

**Metropolitan Transportation Commission and the Association of Bay Area Governments  
MTC Planning Committee with the ABAG Administrative Committee**

January 10, 2020

Agenda Item 5a

**Plan Bay Area 2050 Draft Blueprint: Proposed Strategies for the Environment Element**

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- Subject:** Overview of the environmental strategies under consideration for inclusion in the Plan Bay Area 2050 Draft Blueprint. Strategies focused on transportation, housing, and the economy will be discussed at the joint workshop of the Commission and the ABAG Executive Board later this month.
- Background:** The Plan Bay Area 2050 Draft Blueprint will identify complementary strategies designed to advance the Guiding Principles adopted in September 2019. The Draft Blueprint strategies are organized into four interconnected topical areas: transportation, housing, the economy, and environment. The Draft Blueprint will study two different packages of strategies: “Blueprint Basic” that assumes no new revenues are raised, and “Blueprint Plus” that integrates new regional revenues to support a more expansive strategy package.
- The Environment Element of the Draft Blueprint will include strategies designed to reduce transportation-related greenhouse gas emissions, address impacts from climate change and natural hazards, and conserve agriculture, open space, and working lands. The strategies in this section are complementary to those in other elements of the Plan and should be thought of together, not in isolation. The proposed Draft Blueprint strategies build upon Plan Bay Area 2040, while integrating a new suite of resilient and equitable strategies studied in Horizon.
- Blueprint Strategies:** Building on Plan Bay Area 2040 and Horizon, staff are recommending the study of four environmental strategies in the Draft Blueprint:
- Reduce Transportation-Related Greenhouse Gas (GHG) Emissions***
1. **Expand the Climate Initiatives Program** captures additional GHG reductions from Plan Bay Area 2040 strategies that comprise MTC’s Climate Initiatives Program, as well as new strategies under consideration such as increased electrification requirements for transportation network companies.
- Note: additional GHG reductions will be achieved through a combination of transportation, housing, and economic strategies to be showcased later in January.*
- Conserve Agricultural Lands and Open Space***
2. **Keep Current Urban Growth Boundaries in Place** continues to be recommended in the Draft Blueprint; this strategy has been a part of both prior versions of Plan Bay Area.
- Address Climate and Hazard Impacts***
3. **Adapt to Sea Level Rise** to reduce regional climate impacts. Three Horizon sea level rise strategies will be merged into this single strategy for the Draft Blueprint, contingent on funding availability in Blueprint Basic.
  4. **Modernize Existing Buildings with Seismic, Wildfire, Drought, and Energy Retrofits** to preserve existing housing. The strategy aims to make existing homes healthier and safer while also reducing the carbon and water footprint of the Bay Area’s aging homes, contingent upon New Revenues available in Blueprint Plus.

Table 1 provides context for which strategies were included in Plan Bay Area 2040 and Horizon, and which strategies are recommended for study in the Draft Blueprint Basic and Draft Blueprint Plus.

**Table 1. Environment Strategies in Plan Bay Area 2050 and Horizon and Recommended for the Draft Blueprint Basic and Blueprint Plus.**

	Plan Bay Area 2040	Horizon	Draft Blueprint Basic	Draft Blueprint Plus
Expand the Climate Initiatives Program <sup>1</sup>	X <sup>1</sup>		X	X
Keep Current Urban Growth Boundaries in Place	X	X	X	X
Adapt to Sea Level Rise		X	X <sup>2</sup>	X <sup>3</sup>
Modernize Existing Buildings with Seismic, Wildfire, Drought and Energy Retrofits		X		X

<sup>1</sup> The MTC Climate Initiatives Program administers several key strategies that helped the region achieve the Plan Bay Area 2040 GHG target. Many of these strategies may be proposed for Plan Bay Area 2050, but new strategies may also be included. An additional package of strategies may be needed to reach the GHG reduction target.

<sup>2</sup> The Draft Blueprint Basic will only assume the partial Horizon sea level rise adaptation strategy.

<sup>3</sup> The Draft Blueprint Plus strategy will assume all three Horizon sea level rise adaptation strategies, contingent upon equity mitigations being identified for SR-37.

**Next Steps:** Staff recommend the study of four environmental strategies in the Draft Blueprint. Staff will continue to explore how the strategies reduce greenfield development, address climate and hazard impacts, and reduce transportation-related emissions. Working with stakeholders, staff will also develop possible funding measures to support the more expansive and costly strategies included in the Draft Blueprint Plus. Staff welcomes feedback on how to refine and improve the environmental strategies over the remainder of January before the strategies are finalized and translated into model inputs in February.

**Recommendation:** Information

**Attachments:** Attachment A: Description of Environmental Strategies Proposed for Inclusion in the Draft Blueprint  
Attachment B: Presentation

  
Therese W. McMillan

## A T T A C H M E N T    A

Agenda Item 5a

### **Description of Environmental Strategies Proposed for Inclusion in the Draft Blueprint**

#### **Summary**

The Plan Bay Area 2050 Draft Blueprint includes four elements: Transportation, Housing, the Economy, and the Environment. For the Environment element of the Draft Blueprint, strategies will be integrated to address topic areas including greenhouse gas reduction, climate and natural hazard risks, and conservation. These issues and their associated strategies link to and are thought of as an integrated blueprint alongside complementary transportation, housing and economic strategies. This document introduces the three environmental topical areas and the Draft Blueprint strategy proposed to achieve improved regional outcomes. The proposed strategies each have a brief strategy description for both Blueprint Basic and Blueprint Plus, as well as findings from Horizon analysis, a discussion of complementary Draft Blueprint strategies, and a summary of feedback received on the strategies from November and December public engagement.

#### **Reduce Transportation-Related Greenhouse Gas (GHG) Emissions**

Transportation emissions represent the largest source of greenhouse gas emissions in California. There are over 170 million miles driven in the Bay Area each day, an average of nearly 25 vehicle miles traveled (VMT) per person. Most of these vehicles are conventional gasoline cars, emitting carbon dioxide and other air pollutants with each mile driven.

Through legislation and executive order, the State has established goals to reduce GHG emissions 40 percent below 1990 levels by 2030 and become carbon neutral by 2045. To support this goal, SB 375, the Sustainable Communities and Climate Protection Act of 2008, requires the State to establish GHG emission reduction goals for each metropolitan region in California. Under SB 375, MTC is charged with developing a plan to reduce per-capita GHG emissions from cars and light-duty trucks by 19 percent compared to 2005 levels by 2035. To achieve this goal, Plan Bay Area 2050 will have to prioritize strategies that accommodate growth while reducing dependence on automobiles.

While such strategies were not specifically studied in Horizon, many other complementary strategies for transportation, housing, and the economy were evaluated to understand how these could complement the Climate Initiatives Program (discussed on the following page). These included:

- Allowing diverse housing in Priority Development Areas
- Allowing diverse housing in Transit Rich Areas
- Streamlining development in all growth areas

- Expanding public transit networks
- Building a complete micromobility network
- Implementing Vision Zero speed reduction measures
- Applying tolls based on time-of-day and vehicle occupancy on all freeways

These strategies helped to support significant reductions in GHG emissions in Futures Round 2.

In Horizon, individual projects and policy strategies were not developed and analyzed solely for GHG emission reductions. Because reducing GHG emissions is a priority of the regional planning process, many strategies considered in Horizon - from transportation investments to land use policies - were considered for their impact on travel behavior and emissions. At the series of recent “pop-up” workshops, 90 percent of all comments were in support of the strategies. Future committee items will inform which strategies advance into the draft Blueprint for the transportation, housing and economy elements, which will ultimately complement the strategy listed below.

### ***Strategy - Expand the Climate Initiatives Program***

Staff expect that the GHG reduction achieved by strategies from the Transportation, Housing, and Economy elements alone will fall short of the 19 per-capita reduction target, even as new strategies continue to be integrated to make the Plan more sustainable than ever. Similar to past Plans, staff anticipate closing most or all of the remaining gap with an expanded Climate Initiatives Program.

A number of policies and investments that can reduce GHG emissions are currently not able to be analyzed in the regional land use and travel models because the models are not sensitive enough to capture every type of strategy. Instead, separate calculation methodologies are developed for these policies and programs. Because they are analyzed outside of the standard regional models, the strategies are referred to as “off-model” strategies. These off-model strategies make up the Climate Initiatives Program, the set of activities to help the region meet its SB 375 GHG reduction targets. The Plan Bay Area 2050 Climate Initiatives Program is expected to include most strategies from Plan Bay Area 2040, as well as several new strategies:

- Bikeshare
- Bike Infrastructure
- Carshare
- Commuter Benefits Ordinance
- Employer Shuttles
- Trip Caps
- Vanpool
- Regional EV Charger Network
- Feebate Program Implementation
- Vehicle Buyback Program
- Mobility-as-a-Service (*potential new strategy*)
- Electric TNC Requirement (*potential new strategy*)

The performance of these strategies, in combination with updated land use and transportation strategies, will be assessed as the Blueprint is developed for Plan Bay Area 2050 and compared to the GHG reduction targets. Depending on the assessment, additional policy commitments may be required to reach the 2035 target established by the State.

### **Conserve Agriculture and Open Space**

The San Francisco Bay Area is exceptional in its natural beauty, biologically diverse landscapes and waters, bountiful farms and ranchlands, and world-class parks, trails and open spaces. Vibrant natural and working lands are essential to the high quality of life, health, and prosperity of the region. These natural and working landscapes and their rich biodiversity also form the region's life support system by purifying, storing, and conveying water, producing food, sequestering carbon, and much more.

Protection of natural and working lands has been a regional priority in recent decades, resulting in approximately 28 percent (1.3 million acres) of Bay Area lands under some form of land use protection. Despite these efforts, every year urban development continues to move outward, onto previously undeveloped lands. Pressures for greenfield development are already immense and with two million additional residents anticipated by 2040, conserving natural and working lands will only become more challenging. The healthier and more connected these natural and working lands remain, the better able they will be to provide benefits to people and wildlife while withstanding the effects of population increases and climate change in the coming decades. Meeting this challenge will require bold action.

### ***Strategy - Keep Current Urban Growth Boundaries in Place***

Maintaining urban growth boundaries (UGBs) was the core conservation strategy in Plan Bay Area 2040 and Horizon. Expanding urban development outward has negative environmental impacts and increases the amount of public infrastructure required to be built and maintained into the future. With the exception of San Francisco, all counties in the Bay Area protect open space and agricultural lands by county-wide land use measures, such as urban service areas, environmental corridors, slope/density restrictions, stream conservation areas, or riparian buffers. Additionally, some cities have UGBs to limit sprawl and protect agricultural land. Generally, this means that if a project falls outside a UGB, there are regulatory measures in place to aid local jurisdictions in land protection.

***Blueprint Basic:*** Using urban growth boundaries, confine new development within areas of existing development or areas otherwise suitable for growth, as established by local jurisdictions. ***No funding required***

***Blueprint Plus:***  
same as Blueprint Basic.

**Horizon Analysis:** With this strategy in place, the projected greenfield development from 2020 to 2050 would be 33 to 47 times less than the recent 2000 peak. The reason there is still some greenfield development is that counties and cities have identified limited greenfield areas

within the current set of UGBs that are built out during the planning timeframe. In Horizon and in Plan Bay Area 2040, MTC and ABAG use the regional land use model to assert that no growth occurs outside the UGBs. This assertion assumes that UGBs on their own are a strong enough strategy to prevent development beyond the boundary. However, the general growth measures that are in place vary in effectiveness and enforcement. Given the effectiveness of the UGBs in recent years at constraining greenfield development, no strengthened Blueprint Plus measure is currently recommended. ABAG and MTC staff will work with conservation stakeholders to continue to find ways to strengthen UGBs as a means to prevent sprawl onto important agricultural and habitat lands.

**Complementary Strategies:** By restricting growth outside of UGB, the region needs to ensure sufficient development capacity within UGBs, particularly in areas identified for future growth. By providing opportunities for new development inside UGBs - for example in transit-rich or high-resource areas, there will likely be less pressure to alter the existing boundaries.

**Public Feedback:** Maintaining existing UGBs to restrict urban development on greenfield lands has been an area of agreement among the ABAG and MTC governing boards in past Plan Bay Area cycles. In Horizon, staff opened the door to consider greenfield development as an option. However, staff heard clearly from the public, stakeholders, and elected officials that the Bay Area should remain committed to UGBs as a strategy to protect the environment and reduce urban sprawl, despite the need for new housing. Feedback from the community further supported the Horizon analysis. In Pop-Up Outreach, it received overwhelmingly positive feedback, with 93 percent of commenters approving. When using the digital engagement tool, *Mayor of Bayville*, users also preferred a strategy to expand parks, trails and greenways and preserve agricultural lands, with 55 percent of users funding the idea. Only 8 percent of users didn't adopt a strategy to expand parks and maintain urban growth boundaries.

## Address Climate and Hazard Impacts

In recent years, shocks and stresses have impacted the daily lives of residents - wildfires have destroyed over 10,000 homes in the region, power shut offs have left communities in the dark, and transportation networks have struggled to deal with increasing floods. Many communities have already faced these hazards, raising funds for both mitigation and adaptation. Yet the future holds even more uncertainty - within the next 30 years, there's an estimated 72 percent chance of a 6.7 or greater earthquake hitting the area. Sea level rise is expected to impact the region on a timeline that keeps inching closer. Additionally, climate change has exacerbated the risk of wildfires, as well as other extreme weather impacts.

Without regional resilience efforts, hundreds of thousands of jobs and housing units could be displaced, and key infrastructure rendered unusable by delays or closures. Some hazards, such as earthquakes and wildfires, can be particularly troubling, as they quickly exacerbate the regions housing crisis. A resilient approach is critical to moving forward. The Bay Area has taken steps in a number of communities, but piecemeal efforts have left critical vulnerabilities within the region that the following Blueprint strategies seek to address. By focusing on both sea level rise adaptation and home retrofits, the region can look to 2050 with a foundation of resilient strategies on which to build.

## Strategy - Adapt to Sea Level Rise

With no protective measures, even just 1 foot of additional sea level rise will flood key highways, homes and jobs, and many of the Bay Area's marsh ecosystems. The impacts grow larger with each additional foot of sea level rise.

**Blueprint Basic:** Using forecasted revenues from existing sources like the Army Corps of Engineers and FEMA, the region could protect portions of the Bay Area's shoreline. With limited existing funds the strategy would prioritize resources on areas of high benefits and low costs. Some areas would be assumed to flood as seas rise. **Funding: \$2 billion**

**Blueprint Plus:** With new revenues, the region could more fully adapt to sea level rise. Most Bay Area communities and transportation facilities could be protected; this may include protecting SR-37, provided equity mitigation strategies are identified. **Funding: \$20 billion**

**Horizon Analysis:** In Horizon, sea level rise adaptation was studied through three separate strategies: partial adaptation to sea level rise, full adaptation to sea level rise, and adaptation of the SR-37 corridor.

In partial adaptation, protective and adaptive approaches were focused in areas with the most significant impacts. These impacts included areas with existing communities, sensitive ecosystems, key transportation systems, or areas planned for future growth. Horizon analysis found that a partial, or more limited adaptation approach, could prevent flooding under a 3-foot scenario of up to 100,000 housing units, between 100,000-200,000 jobs, and many critical infrastructure assets, such as major highways. However, many communities were not fully protected under this strategy, and crucial connective infrastructure like SR 37 went unprotected. The Draft Blueprint Basic relies on only a portion of the "partial adaptation" Horizon strategy because existing forecasted revenues were less than anticipated. The adaptation for Blueprint Basic is therefore expected to protect fewer homes, jobs, marsh ecosystems and transportation assets than what was analyzed in the partial Horizon strategy.

Horizon also studied a strategy that more fully adapted the region to sea level rise, and a strategy that specifically adapted State Route 37 (SR-37) and the surrounding ecosystems. More fully adapting to sea level rise protected more communities, and expanded wetland restoration efforts. Adapting SR-37 to sea level rise would maintain a critical east-west highway corridor, preserving much faster travel times than any alternative, and opening up a regionally significant opportunity to restore over 15,000 acres of historic marsh. The Blueprint Plus could integrate all three Horizon sea level rise strategies, provided equity mitigation strategies are identified for SR-37. At the January 7<sup>th</sup> RAWG workshop, staff will continue to work with stakeholders to answer two key questions: How much adaptation should be funded?

**Complementary Strategies:** The sea level rise adaptation strategy needs to be closely integrated with the larger set of strategies that inform the future growth footprint as well as the full set of transportation investments. Alignment between these strategies is crucial toward growing in a resilient manner. To receive broad support for the sea level rise adaptation strategy, the types of investments must acknowledge integrated opportunities to blend flood protection, habitat restoration and public access, leveraging the large investment to advance environment, transportation, housing and economy goals.



**Public Feedback:** Public comments have shown broad support for strategic sea level rise adaptation. In a series of Pop-Up events, sea level rise adaptation strategies were lumped together, and shown with 13 other strategies from the Horizon effort. In this context, 90 percent of those surveyed supported adaptation. Most of the negative comments noted that they considered it to be less of a priority than other strategies, or not within the time horizon of the plan. For comments that supported adaptation, residents wanted to prioritize adaptation for areas with housing. Many also said that, while they supported the effort, it was only necessary for particular areas, emphasizing that this should be a strategic effort. In the digital engagement tool, Mayor of Bayville users preferred a strategy in which they partially adapted, again focusing on prioritization.

### ***Strategy - Modernize Existing Buildings with Seismic, Wildfire, Drought and Energy Retrofits***

Many older buildings built before modern codes are at a greater risk of damage in earthquakes and wildfires and do not meet current standards for energy and water efficiency. A significant earthquake or fire could create even greater pressure on the tight Bay Area housing market by reducing the available housing stock. New buildings are already required to use water and energy efficiently - improvements to existing buildings will further reduce the region's environmental footprint.

**Blueprint Basic:** Due to a lack of substantial existing funding, the strategy as included in the Blueprint would only entail a continuation of ad-hoc upgrades. The strategy would have a very limited effect on the quality of existing Bay Area homes.

**Funding:** <\$1 billion

**Blueprint Plus:** With new revenues, expand the local adoption of building ordinances and companion retrofit incentives to bring existing buildings up to higher standards. Align \$20 billion in new funding split evenly between seismic, wildfire, drought, and energy upgrades. Provide subsidies up to 50 percent to offset the burden of multifamily and single-family building retrofits.

**Funding:** \$20 billion

**Horizon Analysis:** The Bay Area has made efforts to retrofit the existing housing stock, but many of these efforts are geographically localized, or siloed within specific focuses. This Blueprint Plus strategy imagines a broad effort to modernize Bay Area housing, providing upgrades that work in tandem to make safer, more efficient homes. As studied in Horizon, the Blueprint Plus strategy would provide incentives for earthquake, wildfire, energy, and water retrofit upgrades for older homes constructed before modern codes. It accounts for a 50 percent subsidy to reduce the burden of retrofits on tenants and homeowners. This strategy is only recommended for inclusion in the Draft Blueprint Plus, with the addition of new revenues to support the measure.

Horizon analysis has shown that this strategy - when fully funded - could reduce residential earthquake risk for over 500,000 households -- in the modeled scenario with a magnitude 7.0 Hayward earthquake, the strategy saved 50,000 homes and sped up regional recovery. The strategy would support wildfire mitigation measures for over 275,000 at-risk homes in the region, focusing on proven measures like structure hardening and defensible space. The energy



and water efficiency measures would reduce carbon emission by roughly 2 million tons, and water use by 12 billion gallons annually.

The Horizon analysis highlighted the benefits of mitigation. Moving forward, it is important to consider the impact of up-front costs or variable subsidy rates, especially for lower income residents. Additionally, even when funded as a Blueprint Plus strategy, this is not a catch-all fix, as retrofits only reduce a home's risk. Insurance and land use policies are also key to mitigating risk for wildfires, earthquakes and flooding. Additionally, water and energy efficiency retrofits within this strategy tend to address low hanging fruit, and the next step for many communities may end up trickier.

**Complementary Strategies:** This strategy focuses narrowly on improving the health and safety of existing buildings. There are opportunities to link these investments with acquisition and rehab, affordable housing initiatives. As individual homeowners consider a suite of upgrades to their homes, this strategy should acknowledge the many synergies that exist not just in seismic, wildfire, drought, and energy upgrades, but also consider how accessory dwelling units, electric vehicle charging stations offer opportunities to create benefits that are greater than the sum of the parts. In addition, this strategy can work in a complementary manner with the urban growth boundaries strategy to reduce the risks from wildfires, protecting existing structures while ensuring that future growth is avoided at the urban-rural interface.

**Public Feedback:** The strategy was one of the most popular strategies with communities. In Pop-Up Outreach, it received the highest proportion of positive feedback out of all strategies, with 97 percent of commenters approving. Comments equally supported all four upgrades: water efficiency, energy efficiency, fire, and earthquake retrofits. There were also many thoughts about creative financing, with comments agreeing that the strategy should be offered as an incentive program or tax credit. When using the digital engagement tool, Mayor of Bayville, users had the choice to use disaster recovery financing, adopt the retrofit strategy, or to save their funds for another project. Users overwhelmingly chose this strategy, with 66 percent of the results. Out of 44 decisions that users could make, this strategy had the second highest level of support. At the December Policy Advisory Council meeting, one member recommended staff explore Berkeley's transfer tax incentive which is used to fund seismic retrofits at point of sale, which staff agrees is worth further considering as a revenue source.





PLAN BAY AREA 2050

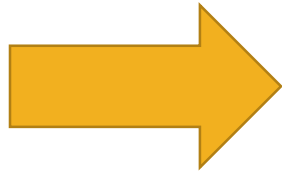
# *Draft Blueprint:* Proposed Strategies for the Environment Element

Dave Vautin & Rachael Hartofelis

Joint MTC Planning & ABAG Administrative Committee

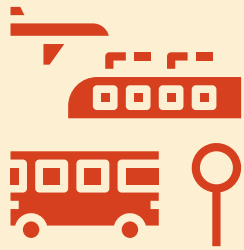
January 10, 2020





Similar to *Horizon*, *Plan Bay Area 2050* is integrating **four core topic areas**, as we work to create a long-range integrated regional vision for the next 30 years.

### *Cross-Cutting Issues*



Transportation



Housing

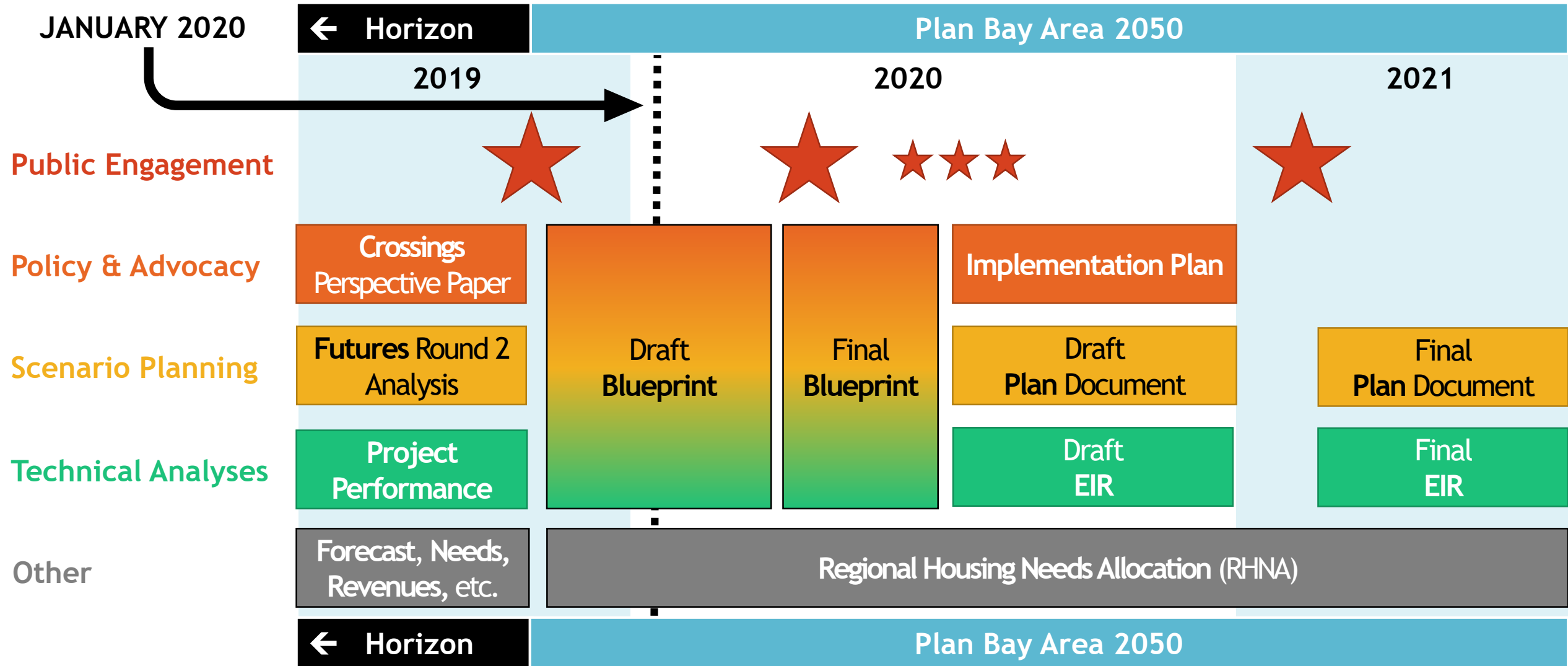


Environment



Economy

# Plan Bay Area 2050 Schedule



Focusing growth in Priority Development Areas (PDAs) has been central to past iterations of Plan Bay Area - **helping to reduce per-capita greenhouse gas emissions and minimize development at the intersection of the urban-rural interface, where wildfire risk is highest.**

While environmental goals have been critical in past iterations of the Plan, new challenges like sea level rise have also emerged. **For this reason, we are integrating a new Environment element in the Plan for the first time.**

The Draft Blueprint will integrate complementary strategies to achieve improved regional outcomes.



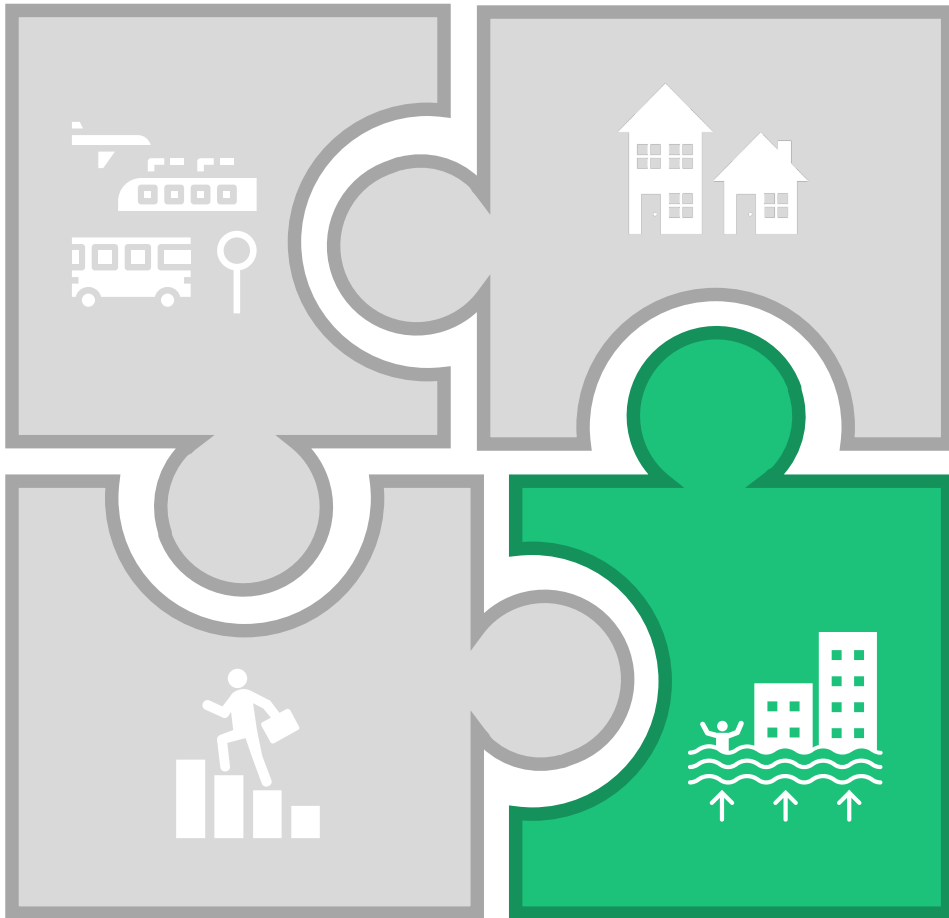
## Plan Bay Area 2050 Blueprint

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



# Plan Bay Area 2050 Blueprint: Environment Element

Today we will focus on the first critical component – the environment.



## Reduce Transportation GHG Emissions

1. Expand the Climate Initiatives Program

*Also: Achieve additional GHG reductions from Transportation, Housing, and Economy strategies*

## Conserve Agriculture Lands and Open Space

2. Keep Current Urban Growth Boundaries in Place

## Address Climate and Hazard Impacts

3. Adapt to Sea Level Rise
4. Modernize Existing Buildings with Seismic, Wildfire, Drought and Energy Retrofits

# The Role of “New Revenues”

Transportation



Housing



Economy



Environment



## Plan Bay Area 2050 Blueprint Basic

Includes available revenues from Needs & Revenue assessments, but does not include New Revenues from future regional measures



## Plan Bay Area 2050 Blueprint Plus

Includes available revenues from Needs & Revenue assessments + additional New Revenues 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 Preferred Alternative in 2020 or 2021.

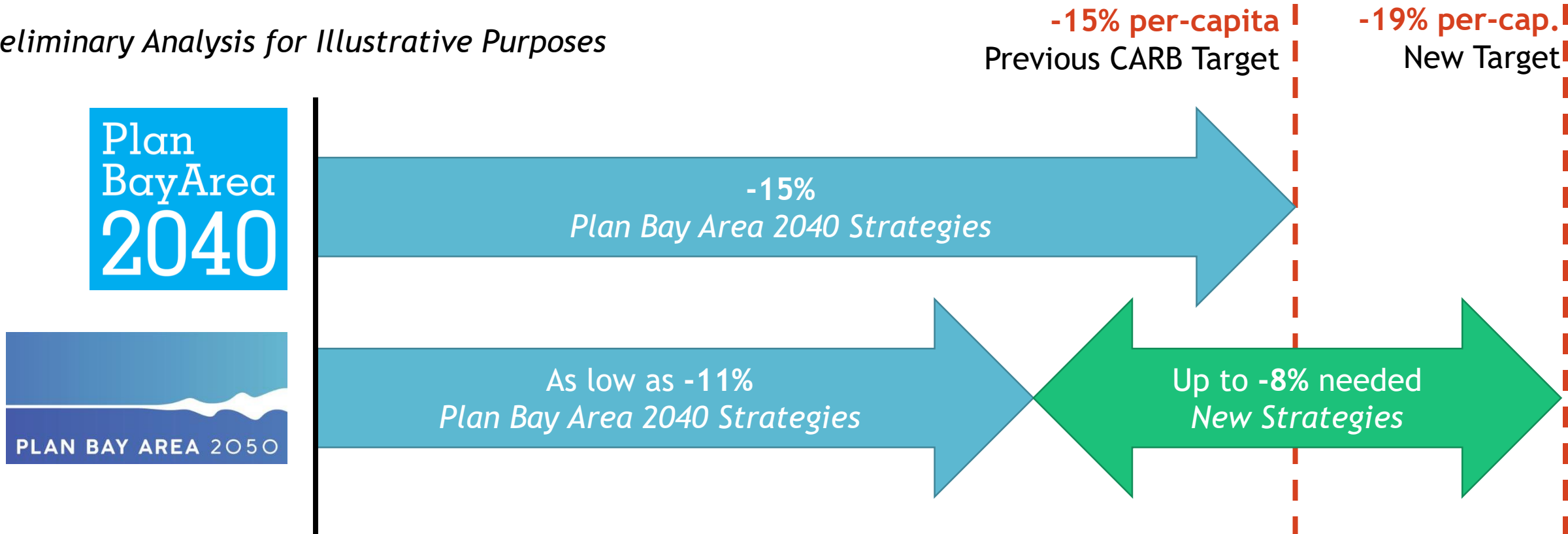
	Draft Blueprint <u>Basic</u>	Draft Blueprint <u>Plus</u>
	<i>Base set of strategies that can be funded with existing revenues.</i>	<i>Expanded set of strategies supported with the inclusion of new revenues.</i>
Expand the Climate Initiatives Program	<div>✓</div> <i>TBD based on GHG target gap<sup>1</sup></i>	<div>✓</div> <i>TBD based on GHG target gap<sup>1</sup></i>
Keep Current Urban Growth Boundaries in Place	<div>✓</div> <i>No cost</i>	<div>✓</div> <i>No cost</i>
Adapt to Sea Level Rise	<div>~</div> <i>\$2 billion<sup>2</sup></i>	<div>✓</div> <i>\$20 billion<sup>2</sup></i>
Modernize Existing Buildings with Seismic, Wildfire, Drought and Energy Retrofits	<div>~</div> <i>&lt;\$1 billion<sup>2</sup></i>	<div>✓</div> <i>\$20 billion<sup>2</sup></i>

<sup>1</sup> In Plan Bay Area 2040, the additional GHG reduction strategies needed to achieve the GHG target cost more than \$500 million.

<sup>2</sup> Based on draft Resilience Needs & Revenue Assessment released at the December Joint MTC Planning & ABAG Administrative Committee.

# Horizon Finding - Meeting or exceeding the Plan Bay Area 2050 19 percent per-capita reduction target for transportation-related GHG emissions will require bolder strategies.

*Preliminary Analysis for Illustrative Purposes*



*An Incremental Progress Assessment, a new CARB requirement, is currently underway; staff will provide further insight on the GHG gap challenge - anticipated in late January.*

# Expand the Climate Initiatives Program

## Blueprint Basic:

In Plan Bay Area 2040, a package of strategies helped the region achieve the GHG reduction target. These strategies make up MTC's Climate Program, which includes investments in transportation demand management (TDM) strategies and electric vehicle and charging incentive programs.

**\$TBD based on GHG gap**

## Blueprint Plus:

The Blueprint *Plus* will include many of the same strategies in the *Basic* version; however, if the additional strategies included in the Blueprint *Plus* reduce GHG emissions, this might be a rare example of where the *Plus* version is actually cheaper than the *Basic* version.

**\$TBD based on GHG gap**

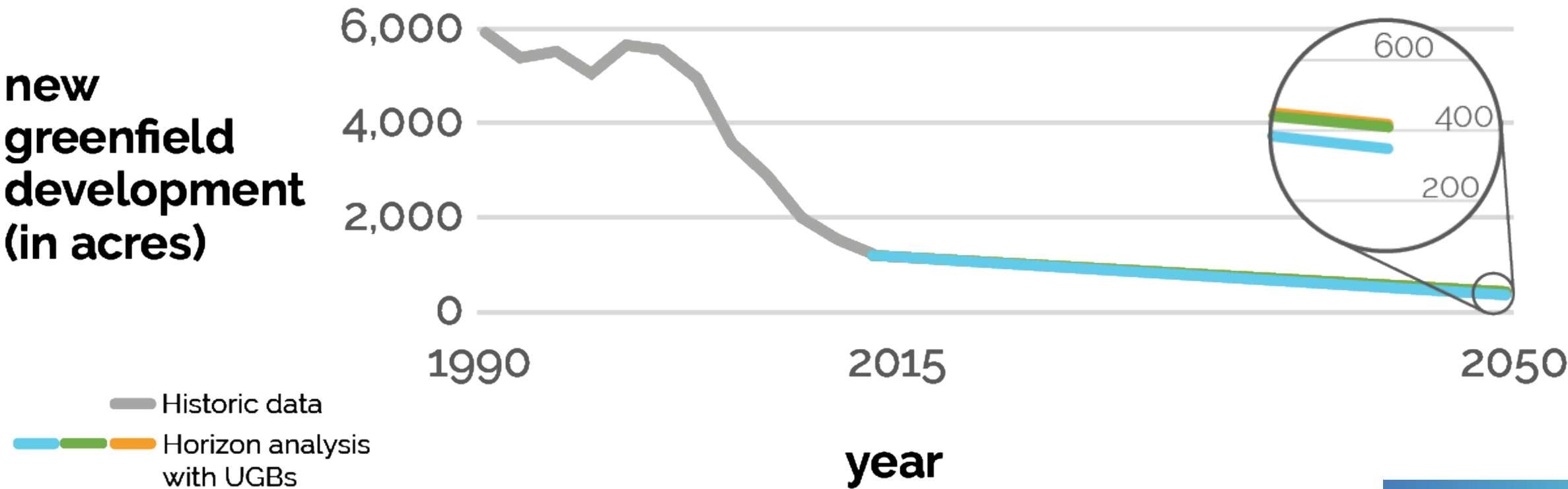
## Integrated Strategies Part of MTC's Climate Program

- Bikeshare
- Bike Infrastructure
- Carshare
- Commuter Benefits Ordinance
- Employer Shuttles
- Trip Caps
- Vanpool
- Regional EV Charger Network
- Feebate Program Implementation
- Vehicle Buyback Program
- Mobility-as-a-Service (*potential new strategy*)
- Electric TNC Requirement (*potential new strategy*)

- *MTC's Climate Program targets strategies that reduce GHG emissions, such as supporting regional vanpool programs, bikeshare service, electric vehicle deployment, trips caps, and employer benefit programs.*

# Horizon Finding - Past efforts to curb greenfield development from urbanization have been effective. Preserving existing urban growth boundaries should remain a key strategy.

Horizon Analysis - Acres of greenfield development annually - historic and projected





# Keep Urban Growth Boundaries

## Blueprint Basic:

Using urban growth boundaries, confine new development within areas of existing development or areas otherwise suitable for growth, as established by local jurisdictions.

No cost

## Blueprint Plus:

*Same as Blueprint Basic*

No cost

- *Over 93% of comments approved of restricting new development to within the urban growth boundary.*
- *"Maintaining urban growth boundaries is a bare minimum 'must have' and even this could be difficult." - Pop-up Comment*

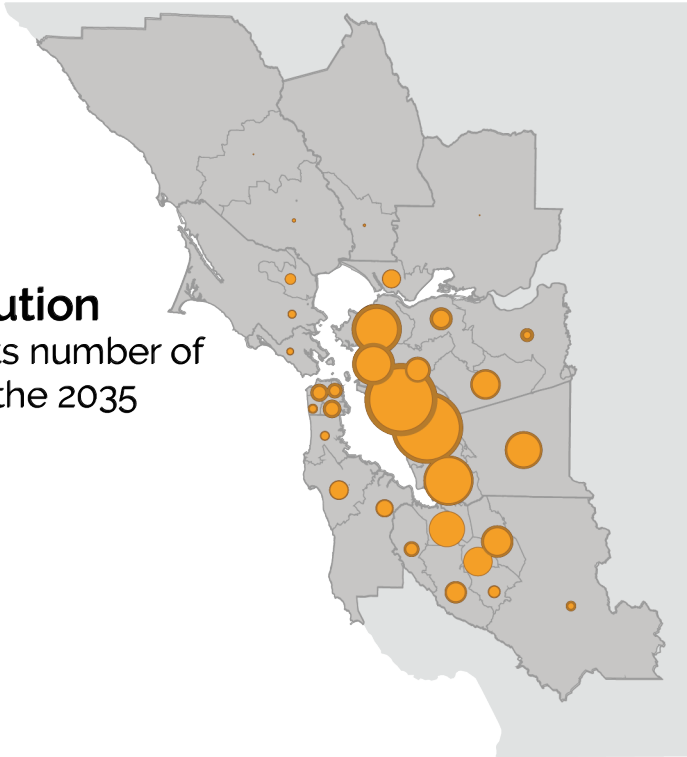
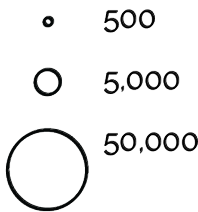


# Horizon Finding - Unmitigated climate and hazard impacts would result in significant damage; adaptation and hazard mitigation measures reduce impacts.

## Horizon Analysis - Earthquake Impacts

### Damage Distribution

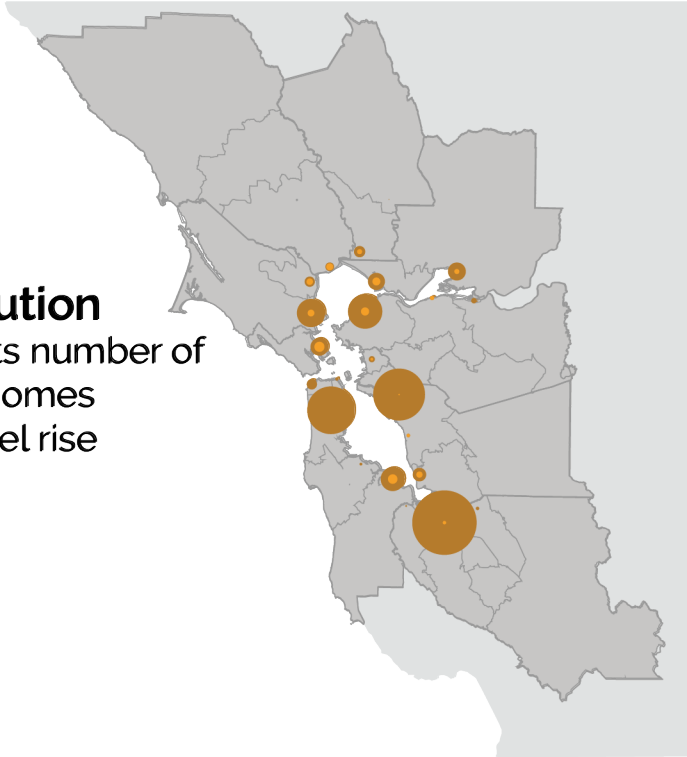
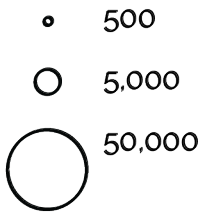
circle area represents number of damaged homes in the 2035 M7.0 earthquake



## Horizon Analysis - Sea Level Rise Impacts

### Damage Distribution

circle area represents number of existing and future homes damaged by sea level rise



*The results show findings from one Horizon Future, Back to the Future. The Futures Final Report has more information.*

# Adapt to Sea Level Rise

## Blueprint Basic:

With forecasted revenues, the region could protect portions its most vulnerable shoreline. Strategies would prioritize on areas of low costs and high benefits, such as for key infrastructure or growth areas.

**\$ 2 Billion**

## Blueprint Plus:

With new revenues, the region could more fully adapt to sea level rise. Most Bay Area communities and transportation facilities could be protected.

**\$20 Billion**

- *Over 90% of pop-up comments approved investing in sea level rise adaptation.*
- *“The best offense is a good defense. Investing in prevention is much better than retroactively trying to fix things.” - Mayor of Bayville Comment*

# Retrofit Existing Buildings

## Blueprint Basic:

Due to a lack of existing funding, the strategy would only entail a continuation of ad-hoc seismic, wildfire, water and energy upgrades. The strategy would have a very limited effect on the quality of existing Bay Area homes.

**\$ <1 Billion**

## Blueprint Plus:

With new revenues, pair ordinance adoption and retrofit incentives to bring existing buildings up to higher seismic, wildfire, water and energy. Offer 50% subsidies to offset the cost of multi- and single-family home retrofits.

**\$20 Billion**

- *This was one of the most popular strategies in the Mayor of Bayville game, and it had the strongest pop-up support (97%).*
- *“Offer incentives to homeowners in the form of tax credits to encourage more retrofits.” - Pop-up Comment*





The Draft Blueprint aims to package complementary strategies; the Environment strategies will be made stronger when paired together with Transportation, Housing, and Economy strategies.



- **Transportation** investments need to align with the sea level rise adaptation strategy, given that not all assets may be able to be protected without New Revenues.
- **Housing** preservation policies targeting affordability should align with existing building upgrades for health and safety, in order to minimize displacement risk.
- **Economic** strategies should consider how employers can assist in addressing commute-related GHG reductions, in part by encouraging growth in lower-VMT locations.

# What's Next?

## January 2020

Answer key environmental questions in advance of the February committee meeting.

- Are these the right strategies to include in the Environment element of the Plan Blueprint?
- How might we weave equity more substantially into the strategies?
- How might we fund these efforts?

## February 2020

Finalize the strategies to test in the Draft Blueprint.

- At the February committee meeting, staff will present the full package of strategies proposed for the Draft Blueprint *Basic* and Draft Blueprint *Plus*.

## Spring 2020

Share feedback on the Draft Blueprint results.

- Staff will present on the regional outcomes resulting from the Draft Blueprint *Basic* and Draft Blueprint *Plus* at committees and public workshops in spring 2020.
- Further refinements to all strategies can be made at this time in advance of the Final Blueprint.