



**DATE:** November 21, 2019

**TO:** Transportation Authority of Marin Board of Commissioners

**FROM:** Anne Richman, Executive Director *Anne Richman*  
Derek McGill, Planning Manager

**SUBJECT:** MTC's Plan Bay Area 2050 Update (Discussion), Agenda Item No. 7

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## RECOMMENDATION

N/A. This item is for discussion only.

## BACKGROUND

Every four years, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) are required to develop and adopt a Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS). The last RTP/SCS, known as Plan Bay Area 2040, was adopted in August of 2017. Immediately following the adoption of Plan Bay Area 2040, MTC staff began development of a scenario planning process, Horizon, and the update to the RTP/SCS known as Plan Bay Area 2050.

As the Congestion Management Agency for Marin County, TAM is required to coordinate with MTC on the development of the RTP/SCS and to submit projects on behalf of Marin County. In April 2019, the TAM Board approved an initial list of projects for consideration in Plan Bay Area 2050, included as **Attachment A**.

Since that time, MTC staff have been conducting numerous technical activities, including a project performance assessment and financial needs and revenues assessments. In addition, MTC has also solicited letters of interest from local jurisdictions for new or modified Priority Development Areas (PDAs), new or modified Priority Conservation Areas (PCAs) as well as a new pilot for Priority Production Area (PPAs) to support the economy of the region.

This staff report provides an overview of MTC's efforts to date. TAM staff intends to bring county revenue projections, revenue shortfalls, and a revised transportation project list to upcoming TAM Board Meetings starting in January 2020.

## DISCUSSION/ANALYSIS

### Overview of Horizon/Plan Bay Area 2050

The RTP/SCS process is required to meet specific state and federal requirements, however long-range planning often needs to consider a wide range of factors that have traditionally been outside of the regional planning process. To explore some of the challenges the Bay Area is facing from new technologies, political volatility, natural disasters and other external factors, MTC launched the Horizon effort to examine potential futures for the region. Elements of this process are being used to inform the discussion of Plan Bay Area 2050. Please note that Plan Bay Area 2050 must achieve a more ambitious climate mandate from the State.

### **Project Performance Assessment**

In April 2019, the TAM Board accepted an initial draft list of projects for consideration in Plan Bay Area 2050. MTC's primary goal for this exercise was to identify a universe of projects to be considered for inclusion into the Plan Bay Area 2050. In addition to the projects submitted by CMAs in spring, MTC has included projects submitted by the public as part of Horizons Transformative Projects through a public call for projects over the summer of 2018.

Since then, MTC has been conducting a project performance assessment and in early November 2019, MTC released draft performance results, assessing the pool of \$250M+ regional projects by:

- Benefit/cost assessments - comparing societal benefits against anticipated project costs under three scenarios developed for the Horizon effort.
- Equity Assessments - examining impacts of project level accessibility benefits in three future scenarios.
- Guiding principle assessment - evaluating projects based on specific focused criteria, flagging areas of concern.

Projects of interest to Marin County included in this assessment are highlighted in **Attachment B**. Many projects of interest to Marin County are still undergoing project performance assessment by MTC. TAM staff will return with the results once available.

### **Draft Financial Needs**

Plan Bay Area 2050 will span 30 years from fiscal years 2021 through 2050 and must meet federal and state requirements related to fiscal constraint. This requires the estimation of costs (discussed below) and available revenues (expected in January 2020) for the operation and preservation (capital maintenance) of the existing transportation system. MTC estimates the capital maintenance and operations costs of multiple transportation system elements in its financial needs assessment. The information presented in **Attachment C** is a preliminary draft estimate of the region's transportation operations and preservation costs over the lifespan of the Plan developed by MTC.

MTC maintains a "fix it first strategy" committing to maintaining the current transportation system before committing to modernization or expansion of the transportation system. Since the last RTP submittal process in 2015/16, new transportation revenue sources have been created, including the renewal of Marin County's ½-Cent Transportation Sales Tax under Measure AA, Regional Measure 3 (RM3) and Senate Bill 1 (SB1). These funding sources are expected to provide additional funding to maintain the system and for new projects. Eligibility of each funding source will be assessed by TAM staff when MTC's revenue projections become available in December 2019.

In addition to transportation needs, Plan Bay Area 2050 will also include a discussion on the needs around affordable housing, and resilience specifically related to earthquakes and sea level rise. This information is also included in Attachment C.

### **Regional Geographies Update**

In May 2019, MTC and ABAG Executive Board adopted the first major policy update to the Bay Area's Regional Growth Framework ("Framework") since its inception in 2007. The original Framework, used for both Plan Bay Area and Plan Bay Area 2040, sought to focus development in locally designated, transit-served Priority Development Areas (PDAs) while preserving natural lands via Priority Conservation Areas (PCAs). The Framework also sought to align these land use priorities with major regional transportation investments. Both Plan Bay Area and Plan Bay Area 2040 focused nearly 80 percent of the region's long-range housing need within PDAs.

In September 2019, local jurisdictions submitted Letters of Interest for 87 new priority areas – 34 PDAs, 16 PCAs, and 37 Priority Production Areas (PPAs), including two PCAs in Marin County. In addition to these new priority areas, local jurisdictions elected to modify the boundaries of 46 PDAs and 1 PCA, including the modification of the Unincorporated Highway 101 PDA in Marin County to remove Golden Gate National Recreation Area land from the PDA designation. TAM staff worked closely with the Marin County Community Development Agency and Marin Transit to meet updated PDA eligibility requirements in Marin County.

MTC is reporting that most transit-rich areas have not been prioritized for new housing and jobs, including less than 20% of transit rich areas in Marin County, where only 1 of 6 SMART stations and no ferry terminals are designated PDAs. Additionally, MTC analysis is showing that only 1% of high resource areas served by transit in Marin County are included in the Regional Growth Strategy. Based on this analysis, MTC is reporting that meeting greenhouse gas reduction goals and equity goals through this set of locally designated areas is likely insufficient and new areas will need to be considered.

### **FISCAL CONSIDERATION**

Plan Bay Area 2050 does not program, allocate or commit funding. However, transportation projects in the RTP are included in CEQA (California Environmental Quality Act) requirements for the region, allowing projects to become eligible for state and federal funding.

### **NEXT STEPS**

MTC is expected to complete the development of the revenue estimates in December 2019 that TAM will use to constrain the list of Marin County projects for Plan Bay Area 2050. Staff will present the revenue estimates and the updated project performance results once they are available, expected at the January 2020 Board Meeting. Staff plans to bring the revised, fiscally constrained county project list to the Board for review in February 2020. Staff will work closely with MTC to interpret the results of the project performance effort and develop regional priorities for inclusion into the Plan Bay Area 2050.

MTC is expected to continue discussion on the transportation blueprint of the plan, and TAM staff will report out on this effort over the coming months. Once the transportation element of the plan is drafted, the plan timeline is summarized as follows:

- In 2020, regional growth forecasts will be drafted by MTC/ABAG for local jurisdictions to review population and housing growth expected by 2050;
- MTC will then develop a preferred scenario and begin development of the Draft Plan Bay Area Report and environmental reports, and begin development of the Regional Housing Needs Assessment (RHNA);
- Approve the environmental reports and Plan Bay Area 2050 in mid-2021, and
- Adopt RHNA allocations in 2021.

### **ATTACHMENTS**

Attachment A: TAM Board Initial Project List – Approved April 2019  
Attachment B: Initial Results of MTC’s project performance Assessment  
Attachment C: MTC Preliminary Draft Needs Assessment  
Attachment D: TAM Board Presentation

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**TAM DRAFT RTP Project List – April 25, 2019**

<b>Programmatic Category</b>	<b>Projects in Category (not exclusive)</b>
Minor Highway Improvements	Highway Interchange Improvements Bellam Boulevard Improvements Bike/Ped Crossings Auxiliary Lanes
Minor Roadway Improvements	Local Road Rehab Projects Sea Level Rise Bridge Replacement HSIP Projects Sir Francis Drake Boulevard 3rd Street 2 <sup>nd</sup> Street East Blithedale Ave
Minor Transit Improvements	Bus Stop Shelter Replacements Access to transit Fleet Expansion/Facilities Manzanita Park and Ride Other Park and Ride Improvements Transit Service Expansion
New Bicycle & Pedestrian Facilities	North South Greenway Projects SMART Multi Use Path Cross Marin Bikeway 2nd to Anderson Path Grand Avenue East Francisco Boulevard Central Marin Gap Closure Bay Trail Segments Approaches to the RSR Bridge Safe Pathways Projects Small Safety Projects Safe Routes to Transit Projects
Management Systems	Ramp Metering Phase 1 & 2 Innovative Technology
Safety and Security	Safe Routes to Schools Program Crossing Guard Program
Travel Demand Management	TDM Program Alt Fuels Program Traveler Information Programs
Intersection Improvements	Anderson at Drake The Hub
Multimodal Streetscape Improvements	Local Road Improvements

		Project Sponsor	Est. Construction Date	Est. Operation Date	Project Cost
<b>Non-Exempt Projects</b>					
<i>Transit Capacity Increasing</i>					
SMART Larkspur Extension	Project Completed 2019		2019	2019	\$ 40
Downtown Novato SMART Station	Fully Funded		2019	2019	\$ 5
San Rafael Transit Center Relocation		GGBHTD	2024	2026	\$ 45
Marin Transit O&M Facility		MT	2021	2024	\$ 31
Larkspur Ferry Parking Garage		GGBHTD	2024	2026	\$ 64
Bus On Shoulder on Highway 101		TAM	2027	2029	\$ 50
<i>Subtotal</i>					\$ 190
<i>Roadway Capacity Increasing</i>					
RSR Eastbound Travel Lane	-		-	2017	\$ 74
Marin Sonoma Narrows		TAM	2020	2023	\$ 151
US 101/I-580 Direct Connector		TAM	2025	2026	\$ 147
RSR Westbound Joint Use Lane*		TAM	2022	2023	\$ 160
Resilient State Route 37		TAM	2030	2036	\$ 1,000
Novato Boulevard**		Novato	2021	2023	\$ 15
<i>Subtotal</i>					\$ 1,473
<b>TOTAL</b>					<b>\$ 1,664</b>

*MTC Target Budget* 1,174

\* Funding from Toll O&M

\*\* The addition of a roadway lane requires this project to be listed as a non-exempt project.

Additional Notes – Projects in ~~Strikethrough text~~ indicate fully funded projects or completed projects since the last RTP submittal process. MTC target budget does not provide a forecast for revenue sources and will be revised once revenue forecasts are developed.



## Horizon/Plan Bay Area 2050: Draft Project Performance Findings

### Attachment A: Overall Summary Table

#### Benefit-Cost Ratios and Equity Scores across Three Futures, and Guiding Principle Flags

Note 1: Total number of rows: 93; 81 projects from public agencies, 12 projects from public/NGOs that were jury finalists from the Transformative Projects process

Note 2: Findings are not shown for 4 agency projects and 12 transformative projects due to modeling or cost estimation work underway.

Some projects are marked with an asterisk (\*) to indicate that a cost review is ongoing and that the findings may be revised by end of 2019 with updated costs.

Some projects are marked with (^) to indicate that findings may be updated, in order to provide additional time for feedback from Sonoma County agencies directly affected by recent wildfire events. (see notes on methodology at the bottom of the page)

Project Type	Project ID	Row ID	Project	Project Source	Lifecycle Cost	Guiding Principle Flags	Benefit-Cost Ratio			Equity Score		
							Rising Tides Falling Fortunes	Clean and Green	Back to the Future	Rising Tides Falling Fortunes	Clean and Green	Back to the Future
Build Core Rail	1004	1	New San Francisco-Oakland Transbay Rail Crossing - Commuter Rail (Crossing 5)	Crossings Study	\$46.1B	2	0.7	2	2	Even	Even	Even
	1007	2	New San Francisco-Oakland Transbay Rail Crossing - BART + Commuter Rail (Crossing 7)	Crossings Study	\$83.5B	2	0.6	1	1	Even	Even	Even
	1002	3	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 3: Mission St)	Crossings Study	\$36.2B	0	0.6	1	1	Even	Even	Even
	1003	4	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 4: New Markets)	Crossings Study	\$37.4B	0	0.6	1	1	Even	Even	Even
	2300	5	Caltrain Downtown Extension	TJPA	\$4.8B	0	<0.5	0.7	0.6	Challenges	Challenges	Challenges
	2205	6	BART to Silicon Valley (Phase 2)	VTA	\$6.0B	0	<0.5	<0.5	0.6	Advances	Advances	Even
	2310	7	Megaregional Rail Network + Resilience Project (Caltrain, ACE, Valley Link, Dumbarton, Cap Cor)	City of San Jose	\$54.1B	2	<0.5	0.5	<0.5	Challenges	Challenges	Challenges
	2306	8	Dumbarton Rail (Redwood City to Union City)	SamTrans + CCAAG	\$3.9B	0	<0.5	<0.5	0.5	Even	Even	Challenges
	2208	9	BART Gap Closure (Millbrae to Silicon Valley)	VTA	\$40.4B	0	<0.5	<0.5	<0.5	Advances	Advances	Even
	6002	10	SMART to Richmond via New Richmond-San Rafael Bridge *	Public/NGO Submission		2	cost estimation and modeling in progress			modeling in progress		
Extend Rail Network - High Cost	2308	11	Valley Link (Dublin to San Joaquin Valley)	TVSJVRRA	\$3.0B	0	<0.5	1	1	Even	Even	Even
	2206	12	BART Extension from Diridon to Cupertino	VTA	\$12.1B	0	<0.5	<0.5	<0.5	Even	Advances	Even
	2203	13	BART to Hercules & I-80 Bus from Vallejo to Oakland	CCTA	\$5.8B	0	<0.5	<0.5	<0.5	Challenges	Challenges	Challenges
	2207	14	BART Extension from Diridon to Gilroy (replacing existing Caltrain)	VTA	\$17.7B	1	<0.5	<0.5	<0.5	Even	Advances	Even
	2204	15	BART on I-680 (Walnut Creek to West Dublin/Pleasanton)	Caltrans	\$11.0B	0	<0.5	<0.5	<0.5	Even	Even	Even
	2207	16	ACE Service Expansion and Capital Improvements (to San Joaquin Valley)	ACE Rail		0	modeling in progress			modeling in progress		
	2309	17	Altamont Vision Phase 1 (to San Joaquin Valley)	ACE Rail		0	modeling in progress			modeling in progress		
Extend Rail Network - Low Cost	2305	18	SMART to Solano (Novato to Suisun City, without sea level rise protections) ^	SMART	\$1.6B	0	<0.5	<0.5	<0.5	Even	Challenges	Challenges
	2202	19	BART DMU Extension to Brentwood	CCTA	\$0.6B	0	<0.5	0.5	<0.5	Advances	Challenges	Challenges
	2304	20	SMART Extension to Cloverdale ^	SMART	\$0.5B	0	<0.5	<0.5	<0.5	Challenges	Even	Challenges
Optimize Existing Transit Network - High Cost	2201	21	BART Core Capacity	BART	\$4.5B	0	1	2	2	Even	Even	Even
	2303	22	Caltrain Full Electrification and Blended System: High Growth	VTA, City of San Jose	\$36.9B	2	<0.5	1	0.5	Challenges	Even	Challenges
	2302	23	Caltrain Full Electrification and Blended System: Moderate Growth	Caltrain + HSR	\$24.6B	2	<0.5	0.9	0.5	Challenges	Even	Challenges
	2001	24	AC Transit Local Rapid Network: Capital Improvements + Service Increase	AC Transit	\$8.4B	0	<0.5	0.5	0.6	Advances	Advances	Even
	2005	25	Alameda County BRT Network + Connected Vehicle Corridors	ACTC	\$4.0B	0	<0.5	<0.5	0.6	Advances	Advances	Even
	2410	26	VTA LRT Systemwide Grade Separation and Full Automation	City of San Jose	\$14.8B	1	<0.5	<0.5	0.7	Advances	Advances	Even
	2407	27	Muni Metro Southwest M-Line Subway	SFCTA	\$5.6B	0	<0.5	<0.5	<0.5	Advances	Advances	Challenges
	2409	28	VTA LRT Systemwide Grade Separation	City of San Jose	\$11.6B	0	<0.5	<0.5	0.5	Advances	Advances	Even
	2411	29	VTA LRT Systemwide Grade Separation, Network Expansion, and Full Automation	City of San Jose and VTA	\$44.2B	0	<0.5	<0.5	<0.5	Advances	Advances	Even
	2301	30	Caltrain Full Electrification and Blended System: Base Growth	Caltrain + HSR	\$20.9B	2	<0.5	<0.5	<0.5	Even	Even	Even
	2401	31	North San Jose LRT Subway	VTA	\$4.9B	0	<0.5	<0.5	0.5	Even	Advances	Even

**Lifecycle Costs:** This includes initial capital cost, annual O&M costs, rehabilitation and replacements costs, and a residual value of the investment at the end of the analysis period, calculated using discounted present value methodology. Refer to Attachment D for details, and for costs as reviewed with sponsors.

**Guiding Principle Flags:** Flags, based on qualitative analysis, are intended to draw attention to a direct adverse impact a project may have that may not be captured as part of other assessments. Refer to Attachment C for details.

**Benefit-Cost Ratio:** All project impacts are measured against a uniform base transportation and land use network in each future, except Resilience projects, which are measured against a baseline where that asset is out of service (hence n/a in some futures). Costs and Benefits to determine the ratio are detailed in Attachment D and E.

For inter-regional projects, since we are only able to model Bay Area benefits, we multiplied the benefits by a factor to reflect the ratio of expected ridership from outside the region. Valley Link benefit multiplier: 3.3; Caltrain/HSR benefit multiplier: 1.3 (the HSR multiplier is applied in Clean and Green only, the future where HSR is completely built out).

**Equity Score:**

"Advances" indicates that the project may benefit lower income individuals (below regional median income) more than higher income individuals.

"Challenges" indicates that project benefits skew towards higher income individuals.

"Even" indicates even distribution of benefits for all income groups.

**Note on Bicycle Projects:** We are not able to sufficiently model improvements to individual bicycle facilities using Travel Model 1.5 (except Bay Bridge West Span since this opens up a connection); Travel Model 2.0 (under development) may allow more advanced analysis in the future. As an interim solution, we modelled a single "Enhanced Regionwide Bike Infrastructure" (Project ID 6006), supported by off-model assertions based on research literature review. This project does not consider any specific improvements, but instead provides perspective on the benefits of a regionwide bike infrastructure investment (e.g. shared streets, trails, superhighways) on our transportation system.



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							Rising Tides Falling Fortunes	Clean and Green	Back to the Future	Rising Tides Falling Fortunes	Clean and Green	Back to the Future
Optimize Existing Transit Network - Low Cost	3001	32	Treasure Island Tolling and Mobility Program (Muni and AC Transit, Free Island Shuttles, Ferry)	SF	\$0.8B	1	8	7	>10	Challenges	Challenges	Challenges
	2209	33	Irvington BART Infill Station *	ACTC	\$0.2B	0	1	1	9	Even	Even	Even
	3002	34	Downtown San Francisco Congestion Pricing	SF	\$0.3B	1	2	3	4	Challenges	Challenges	Challenges
	2007	35	San Francisco Southeast Waterfront Transit Improvements *	SF	\$0.6B	0	2	3	4	Even	Even	Even
	2100	36	San Pablo BRT	AC Transit	\$0.5B	0	1	3	4	Advances	Advances	Even
	2008	37	Alameda Point Transit Network Improvements *	ACTC	\$0.5B	0	0.7	3	4	Even	Even	Even
	2000	38	AC Transit Local Network: Service Increase	AC Transit	\$2.6B	0	1	2	2	Advances	Advances	Even
	2101	39	Geary BRT (Phase 2)	SF	\$0.6B	0	1	2	3	Even	Even	Challenges
	2105	40	Alameda County E14th St/Mission and Fremont Blvd Multimodal Corridor *	ACTC	\$0.5B	0	1	2	2	Advances	Advances	Even
	2103	41	SamTrans El Camino Real BRT: Capital and Service Improvements *	CCAG	\$0.4B	0	0.7	2	1	Advances	Even	Challenges
	2003	42	Muni Forward: Capital Improvements + Service Increase	SF	\$2.9B	0	0.7	2	1	Even	Even	Even
	2004	43	Sonoma Countywide Bus: Service Increase ^	SCTA	\$0.9B	0	<0.5	<0.5	1	Advances	Even	Even
	2400	44	Downtown San Jose LRT Subway	VTA	\$1.9B	0	<0.5	<0.5	1	Even	Even	Even
	6100	45	Integrated Transit Fare System *	Public/NGO Submission		0	cost estimation and modeling in progress			modeling in progress		
	6101	46	Free Transit *	Public/NGO Submission		1	cost estimation and modeling in progress			modeling in progress		
Build Local Transit	4000	47	Oakland/Alameda Gondola Network	City of Oakland	\$1.1B	1	0.7	<0.5	2	Even	Advances	Even
	2403	48	Vasona LRT Extension (Phase 2)	VTA	\$0.3B	0	0.7	<0.5	1	Advances	Advances	Even
	4001	49	Mountain View AV Network (Free Fare, Subsidies from Companies)	City of Mountain View	\$1.4B	1	<0.5	0.9	1	Advances	Advances	Advances
	2412	50	SR-85 LRT (Mountain View to US101 interchange)	City of Cupertino	\$3.7B	0	<0.5	0.7	0.6	Even	Challenges	Even
	5003	51	I-680 Corridor Improvements (BRT, Express Bus, Shared AVs, Gondolas)	CCTA	\$4.6B	0	<0.5	0.5	0.6	Even	Even	Even
	2408	52	Muni Metro T-Third Extension to South San Francisco	City of South San Francisco	\$1.8B	0	<0.5	<0.5	1	Challenges	Challenges	Even
	4002	53	Contra Costa Autonomous Shuttle Program	CCTA	\$3.4B	0	<0.5	<0.5	<0.5	Advances	Even	Challenges
	4003	54	Cupertino-Mountain View-San Jose Elevated Maglev Rail Loop	City of Cupertino	\$8.1B	1	<0.5	<0.5	<0.5	Challenges	Challenges	Challenges
	2402	55	San Jose Airport People Mover	VTA	\$1.4B	0	<0.5	<0.5	<0.5	Even	Challenges	Even
Enhance Alternate Modes	2600	56	WETA Ferry Service Frequency Increase	WETA	\$0.4B	0	2	6	3	Challenges	Even	Even
	6006	57	Enhanced Regionwide Bike Infrastructure	MTC/ABAG	\$12.6B	0	1	3	3	Advances	Advances	Advances
	2601	58	WETA Ferry Network Expansion (Berkeley, Alameda Pt, Redwood City, Mission Bay, Treasure Islan..)	WETA	\$1.0B	0	1	2	2	Even	Even	Even
	2700	59	Bay Bridge West Span Bike Path	MTC/ABAG	\$0.8B	0	<0.5	1	0.5	Even	Challenges	Challenges
	4004	60	Regional Hovercraft Network *	CCAG		0	modeling in progress			modeling in progress		
	6004	61	Bay Trail Completion	Public/NGO Submission		0	cannot be modeled			cannot be modeled		
6005	62	Regional Bicycle Superhighway Network	Public/NGO Submission		0	cannot be modeled			cannot be modeled			

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Build Road Capacity - High Cost	1001	63	Southern Crossing Bridge + New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 6)	Crossings Study	\$47.1B	1	0.6	1	2	Even	Even	Even
	3000	64	Regional Express Lanes (MTC + VTA + ACTC + US-101)	MTC/ABAG	\$12.1B	1	0.6	in progress	2	Challenges	in progress	Challenges
	1005	65	Mid-Bay Bridge (I-238 to I-380) (Crossing 2)	Crossings Study	\$19.9B	2	<0.5	<0.5	1	Even	Challenges	Even
	1006	66	San Mateo Bridge Reconstruction and Widening (Crossing 1)	Crossings Study	\$15.7B	1	<0.5	<0.5	<0.5	Advances	Challenges	Even
Build Road Capacity - Low Cost	3103	67	SR-4 Widening (Brentwood to Discovery Bay)	CCTA	\$0.4B	1	<0.5	<0.5	6	Advances	Even	Challenges
	3101	68	I-680/SR-4 Interchange Improvements (Direct/HOV Connectors, Ramp Widening, Auxiliary Lanes)	CCTA	\$0.4B	1	<0.5	2	3	Even	Challenges	Even
	3110	69	Union City-Fremont East-West Connector *	ACTC	\$0.4B	1	0.7	1	3	Even	Even	Even
	3102	70	SR-4 Operational Improvements	CCTA	\$0.5B	1	<0.5	1	2	Challenges	Challenges	Even
	3104	71	I-80/I-680/SR-12 Interchange + Widening (Phases 2B-7)	STA	\$0.7B	2	<0.5	1	1	Challenges	Even	Even
	3106	72	SR-152 Realignment and Tolling	VTA	\$1.9B	2	2	<0.5	<0.5	Even	Challenges	Even
	3109	73	SR-262 Widening and Interchange Improvements *	ACTC	\$1.0B	2	<0.5	<0.5	1	Even	Even	Challenges
	3100	74	SR-239 Widening (Brentwood to Tracy including airport connector)	CCTA	\$2.4B	1	<0.5	<0.5	0.9	Challenges	Advances	Challenges
	3105	75	SR-12 Widening (I-80 to Rio Vista)	STA	\$2.5B	2	<0.5	<0.5	0.7	Even	Challenges	Even
	Optimize Existing Freeway Network	5000	76	Bay Area Forward (Phase 1: Freeway Ramp and Arterial Components Only)	MTC/ABAG	\$0.6B	1	7	in progress	6	Challenges	in progress
3003		77	San Francisco Arterial HOV and Freeway HOT Lanes	SF	\$1.3B	0	0.5	0.9	3	Challenges	Challenges	Even
2002		78	AC Transit Transbay Network: Capital Improvements + Service Increase	AC Transit	\$6.5B	0	0.5	0.8	1	Challenges	Challenges	Challenges
6001		79	Bus Rapid Transit (BRT) on All Bridges *	Public/NGO Submission		0	cost estimation and modeling in progress			modeling in progress		
6003		80	I-80 Corridor Overhaul *	Public/NGO Submission		1	cost estimation and modeling in progress			modeling in progress		
6020		81	Regional Express Bus Network + Optimized Express Lane Network *	Public/NGO Submission		1	cost estimation and modeling in progress			modeling in progress		
6102		82	Higher-Occupancy HOV Lanes with VMT Fee for SOV *	Public/NGO Submission		1	cost estimation and modeling in progress			modeling in progress		
6103		83	Demand-Based Tolls on All Highways *	Public/NGO Submission		1	cost estimation and modeling in progress			modeling in progress		
6104		84	Reversible Lanes on Congested Bridges and Freeways *	Public/NGO Submission		1	cost estimation and modeling in progress			modeling in progress		
6105		85	Freight Delivery Timing Regulation	Public/NGO Submission		1	cannot be modeled			cannot be modeled		
Resilience	7006	86	I-880 Resilience Project (South Fremont)	MTC/ABAG/BCDC	\$0.1B	0	>10	n/a	n/a	Challenges	n/a	n/a
	7002	87	I-580/US-101/SMART Marin Resilience Project	MTC/ABAG/BCDC	\$0.2B	0	>10	>10	>10	Challenges	Challenges	Challenges
	7004	88	SR-84 Resilience Project (Dumbarton Bridge, 101 interchange)	MTC/ABAG/BCDC	\$0.2B	0	>10	n/a	n/a	Challenges	n/a	n/a
	7003	89	US-101 Peninsula Resilience Project (San Antonio Rd, Poplar Ave, Millbrae Ave)	MTC/ABAG/BCDC	\$0.2B	0	>10	n/a	n/a	Challenges	n/a	n/a
	7005	90	SR-237 Resilience Project (Alviso)	MTC/ABAG/BCDC	\$0.2B	0	>10	n/a	>10	Even	n/a	Even
	7001	91	VTA LRT Resilience Project (Tasman West)	MTC/ABAG/BCDC	\$0.2B	0	5	5	8	Even	Advances	Even
	3200	92	SR-37 Long Term Project (Tolling, Elevation, Interchanges, Widening, Express Bus)	MTC/ABAG/North Bay Cou..	\$5.4B	2	0.7	0.5	<0.5	Challenges	Challenges	Challenges
	7000	93	BART Caldecott Tunnel Resilience Project	BART		0	modeling in progress			modeling in progress		

**Lifecycle Costs:** This includes initial capital cost, annual O&M costs, rehabilitation and replacements costs, and a residual value of the investment at the end of the analysis period, calculated using discounted present value methodology. Refer to Attachment D for details, and for costs as reviewed with sponsors.

**Guiding Principle Flags:** Flags, based on qualitative analysis, are intended to draw attention to a direct adverse impact a project may have that may not be captured as part of other assessments. Refer to Attachment C for details.

**Benefit-Cost Ratio:** All project impacts are measured against a uniform base transportation and land use network in each future, except Resilience projects, which are measured against a baseline where that asset is out of service (hence n/a in some futures). Costs and Benefits to determine the ratio are detailed in Attachment D and E.

For inter-regional projects, since we are only able to model Bay Area benefits, we multiplied the benefits by a factor to reflect the ratio of expected ridership from outside the region. Valley Link benefit multiplier: 3.3; Caltrain/HSR benefit multiplier: 1.3 (the HSR multiplier is applied in Clean and Green only, the future where HSR is completely built out).

**Equity Score:**

"Advances" indicates that the project may benefit lower income individuals (below regional median income) more than higher income individuals.

"Challenges" indicates that project benefits skew towards higher income individuals.

"Even" indicates even distribution of benefits for all income groups.

**Note on Bicycle Projects:** We are not able to sufficiently model improvements to individual bicycle facilities using Travel Model 1.5 (except Bay Bridge West Span since this opens up a connection); Travel Model 2.0 (under development) may allow more advanced analysis in the future. As an interim solution, we modelled a single "Enhanced Regionwide Bike Infrastructure" (Project ID 6006), supported by off-model assertions based on research literature review. This project does not consider any specific improvements, but instead provides perspective on the benefits of a regionwide bike infrastructure investment (e.g. shared streets, trails, superhighways) on our transportation system.

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**PBA 2050 Preliminary Draft Needs Assessment**

This page consists of excerpts from MTC’s Draft Needs Assessment for PBA 2050. All numbers on this page are drafts, prepared by MTC Staff. A full report is available here:

<http://mtc.legistar.com/gateway.aspx?M=F&ID=ef309d92-255d-4bf8-9498-f027bb27cba7.pdf>

**Regional Transportation Needs Estimates**

*Transportation Operation and System Preservation Needs (in millions of \$YOE)*

<b>Mode</b>	<b>State of Good Repair</b>	<b>Maintain Conditions</b>
Local Streets and Roads (including Bike/ped Infrastructure)	68,395	61,859
State Highways	N/A	24,427
Local Bridges	N/A	2,554
Regional Bridge	N/A	19,415
Transit Capital	84,561	59,385
Transit Operating	217,819	217,819

**Regional Affordable Housing Needs Estimates**

*Household Growth Forecast by Income Category for Clean and Green (Horizon)*

<b>Income Ranges</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>	<b>2050</b>
<b>Low (Q1)</b>	<b>766,400</b>	<b>800,400</b>	<b>836,000</b>	<b>895,600</b>	<b>857,900</b>	<b>844,600</b>	<b>836,600</b>
Moderate-Low (Q2)	672,500	683,600	693,600	715,200	686,900	675,900	667,200
Moderate-High (Q3)	654,200	701,700	746,300	756,500	868,000	960,400	1,042,800
High (Q4)	843,200	922,400	996,900	1,020,600	1,183,100	1,345,000	1,488,800
<b>Total</b>	<b>2,936,300</b>	<b>3,108,200</b>	<b>3,272,800</b>	<b>3,387,900</b>	<b>3,595,900</b>	<b>3,826,000</b>	<b>4,035,400</b>

While there is no good data available on the total number of deed-restricted subsidized units in the Bay Area, estimates from NPH/CHPC put the number around 100,000 units. Additional takeaways from Table 2 include:

- Of the 766,00 low-income households, 100,000 currently live in affordable units.
- The remaining 666,000 households, per the methodology described above, constitute the existing shortfall.
- On an annualized basis, this would amount to around 22,200 new units per year between 2020 and 2050.

For this analysis, the housing need for lower-income households is therefore determined to be approximately 24,500 units per year. With an inflation rate of 2.2 percent and an anticipated per-unit subsidy of \$450,000 (in today’s dollars) as developed in CASA, the estimated affordable housing needs would total **\$473 billion** through the year 2050 (in year of expenditure dollars).

**Regional Resilience Needs Assessment**

*Earthquake Need for Residential Buildings (in millions of \$YOE)*

<b>Vulnerability</b>	<b>Number of Units<sup>4</sup></b>	<b>Units Built Annually<sup>5</sup></b>	<b>Inflation</b>	<b>Unit Cost<sup>6</sup></b>	<b>Subtotal<sup>7</sup></b>
Cripple Wall (Single Family)	185	12	2.2%	\$12,000	\$3,003
ROG/HOG (Single Family) <sup>8</sup>	45	3	2.2%	\$25,000	\$1,530
Cripple Wall (Duplex)	31	6	2.2%	\$12,000	\$1,526
ROG/HOG (Duplex)	16	3	2.2%	\$30,000	\$1,984
Soft Story (5+ units)	24	21	2.2%	\$20,000	\$8,527
<b>Total</b>	<b>301</b>	<b>45</b>			<b>\$16,570</b>

4 Regional estimates by UrbanSim scan; shown in thousands.

5 It is assumed that this project may take approximately 15 years, leading to projected costs through 2035. Shown in thousands.

6 Costs derived from SME guidance.

7 Rounded to the nearest million.

8 Room over Garage (ROH); House over Garage (HOG).

**County Local Streets and Roads Needs Estimates**

*Local Streets, Roads, and Bicycle/Pedestrian infrastructure — By County (in millions of \$YOE)*

<b>County</b>	<b>Maintain Conditions</b>	<b>State of Good Repair</b>
Alameda	7,940	8,977
Contra Costa	6,101	6,878
Marin	1,374	1,676
Napa	871	1,290
San Francisco	5,189	5,759
San Mateo	3,824	4,220
Santa Clara	10,186	11,290
Solano	2,838	3,351
Sonoma	3,028	4,446
Total	41,351	47,886

**Marin County Transit Needs Assessment**

*Transit Capital and Operating Needs Projections – By Operator (in millions of \$YOE)*

<b>Operator</b>	<b>Transit Capital Needs - SGR</b>	<b>Transit Capital Needs - Maintain Current Conditions</b>	<b>Transit Operating Needs</b>
Golden Gate Transit	3,497	1,786	3,606
Marin Transit	328	250	1,472
SMART	726	601	2,169



Item 7

Attachment D

# MTC Horizon & Plan Bay Area 2050 Update

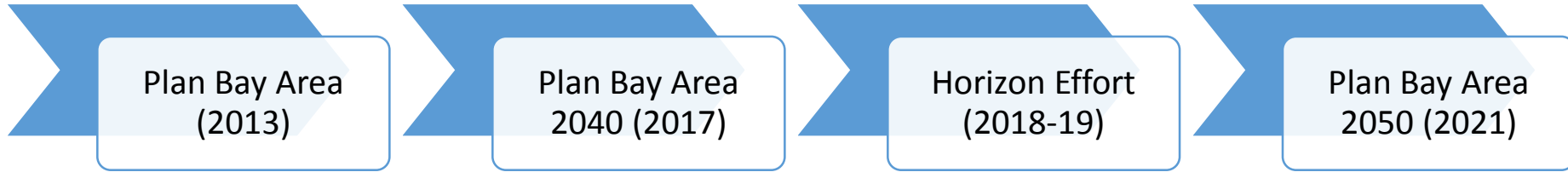
TAM Board of Commissioners  
November 21, 2019



# Plan Bay Area Background

- Regional Transportation Planning is a Federal and State Mandated Process
- In 2008, SB 375 Integrated Transportation & Land Use planning to meet GHG reduction targets – Sustainable Community Strategy (RTP/SCS):
  - Show how region meets GHG goals
  - Show how the region will house its population
- Allows Transportation Projects to Meet Air Quality Requirements, a condition of Regional, State and Federal Funding

# Plan Bay Area 2050



- Sets Performance Targets/Goals
- Forecasts Future Conditions
- Creates a Regional Growth Strategy
- Creates an Investment Strategy
- Assesses Performance

# Horizon Future Scenarios

## 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?



# Horizon Guiding Principles



## 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.



# Horizon/Plan Bay Area Projects


- Public submitted projects (2018)
  - 500 Projects Submitted
  - 12 Finalists selected
- TAM Submitted Projects in April 2019
- Only Projects \$250M+ were assessed for Project Performance



Optimized Express Lane Network + Regional Express Bus Network




Bus Rapid Transit (BRT) on All Bridges



SMART to Richmond via New Richmond-San Rafael Bridge



I-80 Corridor Overhaul



Regional Bicycle Superhighway Network



Bay Trail Completion




Integrated Transit Fare System



Free Transit



Higher-Occupancy HOV Lanes



Demand-Based Tolls on All Highways



Reversible Lanes on Congested Bridges and Freeways



Freight Delivery Timing Regulation

# Project Performance Assessment

## How Were Projects Evaluated?



### Benefit-Cost Assessment (*x 3 Futures*): is the project cost-effective & resilient?

If benefit-cost ratio in a given Future is greater than 1, then benefits exceed costs.

- List of benefits and costs provided on following slide



### Equity Assessment (*x 3 Futures*): is the project advancing equity?

If greater than 60% of project access benefits benefit lower-income households, then it advances equity.

- Quantitative assessment: reflected in equity score
- Geographic assessment: showcased as secondary legacy assessment (*similar to Plan Bay Area 2040*)



### Guiding Principles Assessment: is the project aligned with Plan Bay Area 2050's vision?

If no Guiding Principles "flags" are identified, then it is generally aligned with the Guiding Principles.






- Qualitative assessment based on the five Guiding Principles:
  - Affordable, Connected, Diverse, Healthy, Vibrant

# Benefit Cost Ratio

## Benefits

### Accessibility Benefits

-  Travel time - in vehicle
-  Travel time - out of vehicle
-  Vehicle operating costs
-  Travel costs
-  Mode choice availability

-  Freeway Reliability + Vehicle Ownership
-  Transit Crowding
-  Environmental (Emissions; Natural Land Loss)
-  Health (Physical Activity; Air Pollutants; Noise)
-  Safety (Collisions/Injuries; on-model & off-model/operational benefits)

Major Enhancements from Plan Bay Area 2040

## Costs



### Capital Costs

- Initial investment
- Rehab/Replacement Costs
- Residual value



### Operating & Maintenance Costs (annual)

$$\text{Benefit-Cost Ratio} = \frac{\text{Benefits}}{\text{Costs}}$$



# Marin County Specific Findings

- Some Marin projects have not been modeled
- Marin Resilience Projects score among the highest in the region under B/C Analysis
- However, Marin Projects do not perform well in equity analysis
- Regional Rail Extensions do not perform well
- Low Cost Transit and Bike/Ped Improvements can have significant benefits to region

# Needs Assessment

- Needs Assessment identifies baseline financial needs, while revenue estimates provide fiscal constraint over life of plan
- Previous Needs Estimated:
  - State of good repair: roads, bridges, highways, transit capital, transit operating
- New Needs & Revenue Estimate Process Adds:
  - Affordable Housing – CASA
  - Resilience – Sea Level Rise and Earthquakes

# Regional Needs Assessment (preliminary)

- Affordable Housing Needs - \$473B
- Resilience Needs - \$32B
  - Sea Level Rise - \$15B
  - Earthquake (residential only) - \$17B
- Transportation (maintain conditions)
  - LSR - \$62B
  - State Highway - \$24B
  - Local Bridges - \$2.5B
  - Regional Bridges - \$19B
  - Transit Capital - \$59B
  - Transit O&M - \$218B

# County Needs Assessment

## Local Streets and Roads (\$M)

County	Maintain Conditions	State of Good Repair (SGR)
Alameda	\$7,940	\$8,977
Contra Costa	\$6,101	\$6,878
<b>Marin</b>	<b>\$1,374</b>	<b>\$1,676</b>
Napa	\$871	\$1,290
San Francisco	\$5,189	\$5,759
San Mateo	\$3,824	\$4,220
Santa Clara	\$10,186	\$11,290
Solano	\$2,838	\$3,351
Sonoma	\$3,028	\$4,446
Total	\$41,351	\$47,886

## Transit Capital and Operating (\$M)

Operator	Transit Capital - SGR	Transit Capital - Maintain Current Conditions	Transit Operating Needs
Golden Gate Transit	\$3,497	\$1,786	\$3,606
Marin Transit	\$328	\$250	\$1,472
SMART	\$726	\$601	\$2,169



# Regional Growth Framework Update

## Priority Development Areas: Revised Criteria



More Flexible  
Transit Standards:

- *Transit Rich*
- *Connected Community*



Timeline to Adopt  
PDA Plans



**Priority Production Areas:**  
Pilot Program & Criteria

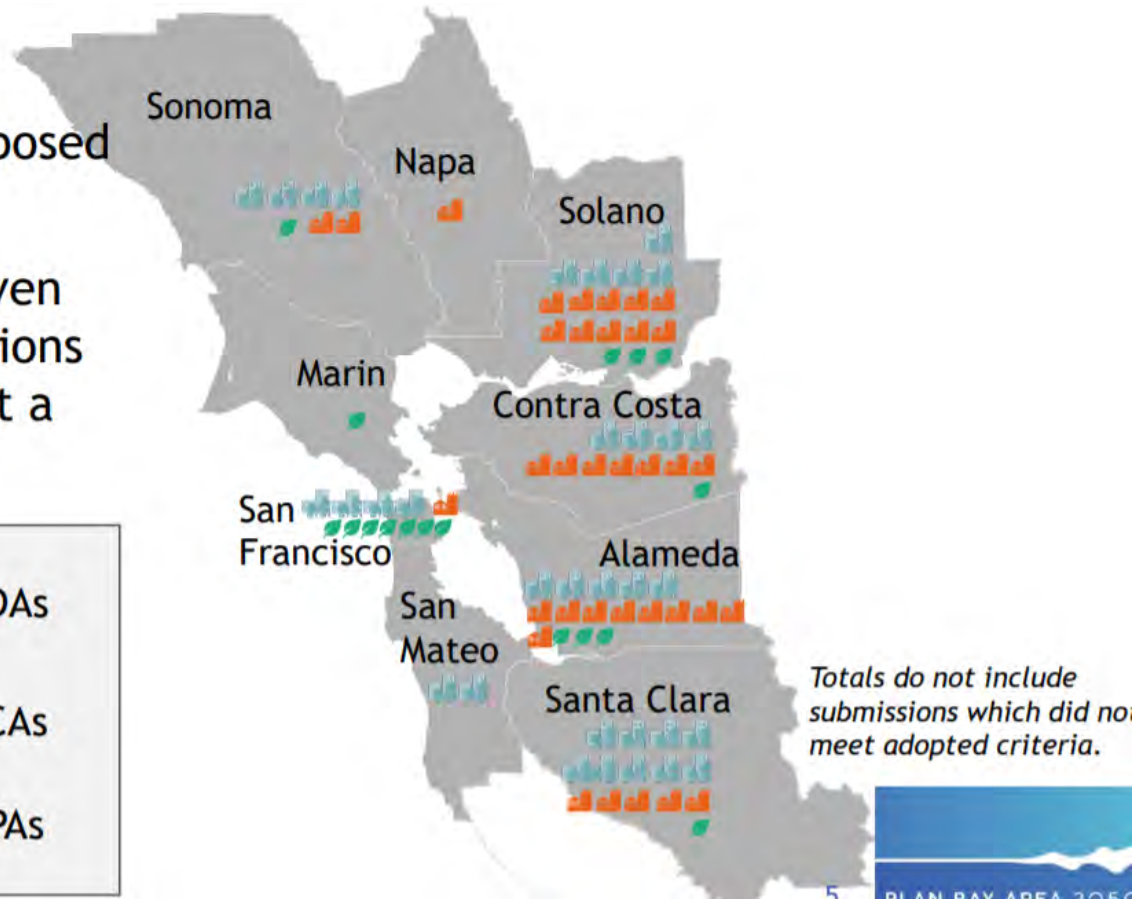
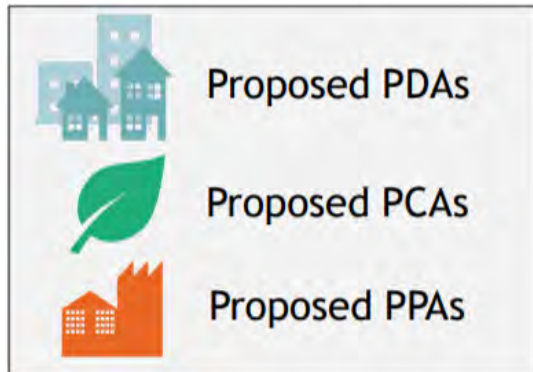


**Priority Conservation Areas:**  
*No change to criteria*

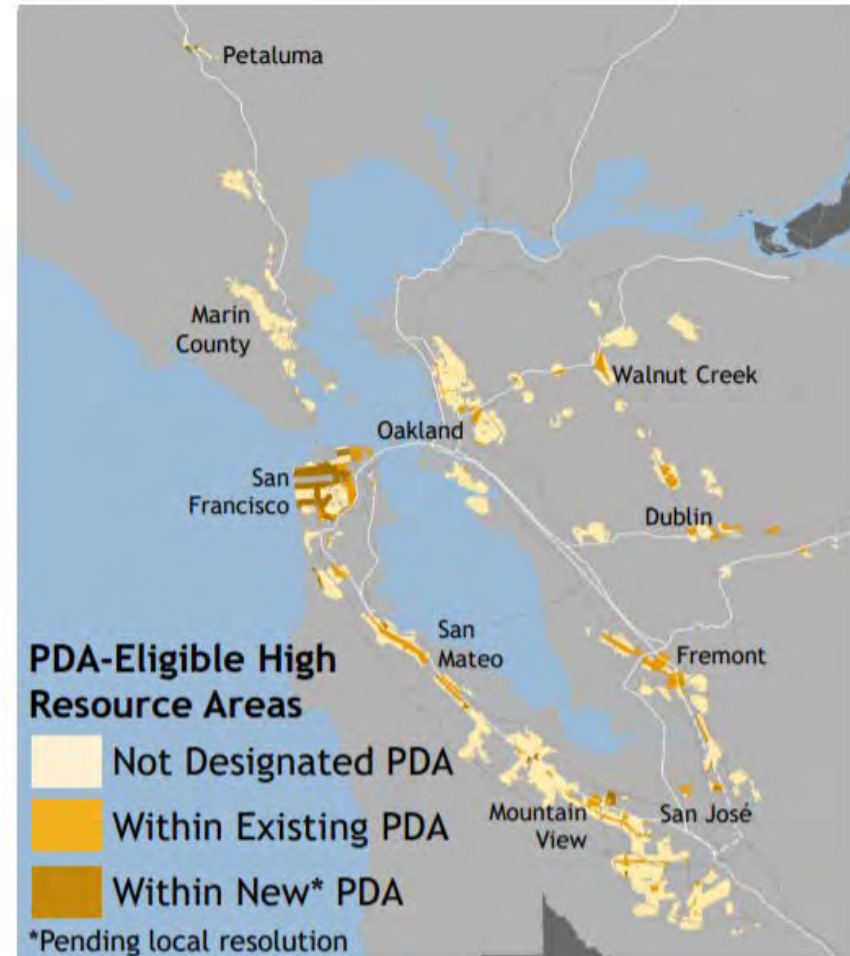
**PDA, PCA and PPA:**  
Call for Letters of Interest  
*June to September 2019*

# New PDAs/PCAs/PPAs

- Jurisdictions in every county submitted at least one new proposed priority area.
- However, the response was uneven across the region, with jurisdictions in some counties volunteering at a much greater rate than others.



# Transit Priority & High Resource Areas



# Upcoming Growth Discussion

## Key Question for Action This Winter:

Should the Plan Bay Area 2050 Blueprint focus some growth outside of locally-nominated places to improve potential GHG & equity outcomes?

### Location of *Housing Growth* (charts are illustrative)

		Pros	Cons	
	<p><b>Highly focused in:</b> Existing &amp; Proposed PDAs</p>		<ul style="list-style-type: none"> <li>• Growth pattern aligned with local nominations</li> <li>• Similar to Plan Bay Area 2040</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to close GHG and equity gaps without broader range of growth areas</li> </ul>
	<p><b>Focused in:</b> Existing &amp; Proposed PDAs + Select <b>High-Resource Areas</b> + Select <b>Transit-Rich Areas</b> ..... outside PDAs</p>		<ul style="list-style-type: none"> <li>• Maximizes potential for GHG reduction</li> <li>• Best aligns with fair housing requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to implement outside locally-nominated areas</li> </ul>
	<p>Focused in Existing &amp; Proposed PDAs + more distributed growth within Urban Growth Boundaries</p>		<ul style="list-style-type: none"> <li>• Largest footprint for meeting housing need</li> <li>• Does not require identifying additional areas for growth</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to implement outside locally-nominated areas</li> </ul>

# PBA 2050 - Upcoming

- Revenue Forecasts in November/December 2019
- Complete Results of Project Performance Assessments
- Definition of High Performing Projects
- Constrained List of Projects to TAM Board ~March 2020
- Draft Regional Growth Blueprint Winter 2020

# Regional Housing Needs Allocation

- RHNA Methodology Committee Formed
- Bulk of RHNA activities will occur in 2020.
- Subregion formations by January 2020.
- Local Growth Totals (2019-2050) will be determined by March 2020 (BIA Settlement).
- 6<sup>th</sup> Cycle RHNA (2024-2032) by Summer 2021.
- Recent Legislation will affect the RHNA Process, and HCD will be more closely involved.



# Questions and Discussion

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