



**METROPOLITAN
TRANSPORTATION
COMMISSION**

Agenda Item 7

Bay Area Metro Center
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TO: Policy Advisory Council

DATE: June 6, 2018

FR: Dave Vautin and Michael Germeraad

RE: Horizon: Futures Shortlist

Policy Advisory Council Agenda Item 7, Horizon: Futures Shortlist, is attached as presented on June 7 to the Regional Advisory Working Group meeting.

MTC staff will be at your June 13 meeting to present a preview of the proposed shortlist of futures to be analyzed in the Horizon process; input is requested.

Attachment

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M E M O R A N D U M

TO: Regional Advisory Working Group
FR: Dave Vautin and Michael Germeraad
RE: Horizon: Futures Shortlist

DATE: May 31, 2018

Summary

Leveraging the eleven futures developed by teams of stakeholders at the April *Horizon* Peer Exchange – and stakeholder input on the futures selection process in May – staff has developed a proposed shortlist of three futures to study in the *Horizon* process. These widely-divergent futures are designed to test strategies and investments to identify those that are the most effective in multiple futures. This should help ensure that the decisions we make today are resilient to ever-changing circumstances. Rather than selecting a “preferred scenario” from this process as in past plans, the specific strategies and investments that perform best in multiple futures will be incorporated into *Plan Bay Area 2050*.

Draft Shortlist of Futures

Narrowing down the list of futures from eleven to three incorporated a combination of stakeholder input and technical refinements; a brief summary of stakeholder survey responses is included in the presentation attached. In the end, staff believes that the three futures featured in the shortlist each present unique opportunities and challenges for Bay Area planners and stakeholders that merit exploration through June 2019. The futures themselves are clearly divergent, with a broad spectrum of inputs for each external force. Staff anticipates that this will lead to differing outcomes across the four topic areas of *Horizon* – transportation, land use, economic development, and resilience.

The three proposed futures for *Horizon* are listed below, and each can be distilled to a central “what-if” question:

- **Clean and Green:** what if... new technologies and a **national carbon tax** enabled telecommuting and **distributed job centers**?
- **Rising Tides, Falling Fortunes:** what if... the federal government **cuts spending and reduces regulations**, leaving decisions to states and regions?
- **Back to the Future:** what if... an **economic boom** and new transportation options spur a **new wave of development**?

Attachments to this cover memo include the descriptions of each future as well as a preliminary table comparing the external forces included in each future. Staff is looking for your input today on whether these three futures are the most appropriate to select to achieve the goals of the *Horizon* process, and if any changes should be made to the futures before they are finalized in early July.



Figure 1: Primary steps of the Futures element of *Horizon*.

Next Steps

In lieu of a July RAWG, staff will hold a webinar in advance of the Joint MTC Planning/ABAG Administrative Committee presentation on the Futures Shortlist. This webinar will highlight preliminary regional forecasts for each future, including population trends, employment trends, demographic trends, and revenue impacts associated with each.

After getting feedback from the Joint Committees, staff will commence round 1 of travel & land use modeling for the futures, exploring what would happen to the Bay Area if “status quo” policies continue – despite the unique external forces incorporated in each. This will allow for a robust policy discussion in the fall. The public, stakeholders, elected officials, and staff will work to brainstorm solutions to better align outcomes with the Final Guiding Principles (and ideally, “win the future”).

Attachments

- Presentation (*including high-level survey findings*)
- Attachment A: Futures: Summary Table & Descriptions
- Attachment B: Futures Shortlist: Preliminary Summary of Model Inputs

DV
J:\COMMITTEE\RAWG\2018\06_JUN_2018_RAWG\03i_Horizon_FuturesShortlist.docx

An aerial photograph of a city street scene. In the foreground, there is a cafe with several tables and chairs, some with white umbrellas. People are sitting at the tables. To the right, a bus stop with a green roof is visible. In the background, a street intersection with cars and pedestrians can be seen. The overall scene is a mix of urban infrastructure and public space.

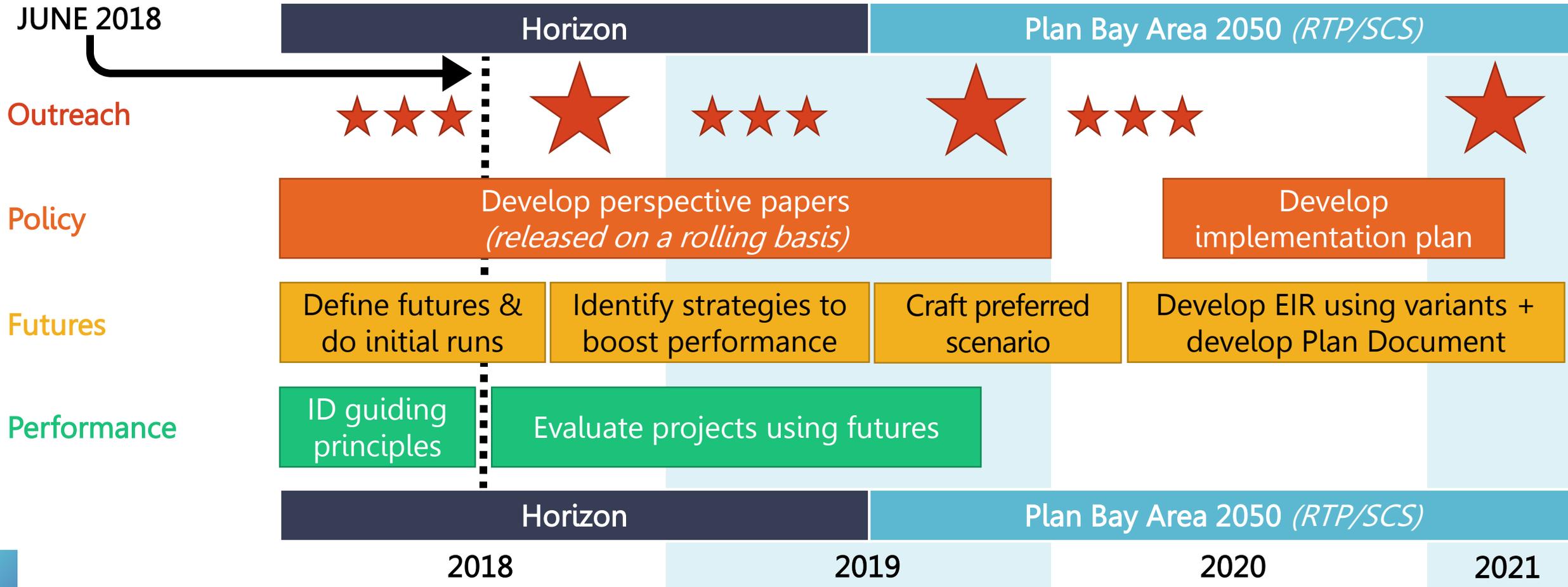
HORIZON

Futures Shortlist

Dave Vautin, MTC/ABAG

Regional Advisory Working Group -- June 7, 2018

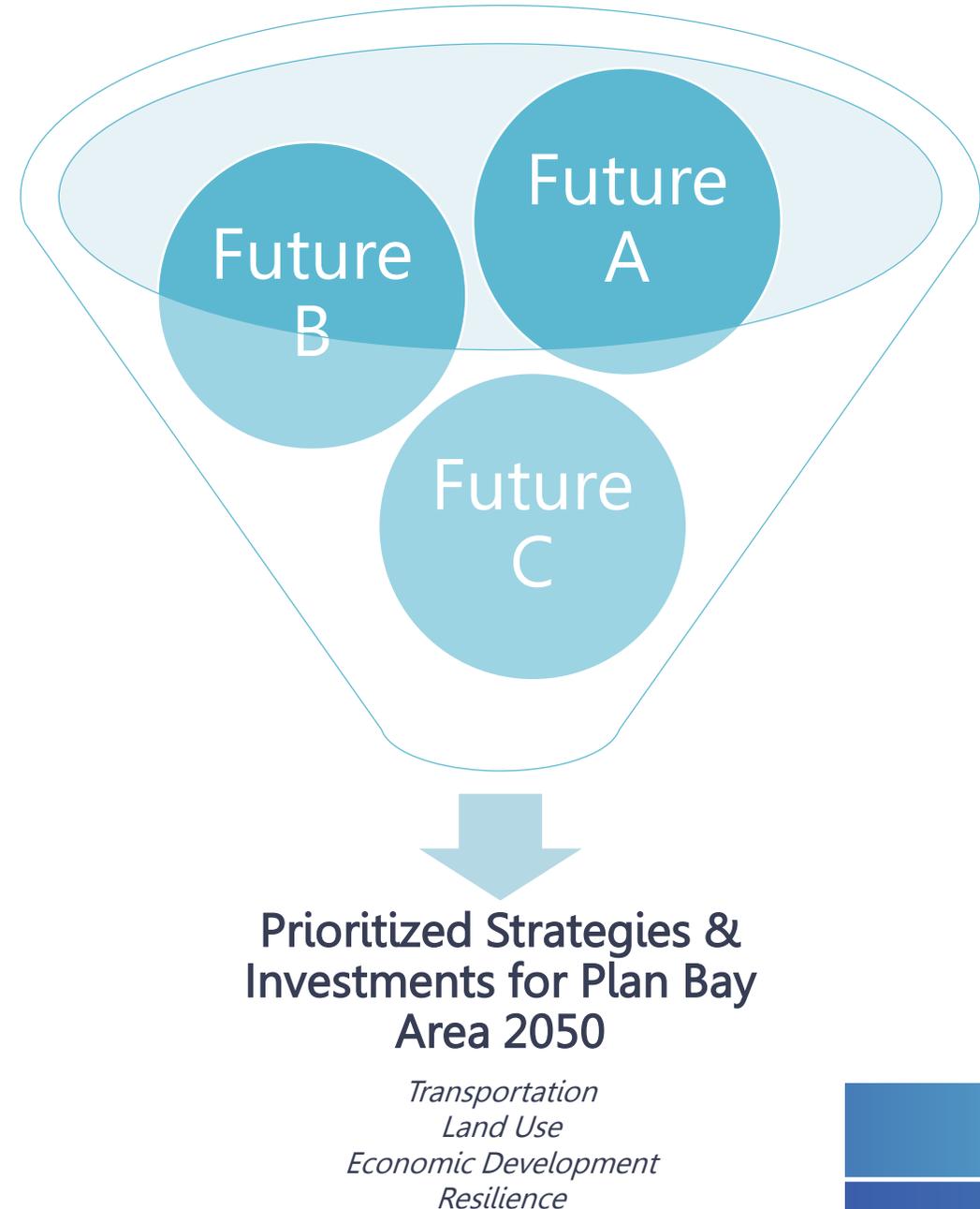
Horizon + Plan Bay Area 2050 Overview



Why Are We Creating Futures?

Creating a range of divergent futures will allow us to envision how the San Francisco Bay Area would respond to a wide range of external forces. Each future should create unique opportunities and challenges for the public, stakeholders, elected officials, and staff to explore.

However, this is not a traditional scenario planning process – none of the futures is likely to be selected as a “preferred”. Instead, the process is designed to test the resilience of policies and projects to determine which should be considered for inclusion in Plan Bay Area 2050.



How Were Futures Created?

3-Minute Video –
Summary of April 23rd
Horizon Peer Exchange

<https://youtu.be/1rDmygU5yn0>



Futures were developed based on external forces beyond the region's control. For the shortlisted futures, preliminary socioeconomic forecasts for the Bay Area should be ready in July (e.g., forecasted income distribution).

Feedback from Stakeholder Outreach

53
responses

Likelihood	
Rapidly Rising Tides	2.4
Shake and Remake	2.3
Rise of the Region	2.1
Freedom to Roam	2.1
Sustainable Downsizing	2.0
Clean and Green	1.8
Back to the Future	1.8
American Dream	1.7

(Adverse) Impact on Region	
Rapidly Rising Tides	2.9
Shake and Remake	2.9
Rise of the Region	2.8
Freedom to Roam	2.5
Sustainable Downsizing	2.5
American Dream	2.5
Back to the Future	2.4
Clean and Green	2.2

Ability to Respond to Impacts	
Clean and Green	2.6
Freedom to Roam	2.2
American Dream	2.0
Sustainable Downsizing	1.9
Rise of the Region	1.9
Rapidly Rising Tides	1.8
Shake and Remake	1.8
Back to the Future	1.8

Feedback from Stakeholder Outreach

Likelihood	
Rapidly Rising Tides	2.4
Shake and Remake	2.3
Rise of the Region	2.1
Freedom to Roam	2.1
Sustainable Downsizing	2.0
Clean and Green	1.8
Back to the Future	1.8
American Dream	1.7

(Adverse) Impact on Region	
Rapidly Rising Tides	2.9
Shake and Remake	2.9
Rise of the Region	2.8
Freedom to Roam	2.5
Sustainable Downsizing	2.5
American Dream	2.5
Back to the Future	2.4
Clean and Green	2.2

Ability to Respond to Impacts	
Clean and Green	2.6
Freedom to Roam	2.2
American Dream	2.0
Sustainable Downsizing	1.9
Rise of the Region	1.9
Rapidly Rising Tides	1.8
Shake and Remake	1.8
Back to the Future	1.8

Feedback from Stakeholder Outreach

Likelihood	
Rapidly Rising Tides	2.4
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Rapidly Rising Tides	2.9
Shake and Remake	2.9
Rise of the Region	2.8
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American Dream	2.5
Back to the Future	2.4
Clean and Green	2.2

Ability to Respond to Impacts	
Clean and Green	2.6
Freedom to Roam	2.2
American Dream	2.0
Sustainable Downsizing	1.9
Rise of the Region	1.9
Rapidly Rising Tides	1.8
Shake and Remake	1.8
Back to the Future	1.8

Highlighted Comments on Each Future

#	Future		Highlighted Comments
1+6	Sustainable Downsizing		"Description of elements within the scenario is contradictory and likely to increase angst and dysfunction. "
2	Clean and Green	★	"I agree with the initial elements of this scenario, but any sentence that combines "federal government" with "ambitious" seems unlikely. "
3	Rapidly Rising Tides	★	"After decades of warnings, humans finally respond once problems are impossible to ignore - sounds like a believable headline. "
4	Freedom to Roam		"This is a realistic short-term future , which I don't think is sustainable in the long term due to the economic disparity that is amplified by technology."
5+11	Rise of the Region	★	" Reduced federal funding is likely and should be studied."
8	American Dream	★	"This would likely be the "American Dream" for only some people. "
9	Shake and Remake	★	"I don't [think] this scenario would provide much opportunity to reconfigure dramatically the Bay Area."
10	Back to the Future		" Another unlikely combo - everything seems plausible except setting back self-driving cars for decades."

How Was the Shortlist Created?

1. Merged three sets of similar futures together
 - a. **New Clean and Green**
 - a. Includes “status quo” growth rate from **Freedom to Roam**
 - b. Includes carbon tax structure from **Clean and Green**
 - b. **New Back to the Future**
 - a. Includes most assumptions from **American Dream**
 - b. Includes future name from **Back to the Future**
 - c. **Rising Tides, Falling Fortunes**
 - a. Includes reduction in environmental regulations from **Rapidly Rising Tides**
 - b. Includes populist policies and devolution to states & regions from **Rise of the Region**

**5 FUTURES
REMAIN**
2. Considered feedback from survey and made revisions accordingly
 - a. **Sustainable Downsizing** eliminated from consideration due to perceived internal inconsistencies
 - b. **Shake and Remake** eliminated based on internal decision to include *Haywired* in all futures on the shortlist

**3 PROPOSED
FUTURES**

Three Potential Futures – “What If?” Scenarios



**Clean
and Green**

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



**Rising Tides,
Falling
Fortunes**

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



**Back to
the Future**

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



Recognizing the growing impacts of climate change, the federal government significantly tightens environmental regulations and implements an ambitious, nationwide carbon tax. New technologies thrive, with virtual reality enabling telecommuting and smaller-scale workplaces distributed across town centers. While high-tech manufacturing thrives in the United States, economic growth slows for other more energy-intensive sectors.



Potential Opportunities:

- Regional economy well-positioned to succeed in this future
- Reduced funding needs for transport & SLR infrastructure

Potential Challenges:

- Significant economic impacts on certain sectors
- Increased divisions between rich and poor communities



Rising Tides,
Falling
Fortunes

Nationwide tax cuts and spending caps result a significant reduction in federal infrastructure funding. Combined with autonomous vehicles failing to live up to the hype, cities, regions, and states are forced to pay for much-needed traditional infrastructure projects themselves. Lack of regulatory action on climate change worldwide results in sea levels rising by three feet by 2050 – creating a new set of infrastructure needs in an era of slow growth.



Rising Tides,
Falling
Fortunes

Potential Opportunities:

- Greater independence to set regional policies & funding framework
- Reduced pressures from growth, including lower risk of displacement

Potential Challenges:

- Sea level rise impacts & lack of funding to address them
- Lower incomes for all and reduced economic opportunity



Back to
the Future

The U.S. experiences **continued prosperity** and renewed respect on the world stage, thanks to smart and strategic policy decisions on the national level. **Rapid job growth** means more people want to move to the U.S., and **increased public investment in infrastructure** makes the nation more attractive for businesses. **Silicon Valley technologies** are dominant **worldwide** in everything from cars to e-commerce. Wealthy Americans seek larger suburban homes and **many depend on new technologies (such as high-speed rail)** to access urban job centers.



Back to
the Future

Potential Opportunities:

- Rising wages and low unemployment
- Significantly more funding available to address transportation & resilience needs

Potential Challenges:

- Risk of urban sprawl and associated environmental impacts
- Extreme transit crowding and traffic congestion

Summary of Proposed Futures

#	FUTURE NAME	IMMIGRATION AND TRADE	NATIONAL TAXES AND FUNDING	NATIONAL GROWTH	LAND USE PREFERENCES	NATIONAL ENVIRONMENTAL POLICY	NEW TECHNOLOGIES
2+4	 Clean and Green	Similar to today	Higher funding via carbon tax	Similar to today	Housing: more urban	Stricter regulations (1' SLR)	Widespread
					Jobs: more dispersed		
3+5+11	 Rising Tides, Falling Fortunes	Reduced	Lower funding due to tax cuts	Limited	Housing: more urban	Relaxed regulations (3' SLR)	More limited
					Similar to today		
8+10	 Back to the Future	Increased	Similar to today	Rapid	Housing: more dispersed	Similar to today (2' SLR)	Widespread
					Jobs: more urban		

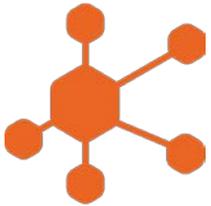
One final reminder: it is important to have a range of divergent futures with unique challenges – rather than reflecting “the world as we would like it to be”. None of the futures is likely to be selected as the “preferred” for Plan Bay Area 2050.

The San Francisco Bay Area Aspires To Be:



AFFORDABLE

All Bay Area residents and workers have sufficient housing options they can afford – households are economically secure.



CONNECTED

An expanded, well-functioning 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 access to the region's assets and resources.



HEALTHY

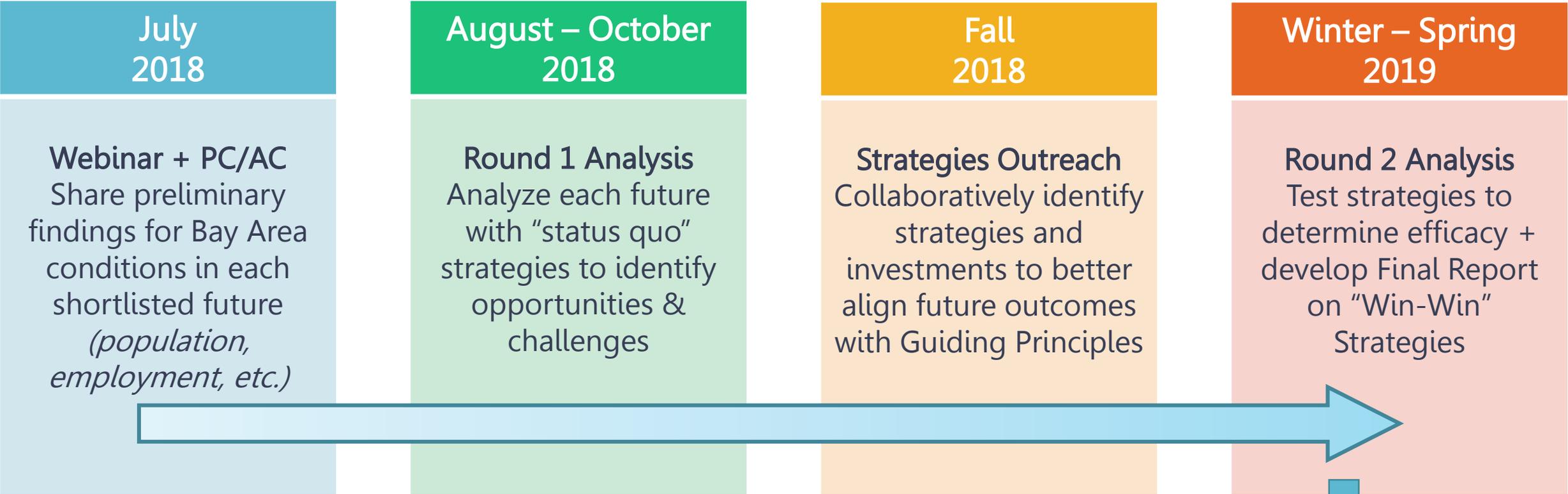
The region's natural resources, open space, clean water and clean air are conserved – the region actively reduces its environmental footprint and protects residents from environmental impacts.



VIBRANT

The Bay Area region is an innovation leader, creating quality job opportunities for all and ample fiscal resources for communities.

What's Next for the Futures in Horizon



Integrate the most effective and resilient strategies into **Plan Bay Area 2050**

Proposed Shortlist

#	FUTURE NAME	IMMIGRATION AND TRADE	NATIONAL TAXES AND FUNDING	NATIONAL GROWTH	LAND USE PREFERENCES	NATIONAL ENVIRONMENTAL POLICY	NEW TECHNOLOGIES	NATURAL DISASTERS
2+4	 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			
3+5 +11	 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			
8+10	 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			

Other Futures Considered

1+6	 Sustainable Downsizing	Reduced	Higher funding via income tax	Limited	Housing: more urban	Stricter regulations (1' SLR)	Widespread	Magnitude 7.0 Hayward Fault earthquake
					Similar to today			
9	 Shake and Remake	Similar to today	Higher funding via income tax	Similar to today	Housing: more urban	Stricter regulations (1' SLR)	Widespread	Series of Magnitude 7.0 earthquakes
					Jobs: more urban			

Future #7: America Divided has been deprioritized from further consideration, given that the Bay Area would not be well-positioned to mitigate the impacts from a national shift to plutocratic government. Slight modifications to the other futures under consideration have been made to improve their internal consistency.

#	FUTURE NAME	FUTURE DESCRIPTION
1 + 6	 Sustainable Downsizing	Economic growth has significantly slowed due to strict caps on immigration, hefty tariffs, and rising tax rates required to pay for the needs of an aging population. Still, the private sector powers forward with widespread adoption of autonomous vehicles and online shopping eclipsing traditional retail stores. A combination of federal incentives and shifting consumer preferences result in growing popularity for clean-fuel vehicles and an increased preference for smaller housing units in walkable locations.
2 + 4	 Clean and Green	Recognizing the growing impacts of climate change, the federal government significantly tightens environmental regulations and implements an ambitious, nationwide carbon tax. New technologies thrive, with virtual reality enabling telecommuting and smaller-scale workplaces distributed across town centers. While high-tech manufacturing thrives in the United States, economic growth slows for other more energy-intensive sectors.
3 + 5 + 11	 Rising Tides, Falling Fortunes	Nationwide tax cuts and spending caps result in a significant reduction in federal infrastructure funding. Combined with autonomous vehicles failing to live up to the hype, cities, regions, and states are forced to pay for much-needed traditional infrastructure projects themselves. Lack of regulatory action on climate change worldwide results in sea levels rising by three feet by 2050 – creating a new set of infrastructure needs in an era of slow growth.
8 + 10	 Back to the Future	The U.S. experiences continued prosperity and renewed respect on the world stage, thanks to smart and strategic policy decisions on the national level. Rapid job growth means more people want to move to the U.S., and increased public investment in infrastructure makes the nation more attractive for businesses. Silicon Valley technologies are dominant worldwide in everything from cars to e-commerce. Wealthy Americans seek larger suburban homes and many depend on new technologies (such as high-speed rail) to access urban job centers.
9	 Shake and Remake	Earthquakes transform the Bay Area, with magnitude 7.0 events striking the Hayward, San Andreas, and Great Valley faults in sequence between 2025 and 2035. The resulting damage hobbles regional growth. Fortunately, new technologies – especially those developed by the private sector – create opportunities to rebuild the region in a markedly different form.

Future #7: America Divided has been deprioritized from further consideration, given that the Bay Area would not be well-positioned to mitigate the impacts from a national shift to plutocratic government. Slight modifications to the other futures under consideration have been made to improve their internal consistency.

			2 + 4	3 + 5 + 11	8 + 10
External Forces			Clean and Green	Rising Tides, Falling Fortunes	Back to the Future
Environmental	1	Sea Level Rise	1 Foot	3 Feet	2 Feet
	2	Natural Disasters	2035 Hayward Fault Earthquake (magnitude 7.0)	2035 Hayward Fault Earthquake (magnitude 7.0)	2035 Hayward Fault Earthquake (magnitude 7.0)
Political	3	U.S. Political System	Healthy Democracy	Flawed Democracy	Healthy Democracy
	4	U.S. Standing in the World	Multiple Superpowers	Declining Power	Preeminent Global Power
	5a	U.S. Tax Rates	Higher Tax Rates	Lower Tax Rates	Similar to Today
	5b	U.S. Tax Structure	Carbon Tax	Income Tax (Similar to Today)	Income Tax (Similar to Today)
	6a	U.S. Spending Levels	Higher Expenditures	Lower Expenditures	Similar to Today
	6b	U.S. Spending Distribution	Similar Share to Today	Reduced Share for Metro Areas	Larger Share for Metro Areas
	7	Immigration Policy	80,000 Annual Immigrants (to Bay Area)	20,000 Annual Immigrants (to Bay Area)	240,000 Annual Immigrants (to Bay Area)
	8	Trade Policy	3% Average Tariff Rate	10% Average Tariff Rate	0% Average Tariff Rate
	9	Environmental Policy	Increased Regulations	Reduced Regulations	Similar to Today
Economic	10	U.S. Population Annual Growth Rate	+1.0%	+0.5%	+2.5%
	11	U.S. Jobs Annual Growth Rate	+0.5%	+0.5%	+2.5%
	12	U.S. Jobs Distribution	<i>currently being refined</i>	<i>currently being refined</i>	<i>currently being refined</i>
	13	U.S. Productivity	+4.0%	+2.0%	+2.0%
Land Use	14	Housing Preferences	Greater Preference for Urban Housing	Greater Preference for Urban Housing	Greater Preference for Dispersed Housing
	15	Workplace Preferences	Greater Preference for Dispersed Employment Centers	Similar Preference to Today	Greater Preference for Urban Employment Centers
	16	Telecommute Share	30%	15%	6%
	17	E-Commerce Market Share	50%	20%	50%
	18	Interregional Volumes	Current Growth Rates	Limited Growth Rates	Faster Growth Rates
Transportation	19	Transportation Technologies	High Speed Rail, Autonomous Rail and Buses, Freight Aerial Drones	Autonomous Buses	Hyperloop, Autonomous Rail and Buses, Freight Aerial Drones, Lower-Cost Helicopter Transport
	20	Autonomous Vehicle Market Share	95%	10%	75%
	21	Electric Vehicle Market Share	95%	10%	75%
	22	Sharing Preferences	Greater Preference	Similar Preference to Today	Reduced Preference
	23	Per-Mile Vehicle Operating Cost	\$0.50 per Mile	\$0.30 per Mile	\$0.15 per Mile
	24	Annual Federal Transportation Funding (Bay Area)	\$2.5 Billion	\$0.5 Billion	\$2.5 Billion