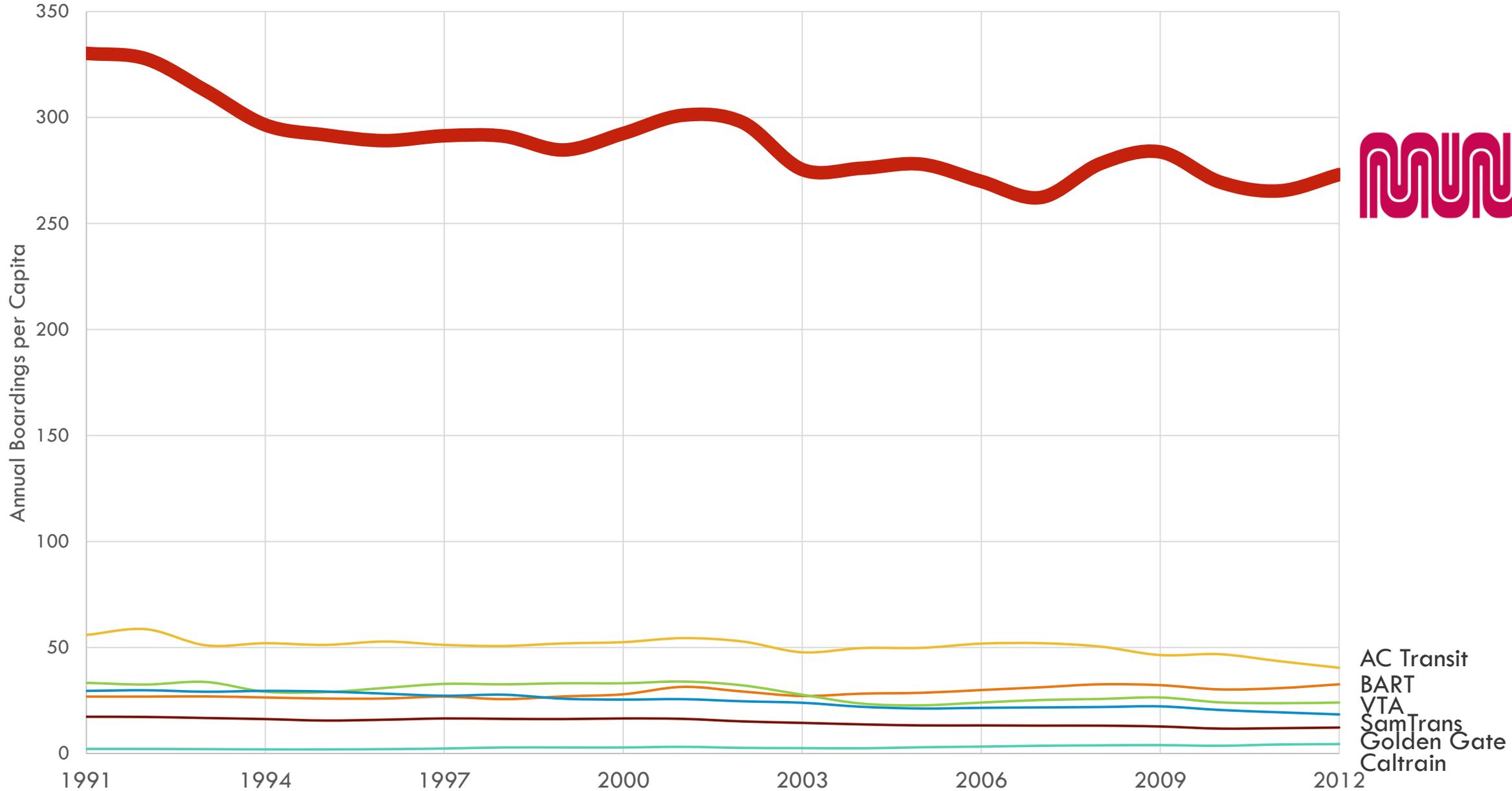




TRANSIT RIDERSHIP: HISTORICAL TREND



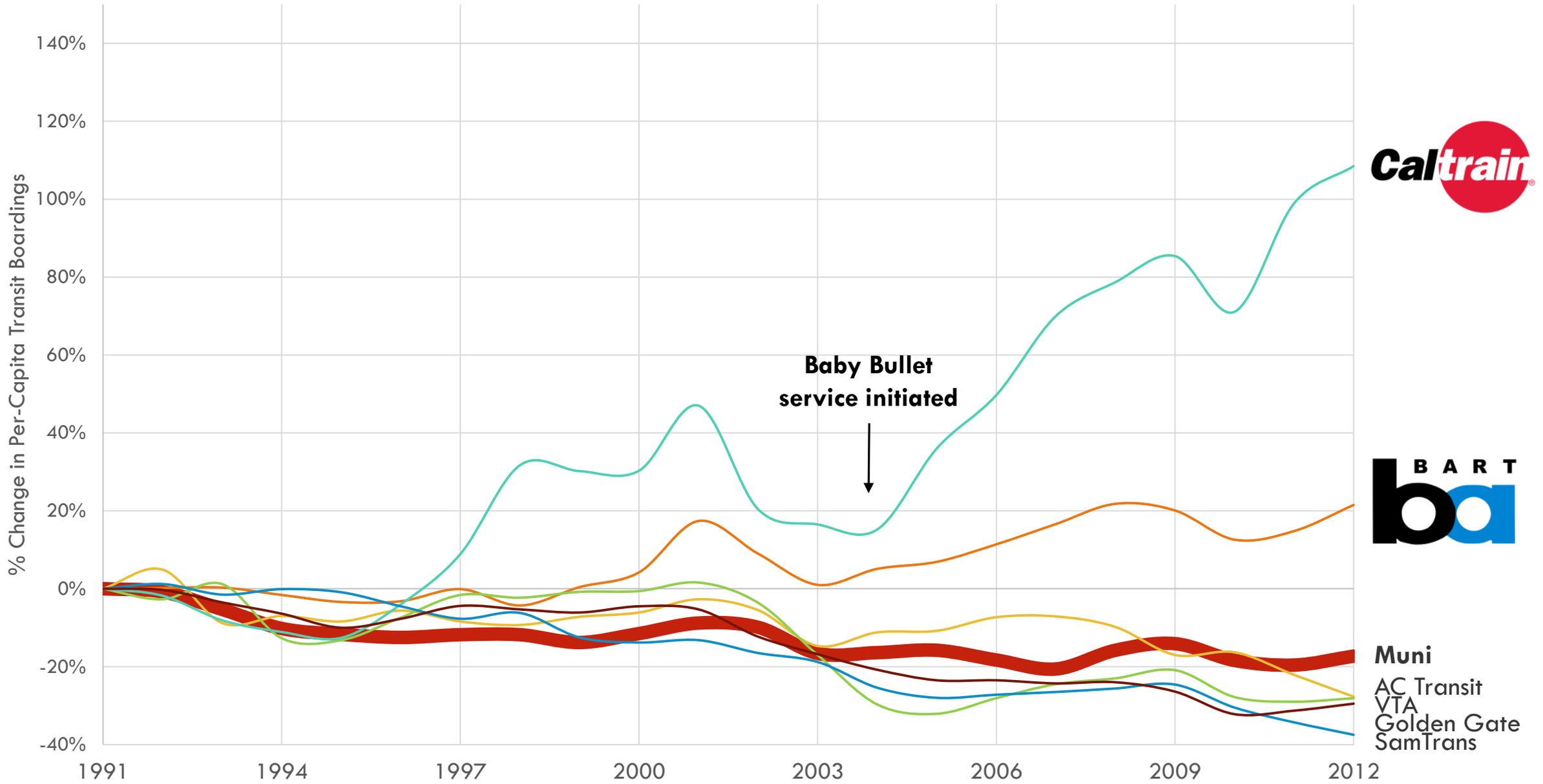
PER-CAPITA TRANSIT BOARDINGS BY OPERATOR



AC Transit
BART
VTA
SamTrans
Golden Gate
Caltrain

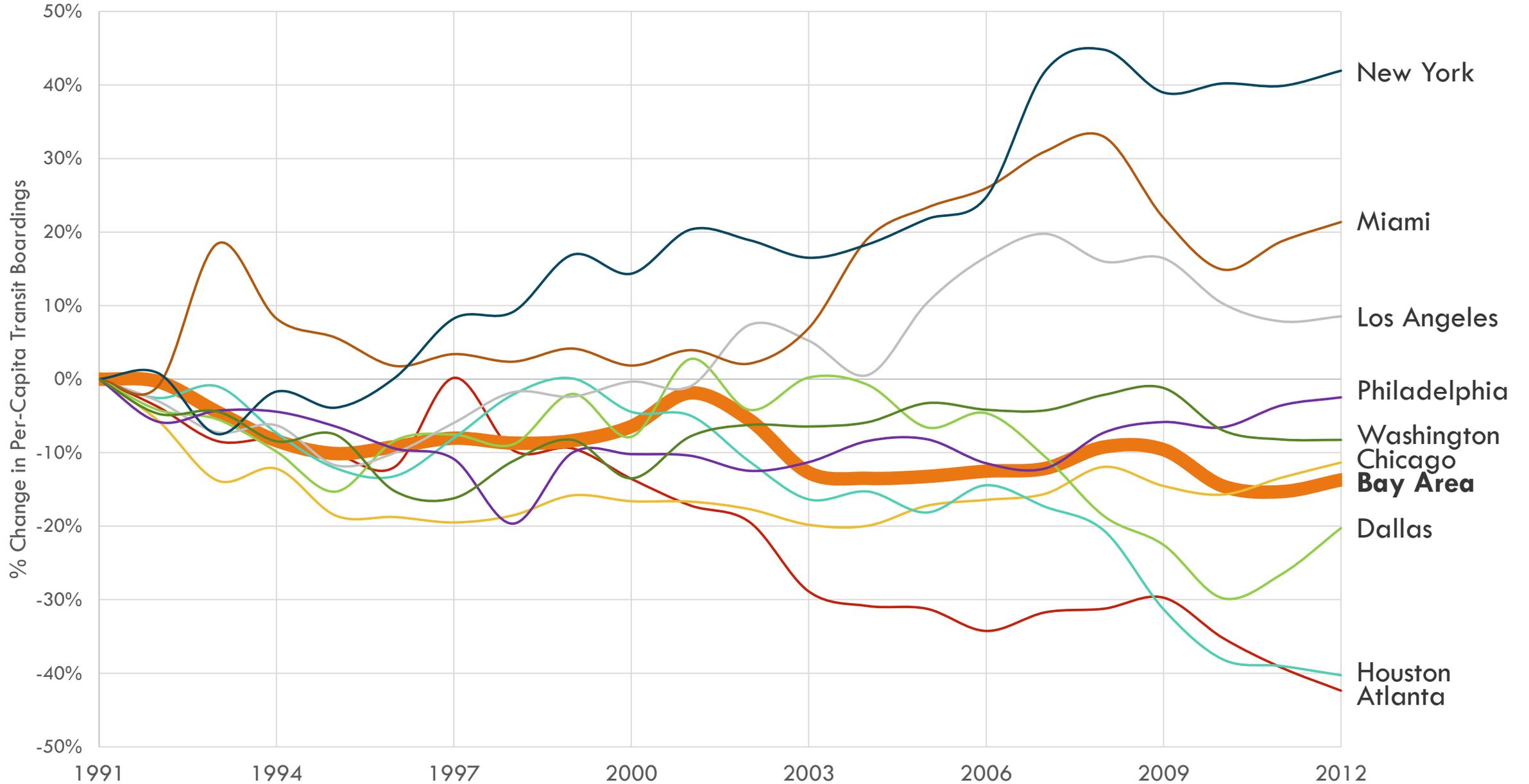
Source: FTA NTD, 2012

% CHANGE IN PER-CAPITA TRANSIT BOARDINGS BY OPERATOR SINCE 1991



Muni
AC Transit
VTA
Golden Gate
SamTrans

% CHANGE IN PER-CAPITA TRANSIT BOARDINGS BY METRO AREA SINCE 1991



WEBSITE LAUNCH:
WINTER 2015

BAY AREA VITAL SIGNS



REFERENCES AND IMAGE SOURCES

- Slide 1 – Title Slide
 - <https://www.flickr.com/photos/davidyuweb/13370127374>
- Slide 4 – Metro Area Photographs
 - http://en.wikipedia.org/wiki/List_of_United_States_cities_by_population#mediaviewer/File:LA_Skyline_Mountains2.jpg
 - http://en.wikipedia.org/wiki/Philadelphia-Camden-Wilmington,_PA-NJ-DE-MD_Metropolitan_Statistical_Area#mediaviewer/File:Philly_skyline.jpg
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 - http://en.wikipedia.org/wiki/Chicago-Naperville-Elgin,_IL-IN-WI_Metropolitan_Statistical_Area#mediaviewer/File:Chicago_aerial_view.jpg
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 - <https://flic.kr/p/nrWLtK>