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Table 1

Table 2

Table 3

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Table 9

Table 10

PLAN BAY AREA 2050

Plan Bay Area 2050 Blueprint: Transportation

RAWG Workshop

November 12, 2019

PLAN BAY AREA 2050

Welcome & Introductions

Alix Bockelman

Deputy Director, Policy

PLAN BAY AREA 2050

What Do The Guiding Principles Mean for Transportation?

Large Group Activity

PLAN BAY AREA 2050

Pop-Ups

28 Events

Online Survey

1,600+ submissions

= 10,000+ Comments

Cross-Cutting Issues	 *Equity*  *Resilience*	★ Adopted by MTC and ABAG Boards September 2019
Vision	To ensure by the year 2050 that the Bay Area is **affordable, connected, diverse, healthy, and vibrant for all.**	
Guiding Principles	 **Affordable**	All Bay Area residents and workers have sufficient housing options they can afford – households are economically secure.
	 **Connected**	An expanded, well-functioning, safe and multimodal transportation system connects the Bay Area – fast, frequent and efficient intercity trips are complemented by a suite of local transportation options, connecting communities and creating a cohesive region.
	 **Diverse**	The Bay Area is an inclusive region where people from all backgrounds, abilities, and ages can remain in place – with full access to the region's assets and resources.
	 **Healthy**	The region's natural resources, open space, clean water and clean air are conserved – the region actively reduces its environmental footprint and protects residents from environmental impacts.
	 **Vibrant**	The Bay Area region is an innovation leader, creating quality job opportunities for all and ample fiscal resources for communities.

PLAN BAY AREA 2050

Plan Bay Area 2050 Overview

Adam Noelting

Regional Planning Program

Tri-Valley
Source: Flickr/Creative Commons

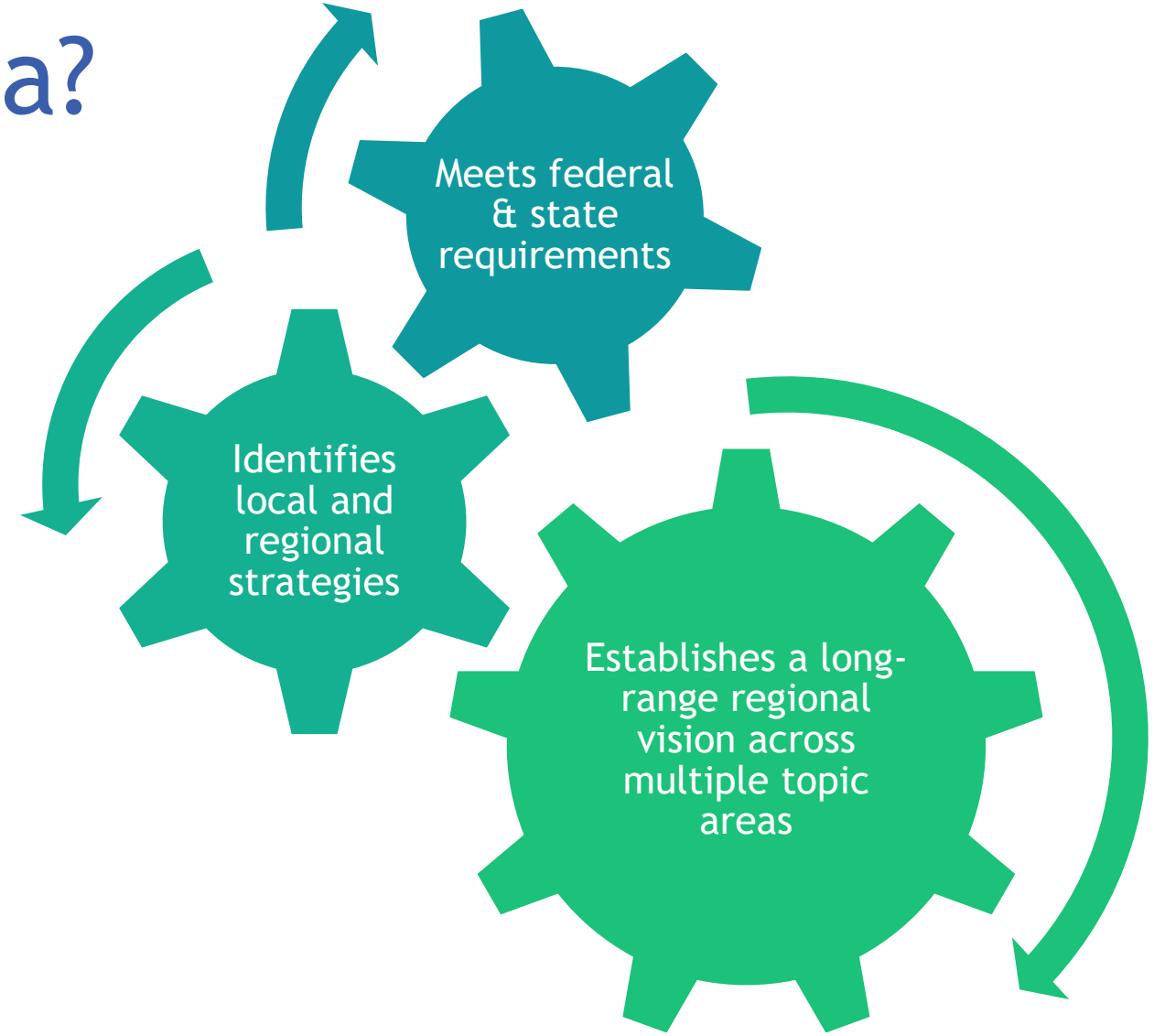
Welcome to ***Plan Bay Area 2050***.

Over the next two years,

MTC and ABAG will work together to plan for a better Bay Area - considering strategies to tackle the challenges of today and tomorrow.

What is Plan Bay Area?

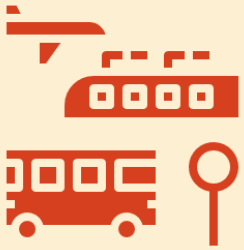
- The regional plan is **a blueprint for growth and infrastructure for the next 30 years.**
- The regional plan is **updated every four years**, with this major update due in 2021.
- The regional plan is a reflection of **the shared priorities of the diverse nine-county San Francisco Bay Area.**
- The regional plan is **fiscally-constrained**, even as it aspires to tackle the Bay Area's big challenges with specific strategies.
- The regional plan is **not an expenditure plan**; it is focused on setting priorities and over the long term and looking holistically across "silos".



Plan Bay Area 2050 will cover four topic areas and integrate two cross-cutting issues.

Cross-Cutting Issues

Equity *Resilience*



Transportation

Environment

Housing

Economy

Plan Bay Area builds on Horizon

Horizon:
Futures, Project Performance, etc.

Plan Bay Area 2050:
Blueprint
(previously Preferred Scenario)

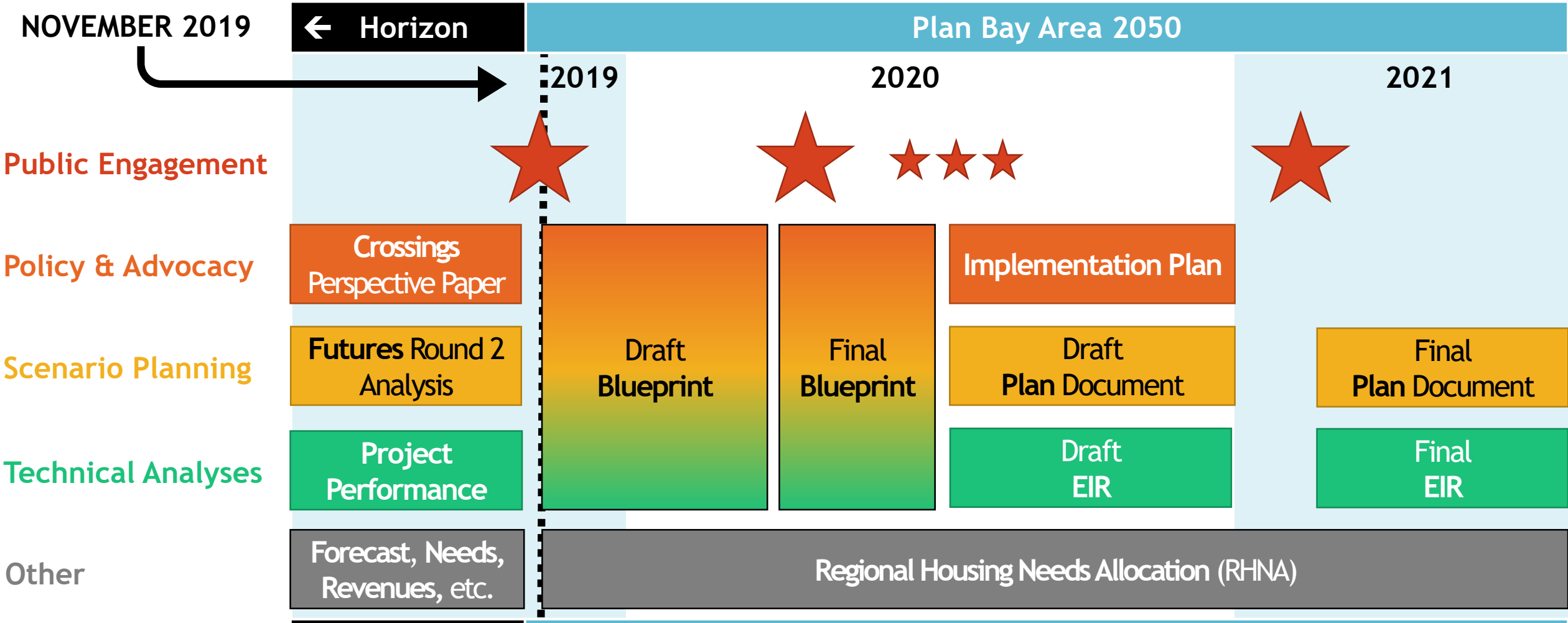
Plan Bay Area 2050:
Finalization

February 2018-October 2019
Robust scenario planning, project evaluation, and policy analyses

September 2019-Summer 2020
Selection of resilient and equitable strategies to create a more comprehensive regional plan

Summer 2020-Summer 2021
Development of shorter-range Implementation Plan + environmental analysis

Plan Bay Area 2050 Schedule



The transportation section of the Blueprint will answer the following questions

- How do we align available transportation revenues with priority investments?
- What are our top priorities for transportation investments?
- What other supportive strategies are needed?

Key elements of the Transportation Blueprint include

Investment Strategy*

Supportive Strategies*

Implementation Plan

**emphasis of today's workshop*

The Blueprint will consider new revenues

- Forecasted
- Revenues

Blueprint *Basic*

- Forecasted
- Revenues +
- **new sources**

Blueprint *Plus*

Three Topics to Think About…

- **EQUITY.**

  Plan Bay Area 2040 performed much better on environmental goals than on equity goals; in concert with the Equity Platform effort, staff proposes to prioritize equity to a significantly greater degree this cycle.

- **GREENHOUSE GASES.**

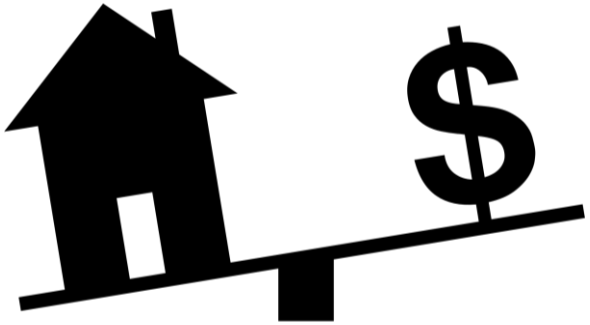
  The new 19 percent per-capita greenhouse gas emissions reduction target will require ambitious strategies going far beyond *Plan Bay Area 2050*; adopting a Plan that does not achieve the target puts the region's SB1 Solutions for Congested Corridors funding at risk post-2021.

- **NEW REVENUES.**

  The Blueprint may be able to incorporate significant new revenues that could fund transportation, housing, economic, and/or environmental strategies.

Placing equity as a priority will require further refinement of Plan strategies.

The strategies of Plan Bay Area 2040 were **insufficient to prevent further growth in displacement risk.**



The strategies of Plan Bay Area 2040 **did little to address the rising cost of living in the Bay Area.**

Through *Horizon*, we tested the following strategies for the boards to consider including in the Plan, among others:

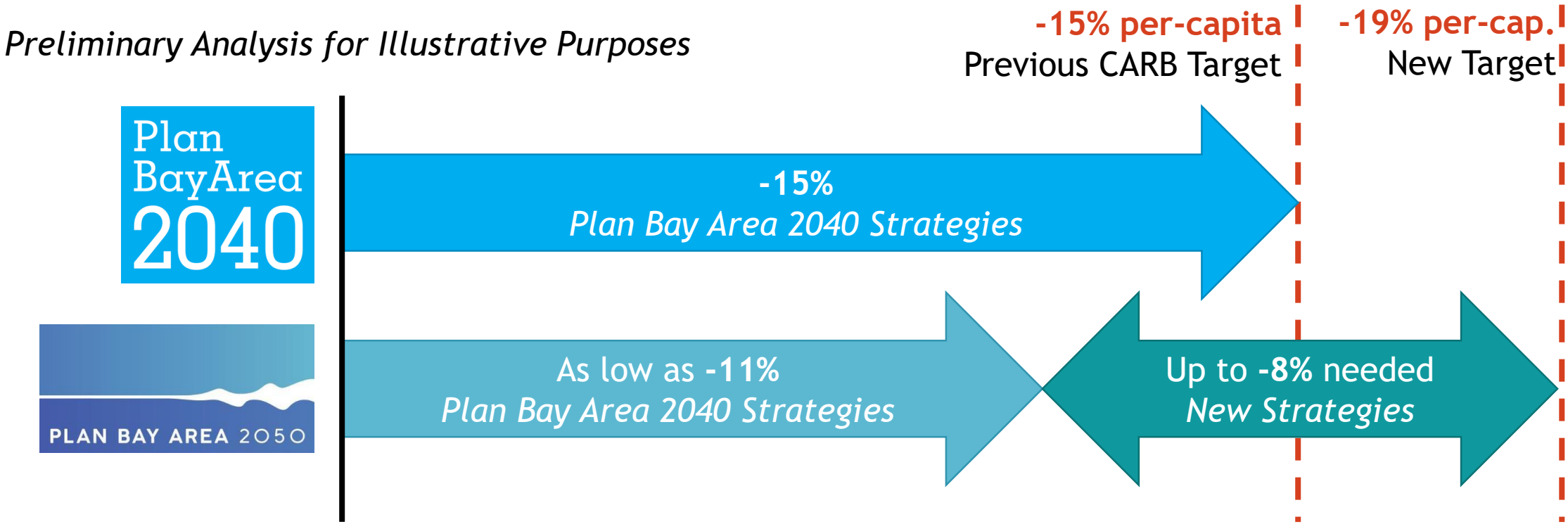
- Requiring a greater share of new housing to be deed-restricted affordable units
- Strengthening renter protections
- Increasing affordable housing preservation and production

Through *Horizon*, we tested the following strategies for the boards to consider including in the Plan, among others:

- Allowing housing near transit and in high-resource areas
- Providing free transit to lower-income households
- Subsidizing childcare for lower-income households

Meeting the new 2035 GHG target will only be possible with ambitious new strategies.

Preliminary Analysis for Illustrative Purposes



What magnitude of strategies would be necessary to close this gap?

approx. **-5%**
Reduce freeway speed limits to 55 mph with robust enforcement

approx. **-3%**
Fund $100 billion of new transit megaprojects via megameasure

approx. **-5%**
Incorporate strategies to enable nearly all job and housing growth to focus in the region's lowest-VMT areas (e.g., SF)

PLAN BAY AREA 2050

New revenues could help address both of these challenges - and more.

Basic Version of the Blueprint
Includes available revenues from Needs & Revenue assessments, but does not include New Revenues from future regional measures

Expanded "Plus" Version of the Blueprint
Includes available revenues from Needs & Revenue assessments + ~$100 billion distributed to one or more topic areas of the Plan

This approach will provide more flexibility over the next year, should the MTC/ABAG boards wish to integrate new revenues to create a more aspirational Plan.

Either could be adopted as the the Preferred Alternative in the EIR process in summer 2020.

The Draft Blueprint will identify complementary strategies, both land use and transportation.

Plan Bay Area 2050 Blueprint

- **Transportation** Investments & Strategies
- **Housing** Strategies
- **Economic** Strategies
- **Environmental** Strategies

Questions?

Contact MTC/ABAG staff with any follow-up questions:

- Adam Noelting: anoelting@bayareametro.gov
- Dave Vautin, Plan Bay Area 2050 Project Manager: dvautin@bayareametro.gov

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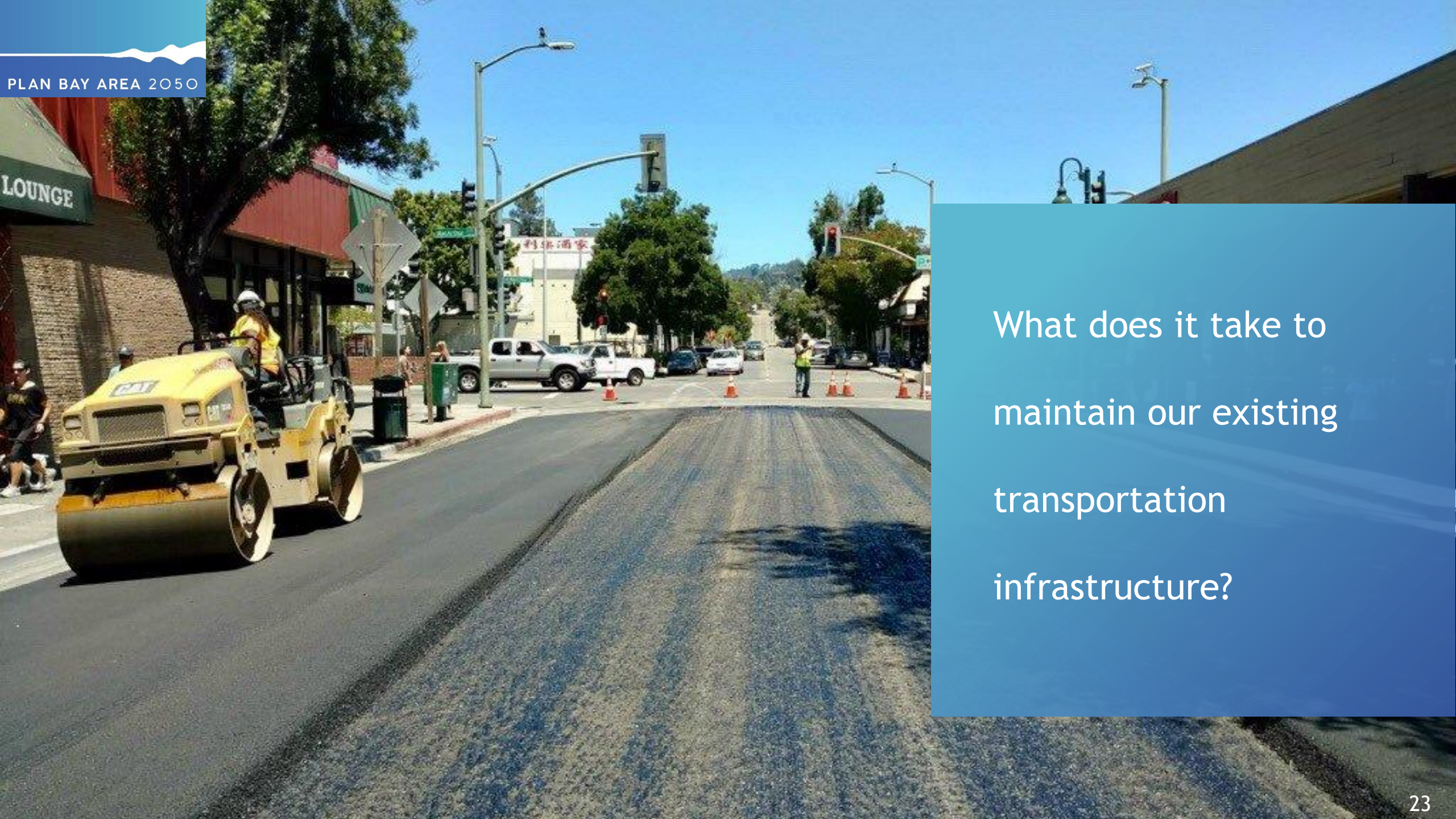
PLAN BAY AREA 2050

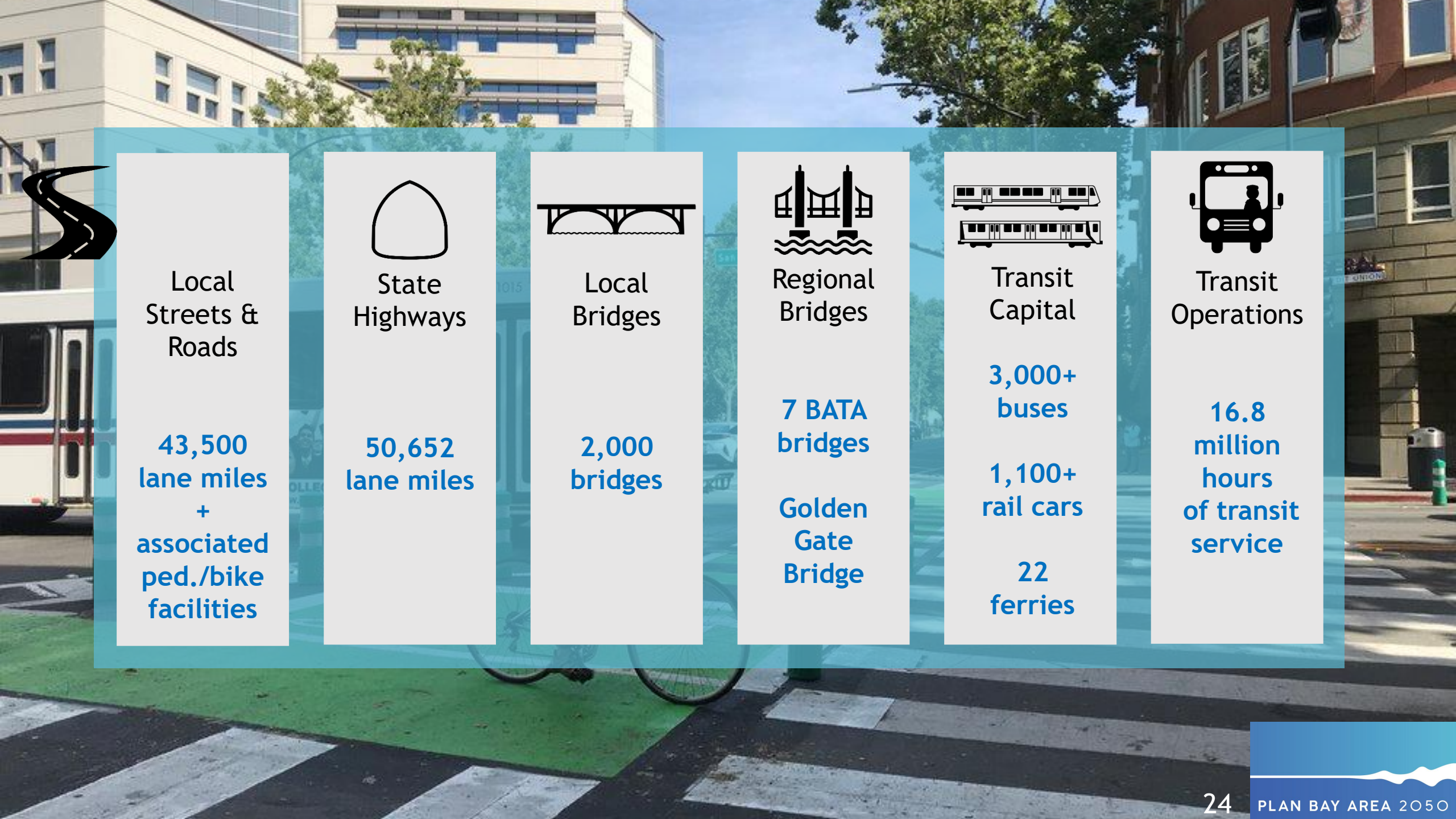
Transportation Operations + Maintenance Needs Assessments

William Bacon

Programming and Allocations



What does it take to maintain our existing transportation infrastructure?



Local Streets & Roads	State Highways	Local Bridges	Regional Bridges	Transit Capital	Transit Operations
43,500 lane miles + associated ped./bike facilities	50,652 lane miles	2,000 bridges	7 BATA bridges Golden Gate Bridge	3,000+ buses 1,100+ rail cars 22 ferries	16.8 million hours of transit service

Transportation Needs Methodologies

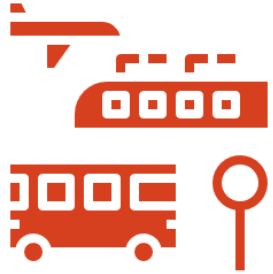
- **Local street & road and bridge** maintenance needs were estimated using StreetSaver®, a pavement management system used by all Bay Area jurisdictions in combination with input and estimates from the 2018 California LSR Needs Assessment.
- **Bicycle/pedestrian and other non-pavement infrastructure** maintenance needs estimated using StreetSaver® and prediction models for accompanying local street and road infrastructure
- **Regional bridge** needs were estimated using the Bay Area Toll Authority's bridge maintenance, rehab, and replacement schedules and cost estimates.
- **State highway and bridge** needs were estimated using information for District 4 (San Francisco Bay Area) in Caltrans' 2019 State Highway System Management Plan and Fiscal Year 2019/20 Project Book.

Transportation Needs Methodologies

- **Transit capital** maintenance needs were developed using the Regional Transit Capital Inventory – an inventory of every public transit asset in the region- and TermLite, a software that models the cost of replacing transit assets over time based on the assets' useful life. Assumes replacement of existing bus fleet with zero emission buses in compliance with CARB's Innovative Clean Transit Regulation. Assumes in-kind replacement, without major upgrade, of other assets.

- **Transit operating** needs are estimated using information provided by the region's public transit operators on the cost of maintaining today's current level of service (16.8 million service hours per year) over the Plan period.

Transportation Summary



- **$417 billion** to improve and maintain the system in a state of good repair
- **$385 billion** to prevent further deterioration / maintain existing conditions

30-Year Transportation Operations and Capital Maintenance Needs (in billions of $YOE)

	Local Streets, Roads,& Local Bridges	Regional Bridges	State Highway & Bridge	Transit Capital	Transit Operating	Total Operations and Capital Maintenance Needs	Plan Bay Area 2050 Draft Transportation Revenue
Maintain Existing Conditions	$64.4	$19.4	$24.4	$59.4	$217.8	$385.4	TBD
State of Good Repair	$71.0	$19.4	$24.4	$84.6	$217.8	$417.2	TBD

Note: Two condition scenarios could only be calculated for Local Streets, Roads, and Local Bridges, and Transit Capital

Comparison to Plan Bay Area 2040

33% ↑ in transit service hours (12.6 million hr/year to 16.8 million hr/year)

Annual need for local streets 6% ↑, PCI now 68 vs 66 in PBA 2040
(Increase in annual need mostly due to higher costs for maintenance materials and labor)

Both plans assume replacement of the Richmond-San Rafael Bridge
PBA 2050 assumes O&M/Seismic tolls will increase and be indexed

Up to $10 billion (YOE$) in additional transit capital assets added to the regional inventory since PBA 2040.

$36 billion

=

Remaining, unfunded need in PBA 2040 to achieve a state of good repair for our existing system

12% of total PBA 2040 revenues

(20% when you exclude transit operating revenues)

PBA 2050 unfunded need likely to grow even higher

Next Steps

- **November**: allow for continued review of needs assessments & refine needs based on feedback received
- **December**: share initial revenue estimates for the transportation element
- **January**: finalize Needs & Revenue work in time for Draft Blueprint analysis

Questions?

Contact MTC/ABAG staff with any follow-up questions:

- Bill Bacon: wbacon@bayareametro.gov
- Dave Vautin, Plan Bay Area 2050 Project Manager: dvautin@bayareametro.gov

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PLAN BAY AREA 2050

What Did We Learn: Futures

Michael Germeraad

Regional Planning Program

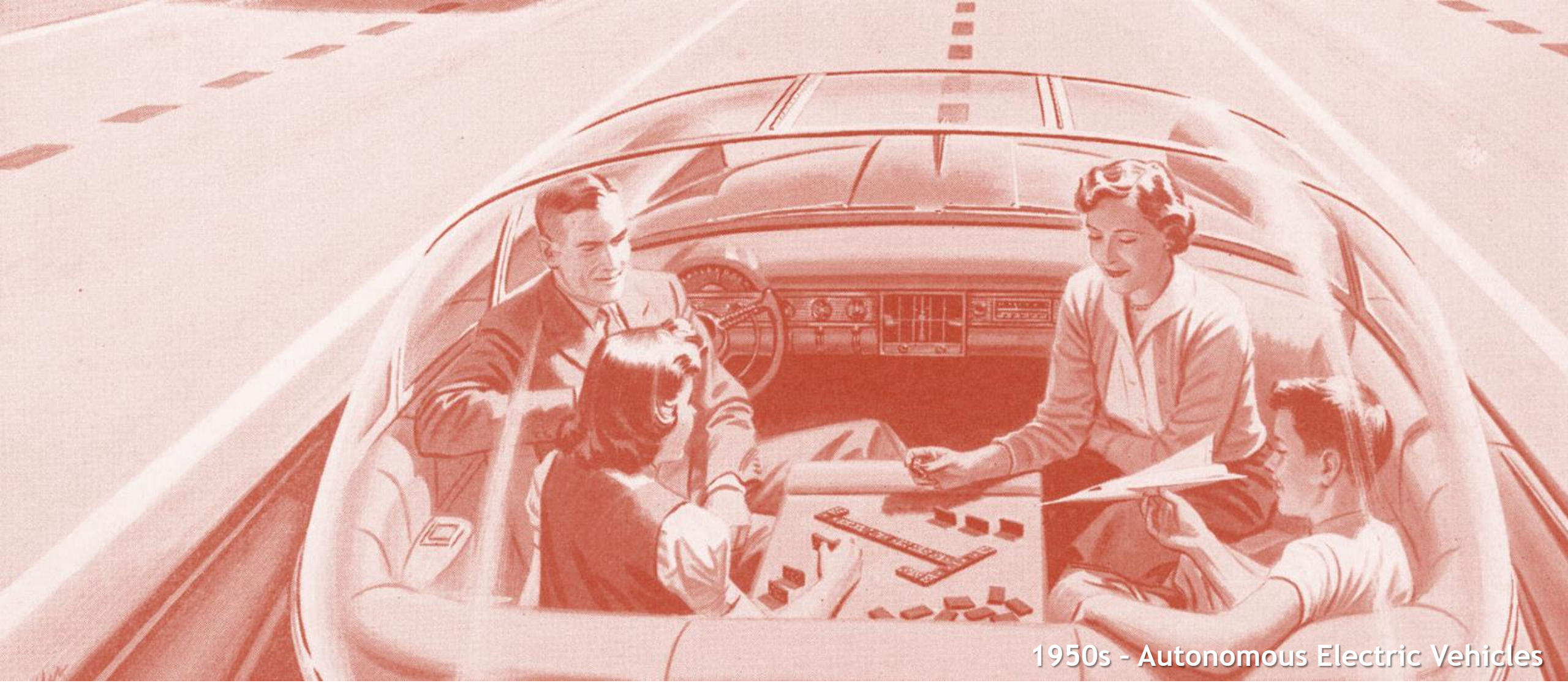
Plan BayArea 2040

HORIZON

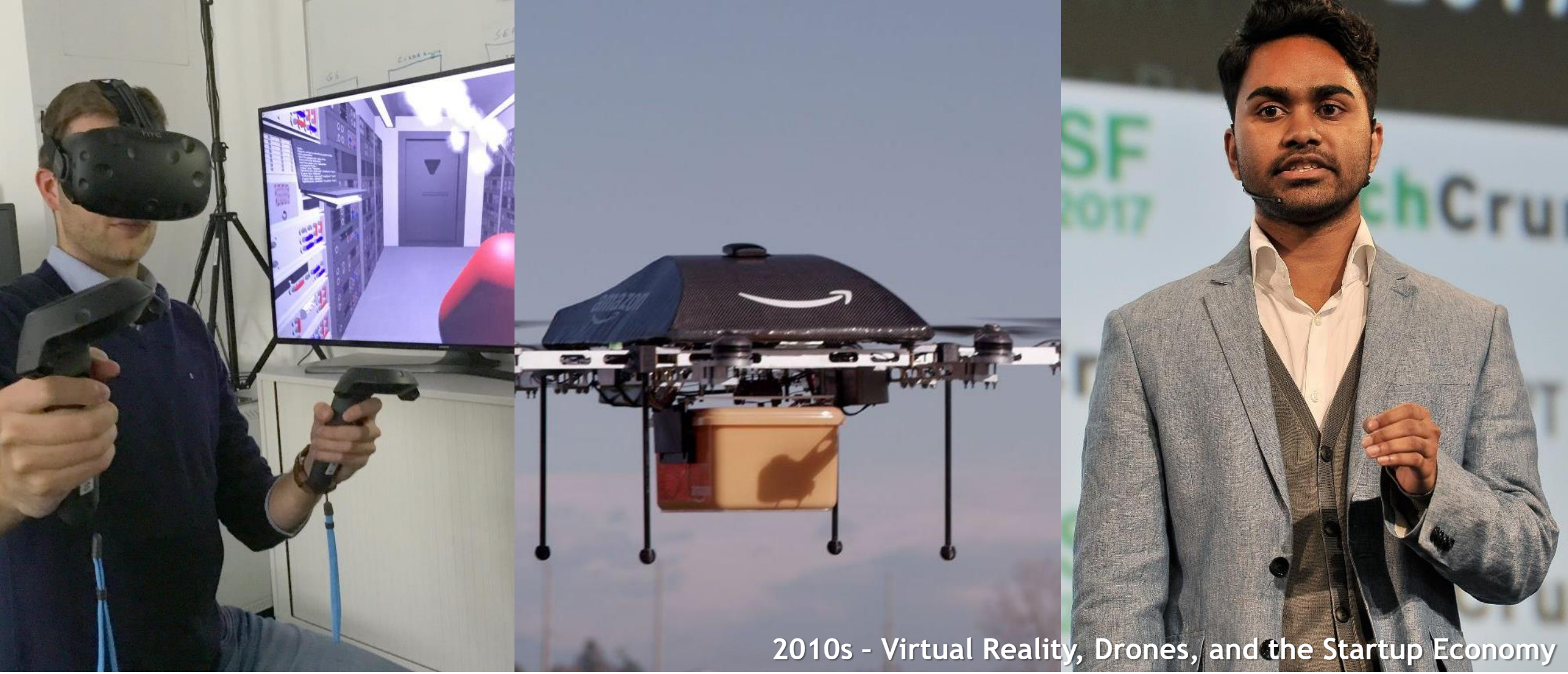
PLAN BAY AREA 2050

Spring 2015 to July 2017 | **February 2018 to October 2019** | **July 2019 to June 2021**

- State law (SB-375) requires ABAG and MTC to create a long-range plan.
  - the plan must tie together housing and regional transportation planning.
  - the plan must reduce reduce greenhouse gas (GHG) emissions.
  - Past plans have achieved GHG goals, but not affordability and equity goals.
  - Horizon and the Plan Bay Area 2050 intend to do better.



We've long dreamed about innovations that could change our lifestyles and our communities…



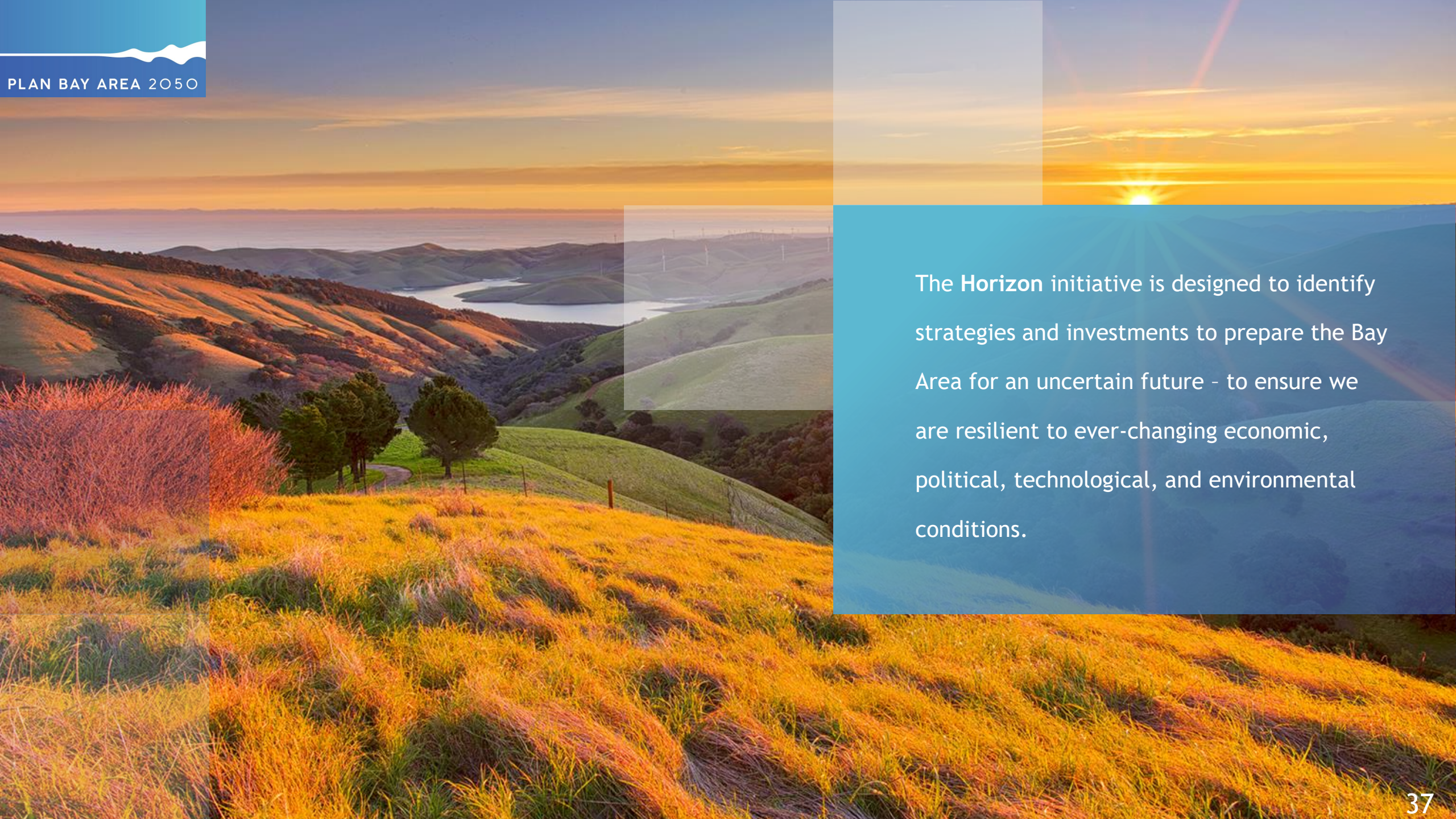
… but with the accelerating pace of innovation, shifts may occur sooner than expected.

Immigration Shifts

Economic Displacement

Vulnerability to Disasters

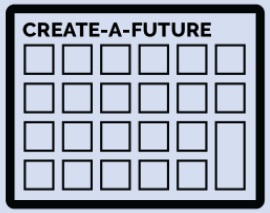
The challenges we face are not merely technological - they are political, economic, and environmental.



The **Horizon** initiative is designed to identify strategies and investments to prepare the Bay Area for an uncertain future – to ensure we are resilient to ever-changing economic, political, technological, and environmental conditions.

Futures Process

OUTREACH

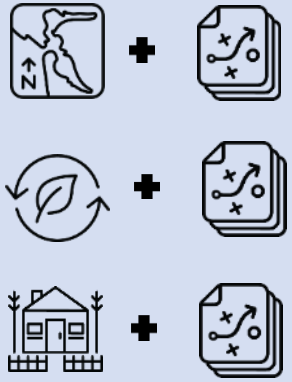


ROUND 1 ANALYSIS

Current Strategies

REPORT

OUTREACH



ROUND 2 ANALYSIS

New Strategies

REPORT

Three Futures – "What If?" Scenarios

A

Rising Tides, Falling Fortunes

What if... the federal government cuts spending and reduces regulations, leaving more policy decisions to states and regions?

B

Clean and Green

What if... new technologies and a national carbon tax enabled greater telecommuting and distributed job centers?

C

Back to the Future

What if... an economic boom and new transportation options spur a new wave of development?

Rising Tides, Falling Fortunes

2050 Population

8.6 Million Residents

+1.0 Million from today

2050 Jobs

4.5 Million Jobs

+0.5 Million from today

2050 Homes

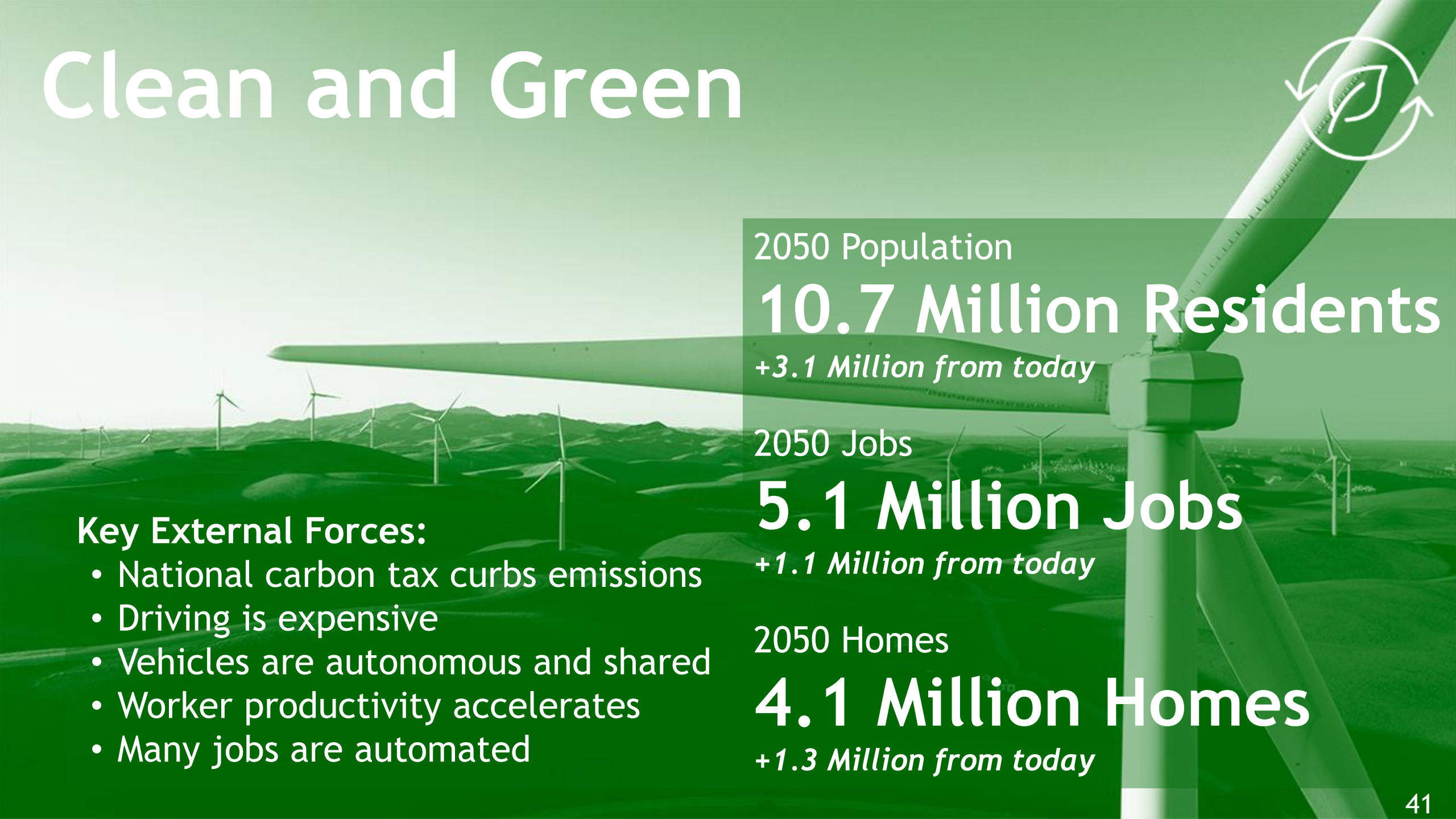
3.3 Million Homes

+0.5 Million from today

Key External Forces:

- 3 feet of sea level rise
- Weak U.S. economy
- Reduced immigration to U.S.
- New technology is limited
- 2035 earthquake *(in all futures)*

Clean and Green



Key External Forces:

- National carbon tax curbs emissions
- Driving is expensive
- Vehicles are autonomous and shared
- Worker productivity accelerates
- Many jobs are automated

2050 Population

10.7 Million Residents

+3.1 Million from today

2050 Jobs

5.1 Million Jobs

+1.1 Million from today

2050 Homes

4.1 Million Homes

+1.3 Million from today

Back to the Future

2050 Population

13.6 Million Residents

+6 Million from today

2050 Jobs

6.7 Million Jobs

+2.7 Million from today

2050 Homes

4.9 Million Homes

+2.1 Million from today

Key External Forces:

- U.S. immigration rates increase
- Global and U.S. economies boom
- Driving is cheap and autonomous
- Sea level rises 2 feet
- Employers prefer urban workplaces

	Round 1 Analysis *Comparing the three Futures, how does Plan Bay Area 2040 fare in an era of uncertainty?*	Round 2 Analysis *Comparing against Round 1 results, how do new strategies improve each Future?*
Rising Tides, Falling Fortunes *(RTFF)*	2015 Baseline + External Forces *(RTFF)* + Strategies *(PBA 2040)*	2015 Baseline + External Forces *(RTFF)* + Strategies *(Horizon$)*
Clean and Green *(CAG)*	2015 Baseline + External Forces *(CAG)* + Strategies *(PBA 2040)*	2015 Baseline + External Forces *(CAG)* + Strategies *(Horizon$$)*
Back to the Future *(BTTF)*	2015 Baseline + External Forces *(BTTF)* + Strategies *(PBA 2040)*	2015 Baseline + External Forces *(BTTF)* + Strategies *(Horizon$$)*

35 Strategies Analyzed

Strategies were designed to support these nine priority areas, based on the Futures Interim Report findings. While new revenues were assumed in all Futures, fiscal constraint did mean that some strategies were omitted from Rising Tides, Falling Fortunes.

Improve Economic Mobility

Shift the Location of Jobs

Spur Housing Production

Retain & Expand Affordable Housing

Improve Access, Speed, and Reliability of Transportation

Prioritize Active Modes

Price Transportation Services

Reduce the Environment's Impact on Us

Reduce Our Impact on the Environment

PLAN BAY AREA 2050

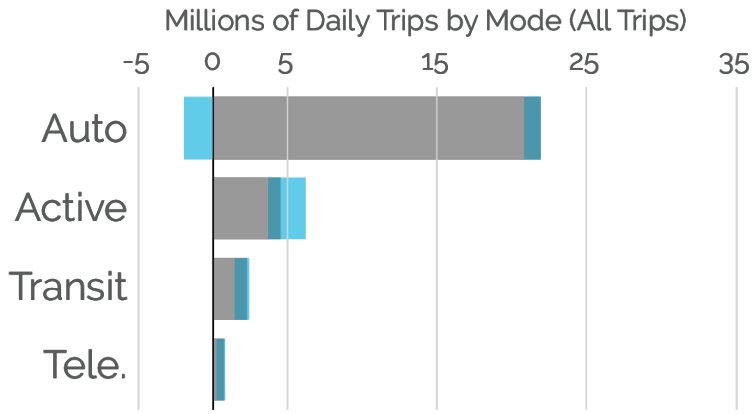
Findings from Horizon Futures Analysis

Today, we'll explore a few of the findings from the Round 1 and Round 2 Futures analysis, focusing on changes in mode share, highway congestion and transit crowding.

Altering the region's mode share is incredibly difficult. Both external forces and new strategies resulted in some positive shifts.

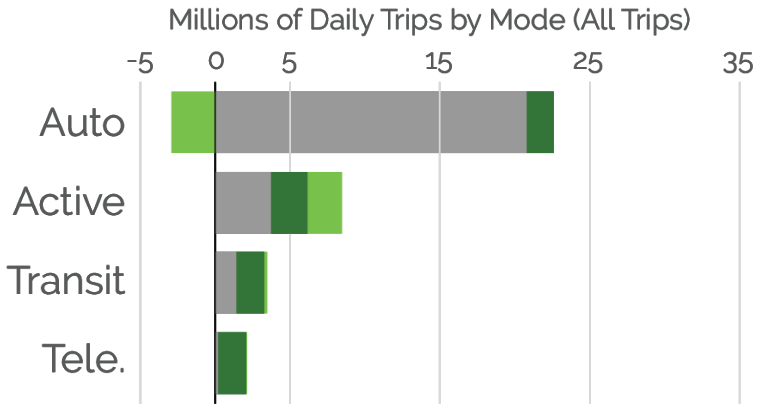
Rising Tides, Falling Fortunes

Mode	2015	Round 1 2050	Round 2 2050
Auto	79%	74% ↓	68% ↓↓
Active	14%	15%	21% ↑↑
Transit	6%	8% ↑	8%
Telecommute	1%	3% ↑	3%



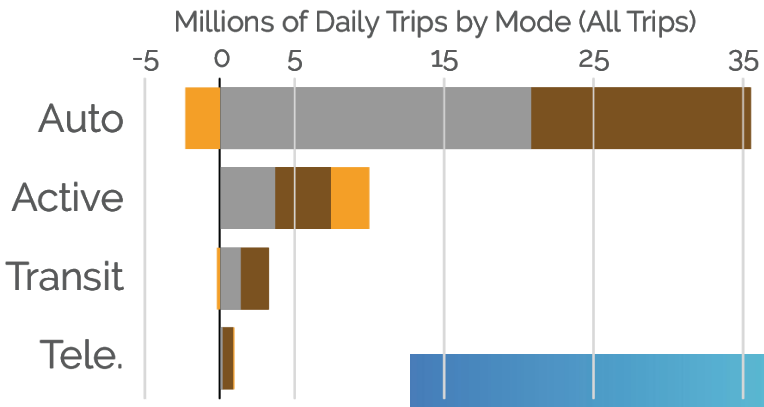
Clean and Green

Mode	2015	Round 1 2050	Round 2 2050
Auto	79%	66% ↓↓↓	58% ↓↓
Active	14%	18% ↑	25% ↑↑
Transit	6%	10% ↑	10%
Telecommute	1%	6% ↑↑	6%



Back to the Future

Mode	2015	Round 1 2050	Round 2 2050
Auto	79%	75% ↓	70% ↓↓
Active	14%	16% ↑	21% ↑↑
Transit	6%	7% ↑	7%
Telecommute	1%	2% ↑	2%



Note that mode share is reflective of all trips; the shares are different by trip type, like commute trips.

Round 2 Strategy Highlight: Micromobility strategies led to a significant shift in active mode share.

Strategies that prioritized active modes.

Implement Vision Zero Speed Reductions
Reduce speed limits to 25 mph on local roads within three miles of transit, in addition to reducing speeds on highways.

Build a Micromobility Network
Build nearly 10,000 miles of micromobility infrastructure, including protected lanes and trails.

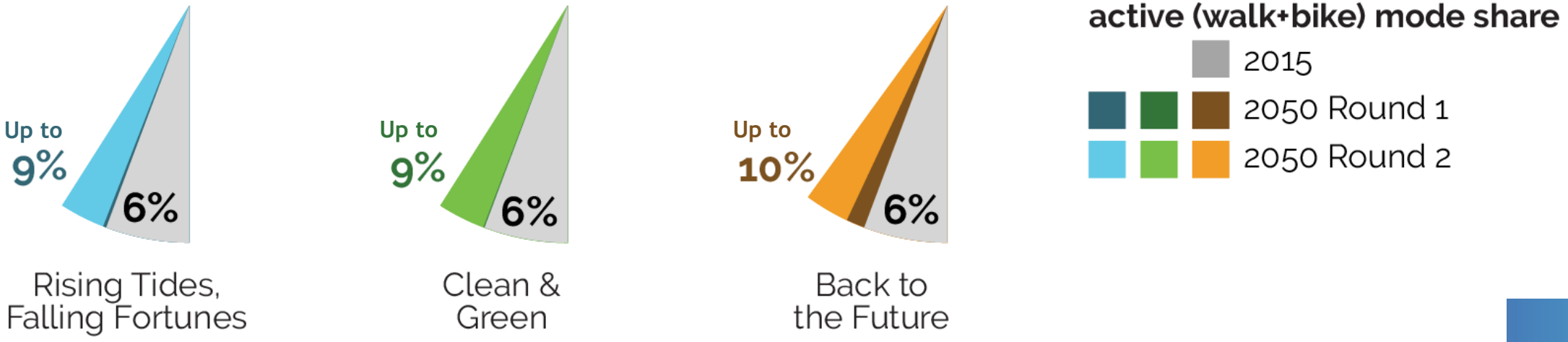
Invest in Free Short-Trip Service
Fund shared personal mobility, including scooters and electric bikes, within 3 miles of transit.

Other strategies that contributed to modal shift.

Suite of Growth Pattern Strategies
By changing the growth pattern in Round 2 analysis, more households and jobs are in areas where the active transportation investments were focused.

Apply Time-of-Day Tolls on All Freeways
Toll vehicles on highways based on the time of day and the number of occupants in the vehicle.

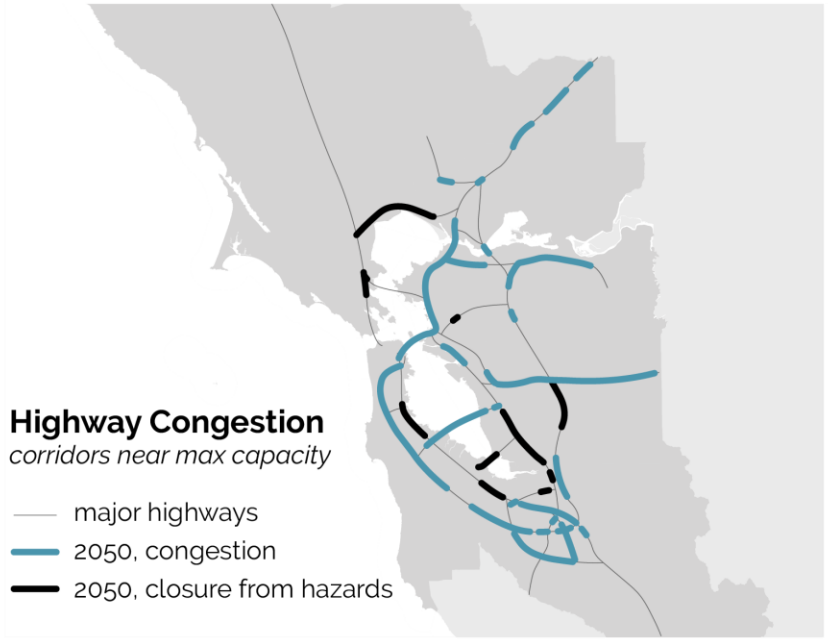
Active (walk & bike) mode share in 2015, and Futures round 1 and round 2 analysis



Note that mode share is reflective of commute mode; the share is higher when accounting for all trips.

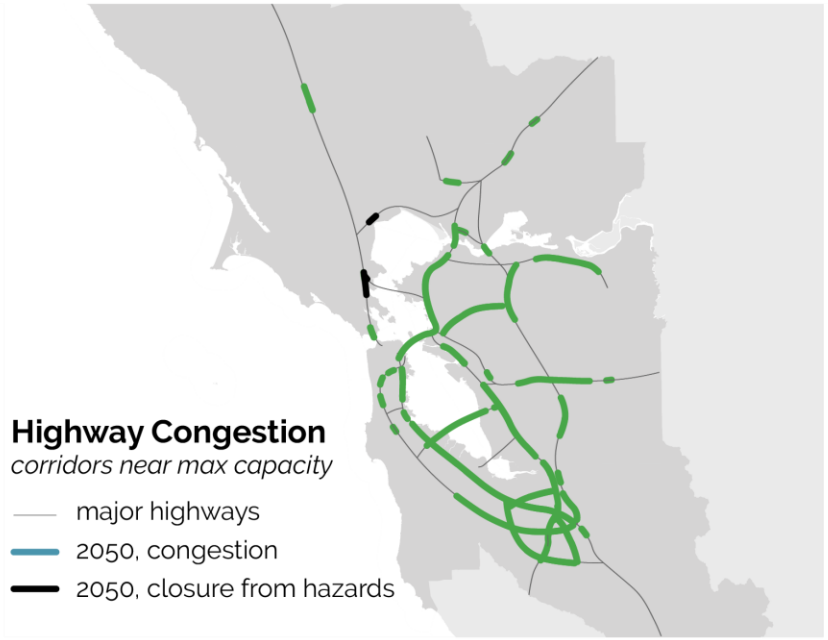
In Round 1, congestion worsened with VMT rising and unmitigated highway damage. In Round 2, pricing and mitigation alleviated some congestion.

Rising Tides Falling Fortunes
2050: 10% autonomous vehicle market share
2050: $0.20 per mile vehicle operating cost



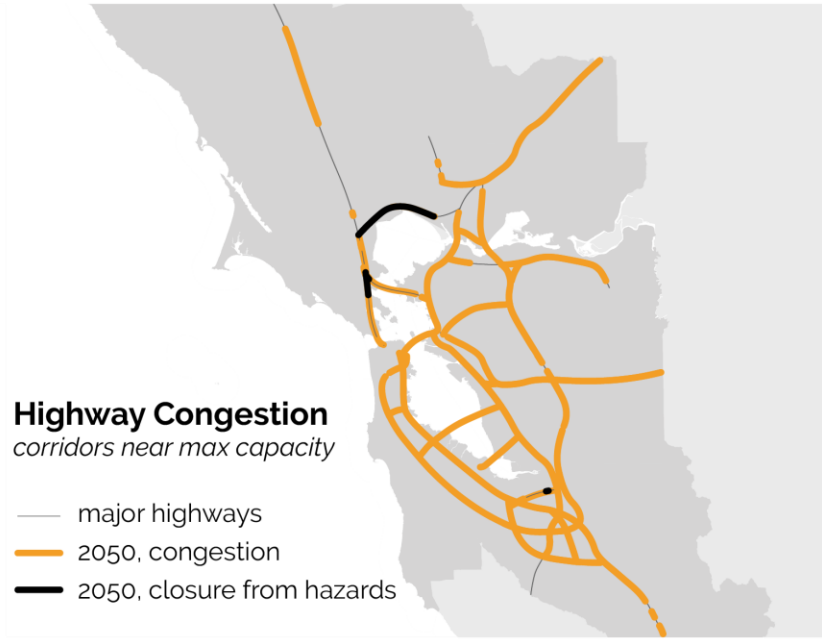
Round 1

Clean and Green
2050: 95% autonomous vehicle market share
2050: $0.40 per mile vehicle operating cost



Round 1

Back to the Future
2050: 75% autonomous vehicle market share
2050: $0.10 per mile vehicle operating cost

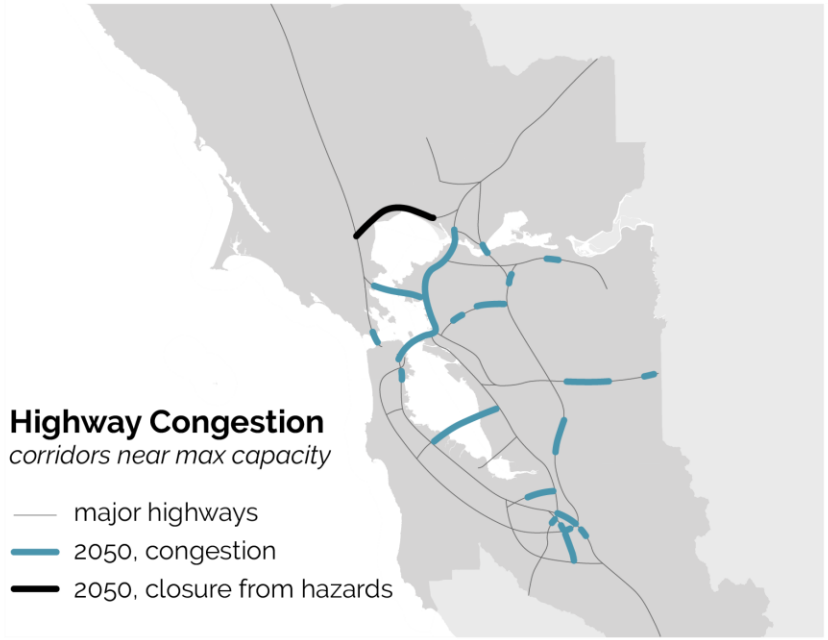


Round 1

In Round 1, congestion worsened with VMT rising and unmitigated highway damage. In Round 2, pricing and mitigation alleviated some congestion.

Rising Tides Falling Fortunes

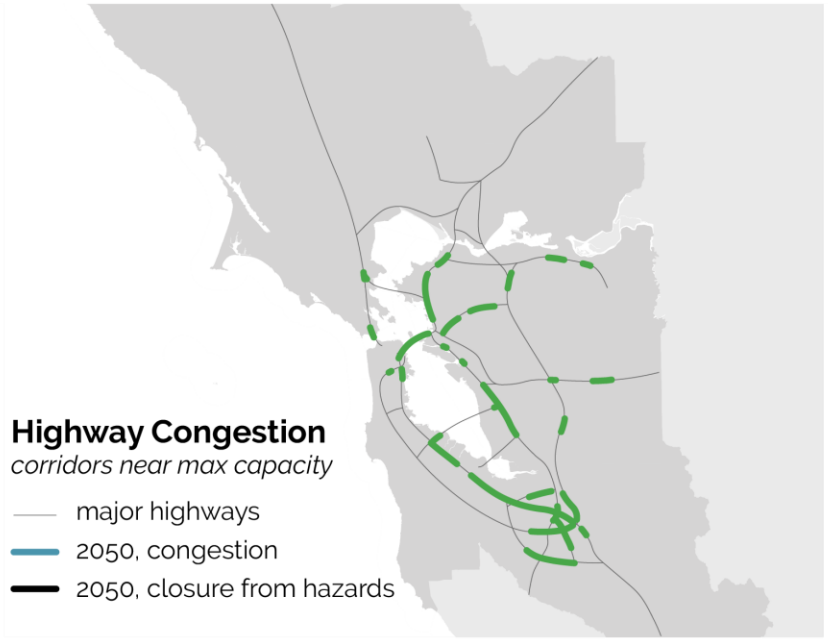
2050: 10% autonomous vehicle market share
2050: $0.20 per mile vehicle operating cost



Round 2

Clean and Green

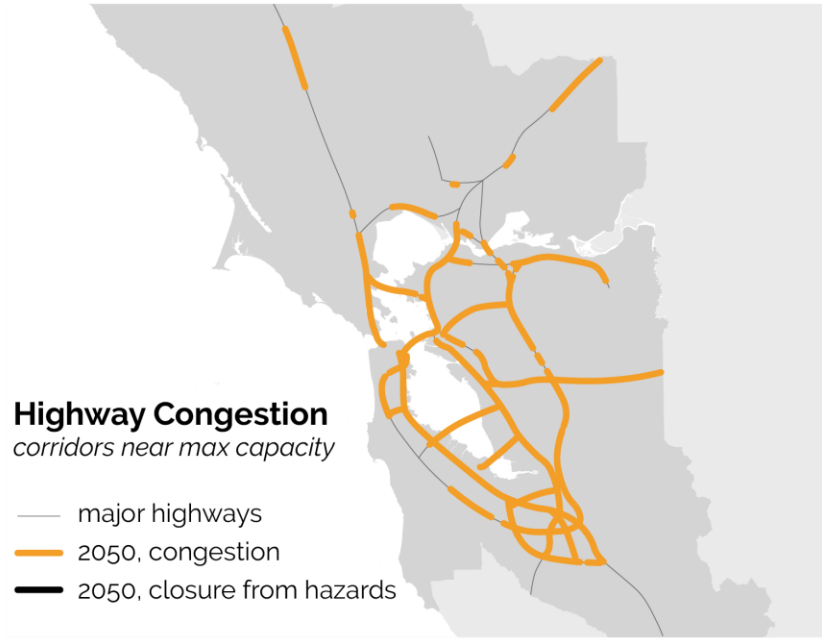
2050: 95% autonomous vehicle market share
2050: $0.40 per mile vehicle operating cost



Round 2

Back to the Future

2050: 75% autonomous vehicle market share
2050: $0.10 per mile vehicle operating cost



Round 2

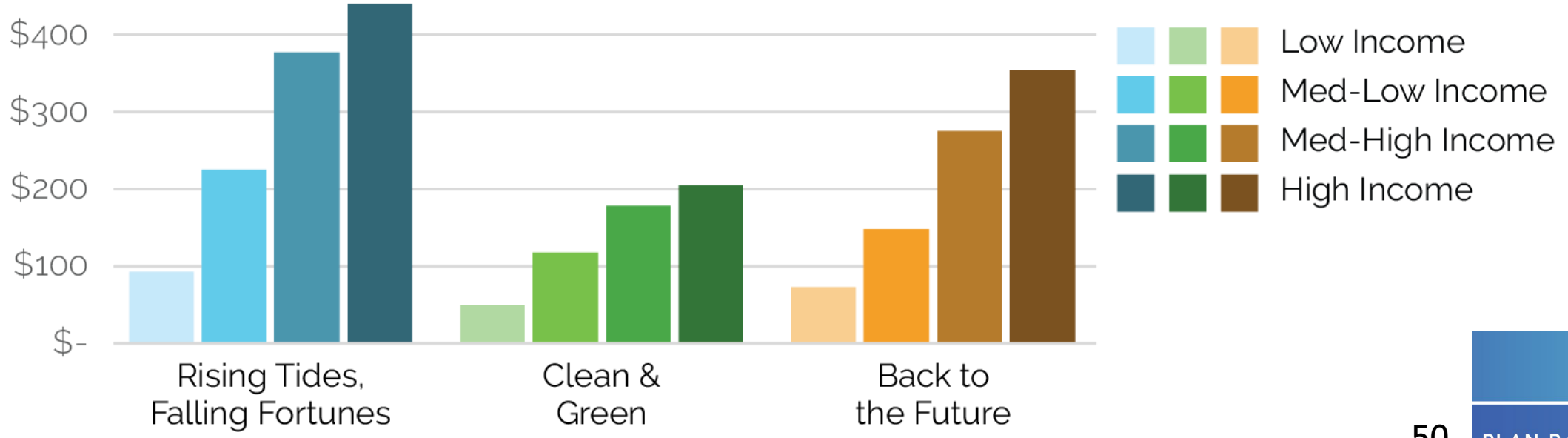
Round 2 Strategy Highlight: Highway pricing reduced roadway congestion, but equity concerns need to be explored more fully.

Apply Time-of-Day Tolls on All Freeways

Strategies
(Horizon$_{\$\$}$)

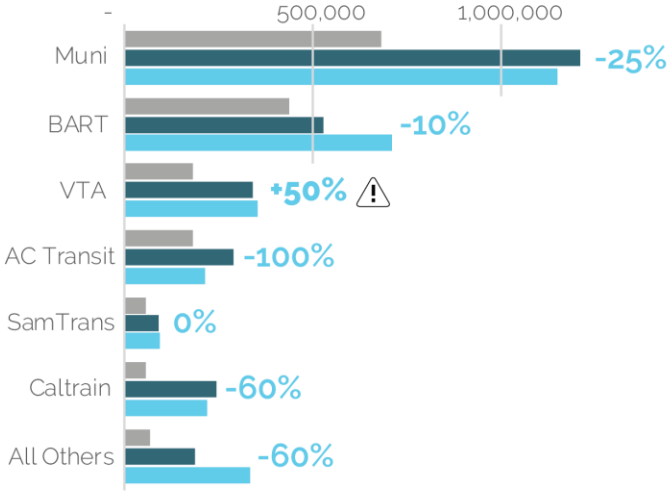
Apply a $0.05 - $0.15 per mile toll on all freeways depending on vehicle occupancy and time of day. This is on top of driving costs assumed in each future.

Average Annual Time-of-Day Toll Revenue per Household by Income in 2050 (2019 dollars)



In Round 1, transit crowding worsened with new transit demands. In Round 2, new strategies helped alleviate crowding on many systems.

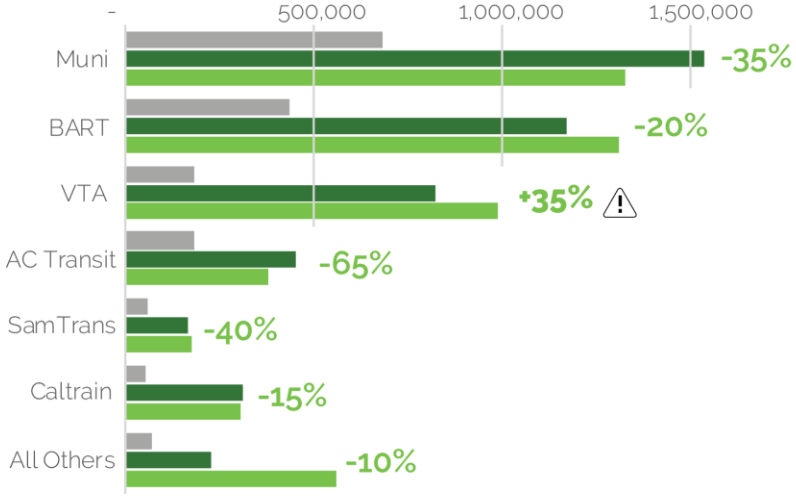
Rising Tides, Falling Fortunes



Daily transit boardings
- 2015 Baseline
- 2050 Round 1
- 2050 Round 2

Transit Crowding
#% Change between Round 1 and Round 2

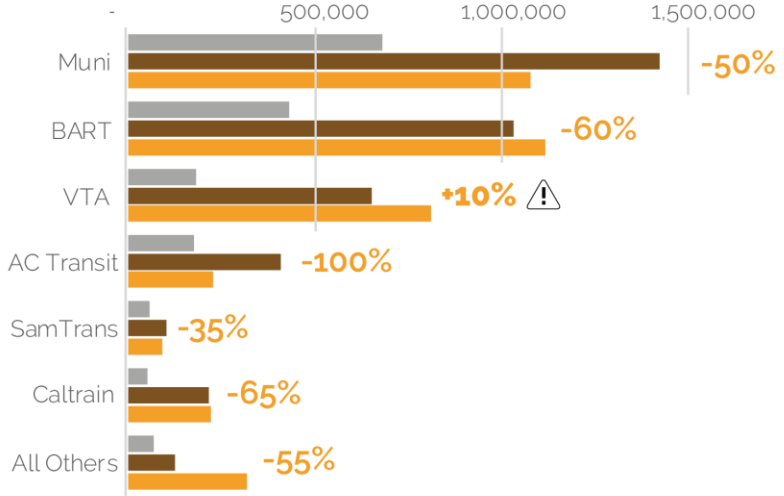
Clean and Green



Daily transit boardings
- 2015 Baseline
- 2050 Round 1
- 2050 Round 2

Transit Crowding
#% Change between Round 1 and Round 2

Back to the Future



Daily transit boardings
- 2015 Baseline
- 2050 Round 1
- 2050 Round 2

Transit Crowding
#% Change between Round 1 and Round 2

Round 2 Strategy Highlight: Transit investments like a second transbay rail crossing reduced transit crowding substantially.

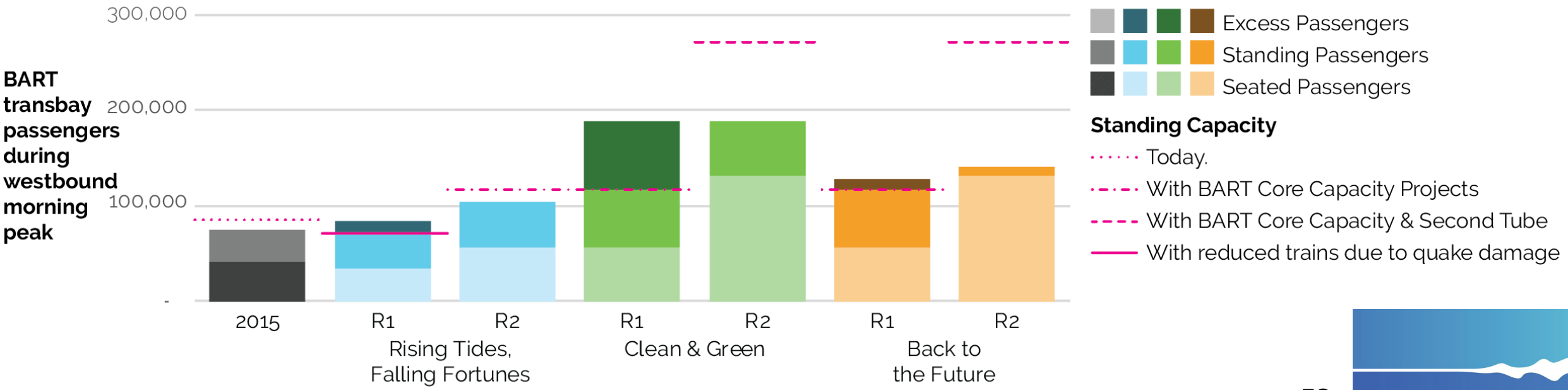
Build a New Transbay Rail Crossing

Strategies
(Horizon$_{\$\$}$)

Build a new transit crossing across the San Francisco Bay, connecting new markets, and providing redundancy and capacity to the existing transbay tube.

Note that BART was studied as a representative mode for such a crossing for exploratory purposes only.

BART Transbay ridership during westbound morning peak



Rating Strategies

Staff have selected one of three ratings for each strategy, based on its resilience and efficacy in the Futures analysis as well as its support for equitable outcomes.

Futures Round 2: Strategy Recommendations
Transportation

Recommended to move forward into Plan Bay Area 2050 Blueprint.

- Operate and Maintain the Existing System
- Build a Complete Micromobility Network
- Develop a Single Platform to Access and Pay for All Mobility Options

Recommended to move forward *with minor revisions*.

- Complete Set of *Plan Bay Area 2040* Transit Expansion Projects
- Build a New Transbay Rail Crossing
- Apply Tolls Based on Time of Day and Vehicle Occupancy on All Freeways
- Lower Speed Limits on Highways and Local Streets

Not recommended to move forward *unless major revisions are made*.

- Build and Operate an Express Bus Rapid Transit Network
- Provide Free Transit to Lower-Income Riders
- Provide Free Shared Bike, Scooter, and Shuttle Service
- Build Carpool Lanes & Address Interchange Bottlenecks
- Modernize and Boost Frequencies to Create a Next-Generation Rail Network
- Extend the Regional Rail Network

PLAN BAY AREA 2050

Futures Final Report:
Resilient and Equitable Strategies for the Bay Area's Future

The full report will highlight the full suite of strategies studied and describes to what extent the region performs better with these strategies.

The report is expected to be on the MTC website later this month:

https://mtc.ca.gov/our-work/plans-projects/horizon/futures-planning

PLAN BAY AREA 2050

Questions?

Contact MTC/ABAG staff with any follow-up questions:

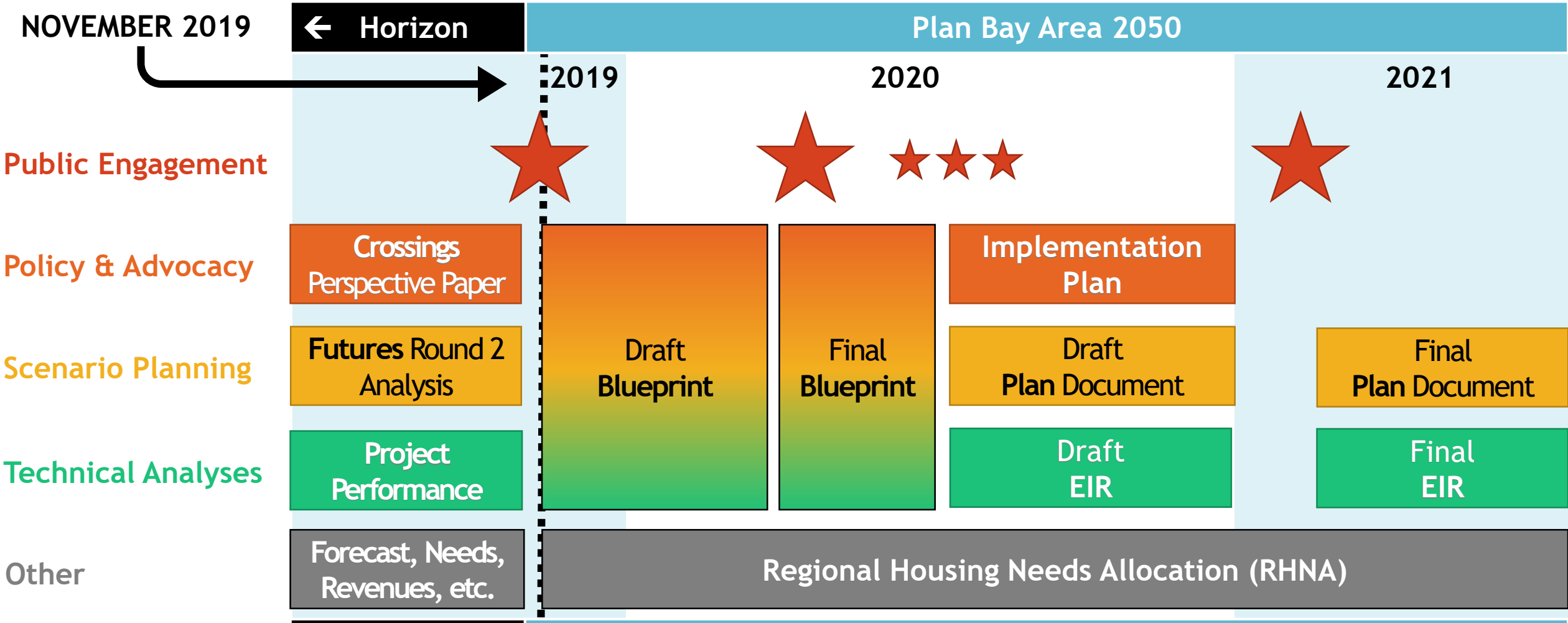
- Michael Germeraad: mgermeraad@bayareametro.gov
- Dave Vautin, Plan Bay Area 2050 Project Manager: dvautin@bayareametro.gov

What Does the Public Think?

Ursula Vogler

Legislative and Public Affairs

Plan Bay Area 2050 Schedule



Phase I: Plan Bay Area 2050 Engagement

Focus Area

Prioritize high-performing Horizon strategies for consideration in Blueprint

Tactics

1. Pop-up Workshops: 37 locations across the Bay Area
2. Mayor of Bayville: Digital tool used to engage participants online
3. In-depth workshops with partners and stakeholders

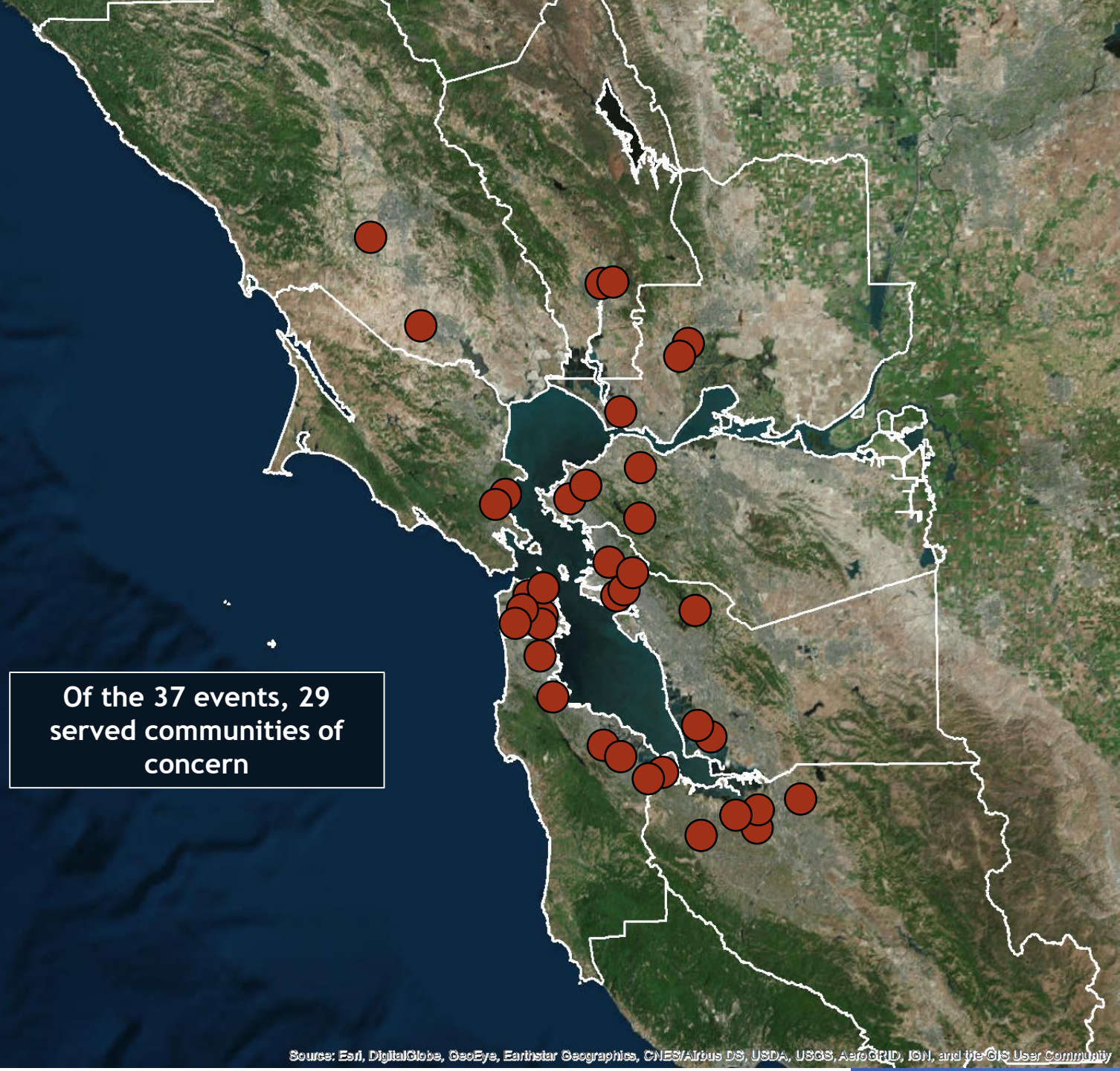
Pop-up Workshops

Held 37 pop-ups in six weeks:

- Held in all nine counties
- Focused on Communities of Concern
- 29 of the pop-ups were held in areas serving Communities of Concern
- Have received over 2,500 comments to-date

Pop-up Locations

Napa Farmer's Market	October 5
Alum Rock Farmer's Market	October 6
Richmond Library	October 10
Contra Costa College	October 10
Livermore Art Walk	October 12
Diwali Festival - Cupertino	October 12
Pittsburg Farmer's Market	October 12
San Francisco State University	October 16
East Palo Alto Farmer's Market	October 16
Luther Burbank Farmer's Market	October 16
Orinda Casual Carpool	October 17
Heart of the City Farmer's Market	October 18
Cherryland Fun Run (Oakland)	October 19
College of San Mateo Market	October 19
Sunday Streets - Excelsior	October 20
Dental Care Event in So. SF	October 20
Santa Clara Library	October 22
Vacaville Job Fair	October 23
Serramonte Farmer's Market	October 24
CBO pop-up (Fremont)	October 25
Lake Merritt	October 26
Vacaville Farmer's Market	October 26
Vallejo Farmer's Market	October 26
Transportation Museum (San Carlos)	October 27
San Jose Farmer's Market	November 1
Dia de los Muertos (Oakland)	November 2
CBO pop-up (SF Chinatown)	November 2
Fremont Farmer's Market	November 3
Pickleweed Library (San Rafael)	November 7
CBO pop-up (East Palo Alto)	November 9
Health and Harvest Fair (SF)	November 9
Petaluma Farmer's Market	November 12
CBO Pop-up (Oakland)	November 15
CBO pop-up (San Francisco)	November 16
Napa Farmer's Market	November 16
San Rafael Farmer's Market	November 17



Feedback from Pop-ups: Most Popular Strategies

1. **Modernize Public Transit**
   - Improve connections between transit agencies and between modes
   - Make services more reliable and frequent
   - Electrify regional rail systems

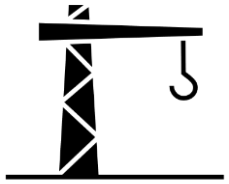
2. **Build Affordable Housing**
   - Build working-class housing so people can live near where they work
   - Address homelessness
   - Ensure housing is located near high-quality schools *(nexus with high-resource area strategy)*

3. **Encourage More Biking & Walking**
   - Improve safety of bike & pedestrian network
   - Expand bicycle infrastructure
   - Support connection between personal & environmental health

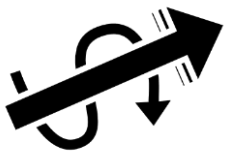
Feedback from Pop-ups: Least Popular Strategies

Relatively few people disliked the high-performing strategies from Horizon.

90% of comments were supportive of the high-performing strategies from Horizon.



1. **Increase Development Fees in Places that Generate Long Auto Trips**
   - Use incentives rather than disincentives to encourage shift in jobs
   - Jobs/housing balance is critical but strategy is confusing



2. **Simplify the Development Process to Encourage Housing**
   - Preserve local control
   - Keep and maintain existing properties

Mayor of Bayville Digital Tool

Launched November 6, 2019:

- Uses gamification to get input from public
- Aimed at reaching a younger, less traditional audience
- Promoted via email, MTC/ABAG social media and targeted online advertising

Tool asks participants to solve real-world problems:

- Each Plan element includes two or three challenges
- Participant selects from a list of strategies to challenge
- Once completed, participant sees how their results compare to others
- Encourage participants to complete all four elements

Questions?

Contact MTC/ABAG staff with any follow-up questions:

- Ursula Vogler: uvogler@bayareametro.gov
- Dave Vautin, Plan Bay Area 2050 Project Manager: dvautin@bayareametro.gov

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PLAN BAY AREA 2050

10-MINUTE BREAK

PLAN BAY AREA 2050

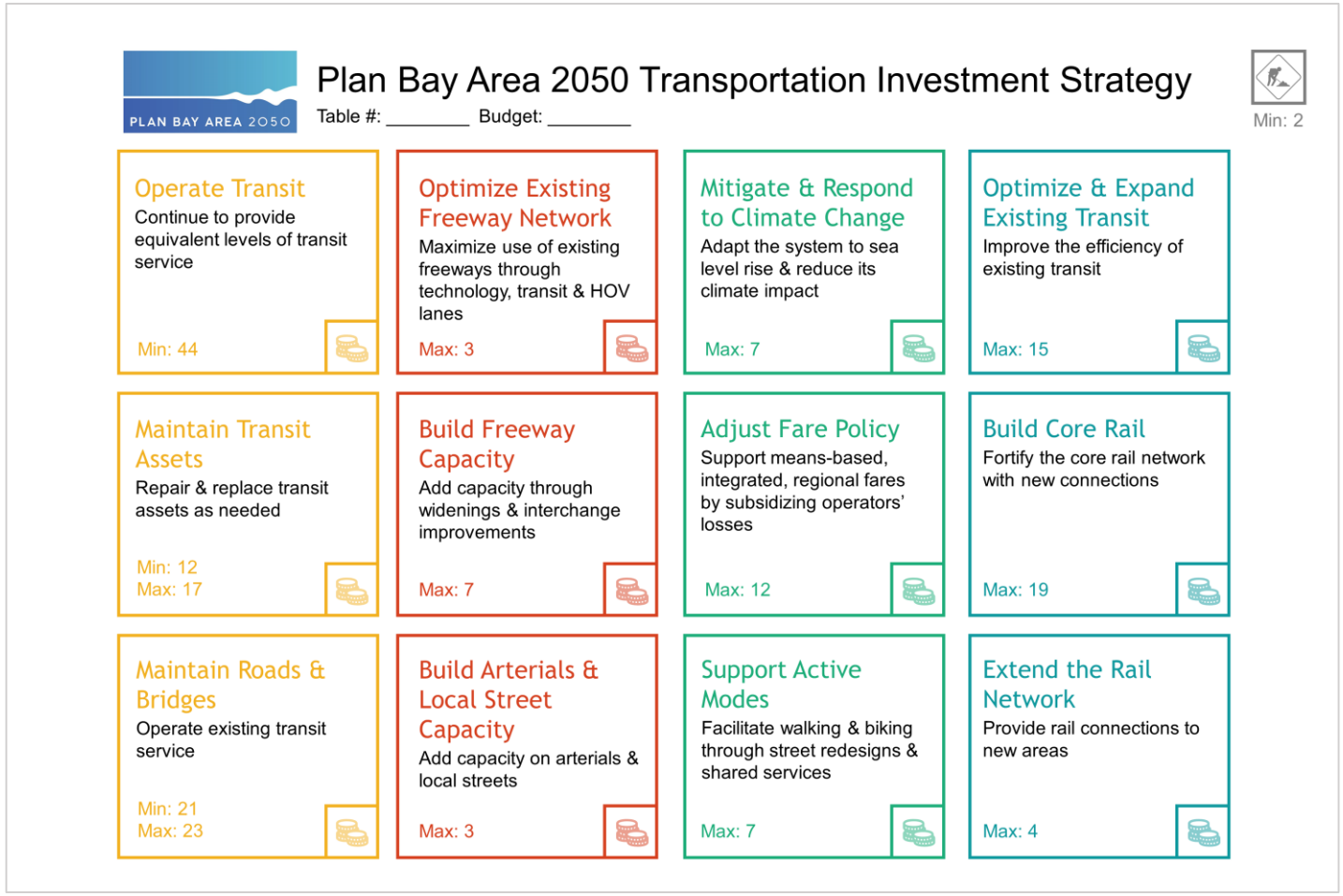
Crafting a Transportation Investment Strategy

Small Group Activity

The transportation section of the Blueprint will answer the following questions

- How do we align available transportation revenues with priority investments?
- What are our top priorities for transportation investments?
- What other supportive strategies are needed?

Components



Budget
$450 to $525 Billion

Game Piece
Choose where to spend

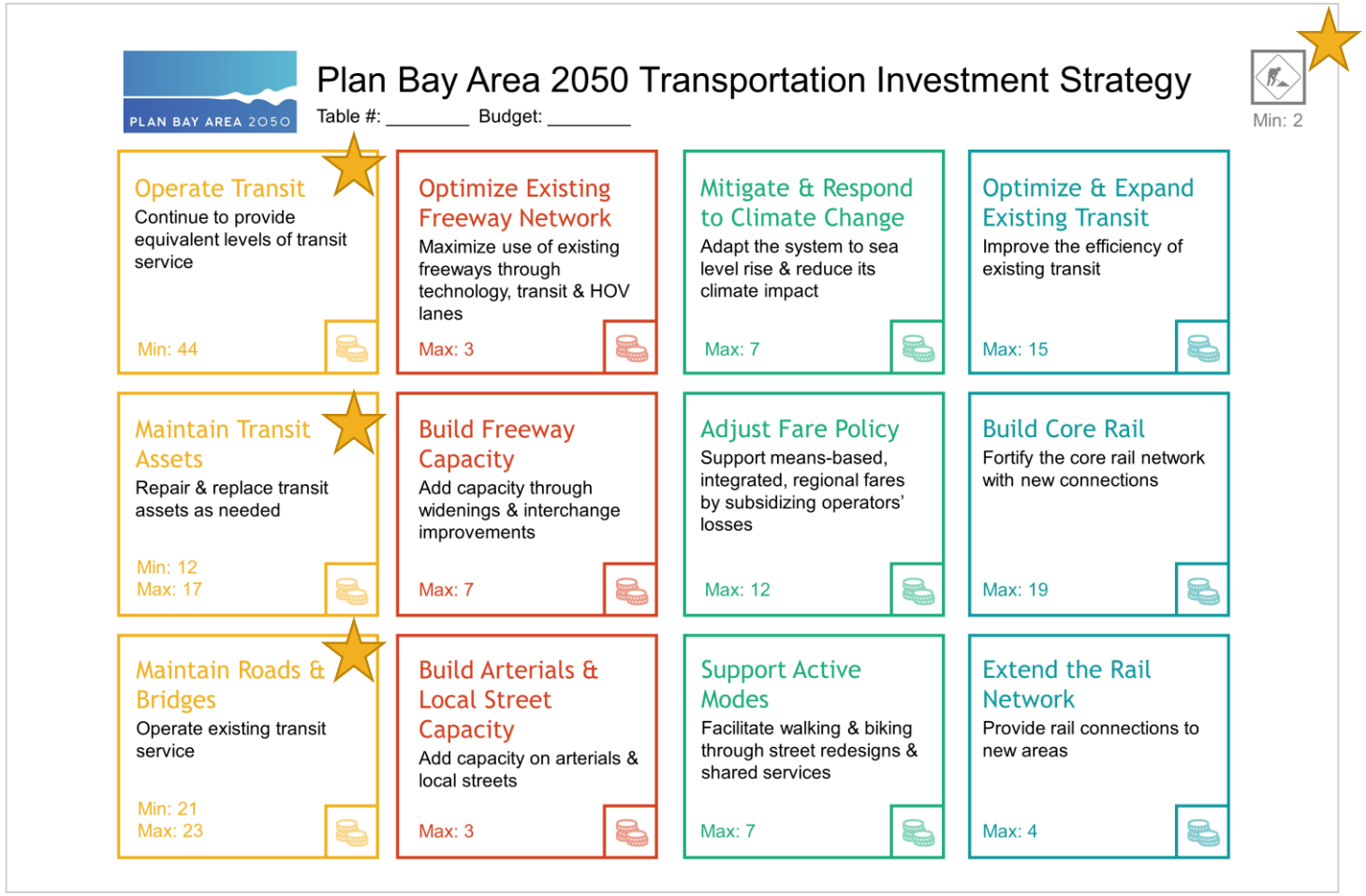
Optimize & Expand Existing Transit	Optimize & Expand Existing Transit	Optimize & Expand Existing Transit
Low Investment **$**$$ Convert high-ridership bus routes to BRT and expand express bus service	Medium Investment **$$**$ Optimize existing bus and express bus networks using BRT, frequency boosts, and line extensions	High Investment **$$$** Optimize existing bus and rail networks using BRT, frequency boosts, extensions to bus and LRT lines, and LRT grade separations
125,000 daily net new boardings	**175,000** daily net new boardings	**225,000** daily net new boardings
3 chips	**5** chips	**11** chips

Investment Levels
Collectively choose how much to spend

Note revenue range with and without New Revenues for illustrative purposes only; Revenue Forecasts still under development.

PLAN BAY AREA 2050

Components



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Investment Levels
Collectively choose how much to spend

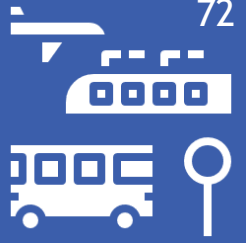
Note revenue range with and without New Revenues for illustrative purposes only; Revenue Forecasts still under development.

PLAN BAY AREA 2050

Remember…

The point of this exercise is to understand how you would collectively allocate your revenues across investment categories. After this exercise, we will discuss project-level prioritization, but for now, take a birds-eye view and focus on overarching types of investments.

Futures Round 2: Strategy Recommendations
Transportation



Recommended to move forward into Plan Bay Area 2050 Blueprint.	Operate and Maintain the Existing System
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	Modernize and Boost Frequencies to Create a Next-Generation Rail Network
	Extend the Regional Rail Network

PLAN BAY AREA 2050

LUNCH

PLAN BAY AREA 2050

Draft Findings From Project Performance

Anup Tapase

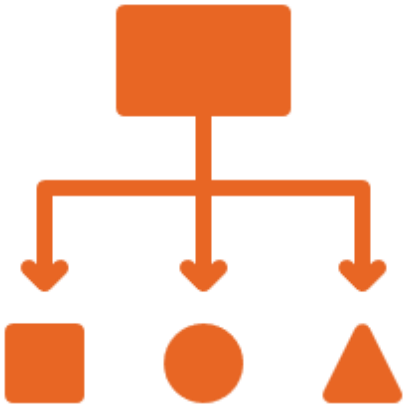
Regional Planning Program

The Project Performance Assessment is one key lens to understand how our major transportation investments would fare in an uncertain future, in combination with Futures Planning which explored synergies between individual projects and strategies.

Key Objectives of Project Performance

- Understand how project benefits vary under different conditions.
- Learn how the performance of projects could be enhanced.
- Start a collaborative dialogue with all stakeholders.

Process to Date



Requested projects for consideration in Plan Bay Area 2050

Spring 2018 to Spring 2019

Develop evaluation methodology with input from RAWG/RMWG

Summer 2018 to Winter 2019

Evaluated benefits & costs of 93 projects using three Futures

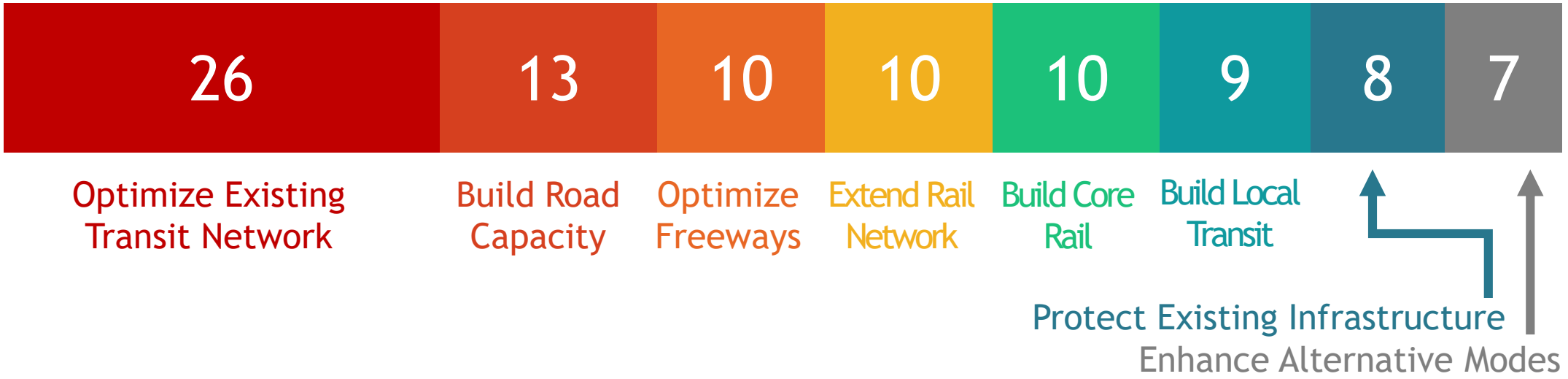
Spring 2019 to Fall 2019

Identify findings/next steps to prioritize projects & strategies

Fall 2019 & beyond

Which Projects Did We Evaluate?

Number of Projects by Objective



Capital Cost Breakdown of Projects*

86% of capital costs are for rail investments

3% of capital costs are for bus investments

7% of capital costs are for road investments

* **Does not include public submissions of transformative projects selected by the jury**; costs for these projects are still under development.

Which Projects Did We Not Evaluate?

- **Committed Projects**
  (not exhaustive list; included in baseline network for analysis)

- **BART:** Silicon Valley Phase 1; Fleet Modernization
- **Caltrain:** Modernization
- **Muni:** Central Subway; Muni Forward; Van Ness BRT; Geary BRT Phase 1
- **SMART:** Larkspur and Windsor Extensions
- **VTA:** Eastridge Extension; Next Network
- **AC Transit:** International Blvd BRT; AC Go
- **Express Lanes:** Committed Segments Only
- **Interchanges:** I-680/SR-4 (initial phases); I-80/I-680/SR-12 (initial phases)

- **Projects Less than $250 Million or Not Capacity-Increasing**
  (exempt from Project Performance)

How Were Projects Evaluated?

Benefit-Cost Assessment *(x 3 Futures)*: **is the project cost-effective & resilient?**

If benefit-cost ratio in a given Future is greater than 1, then benefits exceed costs.

- List of benefits and costs provided on following slide

Equity Assessment *(x 3 Futures)*: **is the project advancing equity?**

If greater than 60% of project access benefits benefit lower-income households, then it advances equity.

- Quantitative assessment: reflected in equity score
- Geographic assessment: showcased as secondary legacy assessment *(similar to Plan Bay Area 2040)*

Guiding Principles Assessment: is the project aligned with Plan Bay Area 2050's vision?

If no Guiding Principles "flags" are identified, then it is generally aligned with the Guiding Principles.

- Qualitative assessment based on the five Guiding Principles:
  - Affordable, Connected, Diverse, Healthy, Vibrant

How Were Projects Evaluated: Benefit-Cost

Benefits

Accessibility Benefits

- Travel time - in vehicle
- Travel time - out of vehicle
- Vehicle operating costs
- Travel costs
- Mode choice availability

- **Freeway Reliability + Vehicle Ownership**
- Transit Crowding
- **Environmental** (Emissions; Natural Land Loss)
- **Health** (Physical Activity; Air Pollutants; Noise)
- **Safety** (Collisions/Injuries; on-model & off-model/ operational benefits)

Major Enhancements from Plan Bay Area 2040

Costs

Capital Costs
- Initial investment
- Rehab/Replacement Costs
- Residual value

Operating & Maintenance Costs (annual)

$$\text{Benefit-Cost Ratio} = \frac{\text{Benefits}}{\text{Costs}}$$

Source: NASA

While the Project Performance Assessment is more robust than prior cycles, it should be noted that all models and analyses have limitations. This analysis reflects our best effort to provide a data-driven lens on how projects perform, but it is not the only consideration when crafting the fiscally-constrained Plan.

PLAN BAY AREA 2050

DRAFT

Key Findings & Next Steps

Integrating Performance Findings into
Plan Bay Area 2050's Transportation Element

KEY FINDING

1

Costs of projects evaluated totaled more than $400 billion, well exceeding the fiscal constraints of the Bay Area.

Not only have existing megaprojects grown in costs, but bold new ideas are increasingly expensive. Plan Bay Area 2050 should recommend regional reforms to speed project delivery and manage capital and O&M costs.

KEY FINDING

2

Project performance will be significantly affected by uncertain future conditions.

Projects should be planned along with complementary strategies that enhance their performance and resilience, such as enhanced land use strategies near new stations or pricing strategies to boost demand.

KEY FINDING

3

Lower-cost transit improvements, such as urban BRT lines, and sea level rise protections for heavily-used freeways are the best bet in an uncertain future.

Such projects should be seen as low-hanging fruit and advanced to implementation expeditiously.

KEY FINDING

4

High-cost commuter rail projects have mixed performance outcomes, predominantly benefiting higher-income groups.

Rail projects should be evaluated alongside lower-cost bus improvements. Such projects should be paired with complementary strategies to ensure that all Bay Area residents benefit from them.

KEY FINDING

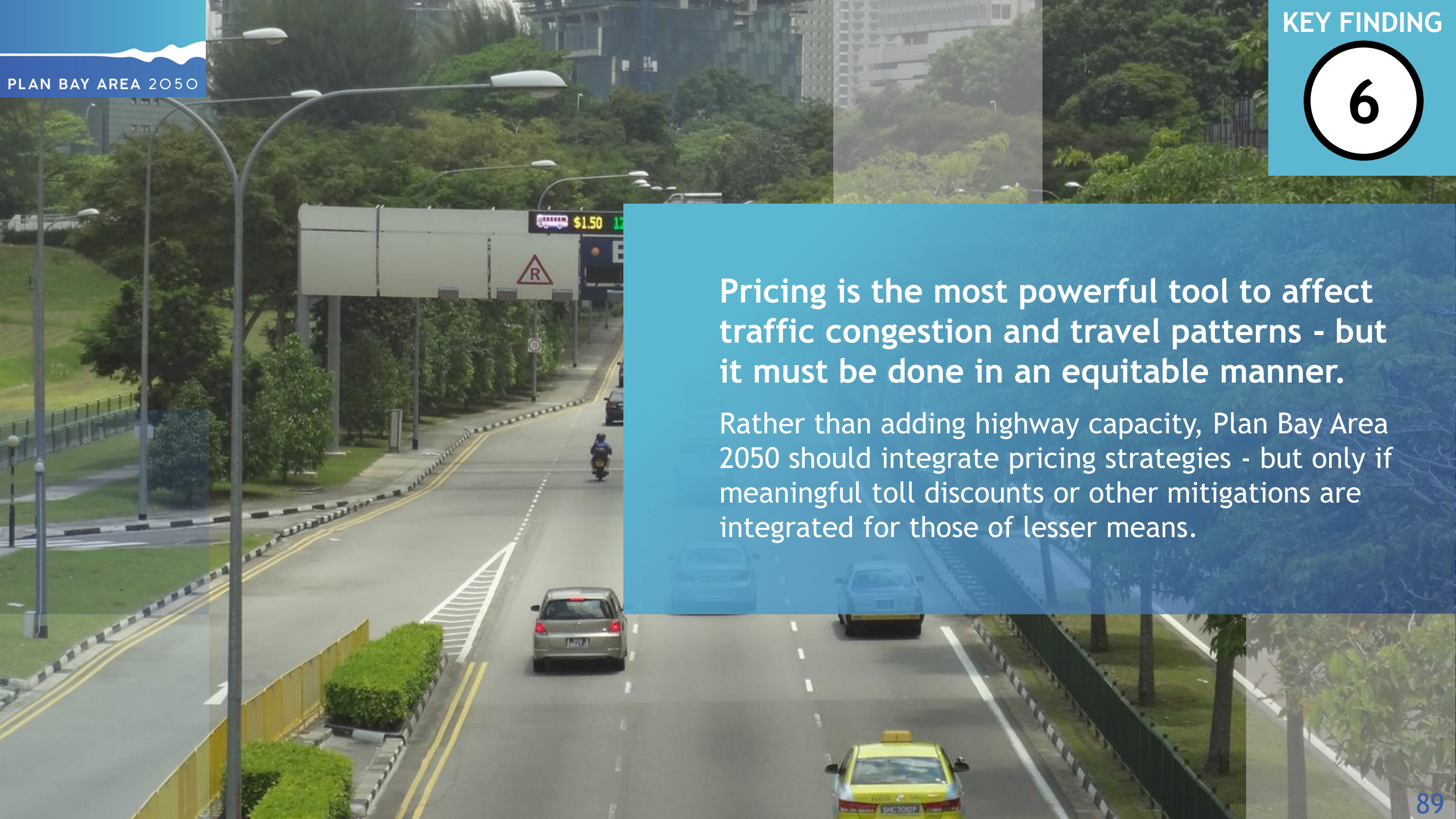
5

Some projects have synergies, while other projects compete with each other.

In a fiscally-constrained environment, we should focus on complementary investments and strategies, while being careful before including projects that degrade benefits of others.

KEY FINDING

6



Pricing is the most powerful tool to affect traffic congestion and travel patterns - but it must be done in an equitable manner.

Rather than adding highway capacity, Plan Bay Area 2050 should integrate pricing strategies - but only if meaningful toll discounts or other mitigations are integrated for those of lesser means.

Early Finding
Full assessment still in progress

KEY FINDING 7

Transit fare reforms could meaningfully change travel behavior.

Reforming the Bay Area's complex fare systems could significantly grow ridership. However, this strategy must be paired with service and capacity increases to accommodate the robust growth in demand.

KEY FINDING

8

Greater investment in micromobility can have significant regional benefits for the overall transportation network.

The region should consider including a much more significant investment in active transportation than prior iterations of Plan Bay Area.

KEY FINDING

9

A new Transbay Rail Crossing emerged as the most cost-effective transit expansion megaproject.

To relieve crowding, support focused growth, and enhance mobility across the Bay Area, Plan Bay Area 2050 should consider a new rail and/or BART crossing between San Francisco and the East Bay as a critical new investment.

Findings on Select Corridors

- **Peninsula/US-101.** The region should carefully consider the sequencing of investments on this corridor, especially given a potential nexus with a New Transbay Rail Crossing.
- **Altamont Pass.** Rather than adding auto capacity, combining Valley Link with complementary pricing strategies presents a promising path forward.
- **South Bay.** Some of the aspirational transit improvements in Santa Clara County fell short on cost-effectiveness in most Futures, but there may be land use benefits of such projects that cannot be fully reflected.
- **SR-4/SR-239.** Operational improvements yield meaningful benefits to travelers along this freeway corridor, but expansions are less resilient in an uncertain future.
- **SR-37.** For this east-west connection, the proposed resilience project had higher costs and lower benefits than other transportation facilities requiring protection from rising sea levels.

Snippet from Attachment A: Summary Table of Projects

	Benefit-Cost Ratio			Equity Score		
Guiding Principle Flags	Rising Tides Falling Fortunes	Clean And Green	Back To The Future	Rising Tides Falling Fortunes	Clean And Green	Back To The Future
2	0.7	2	2	Even	Even	Even
2	0.6	1	1	Even	Even	Even
0	0.6	1	1	Even	Even	Even
0	0.6	1	1	Even	Even	Even
0	<0.5	0.7	0.6	Challenges	Challenges	Challenges
2	<0.5	0.6	0.5	Challenges	Challenges	Challenges
0	<0.5	<0.5	0.6	Advances	Advances	Even
0	<0.5	<0.5	0.5	Even	Even	Challenges
0	<0.5	<0.5	<0.5	Advances	Advances	Even
0	cost review in progress			cost review in progress		
0	<0.5	1	1	Even	Even	Even
0	<0.5	<0.5	<0.5	Even	Advances	Even
0	<0.5	<0.5	<0.5	Challenges	Challenges	Challenges
1	<0.5	<0.5	<0.5	Even	Advances	Even
0	<0.5	<0.5	<0.5	Even	Even	Even
0	modeling in progress			modeling in progress		
0	modeling in progress			modeling in progress		
0	<0.5	<0.5	<0.5	Even	Challenges	Challenges
0	<0.5	0.5	<0.5	Advances	Challenges	Challenges
0	<0.5	<0.5	<0.5	Challenges	Even	Challenges
0	1	2	2	Even	Even	Even
2	<0.5	1	0.5	Challenges	Even	Challenges
2	<0.5	0.9	0.5	Challenges	Even	Challenges
0	<0.5	0.5	0.6	Advances	Advances	Even
1	<0.5	<0.5	0.7	Advances	Advances	Even
0	<0.5	<0.5	<0.5	Advances	Advances	Challenges
0	<0.5	<0.5	0.5	Advances	Advances	Even
0	<0.5	<0.5	<0.5	Advances	Advances	Even
2	<0.5	<0.5	<0.5	Even	Even	Even
0	<0.5	<0.5	0.5	Even	Advances	Even
1	8	7	>10	Challenges	Challenges	Challenges
0	1	1	9	Even	Even	Even
1	2	3	4	Challenges	Challenges	Challenges

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Moving Forward

- **During Plan Bay Area and Plan Bay Area 2040,** MTC has used the Project Performance Assessment to categorize projects as high-, medium- and low-performing - with low-performing projects required to submit a “compelling case” if they wished to include it in the fiscally-constrained Plan.
- **For Plan Bay Area 2050, we are proposing a solutions-oriented approach instead.** This would continue the identification of high-performing projects, but for all remaining projects, MTC would work collaboratively with sponsors to identify project refinements or complementary local or regional strategies to address performance shortcomings.

Moving Forward

LATE JANUARY

Commission & Board Workshop:
Plan Bay Area 2050 Draft Blueprint
Transportation Tradeoffs Discussion

November

- Finish analysis of remaining projects
- Continue to address questions raised by project sponsors
- Start conversation on "high-performing" project definition

December

- Refine definition of "high-performing" project
- Begin conversations with project sponsors on refinements & complementary strategies

January

- Incorporate high-performing projects into Transportation component of Draft Blueprint
- Continue conversations with project sponsors on remaining projects

PLAN BAY AREA 2050

Questions?

Contact MTC/ABAG staff with any follow-up questions:

- Anup Tapase: atapase@bayareametro.gov
- Dave Vautin, Plan Bay Area 2050 Project Manager: dvautin@bayareametro.gov

PLAN BAY AREA 2050

5-10 MINUTE BREAK

PLAN BAY AREA 2050

Defining High-Performing Projects

Small Group Discussion

The transportation section of the Blueprint will answer the following questions

- How do we align available transportation revenues with priority investments?
- What are our top priorities for transportation investments?
- What other supportive strategies are needed?

How do we define high-performing projects?

A	**Benefit-Cost Assessment** *(x 3 Futures)*	**is the project cost-effective & resilient?**	If benefit-cost ratio in a given Future is greater than 1, then benefits exceed costs.
B	**Equity Assessment** *(x 3 Futures)*	**is the project advancing equity?**	If greater than 60% of project access benefits benefit lower-income households, then it advances equity.
C	**Guiding Principles Assessment**	**is the project aligned with Plan Bay Area 2050's vision?**	If no Guiding Principles "flags" are identified, then it is generally aligned with the Guiding Principles.

- Are there automatic qualifiers?
- Should all categories (A, B & C) be weighted equally?
- Should all Futures be weighted equally?
- Is there need for equity in geographic representation?
- Is there need for equity in project types?

To Start the Conversation: What are Some Ideas on How a High-Performer Could Be Defined?

	STAR PERFORMERS	BENEFIT-COST EMPHASIS	EQUITY EMPHASIS	SINGLE FUTURE EMPHASIS	OTHER CONSIDERATION EMPHASIS
Benefit-Cost Assessment (x 3 Futures)	greater than or equal to 1 in all three futures	greater than or equal to 1 in at least two futures	greater than or equal to 0.5 in all three futures	greater than or equal to 3 in the Clean and Green future	greater than or equal to 1 in all three futures and accrues benefits quickly
Equity Assessment (x 3 Futures)	advances equity in at least one future	does not challenge equity in any future	advances equity in all three futures	does not challenge equity in the Clean and Green future	does not challenge equity in any future
Guiding Principles Assessment	no flags	two or less flags	three or less flags	two or less flags	two or less flags

What are other considerations?

- Are there types of projects that we are overlooking?
- Are there other factors that we didn't account for, such as:
  - Fiscal impacts – *does the project generate revenues?*
  - Land use impacts – *does the project spur new development plans?*
  - Resiliency/redundancy – *does the project provide redundancy to a vital asset?*
  - Feasibility – *does the project pose engineering or environmental challenges?*
  - Time to implement – *does the project deliver benefits quickly?*

PLAN BAY AREA 2050

Refining Supportive Strategies

Small Group Activity

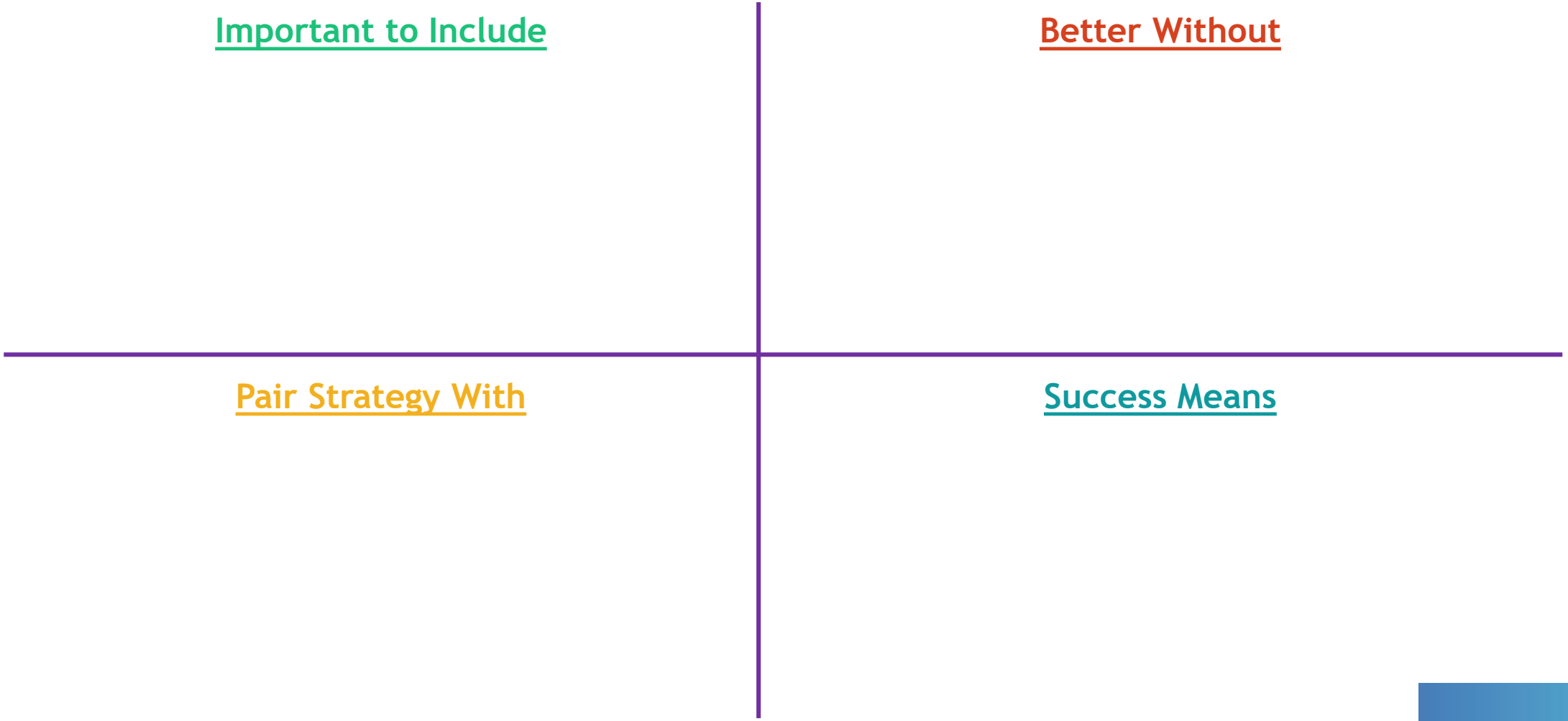
The transportation section of the Blueprint will answer the following questions

- How do we align available transportation revenues with priority investments?
- What are our top priorities for transportation investments?
- What other supportive strategies are needed?

Supportive strategies can improve project outcomes and help reach regional goals

- Micromobility: Infrastructure & Share Services
- Transit-Oriented Development
- Road Safety & Speed Limits
- Sea Level Rise: Resilient Transportation
- Road Pricing
- Transit Fare Policy
- Transit Integration
- Future of Local Transit

Four questions to answer



screen

Transit Integration

Future of Local Transit

atrium

Road Pricing

Vacant

Micromobility: Infrastructure & Shared Services

screen

Road Safety & Speed Limits

Sea Level Rise: Resilient Transportation

Vacant

Transit Fare Policy

Transit-Oriented Development

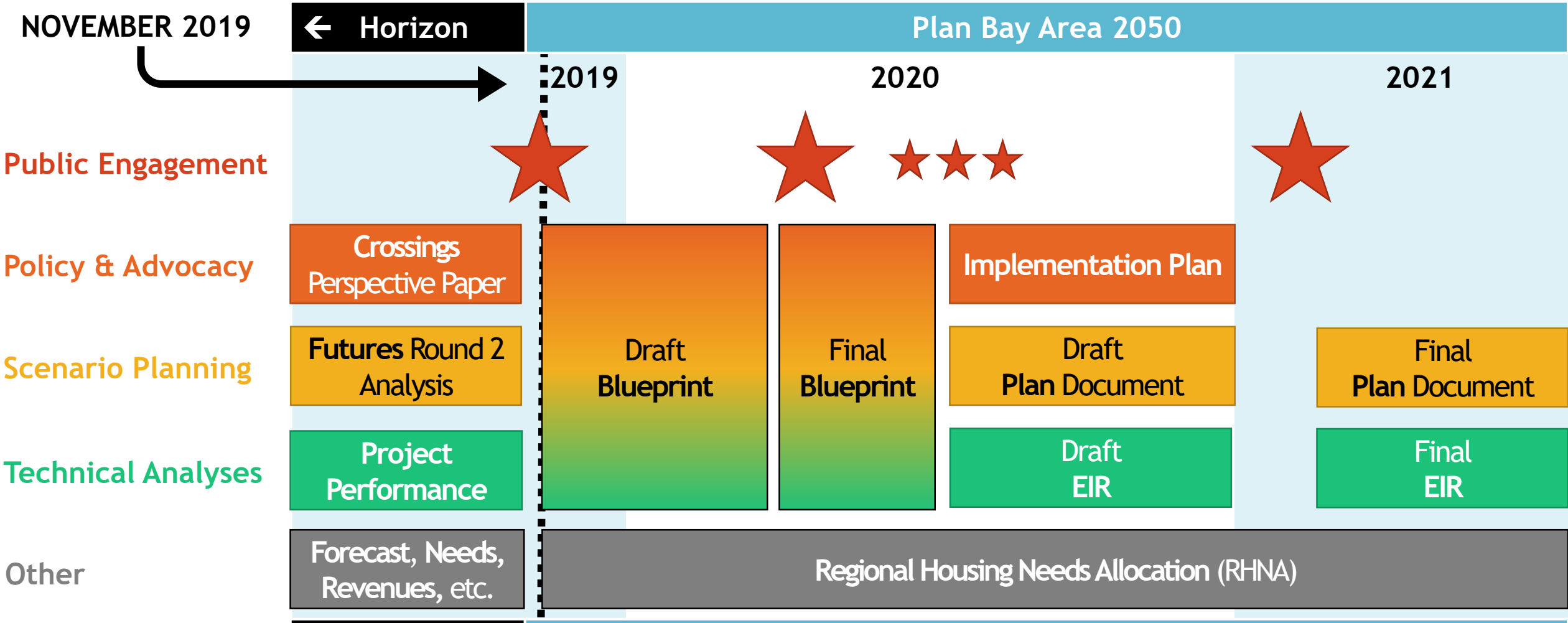
PLAN BAY AREA 2050

Next Steps

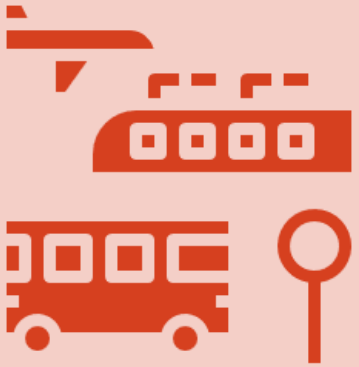
Dave Vautin, Horizon/PBA 2050 Project Manager

Regional Planning Program

Plan Bay Area 2050 Schedule



Mark your calendars for the next Workshops!



RAWG:
Transportation
November 12

RAWG:
Housing & Economy
December 10

REWG:
Equity
December 11

RAWG:
Environment
January 2020

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Questions?

Contact MTC/ABAG staff with any follow-up questions:

- Dave Vautin, Plan Bay Area 2050 Project Manager: dvautin@bayareametro.gov

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Thank You!

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