SFMTA
Municipal
Transportation
Agency

Transit Economic Benefits Study

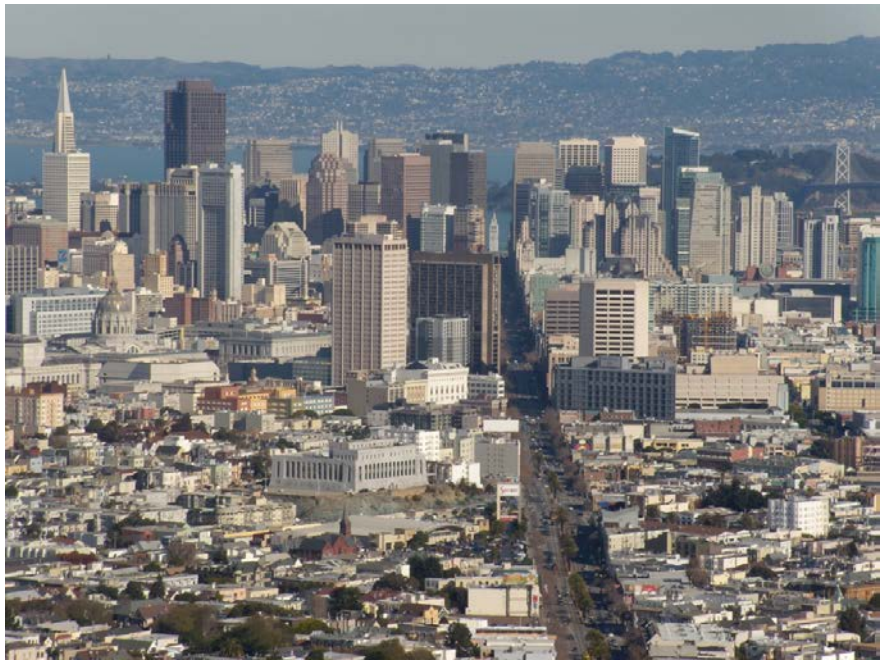
September 3, 2015

SFMTA Citizens Advisory Committee

San Francisco, CA

Strategic Plan Context

- Goal 3: Improve the environment and quality of life in San Francisco
- Objective 3.2: Increase the transportation system's positive impact to the economy

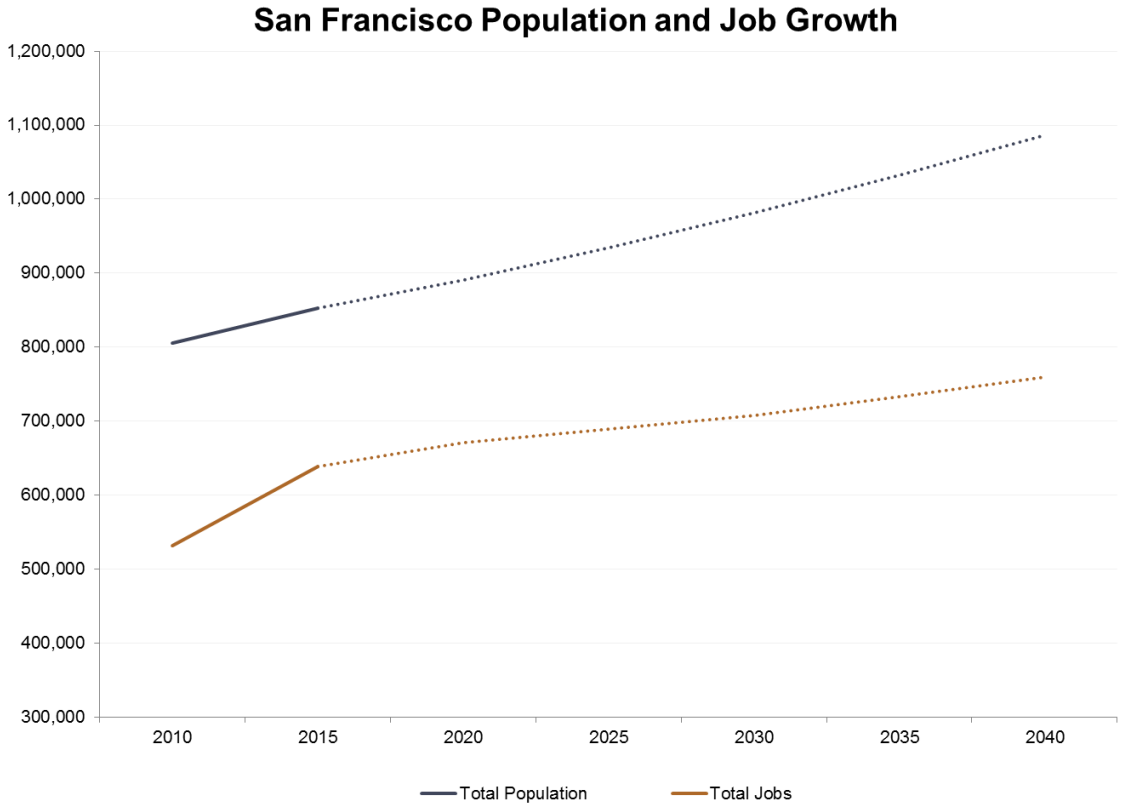


Study Purpose

- Document Muni's contribution to San Francisco's economy
- Calculate "return on investment" from maintaining and expanding Muni
- Advance analytical framework and metrics for transit planning and investment decisions
- Study is a partnership between Economic & Planning Systems (EPS), an Oakland-based transportation economics consultant, and the SFMTA

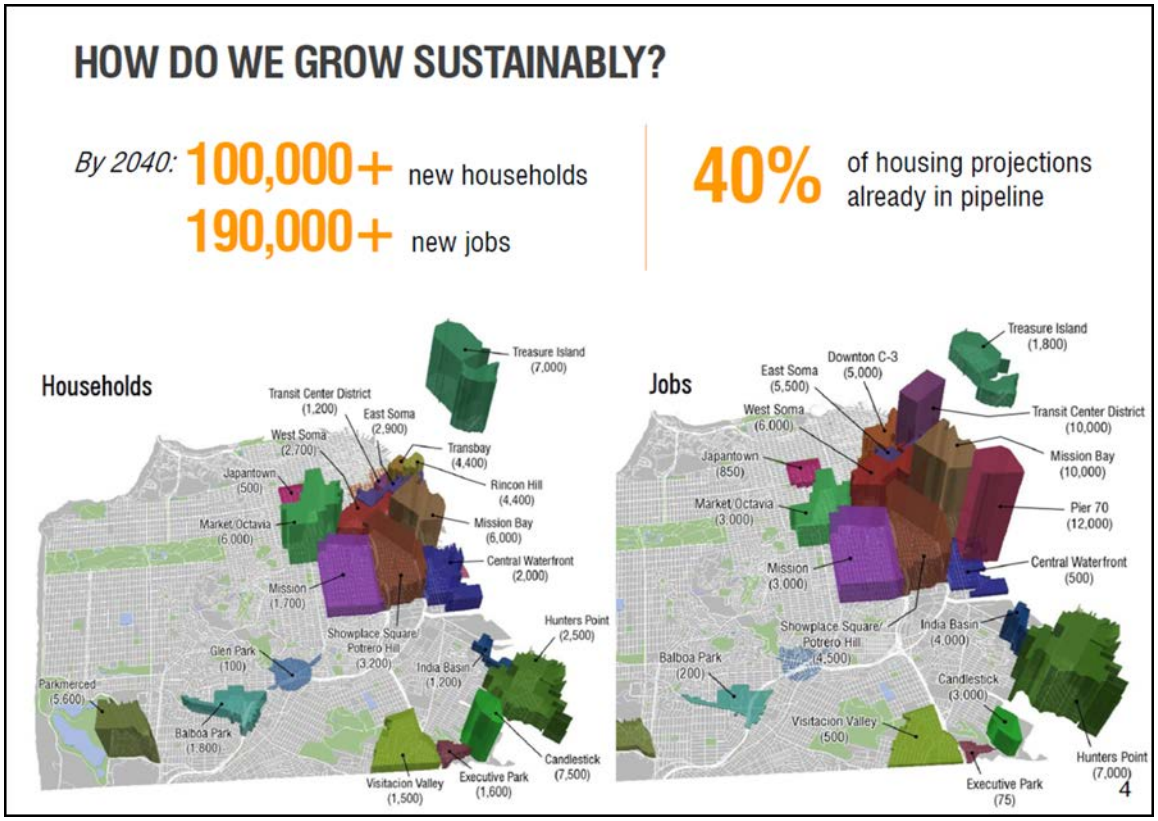
Study Context

- Recent and projected population and job growth is placing demands on City's transportation infrastructure



Sources: Bureau of Labor Statistics, U.S. Census and Association of Bay Area Governments (ABAG)

Study Context



- Transportation infrastructure is aging and nearing capacity
- Limited physical space precludes road and parking expansion
- In 2014, voters approved propositions to invest in transportation and reaffirmed the City's Transit First Policy

Methodology Overview

- Compare monetized benefits of Muni to annual operating and “state of good repair” costs
  - Use widely accepted guidelines for Benefit-Cost Analysis
  - Based on quantifiable metrics and readily available data
- Use conservative and highly transparent methodology
  - Vet analysis with SFMTA, SFCTA and others
  - Include “high” and “low” estimates
  - Highlight key sources of uncertainty
  - Show all calculations

Study Assumptions

- Considers travel patterns *absent* MUNI, a hypothetical scenario that does not take into account the following factors:
  - Infrastructure constraints (e.g. total gridlock)
  - Changes in travel behavior and development patterns
  - Price effects (e.g., parking costs)
- Calculations exclude:
  - Impact of population and employment growth
  - Circling for parking
  - Auto purchase costs
  - Changes in transportation technology and costs
  - Value of foregone trips

Muni Benefits Monetized in Study

Benefit	Description
Travel time savings to drivers	By reducing auto trips in City, Muni reduces congestion and improves travel times
Reduced parking costs	Muni customers reduce parking costs at both destinations and residence
Improved travel safety	Muni travel results in fewer collisions than autos on both a per passenger trip and mile basis
Travel cost savings to Muni riders	Muni customers avoid auto operations & maintenance and life-cycle costs (e.g. fuel, insurance, depreciation)
Air quality and Greenhouse Gas (GHG) reductions	Muni travel produces less GHG and other emissions than autos on both a per passenger trip and mile basis

Muni Benefits Not Monetized

Benefit	Example
Worker productivity	Economic agglomeration effects (concentration of workers and industries in a centralized location)
Public Health	Active transportation choices that promote physical movement
Livability	Enhanced transportation options, pedestrian friendly streets, less traffic
Social equity	Accessibility for lower income and other disadvantaged groups

Muni improves commutes & job access

Muni Clipper® Card Boarding Locations

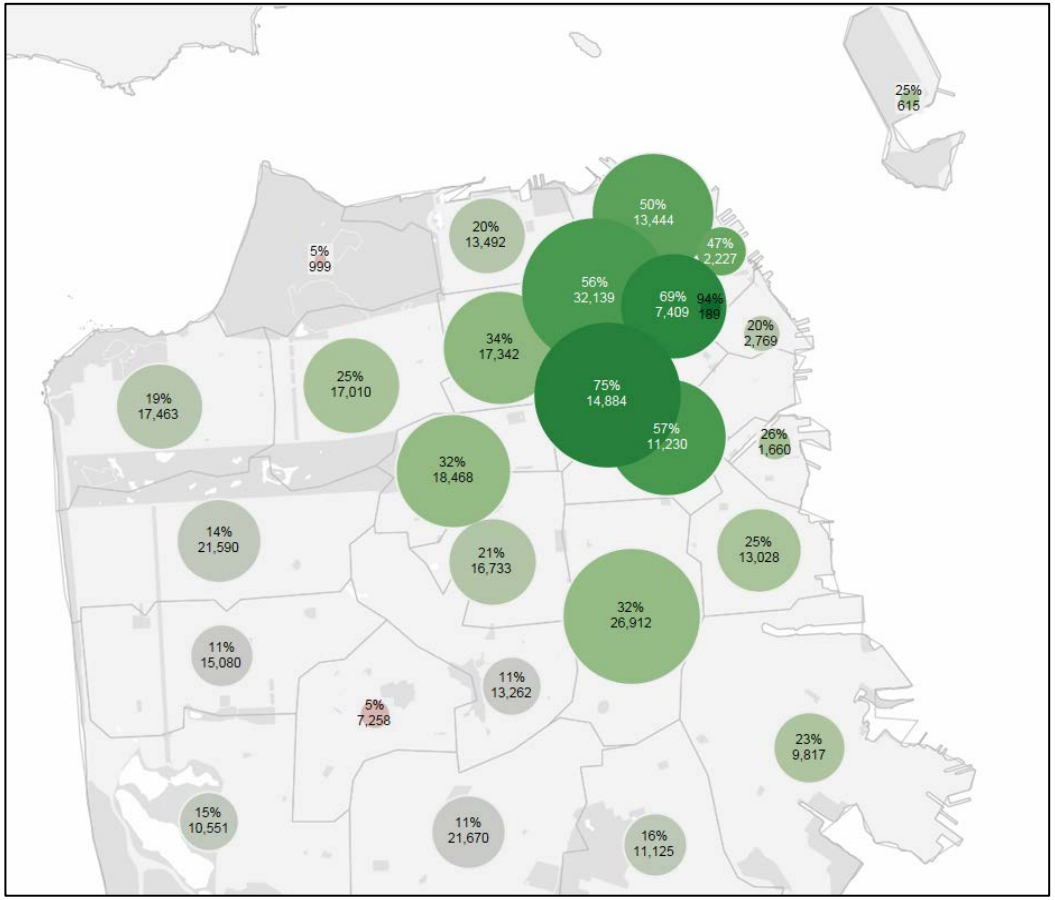
- Highest Muni ridership occurs in the City's most congested areas.
- Without Muni, existing travel and development patterns would not be possible
- Muni results in 9.3 to 11.5 million hours of travel time savings annually, monetized at $196 to $292 million

Muni increases productivity & job growth

- Placing jobs near transit is helping the city accommodate growth more sustainably
- Transit frees up space for more productive land uses such as housing and employment
- Conversely, shifting from transit to autos could hypothetically displace up to 11% of housing units and 21% of jobs in San Francisco

Muni reduces travel costs

- More than 30% of City households do not own a car
- Private auto mode share is below 50%, one of lowest rates in nation
- Car-free are car-lite households are prevalent where roadway space and parking are at a premium
- Average direct travel cost savings/rider ≈ 10¢ / trip (excludes parking) ≈ $15.8 million/year

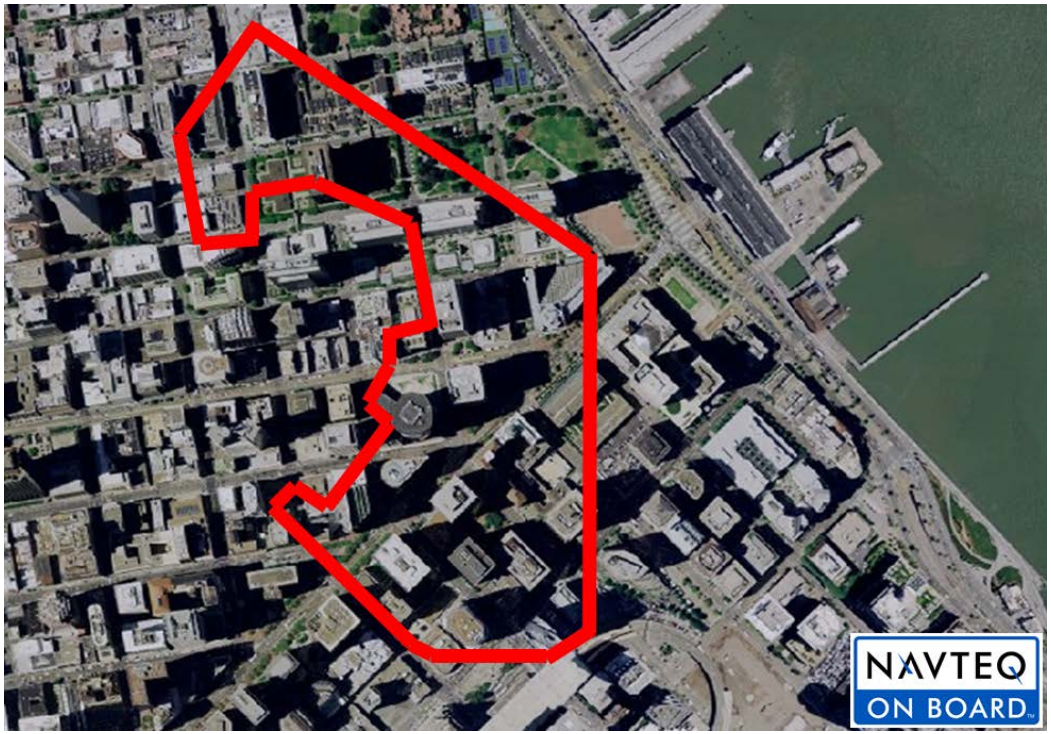


Zero-Car Households in San Francisco

Muni reduces the need to own a car

- Without Muni, San Francisco's car ownership patterns could more closely mirror the rest of the Bay Area where transit options are not as prevalent
- Hypothetically, automobile ownership rates could increase by over 50 percent, or nearly 195,000 new vehicles.
- New weekday vehicle trips would soar by 188,000 to 230,000.

Muni reduces parking demand



Former 8,800-space Candlestick Park parking lot superimposed over the Financial District. Muni Metro boardings at the Embarcadero and Montgomery stations average over 25,500 on weekdays – almost three times higher capacity at a fraction of the space

- Muni customers, pedestrians and bicyclists avoid parking costs
- Muni is responsible for
  - 27 to 30 million fewer paid parking destinations annually
  - 129,000 less residential spaces
  - $800 million to $1.2 billion per year in direct savings to residents

Muni improves the environment

- The SFMTA operates a diverse fleet of zero-emission Muni vehicles: historic streetcars, light rail vehicles, trolley buses and cable cars
- Over half of all Muni boardings occur on the electrically-powered fleet
- 229,000-330,000 fewer metric tons of CO_2 emissions per year with monetized value of $30-$50 million per year

Muni improves travel safety

- Increased transit usage is helping the City work towards its Vision Zero goals
- Muni travel results in fewer collisions than autos on both a per passenger trip and mile basis
- 265–500 fewer injury collisions annually with a monetized value of $90-$192 million

Summary of Findings

Economic Benefit Category	Annual Impact (High)	Annual Impact (Low)	Net Present Value (High)	Net Present Value (Low)
Travel time savings to drivers	$236.8	$192.4	$3,946.7	$3,206.7
Reduced travel costs	$830.4	$515.6	$13,840.0	$8,593.3
Improved travel safety	$191.6	$90.1	$3,193.3	$1,501.7
Travel cost savings to Muni riders	$15.8	$15.8	$263.3	$263.3
Air quality and Greenhouse Gas (GHG) reductions	$50.1	$29.5	$835.0	$491.7
Parking Cost Savings at Residence	$458.6	$589.6	$9,818.3	$7,636.7
Total Quantified Economic Benefits	**$1,898.0**	**$1,285.8**	**$36,633.3**	**$21,430.1**
Muni costs (less fare revenues)	$651.8	$651.8	$10,863.2	$10,863.2
Net Muni Economic Benefits	**$1,246.2**	**$634.0**	**$20,770.1**	**$10,566.9**
Benefit-Cost Ratio	**2.91**	**1.97**	**2.91**	**1.97**
Return on Investment (ROI)	**191%**	**97%**	**191%**	**97%**

Expressed in millions of 2014 dollars

Summary of Findings

- Monetized economic benefits of Muni exceed costs by **$634 million** to **$1.25 billion** per year
  - $760 to $1,500 per resident and $3.53 to $6.95 per Muni trip
- In “Present Value” terms, Muni’s net monetized benefits range from **$10.6** to **$20.8 billion**
  - $12,600 to $24,800 per resident
- The overall benefit-cost ratio is **2.0** to **2.9**

Next Steps

- Improve awareness of transit benefits to the public and policymakers
- Develop a methodology to calculate the benefits of other SFMTA services (e.g., bicycling, pedestrian circulation and safety, parking management, etc.)
- Incorporate cost-benefit metrics into SFMTA investment decisions and budgeting

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