TO: Joint MTC Planning Committee with the ABAG Administrative Committee
FR: Deputy Executive Director, Policy
RE: Horizon: Interim Futures Report - Opportunities and Challenges

**Summary**

Today, MTC/ABAG staff are releasing the Opportunities and Challenges Report, which highlights major opportunities and challenges that the Bay Area might face in the coming decades as a result of three “what if...?” scenarios known as futures. This report is a key milestone of the *Horizon* long-range planning process, designed to help prioritize strategies in an era of uncertainty. Over the past six months, staff have analyzed the three futures finalized in summer 2018 using economic, land use, and travel models. This work is focused on exploring how previously unmodeled external forces, such as autonomous vehicles, rate of sea level rise, and national economic growth, affect the Bay Area’s future - assuming that today’s policies continue in future decades.

The final report provides a set of opportunities and challenges for each future, organized by impacts on the five *Horizon* Guiding Principles: affordable, connected, diverse, healthy, and vibrant. The report will be available on the *Horizon* website at bayareametro.gov/horizon.

**The Futures Process**

Futures Planning is a new way of looking at long-range planning, focusing on exploring divergent “what if...?” scenarios to identify strategies that are effective in a wide variety of circumstances. It replaces traditional scenario planning where funding and growth are distributed based on fixed assumptions; instead, the Futures Planning process outlines a variety of potential political, technological, economic and environmental challenges that would affect the lives of Bay Area residents.

Based on the first round of analysis, the Opportunities and Challenges Report explores the future conditions of the Bay Area with current policies - in part, to understand what challenges may emerge if we do not take action in the coming years. This month, we pivot to the next phase of Futures Planning for *Horizon*, delving into prioritization of strategies for further testing in the second round of analysis.
Upcoming Opportunities to Provide Strategy Feedback

Based on feedback from stakeholders and residents in March, MTC/ABAG will identify a suite of transportation, land use, economic development, and resilience strategies to apply to each future in the second round of analysis. An optimized mix of strategies will be incorporated for each future, with the goal of better understanding the effectiveness of current and new strategies across a range of potential future conditions.

In the coming weeks, staff will engage with the public, stakeholders, and community-based organizations to get feedback on which strategies should be prioritized for further study for each future:

- **Technical Stakeholders Workshop** (1)
- **Public Workshops** (5)
  - March 12, 6pm-8pm; Oakland, 101 8th Street
  - March 14, 6pm-8pm; San Jose, 200 E. Santa Clara Street
  - March 16, 10am-12pm; Petaluma, 320 North McDowell Blvd
  - March 19, 6pm-8pm; San Bruno, 1150 El Camino Real
  - March 20, 6pm-8pm; Vallejo, 253 Georgia Street
- **Community Based Organization Focus Groups** (8)
- **Online Engagement** via Vital Signs Website: [http://www.vitalsigns.mtc.ca.gov/horizon](http://www.vitalsigns.mtc.ca.gov/horizon)

Next Steps

Staff will return to the MTC Planning and ABAG Administrative Committees in April with a summary of feedback from March outreach and a preliminary list of strategies to analyze in each of the three futures for the next phase of Horizon.

Attachments:
- Attachment A: Presentation

AAB:mg

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Futures - Interim Report

Opportunities and Challenges
Joint MTC Planning Committee with the ABAG Administrative Committee
March 8, 2019
Schedule for Horizon and Plan Bay Area 2050

**MARCH 2019**
- **Horizon**: Develop perspective papers *(released on a rolling basis)*
- **Plan Bay Area 2050 (RTP/SCS)**
  - Define futures
  - Finalize models
  - Round 1 analysis
  - Round 2 analysis
  - Craft preferred scenario
  - Develop EIR + develop Plan Document

**2018**
- **Horizon**
- **Plan Bay Area 2050 (RTP/SCS)**

**2019**
- **Horizon**
- **Plan Bay Area 2050 (RTP/SCS)**

**2020**
- **Plan Bay Area 2050 (RTP/SCS)**

**2021**
- **Plan Bay Area 2050 (RTP/SCS)**

**Policy**
- Develop perspective papers *(released on a rolling basis)*
- Develop implementation plan

**Futures**
- Define futures
- Finalize models
- Round 1 analysis
- Round 2 analysis
- Craft preferred scenario
- Develop EIR + develop Plan Document

**Performance**
- ID guiding principles
- Code projects
- Evaluate projects using futures

**Outreach**
- 3 stars

**Round 1 analysis**

**Round 2 analysis**

**Finalize models**

**Define futures**

**Develop perspective papers** *(released on a rolling basis)*

**Craft preferred scenario**

**Develop implementation plan**
Futures Process

OUTREACH

ROUND 1 ANALYSIS
Current Strategies

ROUND 2 ANALYSIS
New Strategies

REPORT

OUTREACH

REPORT

Futures Process

OUTREACH

ROUND 1 ANALYSIS
Current Strategies

ROUND 2 ANALYSIS
New Strategies

REPORT

OUTREACH

REPORT
Futures Analysis

Plan Bay Area 2040
Adopted in July 2017

Horizon Futures Round 1 Analysis

• How does the region’s currently-adopted Plan fare in an era of uncertainty?
• What are the opportunities and challenges the region may face?

Horizon Futures Round 2 Analysis

• How might new strategies result in improved outcomes in each future?
• Which strategies are effective across many futures?
## External Forces

<table>
<thead>
<tr>
<th>Future Name</th>
<th>Immigration and Trade</th>
<th>National Taxes and Funding</th>
<th>National Growth</th>
<th>Land Use Preferences</th>
<th>National Environmental Policy</th>
<th>New Technologies</th>
<th>Natural Disasters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rising Tides, Falling Fortunes</td>
<td>Reduced</td>
<td>Lower funding due to tax cuts</td>
<td>Limited</td>
<td>Housing: more urban</td>
<td>Relaxed regulations (3' SLR)</td>
<td>More limited</td>
<td>Magnitude 70 Hayward Fault earthquake</td>
</tr>
<tr>
<td>Clean and Green</td>
<td>Similar to today</td>
<td>Higher funding via carbon tax</td>
<td>Similar to today</td>
<td>Housing: more urban</td>
<td>Stricter regulations (1' SLR)</td>
<td>Widespread</td>
<td>Magnitude 70 Hayward Fault earthquake</td>
</tr>
<tr>
<td>Back to the Future</td>
<td>Increased</td>
<td>Similar to today</td>
<td>Rapid</td>
<td>Housing: more dispersed</td>
<td>Similar to today (2' SLR)</td>
<td>Widespread</td>
<td>Magnitude 70 Hayward Fault earthquake</td>
</tr>
</tbody>
</table>
Plan Bay Area 2040 Policies

Land Use

- Assign higher density than currently allowed by cities in select PDAs.
- Keep urban growth boundaries in place.
- Preserve and incorporate office space caps in some job-rich cities.
- Assume 10% inclusionary zoning for all for-profit housing development.
- Assume eased parking minimums, streamlined process, and subsidies stimulate development in PDAs.

Transportation

- Operate and Maintain - Fix-it-First; Ongoing Operations
- Modernize - Caltrain Electrification, BART Core Capacity, New BRT Lines, Bay Area Forward, etc.
- Expand - BART to Silicon Valley, Caltrain DTX, Express Lanes Network, etc.
Three Futures

By imagining three different futures for the Bay Area, we can begin to explore the impacts associated with each path forward.
Rising Tides, Falling Fortunes

Imagine a future where the federal government cuts spending and reduces regulations, leaving decisions to states & regions.
Imagine a future where new technologies and a national carbon tax enabled telecommuting and distributed job centers.
Back to the Future

Imagine a future where an economic boom and new transportation options spur a new wave of development.

Photo Credit: Paulo Philippidis, Bus Through Sonic Runway
https://www.flickr.com/photos/canorus/40642623862
Population Growth

Rising Tides, Falling Fortunes
+1.0 million residents in 2050

Clean and Green
+3.1 million residents in 2050

Back to the Future
+6.0 million residents in 2050

= 50,000 residents.
A single line represents 1 million residents
Housing Growth

Rising Tides, Falling Fortunes
+0.5 million units by 2050

Clean and Green
+1.3 million units by 2050

Back to the Future
+2.1 million units by 2050

Circle color is representative of year.

Circle area is representative of the number of homes.

50k  100k  500k
Rising Tides, Falling Fortunes
+0.5 million jobs by 2050

Clean and Green
+1.1 million jobs by 2050

Back to the Future
+2.7 million jobs by 2050

Circle color is representative of year.

Circle area is representative of the number of jobs.

50k 100k 500k
Opportunities & Challenges: Top 10 Findings

We have explored the opportunities and challenges associated with each future across the five Guiding Principles of Horizon.
Priority Development Areas (PDAs) thrive in all three futures, putting a greater share of residents close to higher-quality affordable transit.
Without new strategies in place, Bay Area housing affordability is likely to continue to get worse.
Opportunity

With growing demand for telecommuting and transit, a smaller percentage of residents may need to depend on automobiles to get around.

**Rising Tides, Falling Fortunes**
In 2050, 67% of commuters use autos.

- Auto: -10%
- Telecommute: +9.5%
- Bike+Ped: +0.5%
- Transit: 0%

**Clean and Green**
In 2050, 45% of commuters use autos.

- Auto: -31.5%
- Telecommute: +28%
- Bike+Ped: +0.5%
- Transit: +3%

**Back to the Future**
In 2050, 69% of commuters use autos.

- Auto: -8%
- Telecommute: +7%
- Bike+Ped: +0.5%
- Transit: +0.5%

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

Without new strategies like roadway pricing, changing conditions will result in even higher levels of traffic congestion.

Rising Tides, Falling Fortunes
Limited AV, Similar cost to drive, Similar ownership model

Clean and Green
Significant AV, High cost to drive, Shared ownership model

Back to the Future
Significant AV, Low cost to drive, Individual ownership model

2050 Highway Conditions
- major highways
- 2050 congestion (less than 35mph speeds)
- 2050 closure from hazards
The Bay Area is likely to become more racially diverse over time, driven primarily by immigration from abroad.

Rising Tides, Falling Fortunes
+20,000 immigrants annually

Clean and Green
+80,000 immigrants annually

Back to the Future
+240,000 immigrants annually

Above is the change in regional share. In Rising Tides, a future with slower growth, the absolute number of white residents decreases. In Back to the Future, a future with faster growth, the absolute number of white residents increases, but as a share of the regional population it decreases.
Opportunity #2

Rapid housing growth - or an economy cool-off - could both help ease displacement pressures.

Share of Lower-Income Households at Risk of Displacement
Opportunity

Electrification and urban growth boundaries could reduce human impacts on the environment.

Annual Per-Capita **Greenhouse** Gas Emissions from Transportation *(in metric tons)*
Acute impacts from sea level rise and natural disasters will be more difficult to recover from if the region’s economy is weak.

**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

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

**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
Middle-wage jobs continue to disappear in all three futures.

Share of Jobs in Middle Wage Industries

<table>
<thead>
<tr>
<th>Year</th>
<th>Observed</th>
<th>Rising Tides, Falling Fortunes</th>
<th>Clean and Green</th>
<th>Back to the Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2030</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2050</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Futures Scorecard - Guiding Principles (1)

<table>
<thead>
<tr>
<th>Selected Indicators from VITAL SIGNS</th>
<th>2015</th>
<th>Rising Tides, Falling Fortunes (2050 Plan Bay Area 2040 Policies)</th>
<th>Clean and Green (2050 Plan Bay Area 2040 Policies)</th>
<th>Back to the Future (2050 Plan Bay Area 2040 Policies)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AFFORDABLE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing costs (share of income)</td>
<td>26%</td>
<td>48%</td>
<td>50%</td>
<td>52%</td>
</tr>
<tr>
<td>Housing production (net new units)</td>
<td>16,000</td>
<td>14,000</td>
<td>38,000</td>
<td>60,000</td>
</tr>
<tr>
<td><strong>CONNECTED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-auto commute mode share</td>
<td>25%</td>
<td>33%</td>
<td>55%</td>
<td>31%</td>
</tr>
<tr>
<td>Average commute time (minutes)</td>
<td>31</td>
<td>34</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td><strong>DIVERSE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk of displacement (share of lower-income HHs)</td>
<td>38%</td>
<td>14%</td>
<td>60%</td>
<td>28%</td>
</tr>
</tbody>
</table>
# Futures Scorecard - Guiding Principles (2)

## Selected Indicators from 2015 - 2050 Plan Bay Area 2040 Policies

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2015</th>
<th>Rising Tides, Falling Fortunes (2050)</th>
<th>Clean and Green (2050)</th>
<th>Back to the Future (2050)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-income population (share of overall population)</td>
<td>50%</td>
<td>54%</td>
<td>37%</td>
<td>39%</td>
</tr>
<tr>
<td>Greenhouse gas emissions (per-capita)</td>
<td>3.0</td>
<td>1.9</td>
<td>0.7</td>
<td>1.2</td>
</tr>
<tr>
<td>Annual greenfield development (acres)</td>
<td>1,200</td>
<td>300</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>Jobs in middle-wage industries (share of all jobs)</td>
<td>21%</td>
<td>18%</td>
<td>17%</td>
<td>19%</td>
</tr>
<tr>
<td>Gross regional product (inflation-adjusted)</td>
<td>$0.7 trillion</td>
<td>$1.1 trillion</td>
<td>$2.1 trillion</td>
<td>$1.9 trillion</td>
</tr>
</tbody>
</table>

**DIVERSE**

**HEALTHY**

**VIBRANT**
Futures Interim Report: Opportunities and Challenges

The full report highlights a broader suite of opportunities and challenges, delving into specifics for each future.

Go to: mtc.ca.gov/our-work/plans-projects/horizon/futures-planning
What’s Next?

The conditions in each future present unique challenges and opportunities for the region to leverage and address in the next round of analysis.
Next Step for Futures: Round 2

Horizon Futures Round 2 Analysis
• How might new strategies result in improved outcomes in each future?
• Which strategies are effective across many futures?

Strategies are based on existing and future Perspective Papers:
• Autonomous Vehicles
• Toward a Shared Future
• Growth Strategies
• The Future of Jobs (Coming in April)
• Bay Crossings (Coming in May)
• Sea Level Rise (Coming in September)

Strategies are also based on other efforts, including:
• CASA
• BCDC’s Adapting to Rising Tides Program
• Comprehensive Economic Development Strategy
• Horizon/Plan Bay Area 2050 Project Performance
Stakeholder Workshop
San Francisco
3/11/19 - 8:30 AM to 1:30 PM

Public Workshops
Oakland
3/12/19 - 6:00 PM to 8:00 PM
San Jose
3/14/19 - 6:00 PM to 8:00 PM
Petaluma
3/16/19 - 10:00 AM to 12:00 PM
San Bruno
3/19/19 - 6:00 PM to 8:00 PM
Vallejo
3/20/19 - 6:00 PM to 8:00 PM

Get Involved Planning the Region’s Future!

Online Outreach
vitalsigns.mtc.ca.gov/horizon
We’re seeking input from stakeholders & the public on which strategies would *transform each future* - and we’ll report back next month.