From Operations to Strategy: Making Better Decisions through Performance Measurement

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Outline

Part I: Importance of Strategic Planning

- An agency moving as one
- A city and region moving as one

Part II: Performance Measurement

- Operational level – real time decision making
- Planning level
- Strategic level
- Communicating metrics

Part III: Lessons Learned

Acknowledgements

SFMTA Municipal Transportation Agency

Dan Howard

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Part I: Importance of Strategic Planning

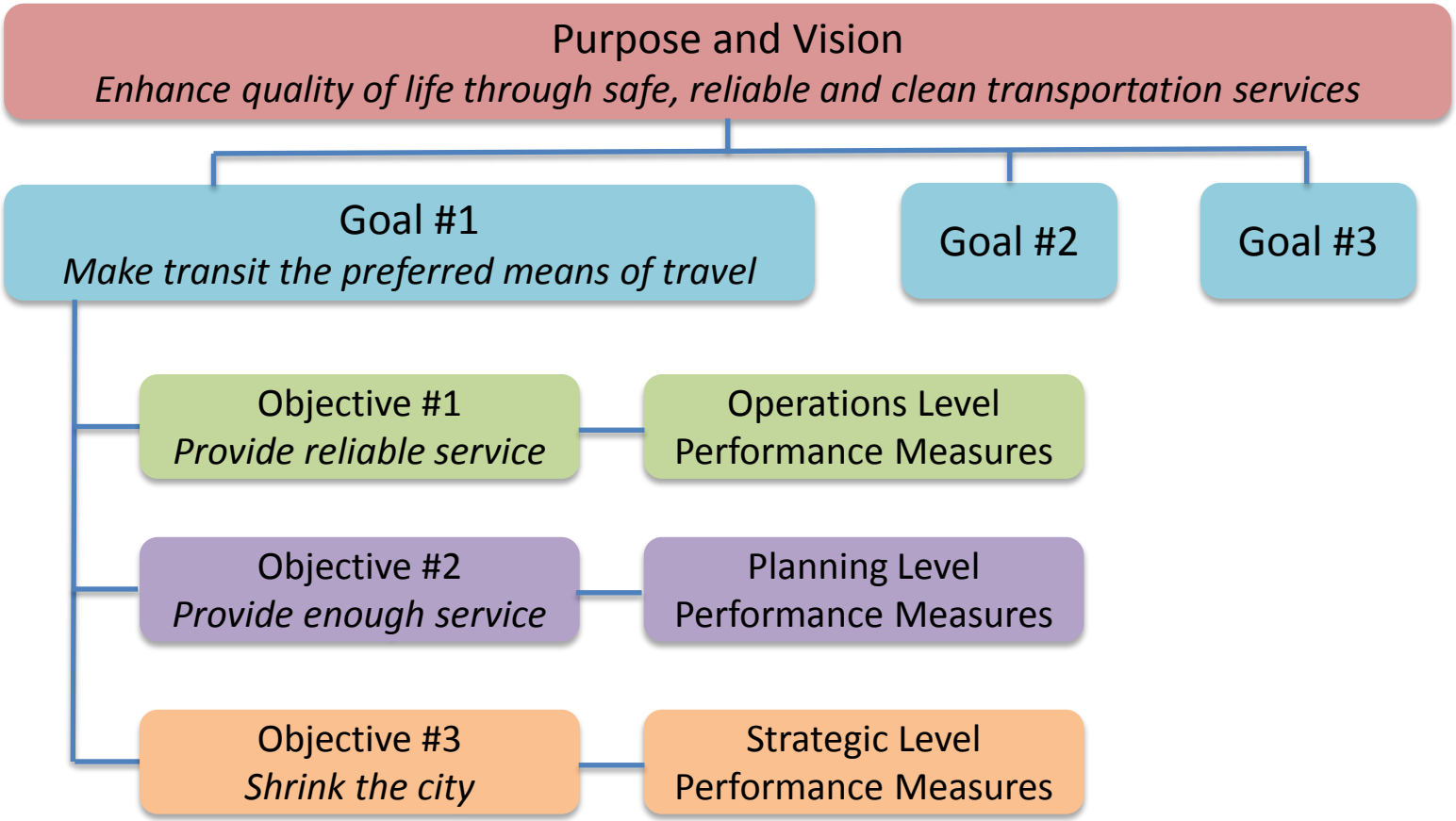
An Agency Moving As One

- Establish purpose and vision
- Translate purpose and vision into achievable goals
- Performance Measurement: Evaluate progress towards goals from agency and customer perspective
- Are we fulfilling our purpose and mission?

A City and Region Moving as One

- Establish purpose and vision with community
- Communicate goals, progress, and funding needs to community and civic leaders

Translating Purpose and Vision

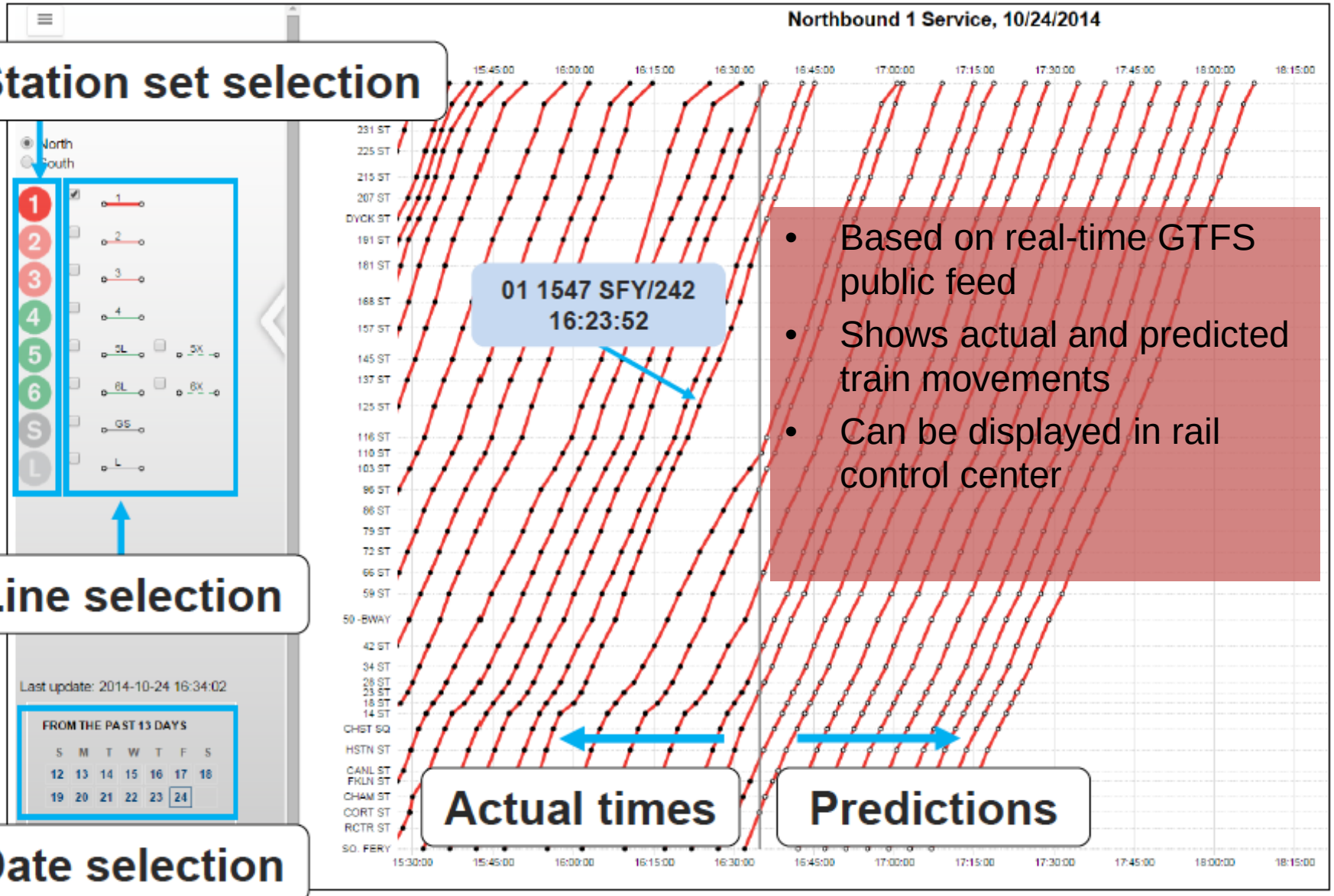


Part II: Performance Measurement

Operations Level Performance Measures

- Measure performance from seconds to hours
- Designed for real-time decision making in the field
- Maintain high level of service or respond to incidents and emergencies

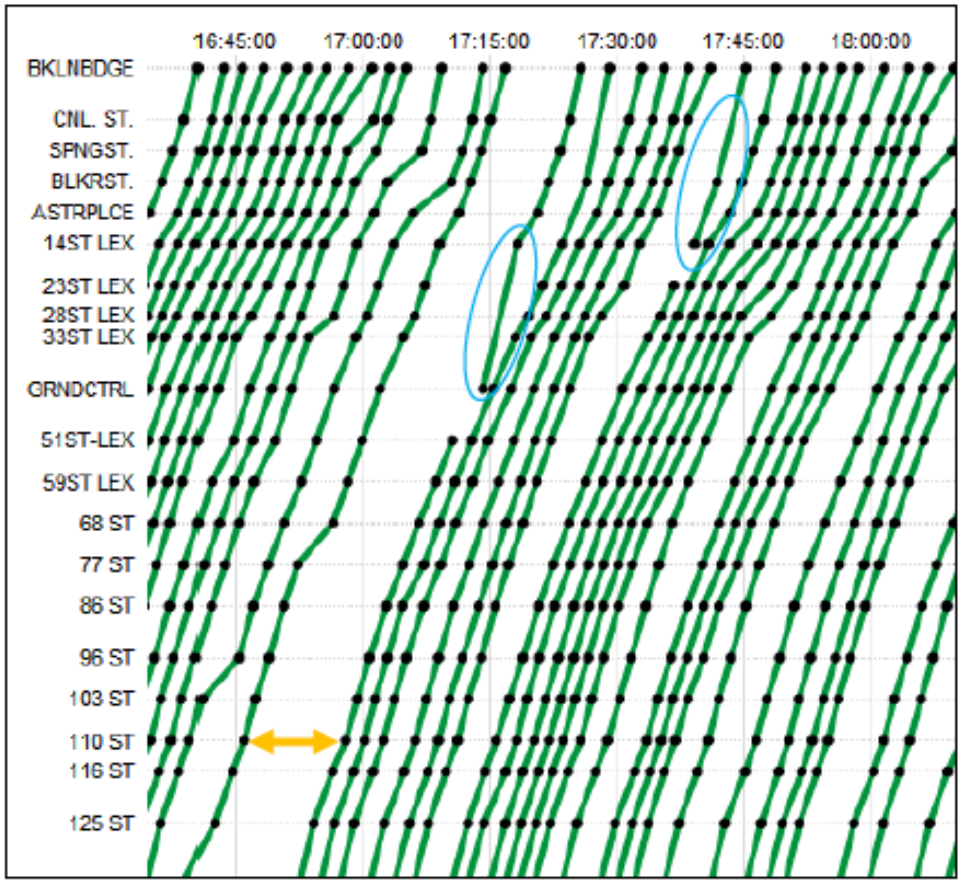
Operations Level Performance Measures



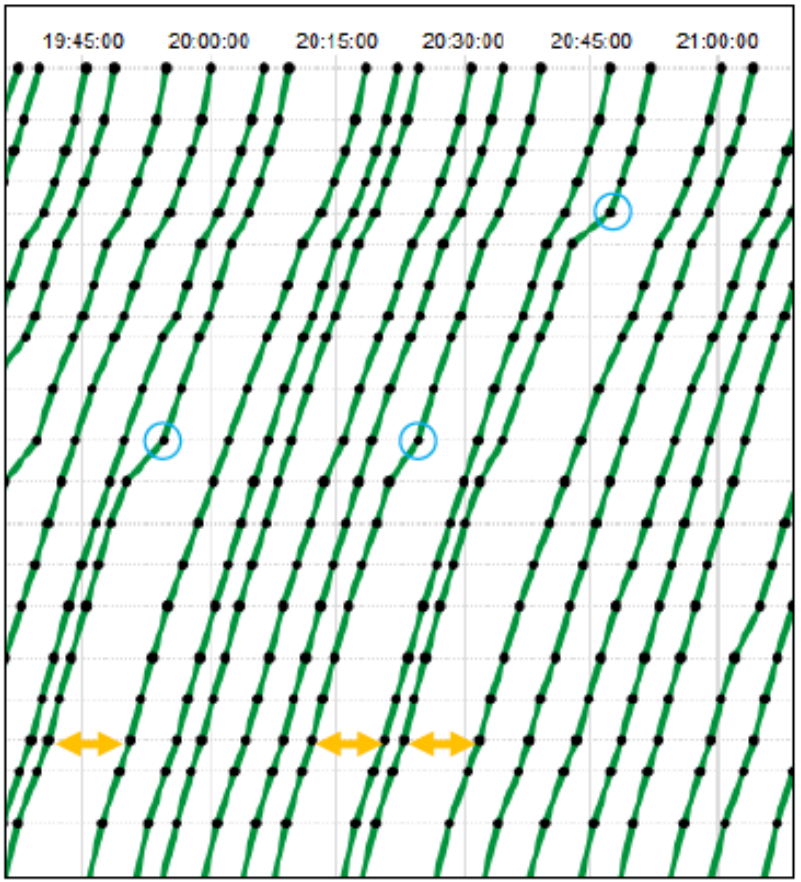
Operations Level Performance Measures

- Make and evaluate real-time decisions

Skipping Stops



Holding Trains



Planning Level Performance Measures

- Measure performance over 1 to 6 months
- Assess trends in operational performance and adherence to service standards
- Target operational hot spots for improvements and change service delivery plan to meet demand
- Can lead to recommendations for capital projects

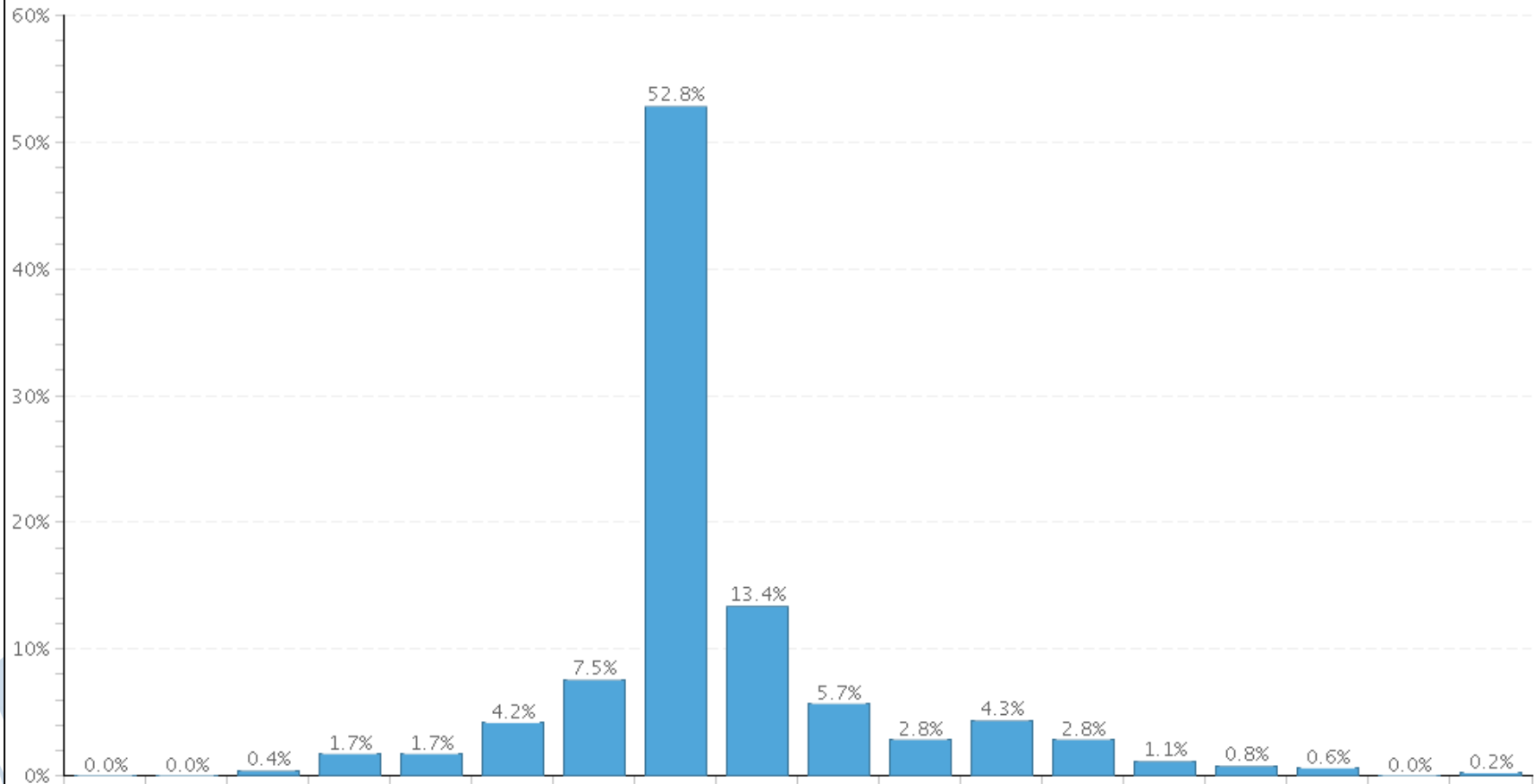
Planning Level Performance Measures

- Wait Assessment
  - Tied to TCQSM concept of reliability
  - Percent of actual intervals between trains that are no more than scheduled + 25%
  - For a 10 minute headway: 12.5 minutes max
  - For a 3 minute headway: 3.75 minutes max
- On-time performance
  - Measured at the terminals
  - Agencies have most control at terminals and need to “get it right” from the start

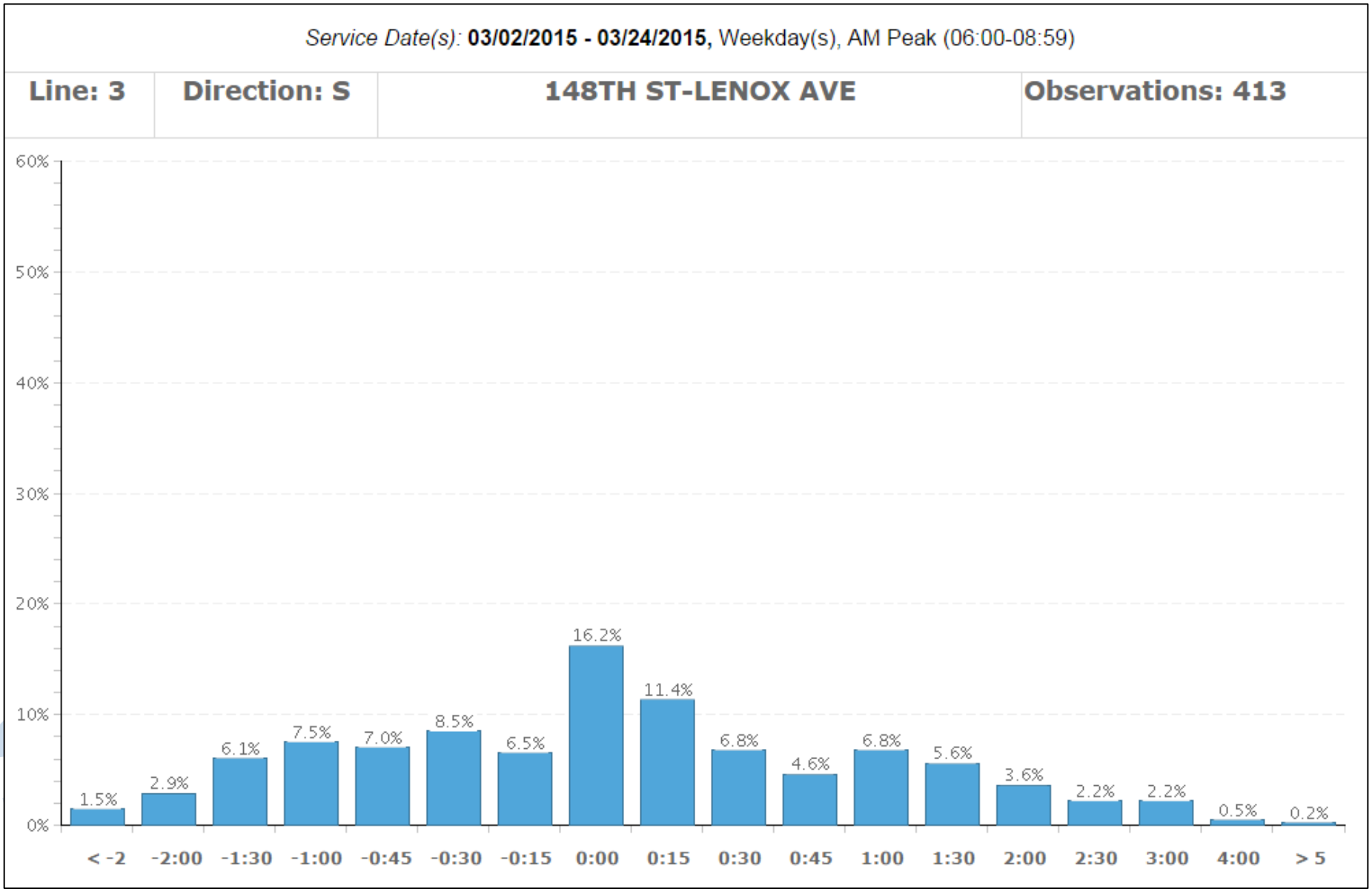
Terminal On Time Performance

Service Date(s): **03/02/2015 - 03/24/2015,** Weekday(s), AM Peak (06:00-08:59)

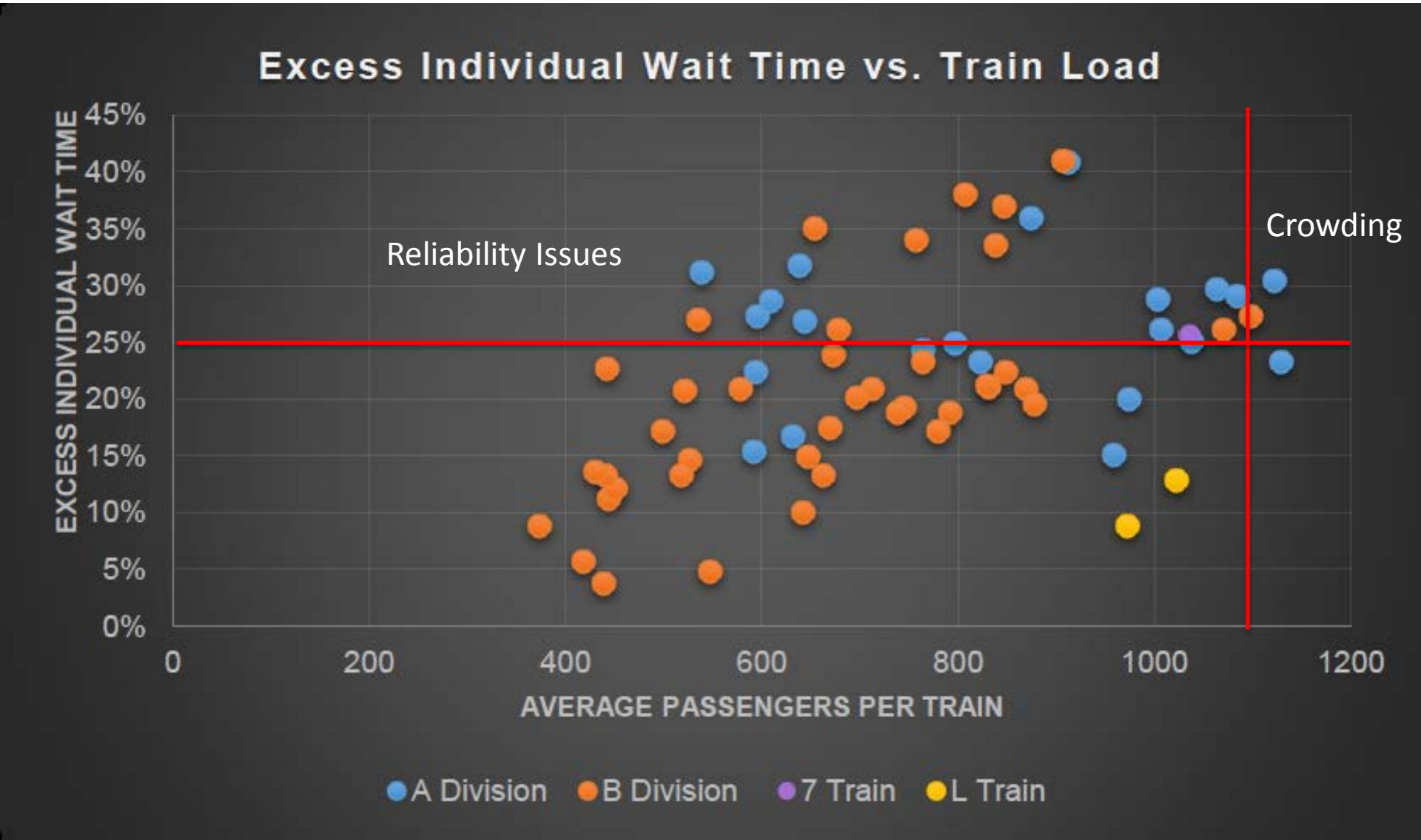
Line: 1	Direction: N	SOUTH FERRY (A LOOP)	Observations: 530



Terminal On Time Performance



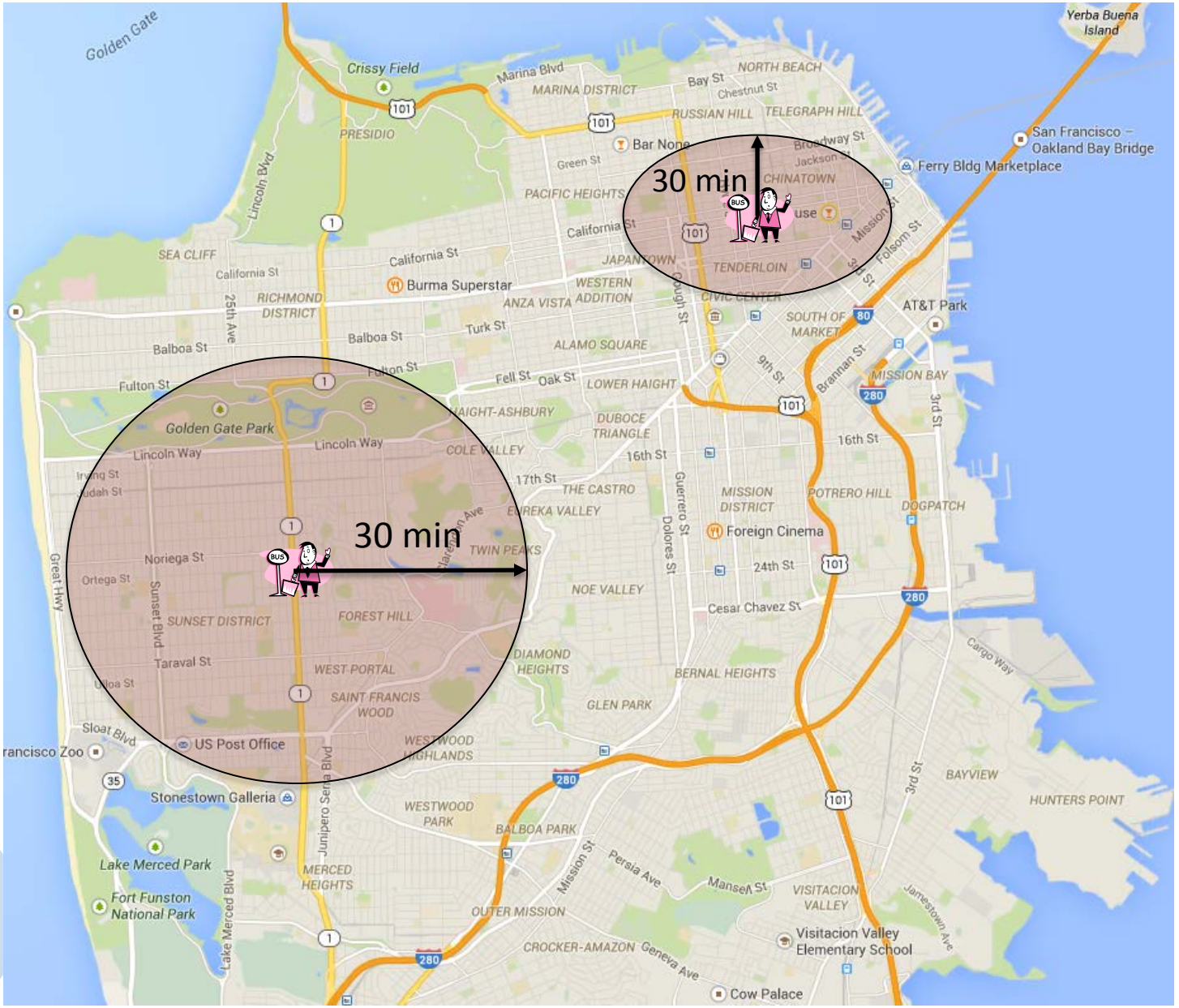
Wait Time and Train Load



Strategic Level Performance Measures

- Measure performance over 6 months to 5 years +
- Assess impact of transit agency on city and regional economy and quality of life
- Target planning, operational, and infrastructure changes to meet needs of city and region
- Can lead to recommendations for capital projects and forecast effects on city and region

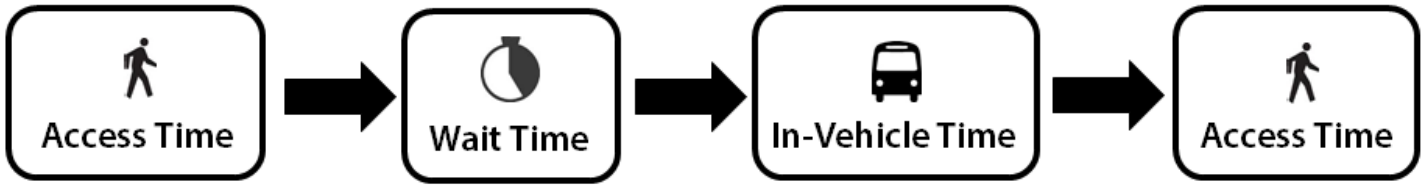
Measuring Access



Measuring Access

Access: How much of the city is within reach within a fixed travel budget?

- "How many jobs can I *reliably* access within 30 minutes of my job?"



Walk speed, geography

Headway gaps and bunches

Vehicle travel time

Walk speed, geography

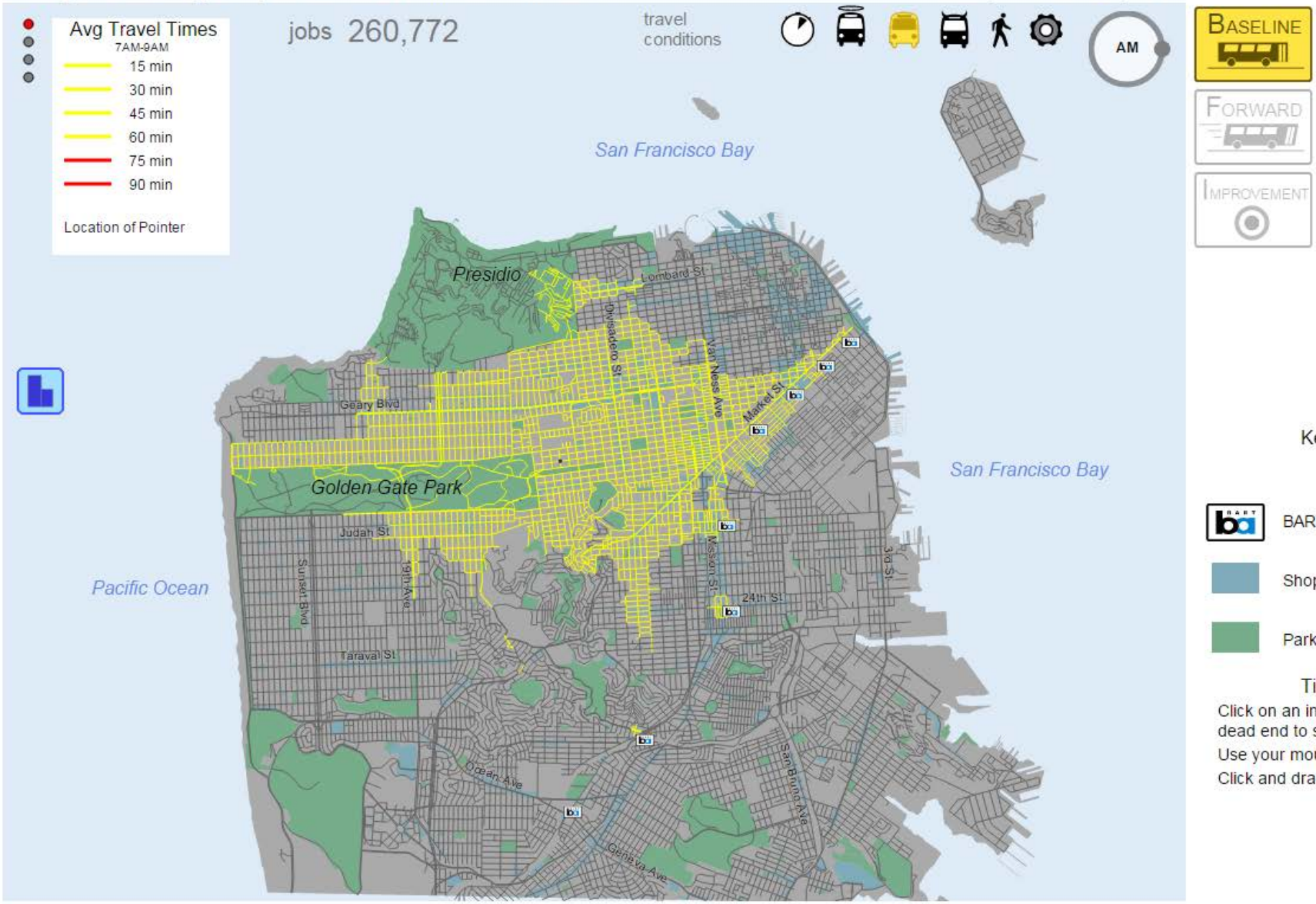
Source: Howard, D. *Visualizing Transit Service and Improvements: An Interactive Tool based on AVL Data*

Measuring Access

Interactive Transit Service Map of San Francisco

beta 3.0 Dan Howard | UC Berkeley

What you should typically be able to reach in 30 min from Clayton St & Hayes St



Set Maximum Travel Time: 30 minutes

0 10 20 30 40 50 60 70 80 90

http://bit.ly/1IVNTge

Interactive Transit Service Map of San Francisco

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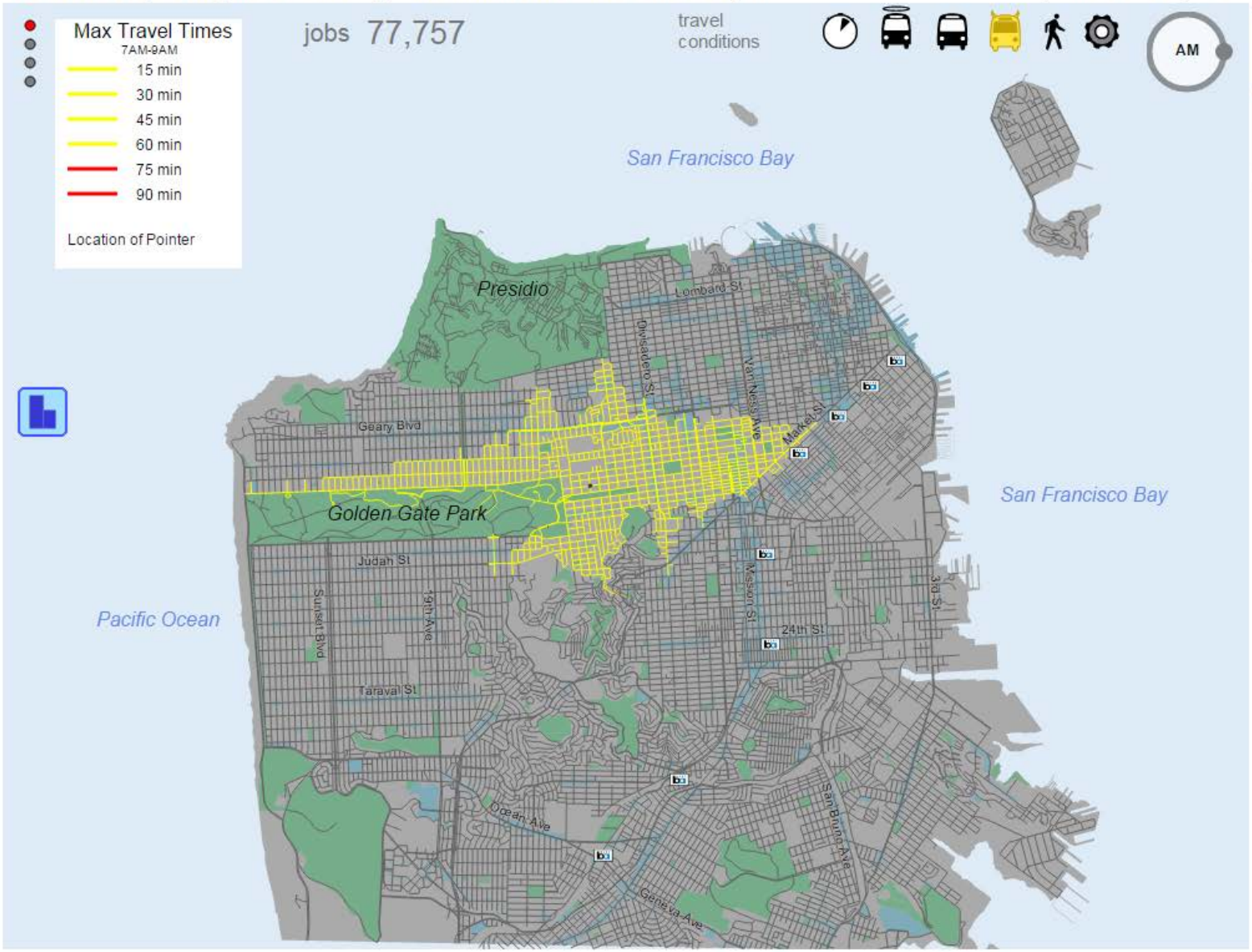
The farthest you might be able to get in 30 min on a bad transit day from Clayton St & Hayes St



Set Maximum Travel Time: 30 minutes

0 10 20 30 40 50 60 70 80 90 100

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Interactive Transit Service Map of San Francisco

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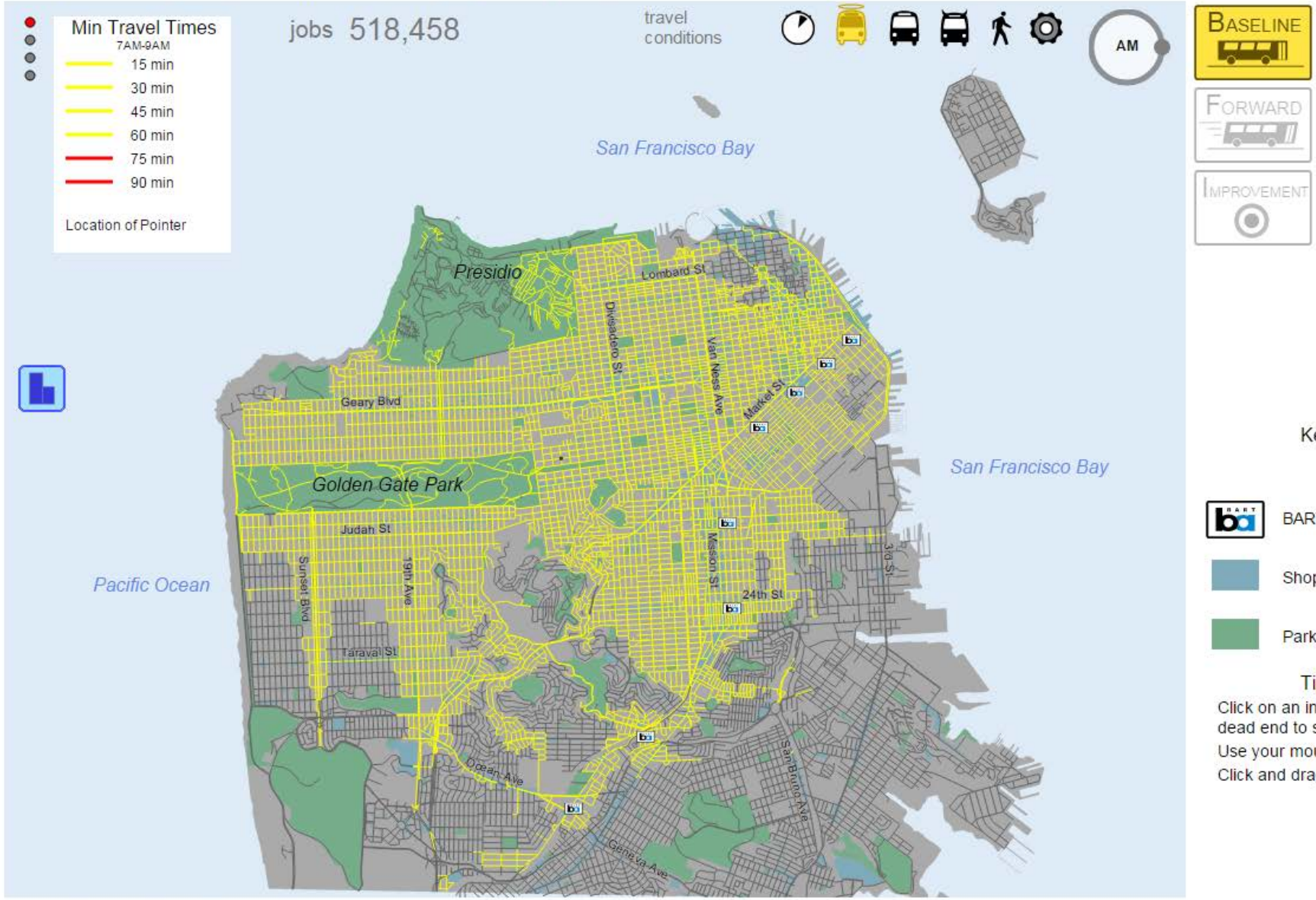
What you could reach in 30 min on a really good day from Clayton St & Hayes St



Set Maximum Travel Time: 30 minutes

0 10 20 30 40 50 60 70 80 90 100

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Interactive Transit Service Map of San Francisco

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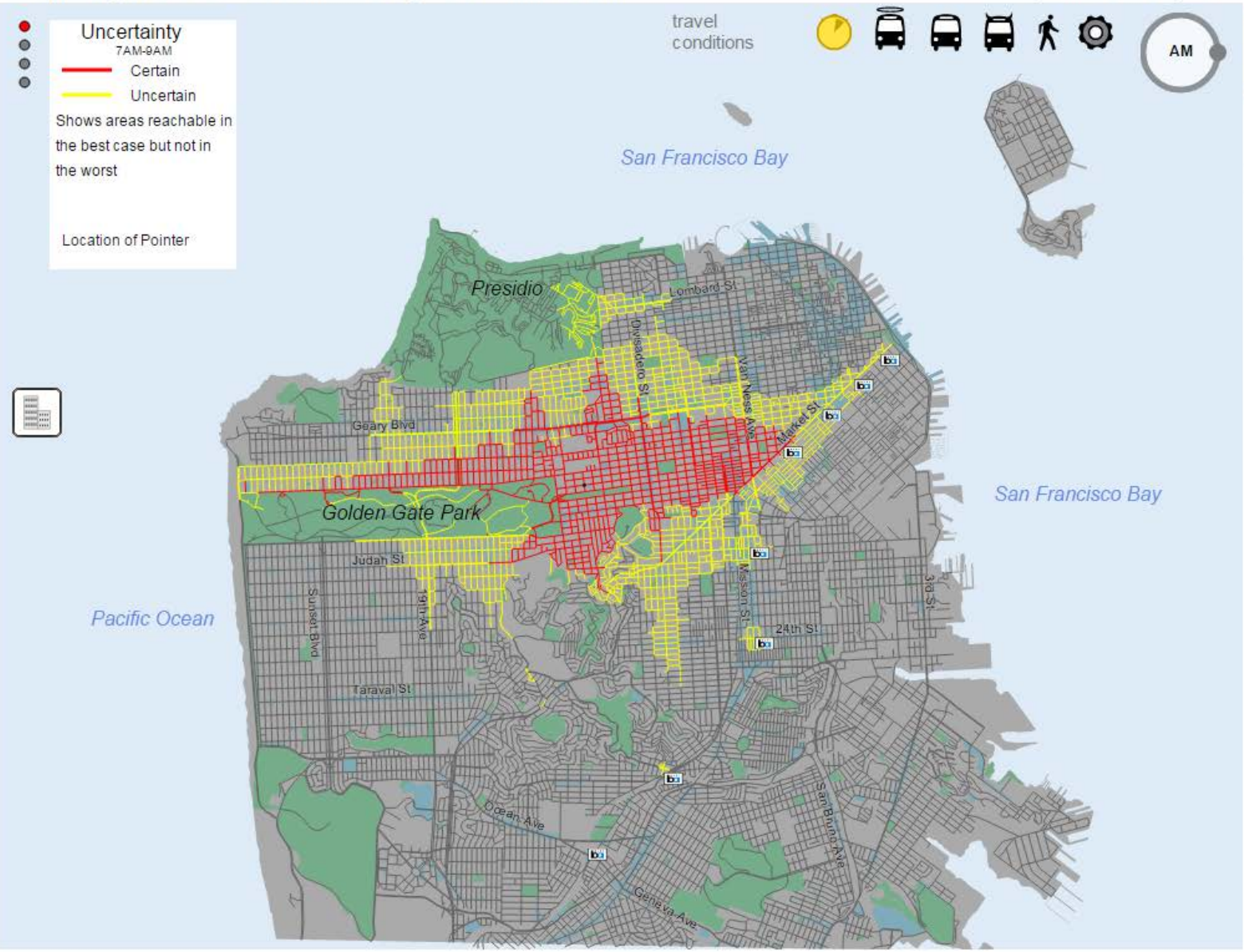
Comparing the worst case and average travel times from Clayton St & Hayes St



Set Maximum Travel Time: 30 minutes

0 10 20 30 40 50 60 70 80 90 100

http://bit.ly/1IVNTge

Measuring Access

How can we use this metric?

- Assessing existing quality of service from customer perspective
  - Identify needs
  - Communicate with stakeholders

- Evaluate before and after
  - New service, altered service pattern
  - Operational practices
  - Traffic engineering improvements

- Demonstrate the potential effects of large capital projects

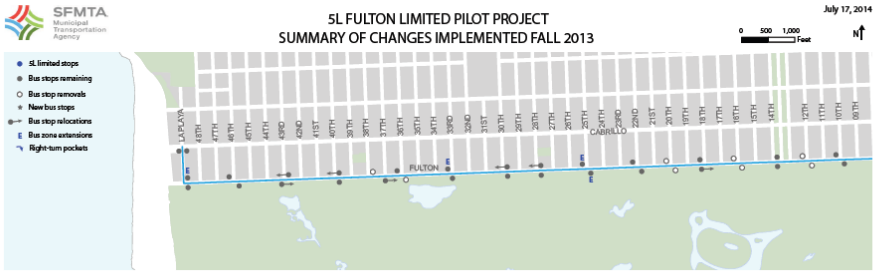
Communicating Metrics

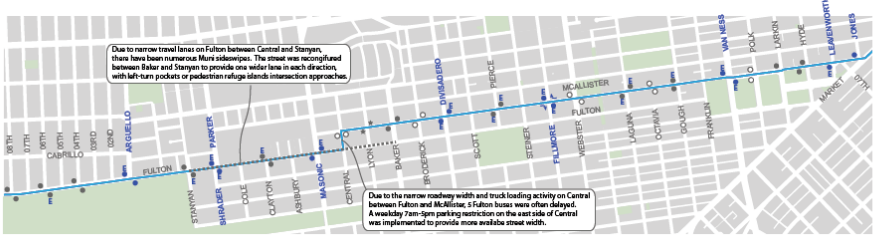
- Feedback for operators, front line supervisors, DOT staff, and leadership
- Tie service changes and capital improvements to agency purpose, performance metrics
- Transparency and clear communications when engaging community

MUNI FORWARD

5L Pilot Project

Summary of 5L Pilot Proposals





5L Service Changes

5 Fulton Short Line and 5L Fulton Limited Service Overview Weekdays 7am-7pm*

*At all other times 5 Fulton makes all stops between Ocean Beach and Temporary Transbay Terminal

5L Pilot Preliminary Results

Travel Time Savings

The 5L is

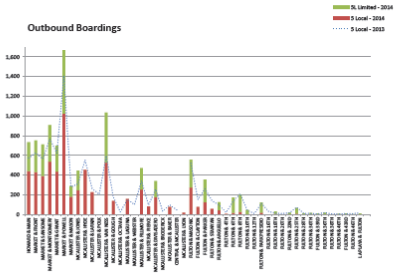
16% faster in the morning peak and 17% faster in the afternoon peak

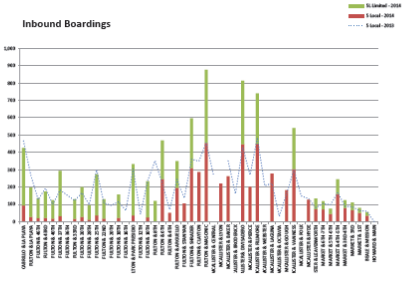
Ridership Increases

Average weekday ridership increased by

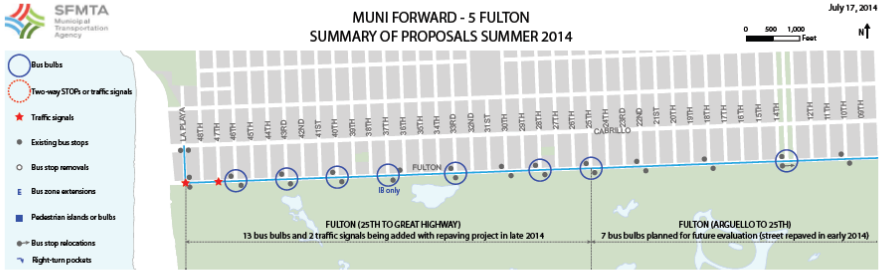
1,900 people (9%)

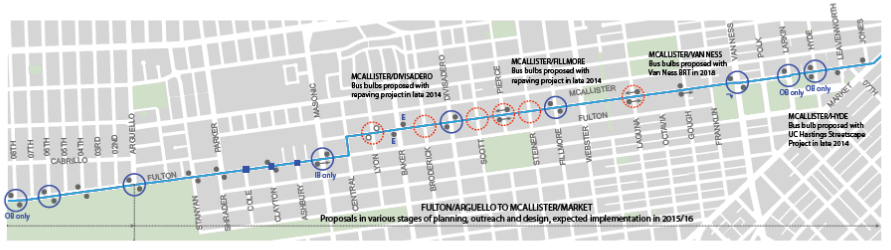
Many customers are choosing the 5L over the local service!

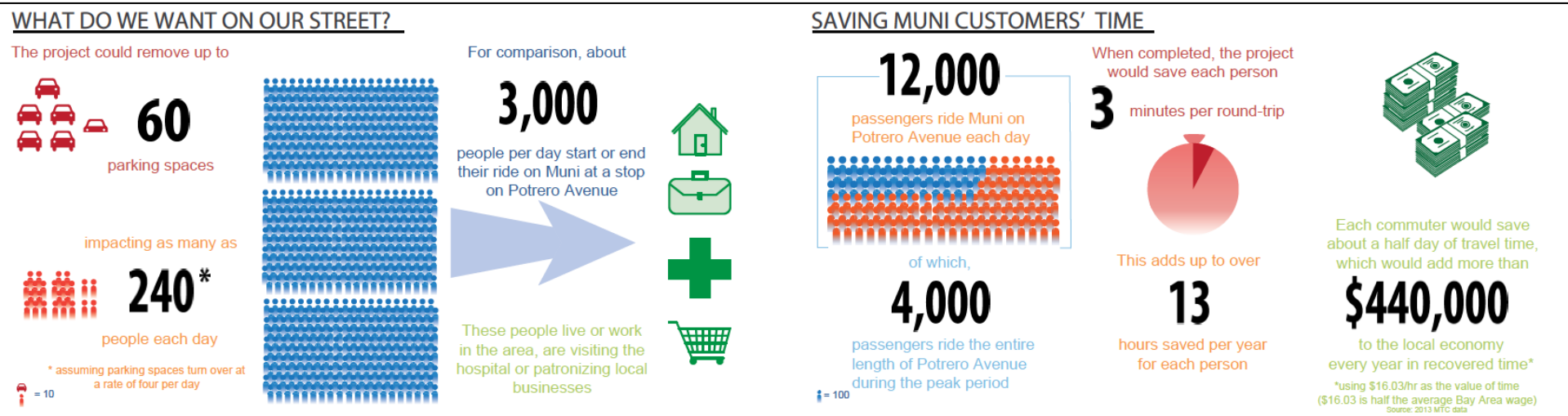




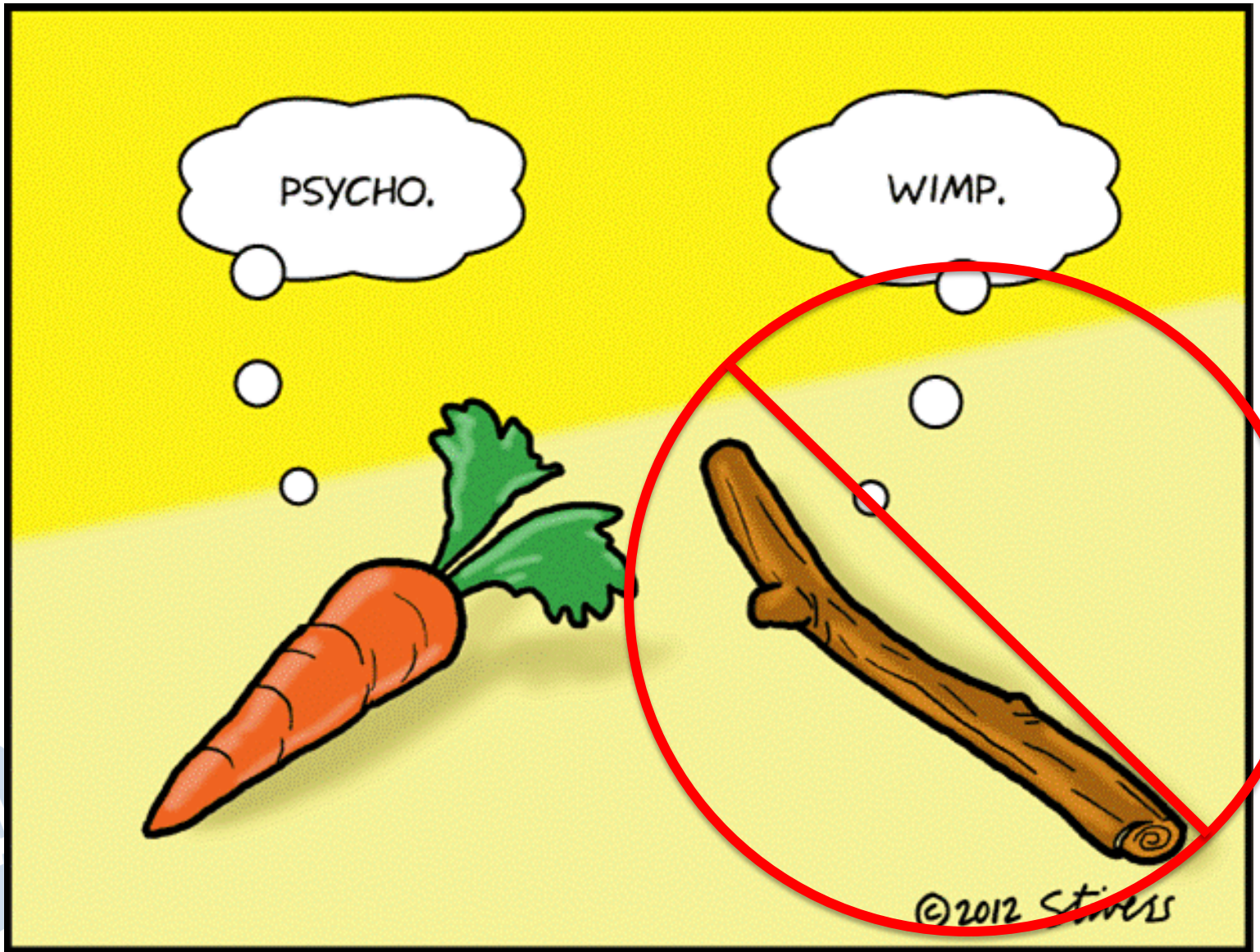
Summary of Proposals in the 5 Fulton Corridor

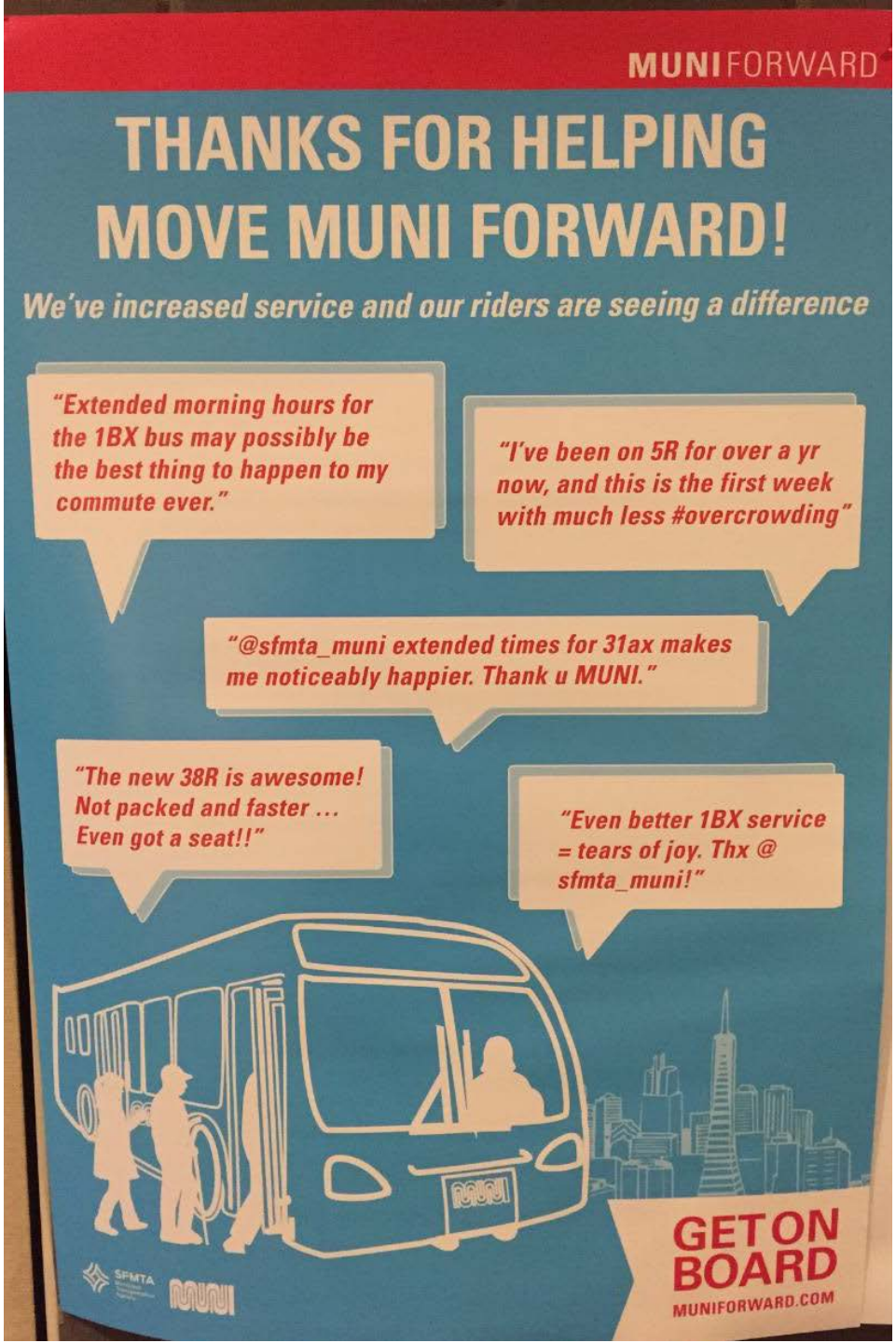




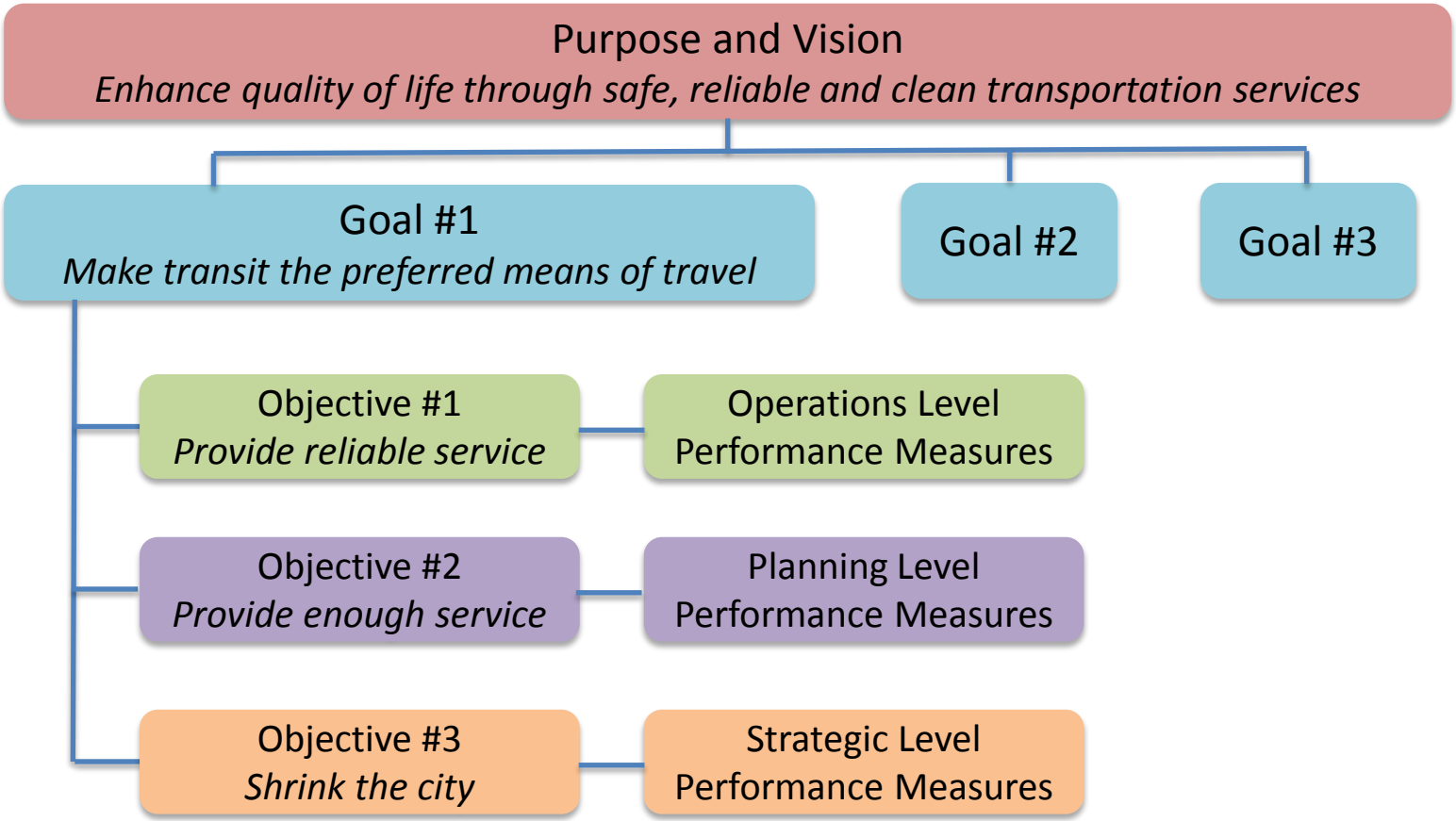

WHAT DO WE WANT ON OUR STREET?
The project could remove up to
60
parking spaces
impacting as many as
240*
people each day
* assuming parking spaces turn over at a rate of four per day
= 10
For comparison, about
3,000
people per day start or end their ride on Muni at a stop on Potrero Avenue
These people live or work in the area, are visiting the hospital or patronizing local businesses
SAVING MUNI CUSTOMERS' TIME
12,000
passengers ride Muni on Potrero Avenue each day
of which,
4,000
passengers ride the entire length of Potrero Avenue during the peak period
= 100
When completed, the project would save each person
3
minutes per round-trip
This adds up to over
13
hours saved per year for each person
Each commuter would save about a half day of travel time, which would add more than
$440,000
to the local economy every year in recovered time*
*using $16.03/hr as the value of time ($16.03 is half the average Bay Area wage)
Source: 2013 MTC data

Part III: Lessons Learned




MUNIFORWARD
THANKS FOR HELPING MOVE MUNI FORWARD!
We've increased service and our riders are seeing a difference
"Extended morning hours for the 1BX bus may possibly be the best thing to happen to my commute ever."
"I've been on 5R for over a yr now, and this is the first week with much less #overcrowding"
"@sfmta_muni extended times for 31ax makes me noticeably happier. Thank u MUNI."
"The new 38R is awesome! Not packed and faster … Even got a seat!!"
"Even better 1BX service = tears of joy. Thx @ sfmta_muni!"
SFMTA
muni
GET ON BOARD
MUNIFORWARD.COM

The Complete Picture



Thank You!

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Access Map: http://bit.ly/1IVNTge

Appendix

Planning Level Performance Measures

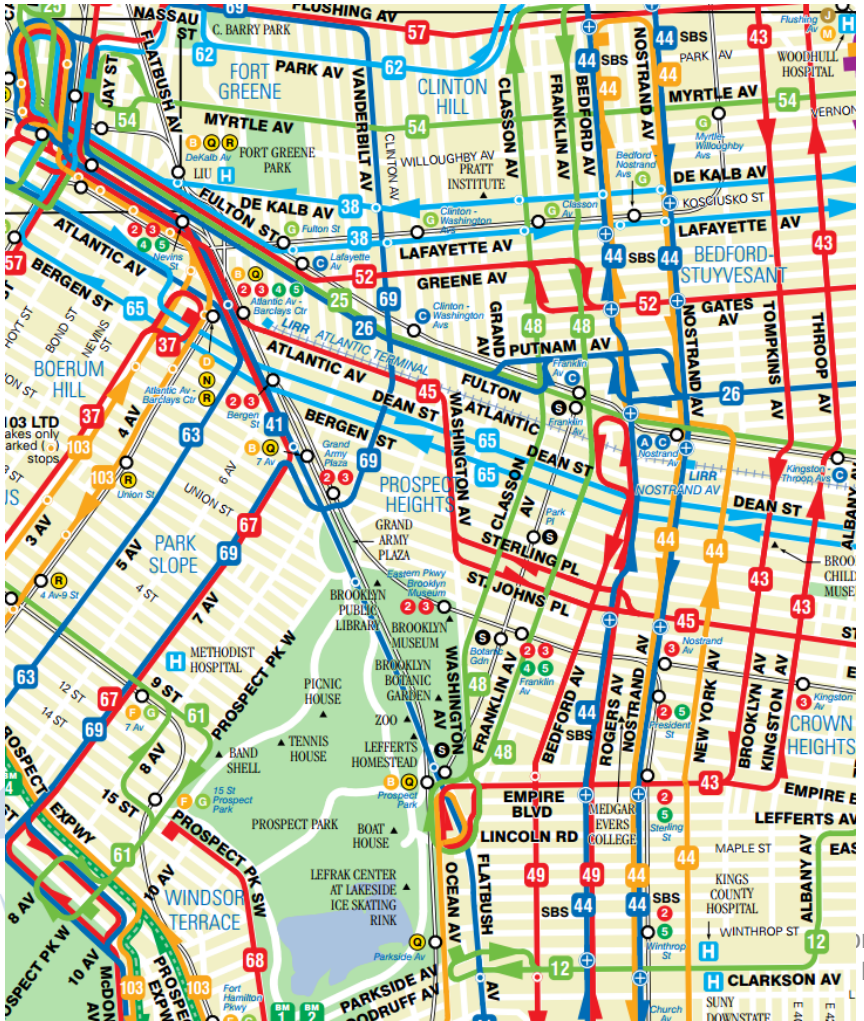
- Bus route spacing

Transit Dependency (Percentage of Households Without Automobiles)	Population Density (Persons per Square Mile)	
	Greater Than 12,000	12,000 or Less
Over 15%	2,000-2,600 feet (3/8-1/2 mile) between routes	2,000-2,600 feet (3/8-1/2 mile) between routes
15% and Under	2,000-2,600 feet (3/8-1/2 mile) between routes	5,280 feet (1 mile) between routes

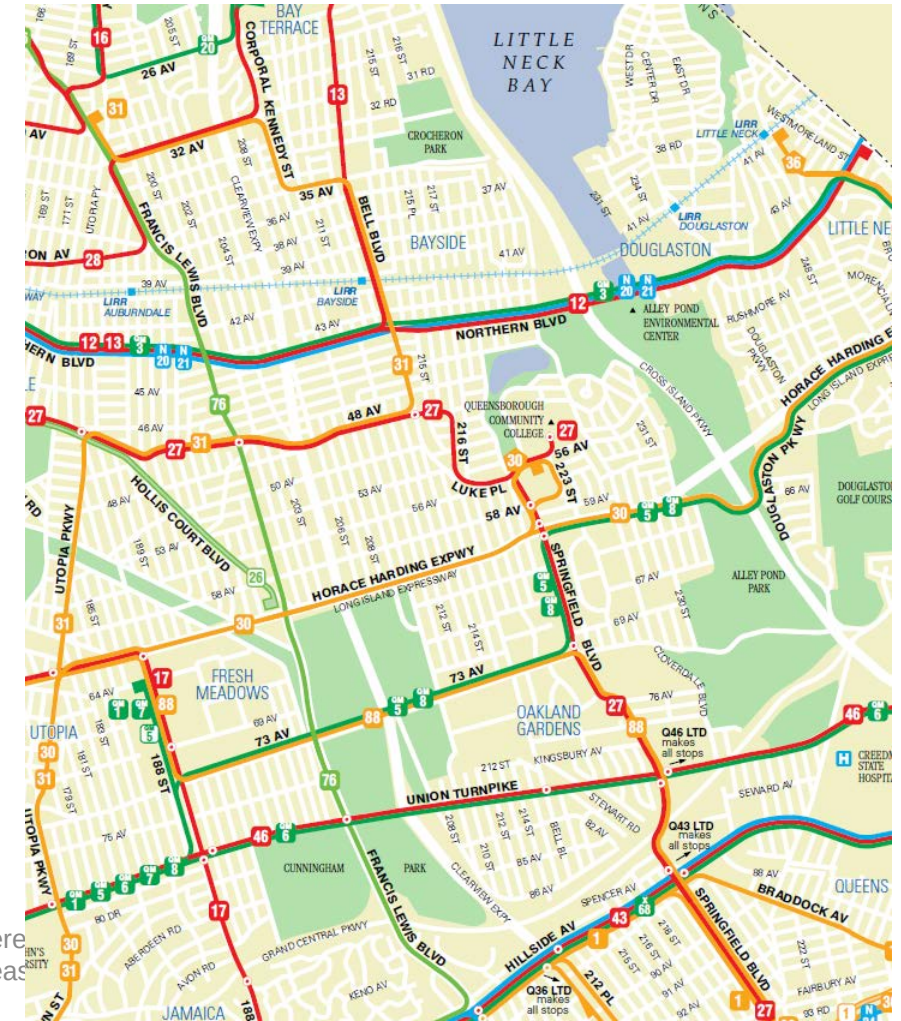
- Transit dependent neighborhoods get better access to transit

Service Coverage

Downtown Brooklyn –
Dense bus service



Eastern Queens –
Spread out bus service



Measuring Access