HORIZON



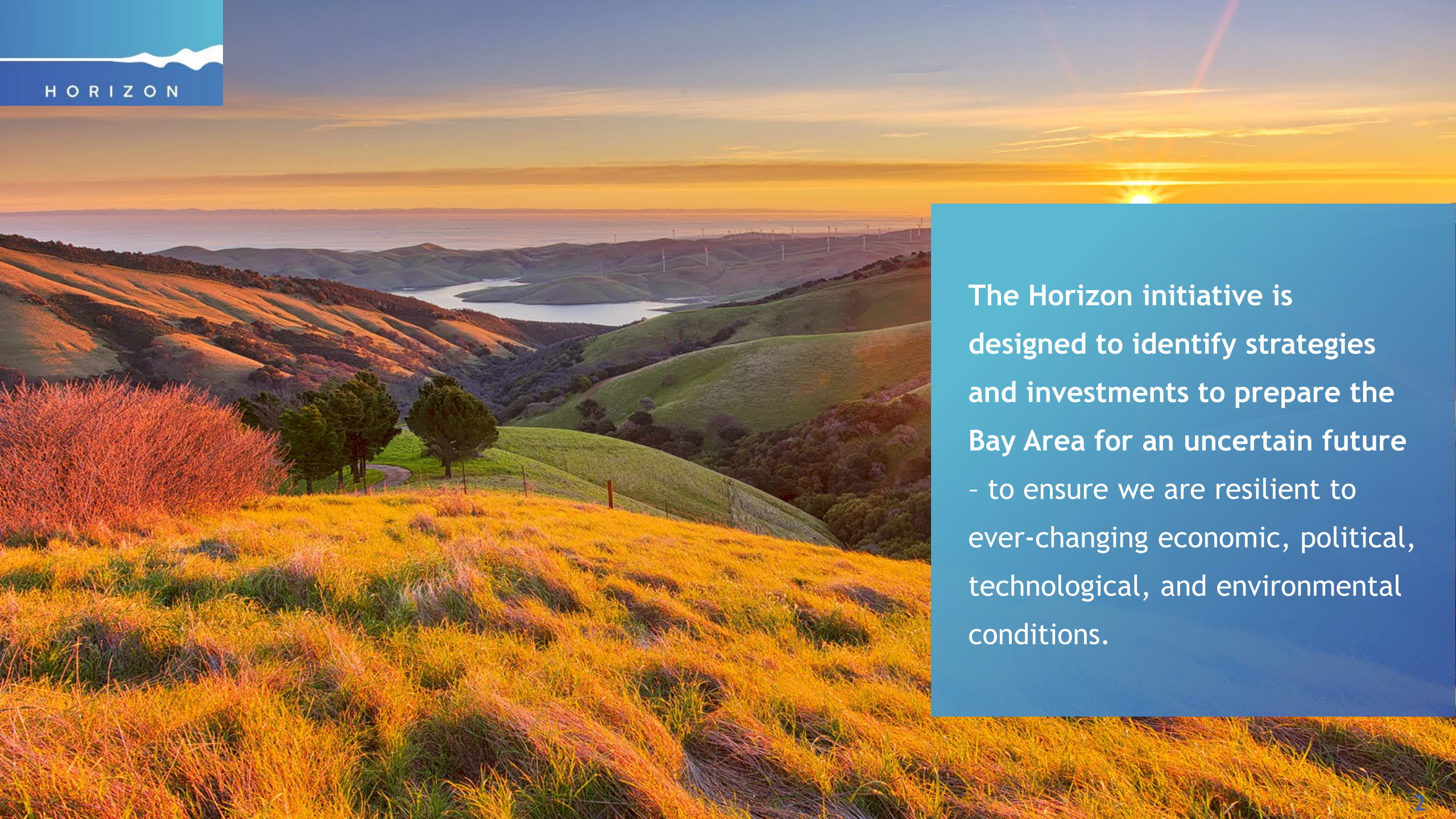
Futures Final Report

Preliminary Findings on Horizon Strategies in Advance of Plan Bay Area 2050

MTC Planning Committee with the ABAG Administrative Committee

October 11, 2019 - Michael Germeraad

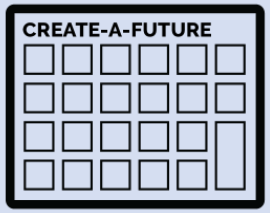
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The Horizon initiative is designed to identify strategies and investments to prepare the Bay Area for an uncertain future – to ensure we are resilient to ever-changing economic, political, technological, and environmental conditions.

Futures Process

OUTREACH



ROUND 1 ANALYSIS

Current Strategies



REPORT



OUTREACH



ROUND 2 ANALYSIS

New Strategies



REPORT



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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?

	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$$)*
Back to the Future *(BTTF)*	2015 Baseline + External Forces *(BTTF)* + Strategies *(PBA 2040)*	2015 Baseline + External Forces *(BTTF)* + Strategies *(Horizon$$)*

Refresher: External Forces for Each Future

FUTURE NAME	IMMIGRATION AND TRADE	NATIONAL TAXES AND FUNDING	NATIONAL GROWTH	LAND USE PREFERENCES	NATIONAL ENVIRONMENTAL POLICY	NEW TECHNOLOGIES	NATURAL DISASTERS
 **Rising Tides, Falling Fortunes**	**Reduced**	**Lower funding** due to tax cuts	**Limited**	Housing: more **urban**	**Relaxed regulations** (3' SLR)	More **limited**	Magnitude 7.0 Hayward Fault earthquake
				Similar to today			
 **Clean and Green**	Similar to today	**Higher funding** via carbon tax	Similar to today	Housing: more **urban**	**Stricter regulations** (1' SLR)	**Widespread**	Magnitude 7.0 Hayward Fault earthquake
				Jobs: more **dispersed**			
 **Back to the Future**	**Increased**	Similar to today	**Rapid**	Housing: more **dispersed**	Similar to today (2' SLR)	**Widespread**	Magnitude 7.0 Hayward Fault earthquake
				Jobs: more **urban**			

Refresher: How Did We Integrate the Megaregion?



Rising Tides, Falling Fortunes

Status quo Future - interregional travel **continues to grow at current rate**, including in-commuting



Clean and Green

Federal policy **minimizes further growth in interregional travel**, with new taxes making it much less affordable for mega-commuters



Back to the Future

Low cost of driving allows the megaregion to blossom - with **much more rapid interregional growth than today** overwhelming existing regional gateways



Refresher: 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

HORIZON

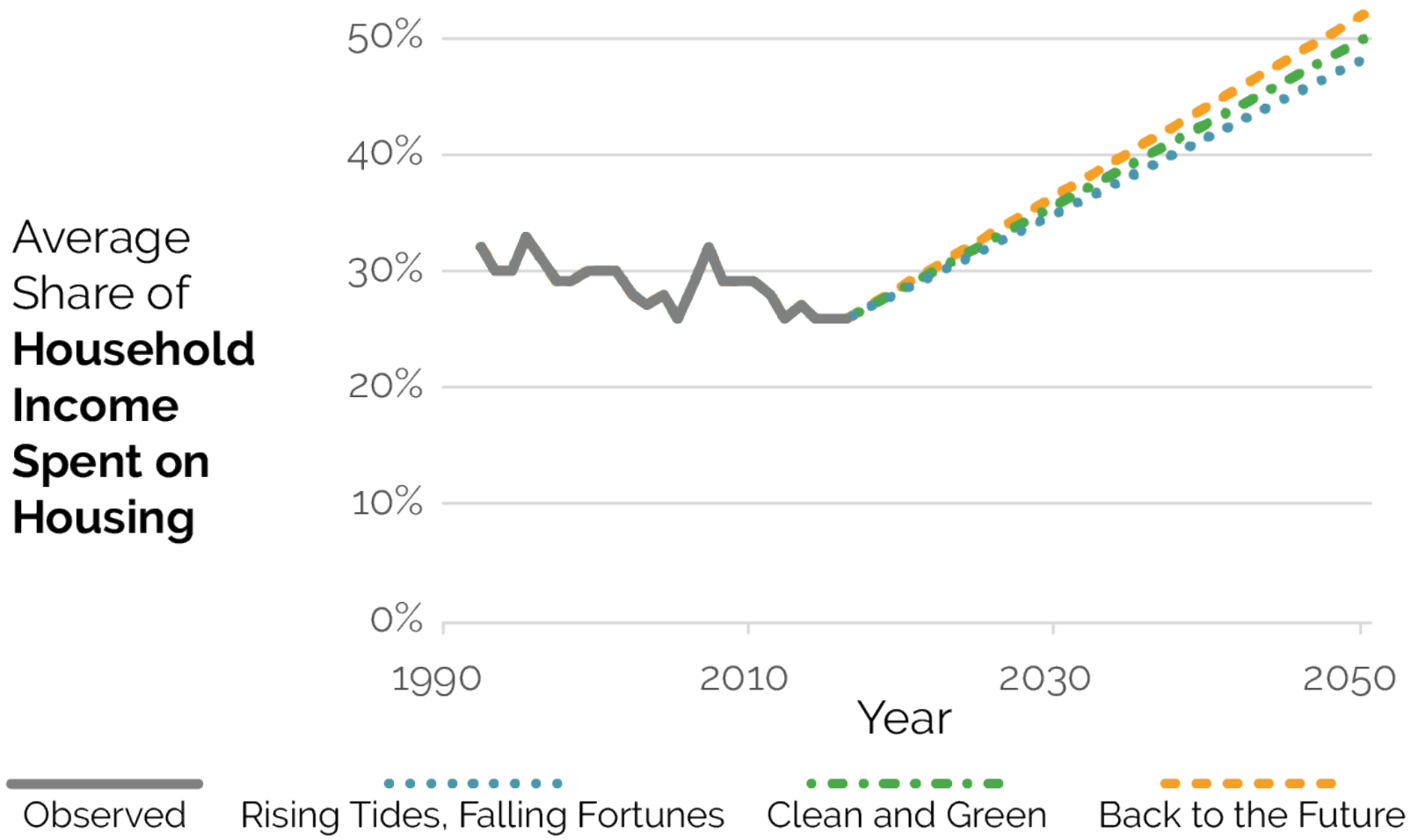
Refresher: Five Challenges from Round 1 Analysis

In the Futures Interim Report (March 2019), a set of key challenges were identified. The challenges focused on how Plan Bay Area 2040 strategies might fare under previously-unstudied external forces like sea level rise, autonomous vehicles, and federal policy shifts.

Challenge

AFFORDABLE

Without new strategies in place, Bay Area housing affordability continued to get worse.





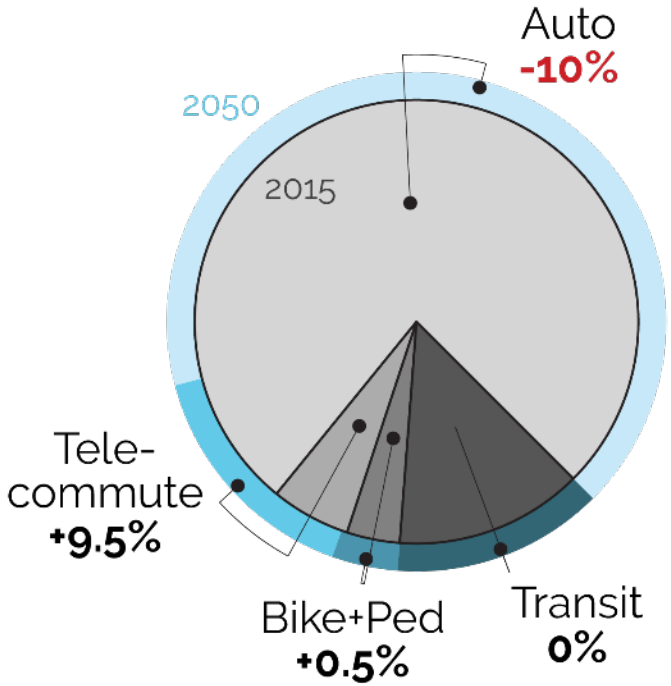
Challenge

CONNECTED

Public transit, walking, and bicycling saw limited gains in mode share compared to 2015 conditions.

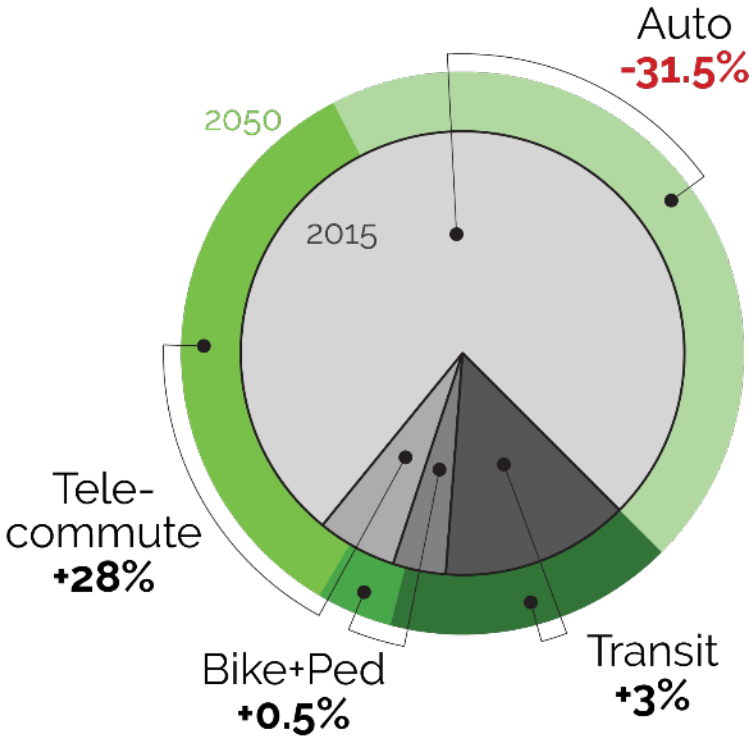
Rising Tides, Falling Fortunes

In 2050, 67% of commuters use autos.



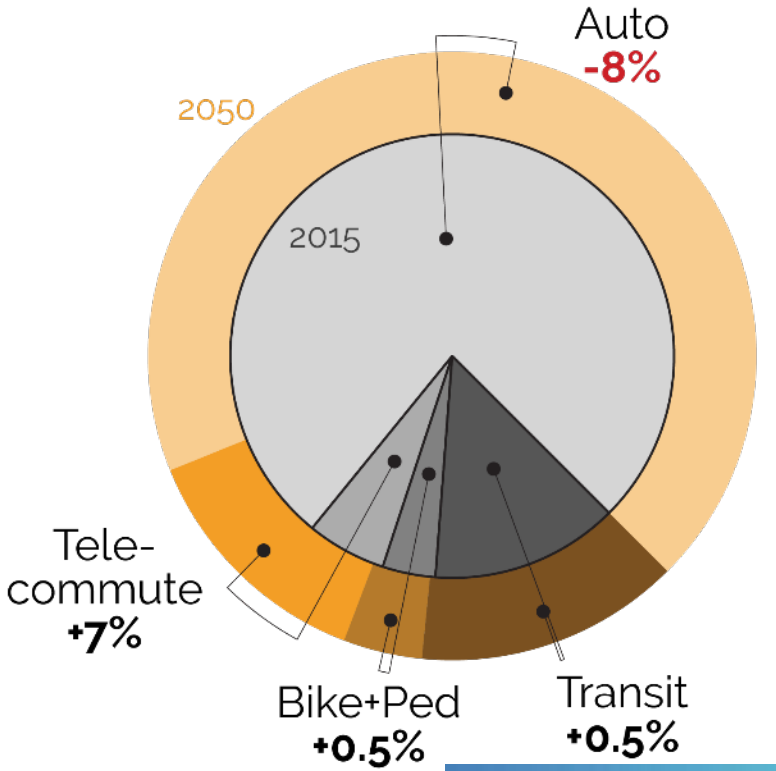
Clean and Green

In 2050, 45% of commuters use autos.



Back to the Future

In 2050, 69% of commuters use autos.



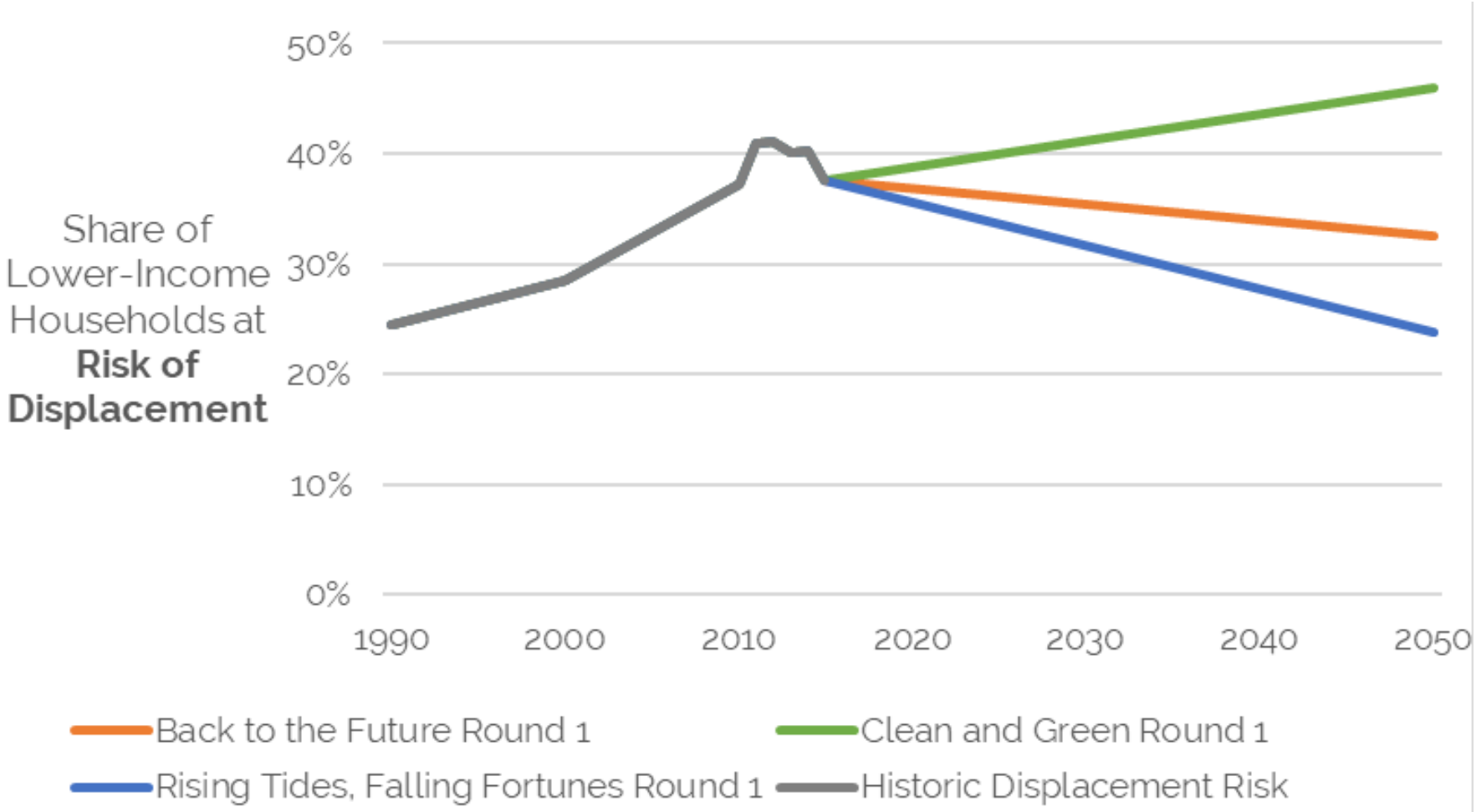
In 2015, 77% of commuters use an automobile to get to work.

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Challenge

DIVERSE

A significant share of lower-income households remained at risk of displacement in each Future.





Challenge

HEALTHY

Unmitigated impacts from sea level rise and natural disasters resulted in significant damage across the region.

Homes Affected by Hazards

1k 10k 40k

Sea Level Rise

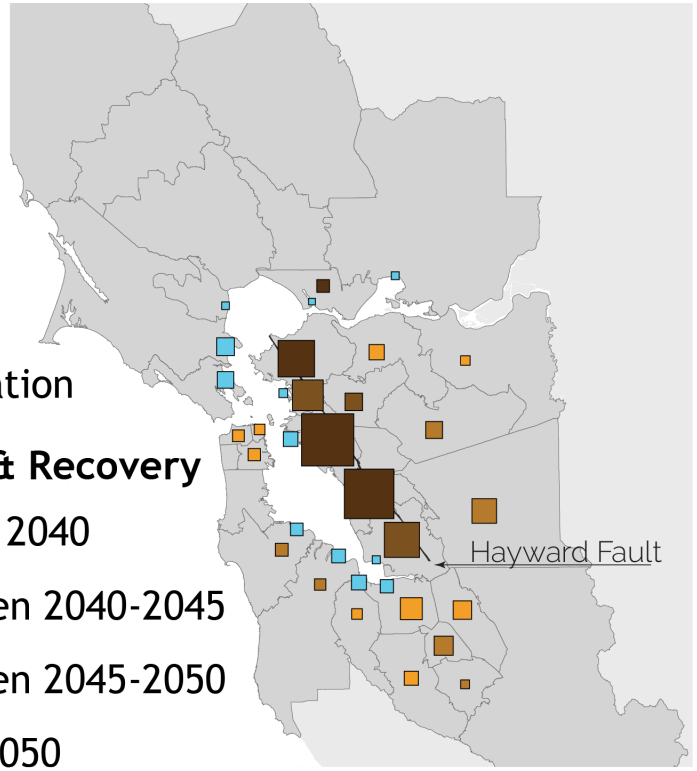
- Permanent Inundation

Earthquake Damage & Recovery

- Recovered before 2040
- Recovered between 2040-2045
- Recovered between 2045-2050
- Recovered after 2050

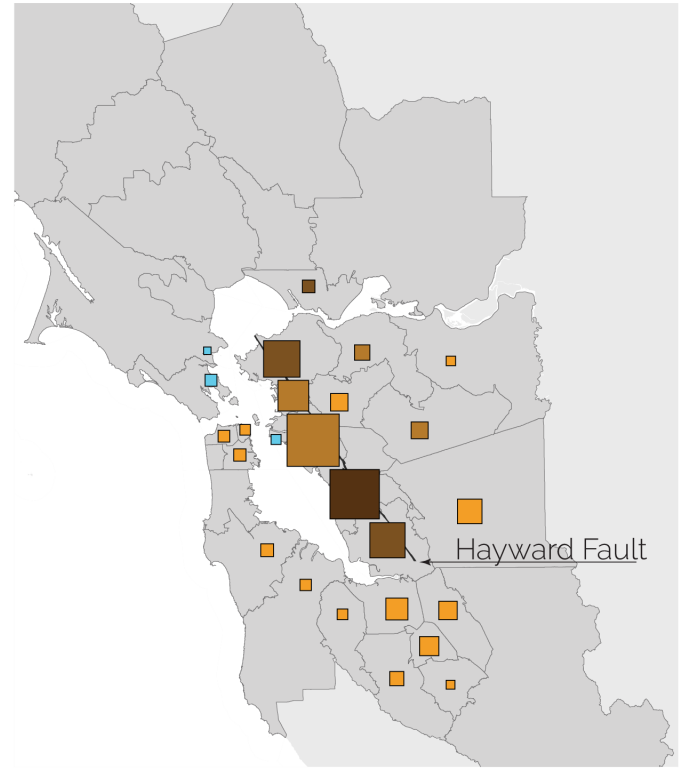
Rising Tides, Falling Fortunes

3 feet of sea level rise



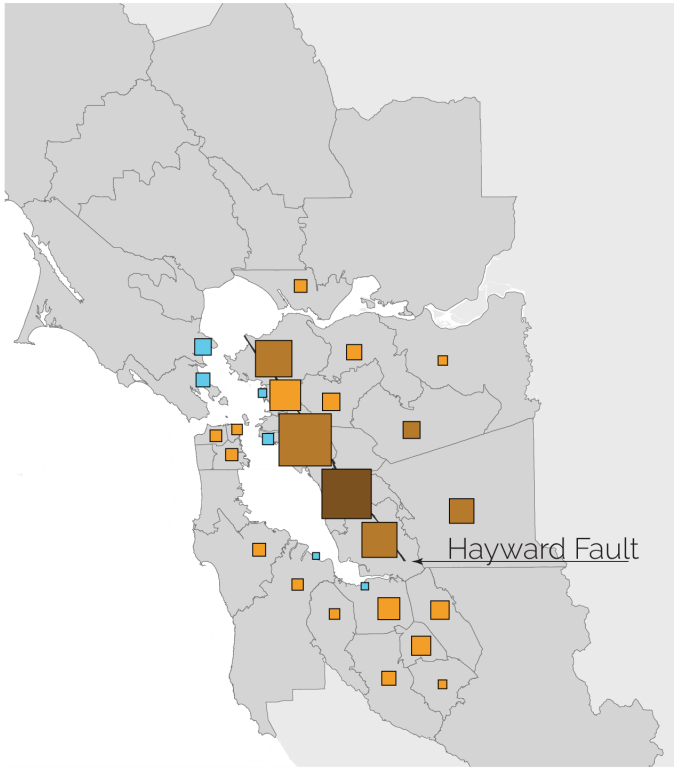
Clean and Green

1 foot of sea level rise



Back to the Future

2 feet of sea level rise



HORIZON

Challenge

VIBRANT

Land use strategies included in *Plan Bay Area 2040* were insufficient to address the region's longstanding jobs-housing imbalance.

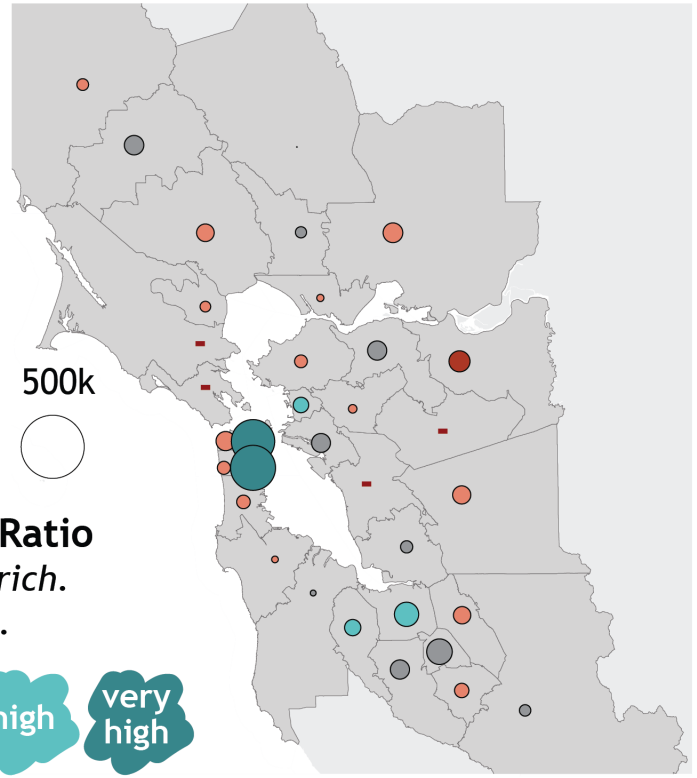
Overall Growth
Circle area represents combined job & housing growth from 2015 to 2050.

negative growth | 10k | 100k | 500k

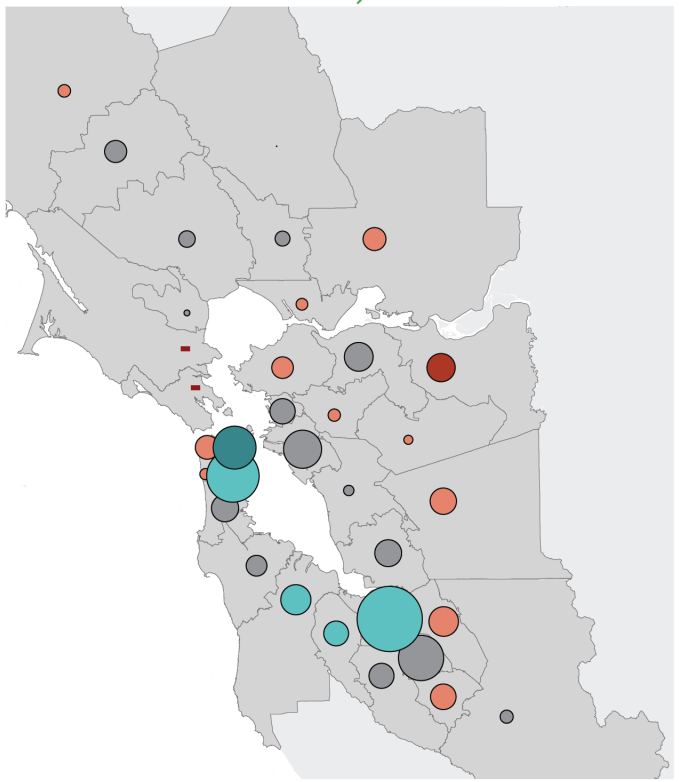
2050 Jobs/Housing Ratio
Red areas are housing rich. Blue areas are job rich.

very low | low | avg. | high | very high

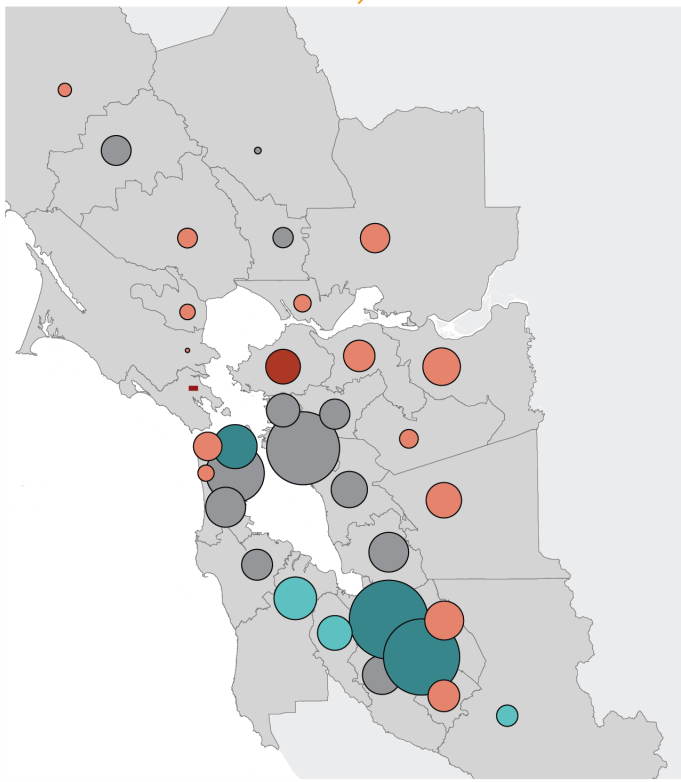
Rising Tides, Falling Fortunes
+0.5M Homes, +0.5M Jobs



Clean and Green
+1.3M Homes, +1.1M Jobs



Back to the Future
+2.1M Homes, +2.7M Jobs



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Top 10:
Horizon Strategy Findings

We have explored the effectiveness of over 30 strategies to improve the region's economic, housing, transportation, and environmental challenges.

New growth areas enable more growth near transit and near opportunity.

Allow Diverse Housing Around Transit

Strategies (Horizon$)

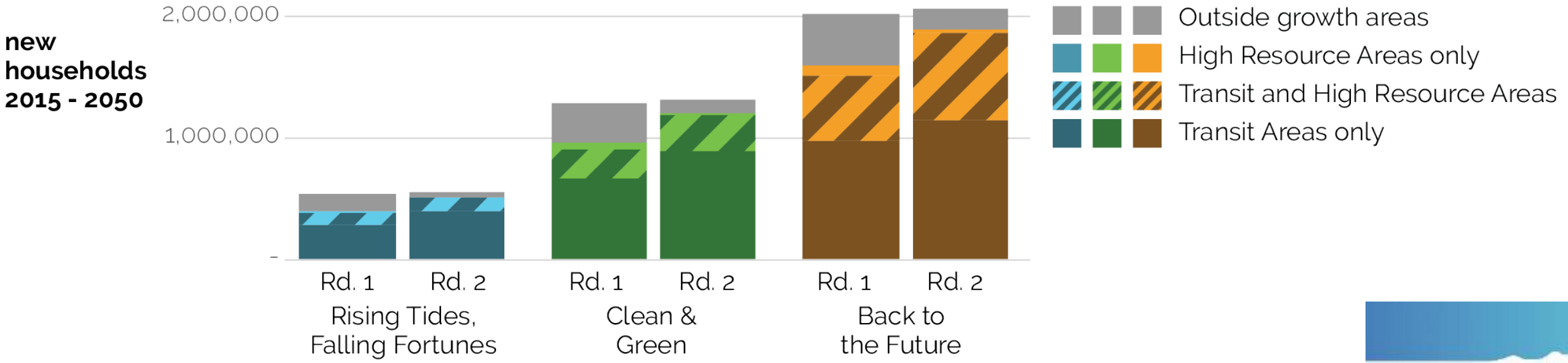
Allow more diverse housing growth around areas with high frequency transit. Expand the growth footprint beyond the current list of PDAs.

Allow Diverse Housing in High-Resource Areas

Strategies (Horizon$)

Allow more diverse housing growth in areas of high opportunity that also have moderate transit service. Expand the growth footprint beyond the current list of PDAs.

Location of households added between 2015-2050 relative to growth geography



HORIZON

A mix of strategies to retain and expand affordable housing made progress in addressing the current affordable housing gap.

Pass Inclusionary Zoning Policies

Strategies (Horizon$)

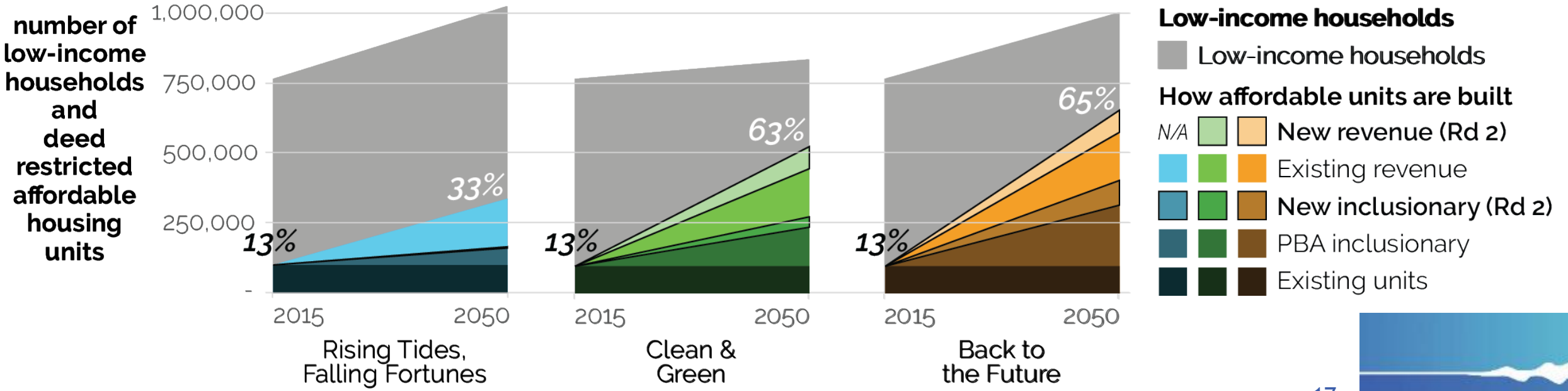
Require 10% to 20% of all new development to be deed-restricted affordable, expanding off the Plan Bay Area 2040 inclusionary strategy.

Fund Affordable Housing

Strategies (Horizon$$)

Raise $1.5 billion in new annual revenue to build and preserve affordable housing, complementing existing federal, state, and local affordable housing funds.

Number of deed restricted affordable housing units and the number of low-income households



Shifts in transportation mode choice were most pronounced for active transportation, driven in part by micromobility strategies.

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.

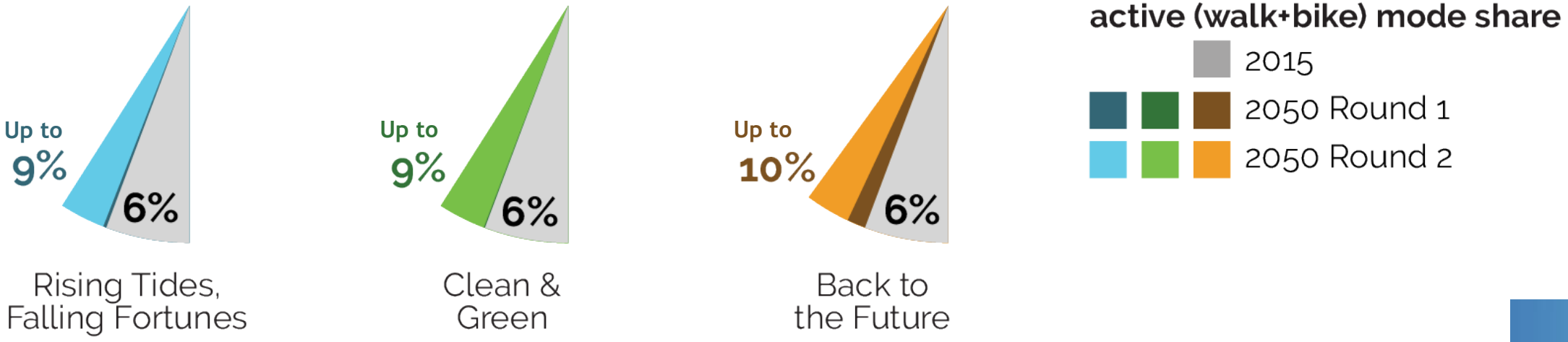
Invest in Free Short-Trip Service
Fund shared personal mobility, including scooters and electric bikes, within 3 miles of transit.

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.

While still present, transit overcrowding was partially alleviated, with new Bus Rapid Transit (BRT) lines as well as a new Transbay Rail Crossing playing a key role.

Make Strategic Transit Investments



Strategies (Horizon$)

Build major PBA2050 transit investments, such as BART to Silicon Valley Phase 2 and Caltrain DTX.

Build a Next-Generation BRT Network



Strategies (Horizon$)

Create a fast and frequent regional bus network, providing redundancy for rail lines and connecting underserved areas.

Build a New Transbay Rail Crossing



Strategies (Horizon$$)

Build a new rail crossing from the East Bay to the West Bay to provide greater transit capacity across the Bay.

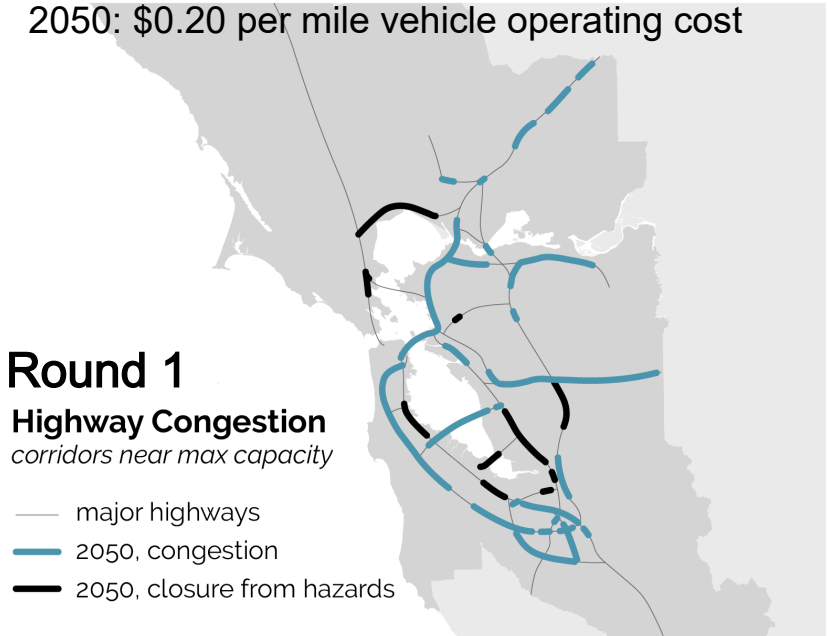
Final analysis of transit overcrowding still under development.

Road pricing reduced roadway congestion, but equity concerns need to be addressed before advancing this strategy further. *(part 1)*

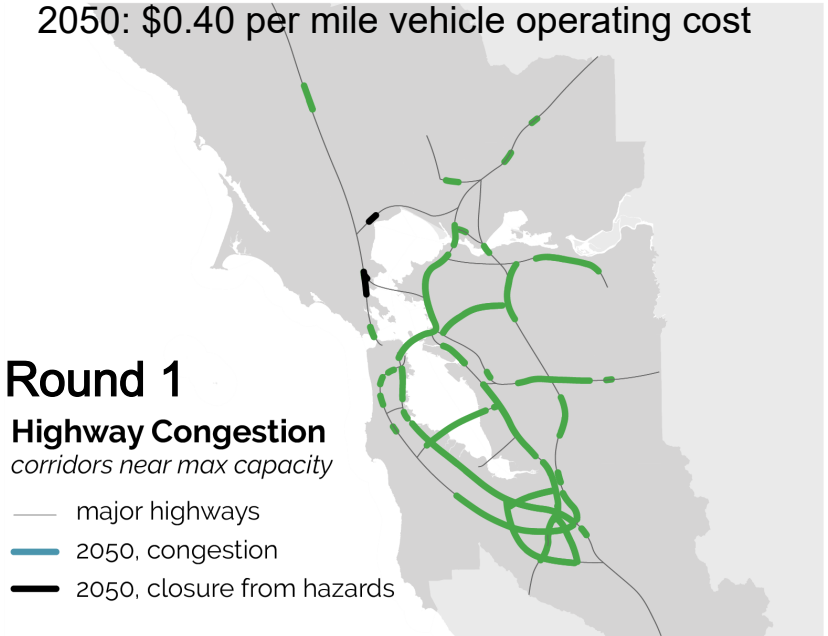
We were able to explore how congestion was affected by external forces & strategies.

The next slide will show the difference in Round 2.

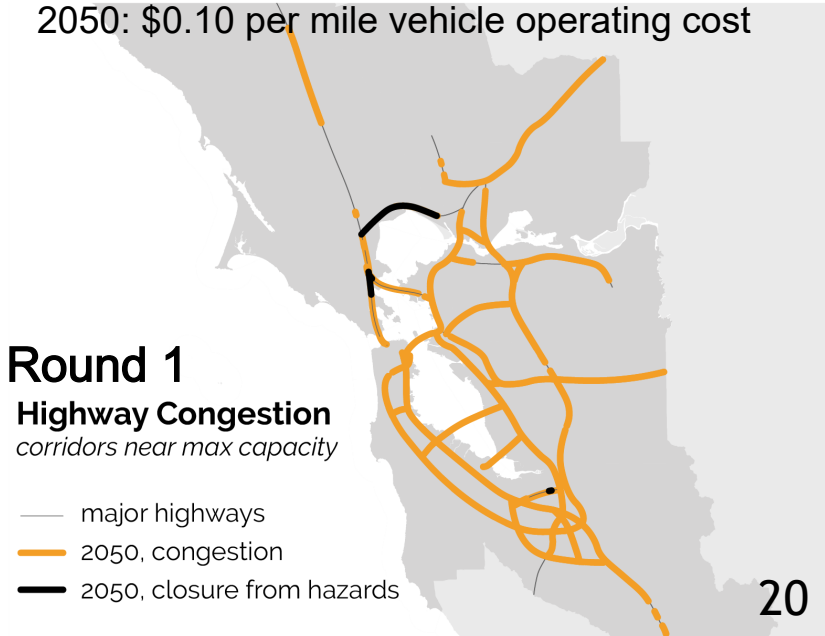
Rising Tides Falling Fortunes
2050: 10% autonomous vehicle market share
2050: $0.20 per mile vehicle operating cost



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



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



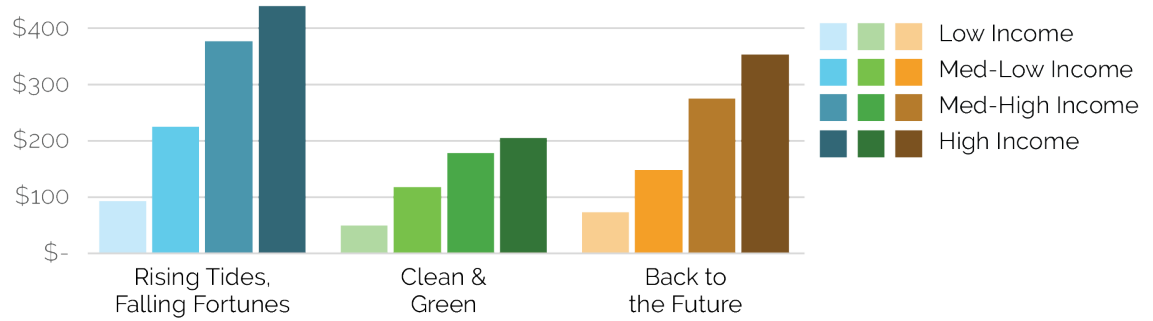
Road pricing reduced roadway congestion, but equity concerns need to be addressed before advancing this strategy further. *(part 2)*

Apply Time-of-Day Tolls on All Freeways

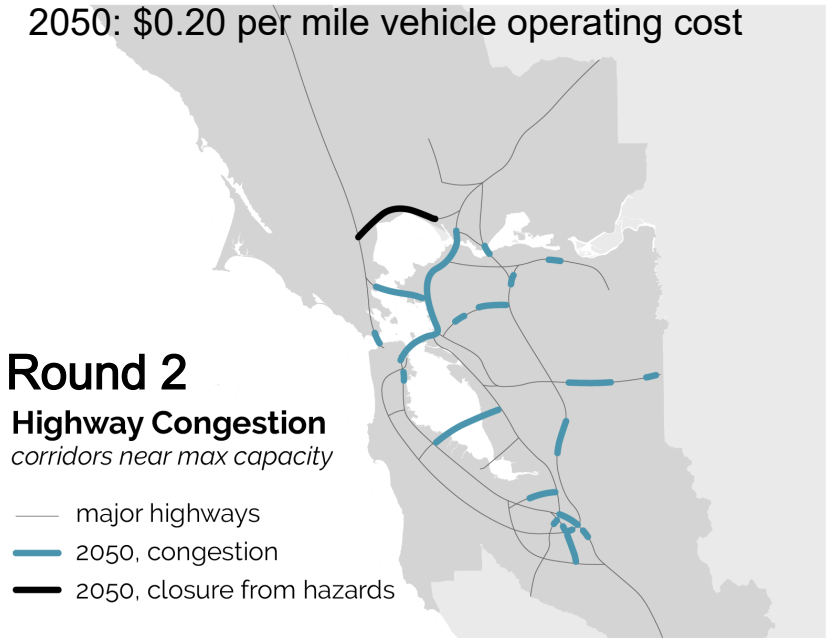
Strategies
(Horizon$_{\$\$}$)

Apply a $0.05 - $0.15 per mile toll on all freeways depending on vehicle occupancy and time of day.

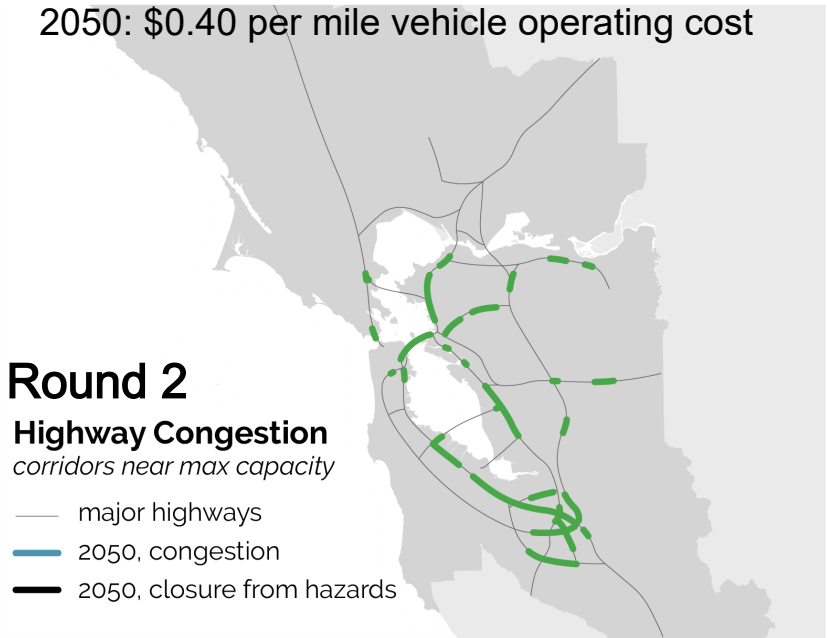
Average Annual Time-of-Day Toll Revenue per Household by Income in 2050 (2019 dollars)



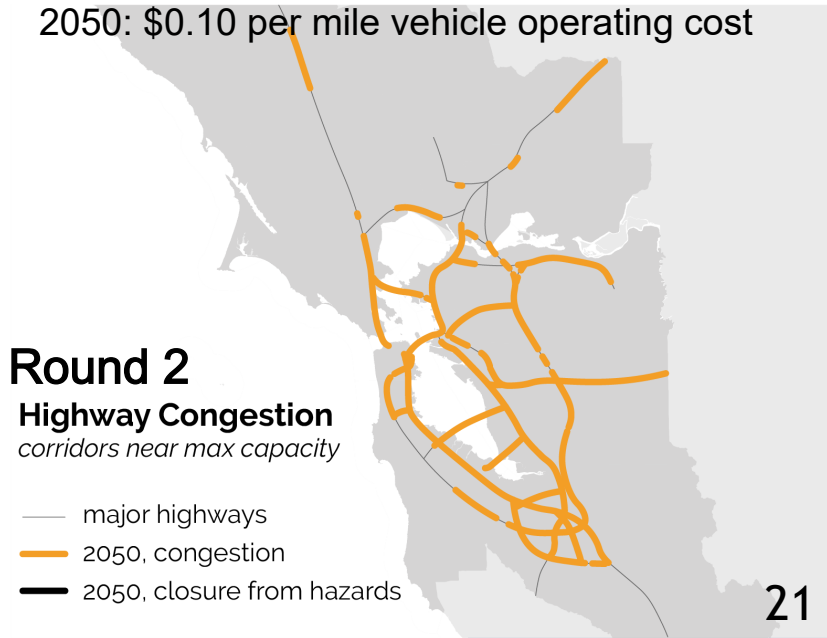
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2050: $0.40 per mile vehicle operating cost



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



Economic development strategies evaluated were insufficient to slow the decline of the middle class.

Create Incubator Programs

Strategies (Horizon$)

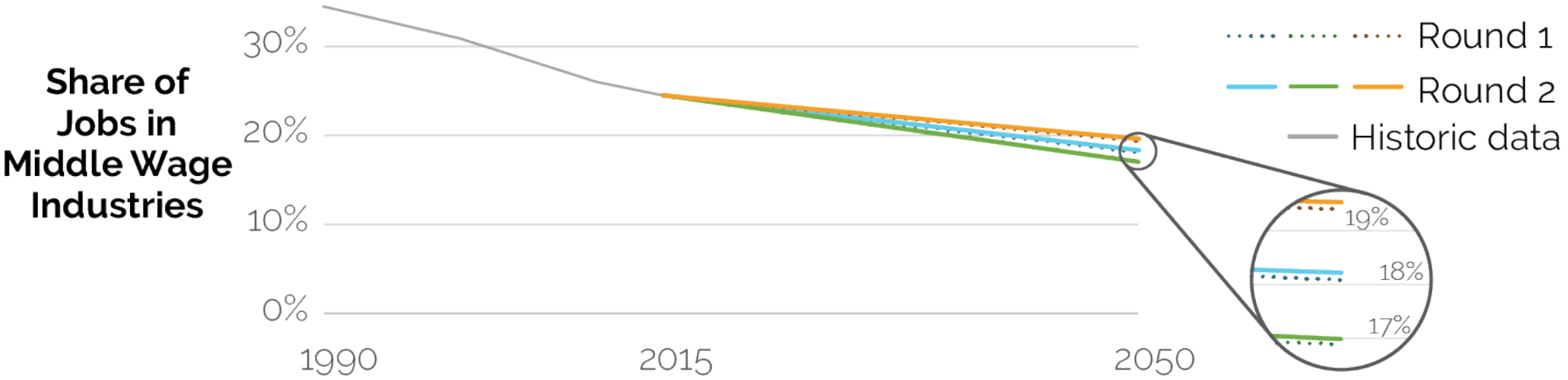
Expand and create new job incubator programs in economically-challenged communities.

Expand Construction Workforce Programs

Strategies (*Horizon$$*)

Expand construction workforce development and training programs. Support early construction professionals in early apprenticeship years.

Share of regional jobs in middle wage industries - historic and projected



HORIZON

Adaptation and retrofit strategies boosted our region's resilience.

Adapt to Sea Level Rise

Strategies
(Horizon$_{$$}$)

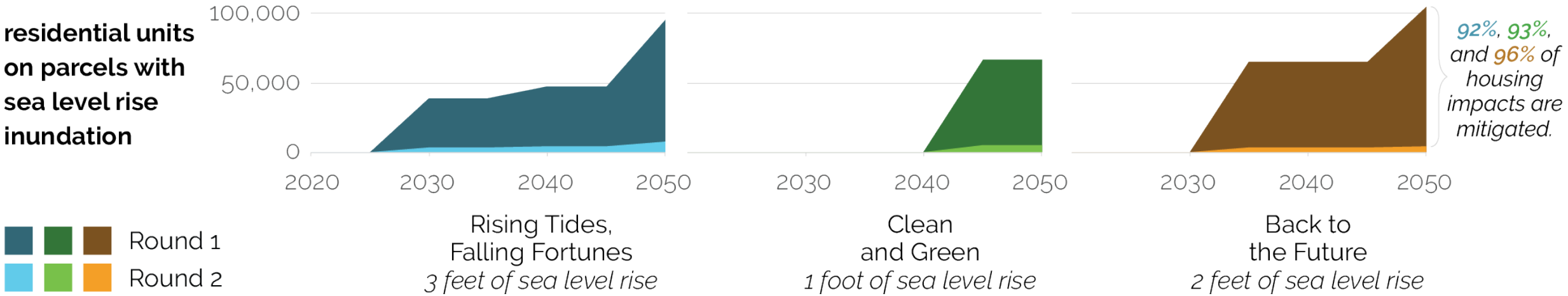
Leverages existing and new revenues to fund a hybrid set of gray and green infrastructure systems to adapt the region.

Retrofit Older Existing Buildings

Strategies
(Horizon$_{$$}$)

Provides 50% subsidies for older buildings built before current codes to support common earthquake, wildfire, energy, and water retrofit strategies.

Residential sea level rise impacts in Futures round 1 (without adaptation) and round 2 (with adaptation)



HORIZON

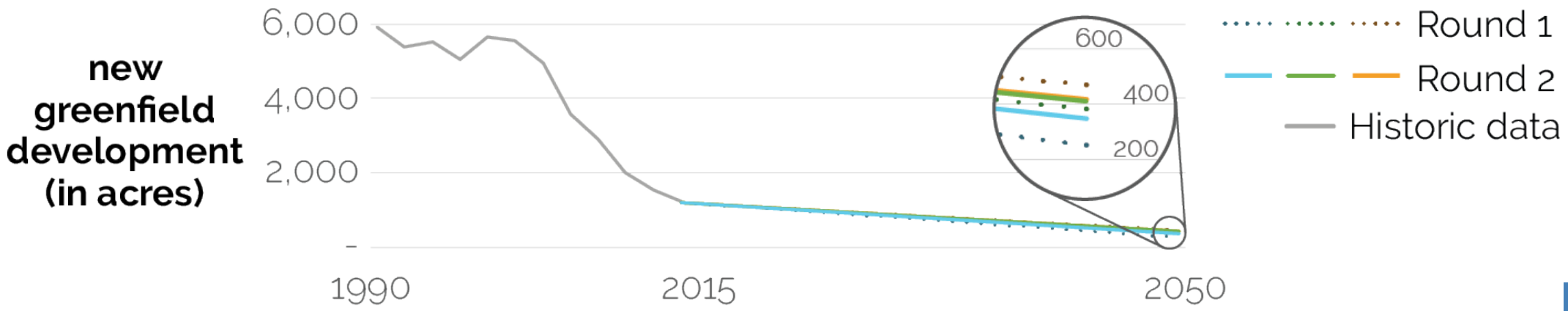
Urban growth boundaries led to minimal greenfield development in both Round 1 and Round 2.

Maintain Urban Growth Boundaries

Strategies
(PBA 2040)

Restrict urban development on greenfield lands, continuing the region's recent commitment to reducing sprawl outward.

Acres of greenfield development annually - historic and projected



A VMT-based fee on office development was effective in focusing office growth, but not in shifting jobs to the East and North Bay.

Apply a VMT-Based Fee on Office Development

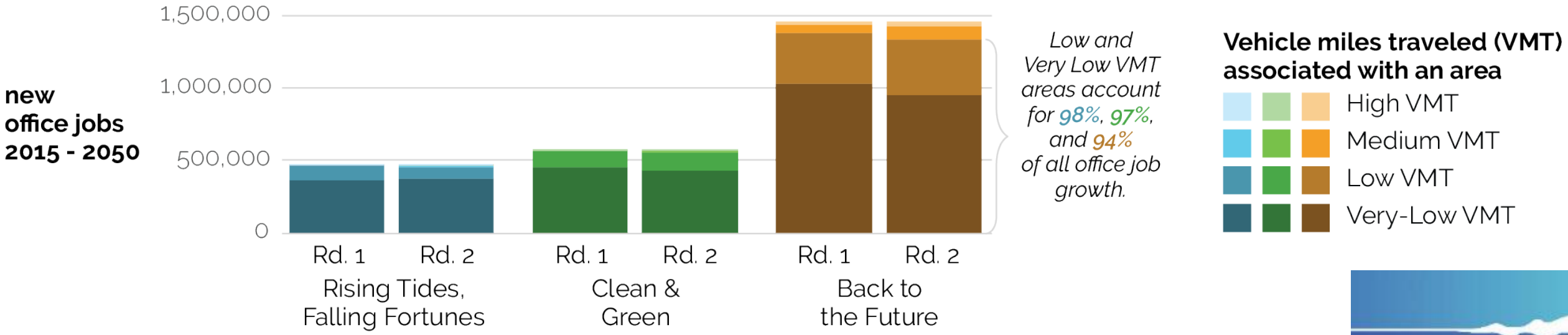
Strategies (PBA 2040)

Apply a fee on new office development in areas that have high employment-related vehicle miles traveled (VMT), expanding upon a Plan Bay Area 2040 strategy.

Given that this strategy was included in Plan Bay Area 2040, it was studied in both Futures Round 1 and Futures Round 2 - and was very effective in focusing growth in low-VMT places in both analyses.

Further refinements could focus on better tailoring this strategy to reflect county-level conditions - rather than "one size fits all".

Location of new office-related job growth relative to an area's associated VMT level



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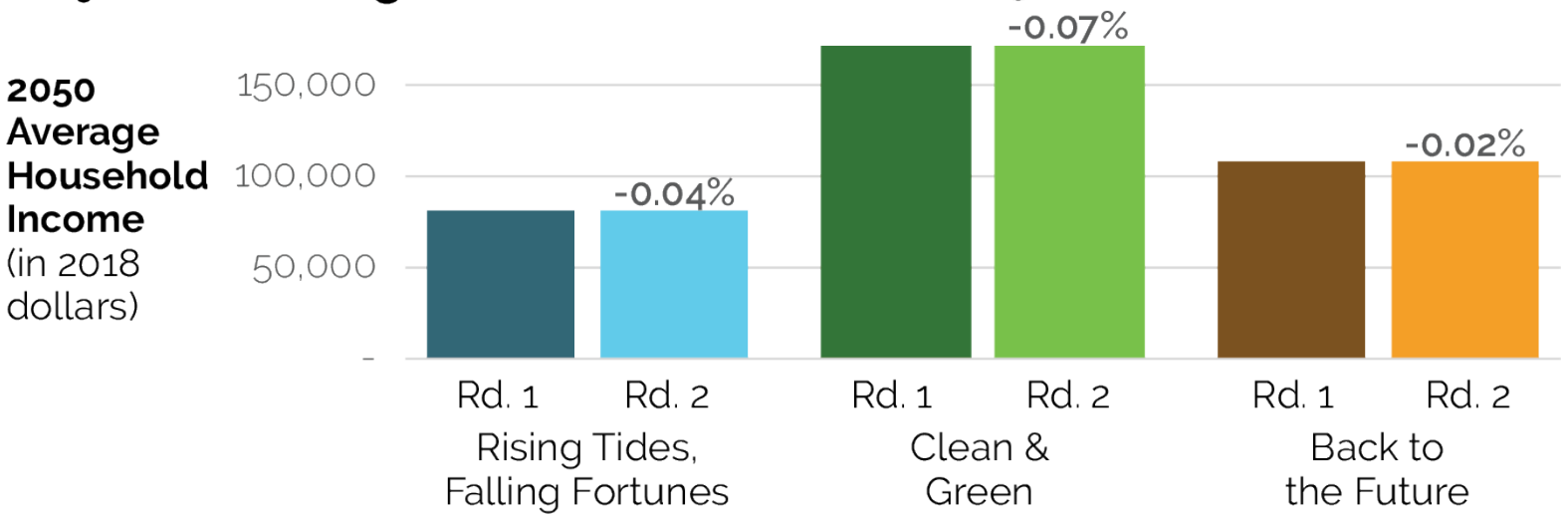
A large tax package (to fund subsidies / projects) focused on higher-income individuals and businesses did not have significant adverse impacts on the economy.

Raise New Revenues

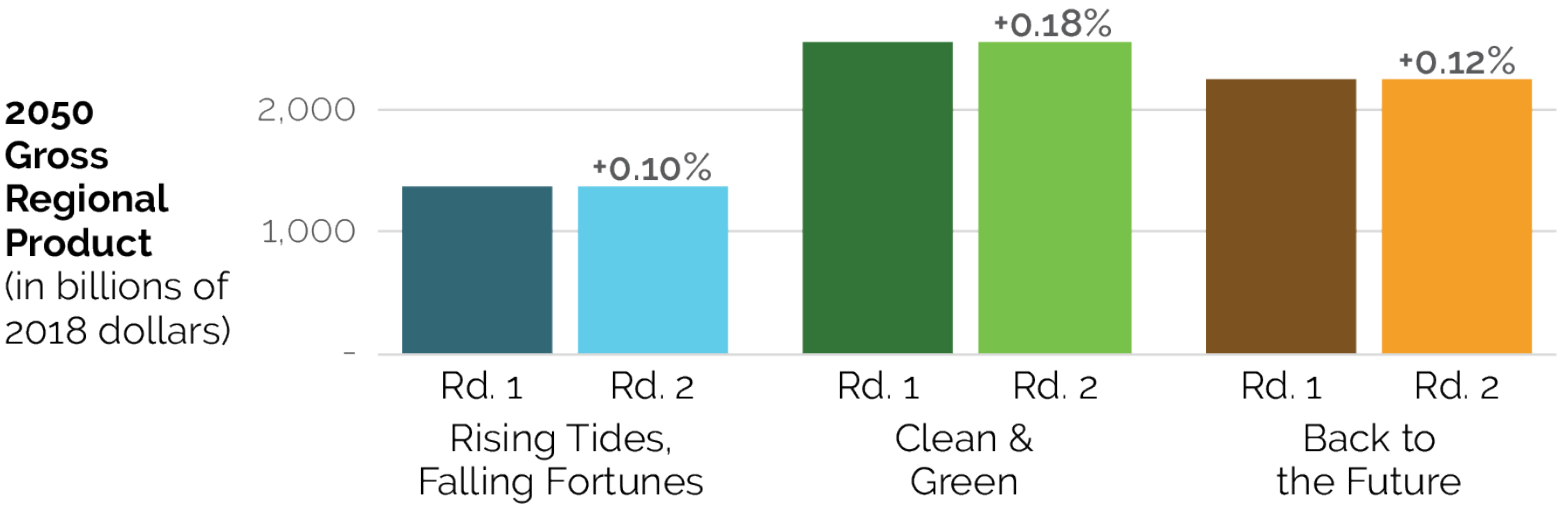
Strategies
(Horizon$$)

Place a balanced tax increase on businesses, parcels (building and home owners), and high-income earners.

Projected Average Household Income in 2050



Projected Annual Gross Regional Product in 2050



Initial economic analysis indicates that impacts would be relatively limited; however, further refinements could potentially better reflect the broader suite of benefits from infrastructure investments.

HORIZON

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
Economy



Recommended to move forward into Plan Bay Area 2050 Blueprint.

No economic strategies received this rating.

Recommended to move forward *with minor revisions*.

- Assess a VMT-Based Fee on Office Development
- Create Incubator Programs in Economically-Challenged Areas
- Expand Childcare Support for Low-Income Families

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

- Expand Construction Workforce Programs
- Place Office Caps in Job-Rich Cities

Already advancing into implementation due to state legislative action in 2019.

- Provide Portable Benefits for Part-Time/Freelance Workers

Not explored as part of Futures Round 2 analysis, but will be explored as part of Plan Bay Area 2050 Blueprint.

- Establish Priority Production Areas to Protect Industrial Lands

Futures Round 2: Strategy Recommendations
Housing

Recommended to move forward into Plan Bay Area 2050 Blueprint.

- Allow Diverse Housing in Priority Development Areas (PDAs)
- Streamline Development in All Growth Areas

Recommended to move forward *with minor revisions*.

- Allow Diverse Housing around Major Transit Stops (TPAs)
- Allow Diverse Housing in High-Resource Areas (HRAs)
- Transform Aging Malls and Office Parks into Neighborhoods
- Fund Affordable Housing Preservation & Production
- Require 10 to 20 Percent of All New Housing to be Affordable

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

No housing strategies received this rating.

Already advancing into implementation due to state legislative action in 2019.

- Repurpose Public Land to Build Housing
- Increase Renter Protections

Futures Round 2: Strategy Recommendations
Transportation

Recommended to move forward into Plan Bay Area 2050 Blueprint.	Operate and Maintain the Existing System Advance a Complete Micromobility Network Develop a Single Platform to Access and Pay for All Mobility
Recommended to move forward *with minor revisions*.	Advance a New Transbay Rail Crossing Invest in Free Short-Trip Service Implement Vision Zero Speed Reduction Measures
Not recommended to move forward *unless major revisions are made*.	Apply Time-of-Day Tolls on All Freeways
Ratings pending release of Draft Project Performance results.	Provide Free Transit to Lower-Income Riders Make Strategic Transit Modernization/Expansion Investments Build a Next-Generation Bus Rapid Transit Network Build Carpool Lanes & Address Interchange Bottlenecks Advance Next-Generation Rail Modernization Extend the Regional Rail Network

Futures Round 2: Strategy Recommendations
Environment



Recommended to move forward into Plan Bay Area 2050 Blueprint.

- Keep Current Urban Growth Boundaries in Place
- Partially Adapt to Sea Level Rise

Recommended to move forward *with minor revisions*.

- Retrofit Older Existing Buildings (Energy, Water, Seismic, Fire, etc.)
- Fully Adapt to Sea Level Rise

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

- Purchase Disaster Recovery Financing

Rating pending release of Draft Project Performance results.

- Adapt SR-37 to Sea Level Rise

HORIZON

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 posted on the MTC website later this month.



HORIZON

What's Next?

Horizon provided an opportunity to "stress test" key strategies in advance of Plan Bay Area 2050. Input from elected officials, stakeholders, and the general public will help inform further refinements to make the shortlist of strategies included in the Plan Bay Area 2050 Draft Blueprint as resilient and equitable as possible.

The final decision on what strategies to include will occur in early 2020 and will be made by the MTC Commission and ABAG Executive Board.

Plan Bay Area 2050 Schedule

