Geneva-Harney Bus Rapid Transit Feasibility Study

STUDY REPORT

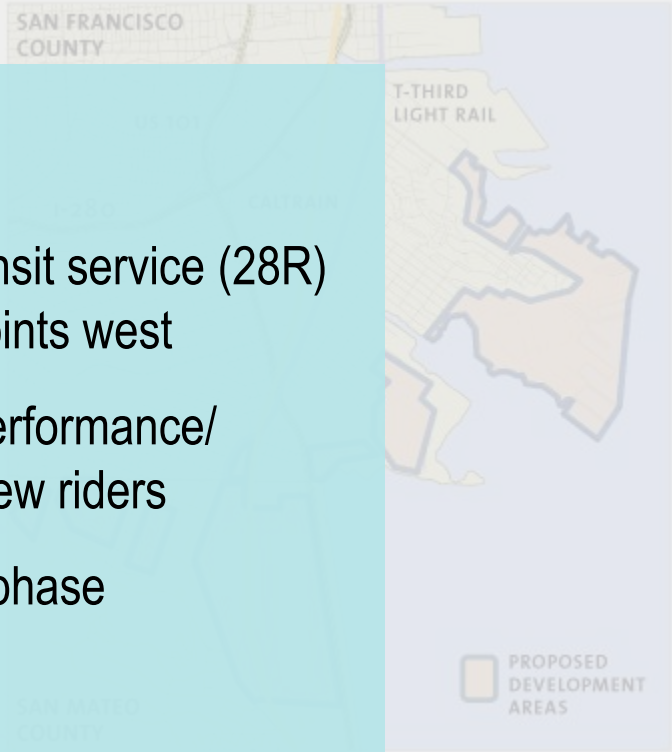
Citizens Advisory Committee

June 24, 2015

Study Overview

Why improve transit in the Geneva-Harney corridor?

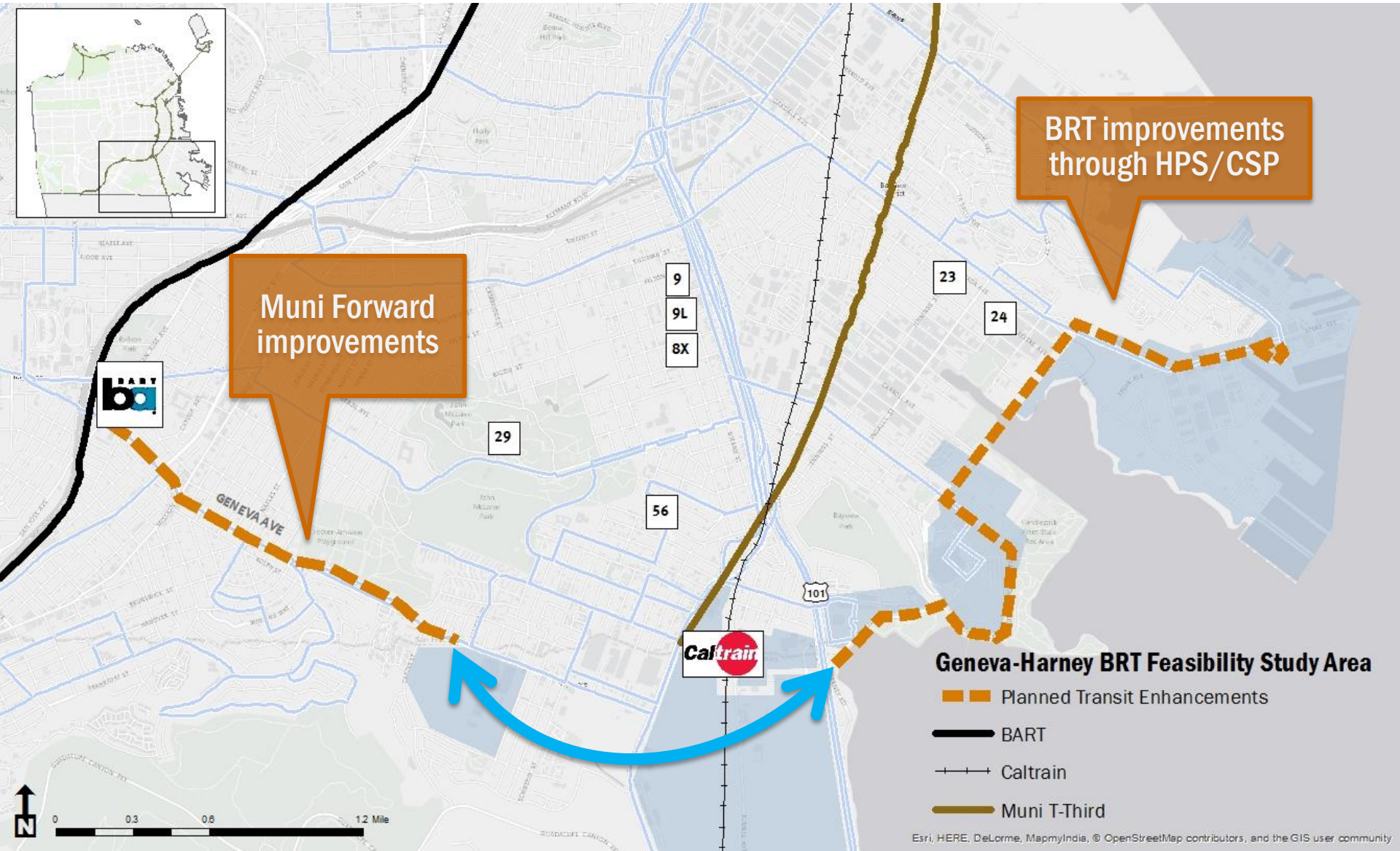
- Substantial dense, mixed-use, walkable developments expected in now-vacant land parcels around the Bayshore Caltrain Station
  - 7,500 [illegible] households
  - 30,000+ new jobs
- Major tra[illegible] this area in the 2015-2020 timeframe but no clearly [illegible]
- Bus Rapid Transit envisioned in the Bi-County [illegible] (Mar 201[illegible]
- Improve service quality and connectivity
- Improve balance among all corridor travelers



Study Goals:

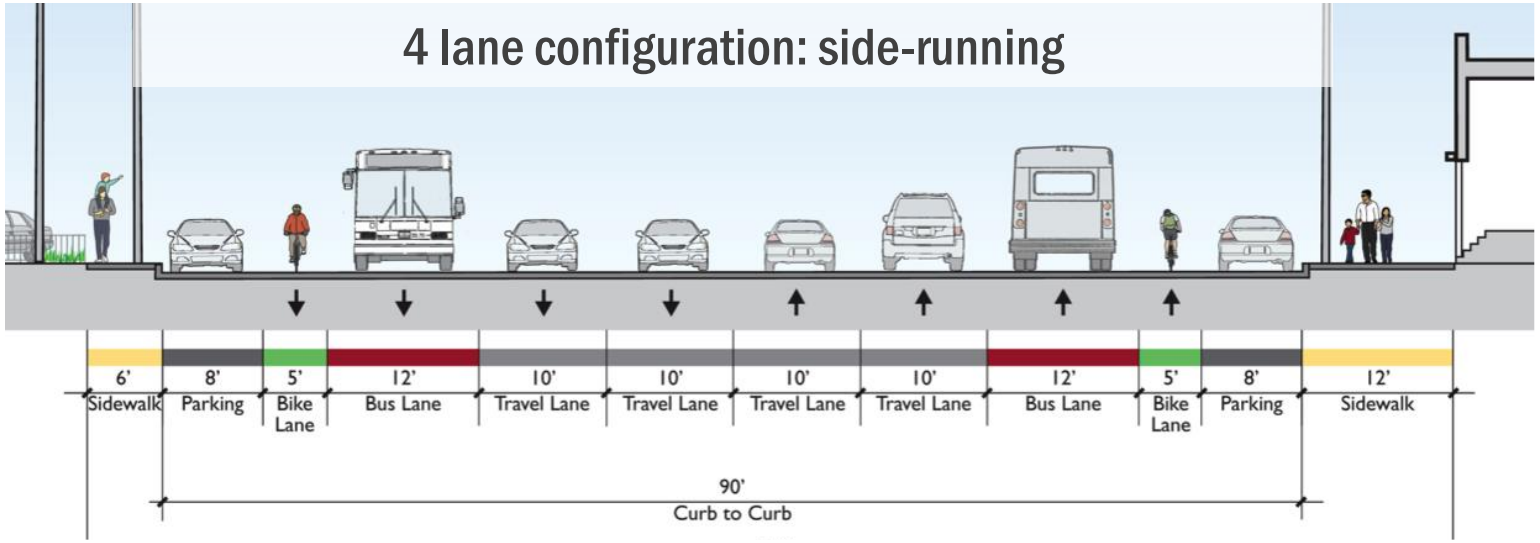
- Determine route for near-term rapid transit service (28R) between HPS/CPS and Balboa Park/points west
- Determine BRT character to address performance/ connectivity for existing travelers and new riders
- Identify benefits and concerns for next phase
- Explore high-level light rail feasibility

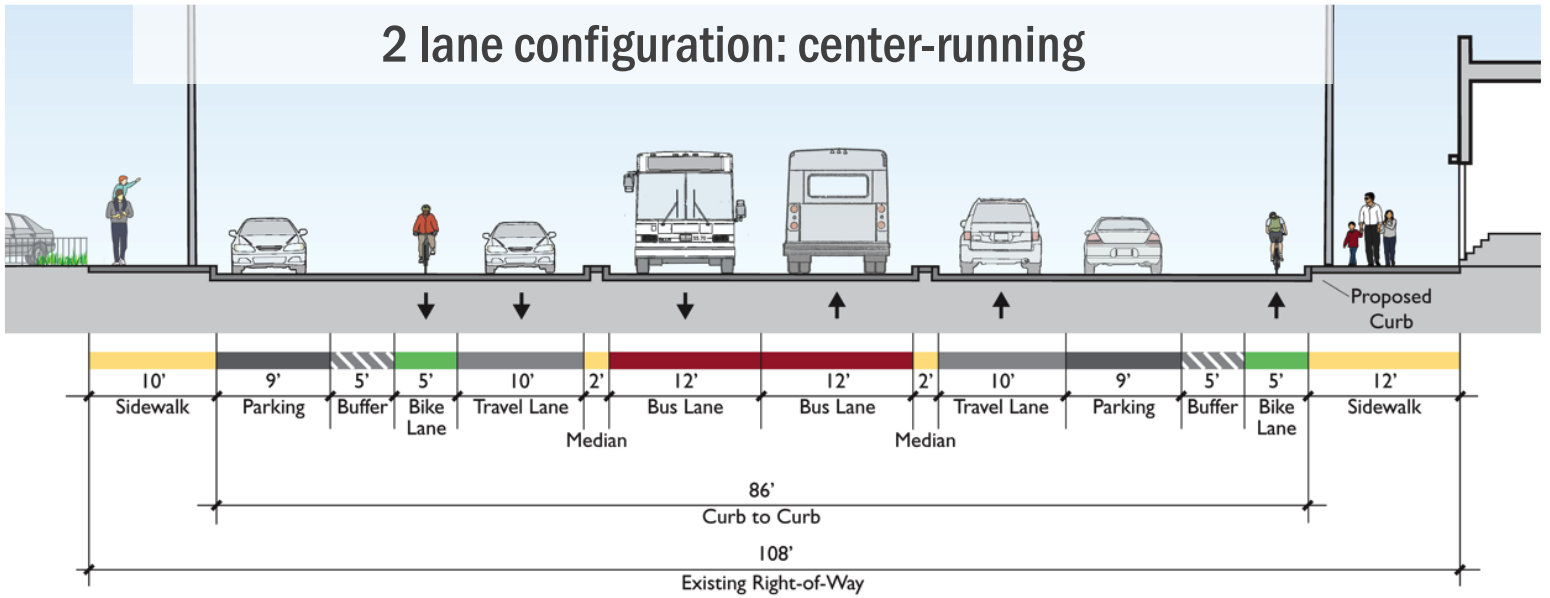
Project Context



Scenario Options

Geneva Alternatives



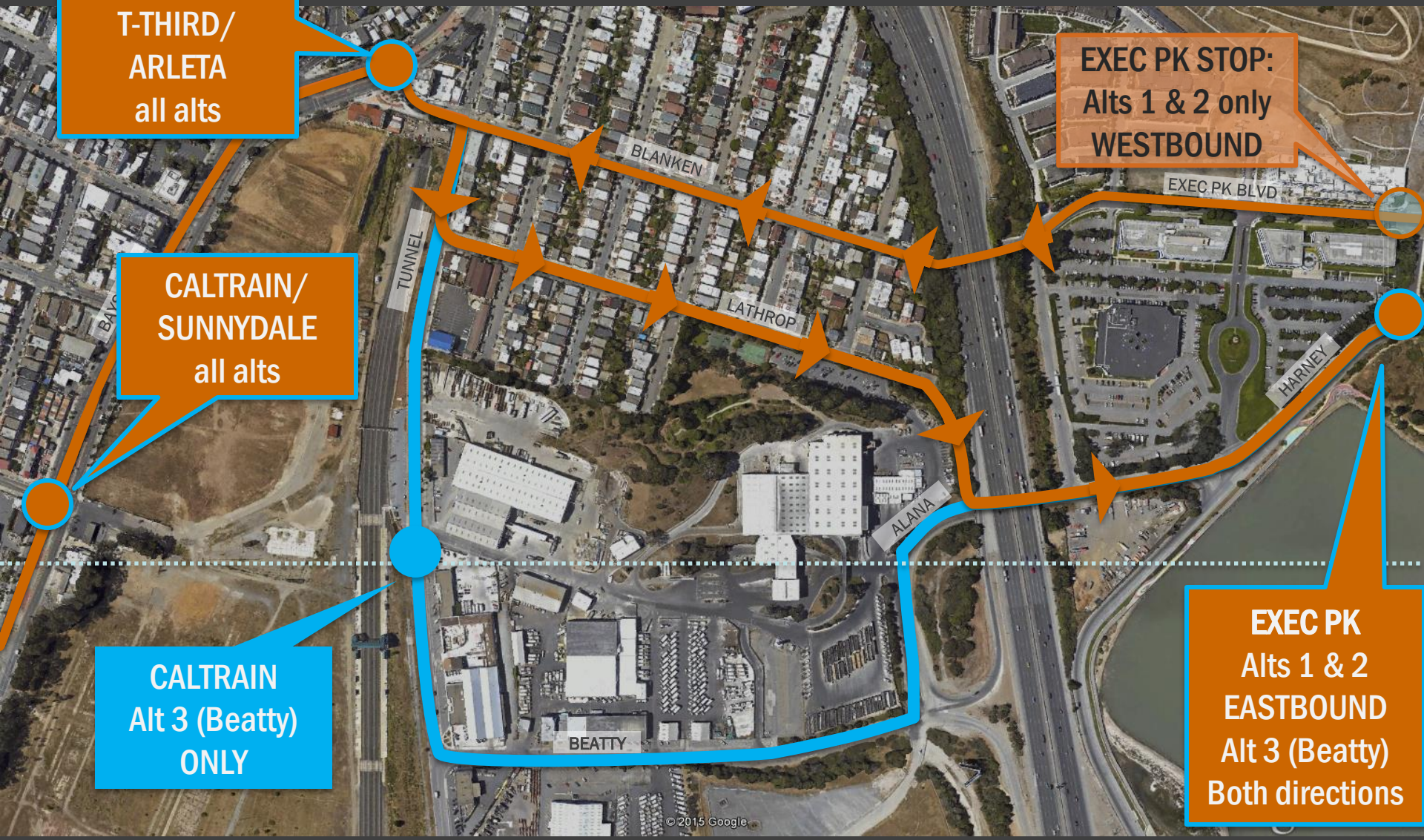


Geneva Alternatives

4 lane configuration: side-running

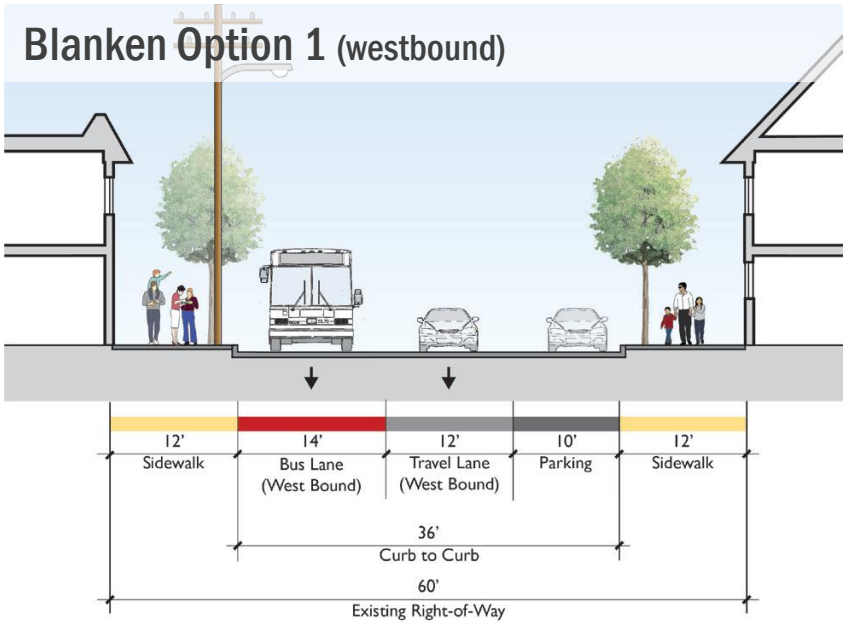
2 lane configuration: center-running

Eastern Alignment Alternatives

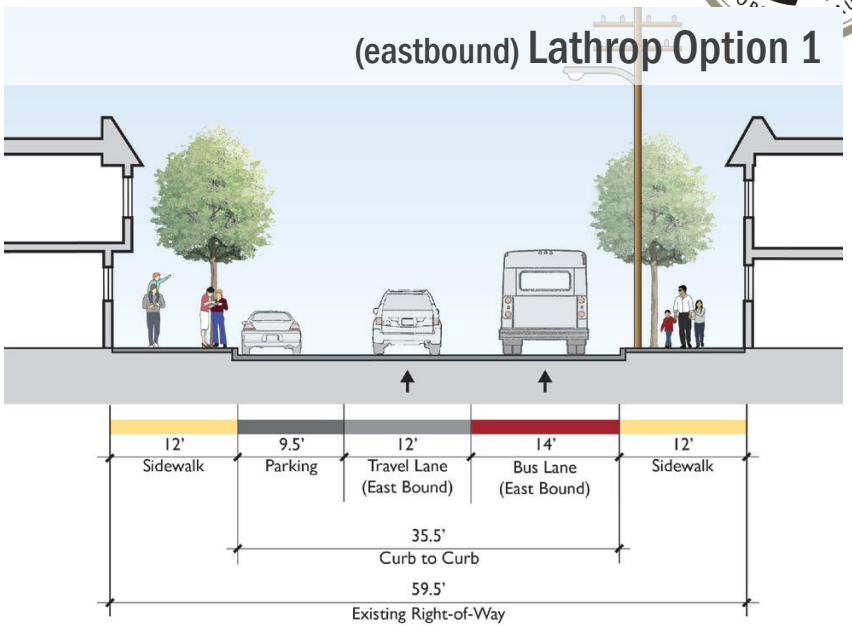


Eastern Segment Options—Little Hollywood

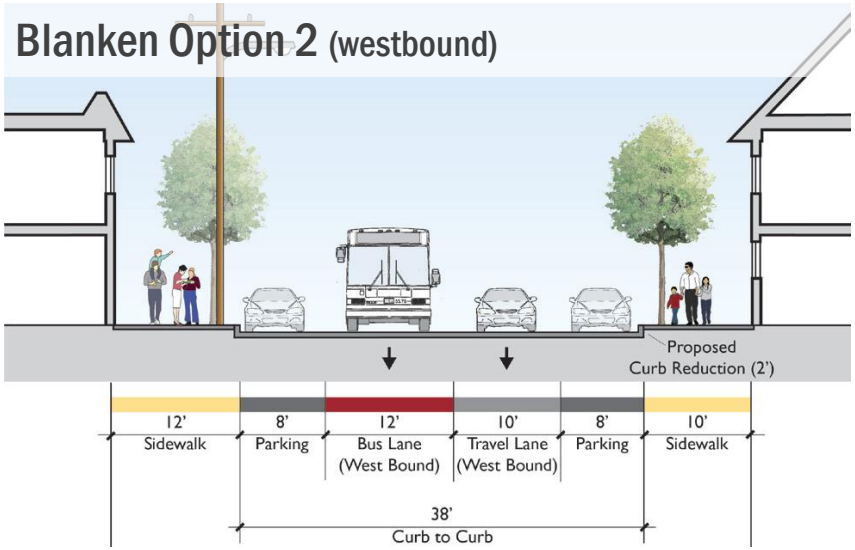
Blanken Option 1 (westbound)



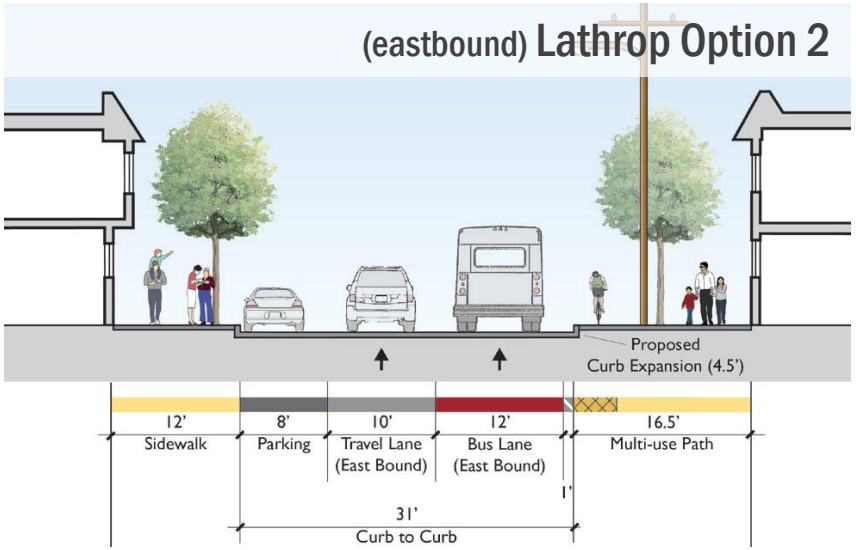
(eastbound) Lathrop Option 1



Blanken Option 2 (westbound)



(eastbound) Lathrop Option 2

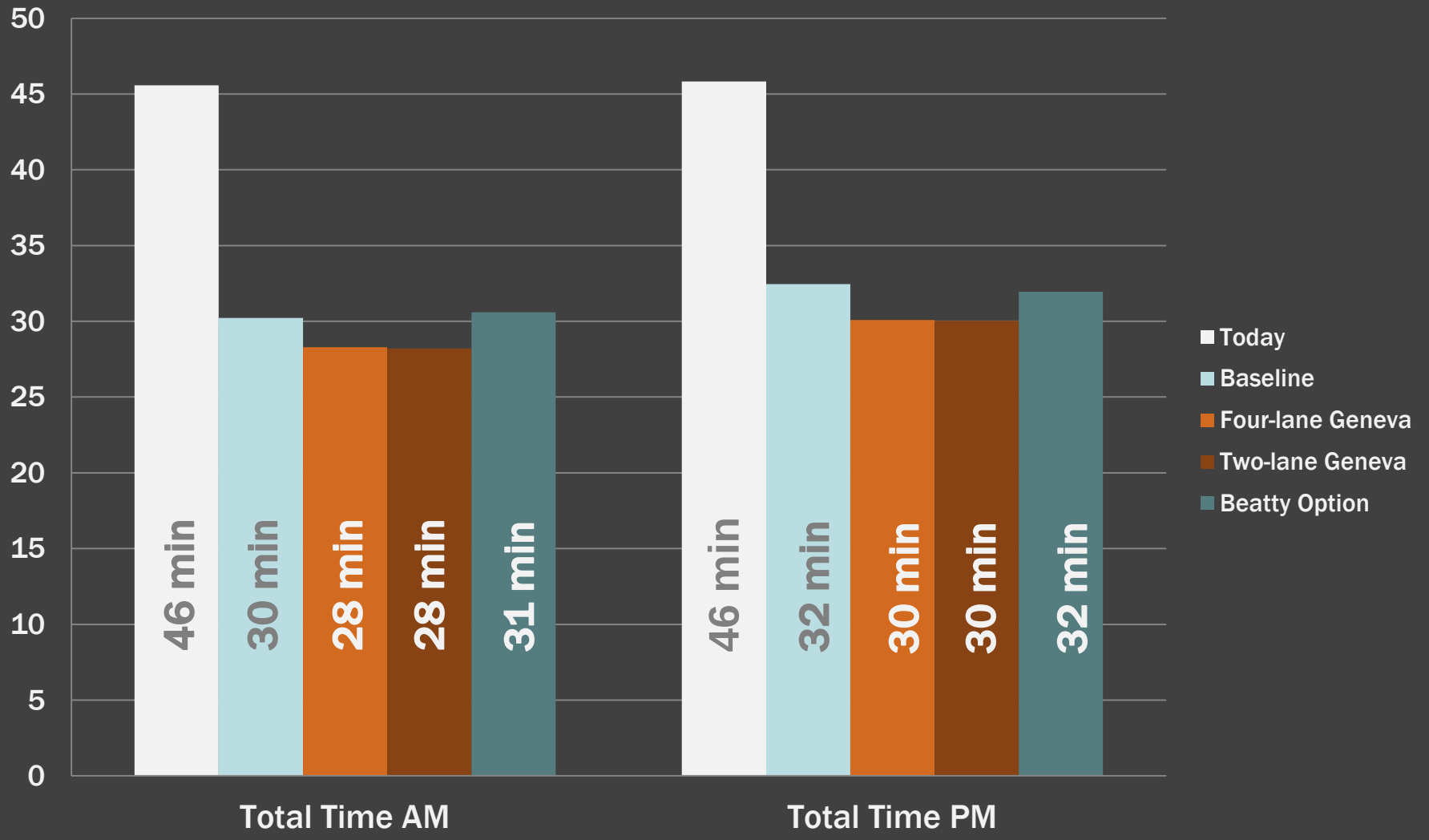


Potential Parking Changes, Little Hollywood

Top Benefits, Top Concerns

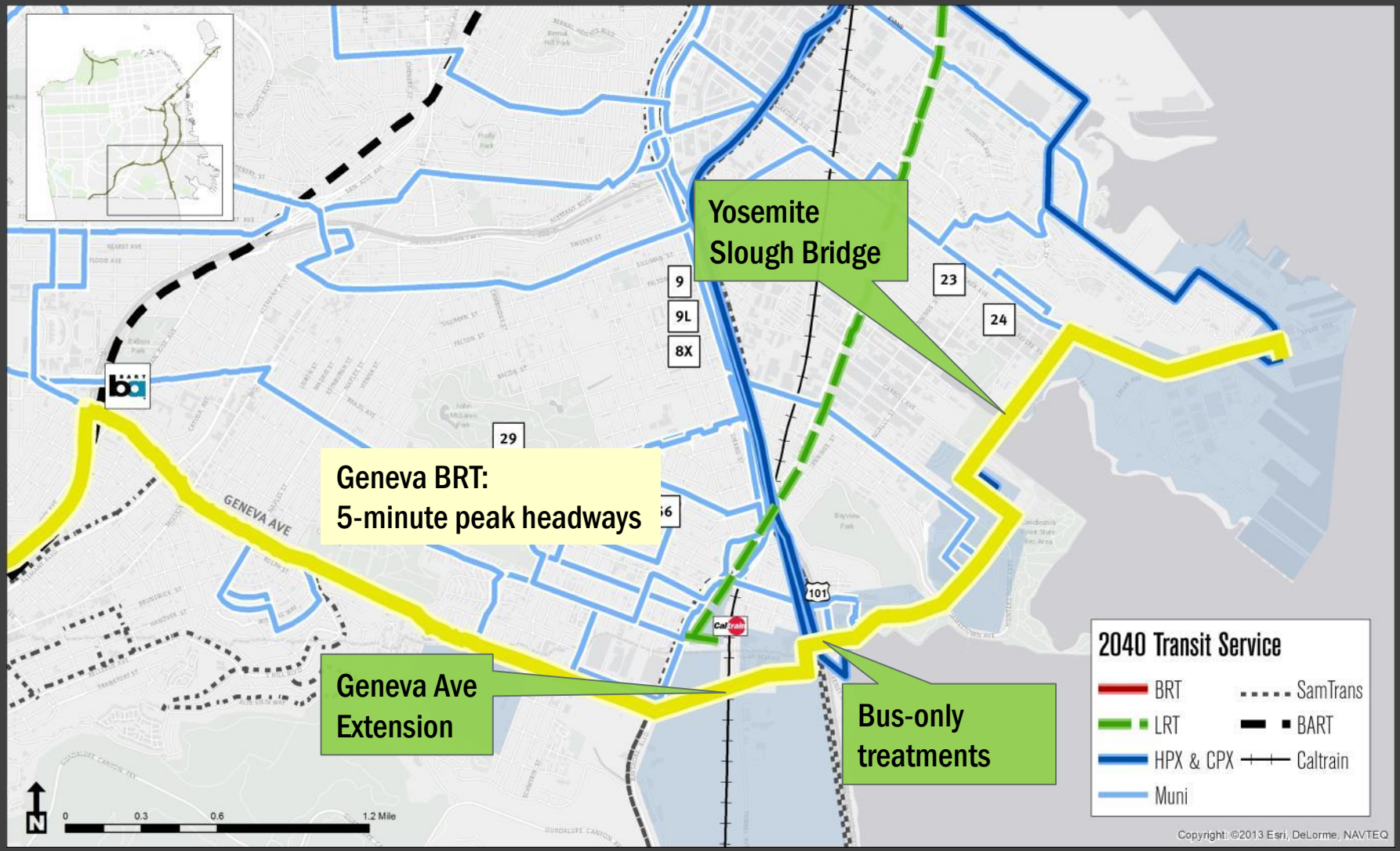
Benefits	Concerns
More reliable transit service	Impacts on parking availability
More frequent transit	Traffic diversions to residential neighborhoods
Fewer, more direct transfers	Change in neighborhood character
Safer crossing opportunities	Construction impacts
Safer bicycle facilities	Reduced turning opportunities

Travel Time: Balboa Park to Candlestick



Future Outlook

2040 Baseline Transit Service



Source: SF CHAMP

Note: Weekday PM Peak

Future Outlook
Exploring Light Rail

	2040 Baseline	2040 LRT 1 (Transfer @ Bayshore)	2040 LRT 2 (BRT + LRT)
BRT Headway (mins)	5	10	10
LRT Headway (mins)	5	5	5
Headway on Geneva (mins)	5	5	3
Service on Geneva	BRT	BRT	BRT + LRT
BRT Coverage	HPS to BART	HPS to Bayshore	HPS to BART
BRT Transfers (1-seat)			
to Caltrain	+	+	+
to BART	+	-	+
to LRT		+	+
LRT Transfers (1-seat)			
to Caltrain			+
to BART		+	+
to BRT		+	+

Less frequent service **East of 101** with LRT options

More frequent service on **Geneva** with BRT+LRT

Required transfer at Bayshore means no direct route to BART Stn from E of 101

Future Outlook
Initial LRT Findings

- LRT options create/improve direct downtown connection
  - they have potential to increase ridership
  - one-seat ride from east-side to BART is desirable
- LRT + BRT keeps competitive travel time with auto
  - Higher frequency on Geneva than LRT only
  - Would require proactive street/signal management
- Next steps
  - additional coordination with partners (ie, Daly City)
  - enumerate key issues for future study

Geneva cost estimates

GENEVA/BAYSHORE SEGMENT	Option 1 (4-Lane Curbside)	Option 2 (2-Lane Center)	Bayshore Avenue
Low Range			$2,400,000
High Range			$3,900,000

Estimated BRT Costs

- $10M - $25M depending on alternative (2020$)

Estimated LRT Costs

- $300 – 600M depending on alternative (2040$)

EASTERN SEGMENT	Option 1 Couplet	Option 2 Couplet + Bike Path	Option 3 Beatty
Low Range	$2,700,000	$4,400,000	$4,600,000
High Range	$4,500,000	$7,400,000	$7,700,000

Study Findings

- 28L/Geneva BRT closes rapid transit gap in network
  - 1-seat ride greatly reduces transit travel time
    - 30-40% travel time reduction (over today)
  - Improvements lead to increased ridership
    - 6-8% more than baseline

- baseline & project investments include substantial changes, benefits
  - new bike lanes on Geneva provide direct connection for cyclists
  - impact of lane conversion on Geneva (Muni Forward) less than expected
  - possible changes to Blanken for safety as transit, cycling, and traffic grows

Study Findings

- All BRT options feasible, but need further refinement before selection
- More work to be done to determine best option for eastern segment
  - substantial trade-offs between Blanken & Beatty options
    - direct access to Caltrain vs direct route between East & West of corridor
    - better transit reliability vs change in community roadways
    - substantial community concern with couplet options
  - character of Beatty and/or its alternatives
    - timeline for vacation/replacement in context of 15-20 yr investment
    - magnitude of truck traffic and potential conflicts between trucks/buses

Next Steps

- Technical findings:
  - there are feasible near-term options for closing this transit gap
  - no fatal flaws for LRT, but more work needed on
    - service planning options; operational benefits
  - community/stakeholder feedback re options & impacts
    - prefer to maintain calmer neighborhood feel in Little Hollywood
    - concerns with potential diversions to/through neighborhood streets
- Pre-environmental phase of work
  - Refinement of alternatives
  - Timeline for Beatty replacement
  - LRT operational benefits

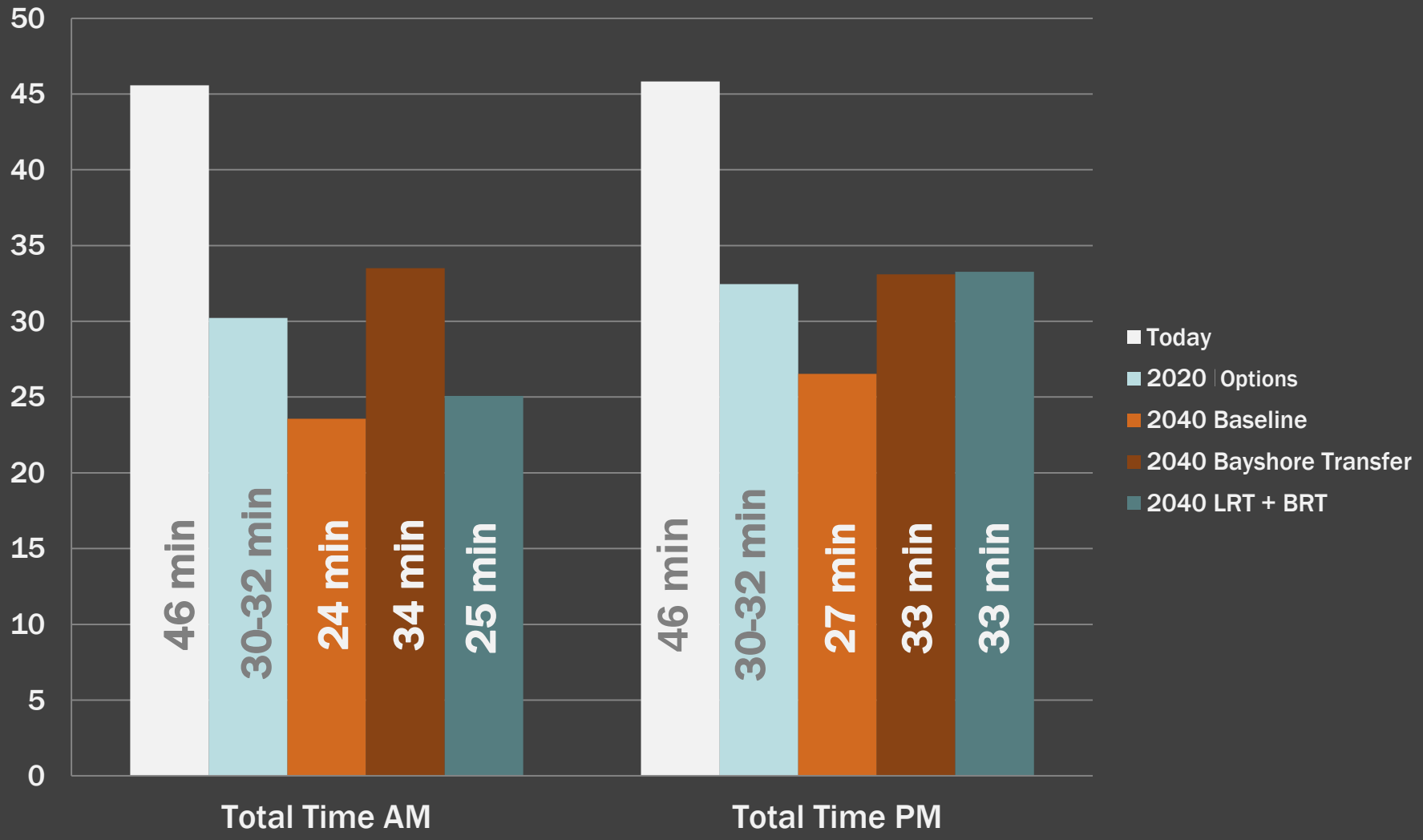
Led by SFMTA, beginning this fall

Thank you!

For more information,
please email genevabrt@sfcta.org
or visit genevabrt.org

Future Outlook

Travel Time between Candlestick and Balboa Park



Source: SF CHAMP

Geneva BRT cost estimates

2020 Cost Estimates	Alternative 1 (4-Lane + Couplet 1)	Alternative 2 (2-Lane + Bike Path)	Alternative 3 (2-Lane + Beatty)
Low Range	$11,600	$12,400	$14,300
High Range	$22,100	$23,500	$23,800
Rounded Estimate	$14,700	$15,600	$15,800

Initial Performance Metrics

Transit Performance

	Today	2020 baseline	4-Lane Geneva BRT	2-Lane Geneva BRT	2-Lane Geneva + Beatty BRT
Transit Travel Time	43	50	✓	✓	✓
28L Ridership (Daily)	-	16,730	+7.1%	+7.2%	+6.1%
28L Ridership (Peak)	-	8,170	+7.3%	+6.9%	+7.1%
Transit Mode Share (trips to/from Corridor)	12.3%	15.2%	✓	✓	✓

- Notable increase in ridership, both daily and peak periods
  - modest changes in travel time and mode share
  - reliability to be analyzed in next phase of work

Source: SF-CHAMP

Feedback

Better connections to Caltrain should be the focus

Would this incorporate eliminating crosswalks?

Keep Beatty open as long as possible, or find another alternative

How does this help us who are already here?

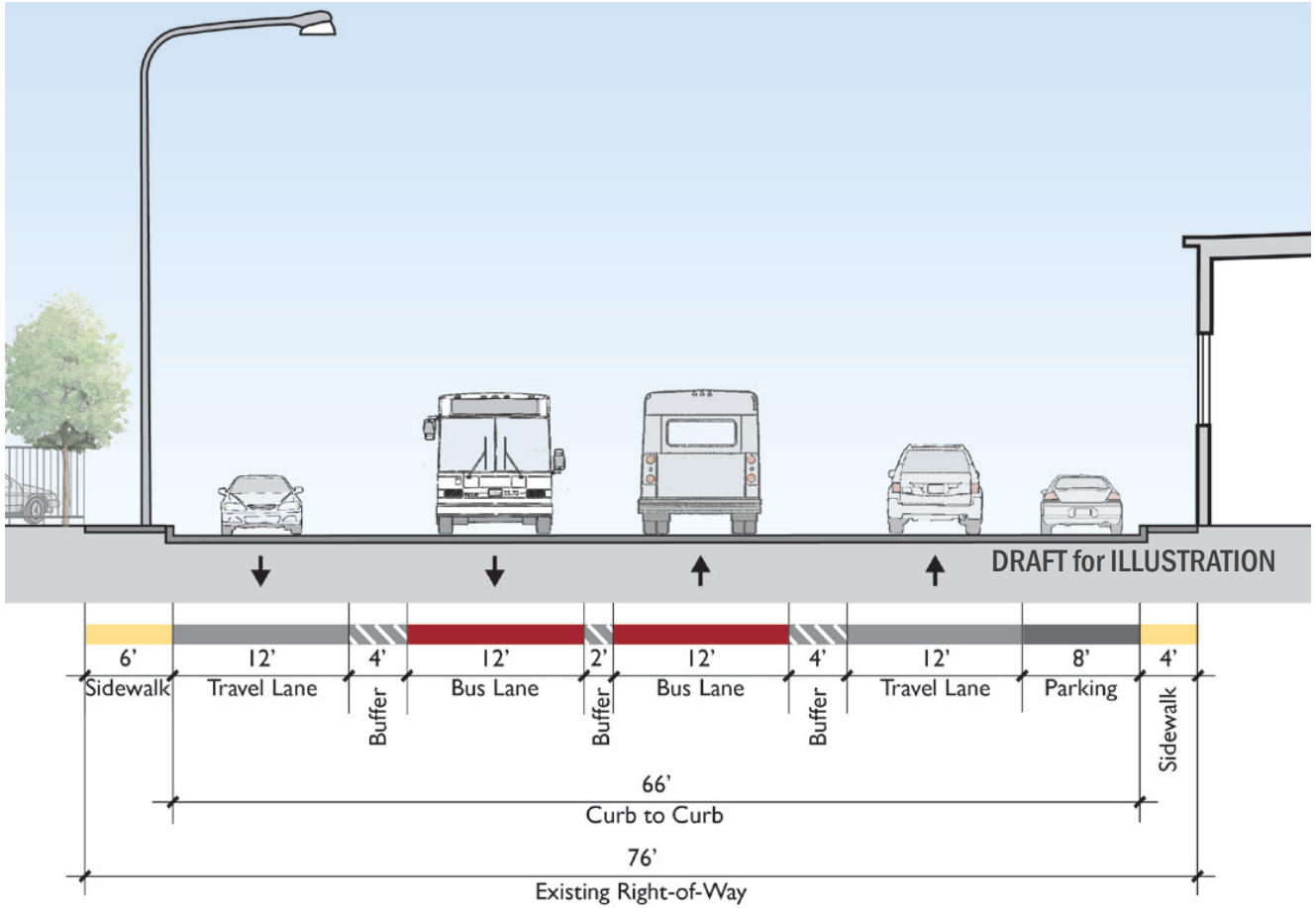
We need to get out in front of it and get better transportation for ourselves and for the people who are coming.

We already have two freeways. I support this instead.

The seniors have advocated for something to help crossing Geneva at Oriente.

It's too dangerous to bike on Geneva.

Eastern Segment Options—Beatty Ave



- With truck, transit vehicle traffic, not advised to continue bicycle route on Beatty, would likely move cyclists to Blanken
- Width, character of Beatty/Alanna change substantially along the route
- Timeline for Beatty vacation to be reviewed during next phase of work

Guiding Principles for Options

Central Segment – Geneva Ave

	Must					Should			May	
	transit lane	transit shelter	protected bikeway	shared turn/ travel lane	sidewalk	buffer	parking lane	refuge	travel lane	left turn
Existing	×	×	×	●	○	×	●	×	●	●
2020 Baseline	○	×	○	●	○	×	●	×	●	●
4-Lane Curbside	●	●	○	●	○	○	○	×	●	●
4-Lane Center	●	○	○	●	○	○	○	×		
2-Lane Center	●	●	●	●	●	●	●	●	×	●

Insufficient space for shelters, bikeway, buffer; No sidewalk expansion

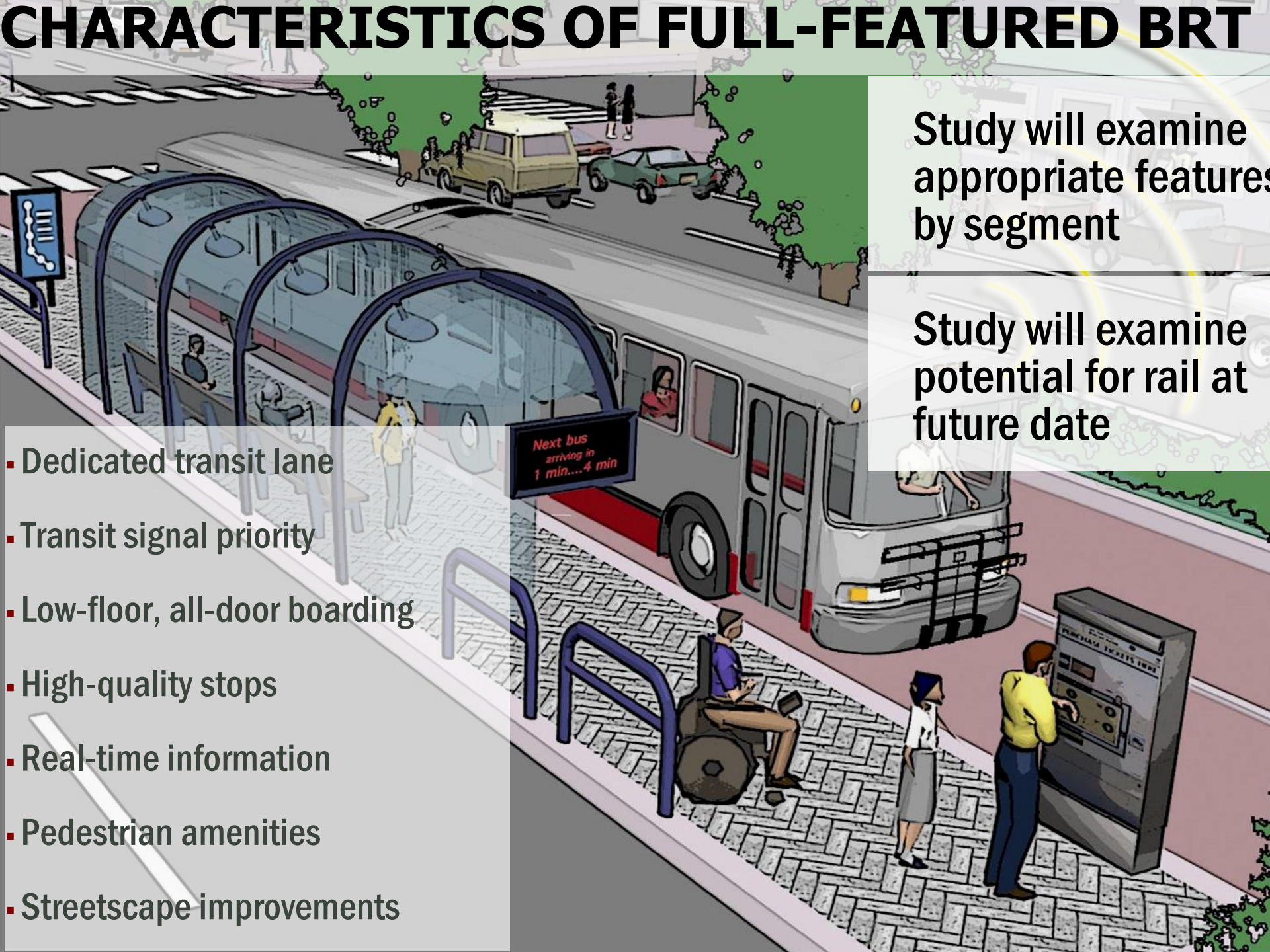
Guiding Principles for Options

Eastern Segment – Little Hollywood

	Must			Should	May
	transit lane	shared turn/ travel lane	sidewalk	parking lane	parking lane
Existing		●	●	●	●
Baseline		●	●	●	○
Blanket only	●	●	●		
Couplet	●	●	●	●	○
Beatty	●	●	●	●	○

Requires parking removal on both sides

CHARACTERISTICS OF FULL-FEATURED BRT

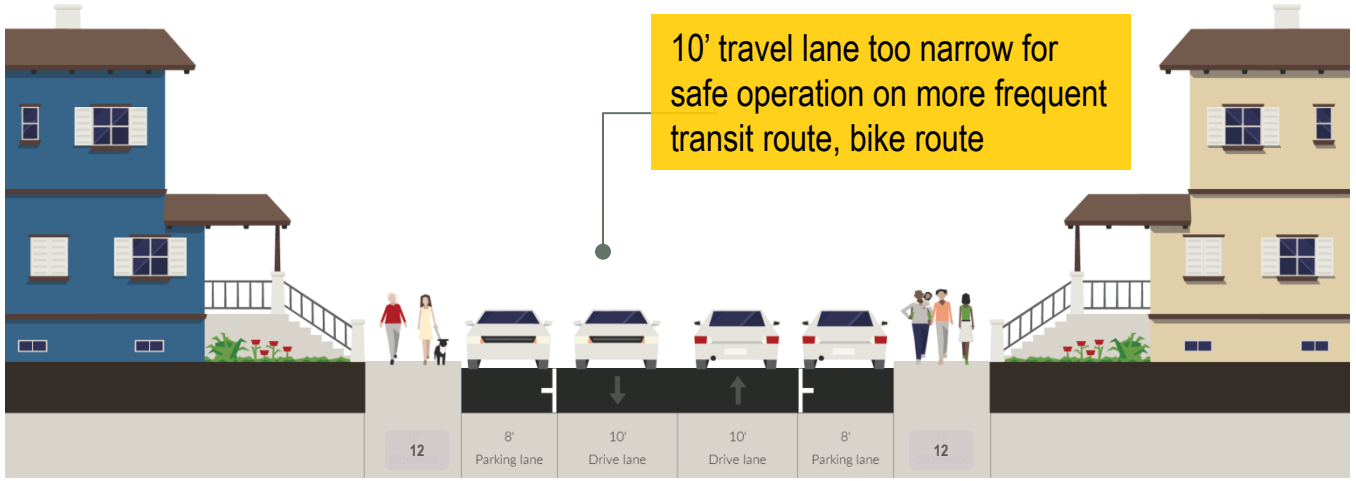


- Dedicated transit lane
- Transit signal priority
- Low-floor, all-door boarding
- High-quality stops
- Real-time information
- Pedestrian amenities
- Streetscape improvements

Study will examine appropriate features by segment

Study will examine potential for rail at future date

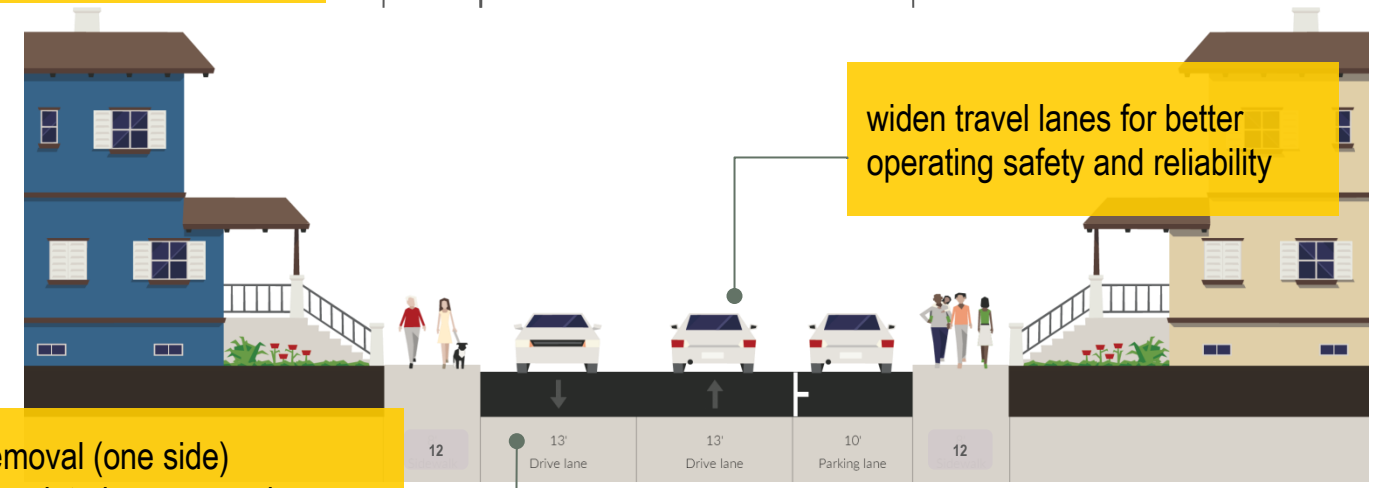
2| Blanken – potential baseline



10' travel lane too narrow for safe operation on more frequent transit route, bike route

maintain sidewalk and roadway width

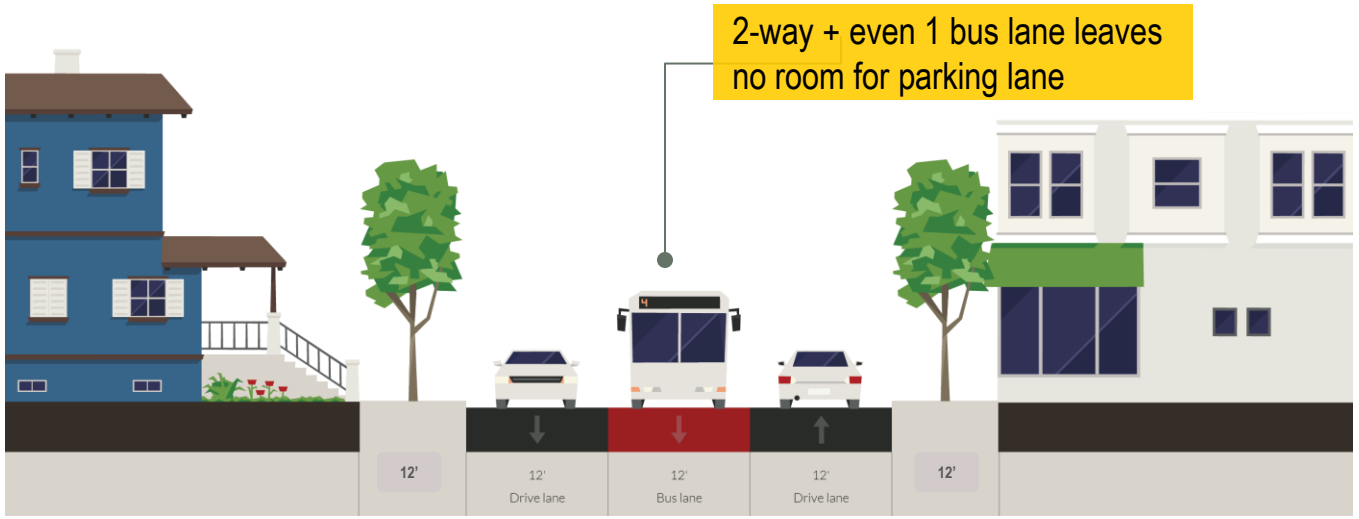
36' roadway

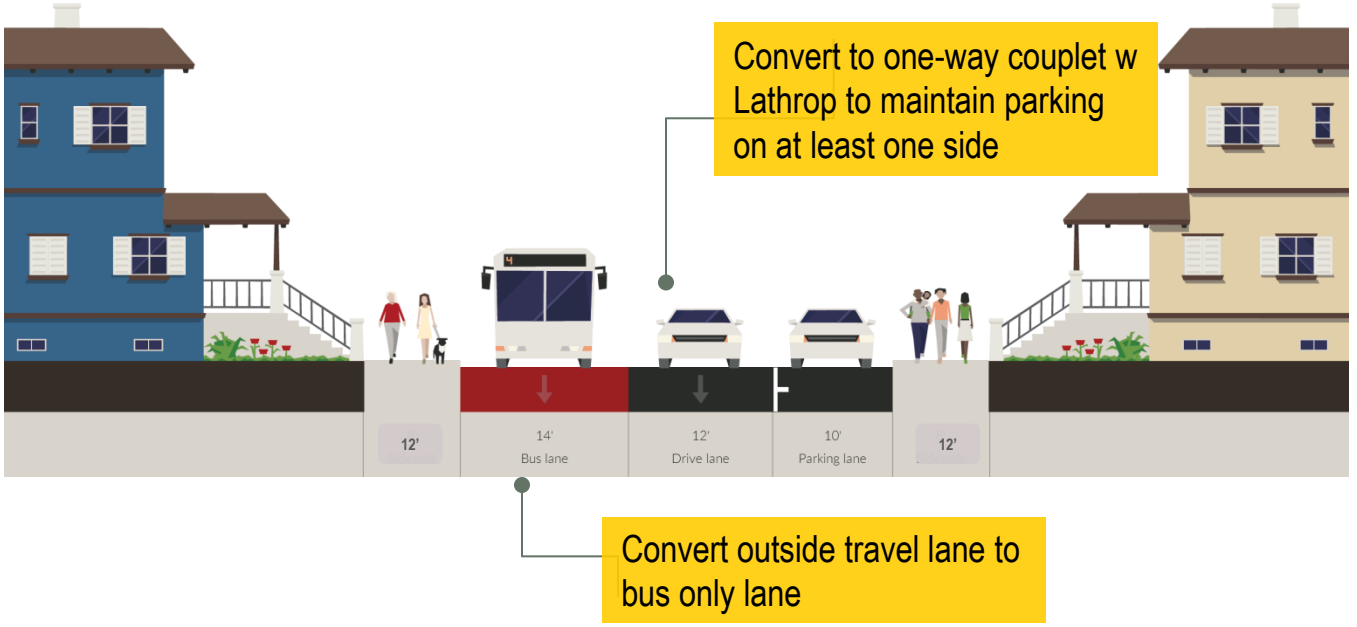


widen travel lanes for better operating safety and reliability

parking removal (one side) to accommodate lane expansion

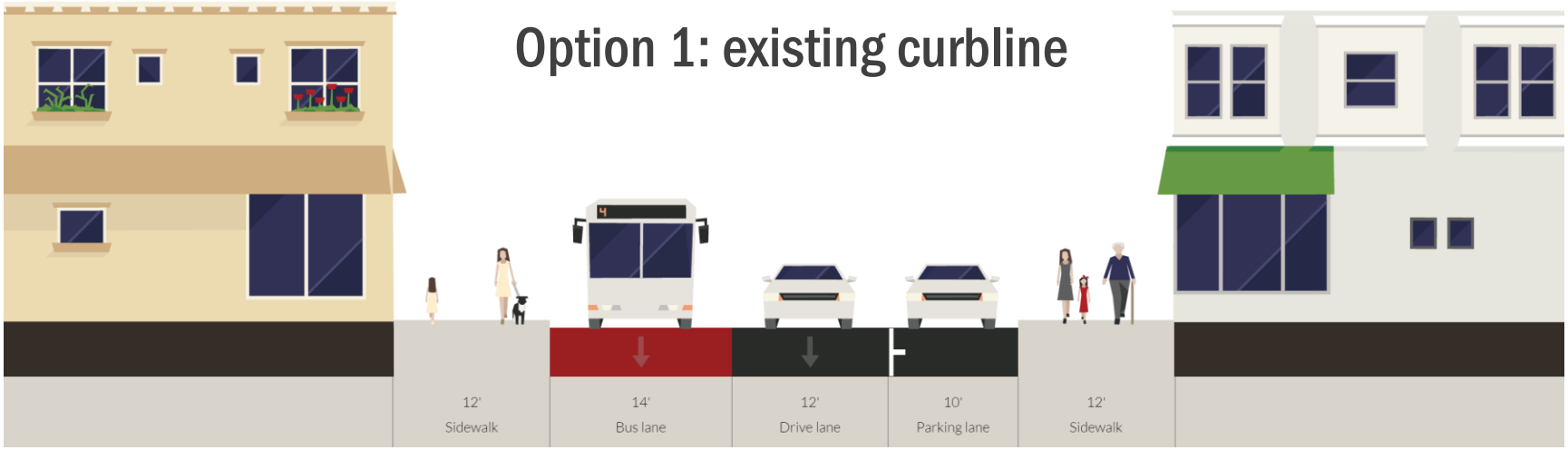
2 | Blanken – Why couplet?



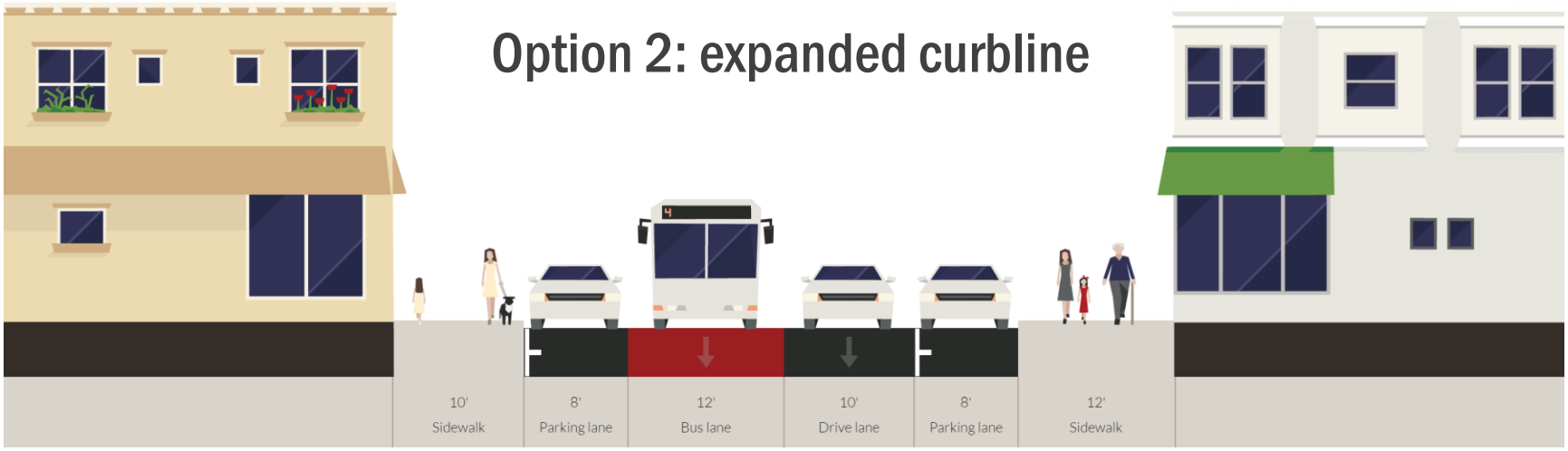


2 | Blanken Concepts

Option 1: existing curbline

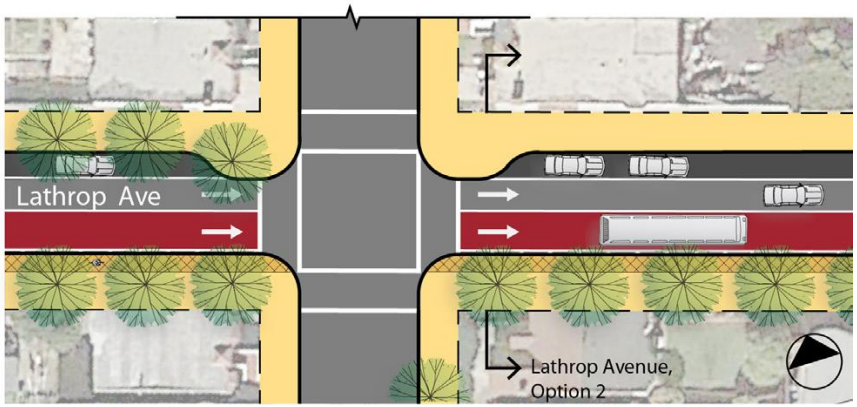


Option 2: expanded curbline

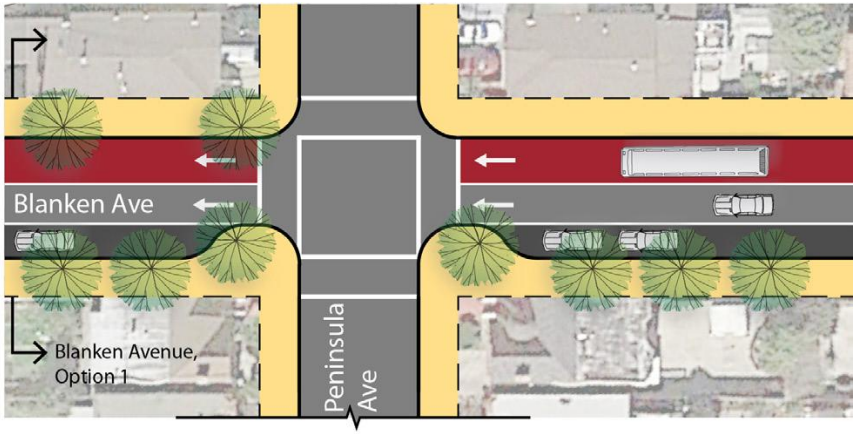


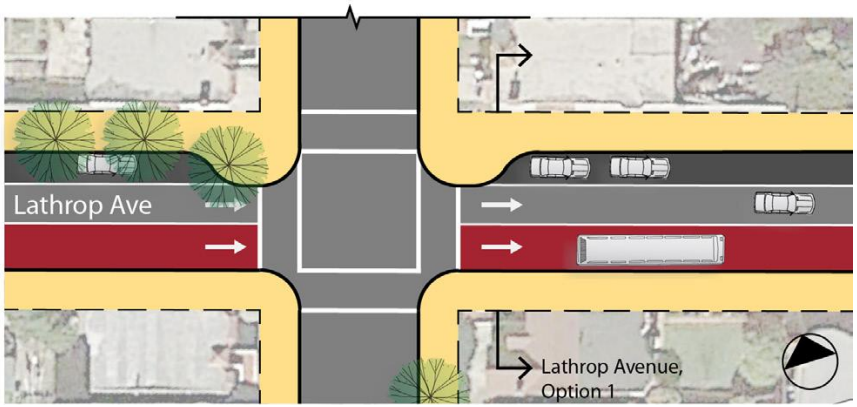
Eastern Segment Options

Option 1 – existing roadspace



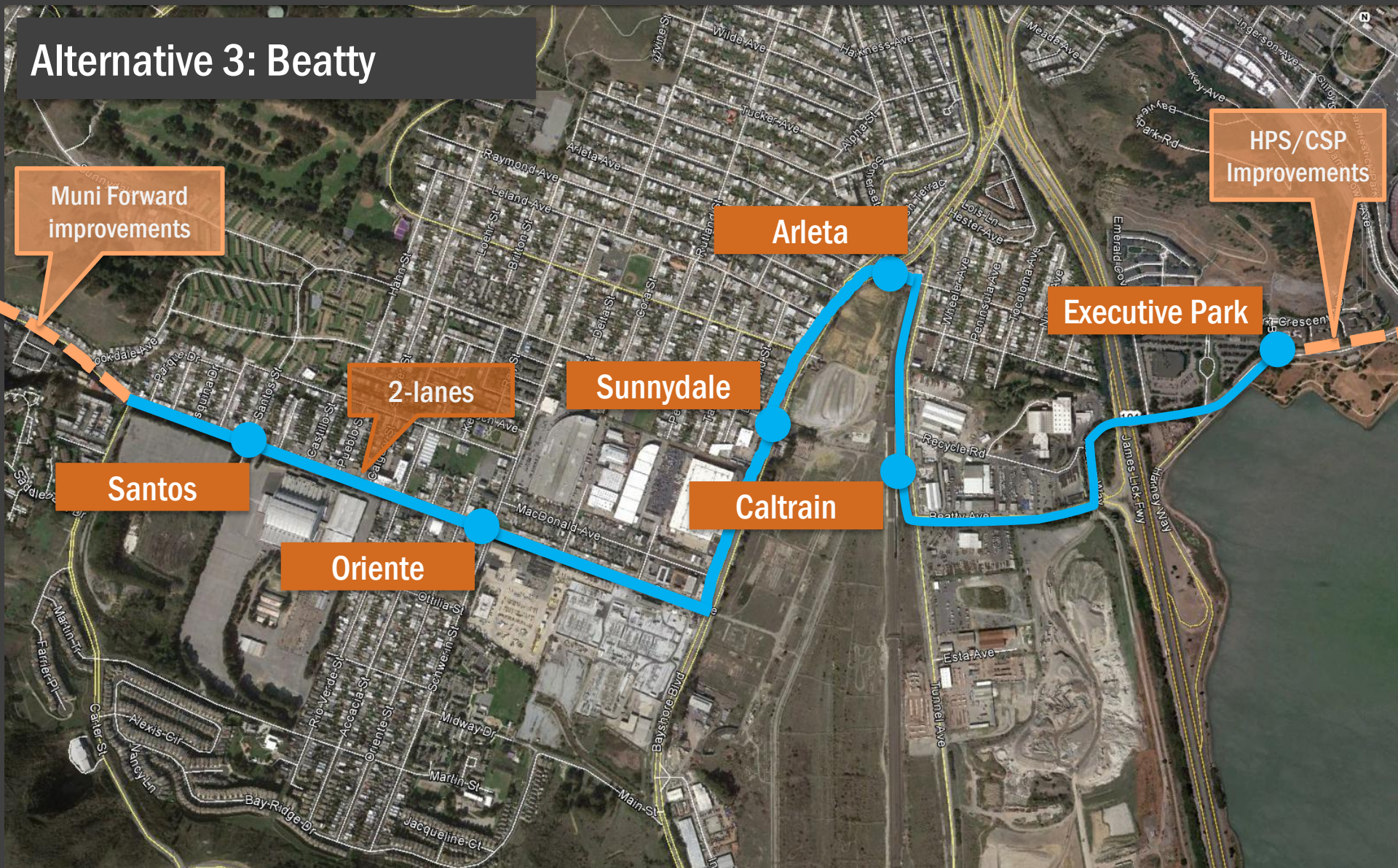
Option 2 – reallocated roadspace



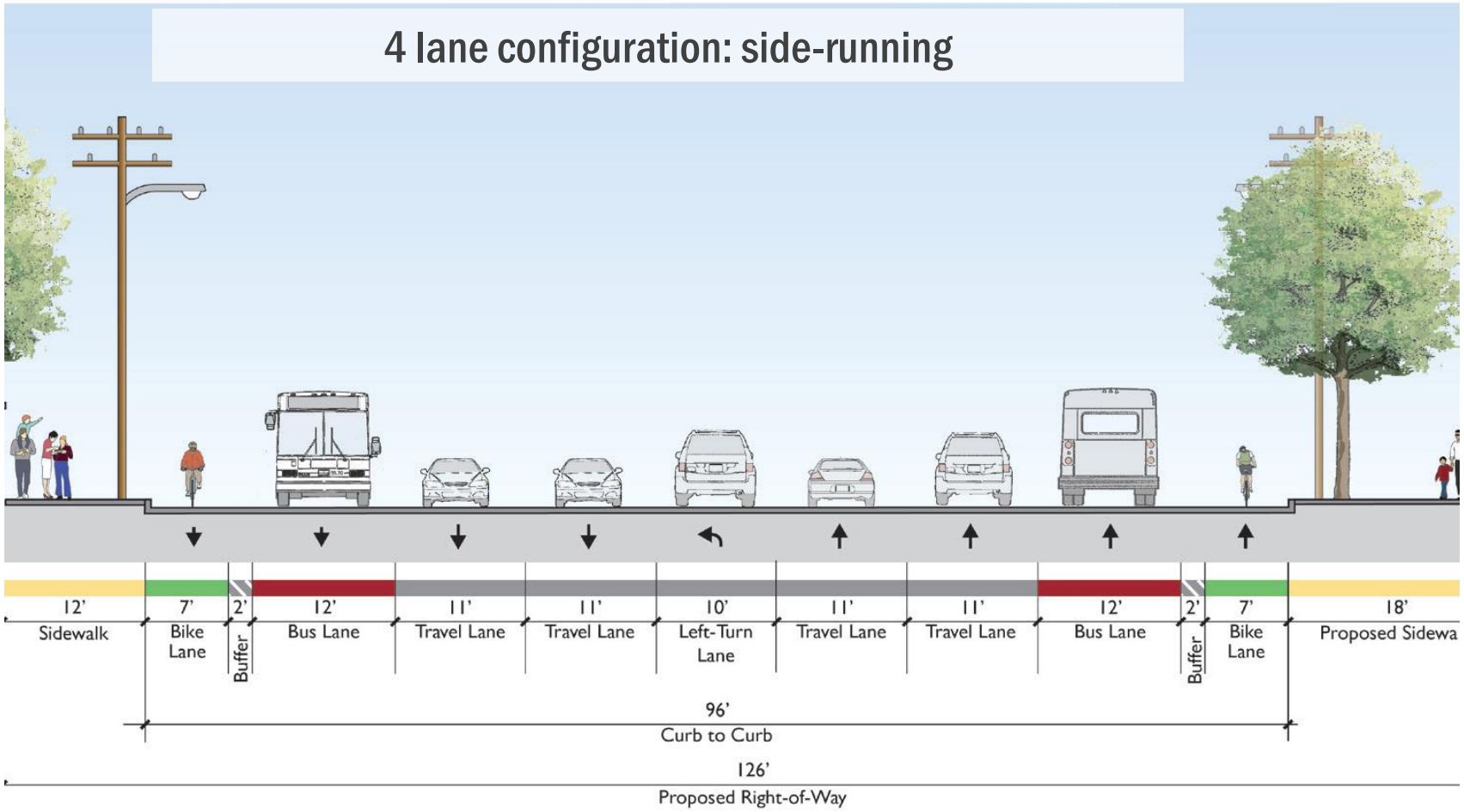


Transportation Network Assumptions

Transportation Network Assumptions



Bayshore Blvd Cross Section



Outreach

D10BENEFITS.ORG

7TH ADDITIONAL COMMUNITY MEMBER SEAT | BMR PROGRAM – THE SAN FRANCISCO SHIPYARD | DISTRICT 10 FINANCIAL EMPOWERMENT | MEETING INFORMATION | ABOUT THE AGREEMENT | ABOUT THE IMPLEMENTATION COMMITTEE | LISTENING SESSIONS | FREQUENTLY ASKED QUESTIONS

The Bayview Hunters Point Core Community Benefits Agreement

GENEVA-HARNEY BRT MEETING

November 17, 2014 · by d10benefits · in Uncategorized

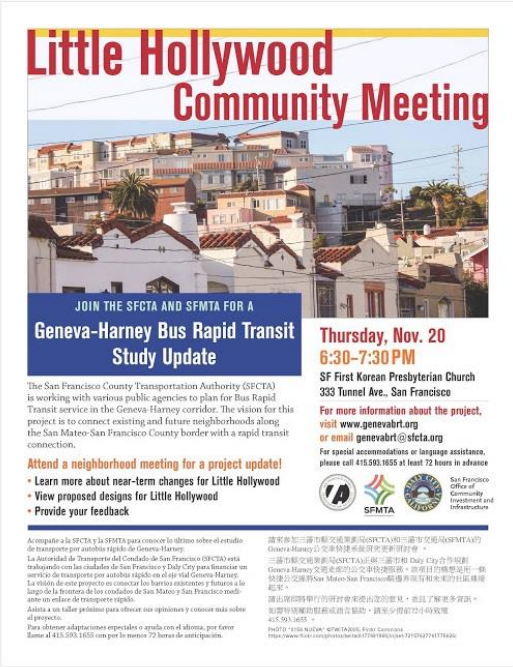
Special Neighborhood meeting this Thursday in response to the request from the community. There will be a project update specifically geared for Little Hollywood. This is a great opportunity to voice and concerns or questions regarding new transportation in District 10.

Search this site...

RECENT POSTS

- Southeastern Working Group
- Looking Back on the Past Lives of Candlestick Point
- Mission Bay Loop Public Meeting – TOMORROW @ 6:30PM
- Community Tree Lighting
- Geneva-Harney BRT Meeting

ARCHIVES



Walk San Francisco
@walksf
Follow

Attend 2nite's #BRT workshop to give input on #pedestrian safety improvements; 6–8 pm
Bret Harte Elem 1035 Gilman Ave

SFCTA
@sfcta
Follow

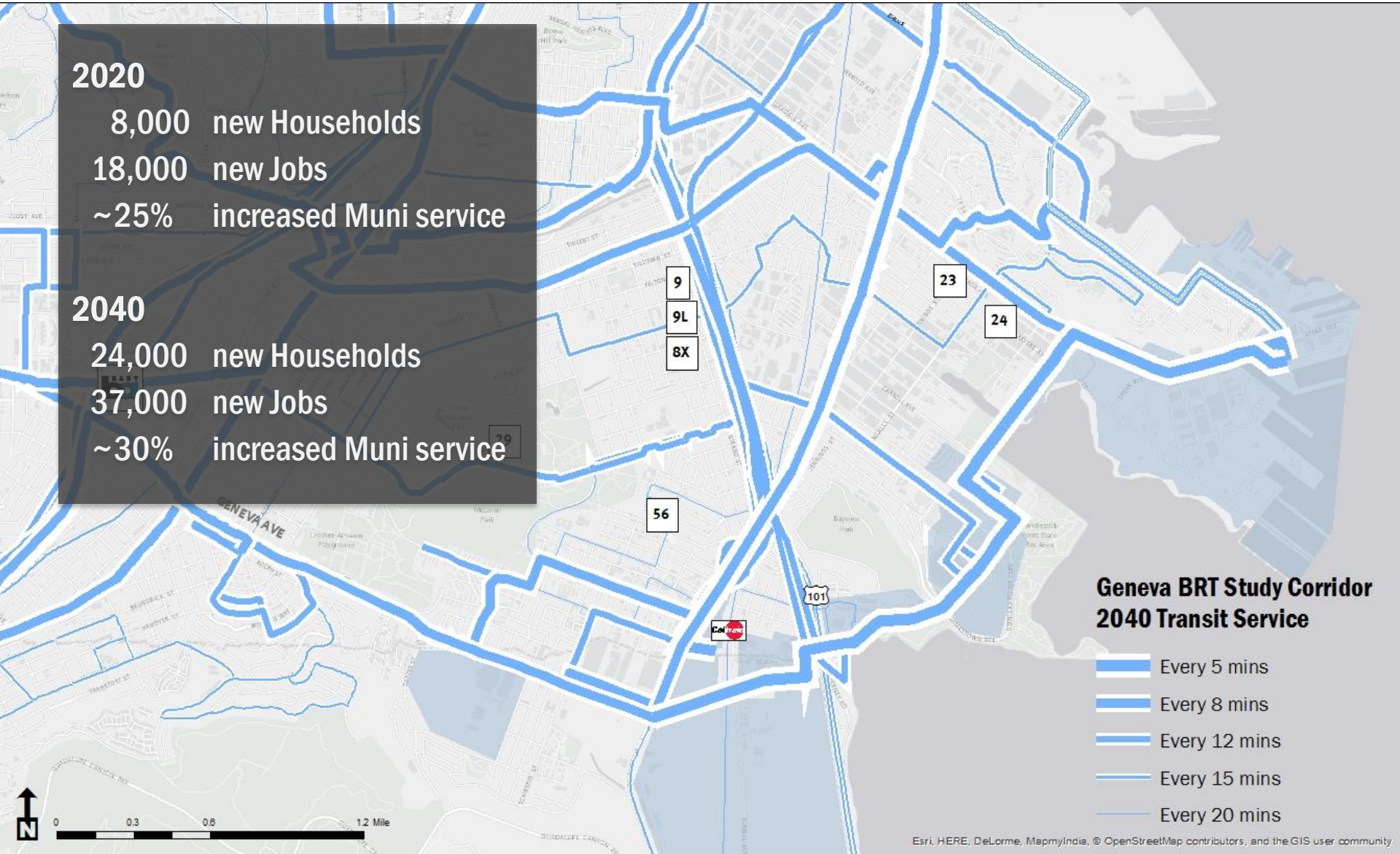
Join us for a Geneva-Harney BRT Workshop tom 11am @ Bayshore Cmty Ctr, Daly City sfcta.org/geneva-harney- … @DalyCityGov @sfmta_muni

2020

8,000 new Households
18,000 new Jobs
~25% increased Muni service

2040

24,000 new Households
37,000 new Jobs
~30% increased Muni service



Intersection Summary
Eastern Segement –Bayshore, Blanken

	Existing		2020 Baseline		2020 BRTAlt1		2020 BRTAlt2		2020 BRTAlt3	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Bayshore/ Sunnydale	18	B	18	B	16.5	B	16.5	B	17.3	B
Bayshore/ Blanken	8.2	A	22.7	C	1.7	A	1.3	A	21.9	C
Bayshore/ Tunnel	8.3	A	7.6	A	17.6	B	10.3	B	10.2	B
Blanken/ Tunnel*	9.9	A	13.9	B	24.1	C	24.7	C	17.1	B
Alana /Harney/ Thomas Mellon**	7.2 (12.1)	A (B)	10 (30.4)	A (D)	12.8 (29.7)	B (D)	21 (48.8)	C (E)	9.5 (16.8)	A (C)

* 4-Way Stop Today, but signal to be added in near future.
** Side Street Stop Control

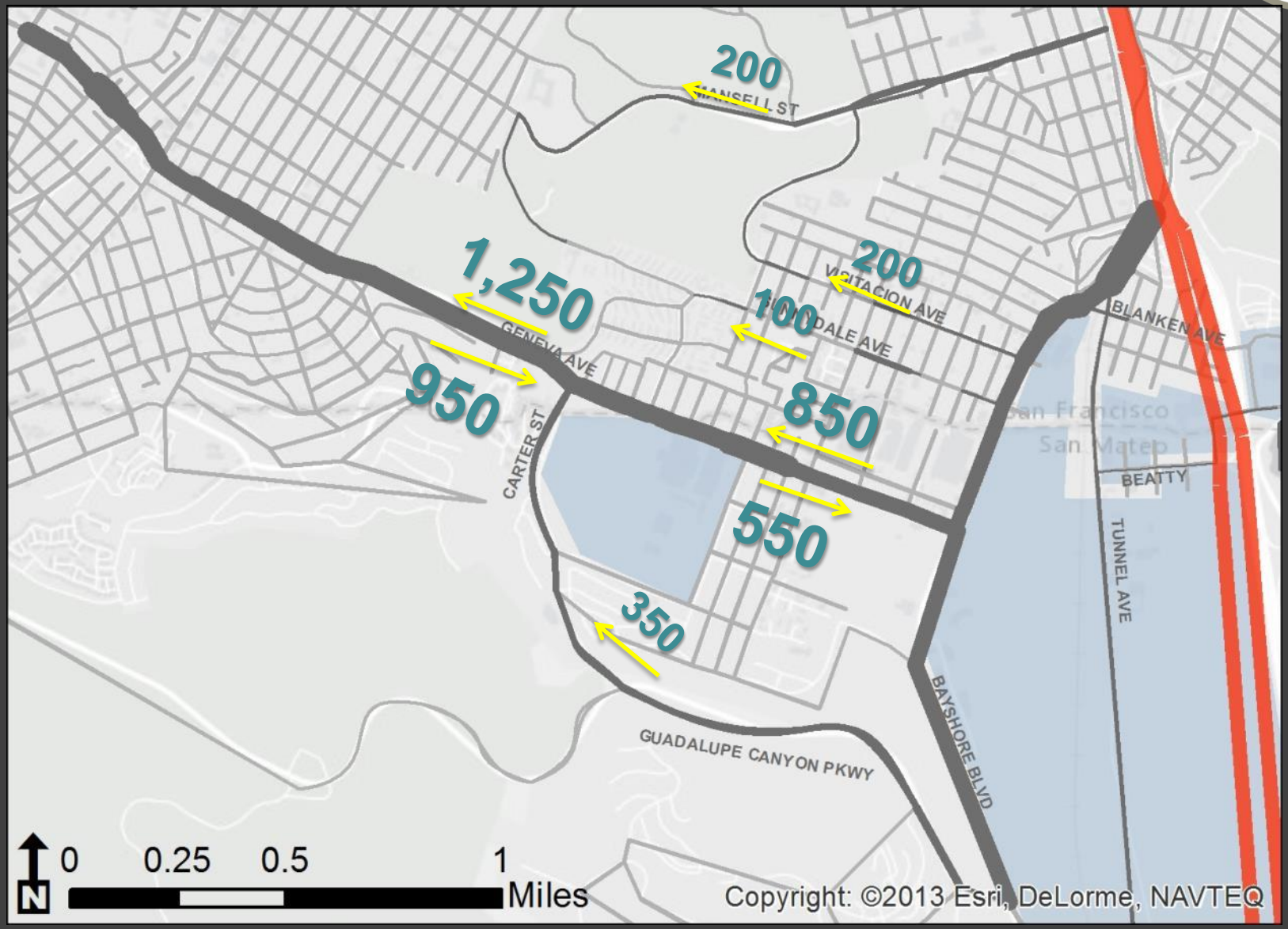
Intersection Analysis
Western Segment – Geneva

	Existing		2020 Baseline		2020 BRTAlt1		2020 BRTAlt2		2020 BRTAlt3	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
San Jose	33.8	C	21.2	C	23.4	C	20.6	C	22.2	C
Cayuga*	44.2	E	14.6	B	11.9	B	13.8	B	13.2	B
Mission	17.3	B	16.9	B	35.7	D	16.1	B	18.1	B
Moscow	7.7	A	14.3	B	17	B	14.8	B	14.4	B
Carter	18.4	B	54.7	D	68.8	E	55.3	E	21.9	C
Santos	11.6	B	12.2	B	10.6	B	11.1	B	11.6	B
Schwerin	7.3	A	16.9	B	12.9	B	17.5	B	19.8	B
Bayshore	34	C	16	B	15	B	13.7	B	21.4	C

* 4-Way Stop Today, but signal to be added in near future.

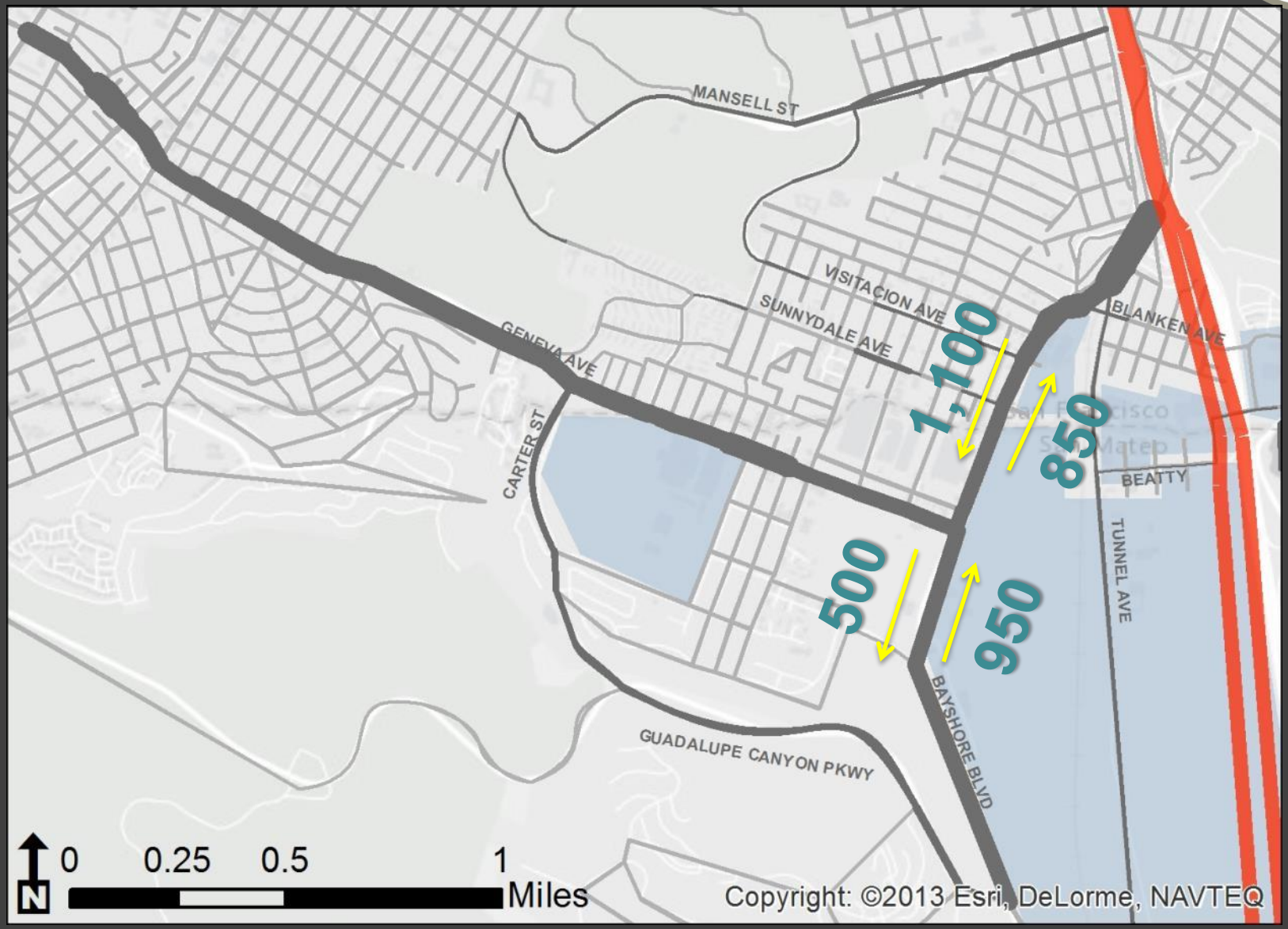
Traffic Patterns and Distribution Today

Peak Hour Trips



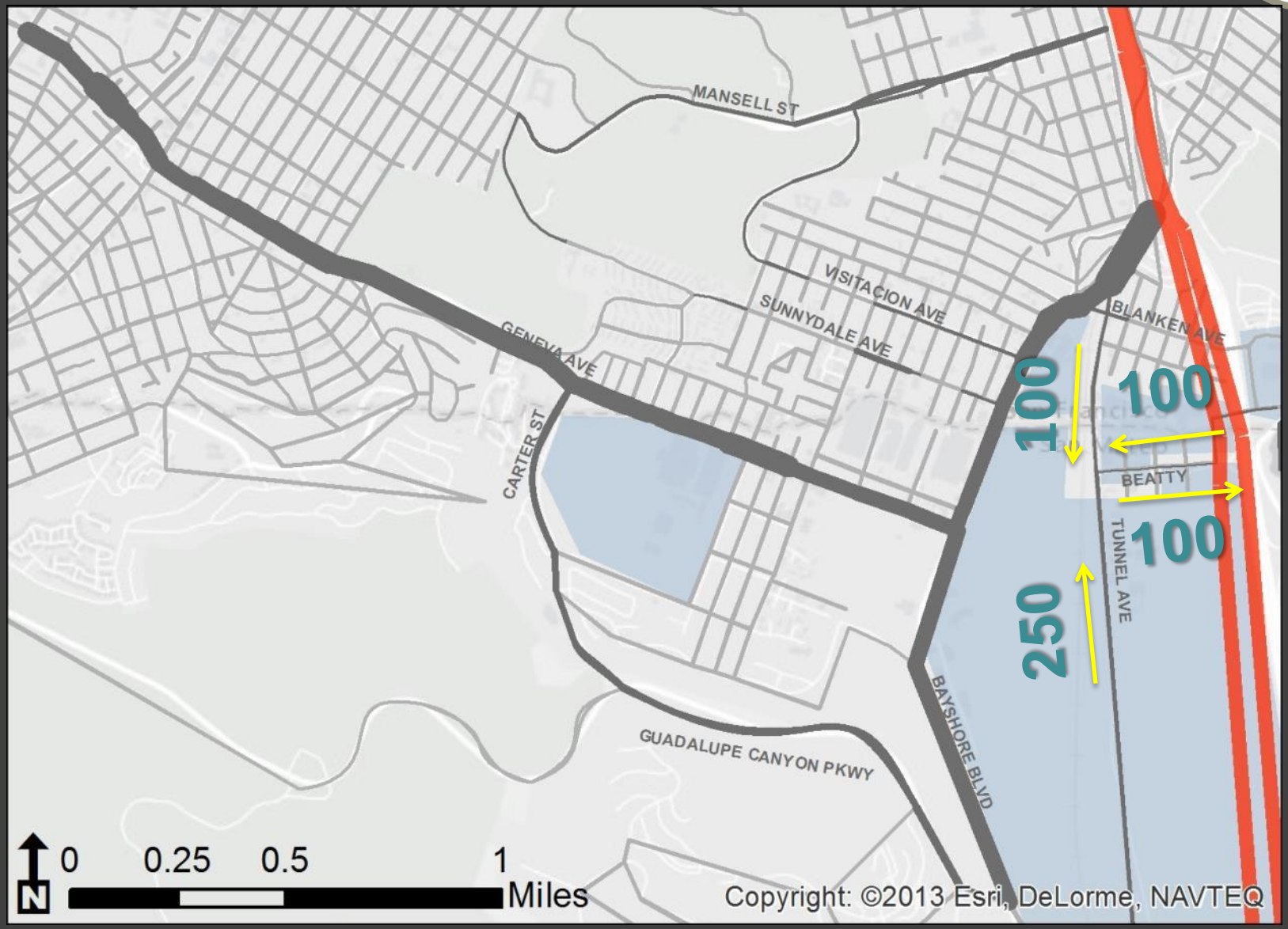
Traffic Patterns and Distribution Today

Peak Hour Trips



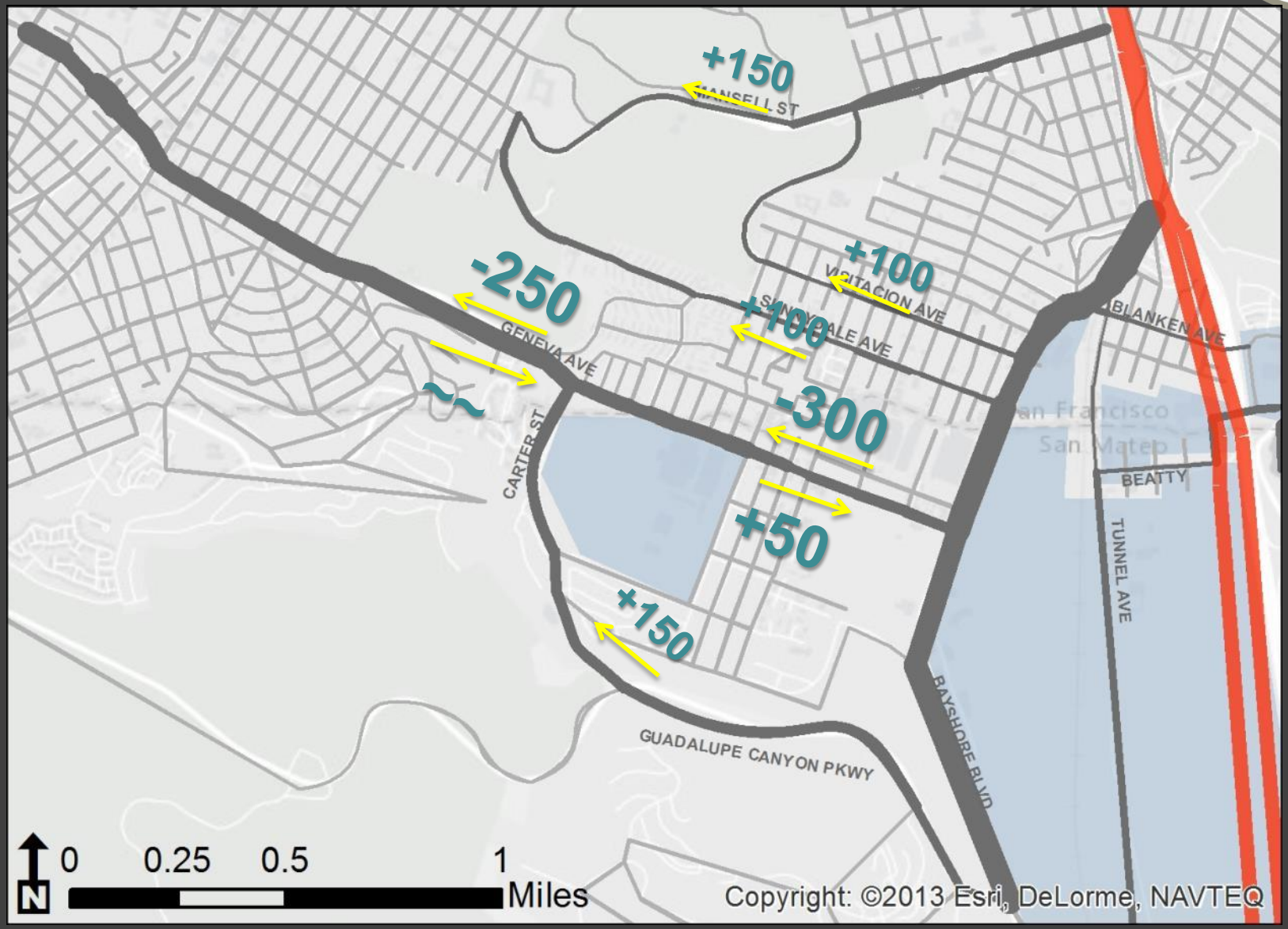
Traffic Patterns and Distribution Today

Peak Hour Trips



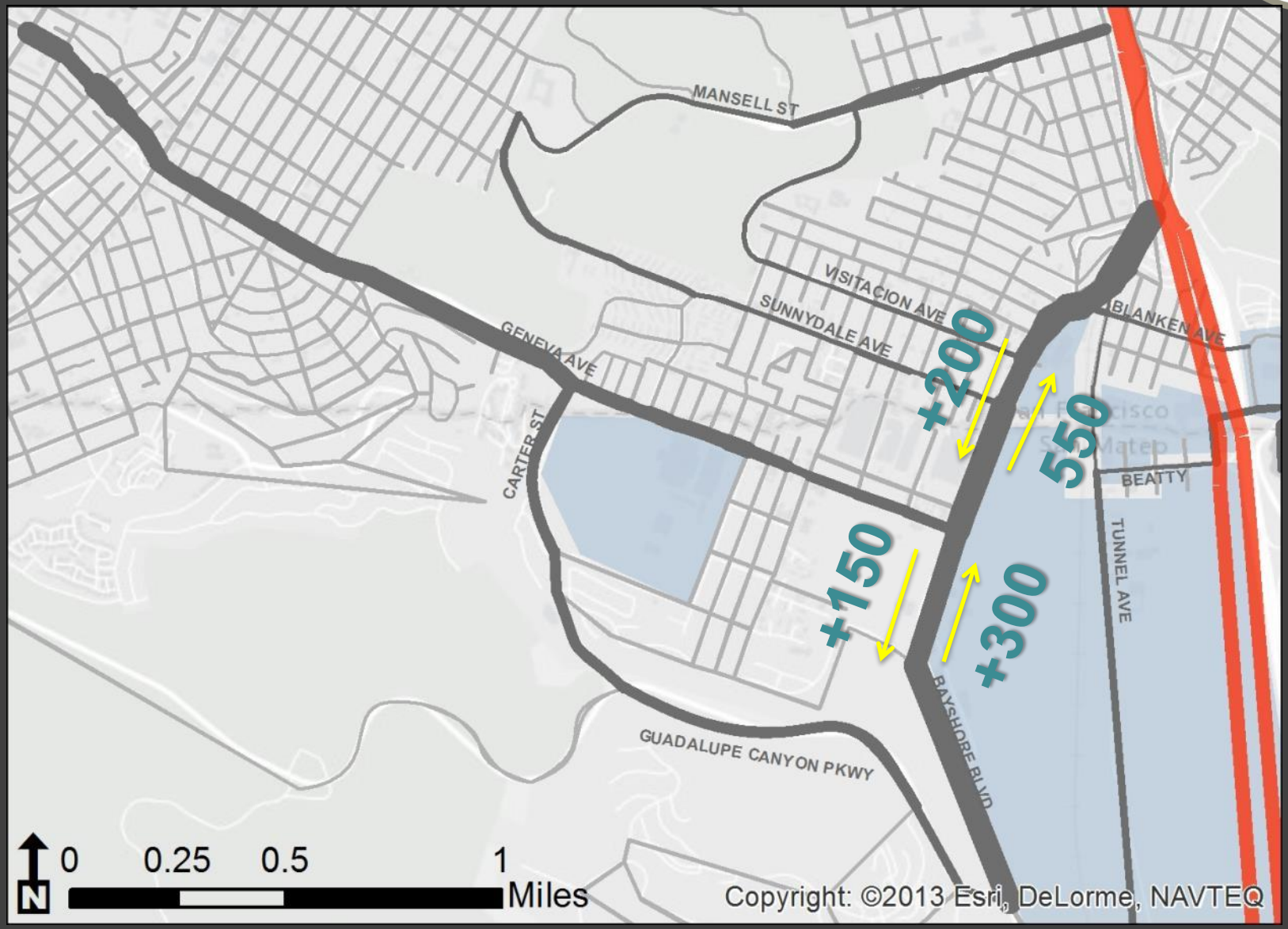
Traffic Patterns and Distribution 2020

Peak Hour Trips



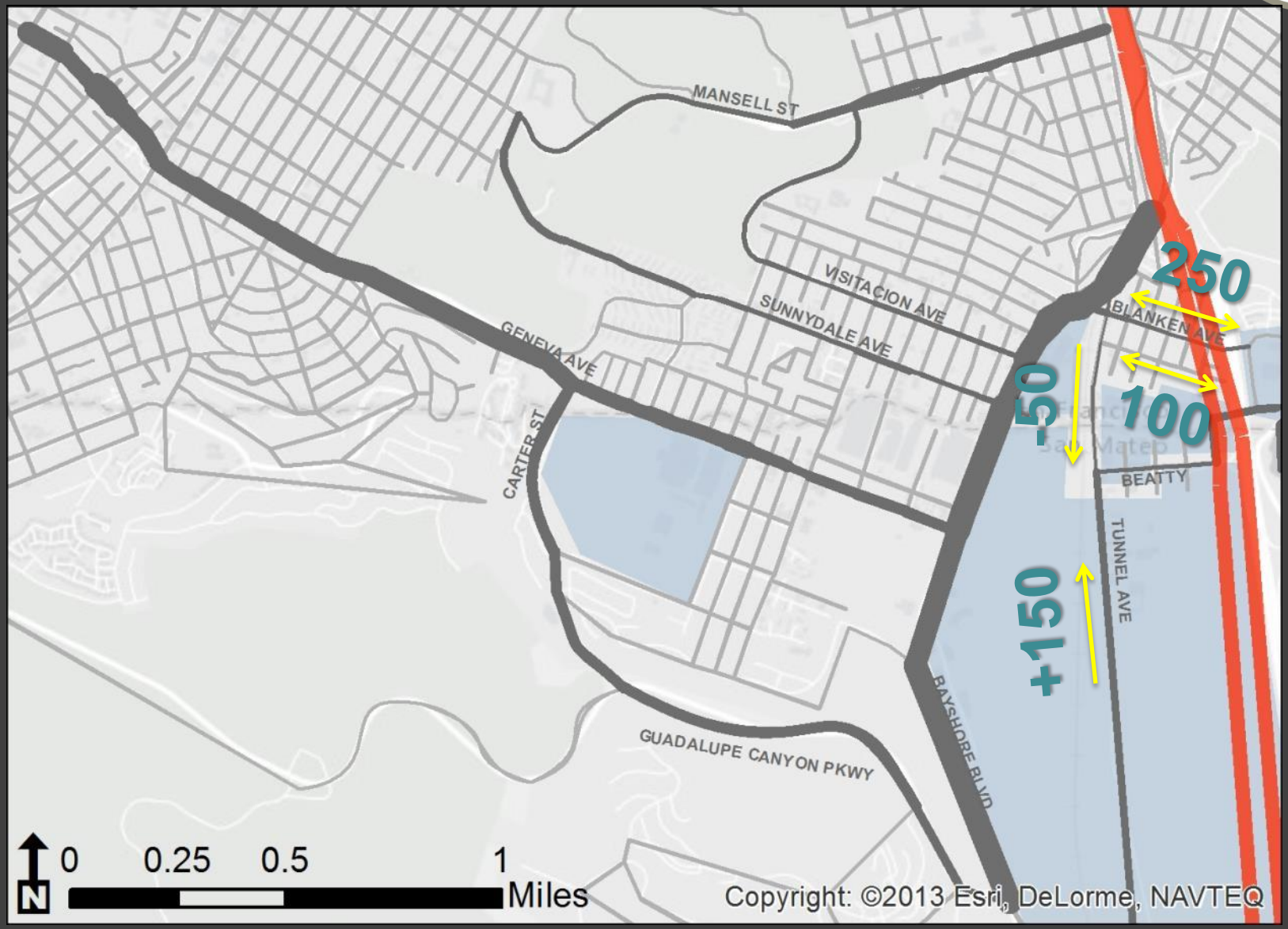
Traffic Patterns and Distribution 2020

Peak Hour Trips



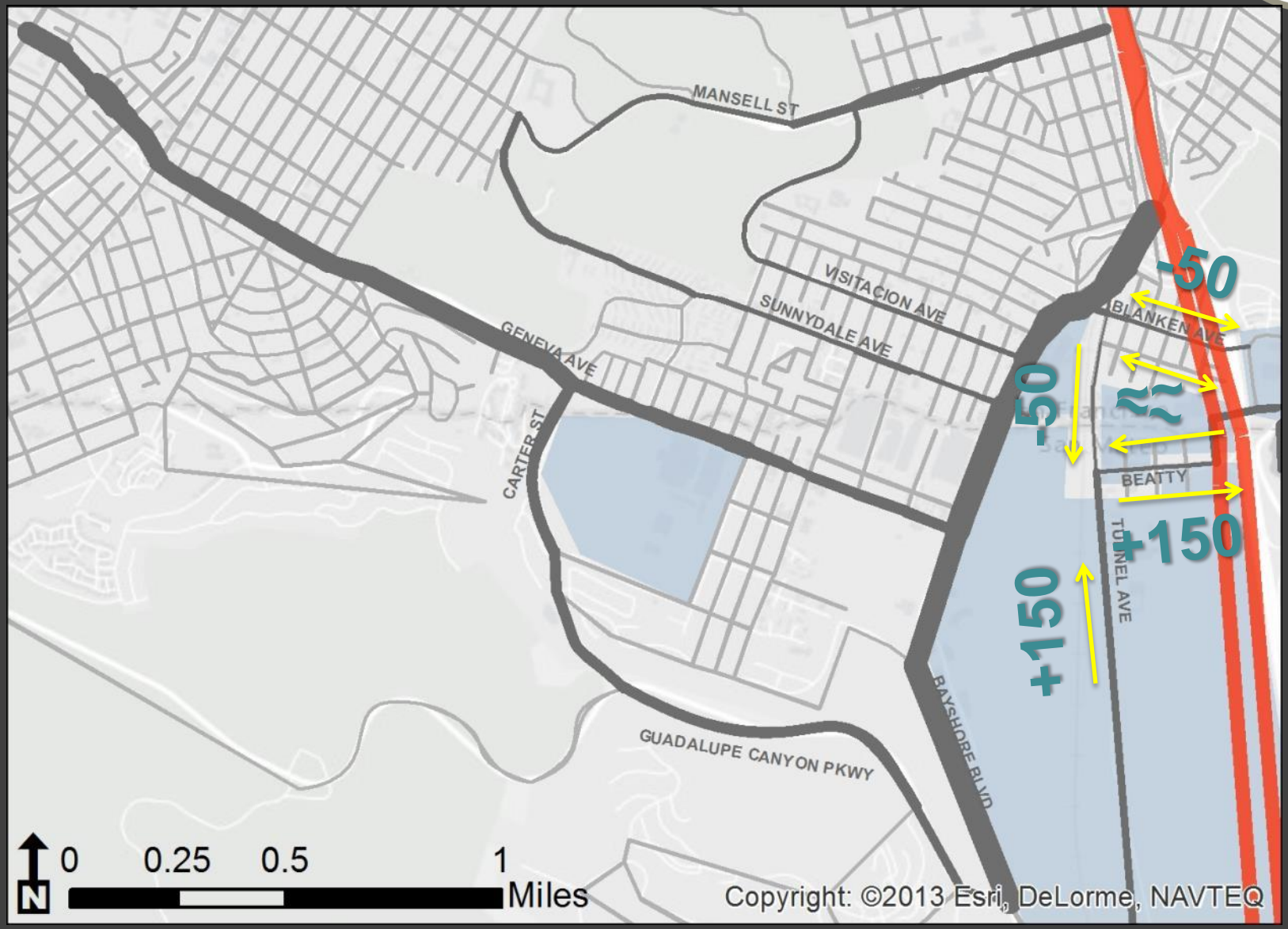
Traffic Patterns and Distribution 2020

Peak Hour Trips (without Beatty)



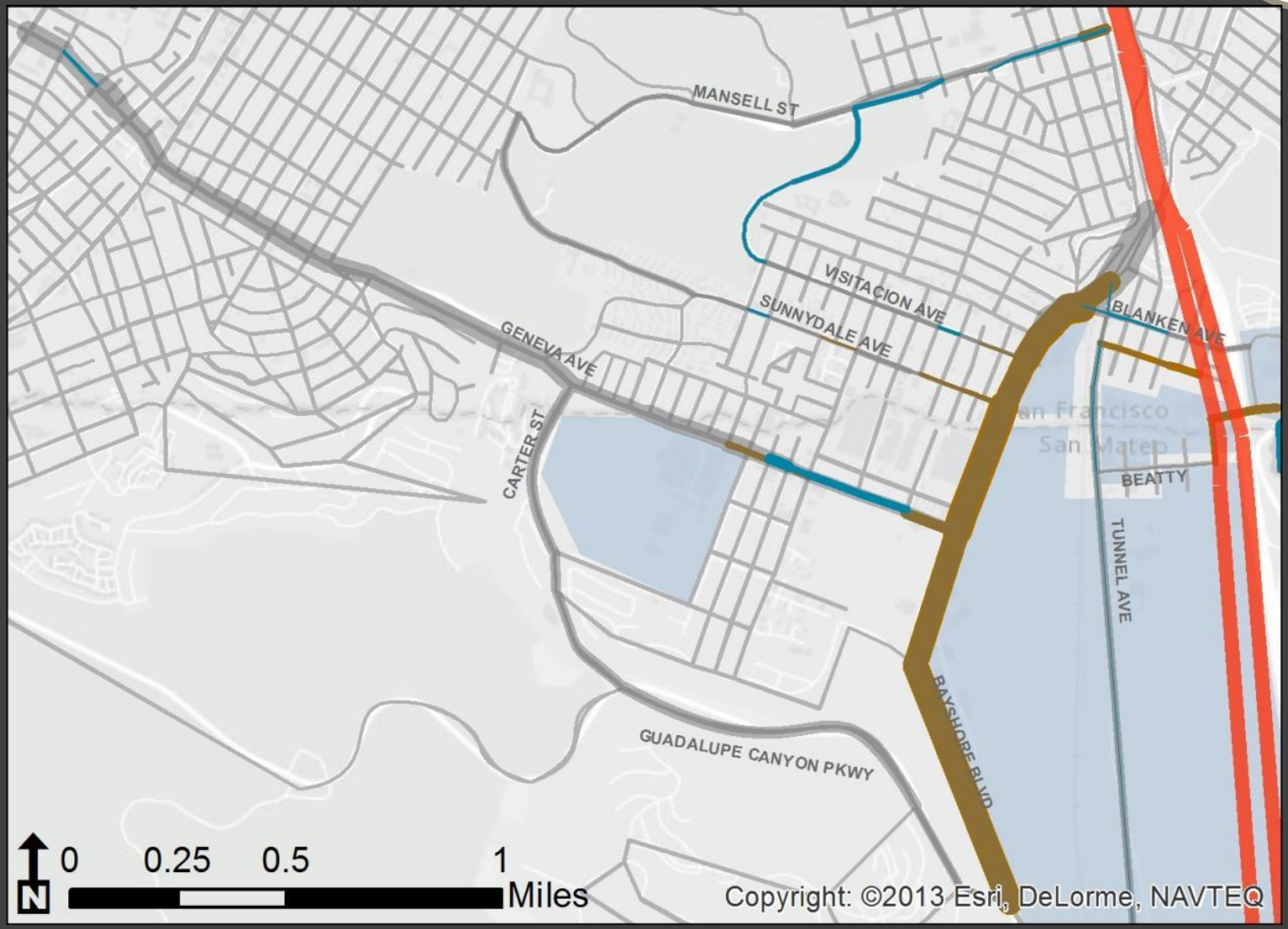
Traffic Patterns and Distribution 2020

Peak Hour Trips (with Beatty)



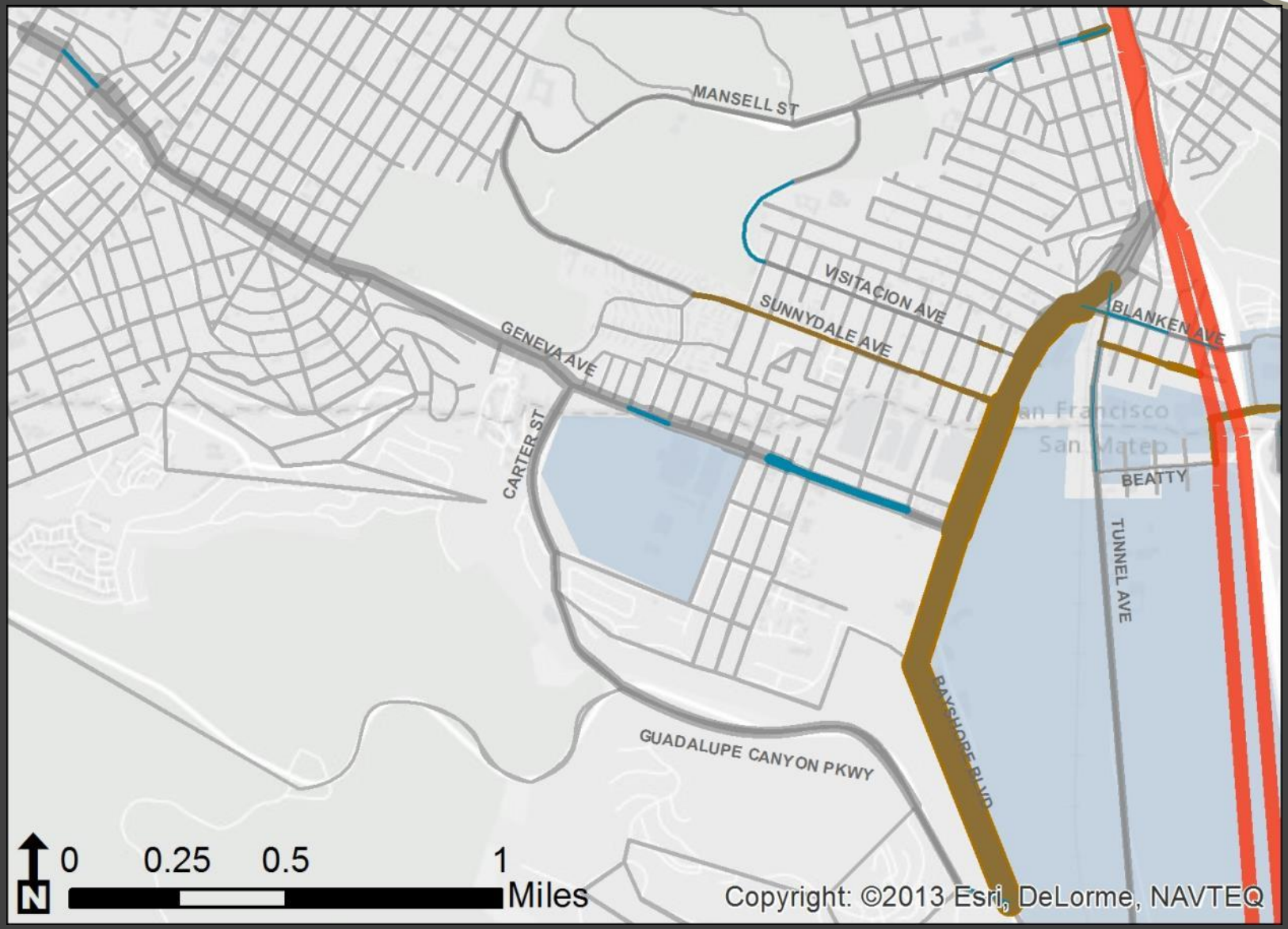
Traffic Patterns and Distribution 2020

Peak Hour Trips (Four-Lane Geneva)



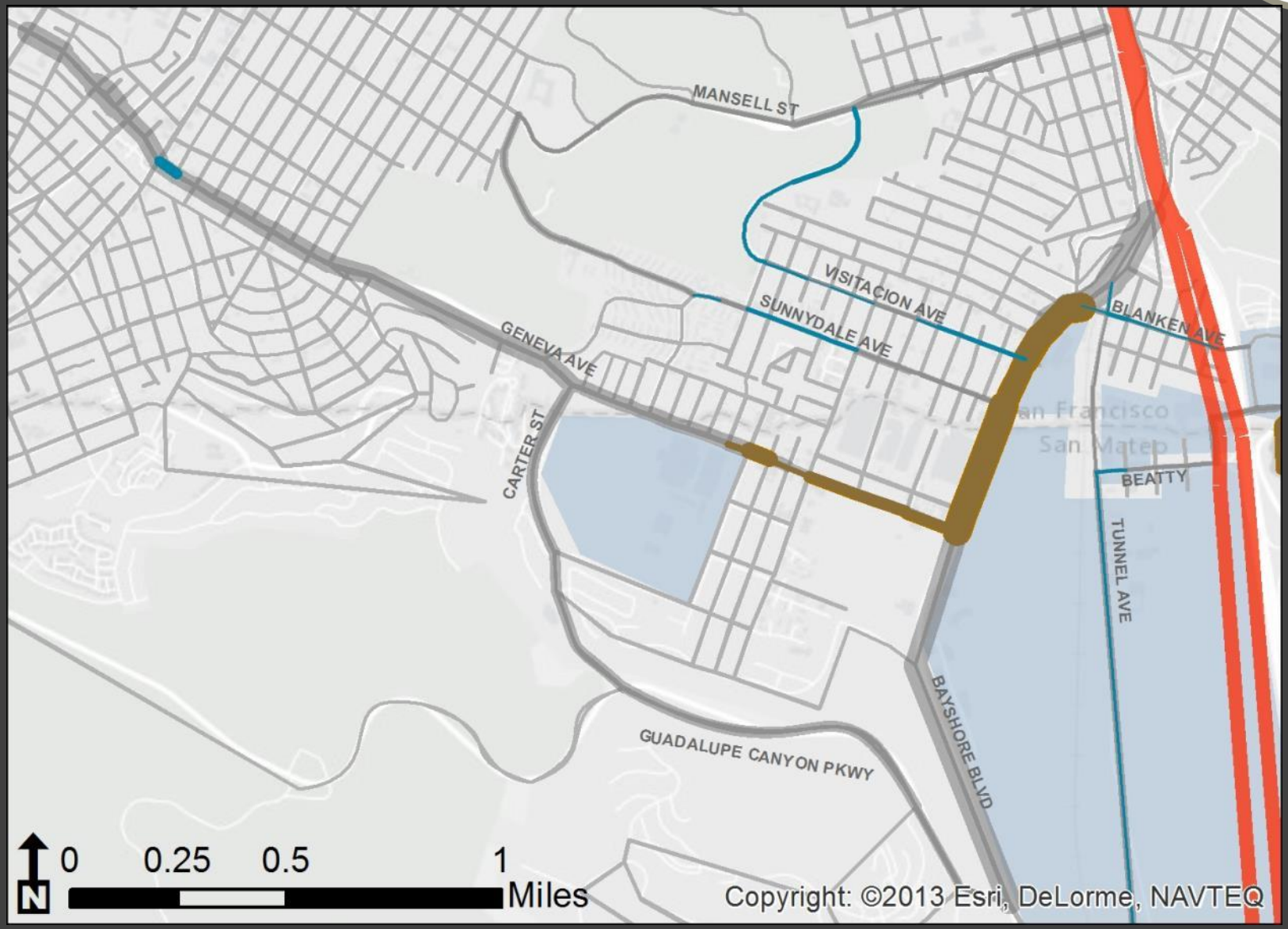
Traffic Patterns and Distribution 2020

Peak Hour Trips (Two-Lane Geneva)

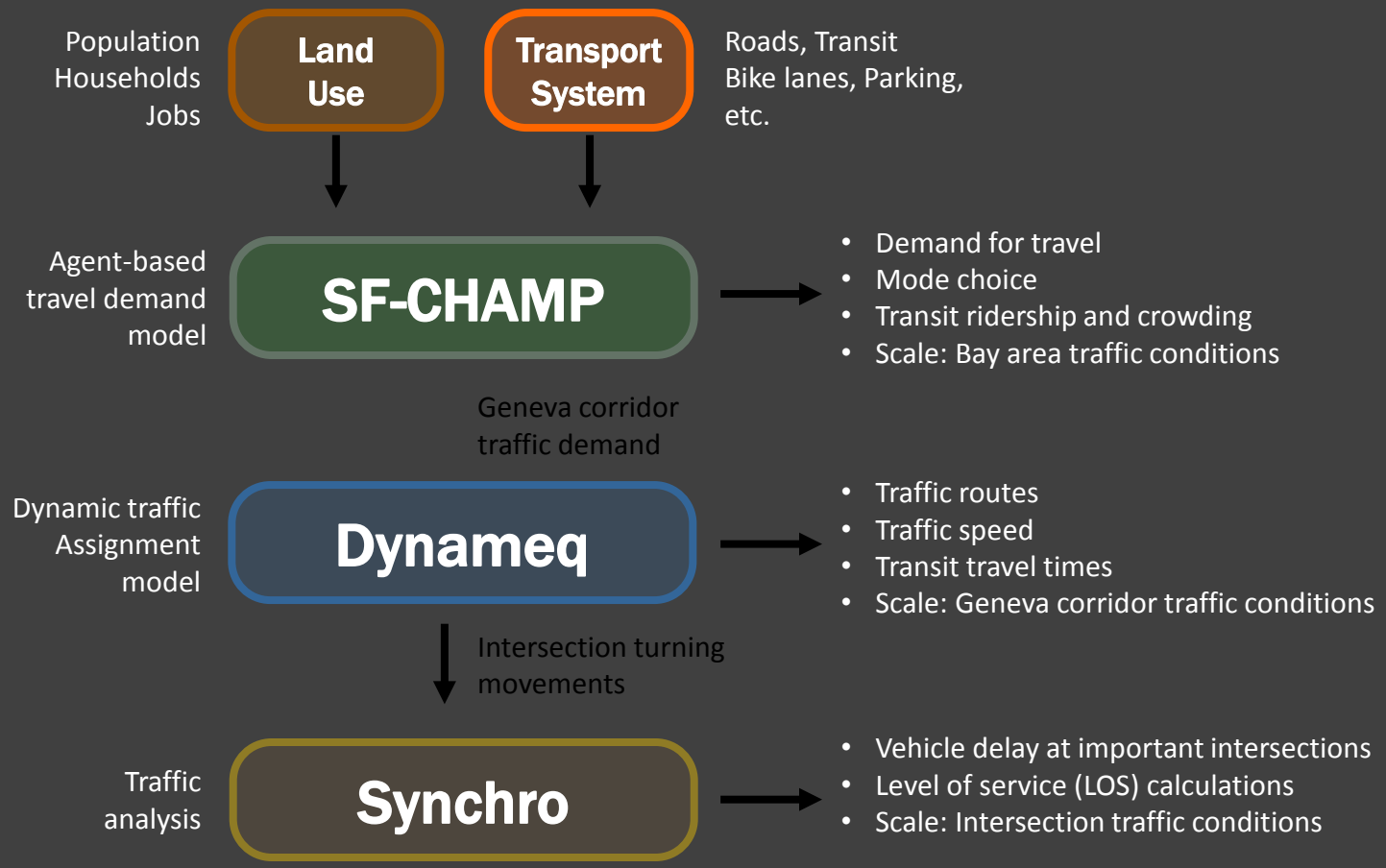


Traffic Patterns and Distribution 2020

Peak Hour Trips (Beatty Option)



Model Process



Accessibility: Balboa Park to Candlestick

	Today	2020 Baseline	2020 BRT	2040 Baseline
Driving in Car	13	12	12	14
Riding in Bus	25	17	15	15
Ratio of Transit to Auto	1.9	1.4	1.2	1.0

*Calculates time spent in vehicle only, does not include walk to transit or parking, etc.

Source: SF-CHAMP

- Little change for in-vehicle drive time with the project
- 28L substantially reduces in-vehicle time for transit riders
  - BRT project offers notable improvement in transit time
  - Both offer substantial improvement in transit competitiveness
- Reliability to be studied in later phase of work

Pedestrian/Bicycle Amenities

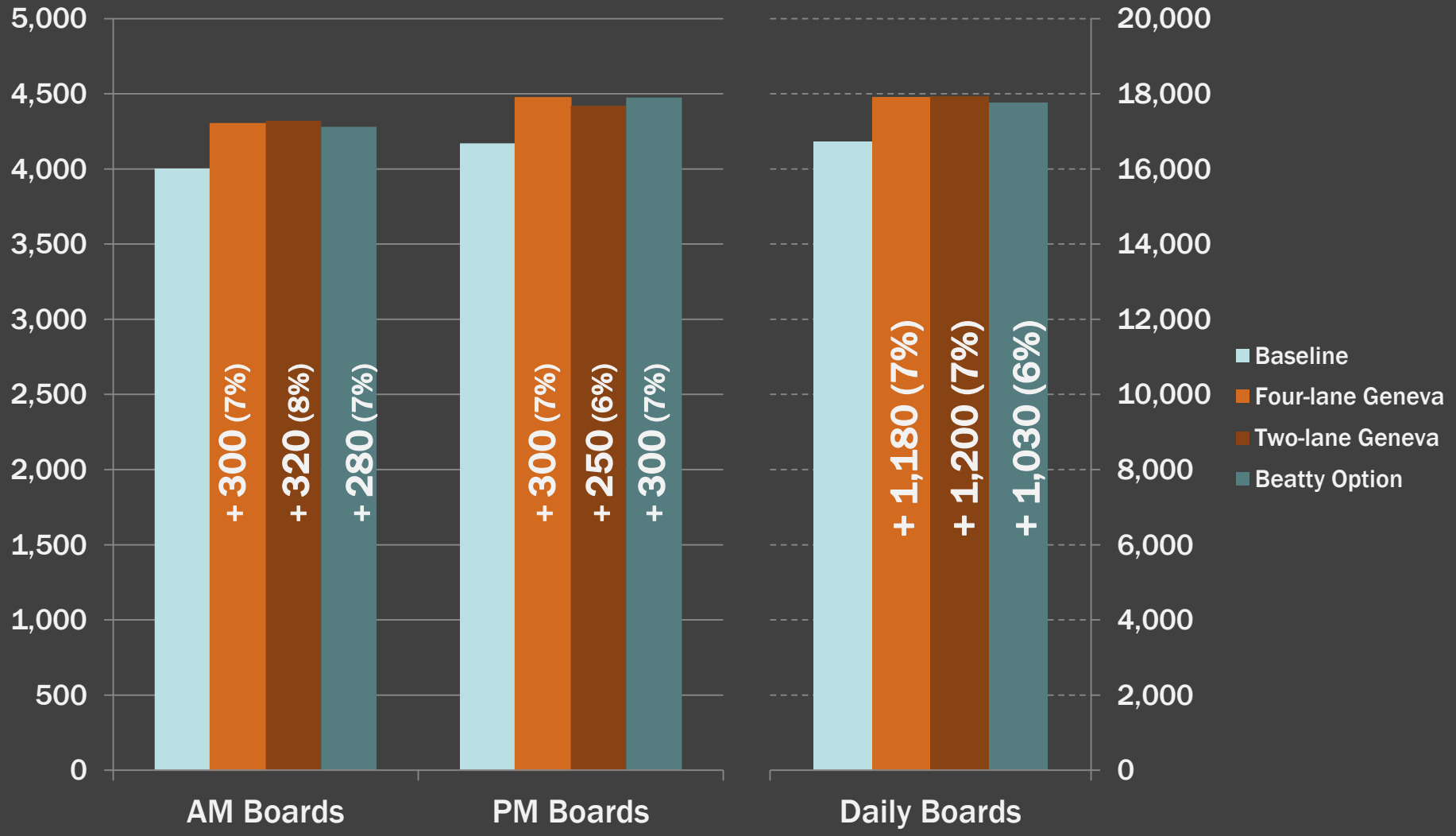
Western Segment	Today	2020 Baseline	4-Lane Geneva BRT	2-Lane Geneva BRT
Continuous Bike Lane	–	–/+	–	+
Wider Sidewalks	–	–/+	–	+
Shorter Crossings	–	–	–/+	+

Eastern Segment	Today	2020 Baseline	Blanken/ Lathrop #1	Blanken/ Lathrop#2	Beatty BRT
Continuous Bike Lane	~	~	–	+	–
Wider Sidewalks	–	–	–	–/+	–
Shorter Crossings	–	–	–	–/+	–

Findings

- 28L/Geneva BRT closes rapid transit gap in network
  - 1-seat ride greatly reduces transit travel time
    - 30-40% travel time reduction (over today)
  - Improvements lead to increased ridership
    - 6-8% more than baseline
- baseline & project investments include substantial changes, benefits
  - new bike lanes on Geneva provide direct connection for cyclists
  - impact of lane conversion on Geneva (Muni Forward) less than expected due to new signals, better coordination but some vehicles will divert to other rtes
  - expect some changes to Blanken over time for safety as
    - transit frequency grows (56, 28L, shuttles, etc)
    - bicycle ridership increases
    - background traffic grows

Boardings on 28L / Geneva BRT



Initial Performance Metrics

Transit Accessibility

	Today	2020 Baseline	4-Lane Geneva BRT	2-Lane Geneva BRT	2-Lane Geneva + Beatty BRT
Transit Travel Time (AM Candlestick Pt to Balboa Pk)	46	30	28	28	31
Jobs within 30 mins by Transit (Candlestick Pt)	4,400	52,300	✓	+6.1%	+8.8%
Jobs within 30 mins by Transit (Visitacion Valley)	53,400	86,000	+2.7%	+3.4%	+3.8%

- 28L closes gap in transit connectivity, reducing travel time by 50%
- Notable increases in transit access to jobs to/from the corridor
- Still to come: transit to auto comparisons; equity analysis

Source: SF-CHAMP

Initial Performance Evaluation