

## Memorandum

TO: Regional Advisory Working Group

DATE: February 27, 2018

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RE: Futures: Identifying External Forces

External forces define our everyday lives – none of us can truly anticipate or affect fluctuations in gas prices or shifts in federal tax policy, for example. In the same vein, external forces affect the future of our region as well. Today, staff is looking for input on what external forces may exist – today or in the future – that will affect the daily lives of Bay Area residents through 2050.

### Overview of the *Futures* Initiative

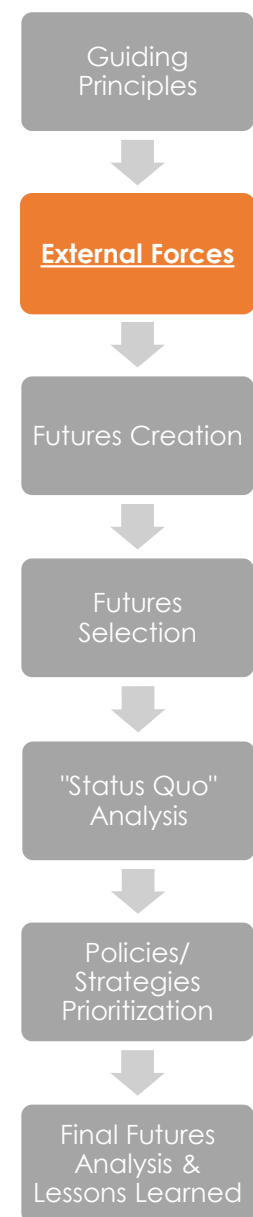
Defining external forces is the second step of the overall *Futures* initiative, which includes not only the creation of potential forces to explore through futures planning but also a suite of policy analyses and a robust project evaluation process. *Futures* is intended to address a range of topics, including but not limited to transportation, land use, economic development, and resilience. Based on a set of guiding principles, stakeholders and the public will identify policies, strategies, and investments that should be aligned with each future to make progress towards our regional vision despite potential headwinds. *Futures* is expected to last through summer 2019, at which point high-performing policies, strategies, and investments will be integrated into the preferred scenario for the 2021 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

### What is An External Force?

**External forces** are defined as long-time trends or one-time events which affect the Bay Area but for which Bay Area residents and elected officials have little-to-no influence. Examples include advancements in autonomous vehicle (AV) technology or changes to immigration policies – AVs have the potential to significantly change our transportation system and land use pattern, whereas immigration policies may impact our labor force and economic vitality. While typically on the global or national levels, external forces can also include the occurrence of natural disasters, such as earthquakes and wildfires. External forces are inputs to the suite of simulation models that will be used to forecast the future, including Hazus, REMI, UrbanSim Two, and Travel Model Two.

In contrast to external forces:

**Policies or strategies** are defined as specific actions on the state, regional, or local levels that could be taken to improve outcomes for Bay Area residents and businesses. While no individual government agency can implement a cross-cutting suite of policy solutions, it is reasonable to assume that, through the democratic process, Bay Area residents have moderate-to-significant influence in advancing policies for these three levels of government. These could range



**Figure 1:** Primary steps of the Futures process.

from significant shifts in zoning to accommodate a rapidly-growing population to construction of new infrastructure to harden our shoreline against rising sea levels. Similar to external forces, policies and strategies are model inputs, but they will be defined once we have a more complete picture of opportunities and challenges in each future (following the “status quo” analysis phase).

- **Performance measures** are defined as quantifiable conditions in each future, such as employment distribution, racial/ethnic composition, congested delay, interregional volumes, and per-capita greenhouse gas emissions. In contrast to the prior two categories, these are model outputs that are a result of both external forces and policy decisions. For example, employment levels may be affected both by globalization and trade policies (external forces) and by economic incentives and infrastructure investments here in the Bay Area (policies/strategies). Staff intends to leverage the Vital Signs performance monitoring tool to sync historical trends with potential future trajectories under each future.

### Identifying External Forces

This spring, staff will be working with stakeholders and the public to collaboratively construct and prioritize a handful of well-defined futures for analysis. To do so, conditions for each external force will need to be identified. For example, if an external force is fuel prices, each future will need to imagine what fuel prices might be in 2050, given future political and economic forces, to create a consistent and coherent future to study.

To assist in today’s brainstorming of potential forces, staff has developed an initial list of external forces which could be used to define a future in **Attachment A**. We are looking for your feedback on the following questions at today’s meeting:

1	Which of the external forces initially identified do you believe will have the <b>greatest potential impact</b> on the future of the Bay Area?
2	Are there external forces – as defined on the prior page – <b>that are not currently listed</b> ? Why is this force <b>particularly influential</b> for the region’s future trajectory?
3	Are there any external forces currently under consideration are either <b>unlikely to have significant impacts</b> or <b>improperly defined as external forces</b> ?

**Figure 2:** Key questions for RAWG on this item.

### Next Steps






Based on feedback received, staff will revise the list of external forces to frame the development of futures in April and May. Regional stakeholders will be asked to assist in the creation of futures, and expert advisors as well as the public will contribute to narrowing down the list to a handful of divergent futures for further analysis.

**The tentative date for this all-day futures creation workshop is Thursday, April 12.** The event will include expert panelists speaking about some of the key external forces identified below, as well as a collaborative exercise to brainstorm up to a dozen potential futures for further consideration this spring. We look forward to your participation in this upcoming event.

### Attachments:

- Attachment A: Potential External Forces
- Presentation

Potential External Forces

CATEGORIES	INPUTS/ASSUMPTIONS (EXTERNAL FORCES)	INTERMEDIATE OUTPUTS (INPUTS TO HAZUS, REMI, URBANSIM, TRAVEL MODEL)	POLICY INTERVENTIONS (STRATEGIES)	PERFORMANCE MEASURES (OUTCOMES)
 Politics	<ul style="list-style-type: none"> <li>- Political Conditions (Global and National)</li> <li>- Migration &amp; Trade Policies (Global and National)</li> </ul>	not applicable	<p>Across all categories:</p> <ul style="list-style-type: none"> <li>- Funding Levels (State, Regional, Local)</li> <li>- Investments (State, Regional, Local)</li> <li>- Policies (State, Regional, Local)</li> </ul>	<p>Examples include:</p> <ul style="list-style-type: none"> <li>- Emissions</li> <li>- Mode Share</li> <li>- Commute Time</li> <li>- Displacement Risk</li> <li>- Affordability</li> <li>- Open Space</li> </ul> <p>These will be identified after the finalization of the Guiding Principles.</p>
 Environment/ Resilience	<ul style="list-style-type: none"> <li>- Environmental &amp; Resilience Policies (Global and National)</li> <li>- Sea Level Rise (Rate &amp; Inundation)</li> <li>- Natural Disasters (Type, Location, Severity)</li> </ul>	<ul style="list-style-type: none"> <li>- Impact of Disasters (Building Damage, Pop./Jobs Displaced, Revenue Impacts)</li> </ul>		
 Economy	<ul style="list-style-type: none"> <li>- Tax Framework &amp; Rates (Global and National)</li> <li>- Population, Jobs, and Econ. Growth (Global and National)</li> <li>- Fuel &amp; Commodity Prices</li> <li>- Automation of Jobs &amp; AI Capabilities</li> <li>- E-Commerce Adoption Level</li> </ul>	<ul style="list-style-type: none"> <li>- Regional Population (Race/Ethnicity, Income, Age)</li> <li>- Regional Employment (Industry, Unemployment, Wages)</li> <li>- Regional Economic Output</li> </ul>		
 Land Use	<ul style="list-style-type: none"> <li>- External Funding Levels (National and Private Sector)</li> <li>- Housing Policies (National)</li> <li>- Housing and Workplace Preferences</li> </ul>	<ul style="list-style-type: none"> <li>- Housing Distribution (Location, Type, Tenure)</li> <li>- Employment Distribution (Location, Type)</li> </ul>		
 Transportation	<ul style="list-style-type: none"> <li>- Vehicle and Fuel Policies (Global and National)</li> <li>- Transportation Breakthroughs (Drones, Hyperloop, etc.)</li> <li>- Automated Vehicles (Capabilities, Pricing, Market Share)</li> <li>- Electric Vehicles (Capabilities, Pricing, Market Share)</li> <li>- Telecommuting Market Share</li> <li>- Sharing Preferences</li> <li>- External Funding Levels (National and Private Sector)</li> <li>- Interregional Traffic Volumes</li> </ul>	<p>Travel Model Two is run last in the modeling sequence, meaning there are no intermediate outputs.</p>		