375 Beale Street
Suite 700
San Francisco, California
94105

Meeting Agenda - Final

ABAG Administrative Committee

Chair, David Rabbitt, Supervisor, County of Sonoma
Vice Chair, Jesse Arreguin, Mayor, City of Berkeley

Friday, November 8, 2019 | **9:35 AM** | **Board Room - 1st Floor**

Association of Bay Area Governments
Administrative Committee

The ABAG Administrative Committee may act on any item on the agenda.
The ABAG Administrative Committee will meet jointly with the MTC Planning Committee.
The meeting is scheduled to begin at 9:35 a.m.,
or immediately following the preceding committee meeting.
Agenda, roster, and webcast available at https://abag.ca.gov
For information, contact Clerk of the Board at (415) 820-7913.

Location
Bay Area Metro Center, 375 Beale Street, 1st Floor, Board Room, San Francisco, California
Teleconference Location
70 West Hedding Street 10th Floor, San Jose, CA 95110

Roster
Jesse Arreguin, Cindy Chavez, David Cortese, Scott Haggerty, Jake Mackenzie, Karen Mitchoff, Raul Peralez, Julie Pierce, David Rabbitt, Belia Ramos

1. Call to Order / Roll Call / Confirm Quorum

2. ABAG Compensation Announcement - Clerk of the Board

3. ABAG Administrative Committee Consent Calendar

3.a. 19-1221 Approval of ABAG Administrative Committee Minutes of October 11, 2019

Action: ABAG Administrative Committee Approval

Presenter: Clerk of the Board

Attachments: Item 03a Minutes 20191011 Draft.pdf

3.b. 19-1222 Adoption of ABAG Resolution No. 12-19 Delegation of Authority to MTC to conduct a public hearing on the proposed revision to the Bay Area Transportation Air Quality Conformity Protocol and Interagency Consultation Procedures

Action: ABAG Administrative Committee Approval

Presenter: Harold Brazil

Attachments: 3b_SIP Delegation Auth Approval.pdf

4. MTC Planning Committee Consent Calendar

4.a. 19-1154 Approval of MTC Planning Committee Minutes of the October 11, 2019 Meeting

Action: MTC Planning Committee Approval

Attachments: 4a_MTC PLNG_Minutes_Oct 11 2019.pdf

5. Information

5.a. 19-1155 Horizon / Plan Bay Area 2050: Draft Project Performance Assessment Results

Presentation on the draft results from the Project Performance Assessment, which will evaluate approximately 95 projects against the three Futures to determine their cost-effectiveness, equity impacts, and alignment with Guiding Principles.

Action: Information

Presenter: Anup Tapase

Attachments: 5a_HorizonPBA50_DraftProjectPerformance.pdf

5ai_Handout_Correspondence.pdf

5.b. 19-1156 Plan Bay Area 2050: Regional Growth Framework - Update and Next Steps

Presentation on local jurisdiction and County Transportation Agency submissions for the Regional Growth Framework Update, including Priority Development Areas (PDAs), Priority Conservation Areas (PCAs), and Priority Production Areas (PPAs), as well as potential next steps as we advance into the Plan Bay Area 2050 Blueprint process.

Action: Information

Presenter: Mark Shorett

Attachments: 5b_PBA50_Regional Growth Framework UpdateNextSteps.pdf

6. Public Comment / Other Business

Information

7. Adjournment / Next Meeting

The next meeting of the ABAG Adminstrative Committee is on December 13, 2019.

Public Comment: The public is encouraged to comment on agenda items at Committee meetings by completing a request-to-speak card (available from staff) and passing it to the Committee secretary. Public comment may be limited by any of the procedures set forth in Section 3.09 of MTC's Procedures Manual (Resolution No. 1058, Revised) if, in the chair's judgment, it is necessary to maintain the orderly flow of business.

Meeting Conduct: If this meeting is willfully interrupted or disrupted by one or more persons rendering orderly conduct of the meeting unfeasible, the Chair may order the removal of individuals who are willfully disrupting the meeting. Such individuals may be arrested. If order cannot be restored by such removal, the members of the Committee may direct that the meeting room be cleared (except for representatives of the press or other news media not participating in the disturbance), and the session may continue.

Record of Meeting: Committee meetings are recorded. Copies of recordings are available at a nominal charge, or recordings may be listened to at MTC offices by appointment. Audiocasts are maintained on MTC's Web site (mtc.ca.gov) for public review for at least one year.

Accessibility and Title VI: MTC provides services/accommodations upon request to persons with disabilities and individuals who are limited-English proficient who wish to address Commission matters. For accommodations or translations assistance, please call 415.778.6757 or 415.778.6769 for TDD/TTY. We require three working days' notice to accommodate your request.

可及性和法令第六章：MTC 根據要求向希望來委員會討論有關事宜的殘疾人士及英語有限者提供服務/方便。需要便利設施或翻譯協助者，請致電 415.778.6757 或 415.778.6769 TDD / TTY。我們要求您在三個工作日前告知，以滿足您的要求。

Acceso y el Titulo VI: La MTC puede proveer asistencia/facilitar la comunicación a las personas discapacitadas y los individuos con conocimiento limitado del inglés quienes quieran dirigirse a la Comisión. Para solicitar asistencia, por favor llame al número 415.778.6757 o al 415.778.6769 para TDD/TTY. Requerimos que solicite asistencia con tres días hábiles de anticipación para poderle proveer asistencia.

Attachments are sent to Committee members, key staff and others as appropriate. Copies will be available at the meeting.

All items on the agenda are subject to action and/or change by the Committee. Actions recommended by staff are subject to change by the Committee.

375 Beale Street, Suite 800
San Francisco, CA 94105

Metropolitan Transportation Commission

Legislation Details (With Text)

File #:	19-1221	**Version:**	1	**Name:**	
Type:	Minutes			**Status:**	Consent
File created:	10/21/2019			**In control:**	ABAG Administrative Committee
On agenda:	11/8/2019			**Final action:**	
Title:	Approval of ABAG Administrative Committee Minutes of October 11, 2019				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	Item 03a Minutes 20191011 Draft.pdf				

Date	Ver.	Action By	Action	Result

Approval of ABAG Administrative Committee Minutes of October 11, 2019

Clerk of the Board

ABAG Administrative Committee Approval

375 Beale Street
Suite 700
San Francisco, California
94105

Meeting Minutes - Draft

ABAG Administrative Committee

Chair, David Rabbitt, Supervisor, County of Sonoma
Vice Chair, Jesse Arreguin, Mayor, City of Berkeley

Friday, October 11, 2019 | **9:40 AM** | **Board Room - 1st Floor**

Association of Bay Area Governments
Administrative Committee

The ABAG Administrative Committee may act on any item on the agenda.
The ABAG Administrative Committee will meet jointly with the MTC Planning Committee.
The meeting is scheduled to begin at 9:40 a.m.,
or immediately following the preceding committee meeting.
Agenda, roster, and webcast available at https://abag.ca.gov
For information, contact Clerk of the Board at (415) 820-7913.

Location
Bay Area Metro Center, 375 Beale Street, 1st Floor, Board Room, San Francisco, California
Teleconference Location
200 East Santa Clara Street, 18th Floor, Room 1853, San José, California

Roster
Jesse Arreguin, Cindy Chavez, David Cortese, Scott Haggerty, Jake Mackenzie, Karen Mitchoff, Raul Peralez, Julie Pierce, David Rabbitt, Belia Ramos

1. Call to Order / Roll Call / Confirm Quorum

Chair Rabbitt called the ABAG Administrative Committee meeting to order at about 11:20 a.m. The following Committee member participated by teleconference: Peralez. Quorum was present.

Present: 7 - Arreguin, Haggerty, Mackenzie, Mitchoff, Peralez, Pierce, and Rabbitt

Absent: 3 - Chavez, Cortese, and Ramos

2. ABAG Compensation Announcement

The Clerk made the compensation announcement.

3. ABAG Administrative Committee Consent Calendar

Upon the motion by Haggerty and second by Arreguin, the ABAG Administrative Committee Consent Calendar was approved, incluidng minutes of September 13, 2019. The motion passed unanimously by roll call vote as follows:

Aye: 7 - Arreguin, Haggerty, Mackenzie, Mitchoff, Peralez, Pierce, and Rabbitt

Absent: 3 - Chavez, Cortese, and Ramos

3.a. 19-1166 Approval of ABAG Administrative Committee Minutes of September 13, 2019

4. MTC Planning Committee Consent Calendar

The MTC Planning Committee took action on this item.

4.a. 19-1065 Approval of MTC Planning Committee Minutes of the September 13, 2019 Meeting

5. Information

5.a. 19-1066 Horizon: Futures Final Report

Presentation on findings from the second and final round of Futures Planning, including recommendations of Horizon strategies resilient to future uncertainty which should be advanced into Plan Bay Area 2050.

Therese McMillan and Matt Maloney introduced the staff report. Michael Germeraad gave the staff report.

The following gave public comment: Roland Lebrun; Jane Kramer.

5.b. 19-0906 Transit Update: Rail Synthesis and Crossings

Highlights of the progress on regional rail over the past decade, including identification of potential next steps to improve the region's transit system and discussion of tradeoffs associated with a new Transbay Crossing.

Matt Maloney gave the staff report.

The following gave public comment: Roland Lebrun; Adina Levin.

5.c. 19-1067 Plan Bay Area 2040 Amendment Update

Update on a requested amendment to Plan Bay Area 2040, the current long-range plan adopted in 2017, to integrate an Interstate 680 Express Lanes project in Alameda County.

Adam Noelting gave the staff report.

6. Public Comment / Other Busienss

There was no public comment.

7. Adjournment / Next Meeting

Chair Rabbitt adjourned the ABAG Administrative Committee meeting at about 12:46 p.m. The next meeting of the ABAG Administrative Committee is on November 8, 2019.

375 Beale Street, Suite 800
San Francisco, CA 94105

Metropolitan Transportation Commission

Legislation Details (With Text)

File #:	19-1222	**Version:**	1	**Name:**	
Type:	Report			**Status:**	Consent
File created:	10/21/2019			**In control:**	ABAG Administrative Committee
On agenda:	11/8/2019			**Final action:**	
Title:	Adoption of ABAG Resolution No. 12-19 Delegation of Authority to MTC to conduct a public hearing on the proposed revision to the Bay Area Transportation Air Quality Conformity Protocol and Interagency Consultation Procedures				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	3b_SIP Delegation Auth Approval.pdf				

Date	Ver.	Action By	Action	Result

Adoption of ABAG Resolution No. 12-19 Delegation of Authority to MTC to conduct a public hearing on the proposed revision to the Bay Area Transportation Air Quality Conformity Protocol and Interagency Consultation Procedures

Harold Brazil

ABAG Administrative Committee Approval

Association of Bay Area Governments
ABAG Administrative Committee

November 8, 2019 **Agenda Item 3b**

Adoption of ABAG Resolution No. 12-19, Delegation of Authority to MTC to conduct a public hearing on the proposed revision to the Bay Area Transportation Air Quality Conformity Protocol and Interagency Consultation Procedures

Subject: Adoption of ABAG Resolution No. 12-19, Delegation of Authority to MTC to conduct a public hearing on the proposed revision to the Bay Area Transportation Air Quality Conformity Protocol and Interagency Consultation Procedures.

Background: ABAG, the Bay Area Air Quality Management District (BAAQMD), and the Metropolitan Transportation Commission (MTC) adopted the Bay Area's current Transportation Air Quality Conformity Protocol and Interagency Consultation Procedures in 2006 (ABAG Resolution No. 06-06). These procedures, along with the 2001 Ozone Attainment Plan and certain BAAQMD rules, are Bay Area elements of the California State Implementation Plan (SIP) which is the plan to attain the national ambient air quality standards (NAAQS). MTC has taken the lead to consult with the Air Quality Conformity Task Force[1] and revise the conformity procedures to reflect updated consultation best practices and agency roles and responsibilities.

MTC and the Sacramento Area Council of Governments (SACOG) share responsibilities for federal transportation-air quality requirements in Solano County. Northeastern Solano County is part of the Yolo-Solano Air Quality Management District, whereas the remainder of the county is part of the Bay Area Air Quality Management District. MTC and BAAQMD staff are proposing to update procedures for interagency consultation to account for additional federal transportation-air quality requirements and (specifically) provide clarity on MTC and SACOG's roles and updated responsibilities on these requirements, constituting a formal revision to the Bay Area elements of the SIP. The proposed SIP revisions have been reviewed and approved by the Air Quality Conformity Task Force and SACOG staff.

The key revisions to the Air Quality Conformity Protocol and Interagency Consultation Procedures are summarized below:

- Coordination between MTC and SACOG when exchanging travel data for emission inventories in eastern Solano County; and,
- Coordination between MTC and SACOG when conducting project-level conformity in eastern Solano County.

[1] The Bay Area's Air Quality Conformity Task Force consists of staff members of the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Caltrans, California Air Resources Board (CARB), BAAQMD, and MTC/ABAG.

Public Hearing Requirements

As co-lead agencies involved in preparing the SIP, the BAAQMD and ABAG are being asked to delegate authority to MTC to hold a public hearing on the revised conformity and interagency consultation procedures. If approved, MTC will notice and record the public hearing in accordance with MTC's public involvement procedures.

Staff requests that the ABAG Administrative Committee delegate authority to MTC to conduct a public hearing at a wintertime 2019-2020 Joint MTC Planning Committee with the ABAG Administrative Committee on behalf of the three co-lead agencies for revising the Bay Area's Transportation Air Quality Conformity Protocol and Interagency Consultation Procedures.

BAAQMD will be taking a similar action to delegate authority to MTC for the Public Hearing on November 20, 2019.

Recommendation: The ABAG Administrative Committee is requested to adopt ABAG Resolution No. 12-19.

Issues: None

Attachment: Attachment A: ABAG Resolution 12-19

Therese W. McMillan

ASSOCIATION OF BAY AREA GOVERNMENTS
ADMINISTRATIVE COMMITTEE

RESOLUTION NO. 12-19

DELEGATE AUTHORITY TO METROPOLITAN TRANSPORTATION COMMISSION TO CONDUCT PUBLIC HEARING ON PROPOSED REVISION TO THE BAY AREA TRANSPORTATION AIR QUALITY CONFORMITY PROTOCOL AND INTERAGENCY CONSULTATION PROCEDURES

WHEREAS, Association of Bay Area Governments (ABAG), the Bay Area Air Quality Management District (BAAQMD), and the Metropolitan Transportation Commission (MTC) have been designated the co-lead agencies by the U.S. Environmental Protection Agency (U.S. EPA) for developing and implementing various portions of the federal air quality plans in the San Francisco Bay Area; and

WHEREAS, the MTC is the regional transportation planning agency for the San Francisco Bay Area pursuant to Government Code§ 66500 *et seq*.; and

WHEREAS, prior to adopting or amending the long-range Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP), MTC must first determine that these plans and programs conform to the federal air quality plan for the San Francisco Bay Area (termed the State Implementation Plan, or SIP) using procedures established by the U.S. EPA; and

WHEREAS, the three agencies have prepared a protocol for determining transportation air quality conformity in compliance with Federal regulation entitled: San Francisco Bay Area Transportation Air Quality Conformity Protocol ("the Protocol"), which includes certain conformity procedures relating to transportation plans, programs, and projects and the interagency consultation procedures; and

WHEREAS, the three agencies have revised the Protocol to reflect the most recent guidance provided by the U.S. EPA; and

WHEREAS, Federal regulations for amending the SIP require a public hearing prior to adoption or changes to the Protocol; and

WHEREAS, MTC will conduct a duly noticed public hearing on the proposed Protocol at a wintertime 2019-2020 meeting of the MTC Planning Committee; and

WHEREAS, the public's interest in providing comments on the proposed Protocol can best be served through a consolidated public hearing process.

NOW, THEREFORE, BE IT RESOLVED, DETERMINED AND ORDERED, as follows: that the Administrative Committee of the Association of Bay Area Governments hereby delegates to the Metropolitan Transportation Commission the power and responsibility for conducting the public hearing on proposed revision to the Bay Area Transportation Air Quality Conformity Protocol and Interagency Consultation Procedures in accordance with, and in fulfillment of, all applicable legal requirements.

The foregoing was adopted by the Administrative Committee this 8th day of November, 2019.

David Rabbitt
President

Certification of Executive Board Approval

I, the undersigned, the appointed and qualified Clerk of the Board of the Association of Bay Area Governments (Association), do hereby certify that the foregoing resolution was adopted by the Administrative Committee of the Association at a duly called meeting held on the 8th day of November, 2019.

Frederick Castro
Clerk of the Board

Association of Bay Area Governments
METROPOLITAN TRANSPORTATION COMMISSION

Metropolitan Transportation Commission

375 Beale Street, Suite 800
San Francisco, CA 94105

Legislation Details (With Text)

File #:	19-1154	**Version:**	1	**Name:**	
Type:	Minutes			**Status:**	Consent
File created:	10/2/2019			**In control:**	Joint MTC Planning Committee with the ABAG Administrative Committee
On agenda:	11/8/2019			**Final action:**	
Title:	Approval of MTC Planning Committee Minutes of the October 11, 2019 Meeting				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	4a_MTC PLNG_Minutes_Oct 11 2019.pdf				

Date	Ver.	Action By	Action	Result

Subject:
Approval of MTC Planning Committee Minutes of the October 11, 2019 Meeting

Recommended Action:
MTC Planning Committee Approval

Attachments:

Agenda Item 4a
Bay Area Metro Center
375 Beale Street
San Francisco, CA 94105

Meeting Minutes - Draft

Joint MTC Planning Committee with the ABAG Administrative Committee

MTC Committee Members:
James P. Spering, Chair Anne W Halsted, Vice Chair

Damon Connolly, Dave Cortese, Sam Liccardo, Jake Mackenzie, David Rabbitt, Warren Slocum
Non-Voting Members: Dorene M. Giacopini and Jimmy Stracner

Friday, October 11, 2019 | **9:40 AM** | **Board Room - 1st Floor**

1. Roll Call / Confirm Quorum

Rollcall

Present: 6 - Commissioner Connolly, Vice Chair Halsted, Commissioner Liccardo, Commissioner Mackenzie, Commissioner Rabbitt and Chair Spering
Absent: 2 - Commissioner Cortese and Commissioner Slocum

Non-Voting Members Present: Commissioner Giacopini and Commissioner Stracner
Non-Voting Member Absent:
Ex Officio Voting Members Present: Commission Chair Haggerty and
Commission Vice Chair Pedroza
Ad Hoc Non-Voting Members Present: Commissioner Dutra-Vernaci, Commissioner Josefowitz, and Commissioner Worth

ABAG Administrative Committee Members Present: Arreguin, Haggerty, Mackenzie, Mitchoff, Peralez, Pierce, and Rabbitt.

2. ABAG Compensation Announcement - Clerk of the Board

3. ABAG Administrative Committee Consent Calendar

3a. 19-1064 Approval of ABAG Administrative Committee Summary Minutes of the September 13, 2019 Meeting

Action: ABAG Administrative Committee Approval

Attachments: 3a_ABAG AC Minutes 20190913.pdf

4. MTC Planning Committee Consent Calendar

4a. 19-1065 Approval of MTC Planning Committee Minutes of the September 13, 2019 Meeting

Action: MTC Planning Committee Approval

Attachments: 4a_MTC PLNG_Minutes_Sept 13 2019.pdf

Upon the motion by Commissioner Connolly and second by Commissioner Halsted, the Consent Calendar was unanimously approved by the following vote:

5. Information

5a. 19-1066 Horizon: Futures Final Report

Presentation on findings from the second and final round of Futures Planning, including recommendations of Horizon strategies resilient to future uncertainty which should be advanced into Plan Bay Area 2050.

Action: Information

Presenter: Michael Germeraad

Attachments: 5ai_Horizon Futures Final Report.pdf
5aii_Horizon Futures Final Report_AttachmentA_Presentation.pdf

Roland Lebrun was called to speak.
Jane Kramer was called to speak.

5b. 19-0906 Transit Update: Rail Synthesis and Crossings

Highlights of the progress on regional rail over the past decade, including identification of potential next steps to improve the region's transit system and discussion of tradeoffs associated with a new Transbay Crossing.

Action: Information

Presenter: Matt Maloney

Attachments: 5b_Regional Rail Planning Update.pdf
5b_Handout_Correspondence_MTC Regional Rail Update Item 5b_10.11.19.pdf

Roland Lebrun was called to speak.
Adina Levin, Friends of Caltrain, was called to speak.

5c. 19-1067 Plan Bay Area 2040 Amendment Update

Update on a requested amendment to Plan Bay Area 2040, the current long-range plan adopted in 2017, to integrate an Interstate 680 Express Lanes project in Alameda County.

Action: Information

Presenter: Adam Noelting

Attachments: 5c_Plan Bay Area 2040 Amendment Update.pdf

6. Public Comment / Other Business

7. Adjournment / Next Meeting

The next meeting of the MTC Planning Committee will be Friday, November 8, 2019 at 9:40 a.m. at the Bay Area Metro Center, 375 Beale Street, San Francisco, CA.

Association of Bay Area Governments
METROPOLITAN TRANSPORTATION COMMISSION

Metropolitan Transportation Commission

375 Beale Street, Suite 800
San Francisco, CA 94105

Legislation Details (With Text)

File #:	19-1155	**Version:**	1	**Name:**	
Type:	Report			**Status:**	Informational
File created:	10/2/2019			**In control:**	Joint MTC Planning Committee with the ABAG Administrative Committee
On agenda:	11/8/2019			**Final action:**	
Title:	Horizon / Plan Bay Area 2050: Draft Project Performance Assessment Results Presentation on the draft results from the Project Performance Assessment, which will evaluate approximately 95 projects against the three Futures to determine their cost-effectiveness, equity impacts, and alignment with Guiding Principles.				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	5a_HorizonPBA50_DraftProjectPerformance.pdf 5ai_Handout_Correspondence.pdf				

Date	Ver.	Action By	Action	Result

Subject:
Horizon / Plan Bay Area 2050: Draft Project Performance Assessment Results

Presentation on the draft results from the Project Performance Assessment, which will evaluate approximately 95 projects against the three Futures to determine their cost-effectiveness, equity impacts, and alignment with Guiding Principles.

Presenter:
Anup Tapase

Recommended Action:
Information

Attachments:

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

November 8, 2019 **Agenda Item 5a**

Horizon / Plan Bay Area 2050: Draft Project Performance Assessment Results

Subject: Presentation on the draft results from the Project Performance Assessment, which evaluated 93 projects against the three Futures to determine their cost-effectiveness, equity impacts, and alignment with Guiding Principles.

Background: The Project Performance Assessment has historically provided a key lens to understand the benefits and limitations of major infrastructure projects as we develop the regional plan; this cycle has incorporated substantive improvements to better capture resilience and equity in the assessment framework. The Horizon/Plan Bay Area 2050 Project Performance Assessment evaluates three primary types of transportation projects: capacity-increasing investments, operational strategies, and resilience projects to address sea level rise and seismic hazards. Committed projects—those that have full funding plans and environmental clearance—are exempt from project performance and were included in the analysis baseline. Uncommitted projects subject to assessment—generally capacity-increasing investments with total costs greater than $250 million—were all evaluated using a consistent evaluation methodology.

Methodology

Developed between summer 2018 and winter 2019 with input from working groups and committees, the methodology builds upon Plan Bay Area (2013) and Plan Bay Area 2040 (2017). All projects were evaluated consistently using three assessment types, identified below, with the results summarized in **Attachment A**.

1. **Benefit-Cost Assessments** (quantitative using Travel Model 1.5)
   Compares societal benefits against anticipated project costs under three different Futures.
2. **Equity Assessments** (quantitative using Travel Model 1.5)
   Examines distributive impacts of project-level accessibility benefits across income groups under three different Futures.
3. **Guiding Principles Assessment** (qualitative)
   Evaluates alignment with Horizon's five Guiding Principles using specific project-focused criteria, flagging areas of potential concern.

While the Project Performance Assessment is more robust than prior cycles, it should be noted that all models and analyses have limitations. This analysis reflects our best effort to provide a data-driven lens on how projects perform, but it is not the only consideration when crafting the fiscally-constrained Plan.

Initial Findings

Highlights from the analysis findings to-date are included in **Attachment F.** The draft Project Performance Assessment results include 77 of the 93 projects analyzed. Remaining projects will be analyzed in November and integrated into the final findings, slated for release at the end of the year.

Next Steps

Results for Transformative Projects submitted by the public, as well as any other projects that require additional evaluation, will be released after November. Project Performance will remain in draft form through the end of 2019 as we work towards next steps and integration with the Plan Bay Area 2050 Blueprint, which will include identification of high-performing projects and collaboration sessions with other project sponsors.

Issues: MTC is in the midst of developing Plan Bay Area 2050, the Bay Area's long-range fiscally-constrained plan for transportation, housing, the economy, and the environment. It is not feasible to include all of the proposed transportation investments using the region's forecasted revenues, even if new revenues become available. Fiscal constraint necessitates prioritization of investment priorities, which will be informed by MTC's ongoing Project Performance Assessment, as well as parallel work on strategies via the recently-completed Futures Planning effort.

Recommendation: In prior cycles of Plan Bay Area, MTC has used the Project Performance Assessment to identify outliers - both positive and negative - in order to inform the development of the regional plan's transportation investment strategy. Criteria were established to group projects into a status of low-, medium-, or high-performing. Project sponsors of low-performing projects were required to present a "compelling case" to the Commission in order to include their respective project into the fiscally-constrained regional plan, whereas high-performing projects were prioritized for their inclusion.

MTC remains committed to using performance data to inform key decisions in the context of the fiscally-constrained Plan Bay Area 2050. However, we are considering a fresh approach to move forward that focuses on finding solutions to projects' performance deficiencies, rather than requiring a "compelling case" for such projects.

For high-performing projects, MTC will work with Plan stakeholders to identify the appropriate criteria to identify the highest-performing projects. This will include cost-effectiveness across multiple Futures, support for social equity goals, and alignment with the Guiding Principles. This process will help showcase the projects that performed the best in the Project Performance Assessment so that these projects are strongly considered for inclusion when crafting the transportation component of the Plan Bay Area 2050 Draft Blueprint. Staff will propose a definition for high-performing projects in December or January for Commission approval.

For the remaining projects, staff is exploring alternative approaches focused on actions to boost a project's relative performance. Depending on the performance results, these solutions may take the form of complementary transportation strategies – like pricing or safety enhancements – as well as land use strategies or equity mitigations. As we begin to consider various project investments in the fiscally-constrained Plan, we would like to engage with each CTA, transit operator, and project sponsor in a collaborative dialogue to identify the appropriate supportive strategies to boost project performance to achieve a resilient, equitable and cost-effective Blueprint for Plan Bay Area 2050.

Attachments:
Attachment A: Overall Summary Table *(Draft)*
Attachment B: Guiding Principles & Equity Summary Table *(Draft)*
Attachment C: Detailed Table of Guiding Principle Flags *(Draft)*
Attachment D: Detailed Table of Lifecycle Benefits by Future *(Draft)*
Attachment E: Detailed Table of Lifecycle Costs *(Draft)*
Attachment F: Presentation

Therese W. McMillan

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)

							Benefit-Cost Ratio			Equity Score		
Project Type	Project ID	Row ID	Project	Project Source	Lifecycle Cost	Guiding Principle Flags	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 + CCAG	$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
	2307	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	VTA	$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

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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.
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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.

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

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(see notes on methodology at the bottom of the page)

							Benefit-Cost Ratio			Equity Score		
Project Type	Project ID	Row ID	Project	Project Source	Lifecycle Cost	Guiding Principle Flags	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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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:
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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.

Horizon/Plan Bay Area 2050: Draft Project Performance Findings
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Benefit-Cost Ratios and Equity Scores across Three Futures, and Guiding Principle Flags

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(see notes on methodology at the bottom of the page)

							Benefit-Cost Ratio			Equity Score		
Project Type	Project ID	Row ID	Project	Project Source	Lifecycle Cost	Guiding Principle Flags	Rising Tides Falling Fortunes	Clean and Green	Back to the Future	Rising Tides Falling Fortunes	Clean and Green	Back to the Future
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	Challenges
	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		

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Horizon/Plan Bay Area 2050: Draft Project Performance Findings
Attachment B: Guiding Principles and Equity Summary Table

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Note 3: Projects are ordered by their potential to advance equity based on the equity score
(see high-level description of methodology at the bottom of the page)

Project ID	Row ID	Project	Project Type	Lifecycle Cost	Guiding Principle Flags	Provides Point of Access in CoC?	Equity Score		
							Rising Tides Falling Fortunes	Clean and Green	Back to the Future
4001	1	Mountain View AV Network (Free Fare, Subsidies from Companies)	Build Local Transit	$1.4B	1	No	Advances	Advances	Advances
6006	2	Enhanced Regionwide Bike Infrastructure	Enhance Alternate Modes	$12.6B	0	Yes	Advances	Advances	Advances
2100	3	San Pablo BRT	Optimize Existing Transit Network - Low Cost	$0.5B	0	Yes	Advances	Advances	Even
2001	4	AC Transit Local Rapid Network: Capital Improvements + Service Increase	Optimize Existing Transit Network - High Cost	$8.4B	0	Yes	Advances	Advances	Even
2000	5	AC Transit Local Network: Service Increase	Optimize Existing Transit Network - Low Cost	$2.6B	0	Yes	Advances	Advances	Even
2409	6	VTA LRT Systemwide Grade Separation	Optimize Existing Transit Network - High Cost	$11.6B	0	Yes	Advances	Advances	Even
2005	7	Alameda County BRT Network + Connected Vehicle Corridors	Optimize Existing Transit Network - High Cost	$4.0B	0	Yes	Advances	Advances	Even
2208	8	BART Gap Closure (Millbrae to Silicon Valley)	Build Core Rail	$40.4B	0	Yes	Advances	Advances	Even
2403	9	Vasona LRT Extension (Phase 2)	Build Local Transit	$0.3B	0	Yes	Advances	Advances	Even
2410	10	VTA LRT Systemwide Grade Separation and Full Automation	Optimize Existing Transit Network - High Cost	$14.8B	1	Yes	Advances	Advances	Even
2205	11	BART to Silicon Valley (Phase 2)	Build Core Rail	$6.0B	0	Yes	Advances	Advances	Even
2411	12	VTA LRT Systemwide Grade Separation, Network Expansion, and Full Automation	Optimize Existing Transit Network - High Cost	$44.2B	0	Yes	Advances	Advances	Even
2105	13	Alameda County E14th St/Mission and Fremont Blvd Multimodal Corridor	Optimize Existing Transit Network - Low Cost	$0.5B	0	Yes	Advances	Advances	Even
2004	14	Sonoma Countywide Bus: Service Increase	Optimize Existing Transit Network - Low Cost	$0.9B	0	Yes	Advances	Even	Even
4000	15	Oakland/Alameda Gondola Network	Build Local Transit	$1.1B	1	Yes	Even	Advances	Even
2206	16	BART Extension from Diridon to Cupertino	Extend Rail Network - High Cost	$12.1B	0	No	Even	Advances	Even
2401	17	North San Jose LRT Subway	Optimize Existing Transit Network - High Cost	$4.9B	0	Yes	Even	Advances	Even
7001	18	VTA LRT Resilience Project (Tasman West)	Resilience	$0.2B	0	No	Even	Advances	Even
2207	19	BART Extension from Diridon to Gilroy (replacing existing Caltrain)	Extend Rail Network - High Cost	$17.7B	1	Yes	Even	Advances	Even
2407	20	Muni Metro Southwest M-Line Subway	Optimize Existing Transit Network - High Cost	$5.6B	0	No	Advances	Advances	Challenges
2400	21	Downtown San Jose LRT Subway	Optimize Existing Transit Network - Low Cost	$1.9B	0	Yes	Even	Even	Even
2204	22	BART on I-680 (Walnut Creek to West Dublin/Pleasanton)	Extend Rail Network - High Cost	$11.0B	0	No	Even	Even	Even
1003	23	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 4: New Markets)	Build Core Rail	$37.4B	0	Yes	Even	Even	Even
2209	24	Irvington BART Infill Station	Optimize Existing Transit Network - Low Cost	$0.2B	0	No	Even	Even	Even
1002	25	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 3: Mission St)	Build Core Rail	$36.2B	0	Yes	Even	Even	Even
2007	26	San Francisco Southeast Waterfront Transit Improvements	Optimize Existing Transit Network - Low Cost	$0.6B	0	Yes	Even	Even	Even
2003	27	Muni Forward: Capital Improvements + Service Increase	Optimize Existing Transit Network - Low Cost	$2.9B	0	Yes	Even	Even	Even
1004	28	New San Francisco-Oakland Transbay Rail Crossing - Commuter Rail (Crossing 5)	Build Core Rail	$46.1B	2	Yes	Even	Even	Even
1007	29	New San Francisco-Oakland Transbay Rail Crossing - BART + Commuter Rail (Crossing 7)	Build Core Rail	$83.5B	2	Yes	Even	Even	Even
2301	30	Caltrain Full Electrification and Blended System: Base Growth	Optimize Existing Transit Network - High Cost	$20.9B	2	Yes	Even	Even	Even
1001	31	Southern Crossing Bridge + New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 6)	Build Road Capacity - High Cost	$47.1B	1	Yes	Even	Even	Even

Equity Score
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Provides Point of Access in CoC (Plan Bay Area 2040/legacy equity methodology)
This analysis is similar to what was done in Plan Bay Area 2040, indicating whether a project provides an access point (such as a station or new roadway facility) in a Community of Concern (CoC definition updated with 2018 ACS data). However, unlike the equity score, this does not reflect which population groups might actually benefit from the project.
* While the Valley Link project does not have any stations in Communities of Concern in the Bay Area, it does have stations located in Disadvantaged Communities in the San Joaquin Valley

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Project ID	Row ID	Project	Project Type	Lifecycle Cost	Guiding Principle Flags	Provides Point of Access in CoC?	Equity Score		
							Rising Tides Falling Fortunes	Clean and Green	Back to the Future
2308	32	Valley Link (Dublin to San Joaquin Valley)	Extend Rail Network - High Cost	$3.0B	0	Yes*	Even	Even	Even
2008	33	Alameda Point Transit Network Improvements	Optimize Existing Transit Network - Low Cost	$0.5B	0	Yes	Even	Even	Even
2201	34	BART Core Capacity	Optimize Existing Transit Network - High Cost	$4.5B	0	Yes	Even	Even	Even
3110	35	Union City-Fremont East-West Connector	Build Road Capacity - Low Cost	$0.4B	1	No	Even	Even	Even
2601	36	WETA Ferry Network Expansion (Berkeley, Alameda Pt, Redwood City, Mission Bay, Treasure Islan..	Enhance Alternate Modes	$1.0B	0	Yes	Even	Even	Even
5003	37	I-680 Corridor Improvements (BRT, Express Bus, Shared AVs, Gondolas)	Build Local Transit	$4.6B	0	Yes	Even	Even	Even
7005	38	SR-237 Resilience Project (Alviso)	Resilience	$0.2B	0	No	Even	n/a	Even
4002	39	Contra Costa Autonomous Shuttle Program	Build Local Transit	$3.4B	0	Yes	Advances	Even	Challenges
3103	40	SR-4 Widening (Brentwood to Discovery Bay)	Build Road Capacity - Low Cost	$0.4B	1	Yes	Advances	Even	Challenges
2103	41	SamTrans El Camino Real BRT: Capital and Service Improvements	Optimize Existing Transit Network - Low Cost	$0.4B	0	Yes	Advances	Even	Challenges
1006	42	San Mateo Bridge Reconstruction and Widening (Crossing 1)	Build Road Capacity - High Cost	$15.7B	1	Yes	Advances	Challenges	Even
2101	43	Geary BRT (Phase 2)	Optimize Existing Transit Network - Low Cost	$0.6B	0	Yes	Even	Even	Challenges
2306	44	Dumbarton Rail (Redwood City to Union City)	Build Core Rail	$3.9B	0	Yes	Even	Even	Challenges
3109	45	SR-262 Widening and Interchange Improvements	Build Road Capacity - Low Cost	$1.0B	2	No	Even	Even	Challenges
2402	46	San Jose Airport People Mover	Build Local Transit	$1.4B	0	Yes	Even	Challenges	Even
3106	47	SR-152 Realignment and Tolling	Build Road Capacity - Low Cost	$1.9B	2	No	Even	Challenges	Even
3101	48	I-680/SR-4 Interchange Improvements (Direct/HOV Connectors, Ramp Widening, Auxiliary Lanes)	Build Road Capacity - Low Cost	$0.4B	1	No	Even	Challenges	Even
2412	49	SR-85 LRT (Mountain View to US101 interchange)	Build Local Transit	$3.7B	0	No	Even	Challenges	Even
1005	50	Mid-Bay Bridge (I-238 to I-380) (Crossing 2)	Build Road Capacity - High Cost	$19.9B	2	Yes	Even	Challenges	Even
3105	51	SR-12 Widening (I-80 to Rio Vista)	Build Road Capacity - Low Cost	$2.5B	2	Yes	Even	Challenges	Even
2600	52	WETA Ferry Service Frequency Increase	Enhance Alternate Modes	$0.4B	0	Yes	Challenges	Even	Even
3104	53	I-80/I-680/SR-12 Interchange + Widening (Phases 2B-7)	Build Road Capacity - Low Cost	$0.7B	2	Yes	Challenges	Even	Even
2202	54	BART DMU Extension to Brentwood	Extend Rail Network - Low Cost	$0.6B	0	No	Advances	Challenges	Challenges
3100	55	SR-239 Widening (Brentwood to Tracy including airport connector)	Build Road Capacity - Low Cost	$2.4B	1	No	Challenges	Advances	Challenges
2700	56	Bay Bridge West Span Bike Path	Enhance Alternate Modes	$0.8B	0	Yes	Even	Challenges	Challenges
2305	57	SMART to Solano (Novato to Suisun City, without sea level rise protections)	Extend Rail Network - Low Cost	$1.6B	0	Yes	Even	Challenges	Challenges
2304	58	SMART Extension to Cloverdale	Extend Rail Network - Low Cost	$0.5B	0	No	Challenges	Even	Challenges
2303	59	Caltrain Full Electrification and Blended System: High Growth	Optimize Existing Transit Network - High Cost	$36.9B	2	Yes	Challenges	Even	Challenges
2302	60	Caltrain Full Electrification and Blended System: Moderate Growth	Optimize Existing Transit Network - High Cost	$24.6B	2	Yes	Challenges	Even	Challenges
2408	61	Muni Metro T-Third Extension to South San Francisco	Build Local Transit	$1.8B	0	Yes	Challenges	Challenges	Even
3003	62	San Francisco Arterial HOV and Freeway HOT Lanes	Optimize Existing Freeway Network	$1.3B	0	Yes	Challenges	Challenges	Even

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.

Provides Point of Access in CoC (Plan Bay Area 2040/legacy equity methodology)
This analysis is similar to what was done in Plan Bay Area 2040, indicating whether a project provides an access point (such as a station or new roadway facility) in a Community of Concern (CoC definition updated with 2018 ACS data). However, unlike the equity score, this does not reflect which population groups might actually benefit from the project.
* While the Valley Link project does not have any stations in Communities of Concern in the Bay Area, it does have stations located in Disadvantaged Communities in the San Joaquin Valley

Horizon/Plan Bay Area 2050: Draft Project Performance Findings
Attachment B: Guiding Principles and Equity Summary Table

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 public agency projects and the 12 jury finalists, since modelling and/or cost review are in progress
Note 3: Projects are ordered by their potential to advance equity based on the equity score
(see high-level description of methodology at the bottom of the page)

							Equity Score		
Project ID	Row ID	Project	Project Type	Lifecycle Cost	Guiding Principle Flags	Provides Point of Access in CoC?	Rising Tides Falling Fortunes	Clean and Green	Back to the Future
3102	63	SR-4 Operational Improvements	Build Road Capacity - Low Cost	$0.5B	1	Yes	Challenges	Challenges	Even
7004	64	SR-84 Resilience Project (Dumbarton Bridge, 101 interchange)	Resilience	$0.2B	0	Yes	Challenges	n/a	n/a
7003	65	US-101 Peninsula Resilience Project (San Antonio Rd, Poplar Ave, Millbrae Ave)	Resilience	$0.2B	0	Yes	Challenges	n/a	n/a
7006	66	I-880 Resilience Project (South Fremont)	Resilience	$0.1B	0	Yes	Challenges	n/a	n/a
3000	67	Regional Express Lanes (MTC + VTA + ACTC + US-101)	Build Road Capacity - High Cost	$12.1B	1	Yes	Challenges	in progress	Challenges
5000	68	Bay Area Forward (Phase 1: Freeway Ramp and Arterial Components Only)	Optimize Existing Freeway Network	$0.6B	1	Yes	Challenges	in progress	Challenges
7002	69	I-580/US-101/SMART Marin Resilience Project	Resilience	$0.2B	0	Yes	Challenges	Challenges	Challenges
2300	70	Caltrain Downtown Extension	Build Core Rail	$4.8B	0	No	Challenges	Challenges	Challenges
2002	71	AC Transit Transbay Network: Capital Improvements + Service Increase	Optimize Existing Freeway Network	$6.5B	0	Yes	Challenges	Challenges	Challenges
2310	72	Megaregional Rail Network + Resilience Project (Caltrain, ACE, Valley Link, Dumbarton, Cap Cor)	Build Core Rail	$54.1B	2	Yes	Challenges	Challenges	Challenges
4003	73	Cupertino-Mountain View-San Jose Elevated Maglev Rail Loop	Build Local Transit	$8.1B	1	Yes	Challenges	Challenges	Challenges
2203	74	BART to Hercules & I-80 Bus from Vallejo to Oakland	Extend Rail Network - High Cost	$5.8B	0	Yes	Challenges	Challenges	Challenges
3001	75	Treasure Island Congestion Pricing	Optimize Existing Transit Network - Low Cost	$0.8B	1	Yes	Challenges	Challenges	Challenges
3002	76	Downtown San Francisco Congestion Pricing	Optimize Existing Transit Network - Low Cost	$0.3B	1	Yes	Challenges	Challenges	Challenges
3200	77	SR-37 Long Term Project (Tolling, Elevation, Interchanges, Widening, Express Bus)	Resilience	$5.4B	2	Yes	Challenges	Challenges	Challenges
4004	78	Regional Hovercraft Network	Enhance Alternate Modes		0	Yes	modeling in progress		
7000	79	BART Caldecott Tunnel Resilience Project	Resilience		0	No	modeling in progress		
2307	80	ACE Service Expansion and Capital Improvements (to San Joaquin Valley)	Extend Rail Network - High Cost		0	Yes	modeling in progress		
2309	81	Altamont Vision Phase 1 (to San Joaquin Valley)	Extend Rail Network - High Cost		0	Yes	modeling in progress		
6001	82	Bus Rapid Transit (BRT) on All Bridges	Optimize Existing Freeway Network		0	Yes	modeling in progress		
6002	83	SMART to Richmond via New Richmond-San Rafael Bridge	Build Core Rail		2	Yes	modeling in progress		
6003	84	I-80 Corridor Overhaul	Optimize Existing Freeway Network		1	Yes	modeling in progress		
6020	85	Regional Express Bus Network + Optimized Express Lane Network	Optimize Existing Freeway Network		1	Yes	modeling in progress		
6100	86	Integrated Transit Fare System	Optimize Existing Transit Network - Low Cost		0	Yes	modeling in progress		
6101	87	Free Transit	Optimize Existing Transit Network - Low Cost		1	Yes	modeling in progress		
6102	88	Higher-Occupancy HOV Lanes with VMT fee for SOV	Optimize Existing Freeway Network		1	Yes	modeling in progress		
6103	89	Demand-Based Tolls on All Highways	Optimize Existing Freeway Network		1	Yes	modeling in progress		
6104	90	Reversible Lanes on Congested Bridges and Freeways	Optimize Existing Freeway Network		1	Yes	modeling in progress		
6005	91	Regional Bicycle Superhighway Network	Enhance Alternate Modes		0	Yes	cannot be modeled		
6004	92	Bay Trail Completion	Enhance Alternate Modes		0	Yes	cannot be modeled		
6105	93	Freight Delivery Timing Regulation	Optimize Existing Freeway Network		1	Yes	cannot be modeled		

Equity Score
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Horizon/Plan Bay Area 2050: Draft Project Performance Findings
Attachment C: Detailed Table of 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
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(see high-level description of methodology at the bottom of the page)

Project Type	Project ID	Row ID	Project	Affordable	Connected	Diverse	Healthy	Vibrant
Build Core Rail	1002	1	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 3: Mission St)	Supports	Supports	Supports	Supports	Supports
	1003	2	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 4: New Markets)	Supports	Supports	Supports	Supports	Supports
	1004	3	New San Francisco-Oakland Transbay Rail Crossing - Commuter Rail (Crossing 5)	Supports	Supports	Does Not Support	Supports	Does Not Support
	1007	4	New San Francisco-Oakland Transbay Rail Crossing - BART + Commuter Rail (Crossing 7)	Supports	Supports	Does Not Support	Supports	Does Not Support
	2205	5	BART to Silicon Valley (Phase 2)	Supports	Supports	Supports	Supports	Supports
	2208	6	BART Gap Closure (Millbrae to Silicon Valley)	Supports	Supports	Supports	Supports	Supports
	2300	7	Caltrain Downtown Extension	Supports	Supports	Supports	Supports	Supports
	2306	8	Dumbarton Rail (Redwood City to Union City)	Supports	Supports	Supports	Supports	Supports
	2310	9	Megaregional Rail Network + Resilience Project (Caltrain, ACE, Valley Link, Dumbarton, Cap Cor)	Supports	Supports	Does Not Support	Supports	Does Not Support
	6002	10	SMART to Richmond via New Richmond-San Rafael Bridge	Supports	Supports	Does Not Support	Supports	Does Not Support
Extend Rail Network - High Cost	2203	11	BART to Hercules & I-80 Bus from Vallejo to Oakland	Supports	Supports	Supports	Supports	Supports
	2204	12	BART on I-680 (Walnut Creek to West Dublin/Pleasanton)	Supports	Supports	Supports	Supports	Supports
	2206	13	BART Extension from Diridon to Cupertino	Supports	Supports	Supports	Supports	Supports
	2207	14	BART Extension from Diridon to Gilroy (replacing existing Caltrain)	Does Not Support	Supports	Supports	Supports	Supports
	2307	15	ACE Service Expansion and Capital Improvements (to San Joaquin Valley)	Supports	Supports	Supports	Supports	Supports
	2308	16	Valley Link (Dublin to San Joaquin Valley)	Supports	Supports	Supports	Supports	Supports
	2309	17	Altamont Vision Phase 1 (to San Joaquin Valley)	Supports	Supports	Supports	Supports	Supports
Extend Rail Network - Low Cost	2202	18	BART DMU Extension to Brentwood	Supports	Supports	Supports	Supports	Supports
	2304	19	SMART Extension to Cloverdale	Supports	Supports	Supports	Supports	Supports
	2305	20	SMART to Solano (Novato to Suisun City, without sea level rise protections)	Supports	Supports	Supports	Supports	Supports
Optimize Existing Transit Network - High Cost	2001	21	AC Transit Local Rapid Network: Capital Improvements + Service Increase	Supports	Supports	Supports	Supports	Supports
	2005	22	Alameda County BRT Network + Connected Vehicle Corridors	Supports	Supports	Supports	Supports	Supports
	2201	23	BART Core Capacity	Supports	Supports	Supports	Supports	Supports
	2301	24	Caltrain Full Electrification and Blended System: Base Growth	Supports	Supports	Does Not Support	Supports	Does Not Support
	2302	25	Caltrain Full Electrification and Blended System: Moderate Growth	Supports	Supports	Does Not Support	Supports	Does Not Support
	2303	26	Caltrain Full Electrification and Blended System: High Growth	Supports	Supports	Does Not Support	Supports	Does Not Support
	2401	27	North San Jose LRT Subway	Supports	Supports	Supports	Supports	Supports
	2407	28	Muni Metro Southwest M-Line Subway	Supports	Supports	Supports	Supports	Supports
	2409	29	VTA LRT Systemwide Grade Separation	Supports	Supports	Supports	Supports	Supports
	2410	30	VTA LRT Systemwide Grade Separation and Full Automation	Supports	Supports	Supports	Supports	Does Not Support
	2411	31	VTA LRT Systemwide Grade Separation, Network Expansion, and Full Automation	Supports	Supports	Supports	Supports	Supports
Optimize Existing Transit Network - Low Cost	2000	32	AC Transit Local Network: Service Increase	Supports	Supports	Supports	Supports	Supports
	2003	33	Muni Forward: Capital Improvements + Service Increase	Supports	Supports	Supports	Supports	Supports
	2004	34	Sonoma Countywide Bus: Service Increase	Supports	Supports	Supports	Supports	Supports
	2007	35	San Francisco Southeast Waterfront Transit Improvements	Supports	Supports	Supports	Supports	Supports
	2008	36	Alameda Point Transit Network Improvements	Supports	Supports	Supports	Supports	Supports

Questions to determine Guiding Principle flags:
Affordable: Does the project increase travel costs for lower income residents?
Connected: Does the project significantly increase travel times or eliminate travel options?
Diverse: Does the project displace lower-income residents or divide communities (as a direct impact of project construction)?
Healthy: Does the project significantly increase emissions or collisions?
Vibrant: Does the project directly eliminate jobs?

Horizon/Plan Bay Area 2050: Draft Project Performance Findings
Attachment C: Detailed Table of Guiding Principle Flags

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Project Type	Project ID	Row ID	Project	Affordable	Connected	Diverse	Healthy	Vibrant
Optimize Existing Transit Network - Low Cost	2100	37	San Pablo BRT	Supports	Supports	Supports	Supports	Supports
	2101	38	Geary BRT (Phase 2)	Supports	Supports	Supports	Supports	Supports
	2103	39	SamTrans El Camino Real BRT: Capital and Service Improvements	Supports	Supports	Supports	Supports	Supports
	2105	40	Alameda County E14th St/Mission and Fremont Blvd Multimodal Corridor	Supports	Supports	Supports	Supports	Supports
	2209	41	Irvington BART Infill Station	Supports	Supports	Supports	Supports	Supports
	2400	42	Downtown San Jose LRT Subway	Supports	Supports	Supports	Supports	Supports
	3001	43	Treasure Island Congestion Pricing	Does Not Support	Supports	Supports	Supports	Supports
	3002	44	Downtown San Francisco Congestion Pricing	Does Not Support	Supports	Supports	Supports	Supports
	6100	45	Integrated Transit Fare System	Supports	Supports	Supports	Supports	Supports
	6101	46	Free Transit	Supports	Supports	Supports	Supports	Does Not Support
Build Local Transit	2402	47	San Jose Airport People Mover	Supports	Supports	Supports	Supports	Supports
	2403	48	Vasona LRT Extension (Phase 2)	Supports	Supports	Supports	Supports	Supports
	2408	49	Muni Metro T-Third Extension to South San Francisco	Supports	Supports	Supports	Supports	Supports
	2412	50	SR-85 LRT (Mountain View to US101 interchange)	Supports	Supports	Supports	Supports	Supports
	4000	51	Oakland/Alameda Gondola Network	Supports	Supports	Supports	Supports	Does Not Support
	4001	52	Mountain View AV Network (Free Fare, Subsidies from Companies)	Supports	Supports	Supports	Supports	Does Not Support
	4002	53	Contra Costa Autonomous Shuttle Program	Supports	Supports	Supports	Supports	Supports
	4003	54	Cupertino-Mountain View-San Jose Elevated Maglev Rail Loop	Supports	Supports	Supports	Supports	Does Not Support
	5003	55	I-680 Corridor Improvements (BRT, Express Bus, Shared AVs, Gondolas)	Supports	Supports	Supports	Supports	Supports
Enhance Alternate Modes	2600	56	WETA Ferry Service Frequency Increase	Supports	Supports	Supports	Supports	Supports
	2601	57	WETA Ferry Network Expansion (Berkeley, Alameda Pt, Redwood City, Mission Bay, Treasure Isla..	Supports	Supports	Supports	Supports	Supports
	2700	58	Bay Bridge West Span Bike Path	Supports	Supports	Supports	Supports	Supports
	4004	59	Regional Hovercraft Network	Supports	Supports	Supports	Supports	Supports
	6004	60	Bay Trail Completion	Supports	Supports	Supports	Supports	Supports
	6005	61	Regional Bicycle Superhighway Network	Supports	Supports	Supports	Supports	Supports
	6006	62	Enhanced Regionwide Bike Infrastructure	Supports	Supports	Supports	Supports	Supports
Build Road Capacity - High Cost	1001	63	Southern Crossing Bridge + New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 6)	Supports	Supports	Does Not Support	Supports	Supports
	1005	64	Mid-Bay Bridge (I-238 to I-380) (Crossing 2)	Supports	Supports	Supports	Does Not Support	Does Not Support
	1006	65	San Mateo Bridge Reconstruction and Widening (Crossing 1)	Supports	Supports	Supports	Does Not Support	Supports
	3000	66	Regional Express Lanes (MTC + VTA + ACTC + US-101)	Supports	Supports	Supports	Does Not Support	Supports
Build Road Capacity - Low Cost	3100	67	SR-239 Widening (Brentwood to Tracy including airport connector)	Supports	Supports	Supports	Does Not Support	Supports
	3101	68	I-680/SR-4 Interchange Improvements (Direct/HOV Connectors, Ramp Widening, Auxiliary Lanes)	Supports	Supports	Supports	Does Not Support	Supports
	3102	69	SR-4 Operational Improvements	Supports	Supports	Supports	Does Not Support	Supports
	3103	70	SR-4 Widening (Brentwood to Discovery Bay)	Supports	Supports	Supports	Does Not Support	Supports
	3104	71	I-80/I-680/SR-12 Interchange + Widening (Phases 2B-7)	Supports	Supports	Supports	Does Not Support	Does Not Support
	3105	72	SR-12 Widening (I-80 to Rio Vista)	Does Not Support	Supports	Supports	Does Not Support	Supports

Questions to determine Guiding Principle flags:
Affordable: Does the project increase travel costs for lower income residents?
Connected: Does the project significantly increase travel times or eliminate travel options?
Diverse: Does the project displace lower-income residents or divide communities (as a direct impact of project construction)?
Healthy: Does the project significantly increase emissions or collisions?
Vibrant: Does the project directly eliminate jobs?

Horizon/Plan Bay Area 2050: Draft Project Performance Findings
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Project Type	Project ID	Row ID	Project	Affordable	Connected	Diverse	Healthy	Vibrant
Build Road Capacity - Low Cost	3106	73	SR-152 Realignment and Tolling	Does Not Support	Supports	Supports	Does Not Support	Supports
	3109	74	SR-262 Widening and Interchange Improvements	Supports	Supports	Does Not Support	Does Not Support	Supports
	3110	75	Union City-Fremont East-West Connector	Supports	Supports	Supports	Does Not Support	Supports
Optimize Existing Freeway Network	2002	76	AC Transit Transbay Network: Capital Improvements + Service Increase	Supports	Supports	Supports	Supports	Supports
	3003	77	San Francisco Arterial HOV and Freeway HOT Lanes	Supports	Supports	Supports	Supports	Supports
	5000	78	Bay Area Forward (Phase 1: Freeway Ramp and Arterial Components Only)	Supports	Supports	Supports	Does Not Support	Supports
	6001	79	Bus Rapid Transit (BRT) on All Bridges	Supports	Supports	Supports	Supports	Supports
	6003	80	I-80 Corridor Overhaul	Does Not Support	Supports	Supports	Supports	Supports
	6020	81	Regional Express Bus Network + Optimized Express Lane Network	Supports	Supports	Does Not Support	Supports	Supports
	6102	82	Higher-Occupancy HOV Lanes with VMT fee for SOV	Does Not Support	Supports	Supports	Supports	Supports
	6103	83	Demand-Based Tolls on All Highways	Does Not Support	Supports	Supports	Supports	Supports
	6104	84	Reversible Lanes on Congested Bridges and Freeways	Supports	Supports	Supports	Does Not Support	Supports
	6105	85	Freight Delivery Timing Regulation	Supports	Does Not Support	Supports	Supports	Supports
Resilience	3200	86	SR-37 Long Term Project (Tolling, Elevation, Interchanges, Widening, Express Bus)	Does Not Support	Supports	Supports	Does Not Support	Supports
	7000	87	BART Caldecott Tunnel Resilience Project	Supports	Supports	Supports	Supports	Supports
	7001	88	VTA LRT Resilience Project (Tasman West)	Supports	Supports	Supports	Supports	Supports
	7002	89	I-580/US-101/SMART Marin Resilience Project	Supports	Supports	Supports	Supports	Supports
	7003	90	US-101 Peninsula Resilience Project (San Antonio Rd, Poplar Ave, Millbrae Ave)	Supports	Supports	Supports	Supports	Supports
	7004	91	SR-84 Resilience Project (Dumbarton Bridge, 101 interchange)	Supports	Supports	Supports	Supports	Supports
	7005	92	SR-237 Resilience Project (Alviso)	Supports	Supports	Supports	Supports	Supports
	7006	93	I-880 Resilience Project (South Fremont)	Supports	Supports	Supports	Supports	Supports

Questions to determine Guiding Principle flags:
Affordable: Does the project increase travel costs for lower income residents?
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Vibrant: Does the project directly eliminate jobs?

Horizon/Plan Bay Area 2050: Draft Project Performance Findings
Attachment D: Detailed Table of Lifecycle Benefits by Future

Note 1: Total number of projects: 93; 81 projects from public agencies, 12 projects from public/NGOs that were jury finalists from the Transformative Projects process
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All values in billions of 2019 dollars discounted present value

Project Type	Project ID	Row ID	Project	Future	Grand Total	Accessibility Benefits	Transit Crowding Benefits	Freeway Reliability and Vehicle Ownership Benefits	Environmental Benefits	Health Benefits	Safety Benefits
Build Core Rail	1002	1	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 3: Mission St)	Rising Tides Falling Fortunes	**$21.3B**	$6.6B	$7.9B	$1.9B	$0.1B	$4.1B	$0.6B
				Clean and Green	**$45.4B**	$19.0B	$18.8B	$2.0B	$0.0B	$5.2B	$0.5B
				Back to the Future	**$42.3B**	$19.9B	$15.3B	$2.1B	$0.1B	$4.4B	$0.6B
	1003	2	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 4: New Markets)	Rising Tides Falling Fortunes	**$21.6B**	$7.0B	$7.2B	$1.9B	$0.2B	$4.6B	$0.7B
				Clean and Green	**$47.3B**	$19.3B	$19.8B	$1.8B	$0.0B	$6.0B	$0.5B
				Back to the Future	**$42.7B**	$19.2B	$15.8B	$2.1B	$0.1B	$4.9B	$0.7B
	1004	3	New San Francisco-Oakland Transbay Rail Crossing - Commuter Rail (Crossing 5)	Rising Tides Falling Fortunes	**$30.7B**	$14.0B	$7.1B	$1.6B	$0.3B	$5.8B	$1.9B
				Clean and Green	**$79.3B**	$48.4B	$18.6B	$2.1B	$0.0B	$8.6B	$1.6B
				Back to the Future	**$98.0B**	$64.6B	$17.8B	$3.7B	$0.2B	$9.1B	$2.6B
	1007	4	New San Francisco-Oakland Transbay Rail Crossing - BART + Commuter Rail (Crossing 7)	Rising Tides Falling Fortunes	**$47.1B**	$20.9B	$10.6B	$3.0B	$0.4B	$9.7B	$2.4B
				Clean and Green	**$121.0B**	$68.0B	$34.2B	$3.6B	($0.1B)	$13.1B	$2.1B
				Back to the Future	**$114.0B**	$71.8B	$22.0B	$5.3B	$0.2B	$11.9B	$2.7B
	2205	5	BART to Silicon Valley (Phase 2)	Rising Tides Falling Fortunes	**$0.5B**	$0.3B	($0.3B)	$0.2B	$0.0B	$0.1B	$0.2B
				Clean and Green	**$2.3B**	$1.8B	($0.1B)	$0.2B	$0.0B	$0.3B	$0.2B
				Back to the Future	**$3.7B**	$3.5B	($1.5B)	$1.1B	$0.0B	$0.4B	$0.2B
	2208	6	BART Gap Closure (Millbrae to Silicon Valley)	Rising Tides Falling Fortunes	**$0.5B**	$0.3B	($0.2B)	$0.1B	$0.0B	$0.1B	$0.1B
				Clean and Green	**$3.8B**	$1.7B	$1.3B	$0.4B	$0.0B	$0.3B	$0.2B
				Back to the Future	**$5.4B**	$3.7B	$0.1B	$1.0B	$0.0B	$0.3B	$0.3B
	2300	7	Caltrain Downtown Extension	Rising Tides Falling Fortunes	**$1.9B**	$1.4B	$0.2B	$0.0B	$0.0B	$0.2B	$0.1B
				Clean and Green	**$3.4B**	$3.2B	($0.1B)	$0.0B	$0.0B	$0.1B	$0.1B
				Back to the Future	**$3.0B**	$2.4B	$0.8B	($0.3B)	$0.0B	$0.0B	$0.1B
	2306	8	Dumbarton Rail (Redwood City to Union City)	Rising Tides Falling Fortunes	**($0.5B)**	$0.3B	($0.2B)	($0.6B)	($0.3B)	$0.1B	$0.1B
				Clean and Green	**$0.8B**	$0.9B	($0.3B)	$0.3B	($0.3B)	$0.1B	$0.1B
				Back to the Future	**$1.9B**	$1.7B	$0.3B	$0.0B	($0.3B)	$0.0B	$0.1B
	2310	9	Megaregional Rail Network + Resilience Project	Rising Tides Falling Fortunes	**$9.0B**	$5.6B	$1.9B	$0.7B	($0.7B)	$0.9B	$0.6B

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All values in billions of 2019 dollars discounted present value

Project Type	Project ID	Row ID	Project	Future	Grand Total	Accessibility Benefits	Transit Crowding Benefits	Freeway Reliability and Vehicle Ownership Benefits	Environmental Benefits	Health Benefits	Safety Benefits
Build Core Rail	2310	9	Megaregional Rail Network + Resilience Project (Caltrain, ACE, Valley Link, Dumbarton, Cap Cor)	Clean and Green	**$26.8B**	$14.0B	$10.7B	$1.0B	($0.8B)	$1.3B	$0.6B
				Back to the Future	**$21.5B**	$14.6B	$4.4B	$1.6B	($0.8B)	$1.1B	$0.7B
Extend Rail Network - High Cost	2203	10	BART to Hercules & I-80 Bus from Vallejo to Oakland	Rising Tides Falling Fortunes	**$0.4B**	$0.8B	($1.0B)	$0.1B	$0.1B	$0.3B	$0.2B
				Clean and Green	**$0.1B**	$1.4B	($1.6B)	($0.1B)	$0.0B	$0.2B	$0.1B
				Back to the Future	**$1.4B**	$1.4B	($0.6B)	$0.3B	$0.0B	$0.1B	$0.1B
	2204	11	BART on I-680 (Walnut Creek to West Dublin/Pleasanton)	Rising Tides Falling Fortunes	**($0.2B)**	($0.1B)	($0.2B)	$0.2B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$1.6B**	$0.6B	$1.0B	$0.0B	$0.0B	$0.0B	$0.0B
				Back to the Future	**$0.2B**	$0.3B	$0.0B	$0.0B	$0.0B	$0.0B	$0.0B
	2206	12	BART Extension from Diridon to Cupertino	Rising Tides Falling Fortunes	**$1.1B**	$0.6B	($0.2B)	$0.3B	$0.0B	$0.2B	$0.1B
				Clean and Green	**$2.9B**	$1.8B	$0.4B	$0.0B	$0.0B	$0.4B	$0.2B
				Back to the Future	**$5.1B**	$4.5B	($0.4B)	$0.3B	$0.0B	$0.5B	$0.2B
	2207	13	BART Extension from Diridon to Gilroy (replacing existing Caltrain)	Rising Tides Falling Fortunes	**$0.3B**	$0.3B	($0.1B)	$0.1B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$2.0B**	$0.8B	$0.6B	$0.4B	$0.0B	$0.2B	$0.1B
				Back to the Future	**$3.0B**	$1.9B	$0.2B	$0.5B	$0.0B	$0.3B	$0.1B
	2308	14	Valley Link (Dublin to San Joaquin Valley)	Rising Tides Falling Fortunes	**($0.3B)**	$0.7B	($0.4B)	($1.4B)	$0.0B	$0.5B	$0.2B
				Clean and Green	**$4.1B**	$2.0B	$2.0B	($0.1B)	$0.0B	$0.2B	$0.1B
				Back to the Future	**$3.9B**	$3.2B	($0.6B)	$0.6B	$0.0B	$0.3B	$0.3B
Extend Rail Network - Low Cost	2202	15	BART DMU Extension to Brentwood	Rising Tides Falling Fortunes	**($0.2B)**	$0.1B	($0.1B)	($0.2B)	$0.0B	$0.1B	$0.0B
				Clean and Green	**$0.3B**	$0.3B	($0.2B)	$0.1B	$0.0B	$0.1B	$0.0B
				Back to the Future	**($0.1B)**	$0.1B	($0.2B)	$0.0B	$0.0B	$0.0B	$0.0B
	2304	16	SMART Extension to Cloverdale	Rising Tides Falling Fortunes	**$0.1B**	$0.2B	($0.1B)	($0.2B)	$0.0B	$0.1B	$0.0B
				Clean and Green	**$0.1B**	$0.0B	$0.1B	($0.1B)	$0.0B	$0.0B	$0.0B
				Back to the Future	**($0.4B)**	($0.4B)	($0.4B)	$0.2B	$0.0B	$0.1B	$0.0B
	2305	17	SMART to Solano (Novato to Suisun City, without sea level rise protections)	Rising Tides Falling Fortunes	**($0.1B)**	$0.1B	($0.1B)	($0.1B)	$0.0B	$0.0B	$0.0B
				Clean and Green	**$0.2B**	$0.2B	$0.0B	($0.1B)	$0.0B	$0.0B	$0.1B

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All values in billions of 2019 dollars discounted present value

Project Type	Project ID	Row ID	Project	Future	Grand Total	Accessibility Benefits	Transit Crowding Benefits	Freeway Reliability and Vehicle Ownership Benefits	Environmental Benefits	Health Benefits	Safety Benefits
Extend Rail Network - Low Cost	2305	17	SMART to Solano (Novato to Suisun City, without sea level rise protections)	Back to the Future	**$0.0B**	($0.4B)	$0.2B	$0.2B	$0.0B	$0.1B	$0.0B
Optimize Existing Transit Network - High Cost	2001	18	AC Transit Local Rapid Network: Capital Improvements + Service Increase	Rising Tides Falling Fortunes	**$3.5B**	$0.6B	$0.0B	$2.1B	$0.1B	$0.3B	$0.4B
				Clean and Green	**$3.9B**	$1.3B	($0.6B)	$2.4B	$0.0B	$0.4B	$0.4B
				Back to the Future	**$5.3B**	$2.7B	($1.3B)	$2.8B	$0.0B	$0.4B	$0.7B
	2005	19	Alameda County BRT Network + Connected Vehicle Corridors	Rising Tides Falling Fortunes	**$1.0B**	$0.4B	($0.2B)	$0.3B	$0.0B	$0.3B	$0.1B
				Clean and Green	**$1.5B**	$0.4B	($0.2B)	$1.0B	$0.0B	$0.2B	$0.1B
				Back to the Future	**$2.6B**	$1.6B	$0.1B	$0.7B	$0.0B	$0.1B	$0.2B
	2201	20	BART Core Capacity	Rising Tides Falling Fortunes	**$4.4B**	$0.7B	$3.0B	$0.4B	$0.0B	$0.2B	$0.1B
				Clean and Green	**$9.8B**	$1.5B	$7.9B	$0.0B	$0.0B	$0.3B	$0.1B
				Back to the Future	**$10.2B**	$2.8B	$6.6B	$0.6B	$0.0B	$0.2B	$0.1B
	2301	21	Caltrain Full Electrification and Blended System: Base Growth	Rising Tides Falling Fortunes	**$3.1B**	$1.1B	$1.2B	$0.1B	$0.0B	$0.1B	$0.6B
				Clean and Green	**$4.9B**	$3.5B	$0.6B	$0.0B	$0.0B	$0.1B	$0.8B
				Back to the Future	**$4.4B**	$2.4B	$1.2B	$0.2B	$0.0B	$0.0B	$0.6B
	2302	22	Caltrain Full Electrification and Blended System: Moderate Growth	Rising Tides Falling Fortunes	**$6.8B**	$3.6B	$1.7B	$0.3B	$0.1B	$0.3B	$0.8B
				Clean and Green	**$22.9B**	$12.2B	$8.5B	$0.4B	$0.0B	$0.8B	$1.0B
				Back to the Future	**$12.7B**	$7.8B	$2.7B	$0.8B	$0.0B	$0.5B	$0.8B
	2303	23	Caltrain Full Electrification and Blended System: High Growth	Rising Tides Falling Fortunes	**$9.9B**	$5.5B	$2.0B	$0.5B	$0.1B	$0.6B	$1.3B
				Clean and Green	**$35.8B**	$18.6B	$13.3B	$0.9B	$0.0B	$1.3B	$1.7B
				Back to the Future	**$19.2B**	$11.7B	$4.1B	$1.2B	$0.1B	$1.0B	$1.2B
	2401	24	North San Jose LRT Subway	Rising Tides Falling Fortunes	**$0.0B**	($0.1B)	($0.2B)	$0.3B	$0.0B	$0.0B	$0.1B
				Clean and Green	**$0.7B**	($0.4B)	$0.7B	$0.1B	$0.0B	$0.2B	$0.2B
				Back to the Future	**$2.4B**	$1.2B	$0.2B	$0.6B	$0.0B	$0.3B	$0.2B
	2407	25	Muni Metro Southwest M-Line Subway	Rising Tides Falling Fortunes	**$0.4B**	($0.2B)	$0.4B	$0.1B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$1.4B**	($0.3B)	$1.7B	($0.1B)	$0.0B	$0.0B	$0.0B
				Back to the Future	**$2.0B**	$0.2B	$1.2B	$0.4B	$0.0B	$0.2B	$0.0B

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Optimize Existing Transit Network - High Cost	2409	26	VTA LRT Systemwide Grade Separation	Rising Tides Falling Fortunes	**$0.7B**	($0.1B)	($0.2B)	$0.4B	$0.0B	$0.2B	$0.4B
				Clean and Green	**$2.6B**	$1.1B	$0.5B	$0.3B	$0.0B	$0.3B	$0.4B
				Back to the Future	**$5.6B**	$2.9B	$1.1B	$0.7B	$0.0B	$0.3B	$0.5B
	2410	27	VTA LRT Systemwide Grade Separation and Full Automation	Rising Tides Falling Fortunes	**$1.9B**	$0.6B	($0.6B)	$0.9B	$0.0B	$0.4B	$0.6B
				Clean and Green	**$5.7B**	$3.4B	($0.4B)	$1.3B	$0.0B	$0.8B	$0.7B
				Back to the Future	**$10.2B**	$6.2B	($0.1B)	$2.3B	$0.0B	$1.0B	$0.7B
	2411	28	VTA LRT Systemwide Grade Separation, Network Expansion, and Full Automation	Rising Tides Falling Fortunes	**$4.2B**	$1.9B	($0.9B)	$1.1B	$0.1B	$1.1B	$0.9B
				Clean and Green	**$9.1B**	$5.6B	($1.9B)	$2.4B	$0.0B	$2.1B	$0.8B
				Back to the Future	**$16.0B**	$10.3B	($0.9B)	$3.0B	$0.1B	$2.5B	$1.1B
Optimize Existing Transit Network - Low Cost	2000	29	AC Transit Local Network: Service Increase	Rising Tides Falling Fortunes	**$3.2B**	$0.5B	$0.5B	$1.6B	$0.0B	$0.3B	$0.3B
				Clean and Green	**$5.9B**	$1.7B	$1.9B	$1.7B	$0.0B	$0.3B	$0.2B
				Back to the Future	**$5.9B**	$3.5B	($0.2B)	$1.9B	$0.0B	$0.3B	$0.2B
	2003	30	Muni Forward: Capital Improvements + Service Increase	Rising Tides Falling Fortunes	**$2.0B**	$0.6B	$0.8B	$0.1B	$0.0B	($0.1B)	$0.6B
				Clean and Green	**$4.4B**	$0.7B	$2.8B	$0.5B	$0.0B	($0.1B)	$0.6B
				Back to the Future	**$3.4B**	$0.6B	$2.1B	$0.3B	$0.0B	($0.1B)	$0.6B
	2004	31	Sonoma Countywide Bus: Service Increase	Rising Tides Falling Fortunes	**$0.2B**	$0.0B	$0.0B	$0.0B	$0.0B	$0.1B	$0.1B
				Clean and Green	**$0.2B**	$0.0B	($0.2B)	$0.4B	$0.0B	$0.0B	$0.1B
				Back to the Future	**$1.3B**	$0.7B	$0.2B	$0.4B	$0.0B	$0.0B	$0.0B
	2007	32	San Francisco Southeast Waterfront Transit Improvements	Rising Tides Falling Fortunes	**$1.0B**	$0.4B	$0.5B	$0.2B	$0.0B	($0.1B)	$0.0B
				Clean and Green	**$1.6B**	$0.2B	$1.4B	$0.0B	$0.0B	($0.1B)	$0.0B
				Back to the Future	**$2.2B**	$0.8B	$1.1B	$0.4B	$0.0B	($0.1B)	$0.0B
	2008	33	Alameda Point Transit Network Improvements	Rising Tides Falling Fortunes	**$0.4B**	$0.2B	$0.1B	$0.0B	$0.0B	$0.1B	$0.0B
				Clean and Green	**$1.4B**	$0.3B	$1.0B	$0.0B	$0.0B	$0.0B	$0.0B
				Back to the Future	**$1.8B**	$1.5B	$0.0B	$0.3B	$0.0B	$0.1B	$0.0B
	2100	34	San Pablo BRT	Rising Tides Falling Fortunes	**$0.6B**	$0.2B	($0.1B)	$0.0B	$0.0B	$0.2B	$0.3B

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Optimize Existing Transit Network - Low Cost	2100	34	San Pablo BRT	Clean and Green	**$1.2B**	$0.2B	$0.5B	$0.2B	$0.0B	$0.1B	$0.3B
				Back to the Future	**$1.6B**	$0.6B	$0.2B	$0.3B	$0.0B	$0.2B	$0.3B
	2101	35	Geary BRT (Phase 2)	Rising Tides Falling Fortunes	**$0.9B**	$0.1B	$0.5B	($0.1B)	$0.0B	$0.1B	$0.3B
				Clean and Green	**$1.0B**	$0.1B	$0.8B	$0.0B	$0.0B	$0.1B	$0.1B
				Back to the Future	**$1.8B**	$0.7B	$0.4B	$0.4B	$0.0B	$0.1B	$0.1B
	2103	36	SamTrans El Camino Real BRT: Capital and Service Improvements	Rising Tides Falling Fortunes	**$0.3B**	($0.1B)	$0.0B	$0.1B	$0.0B	$0.1B	$0.1B
				Clean and Green	**$0.7B**	$0.5B	$0.0B	$0.2B	$0.0B	$0.0B	$0.1B
				Back to the Future	**$0.4B**	$0.3B	$0.3B	($0.3B)	$0.0B	$0.0B	$0.0B
	2105	37	Alameda County E14th St/Mission and Fremont Blvd Multimodal Corridor	Rising Tides Falling Fortunes	**$0.6B**	$0.3B	($0.3B)	$0.2B	$0.0B	$0.2B	$0.2B
				Clean and Green	**$1.1B**	$0.3B	$0.0B	$0.5B	$0.0B	$0.1B	$0.1B
				Back to the Future	**$0.8B**	$0.4B	($0.2B)	$0.3B	$0.0B	$0.1B	$0.2B
	2209	38	Irvington BART Infill Station	Rising Tides Falling Fortunes	**$0.3B**	$0.1B	$0.2B	$0.0B	$0.0B	($0.1B)	$0.1B
				Clean and Green	**$0.2B**	$0.8B	($0.9B)	$0.1B	$0.0B	$0.1B	$0.1B
				Back to the Future	**$2.1B**	$2.1B	$0.2B	($0.2B)	$0.0B	$0.0B	$0.1B
	2400	39	Downtown San Jose LRT Subway	Rising Tides Falling Fortunes	**$0.2B**	$0.0B	($0.2B)	$0.4B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$0.3B**	$0.2B	($0.2B)	$0.2B	$0.0B	$0.1B	$0.0B
				Back to the Future	**$2.5B**	$1.5B	$0.1B	$0.6B	$0.0B	$0.2B	$0.1B
	3001	40	Treasure Island Congestion Pricing	Rising Tides Falling Fortunes	**$6.2B**	$5.4B	($0.6B)	$0.7B	$0.1B	$0.3B	$0.3B
				Clean and Green	**$5.6B**	$5.4B	($0.6B)	$0.3B	$0.0B	$0.3B	$0.1B
				Back to the Future	**$11.3B**	$9.2B	$0.2B	$1.2B	$0.1B	$0.2B	$0.4B
	3002	41	Downtown San Francisco Congestion Pricing	Rising Tides Falling Fortunes	**$0.7B**	$0.2B	$0.3B	$0.2B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$0.9B**	$0.4B	$0.4B	($0.1B)	$0.0B	$0.1B	$0.0B
				Back to the Future	**$1.4B**	$0.5B	$0.4B	$0.4B	$0.0B	$0.1B	$0.0B
Build Local Transit	2402	42	San Jose Airport People Mover	Rising Tides Falling Fortunes	**$0.4B**	$0.1B	$0.0B	$0.2B	$0.0B	$0.0B	$0.1B
				Clean and Green	**$0.6B**	$0.1B	$0.4B	$0.2B	$0.0B	($0.1B)	$0.0B

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Build Local Transit	2402	42	San Jose Airport People Mover	Back to the Future	**($0.7B)**	($0.8B)	$0.0B	$0.1B	$0.0B	$0.1B	$0.0B
	2403	43	Vasona LRT Extension (Phase 2)	Rising Tides Falling Fortunes	**$0.2B**	($0.1B)	($0.1B)	$0.4B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$0.1B**	$0.2B	$0.0B	($0.1B)	$0.0B	$0.0B	$0.0B
				Back to the Future	**$0.4B**	$0.4B	($0.4B)	$0.4B	$0.0B	$0.0B	$0.0B
	2408	44	Muni Metro T-Third Extension to South San Francisco	Rising Tides Falling Fortunes	**($0.2B)**	$0.0B	($0.4B)	$0.2B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$0.6B**	$0.0B	$0.5B	$0.0B	$0.0B	$0.1B	$0.1B
				Back to the Future	**$1.7B**	$1.0B	$0.2B	$0.4B	$0.0B	$0.0B	$0.1B
	2412	45	SR-85 LRT (Mountain View to US101 interchange)	Rising Tides Falling Fortunes	**$1.0B**	$0.5B	$0.0B	$0.2B	$0.0B	$0.3B	$0.1B
				Clean and Green	**$2.5B**	$0.8B	$1.1B	$0.2B	$0.0B	$0.3B	$0.1B
				Back to the Future	**$2.3B**	$1.8B	$0.0B	$0.3B	$0.0B	$0.2B	$0.1B
	4000	46	Oakland/Alameda Gondola Network	Rising Tides Falling Fortunes	**$0.8B**	$0.5B	($0.1B)	$0.1B	$0.0B	$0.2B	$0.1B
				Clean and Green	**$0.3B**	$0.1B	($0.1B)	$0.0B	$0.0B	$0.3B	$0.1B
				Back to the Future	**$2.4B**	$2.0B	($0.6B)	$0.5B	$0.0B	$0.4B	$0.1B
	4001	47	Mountain View AV Network (Free Fare, Subsidies from Companies)	Rising Tides Falling Fortunes	**$0.4B**	$0.1B	($0.1B)	$0.0B	$0.0B	$0.2B	$0.1B
				Clean and Green	**$1.2B**	$0.8B	($0.1B)	$0.4B	$0.0B	$0.0B	$0.0B
				Back to the Future	**$1.5B**	$0.8B	$0.2B	$0.3B	$0.0B	$0.1B	$0.1B
	4002	48	Contra Costa Autonomous Shuttle Program	Rising Tides Falling Fortunes	**$0.7B**	$0.1B	($0.1B)	$0.4B	$0.0B	$0.2B	$0.1B
				Clean and Green	**$1.2B**	$0.1B	$0.0B	$0.6B	$0.0B	$0.3B	$0.1B
				Back to the Future	**$0.9B**	$0.4B	($0.1B)	$0.2B	$0.0B	$0.3B	$0.1B
	4003	49	Cupertino-Mountain View-San Jose Elevated Maglev Rail Loop	Rising Tides Falling Fortunes	**$0.4B**	$0.5B	($0.2B)	$0.0B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$2.5B**	$0.9B	$1.2B	$0.3B	$0.0B	$0.1B	$0.0B
				Back to the Future	**$2.7B**	$0.9B	$1.3B	$0.2B	$0.0B	$0.2B	$0.0B
	5003	50	I-680 Corridor Improvements (BRT, Express Bus, Shared AVs, Gondolas)	Rising Tides Falling Fortunes	**$1.2B**	$0.7B	($0.3B)	$0.4B	$0.0B	$0.2B	$0.1B
				Clean and Green	**$2.1B**	$1.1B	($0.5B)	$1.2B	$0.0B	$0.2B	$0.1B
				Back to the Future	**$2.8B**	$1.6B	$0.8B	$0.5B	$0.0B	$0.1B	$0.0B

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All values in billions of 2019 dollars discounted present value

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Enhance Alternate Modes	2600	51	WETA Ferry Service Frequency Increase	Rising Tides Falling Fortunes	**$0.7B**	$0.1B	$0.4B	$0.2B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$2.4B**	$0.5B	$1.5B	$0.2B	$0.0B	$0.2B	$0.1B
				Back to the Future	**$0.9B**	$0.4B	$0.5B	$0.1B	$0.0B	$0.0B	($0.1B)
	2601	52	WETA Ferry Network Expansion (Berkeley, Alameda Pt, Redwood City, Mission Bay, Treasure Island)	Rising Tides Falling Fortunes	**$1.1B**	$0.3B	$0.5B	($0.1B)	$0.0B	$0.3B	$0.2B
				Clean and Green	**$1.6B**	$0.5B	$1.0B	$0.1B	$0.0B	$0.0B	$0.0B
				Back to the Future	**$2.1B**	$1.0B	$1.3B	($0.1B)	$0.0B	($0.1B)	$0.0B
	2700	53	Bay Bridge West Span Bike Path	Rising Tides Falling Fortunes	**($0.5B)**	($0.2B)	$0.0B	($0.2B)	$0.0B	$0.0B	$0.0B
				Clean and Green	**$1.1B**	$0.7B	$0.2B	$0.1B	$0.0B	$0.0B	$0.0B
				Back to the Future	**$0.4B**	$0.1B	($0.2B)	$0.4B	$0.0B	$0.1B	$0.0B
	6006	54	Enhanced Regionwide Bike Infrastructure	Rising Tides Falling Fortunes	**$13.7B**	$9.8B	$1.0B	$0.0B	$0.2B	$1.2B	$1.4B
				Clean and Green	**$36.1B**	$28.5B	$4.3B	$0.6B	$0.0B	$1.6B	$1.2B
				Back to the Future	**$40.0B**	$31.1B	$4.0B	$1.3B	$0.1B	$1.8B	$1.7B
Build Road Capacity - High Cost	1001	55	Southern Crossing Bridge + New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 6)	Rising Tides Falling Fortunes	**$26.3B**	$11.9B	$7.6B	$1.2B	$0.1B	$5.0B	$0.5B
				Clean and Green	**$60.3B**	$30.4B	$18.6B	$1.7B	($0.2B)	$9.2B	$0.5B
				Back to the Future	**$73.2B**	$47.8B	$17.7B	$1.6B	$0.1B	$5.2B	$0.8B
	1005	56	Mid-Bay Bridge (I-238 to I-380) (Crossing 2)	Rising Tides Falling Fortunes	**$4.3B**	$4.3B	$0.2B	$0.3B	($0.1B)	($0.2B)	($0.3B)
				Clean and Green	**$7.9B**	$7.1B	$1.3B	($0.2B)	($0.1B)	($0.1B)	($0.2B)
				Back to the Future	**$21.1B**	$21.3B	$1.6B	($0.3B)	$0.0B	($1.4B)	($0.2B)
	1006	57	San Mateo Bridge Reconstruction and Widening (Crossing 1)	Rising Tides Falling Fortunes	**$0.1B**	($0.1B)	$0.1B	$0.0B	$0.0B	$0.1B	$0.0B
				Clean and Green	**($0.8B)**	($1.1B)	$0.3B	$0.2B	$0.0B	($0.1B)	$0.0B
				Back to the Future	**$2.4B**	$2.4B	$0.6B	$0.1B	$0.0B	($0.6B)	($0.1B)
	3000	58	Regional Express Lanes (MTC + VTA + ACTC + US-101)	Rising Tides Falling Fortunes	**$7.6B**	$6.3B	$0.1B	$1.7B	($0.2B)	($0.1B)	($0.2B)
				Back to the Future	**$18.8B**	$21.8B	$0.7B	$0.8B	($0.5B)	($0.9B)	($3.2B)
Build Road Capacity - Low Cost	3100	59	SR-239 Widening (Brentwood to Tracy including airport connector)	Rising Tides Falling Fortunes	**$0.7B**	$0.6B	$0.0B	$0.2B	($0.1B)	$0.0B	$0.1B
				Clean and Green	**$1.0B**	$0.8B	$0.4B	($0.2B)	($0.1B)	$0.1B	$0.1B

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Build Road Capacity - Low Cost	3100	59	SR-239 Widening (Brentwood to Tracy including airport connector)	Back to the Future	**$2.3B**	$2.3B	$0.0B	$0.0B	($0.1B)	$0.1B	$0.0B
	3101	60	I-680/SR-4 Interchange Improvements (Direct/HOV Connectors, Ramp Widening, Auxiliary Lanes)	Rising Tides Falling Fortunes	**($0.1B)**	$0.1B	$0.1B	($0.1B)	$0.0B	($0.1B)	$0.0B
				Clean and Green	**$1.0B**	$0.8B	$0.1B	$0.0B	$0.0B	$0.0B	$0.1B
				Back to the Future	**$1.4B**	$1.2B	$0.0B	$0.2B	$0.0B	$0.0B	$0.0B
	3102	61	SR-4 Operational Improvements	Rising Tides Falling Fortunes	**$0.0B**	$0.1B	($0.1B)	($0.1B)	$0.0B	$0.0B	$0.1B
				Clean and Green	**$0.5B**	$0.0B	$0.2B	$0.1B	$0.0B	$0.0B	$0.2B
				Back to the Future	**$1.1B**	$0.8B	($0.2B)	$0.2B	$0.0B	$0.1B	$0.1B
	3103	62	SR-4 Widening (Brentwood to Discovery Bay)	Rising Tides Falling Fortunes	**($0.3B)**	$0.1B	$0.0B	($0.4B)	$0.0B	$0.1B	$0.1B
				Clean and Green	**$0.1B**	$0.2B	($0.2B)	$0.2B	$0.0B	($0.1B)	$0.0B
				Back to the Future	**$2.5B**	$1.5B	$0.6B	$0.3B	$0.0B	$0.1B	$0.1B
	3104	63	I-80/I-680/SR-12 Interchange + Widening (Phases 2B-7)	Rising Tides Falling Fortunes	**$0.3B**	$0.1B	$0.0B	$0.0B	$0.0B	$0.0B	$0.2B
				Clean and Green	**$0.9B**	$0.3B	$0.4B	$0.0B	$0.0B	$0.0B	$0.2B
				Back to the Future	**$0.7B**	$0.3B	($0.2B)	$0.3B	$0.0B	$0.1B	$0.2B
	3105	64	SR-12 Widening (I-80 to Rio Vista)	Rising Tides Falling Fortunes	**$0.2B**	$0.1B	$0.0B	$0.2B	$0.0B	$0.0B	$0.0B
				Clean and Green	**$0.7B**	$0.5B	$0.0B	$0.1B	$0.0B	$0.1B	$0.1B
				Back to the Future	**$1.8B**	$1.6B	($0.4B)	$0.5B	$0.0B	$0.0B	$0.1B
	3106	65	SR-152 Realignment and Tolling	Rising Tides Falling Fortunes	**$4.5B**	$4.1B	$0.0B	$0.2B	$0.0B	$0.0B	$0.2B
				Clean and Green	**$0.1B**	$3.3B	$0.9B	($2.5B)	($0.4B)	($0.2B)	($0.9B)
				Back to the Future	**($0.9B)**	$4.9B	($0.6B)	($1.8B)	($0.6B)	$0.0B	($2.7B)
	3109	66	SR-262 Widening and Interchange Improvements	Rising Tides Falling Fortunes	**$0.2B**	$0.2B	($0.2B)	($0.4B)	$0.0B	$0.2B	$0.4B
				Clean and Green	**$0.4B**	$0.4B	$0.0B	($0.1B)	$0.0B	($0.1B)	$0.1B
				Back to the Future	**$1.2B**	$1.4B	$0.4B	($0.8B)	$0.0B	$0.0B	$0.1B
	3110	67	Union City-Fremont East-West Connector	Rising Tides Falling Fortunes	**$0.3B**	$0.1B	$0.1B	$0.1B	$0.0B	$0.0B	$0.1B
				Clean and Green	**$0.5B**	$0.2B	$0.1B	$0.2B	$0.0B	$0.0B	$0.0B
				Back to the Future	**$1.2B**	$1.1B	$0.2B	($0.1B)	$0.0B	$0.0B	$0.0B

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All values in billions of 2019 dollars discounted present value

Project Type	Project ID	Row ID	Project	Future	Grand Total	Accessibility Benefits	Transit Crowding Benefits	Freeway Reliability and Vehicle Ownership Benefits	Environmental Benefits	Health Benefits	Safety Benefits
Optimize Existing Freeway Network	2002	68	AC Transit Transbay Network: Capital Improvements + Service Increase	Rising Tides Falling Fortunes	**$3.2B**	$0.8B	$1.3B	$0.5B	$0.0B	$0.2B	$0.3B
				Clean and Green	**$4.9B**	$0.7B	$2.8B	$1.0B	$0.1B	$0.2B	$0.2B
				Back to the Future	**$6.2B**	$2.7B	$2.6B	$0.5B	$0.0B	$0.1B	$0.3B
	3003	69	San Francisco Arterial HOV and Freeway HOT Lanes	Rising Tides Falling Fortunes	**$0.7B**	$0.8B	$0.2B	($0.1B)	$0.0B	($0.1B)	$0.0B
				Clean and Green	**$1.1B**	$0.8B	$0.5B	($0.1B)	$0.0B	($0.1B)	$0.1B
				Back to the Future	**$3.2B**	$2.5B	$0.8B	$0.0B	$0.0B	($0.1B)	$0.1B
	5000	70	Bay Area Forward (Phase 1: Freeway Ramp and Arterial Components Only)	Rising Tides Falling Fortunes	**$4.3B**	$3.8B	$0.1B	$1.2B	($0.1B)	$0.0B	($0.7B)
				Back to the Future	**$3.5B**	$5.9B	$1.1B	$1.5B	($0.5B)	($0.6B)	($3.9B)
Resilience	3200	71	SR-37 Long Term Project (Tolling, Elevation, Interchanges, Widening, Express Bus)	Rising Tides Falling Fortunes	**$3.6B**	$2.1B	$0.7B	$0.3B	$0.5B	($0.2B)	$0.2B
				Clean and Green	**$2.5B**	$4.1B	$1.0B	($2.0B)	$0.4B	($0.3B)	($0.7B)
				Back to the Future	**($4.7B)**	($1.4B)	($0.1B)	($1.2B)	$0.4B	($0.3B)	($2.1B)
	7001	72	VTA LRT Resilience Project (Tasman West)	Rising Tides Falling Fortunes	**$1.0B**	$0.3B	$0.2B	$0.5B	$0.0B	$0.1B	$0.0B
				Clean and Green	**$1.1B**	$0.7B	($0.4B)	$0.3B	$0.0B	$0.3B	$0.1B
				Back to the Future	**$1.6B**	$1.6B	($1.2B)	$0.8B	$0.0B	$0.3B	$0.1B
	7002	73	I-580/US-101/SMART Marin Resilience Project	Rising Tides Falling Fortunes	**$12.0B**	$11.6B	$1.2B	$0.2B	($0.2B)	($0.5B)	($0.2B)
				Clean and Green	**$17.7B**	$17.1B	$1.6B	$0.0B	($0.3B)	($0.4B)	($0.3B)
				Back to the Future	**$20.0B**	$21.0B	$1.6B	($1.7B)	$0.0B	($0.8B)	$0.0B
	7003	74	US-101 Peninsula Resilience Project (San Antonio R..	Rising Tides Falling Fortunes	**$2.7B**	$2.8B	$0.6B	$0.1B	($0.1B)	($0.3B)	($0.4B)
	7004	75	SR-84 Resilience Project (Dumbarton Bridge, 101 in..	Rising Tides Falling Fortunes	**$4.7B**	$4.8B	$0.4B	$0.6B	($0.1B)	($0.3B)	($0.6B)
	7005	76	SR-237 Resilience Project (Alviso)	Rising Tides Falling Fortunes	**$2.2B**	$1.9B	$0.0B	$0.3B	$0.0B	($0.1B)	$0.2B
				Back to the Future	**$11.1B**	$11.8B	$1.9B	($1.7B)	($0.1B)	($0.7B)	($0.1B)
	7006	77	I-880 Resilience Project (South Fremont)	Rising Tides Falling Fortunes	**$4.0B**	$2.9B	$0.1B	$1.1B	($0.1B)	($0.1B)	$0.3B

Methodology Overview: 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).
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).
Description of benefits:
Accessibility Benefits: Represents change in accessibility benefits to all Bay Area residents as a result of the project
Transit Crowding Benefits: Captures the (dis)benefits associated with increase/decrease in crowding, since people may change their travel choices or be denied boarding, or experience discomfort in a crowded vehicle
Freeway Reliability and Vehicle Ownership Benefits: Reflects change in non-recurring vehicle delay on freeways, and the costs of change in vehicle ownership as a result of the project
Environmental Benefits: Captures monetary value of change in GHG emissions or impact on natural lands (wetlands, pastureland, farmland) due to the project
Health Benefits: Represents benefits from increased physical activity due to more walking/biking and reduction in air pollutants and noise
Safety Benefits: Captures decrease in injuries and collisions due to reduced VMT as well as operational and safety improvements such as freewayramp redesign or grade separations
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Horizon/Plan Bay Area 2050: Draft Project Performance Findings
Attachment E: Detailed Table of Lifecycle Costs

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Lifecycle costs in billions of 2019 dollars discounted present value; Project costs in billions of 2019 dollars

						Lifecycle Costs (billions of discounted present value 2019 dollars)				Project Costs (2019$B) (as reviewed with sponsor)	
Project Type	Project ID	Row ID	Project	Project Source	Total Lifecycle Cost (billions of discounted present value 2019$)	Initial Capital Cost	O&M	Rehab + Replacement	Residual Value	Initial Capital Cost	Annual O&M
Build Core Rail	1002	1	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 3: Mission St)	Crossings Study	$36.2B	$33.8B	$4.8B	$2.6B	($5.0B)	$39.6B	$0.3B
	1003	2	New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 4: New Markets)	Crossings Study	$37.4B	$34.9B	$4.9B	$2.7B	($5.1B)	$40.9B	$0.3B
	1004	3	New San Francisco-Oakland Transbay Rail Crossing - Commuter Rail (Crossing 5)	Crossings Study	$46.1B	$39.2B	$7.4B	$4.2B	($4.7B)	$45.9B	$0.4B
	1007	4	New San Francisco-Oakland Transbay Rail Crossing - BART + Commuter Rail (Crossing 7)	Crossings Study	$83.5B	$74.1B	$12.4B	$6.9B	($9.8B)	$86.8B	$0.7B
	2205	5	BART to Silicon Valley (Phase 2)	VTA	$6.0B	$4.7B	$1.3B	$0.5B	($0.5B)	$5.2B	$0.1B
	2208	6	BART Gap Closure (Millbrae to Silicon Valley)	VTA	$40.4B	$43.2B	$1.1B	$2.2B	($6.0B)	$50.7B	$0.1B
	2300	7	Caltrain Downtown Extension	TJPA	$4.8B	$4.4B	$0.7B	$0.1B	($0.5B)	$4.9B	$0.0B
	2306	8	Dumbarton Rail (Redwood City to Union City)	SamTrans + CCAG	$3.9B	$2.7B	$1.1B	$0.4B	($0.3B)	$3.0B	$0.1B
	2310	9	Megaregional Rail Network + Resilience Project (Caltrain, ACE, Valley Link, Dumbarton, Cap Cor)	City of San Jose	$54.1B	$47.0B	$9.9B	$2.4B	($5.1B)	$55.9B	$0.6B
Extend Rail Network - High Cost	2203	10	BART to Hercules & I-80 Bus from Vallejo to Oakland	CCTA	$5.8B	$4.1B	$0.5B	$1.5B	($0.3B)	$4.5B	$0.0B
	2204	11	BART on I-680 (Walnut Creek to West Dublin/Pleasanton)	Caltrans	$11.0B	$9.4B	$0.9B	$1.4B	($0.7B)	$10.2B	$0.0B
	2206	12	BART Extension from Diridon to Cupertino	VTA	$12.1B	$11.1B	$1.5B	$0.9B	($1.5B)	$13.0B	$0.1B
	2207	13	BART Extension from Diridon to Gilroy (replacing existing Caltrain)	VTA	$17.7B	$14.2B	$2.9B	$2.3B	($1.7B)	$16.6B	$0.2B
	2308	14	Valley Link (Dublin to San Joaquin Valley)	TVSJVRRA	$3.0B	$2.0B	$0.7B	$0.5B	($0.2B)	$2.2B	$0.0B
Extend Rail Network - Low Cost	2202	15	BART DMU Extension to Brentwood	CCTA	$0.6B	$0.4B	$0.1B	$0.1B	$0.0B	$0.4B	$0.0B
	2304	16	SMART Extension to Cloverdale	SMART	$0.5B	$0.3B	$0.1B	$0.1B	$0.0B	$0.4B	$0.0B
	2305	17	SMART to Solano (Novato to Suisun City, without sea level rise protections)	SMART	$1.6B	$1.1B	$0.2B	$0.4B	($0.1B)	$1.2B	$0.0B
Optimize Existing Transit Network - High Cost	2001	18	AC Transit Local Rapid Network: Capital Improvements + Service Increase	AC Transit	$8.4B	$2.5B	$4.5B	$1.6B	($0.1B)	$2.6B	$0.2B
	2005	19	Alameda County BRT Network + Connected Vehicle Corridors	ACTC	$4.0B	$1.1B	$2.2B	$0.7B	($0.1B)	$1.2B	$0.1B
	2201	20	BART Core Capacity	BART	$4.5B	$2.8B	$1.2B	$0.8B	($0.4B)	$3.2B	$0.1B
	2301	21	Caltrain Full Electrification and Blended System: Base Growth	Caltrain + HSR	$20.9B	$19.0B	$3.4B	$0.5B	($2.1B)	$22.6B	$0.2B
	2302	22	Caltrain Full Electrification and Blended System: Moderate Growth	Caltrain + HSR	$24.6B	$21.8B	$4.4B	$0.8B	($2.3B)	$25.9B	$0.2B
	2303	23	Caltrain Full Electrification and Blended System: High Growth	VTA, City of San Jose	$36.9B	$29.3B	$8.2B	$1.6B	($2.1B)	$30.6B	$0.3B
	2401	24	North San Jose LRT Subway	VTA	$4.9B	$5.3B	$0.1B	$0.1B	($0.7B)	$5.8B	$0.0B
	2407	25	Muni Metro Southwest M-Line Subway	SFCTA	$5.6B	$3.7B	$2.2B	$0.2B	($0.5B)	$4.1B	$0.1B
	2409	26	VTA LRT Systemwide Grade Separation	VTA	$11.6B	$12.2B	$0.2B	$0.7B	($1.5B)	$14.2B	$0.0B
	2410	27	VTA LRT Systemwide Grade Separation and Full Automation	City of San Jose	$14.8B	$15.4B	$0.2B	$0.8B	($1.6B)	$17.3B	$0.0B
	2411	28	VTA LRT Systemwide Grade Separation, Network Expansion, and Full Automation	City of San Jose and VTA	$44.2B	$44.1B	$2.1B	$2.9B	($4.9B)	$49.6B	$0.1B
Optimize Existing Transit Network - Low Cost	2000	29	AC Transit Local Network: Service Increase	AC Transit	$2.6B	$0.2B	$2.2B	$0.2B	$0.0B	$0.2B	$0.1B
	2003	30	Muni Forward: Capital Improvements + Service Increase	SF	$2.9B	$0.4B	$2.1B	$0.4B	$0.0B	$0.5B	$0.1B
	2004	31	Sonoma Countywide Bus: Service Increase	SCTA	$0.9B	$0.3B	$0.4B	$0.3B	$0.0B	$0.3B	$0.0B
	2007	32	San Francisco Southeast Waterfront Transit Improvements	SF	$0.6B	$0.2B	$0.3B	$0.1B	$0.0B	$0.2B	$0.0B
	2008	33	Alameda Point Transit Network Improvements	ACTC	$0.5B	$0.1B	$0.4B	$0.0B	$0.0B	$0.1B	$0.0B
	2100	34	San Pablo BRT	AC Transit	$0.5B	$0.3B	$0.0B	$0.2B	$0.0B	$0.3B	$0.0B
	2101	35	Geary BRT (Phase 2)	SF	$0.6B	$0.2B	$0.3B	$0.2B	$0.0B	$0.2B	$0.0B

Lifecycle Costs (calculated using discounted present value methodology):
Initial Capital Cost: Capital cost of constructing/implementing the project
O&M: Annual operating and maintenance costs of the project over the full analysis period
Rehab + Replacement: Rehabiliation costs of pavement and roadway structures; replacement costs of roadway and transit assets after their useful lives (e.g. bus replacement every 14 years, roadway technology every 20 years)
Residual Value: Represents useful value of assets/infrastucture at the end of the analysis period (based on straight line depreciation)
Project Costs (as reviewed with sponsor):
Reflects sponsor submitted costs of projects. These were revised in some cases when a high-level cost review of all projects using an independent cost consultant and a uniform methodology flagged sponsor costs that may have been underestimated (such cases were discussed with the sponsors individually).
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Lifecycle costs in billions of 2019 dollars discounted present value; Project costs in billions of 2019 dollars

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Project Type	Project ID	Row ID	Project	Project Source	Total Lifecycle Cost (billions of discounted present value 2019$)	Initial Capital Cost	O&M	Rehab + Replacement	Residual Value	Initial Capital Cost	Annual O&M
Optimize Existing Transit Network - Low Cost	2103	36	SamTrans El Camino Real BRT: Capital and Service Improvements	CCAG	$0.4B	$0.2B	$0.0B	$0.1B	$0.0B	$0.2B	$0.0B
	2105	37	Alameda County E14th St/Mission and Fremont Blvd Multimodal Corridor	ACTC	$0.5B	$0.3B	$0.0B	$0.2B	$0.0B	$0.3B	$0.0B
	2209	38	Irvington BART Infill Station	ACTC	$0.2B	$0.1B	$0.1B	$0.0B	$0.0B	$0.1B	$0.0B
	2400	39	Downtown San Jose LRT Subway	VTA	$1.9B	$2.2B	($0.1B)	$0.1B	($0.3B)	$2.4B	$0.0B
	3001	40	Treasure Island Congestion Pricing	SF	$0.8B	$0.1B	$0.6B	$0.1B	$0.0B	$0.1B	$0.0B
	3002	41	Downtown San Francisco Congestion Pricing	SF	$0.3B	$0.0B	$0.3B	$0.0B	$0.0B	$0.1B	$0.0B
Build Local Transit	2402	42	San Jose Airport People Mover	VTA	$1.4B	$1.1B	$0.2B	$0.2B	($0.1B)	$1.2B	$0.0B
	2403	43	Vasona LRT Extension (Phase 2)	VTA	$0.3B	$0.2B	$0.0B	$0.0B	$0.0B	$0.2B	$0.0B
	2408	44	Muni Metro T-Third Extension to South San Francisco	City of South San Francisco	$1.8B	$1.1B	$0.4B	$0.3B	($0.1B)	$1.2B	$0.0B
	2412	45	SR-85 LRT (Mountain View to US101 interchange)	City of Cupertino	$3.7B	$2.6B	$0.5B	$0.8B	($0.2B)	$2.9B	$0.0B
	4000	46	Oakland/Alameda Gondola Network	City of Oakland	$1.1B	$0.7B	$0.2B	$0.3B	$0.0B	$0.7B	$0.0B
	4001	47	Mountain View AV Network (Free Fare, Subsidies from Companies)	City of Mountain View	$1.4B	$1.3B	$0.2B	$0.0B	($0.1B)	$1.4B	$0.0B
	4002	48	Contra Costa Autonomous Shuttle Program	CCTA	$3.4B	$1.3B	$0.9B	$1.2B	($0.1B)	$1.4B	$0.0B
	4003	49	Cupertino-Mountain View-San Jose Elevated Maglev Rail Loop	City of Cupertino	$8.1B	$7.2B	$0.3B	$1.1B	($0.6B)	$7.9B	$0.0B
	5003	50	I-680 Corridor Improvements (BRT, Express Bus, Shared AVs, Gondolas)	CCTA	$4.6B	$1.3B	$2.6B	$0.8B	($0.1B)	$1.4B	$0.1B
Enhance Alternate Modes	2600	51	WETA Ferry Service Frequency Increase	WETA	$0.4B	$0.0B	$0.3B	$0.0B	$0.0B	$0.0B	$0.0B
	2601	52	WETA Ferry Network Expansion (Berkeley, Alameda Pt, Redwood City, Mission Bay, Treasure Isla..	WETA	$1.0B	$0.3B	$0.7B	$0.0B	$0.0B	$0.3B	$0.0B
	2700	53	Bay Bridge West Span Bike Path	MTC/ABAG	$0.8B	$0.5B	$0.1B	$0.3B	$0.0B	$0.5B	$0.0B
	6006	54	Enhanced Regionwide Bike Infrastructure	MTC/ABAG	$12.6B	$7.4B	$0.8B	$4.8B	($0.4B)	$8.3B	$0.0B
Build Road Capacity - High Cost	1001	55	Southern Crossing Bridge + New San Francisco-Oakland Transbay Rail Crossing - BART (Crossing 6)	Crossings Study	$47.1B	$45.0B	$5.7B	$3.0B	($6.5B)	$52.7B	$0.3B
	1005	56	Mid-Bay Bridge (I-238 to I-380) (Crossing 2)	Crossings Study	$19.9B	$14.8B	$0.8B	$5.6B	($1.3B)	$17.4B	$0.0B
	1006	57	San Mateo Bridge Reconstruction and Widening (Crossing 1)	Crossings Study	$15.7B	$11.4B	$0.6B	$4.6B	($1.0B)	$13.4B	$0.0B
	3000	58	Regional Express Lanes (MTC + VTA + ACTC + US-101)	MTC/ABAG	$12.1B	$5.6B	$3.7B	$3.1B	($0.2B)	$6.1B	$0.2B
Build Road Capacity - Low Cost	3100	59	SR-239 Widening (Brentwood to Tracy including airport connector)	CCTA	$2.4B	$1.8B	$0.0B	$0.7B	($0.1B)	$2.1B	$0.0B
	3101	60	I-680/SR-4 Interchange Improvements (Direct/HOV Connectors, Ramp Widening, Auxiliary Lanes)	CCTA	$0.4B	$0.3B	$0.0B	$0.1B	$0.0B	$0.3B	$0.0B
	3102	61	SR-4 Operational Improvements	CCTA	$0.5B	$0.3B	$0.0B	$0.2B	$0.0B	$0.4B	$0.0B
	3103	62	SR-4 Widening (Brentwood to Discovery Bay)	CCTA	$0.4B	$0.3B	$0.0B	$0.2B	$0.0B	$0.3B	$0.0B
	3104	63	I-80/I-680/SR-12 Interchange + Widening (Phases 2B-7)	STA	$0.7B	$0.5B	$0.0B	$0.3B	$0.0B	$0.5B	$0.0B
	3105	64	SR-12 Widening (I-80 to Rio Vista)	STA	$2.5B	$1.7B	$0.1B	$0.9B	($0.1B)	$1.8B	$0.0B
	3106	65	SR-152 Realignment and Tolling	VTA	$1.9B	$1.2B	$0.1B	$0.7B	($0.1B)	$1.2B	$0.0B
	3109	66	SR-262 Widening and Interchange Improvements	ACTC	$1.0B	$0.7B	$0.0B	$0.4B	$0.0B	$0.7B	$0.0B
	3110	67	Union City-Fremont East-West Connector	ACTC	$0.4B	$0.3B	$0.0B	$0.1B	$0.0B	$0.3B	$0.0B
Optimize Existing Freeway Network	2002	68	AC Transit Transbay Network: Capital Improvements + Service Increase	AC Transit	$6.5B	$2.2B	$2.8B	$1.6B	($0.2B)	$2.4B	$0.1B
	3003	69	San Francisco Arterial HOV and Freeway HOT Lanes	SF	$1.3B	$0.7B	$0.1B	$0.5B	($0.1B)	$0.8B	$0.0B
	5000	70	Bay Area Forward (Phase 1: Freeway Ramp and Arterial Components Only)	MTC/ABAG	$0.6B	$0.3B	$0.1B	$0.2B	$0.0B	$0.3B	$0.0B

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Resilience	3200	71	SR-37 Long Term Project (Tolling, Elevation, Interchanges, Widening, Express Bus)	MTC/ABAG/North Bay Count..	$5.4B	$3.7B	$0.3B	$1.7B	($0.3B)	$4.1B	$0.0B
	7001	72	VTA LRT Resilience Project (Tasman West)	MTC/ABAG/BCDC	$0.2B	$0.1B	$0.0B	$0.1B	$0.0B	$0.1B	$0.0B
	7002	73	I-580/US-101/SMART Marin Resilience Project	MTC/ABAG/BCDC	$0.2B	$0.1B	$0.0B	$0.1B	$0.0B	$0.1B	$0.0B
	7003	74	US-101 Peninsula Resilience Project (San Antonio Rd, Poplar Ave, Millbrae Ave)	MTC/ABAG/BCDC	$0.2B	$0.1B	$0.0B	$0.1B	$0.0B	$0.1B	$0.0B
	7004	75	SR-84 Resilience Project (Dumbarton Bridge, 101 interchange)	MTC/ABAG/BCDC	$0.2B	$0.1B	$0.0B	$0.0B	$0.0B	$0.1B	$0.0B
	7005	76	SR-237 Resilience Project (Alviso)	MTC/ABAG/BCDC	$0.2B	$0.1B	$0.0B	$0.1B	$0.0B	$0.1B	$0.0B
	7006	77	I-880 Resilience Project (South Fremont)	MTC/ABAG/BCDC	$0.1B	$0.0B	$0.0B	$0.0B	$0.0B	$0.0B	$0.0B

Lifecycle Costs (calculated using discounted present value methodology):
Initial Capital Cost: Capital cost of constructing/implementing the project
O&M: Annual operating and maintenance costs of the project over the full analysis period
Rehab + Replacement: Rehabiliation costs of pavement and roadway structures; replacement costs of roadway and transit assets after their useful lives (e.g. bus replacement every 14 years, roadway technology every 20 years)
Residual Value: Represents useful value of assets/infrastucture at the end of the analysis period (based on straight line depreciation)
Project Costs (as reviewed with sponsor):
Reflects sponsor submitted costs of projects. These were revised in some cases when a high-level cost review of all projects using an independent cost consultant and a uniform methodology flagged sponsor costs that may have been underestimated (such cases were discussed with the sponsors individually).
(The full methodology can be found on our website)

HORIZON

Horizon/Plan Bay Area 2050:

Draft Project Performance Findings

Anup Tapase, MTC/ABAG

November 2019

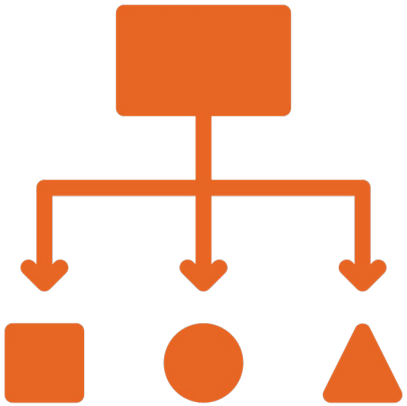
HORIZON

The Project Performance Assessment is **one key lens to understand how our major transportation investments would fare in an uncertain future**, in combination with Futures Planning which explored synergies between individual projects and strategies.

Key Objectives of Project Performance

- Understand how project benefits vary under different conditions.
- Learn how the performance of projects could be enhanced.
- Start a collaborative dialogue with all stakeholders.

Process to Date



Requested projects for consideration in Plan Bay Area 2050

Spring 2018 to Spring 2019

Develop evaluation methodology with input from RAWG/RMWG

Summer 2018 to Winter 2019

Evaluated benefits & costs of 93 projects using three Futures

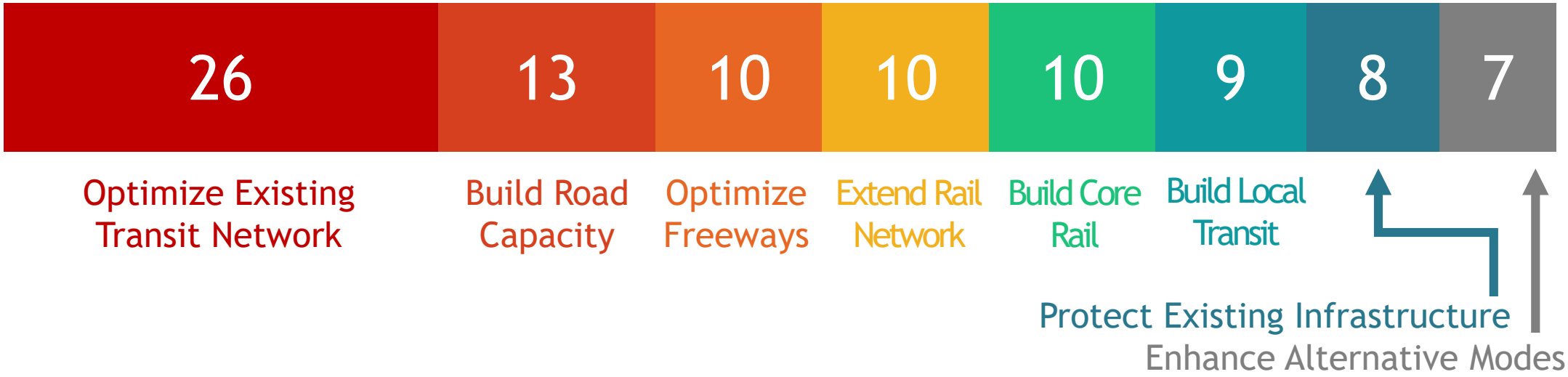
Spring 2019 to Fall 2019

Identify findings/next steps to prioritize projects & strategies

Fall 2019 & beyond

Which Projects Did We Evaluate?

Number of Projects by Objective



Capital Cost Breakdown of Projects*

86% of capital costs are for rail investments

3% of capital costs are for bus investments

7% of capital costs are for road investments

* **Does not include public submissions of transformative projects selected by the jury**; costs for these projects are still under development.

HORIZON

Which Projects Did We Not Evaluate?

Committed Projects
(not exhaustive list; included in baseline network for analysis)

- **BART:** Silicon Valley Phase 1; Fleet Modernization
- **Caltrain:** Modernization
- **Muni:** Central Subway; Muni Forward; Van Ness BRT; Geary BRT Phase 1
- **SMART:** Larkspur and Windsor Extensions
- **VTA:** Eastridge Extension; Next Network
- **AC Transit:** International Blvd BRT; AC Go
- **Express Lanes:** Committed Segments Only
- **Interchanges:** I-680/SR-4 (initial phases); I-80/I-680/SR-12 (initial phases)

Projects Less than $250 Million or Not Capacity-Increasing
(exempt from Project Performance)

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

How Were Projects Evaluated: *Benefit-Cost*

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)

Costs

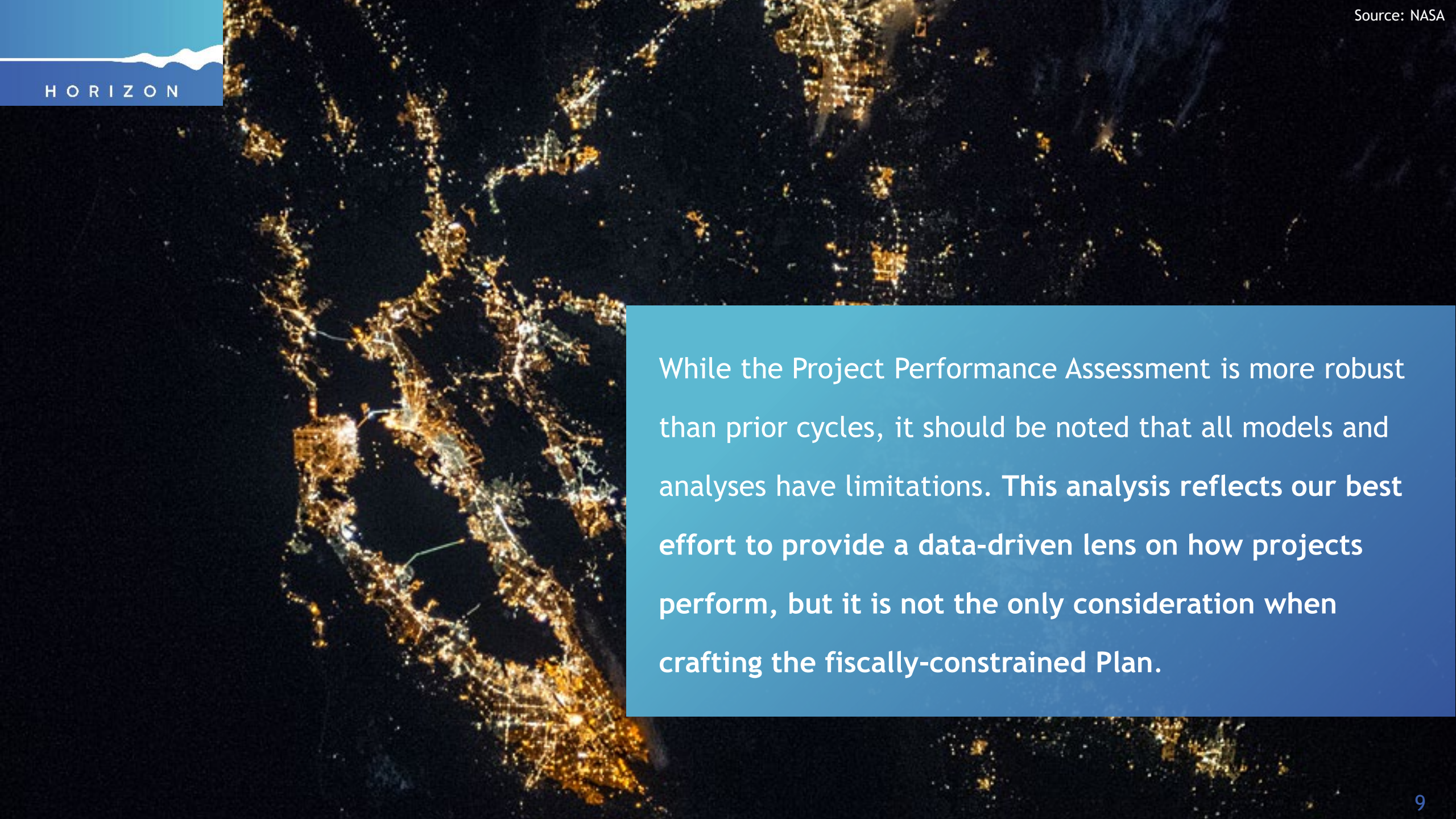
Capital Costs

- Initial investment
- Rehab/Replacement Costs
- Residual value

Operating & Maintenance Costs (annual)

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

Major Enhancements from Plan Bay Area 2040



Source: NASA

While the Project Performance Assessment is more robust than prior cycles, it should be noted that all models and analyses have limitations. **This analysis reflects our best effort to provide a data-driven lens on how projects perform, but it is not the only consideration when crafting the fiscally-constrained Plan.**

HORIZON

DRAFT

Key Findings & Next Steps

Integrating Performance Findings into
Plan Bay Area 2050's Transportation Element

KEY FINDING

1

Costs of projects evaluated totaled more than $400 billion, well exceeding the fiscal constraints of the Bay Area.

Not only have existing megaprojects grown in costs, but bold new ideas are increasingly expensive. Plan Bay Area 2050 should recommend regional reforms to speed project delivery and manage capital and O&M costs.

KEY FINDING

2

Project performance will be significantly affected by uncertain future conditions.

Projects should be planned along with complementary strategies that enhance their performance and resilience, such as enhanced land use strategies near new stations or pricing strategies to boost demand.

KEY FINDING

3

Lower-cost transit improvements, such as urban BRT lines, and sea level rise protections for heavily-used freeways are the best bet in an uncertain future.

Such projects should be seen as low-hanging fruit and advanced to implementation expeditiously.

KEY FINDING

4

High-cost commuter rail projects have mixed performance outcomes, predominantly benefiting higher-income groups.

Rail projects should be evaluated alongside lower-cost bus improvements. Such projects should be paired with complementary strategies to ensure that all Bay Area residents benefit from them.

KEY FINDING

5

Some projects have synergies, while other projects compete with each other.

In a fiscally-constrained environment, we should focus on complementary investments and strategies, while being careful before including projects that degrade benefits of others.

KEY FINDING

6

Pricing is the most powerful tool to affect traffic congestion and travel patterns - but it must be done in an equitable manner.

Rather than adding highway capacity, Plan Bay Area 2050 should integrate pricing strategies - but only if meaningful toll discounts or other mitigations are integrated for those of lesser means.

Early Finding
Full assessment still in progress

KEY FINDING 7

Transit fare reforms could meaningfully change travel behavior.

Reforming the Bay Area's complex fare systems could significantly grow ridership. However, this strategy must be paired with service and capacity increases to accommodate the robust growth in demand.

KEY FINDING

8

Greater investment in micromobility can have significant regional benefits for the overall transportation network.

The region should consider including a much more significant investment in active transportation than prior iterations of Plan Bay Area.

KEY FINDING

9

A new Transbay Rail Crossing emerged as the most cost-effective transit expansion megaproject.

To relieve crowding, support focused growth, and enhance mobility across the Bay Area, Plan Bay Area 2050 should consider a new rail and/or BART crossing between San Francisco and the East Bay as a critical new investment.

Findings on Select Corridors

- **Peninsula/US-101.** The region should carefully consider the sequencing of investments on this corridor, especially given a potential nexus with a New Transbay Rail Crossing.
- **Altamont Pass.** Rather than adding auto capacity, combining Valley Link with complementary pricing strategies presents a promising path forward.
- **South Bay.** Some of the aspirational transit improvements in Santa Clara County fell short on cost-effectiveness in most Futures, but there may be land use benefits of such projects that cannot be fully reflected.
- **SR-4/SR-239.** Operational improvements yield meaningful benefits to travelers along this freeway corridor, but expansions are less resilient in an uncertain future.
- **SR-37.** For this east-west connection, the proposed resilience project had higher costs and lower benefits than other transportation facilities requiring protection from rising sea levels.

Snippet from Attachment A: Summary Table of Projects

	Benefit-Cost Ratio			Equity Score		
Guiding Principle Flags	Rising Tides Falling Fortunes	Clean And Green	Back To The Future	Rising Tides Falling Fortunes	Clean And Green	Back To The Future
2	0.7	2	2	Even	Even	Even
2	0.6	1	1	Even	Even	Even
0	0.6	1	1	Even	Even	Even
0	0.6	1	1	Even	Even	Even
0	<0.5	0.7	0.6	Challenges	Challenges	Challenges
2	<0.5	0.6	0.5	Challenges	Challenges	Challenges
0	<0.5	<0.5	0.6	Advances	Advances	Even
0	<0.5	<0.5	0.5	Even	Even	Challenges
0	<0.5	<0.5	<0.5	Advances	Advances	Even
0	cost review in progress			cost review in progress		
0	<0.5	1	1	Even	Even	Even
0	<0.5	<0.5	<0.5	Even	Advances	Even
0	<0.5	<0.5	<0.5	Challenges	Challenges	Challenges
1	<0.5	<0.5	<0.5	Even	Advances	Even
0	<0.5	<0.5	<0.5	Even	Even	Even
0	modeling in progress			modeling in progress		
0	modeling in progress			modeling in progress		
0	<0.5	<0.5	<0.5	Even	Challenges	Challenges
0	<0.5	0.5	<0.5	Advances	Challenges	Challenges
0	<0.5	<0.5	<0.5	Challenges	Even	Challenges
0	1	2	2	Even	Even	Even
2	<0.5	1	0.5	Challenges	Even	Challenges
2	<0.5	0.9	0.5	Challenges	Even	Challenges
0	<0.5	0.5	0.6	Advances	Advances	Even
1	<0.5	<0.5	0.7	Advances	Advances	Even
0	<0.5	<0.5	<0.5	Advances	Advances	Challenges
0	<0.5	<0.5	0.5	Advances	Advances	Even
0	<0.5	<0.5	<0.5	Advances	Advances	Even
2	<0.5	<0.5	<0.5	Even	Even	Even
0	<0.5	<0.5	0.5	Even	Advances	Even
1	8	7	>10	Challenges	Challenges	Challenges
0	1	1	9	Even	Even	Even
1	2	3	4	Challenges	Challenges	Challenges

Moving Forward

- **During Plan Bay Area and Plan Bay Area 2040,** MTC has used the Project Performance Assessment to categorize projects as high-, medium- and low-performing - with low-performing projects required to submit a "compelling case" if they wished to include it in the fiscally-constrained Plan.
- **For Plan Bay Area 2050, we are proposing a solutions-oriented approach instead.** This would continue the identification of high-performing projects, but for all remaining projects, MTC would work collaboratively with sponsors to identify project refinements or complementary local or regional strategies to address performance shortcomings.

Moving Forward

LATE JANUARY

Commission & Board Workshop:
Plan Bay Area 2050 Draft Blueprint
Transportation Tradeoffs Discussion

November

- Finish analysis of remaining projects
- Continue to address questions raised by project sponsors
- Start conversation on "high-performing" project definition

December

- Refine definition of "high-performing" project
- Begin conversations with project sponsors on refinements & complementary strategies

January

- Incorporate high-performing projects into Transportation component of Draft Blueprint
- Continue conversations with project sponsors on remaining projects

HORIZON

Questions?

Thank you to our transportation partners from across the Bay Area for their continued collaboration - as we work together to make our major investments even better in the coming months.

San Francisco
County Transportation
Authority

1455 Market Street, 22ND Floor, San Francisco, California 94103 415-522-4800 info@sfcta.org www.sfcta.org

November 5, 2019

James P. Spering, Chair
MTC Planning Committee
MTC/ABAG
375 Beale Street
San Francisco, CA 94105

Subject: November 8 MTC Planning Committee, Agenda Item 5a. Horizon/Plan Bay Area 2050: Draft Project Performance Assessment Results

Dear Chair Spering,

The San Francisco County Transportation Authority would like to thank the Horizon/Plan Bay Area team for sharing their preliminary results of the project performance assessment with agency staff before going public. Horizon and Plan Bay Area 2050 has taken a lot of time and effort from MTC staff, as well as required a significant number of both group and individual agency meetings. We would like to take this opportunity to share with the Planning Committee our comments on MTC staff's assessment of specific projects, as well as high level comments about how the project scores might be used to inform subsequent Plan Bay Area policy discussions. We previously shared the majority of these comments with MTC staff.

Our comments below are related to the overall presentation of project scores and initial findings. We have provided additional details on these comments and project-level details on project benefits not captured in this process in Attachments 1 and 2 respectively.

- **Methodology limitations.** MTC has undertaken a very complex and extensive benefit/cost performance analysis that can provide valuable information to guide project prioritization and policy discussions in Plan Bay Area. We appreciate that for the first time, they have included transit crowding in the assessment. However, like any methodology of this sort, key assumptions can drive outcomes and there are always areas where the particular tools used don't adequately capture certain kinds of benefits. For instance, several projects in San Francisco are designed to deliver benefits that are not able to be captured in the tools used in the benefit/cost assessment. Specifically, benefits from bicycle and pedestrian projects, particularly where an existing facility is proposed to be upgraded, and transit reliability improvements are not captured (or captured adequately) in the scores as presented. Similarly, we are concerned that the equity analysis only presents a single dimension – ratio of benefits accrued to low income populations versus the population at large, when there are other ways of looking at this multi-faceted topic. Boiling equity down to a single calculation oversimplifies a complex

issue and misses the opportunity to identify projects that may advance equity for disadvantaged populations.

- **Confidence Assessment.** Following on the above comment, to aide stakeholders in knowing how to use the performance assessment results, it is important to be transparent about key assumptions and limitations that influence the results. Thus, **we strongly urge MTC to include the Confidence Assessment with the draft results for public release.** Based on prior MTC materials, our understanding is this will include notes by project about transit reliability and other qualities that are not captured in the benefit/cost and equity analyses. We have listed out many project benefits not captured in the current methodology in Attachment 2. We would appreciate an opportunity to review the Confidence Assessment before this is made public, similar to the underway review for the draft project performance results. Please see related comment below.
- **Travel Model 1.5 Validation.** During Plan Bay Area 2040, we raised concerns about MTC Travel Model 1.0 validation for Muni, which significantly underestimated Muni ridership compared to observed ridership in the 2010 base year. Earlier in the Horizon/Plan Bay Area 2050 process, we again raised this concern with MTC staff hoping that Travel Model 1.5 would bring some improvement in this area. Travel Model 1.5 transit validation data released by MTC shows that Muni ridership validated has improved, but is still underestimated by 7% while south bay and east bay transit ridership are overestimated by 15% to 21%. We wonder how much these discrepancies – which appear to underestimate transit ridership in urban areas and overestimate transit in suburban environments – have influenced the draft performance evaluation results. We would appreciate working with MTC and the relevant transit operators to understand this.
- **VMT impacts.** As a proxy for greenhouse gas emissions, impacts on VMT is a crucial data point that we would like to see included in this assessment. We continue to request that MTC include the number of VMT increased or decreased for each project, on the table of project assessment results. We understand this is captured in the benefit/cost assessment but reporting VMT out separately is more transparent and understandable to the public.
- **Consistency and transparency.** With such a complex system of scoring, it would be helpful to have each project coded consistently. Some projects have been modeled with strategies that boost project scores, while others have not. This includes fare programs on the crossings rail projects, which were not included in the other rail projects, and grouping projects together in ways that are not immediately evident in the project lists. We request that MTC produce project definitions that clarify which projects are bundled with other projects or include other projects as prerequisites, so that our policymakers are fully-informed.

- **Regional rail network planning.** We understand why MTC has elected to use a project-based approach to evaluate segments and select packages of rail projects for Plan Bay Area purposes. However, while a project-based benefit/cost analysis is a useful measure, it is not designed to fully capture the benefits of an integrated rail system and is no substitute for comprehensive regional rail network planning. Thus, we encourage MTC to present the rail project results as a conversation starter, and just one consideration of many that should be used to inform rail project prioritization and funding decisions.

  We are fortunate to have MTC's active participation in a number of underway bay area and statewide rail planning efforts such as Caltrain's Business Plan, the second transbay crossing work led by BART, the California High Speed Rail project, and the Caltrain Downtown Extension program of projects. We are heartened by MTC's growing involvement in regional rail planning, funding and coordination and suggest that these processes offer a more comprehensive and nuanced approach toward determining our long-term regional rail vision, and the appropriate phasing of projects to attain that vision, than PBA. We understand the constraints MTC must comply with related to Plan Bay Area and welcome working with MTC and regional partners to ensure that these efforts can speak to each other appropriately.

In compiling our comments, we have been conferring with our partner agencies and want to associate ourselves with the comments submitted by **Caltrain** and **TJPA** regarding the Caltrain service vision projects and the Caltrain Downtown Extension.

Again, we appreciate the opportunity to share these comments with the Planning Committee. We look forward to continuing to collaborate on Plan Bay Area 2050.

Sincerely,

Maria Lombardo
Chief Deputy Director

cc: Comm. Halsted, Josefowitz, Ronen
A. Bockelman, M. Maloney, D. Vautin, MTC
T.Chang, M. Beauilieu, A. Crabbe, SFCTA

Attachment 1: Detailed Comments

As MTC staff have said, the benefit/cost ratio provides one piece of information about how projects can be prioritized. We agree that there are other factors that should be part of the conversation to help identify priorities for investments. For example, some benefits are incredibly difficult to capture in modeling, but we believe they should be included in the decision-making process. Complementary strategies are important for all projects, across the entire region. Equity is far more complex than the calculations performed here can capture. And we would like to make sure that our commissioners have as much information about project definitions and impacts as possible. We have detailed each of these points below.

- **Use of the project performance scores:** We appreciate that MTC staff are proposing a process of discussing policies and strategies that in conjunction with these projects, will improve the future outcomes. Given the limitations of MTC's methodology and recognizing that some benefits are just very challenging to quantify, these discussions should start with MTC's acknowledging: 1) benefits of projects that are not captured in the assessment, such as bicycle and pedestrian infrastructure upgrades and transit reliability projects and 2) strategies that are already in place, but have not been or aren't able to modelled such as Muni's existing Lifeline and Free Muni for Seniors and Youth discounts (see strategy section below for more examples). We would like to see a stronger emphasis that these scores are only part of the process. In particular, they should not be the only components used to identify high-performing projects or to direct regional discretionary funding.
- **Equity:** There can be no doubt that equity is the most important concern on the MTC Commissioners' minds. We appreciate that MTC has included additional information about how projects impact equity in this cycle, and that the COC-impacts information is forthcoming. However, we think that a conversation about transportation equity should not be limited to these components. For example:
    - How many low-income residents are benefitting from each project? A project may have a better equity ratio in MTC's methodology, but only be benefitting a small absolute number of low-income people or the converse could be true.
    - Muni ridership is currently 59 % low-income, and other operators in the region have similarly high ridership from low-income communities. What changes to transit demographics are being assumed?
    - Does the project also benefit communities of color, people with mobility challenges, and other communities that are historically disenfranchised?

- Does the project improve safety for bicyclists and pedestrians through improved infrastructure? We know that low-income, seniors, youth and other disadvantaged communities experience higher rates of severe and fatal traffic injuries than other groups.

Strategies that improve projects

We appreciate that MTC staff are seeking strategies that can be coupled with transportation project investments to improve outcomes. In San Francisco, there are several strategies in place that we believe will increase the benefits from projects, which we hope MTC will recognize and incorporate into the reporting of project scores.

- **Regional means-based transit fare pilot program:** Caltrain, BART, Muni and Golden Gate Transit are all engaged in the regional means-based transit fare pilot program, and we believe that this good-faith effort by these agencies should be reflected in their projects' equity scores or accounted for in parallel as a positive, equity-supporting strategy.
- **New PDAs**: San Francisco Planning has submitted several new Priority Development Areas (PDAs), covering a significant new portion of the city in addition to the existing PDAs. Every project submitted by San Francisco is located either entirely or mostly within a PDA.
- **Tenant protections and affordable housing preservation**: We recognize that due to San Francisco's neighborhoods' accessibility and proximity to job centers, these communities are some of the highest-income in the region. However, the City and County of San Francisco has some of the strongest tenant protection policies and affordable housing preservation programs in the region. We feel that these increase the equity impacts for all projects that improve access to and for our Communities of Concern, including the Muni Metro Southwest Subway, Better Market Street, Southeast Waterfront Transportation Improvements, Muni Forward, Treasure Island Congestion Pricing and Downtown Congestion Pricing.

We look forward to being a part of the conversation about how to group projects with other complementary projects or with the policies and strategies such as the ones listed above.

Attachment 2: Project-specific Benefits, Not Captured

All models have limitations, and it is important to make this acknowledgement up front. The following San Francisco transportation projects are designed to deliver benefits that are not able to be captured in MTC's project performance assessment methodology, and some are just difficult to capture through any methodology. We recommend that MTC include a section on non-modeled benefits in their report of project performance assessment scores, either as part of the Confidence Assessment or in a separate table.

Project	Benefits not captured in model
1. **Better Market Street*** *MTC staff has subsequently removed this project from the performance evaluation due to challenges capturing the project's benefits in the model.	**Transit Reliability:** A significant benefit from this project is to improve the reliability of the bus service on Market Street through bus stop consolidation and the creation of a separated cycle track, which has a ripple effect across the entire system of buses that converge on this facility. Bus routes that touch every district of San Francisco and connect to regional transit hubs (BART, Muni Metro, etc.) are impacted by conditions on Market Street.
	Bicycle and Pedestrian Improvements: We request that MTC apply a multiplier to demonstrate increased mode share attributable to this significant infrastructure investment, consistent with the approach that MTC has taken for the regional bike infrastructure project. Market Street is on the high-injury network, and this project will separate active modes from private vehicles and transit, encouraging cycling and walking by improving safety and comfort.
	Muni benefits to low-income residents: SFMTA has 59% low-income ridership, according to MTC's regional means-based transit fare study. Muni currently offers a 50% discount "Lifeline" transit fare pass, for which residents making less than 200% of AMI are eligible. Muni also has Free Muni for Youth and Seniors programs. These represent significant benefits to low income residents.

Project	Benefits not captured in model
2. Caltrain Downtown Extension	**Inter-regional connectivity:** With the buildout of High-Speed Rail, this project will connect Downtown San Francisco with the rest of the state. Similar to other projects included in the list, this project's full benefits include High Speed Rail ridership-related benefits within this region, and those accrued outside of the region, and are not reflected in MTC's performance results. Finally, as US101 is a very congested corridor, each new rider from VMT avoided brings a significant benefit that would be easier to understand by publishing VMT generated/avoided.
	Regional Rail Network: This methodology does not take into account the potential benefits from integrating the region's rail systems into full corridors or a single regional or mega-regional network. From San Francisco's standpoint, this project is a foundational building block for a 2nd Transbay standard gauge rail crossing.
3. Caltrain Full Electrification and Blended System, all projects	**Transit Reliability:** Increases to Caltrain's service and investing in grade separations would increase ridership and improve overall travel times. Without representing the delay from existing at-grade crossings in the baseline, it is hard to demonstrate the benefits of these investments. Further, other primary benefit of grade separations are improved transit reliability (both for rail and surface transit), traffic circulation and emissions, improved pedestrian and bicycle connectivity, and in some projects, reconnecting neighborhoods and street grids. These benefits are not captured in the project performance evaluation.
	Regional Rail Network: See explanation under project #1.

Project	Benefits not captured in model
4. Downtown Congestion Pricing	**Equity:** This project is being designed with the explicit goal of improving equity in San Francisco as the current situation with transit stuck in traffic, disproportionately burdens low income persons, as does air pollution from motor vehicles and the risk of severe and fatal crashes. The final form has not been decided, but we request that this acknowledgement be included in the public release of materials for this assessment.
5. Geary Rapid, Phase 2	**Transit Reliability:** By removing transit from the flow of automobile traffic, the Geary Rapid project improves transit reliability significantly, which is not captured in MTC's modeled benefits. This is a significant limitation that leaves major benefits out for transit priority projects.
6. Muni Forward	**Transit Reliability:** Similar to Geary Rapid, Muni Forward projects improves transit reliability significantly. See explanation under project #5.
	Pedestrian Improvements: Muni Forward projects also include bus stop bump-outs and other improvements to pedestrian safety, which are accounted for in the capital cost but not captured in MTC's modeled benefits.
	Muni benefits to low-income residents: See explanation under project #1.
7. Muni Metro Southwest Subway	**Transit Reliability:** Similar to Better Market Street, this project will improve the reliability of every rail line that travels through the Muni Metro subway.
	Muni benefits to low-income residents: See explanation under project #1.

Project	Benefits not captured in model
8. Regional Express Lanes	**Transit Service:** In San Francisco, our regional express lane project has express bus service incorporated into the project definition from the start. We are unclear why MTC choose to model the project without the bus service.
	Transit Reliability: SFMTA and SamTrans each has buses that operate on the existing express lane facilities. These routes suffer from reliability concerns due to congestion levels on 101 and 280 in San Francisco. The Regional Express Lanes will improve that reliability as well as travel time.
	Muni benefits to low-income residents: See explanation under project #1.
	Equity Focus: See explanation under project #4.
9. Treasure Island Mobility Management Program	**Affordability Program:** The Treasure Island Mobility Management Program has been designed with an affordability program built in. This will include subsidized transit passes and discounts to services like car and bike share, to make transit affordable and accessible. We request that this effort be acknowledged in the public release of materials for this assessment.

Association of Bay Area Governments
METROPOLITAN TRANSPORTATION COMMISSION

Metropolitan Transportation Commission

375 Beale Street, Suite 800
San Francisco, CA 94105

Legislation Details (With Text)

File #:	19-1156	**Version:**	1	**Name:**	
Type:	Report			**Status:**	Informational
File created:	10/2/2019			**In control:**	Joint MTC Planning Committee with the ABAG Administrative Committee
On agenda:	11/8/2019			**Final action:**	
Title:	Plan Bay Area 2050: Regional Growth Framework - Update and Next Steps Presentation on local jurisdiction and County Transportation Agency submissions for the Regional Growth Framework Update, including Priority Development Areas (PDAs), Priority Conservation Areas (PCAs), and Priority Production Areas (PPAs), as well as potential next steps as we advance into the Plan Bay Area 2050 Blueprint process.				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	5b_PBA50_Regional Growth Framework UpdateNextSteps.pdf				

Date	Ver.	Action By	Action	Result

Subject:

Plan Bay Area 2050: Regional Growth Framework - Update and Next Steps

Presentation on local jurisdiction and County Transportation Agency submissions for the Regional Growth Framework Update, including Priority Development Areas (PDAs), Priority Conservation Areas (PCAs), and Priority Production Areas (PPAs), as well as potential next steps as we advance into the Plan Bay Area 2050 Blueprint process.

Presenter:

Mark Shorett

Recommended Action:

Information

Attachments:

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

November 8, 2019 **Agenda Item 5b**

Plan Bay Area 2050: Regional Growth Framework – Update and Next Steps

Subject: Presentation on local jurisdiction and County Transportation Agency submissions for the Regional Growth Framework Update, including Priority Development Areas (PDAs), Priority Conservation Areas (PCAs), and Priority Production Areas (PPAs), as well as potential next steps as we advance into the Plan Bay Area 2050 Blueprint process.

Background: Following Commission and Executive Board adoption of an update to the Regional Growth Framework in May 2019 – which included revised criteria for PDAs and the introduction of a PPA Pilot program – local jurisdictions submitted dozens of new PDAs, PCAs, and PPAs for consideration in Plan Bay Area 2050. Eligible submissions will be integrated as part of the growth pattern in the Plan Bay Area 2050 Blueprint, and supportive strategies will be developed to advance implementation. The attached staff memorandum and presentation discuss the potential for these areas, as well as possibly other priority growth areas, to advance the Plan Bay Area 2050 Guiding Principles, as well as the cross-cutting themes of equity and resilience.

Issues: While newly proposed PDAs help advance the goals of Plan Bay Area 2050, significant gaps may continue if only locally-nominated areas are advanced in the Blueprint phase. For example, just 20 percent of land in high-resource areas (places with high-performing schools, strong access to jobs and services, etc.) that meet PDA eligibility criteria have self-nominated as PDAs.

Recommendation: Staff will return in January and February to seek action on final PDAs, PCAs, and PPAs, as well as any other potential priority areas which may be integrated to better achieve climate and equity goals for Plan Bay Area 2050.

Attachments:
Attachment A: Staff Memorandum
Attachment B: Presentation
Attachment C: Maps of Existing + Proposed PDAs and PPAs
Attachment D: Tables of Existing & Proposed PDAs, PPAs, and PCAs

Therese W. McMillan

METROPOLITAN TRANSPORTATION COMMISSION
ASSOCIATION OF BAY AREA GOVERNMENTS

MEMORANDUM

PLAN BAY AREA 2050

Agenda Item 5b - Attachment A

TO:	Joint MTC Planning Committee with the ABAG Administrative Committee	DATE:	November 8, 2019
FR:	Mark Shorett		
RE:	Plan Bay Area 2050: Regional Growth Framework Update & Next Steps		

Summary
This memorandum provides context and a set of proposed next steps for updating the Regional Growth Framework in advance of the Plan Bay Area 2050 Blueprint. Importantly, this next phase will take into account the set of newly proposed Priority Development Areas, Priority Conservation Areas, and Priority Production Areas submitted by local jurisdictions in September 2019, as well as obstacles to advancing the Plan Bay Area 2050 Guiding Principles through the Blueprint.

Background
In May 2019, the Commission 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 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.

A review of progress toward implementing the Framework through the Horizon *Regional Growth Strategies* Perspective Paper in early 2019 found that development in the region is increasingly focused in PDAs and that the Bay Area has been largely successful in protecting PCAs and other open spaces. However, the pace of housing production, particularly for low- and middle-income households, lags far behind the need. Compounding these challenges, many PDAs did not meet the program's adopted transit service and planning criteria. In addition, the review found that the voluntary nature of the Regional Growth Framework – as local governments are able to "opt out" by not designating eligible places PDAs - resulted in a development pattern in the first two Plans that did not include many of the places where new homes and jobs would provide the greatest regional benefit in terms of lowering vehicle miles traveled and improving affordability and equity outcomes.

Plan Bay Area 2050 must achieve a more ambitious climate mandate from the state, as well as a more broadly aspirational set of objectives identified through the recently-adopted Vision, Guiding Principles, and Cross-Cutting Issues. These set the stage for the Regional Growth Framework Update adopted by MTC and ABAG in May 2019. In summary, the update:

- Established two PDA categories, *Transit Rich* and *Connected Community,* to reflect the varying levels of transit service across the region and to take into account complementary VMT-reduction policies in areas with basic transit
- Created a timeline for jurisdictions to adopt Plans for Priority Development Areas (PDAs) and for County Transportation Agencies (CTAs) to identify transit improvements that bring each PDA up to at least the Connected Communities standard
- Established a Priority Production Area Pilot program and eligibility criteria
- Opened an application period for local jurisdictions to submit Letters of Interest for PDAs, PCAs, and PPAs by September 16, 2019

Regional Growth Framework Update: Local Response
In September, local jurisdictions submitted Letters of Interest for 87 new Priority Areas – 34 PDAs, 16 PCAs, and 37 PPAs. Of these, staff review found that 33 PDAs, all 16 PCAs, and 35 PPAs meet eligibility criteria. In addition to these new priority areas, staff received Letters of Interest to modify the boundaries of 46 PDAs and 1 PCA – in most cases to better align these priority areas with local plans. At least one Priority Area was submitted by jurisdictions in each County. In addition, CTAs and local jurisdictions submitted PDA transit improvements for integration into the Transportation Element of the Plan Bay Area 2050 Blueprint, as well as Letters of Confirmation committing to complete PDA Plans by 2025. In combination, these actions represent the first significant change to the regional "footprint" of places prioritized for jobs, housing, and natural resource conservation since the late 2000s.

Together, the submitted priority areas, transit improvements, and planning commitments:

- ***Help to advance regional housing, climate, and equity Goals***. Compared to current PDAs, new PDAs submitted in September 2019 are more likely to be located in High Resource Areas – places in which households have the greatest chance at upward mobility – and in places where existing households already meet the Plan Bay Area 2050 GHG reduction target. In addition to equity and environmental benefits, these places are typically located in strong housing markets – making the development envisioned in PDA plans more financially feasible for developers (and thus making it easier to subsidize more affordable housing with inclusionary requirements).
- ***Bring nearly all existing PDAs into alignment with the adopted planning and transit standard***. As a result of the transit improvements submitted by CTAs, 99 percent of existing PDAs now would meet at least the minimum transit standard adopted in May. In addition, 98 percent of PDAs meet planning criteria following commitments by cities to complete PDA plans by 2025.
- ***Build upon coordinated industrial economic development strategies***. Jurisdictions within key regional industrial clusters submitted PPAs, including the Northern Waterfront in Contra Costa County, the I-880 Corridor in Alameda County, and several emerging North Bay clusters.

Despite these gains, the Regional Growth Framework's updated footprint for development and conservation may not be adequate to create a Plan Bay Area 2050 Blueprint that meets the region's acute housing, environmental, and equity challenges. Among the obstacles that remain:

- ***Most transit-rich areas have not been prioritized for new housing and jobs***. The majority of urbanized land within a half mile (an approximately ten-minute walk) of a rail station, ferry terminal, or frequent bus stop has not been designated a PDA. The share of these transit-rich areas designated PDAs varies significantly by county, from less than 20 percent in Marin County – where one of five SMART stations and none of three ferry terminals is designated a PDA - to 80 percent in Alameda County – where a PDA has now been nominated around 29 of its 30 regional rail stations.
- ***Despite a significant increase through the 2019 submissions, relatively few eligible High Resource Areas are designated PDAs***. Just 20 percent of places in High Resource Areas served by transit that meets PDA eligibility criteria have been designated PDAs. This issue is particularly significant in Contra Costa and Santa Clara counties, where just over 10 percent of these areas have been designated, and in Marin County, where the figure is below 1 percent. Should the region wish to affirmatively further fair housing in the Plan Bay Area 2050 Blueprint, policymakers may wish to consider integrating at least some additional High Resource Areas into the Blueprint.
- ***Meeting regional housing needs will likely require supportive strategies***. For the past several years, less than 25 percent of the units needed to meet the needs of very-low, low, and moderate income households have been permitted, based on the existing Regional Housing Needs Allocation (RHNA). Even with a dramatic increase in the pace of housing development in transit-rich and high-resource areas, the number of *new* housing units needed to meet the need of the region's working families is unlikely to be built without strategies such as inclusionary zoning or regionally-generated affordable housing funding. Both were identified as effective strategies in the Horizon Futures Round 2 analysis.

Next Steps: What's Next for the Regional Growth Framework?
Following adoption of local resolutions nominating new PDAs, PCAs, and PPAs, staff anticipates recommending a set of Priority Areas to ABAG and MTC for adoption in early 2020. These will be included in the Plan Bay Area 2050 Draft Blueprint and may be eligible for future funding, such as One Bay Area Grant Cycle 3 (OBAG3), in the coming years.

For committee discussion, staff recommends the following next steps to advance a successful Blueprint.

1) **Continue to provide resources to existing and new PDAs while revisiting the geographies prioritized for growth in the Blueprint.** This will involve exploring options in the Draft Blueprint for complementing PDA-focused job and housing growth with development in places that move the region closer to supporting the Blueprint Principles, such as transit-rich and high-resource areas. The presentation (Attachment B - Slide 17) highlights three potential approaches.

2) **Develop a strategic approach to advancing PPAs through a Pilot Program.** To successfully advance a PPA Pilot program, staff will identify an approach that combines including all eligible PPAs in the Blueprint with targeted support for specific PPAs based upon local commitment, and/or other factors.
3) **Identify strategies and implementation actions for the different types of geographies prioritized for growth.** Working closely with MTC and ABAG committees, local staff, and stakeholders, the Plan will connect the places prioritized in the Blueprint that define *where* the region should grow with tailored strategies and actions defining *how* the region should grow.

Upcoming steps for the Growth Framework Update via the Plan Bay Area 2050 Blueprint process include the following:

- December 2019: discuss key questions with stakeholders at RAWG Workshop on Housing & Economy Elements of Plan Bay Area 2050 Blueprint
- January 16, 2020: deadline for resolutions nominating new PDAs, PCAs, and PPAs; deadline for existing PDAs that need to submit VMT-Reduction forms
- February 2020: action on final PDAs, PCAs, and PPAs for Plan Bay Area 2050 + any additional growth areas for the Draft Blueprint
- Winter & Spring 2020: integration of geographies & strategies into Draft & Final Blueprint

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PLAN BAY AREA 2050

Regional Growth Framework: Update & Next Steps

Mark Shorett, MTC/ABAG

November 2019

What is the **Regional Growth Framework?**

Locally-Identified Priority Areas

- Priority Development Areas
- Priority Conservation Areas
- Priority Production Areas

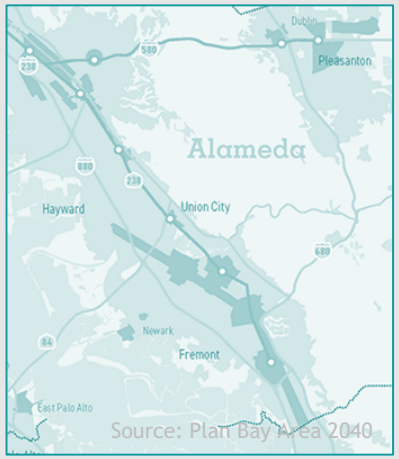
Guidelines Adopted by ABAG/MTC: May 2019

ABAG/MTC Action: Winter 2020

Plan Bay Area 2050: *Geographies*

Where should we grow as a region?

PLAN BAY AREA 2050



ABAG/MTC Action: Winter 2020

Plan Bay Area 2050: *Strategies & Implementation*

Regional Growth Framework Update: Adopted May 2019

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

PDAs, PCAs and PPAs:
Call for Letters of Interest
June to September 2019

PLAN BAY AREA 2050

Local Response: September Submissions

Local jurisdictions demonstrated significant interest in new priority areas.

PDAs:
33 Letters of Interest

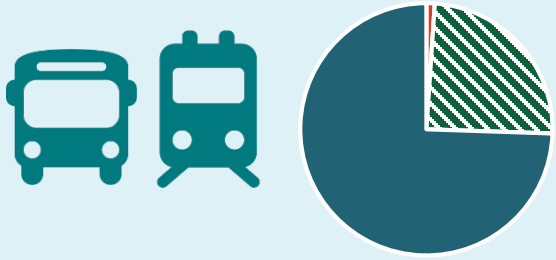
PCAs:
16 Letters of Interest

PPAs:
35 Letters of Interest

Inconsistencies with program guidelines were mostly resolved by cities and CTAs.

PDA PLAN

99% of PDAs on track to meet **planning criteria**

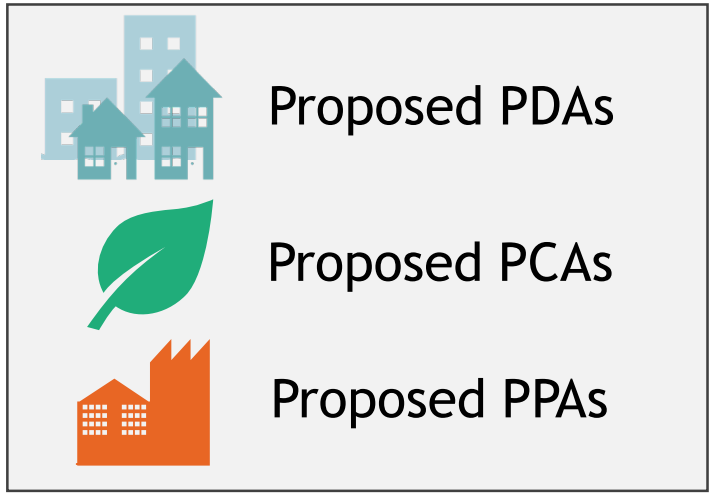


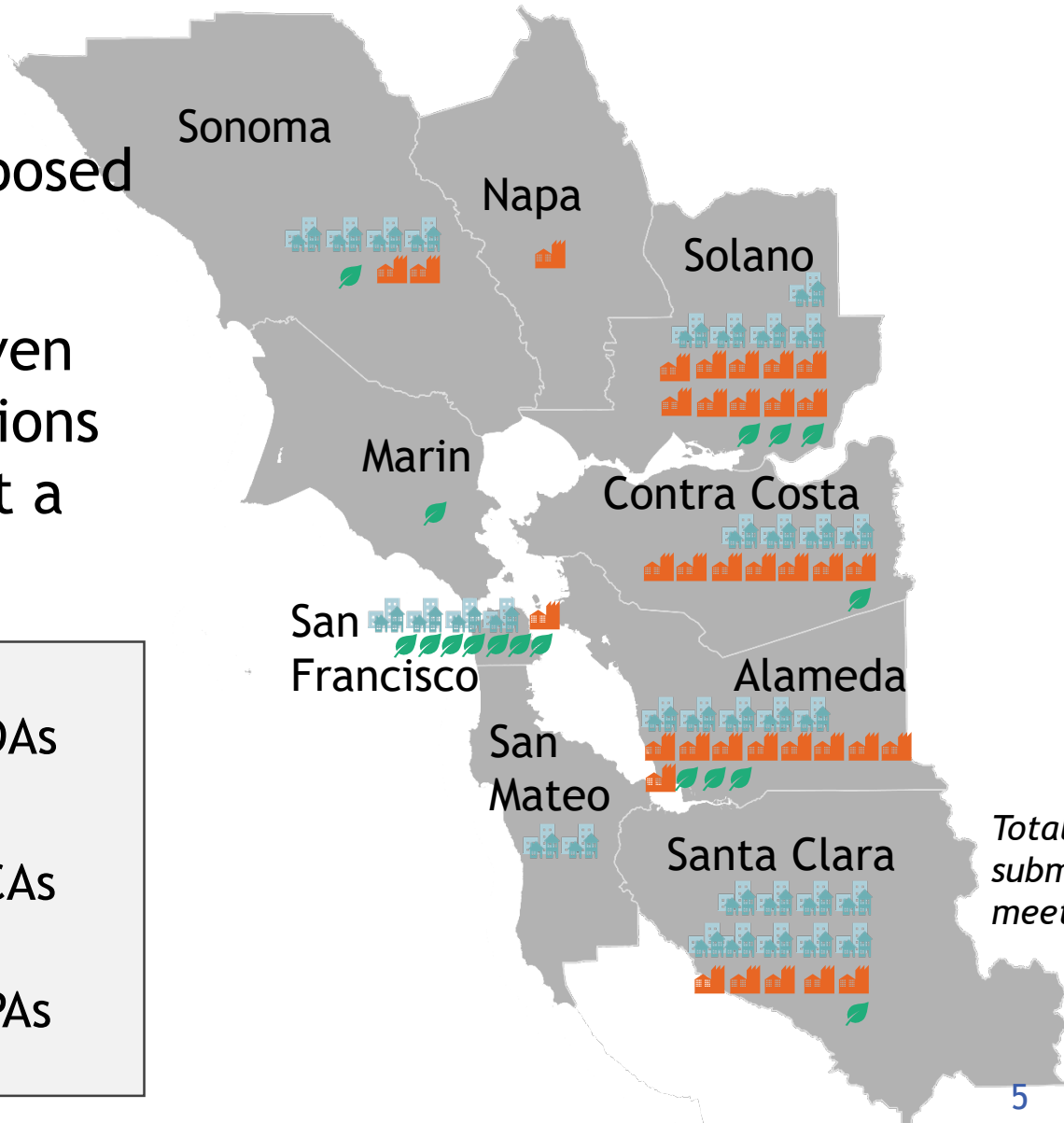
99% of PDAs on track to meet **transit criteria**

Totals do not include submissions which did not meet adopted criteria.

Local Response: September Submissions

- 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.





Totals do not include submissions which did not meet adopted criteria.

Where Are We Now?

Exploring How Local Nominations Can Help Address Challenges

Guiding Principle: AFFORDABLE

Statutory Target:
House Future Population at All Income Levels

Most newly-proposed PDAs are in jobs-rich locations in need of new housing, but with high average housing costs. This means supportive affordable housing strategies will be needed.

Jobs-housing ratio *(city-level)*

0.7	0.9	1.5
Region	Existing PDAs *(average)*	New* PDAs *(average)*

*Pending local resolution

The typical home in a new* PDA is

25%

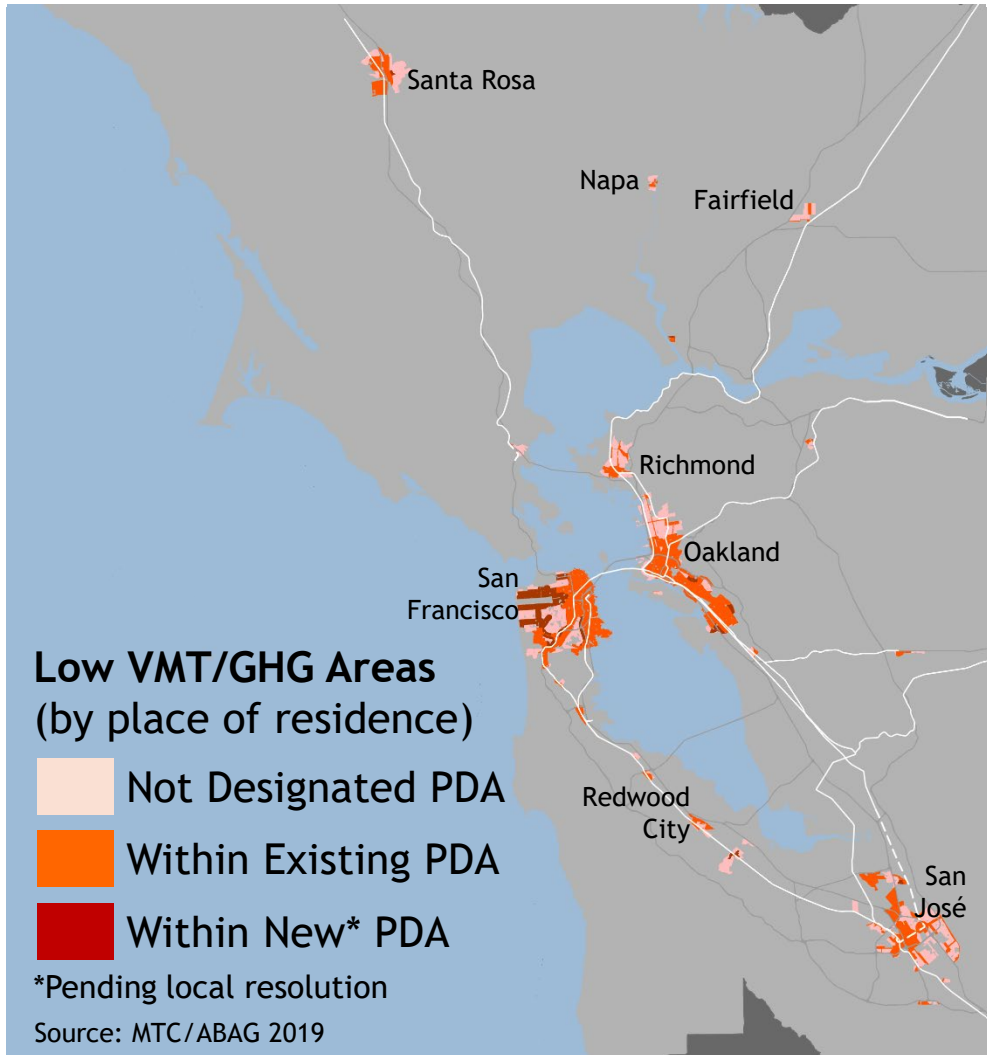
more expensive than in an existing PDA

*Pending local resolution

Based on 2017-2019 home sales reported by Redfin

Sources: California Department of Finance 2016, US Census 2016, Redfin,207-19, MTC/ABAG 2019

Newly submitted PDAs boost the share of existing low-VMT locations included within the Growth Framework.



PDAs now make up 62%

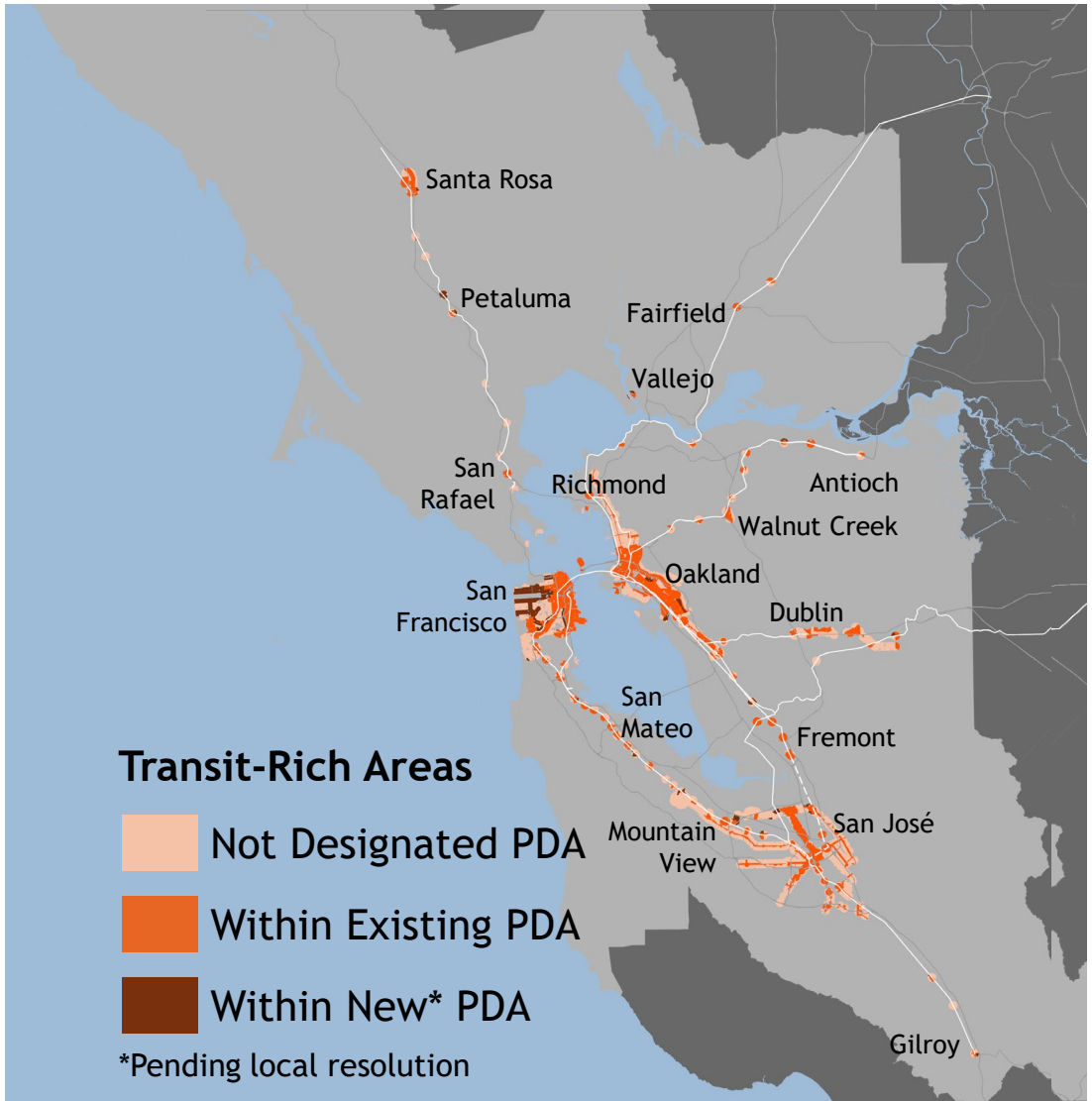
(formerly 57% as of early 2019)

of places* where residents' transportation-related GHG emissions are **20% below the regional average**

*Defined as urbanized land area

Statutory Target: GHG Reduction

However, many other transit-rich locations - which are primed for low-GHG performance in the future - remain outside of the PDA framework.



>50% of transit-rich areas* still have not been designated as PDAs

(now 53%; formerly 56% as of early 2019)

*Defined as land area that meets Transit-rich PDA transit criteria adopted in May 2019 by ABAG and MTC

Source: MTC/ABAG, 2019

Statutory Target:
House Future Population at All Income Levels

The newly-proposed PDAs include more High-Resource Areas and fewer places with high displacement risk…

Share of PDAs in High-Resource Areas*

15% Existing PDAs

44% New** PDAs

*Defined as urbanized land that meets PDA transit criteria and is defined as "high" or "highest resource" by the California Department of Housing & Community Development and Department of Finance.

**Pending local resolution

Areas* at Risk of Displacement

44% Existing PDAs

12% New** PDAs

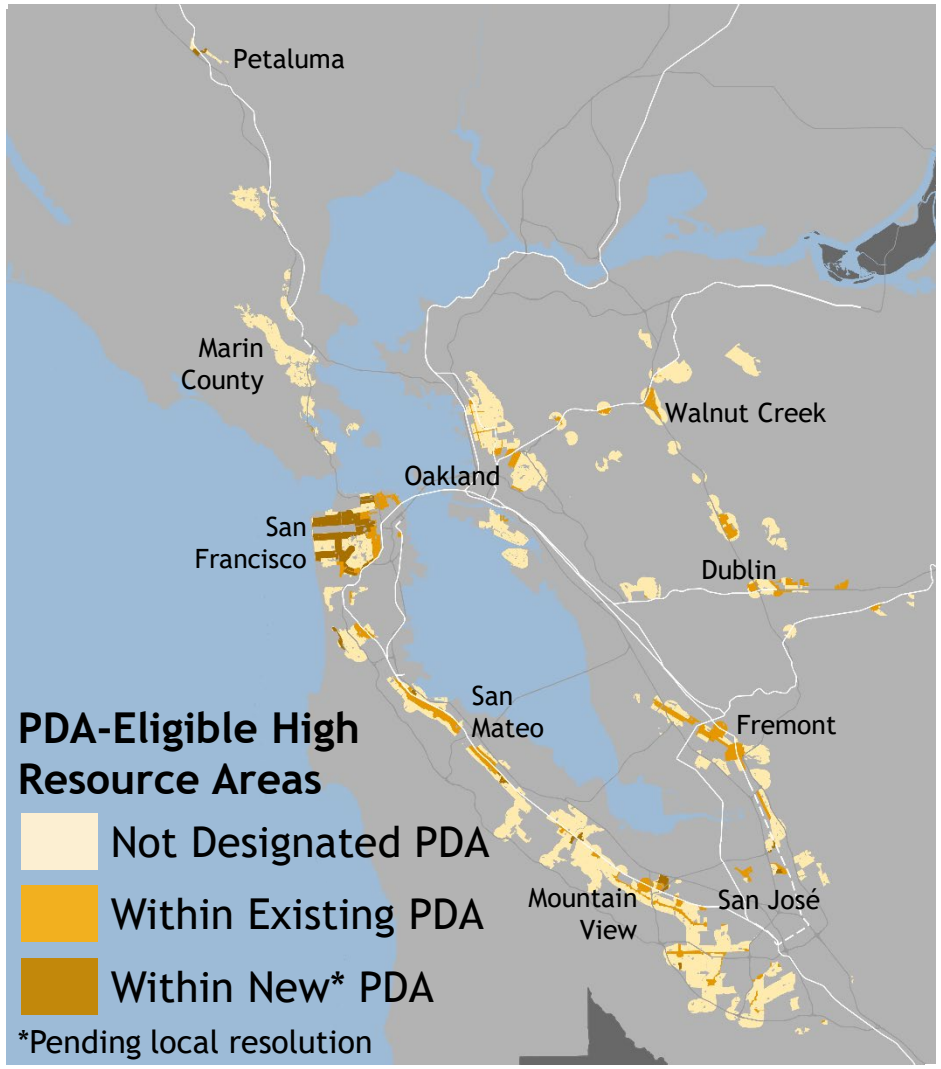
*Defined as land area within PDA boundaries categorized as "At risk of gentrification or displacement" or "Ongoing Gentrification/Displacement of Low-income households" by the UC-Berkeley Urban Displacement Project.

**Pending local resolution

Sources: California HCD & DOF 2019, UC-Berkeley Urban Displacement Project 2017, MTC/ABAG 2019

Statutory Target:
House Future Population at All Income Levels

… but the overall share of High Resource Areas that **could be designated PDAs** remains low.



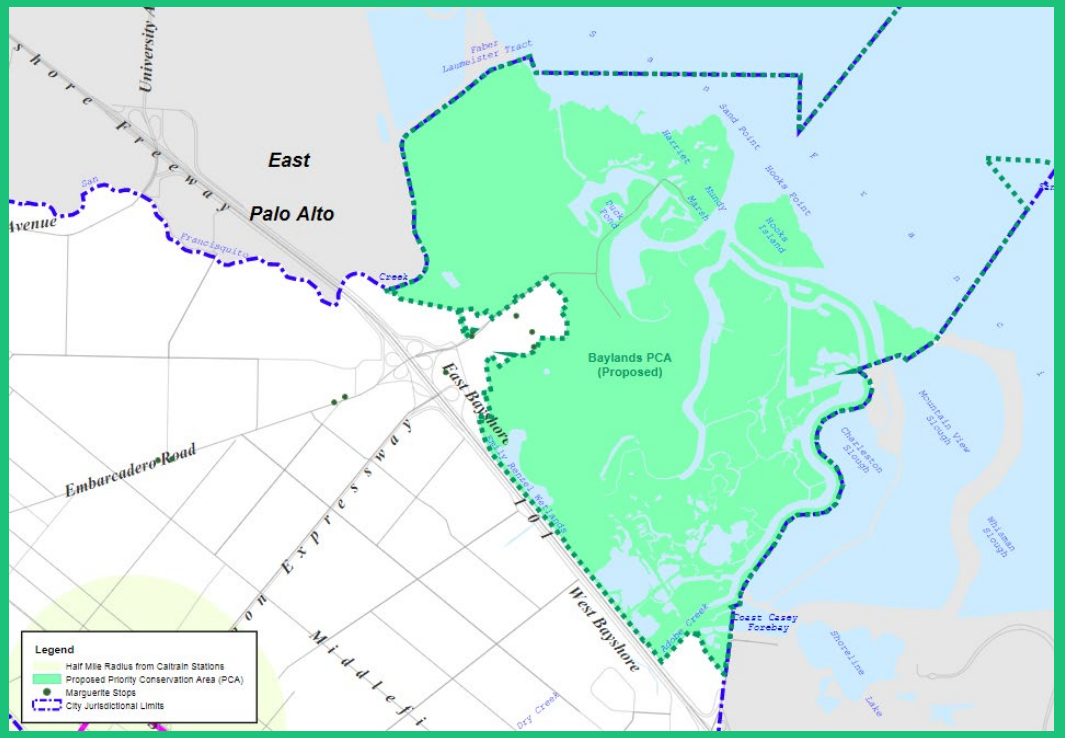
20% of PDA-Eligible High Resource Areas have been designated PDAs

(formerly 15% as of early 2019)

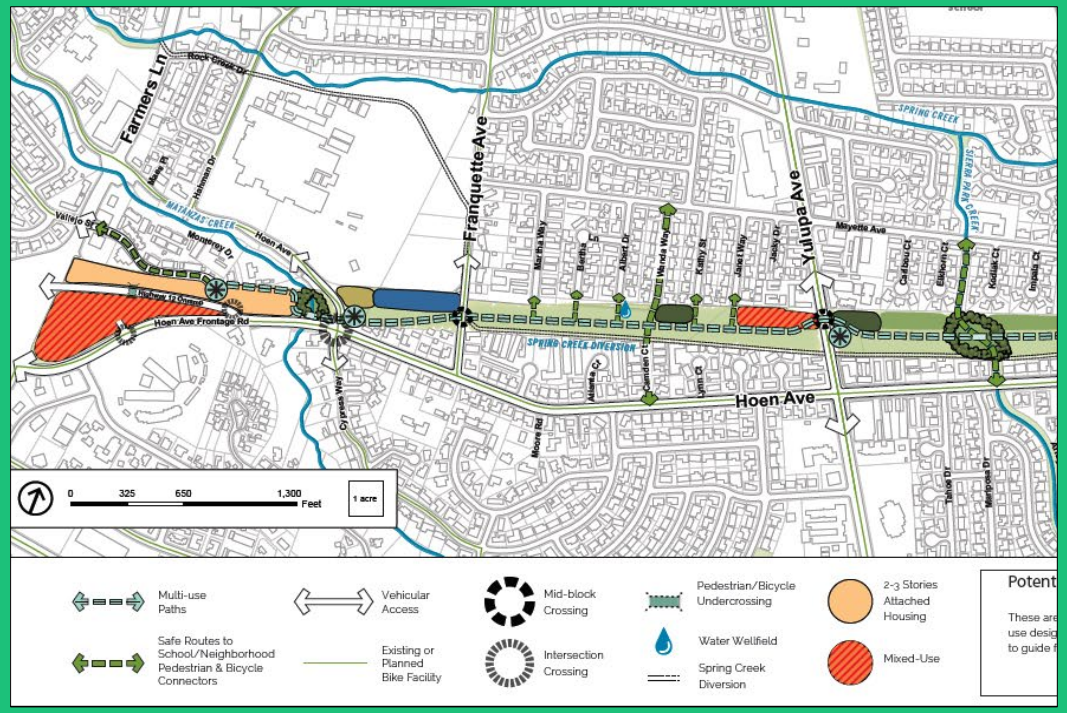
Sources: California HCD 2019, MTC/ABAG 2019

Guiding Principle: HEALTHY

The addition of new* PCAs further strengthens the region's commitment to conservation and open space access.



Baylands, City of Palo Alto

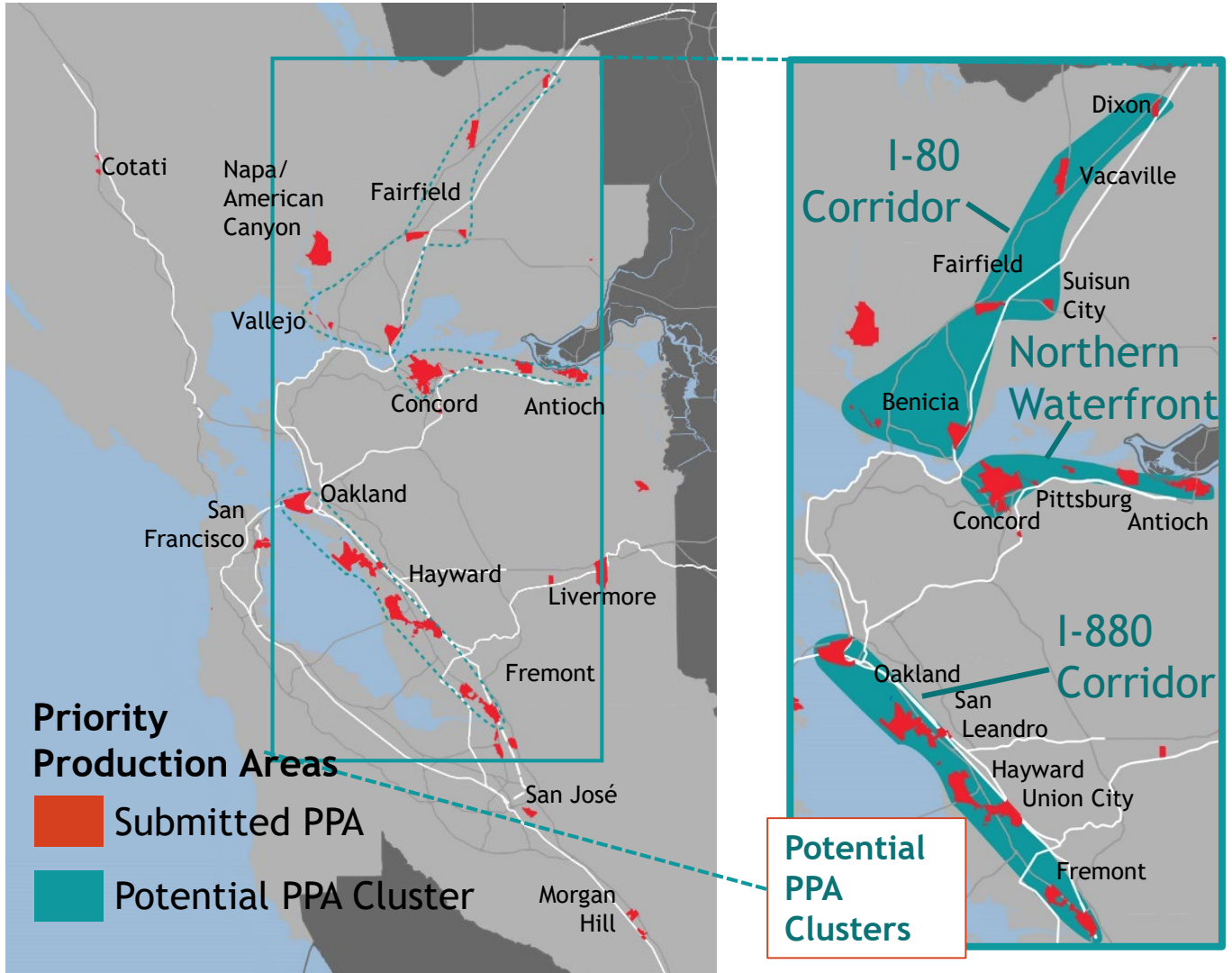


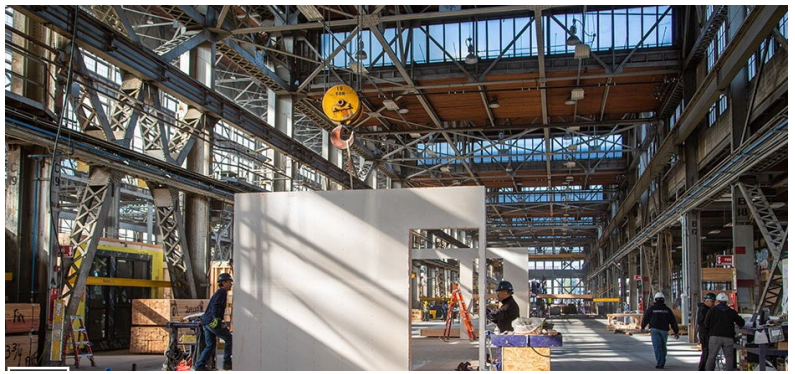
Southeast Greenway, City of Santa Rosa

*Pending local resolution

Guiding Principle: VIBRANT

Nominated PPAs include many of the region's most critical industrial lands, with key clusters in the Northern Waterfront and along I-80/I-880.





Mare Island, Vallejo

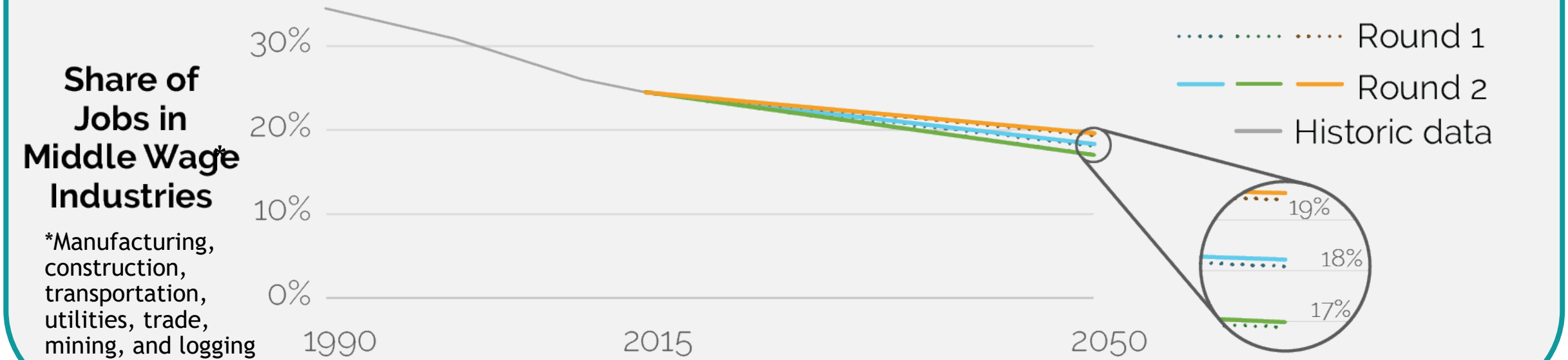
Port of Oakland

Guiding Principle: VIBRANT

Given current and projected trends, **new strategies** are likely necessary to realize the type of job growth envisioned in PPAs.

Horizon Futures Analysis

Share of regional jobs in middle wage industries - historic and projected.



Horizon Futures Strategies

- Create Incubator Programs
- Create Middle-wage Jobs

What's Next for the Blueprint?

Takeaways & Next Steps to Create a More Equitable Plan

Takeaways

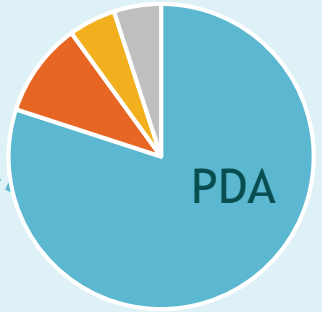
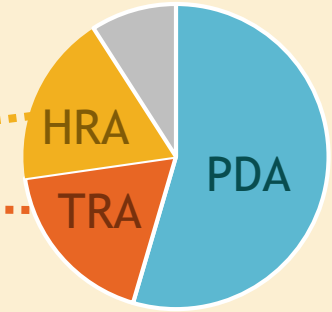
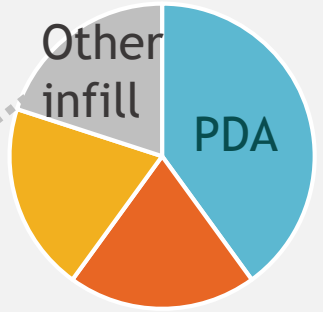
1. Despite significant gains as a result of local submissions, the updated set of PDAs is likely insufficient to close **gaps on GHG and equity.**

2. While there was **robust interest in PPAs**, a comprehensive regional approach is likely needed to address the projected decline in the industries envisioned for these areas.

3. **Supportive strategies will be critical** to advance the Guiding Principles through the Plan Blueprint phase.

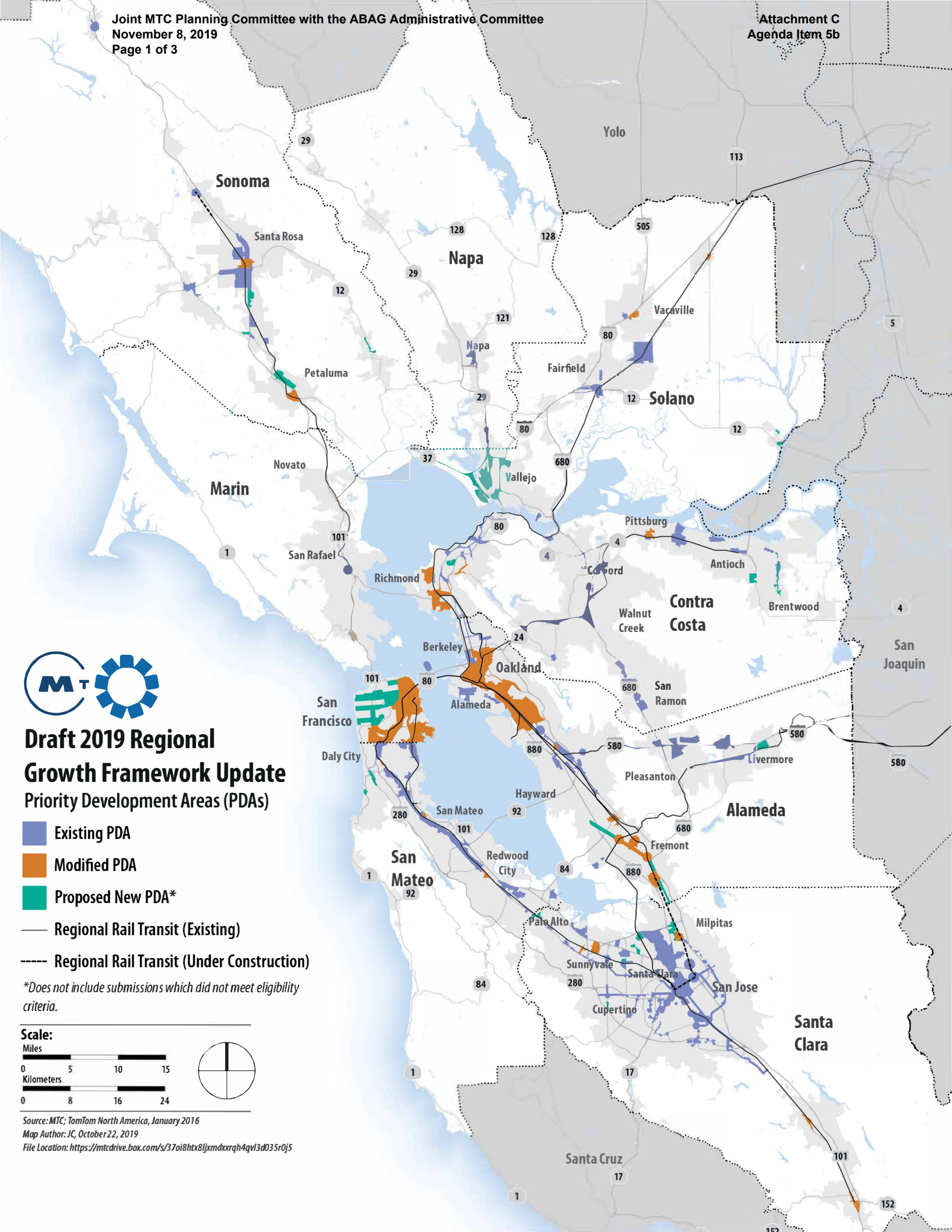
Key Question for Action This Winter:

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
Highly focused in: Existing & Proposed PDAs 	• Growth pattern aligned with local nominations • Similar to Plan Bay Area 2040	• Difficult to close GHG and equity gaps without broader range of growth areas
Focused in: Existing & Proposed PDAs + Select High-Resource Areas + Select Transit-Rich Areas outside PDAs 	• Maximizes potential for GHG reduction • Best aligns with fair housing requirements	• Difficult to implement outside locally-nominated areas
Focused in Existing & Proposed PDAs + more distributed growth within Urban Growth Boundaries 	• Largest footprint for meeting housing need • Does not require identifying additional areas for growth	• Difficult to implement outside locally-nominated areas

Regional Growth Framework: Next Steps

- **December 2019:** discuss key questions with stakeholders at RAWG Workshop on Housing & Economy Elements of Plan Bay Area 2050 Blueprint
- **January 16, 2020:** deadline for resolutions nominating new PDAs, PCAs, and PPAs; deadline for existing PDAs that need to submit VMT-Reduction forms
- **February 2020:** action on final PDAs, PCAs, and PPAs for Plan Bay Area 2050 + any additional growth areas for the Draft Blueprint
- **Winter & Spring 2020:** integration of geographies & strategies into Draft & Final Blueprint



Draft 2019 Regional Growth Framework Update

Priority Development Areas (PDAs)

- Existing PDA
- Modified PDA
- Proposed New PDA*
- Regional Rail Transit (Existing)
- Regional Rail Transit (Under Construction)

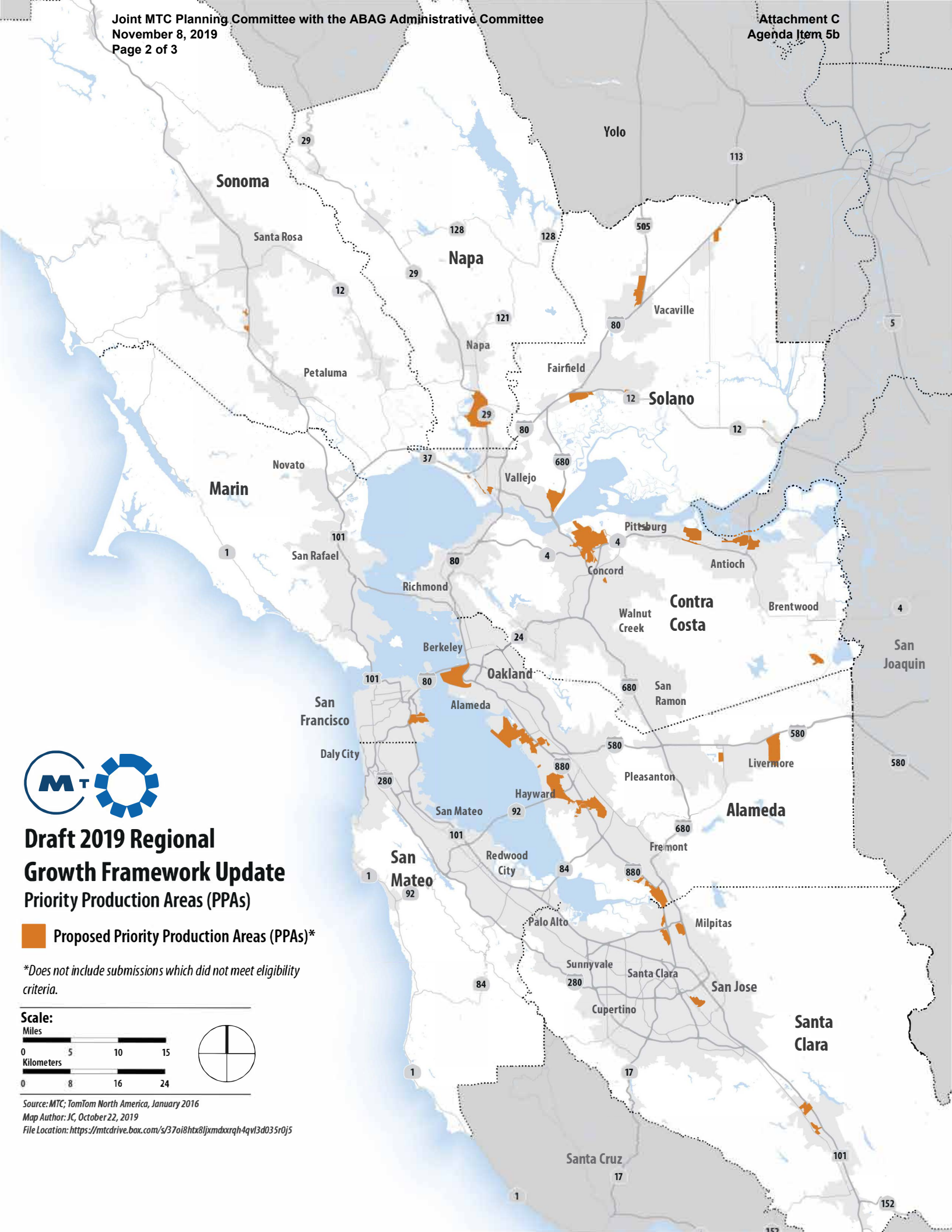
**Does not include submissions which did not meet eligibility criteria.*

Scale:

Miles: 0 5 10 15

Kilometers: 0 8 16 24

Source: MTC; TomTom North America, January 2016
Map Author: JC, October 22, 2019
File Location: https://mtcdrive.box.com/s/37oi8htx8ljxmdxxrqh4qvl3d035r0j5



Draft 2019 Regional Growth Framework Update

Priority Production Areas (PPAs)

Proposed Priority Production Areas (PPAs)*

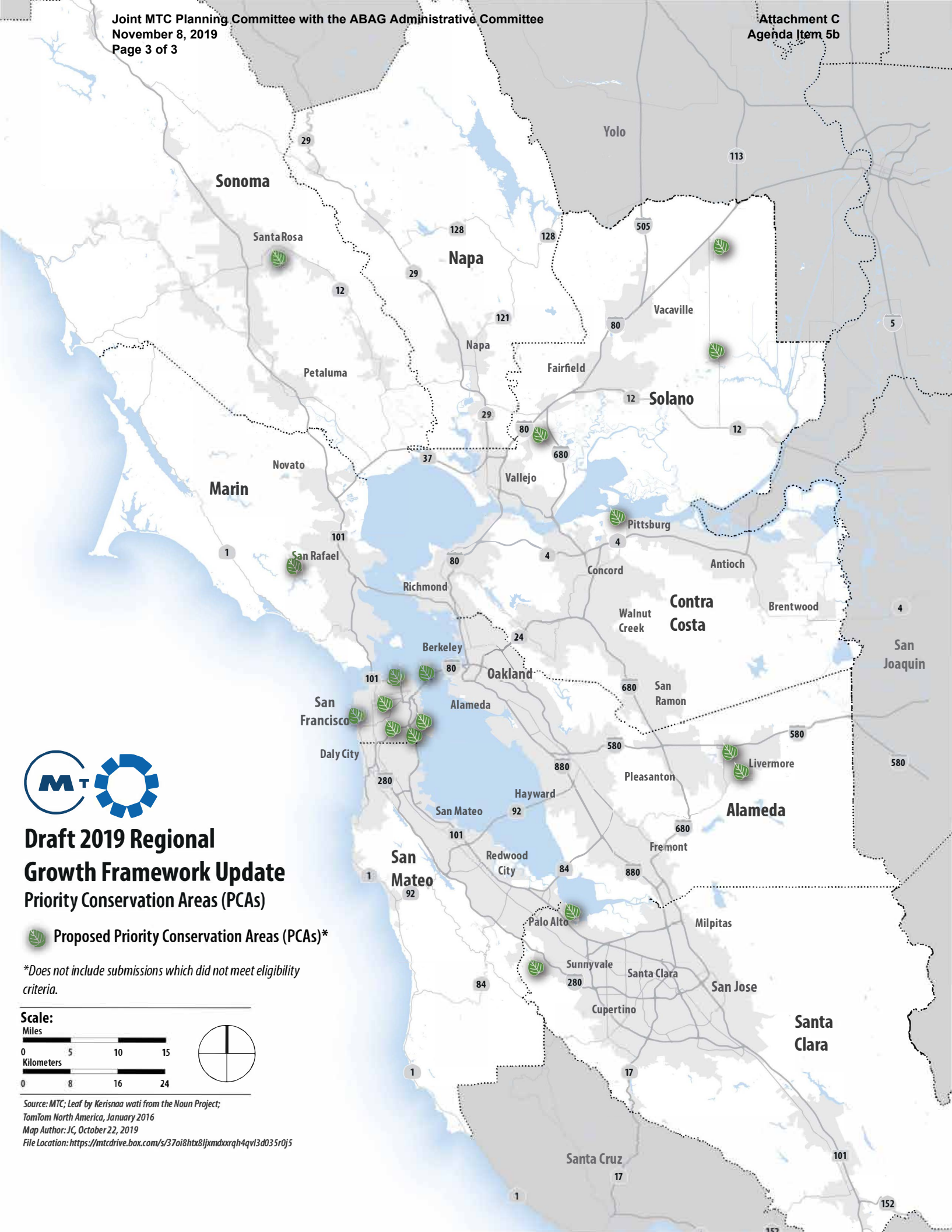
**Does not include submissions which did not meet eligibility criteria.*

Scale:

Miles
0 5 10 15

Kilometers
0 8 16 24

Source: MTC; TomTom North America, January 2016
Map Author: JC, October 22, 2019
File Location: https://mtcdrive.box.com/s/37oi8htx8ljxmdxxrqh4qvl3d035r0j5



Draft 2019 Regional Growth Framework Update

Priority Conservation Areas (PCAs)

Proposed Priority Conservation Areas (PCAs)*

**Does not include submissions which did not meet eligibility criteria.*

Scale:

Miles: 0 5 10 15

Kilometers: 0 8 16 24

Source: MTC; Leaf by Kerisnaa wati from the Noun Project; TomTom North America, January 2016
Map Author: JC, October 22, 2019
File Location: https://mtcdrive.box.com/s/37oi8htx8ljxmdxxrqh4qvl3d035r0j5

2019 Priority Area Submissions: County

County	PDA - New	PDA - Boundary Change	PCA - New	PCA - Boundary Change	PPA - New	Total
Alameda	5	14	2	0	9	30
Contra Costa	4	7	1	0	8	20
Marin	0	1	2	1	0	4
Napa	0	0	0	0	1	1
San Francisco	4	9	7	0	1	21
San Mateo	2	3	0	0	1	6
Santa Clara	9	6	0	0	6	21
Solano	6	4	3	0	9	22
Sonoma	5	2	1	0	2	10
Total	**35**	**46**	**16**	**1**	**37**	**135**

Note: 1) New Priority Areas require local government resolutions to complete nomination process. Figures may change.

2019 Proposed New PDAs by Designation

Designation	Total	Percentage
Transit-Rich	15	43%
Connected Community (High Resource Area)	7	20%
Connected Community (Outside High Resource Area)	11	31%
Total: Eligible	**33**	**94%**
Total: Does not meet eligibility criteria*	**2**	**6%**
Total: All Submissions	**35**	**100%**

**Rio Vista Airport/Church Roads, and Cotati Gravenstein Corridor.*

Required Forms Submitted: PDA Planning and Transit Improvements

Form/Letter of Confirmation	Required	Submitted* (total)	Submitted (%)
PDA Planning	30	28	93%
Transit Improvement	33	31	94%

As a result of submitted transit improvements and confirmation of PDA Planning, 99% of existing PDAs meet program planning and transit criteria

**Not submitted:*

1) PDA Planning: Los Gatos El Camino Real; Hercules San Pablo Avenue.

2) Transit Improvements: Dixon Downtown; Gilroy First Street.

2019 Regional Growth Framework Update: Proposed New PDAs Submitted

County	Jurisdiction	Proposed PDA Name	Designation
Alameda	Berkeley	North Berkeley	Transit-Rich
Alameda	Livermore	McGrath Southfront PDA	Transit-Rich
Alameda	Fremont	North Fremont Blvd	Connected Community (HRA)
Alameda	Fremont	Osgood Rd	Connected Community (HRA)
Alameda	Fremont	Warm Springs Blvd	Connected Community (HRA)
Contra Costa	Brentwood	Brentwood Blvd	Connected Community (Outside HRA)
Contra Costa	Brentwood	Downtown Brentwood	Connected Community (Outside HRA)
Contra Costa	Brentwood	Brentwood Transit Village	Connected Community (Outside HRA)
Contra Costa	Richmond	Hilltop	Connected Community (Outside HRA)
San Francisco	San Francisco	Sunset Corridors and Forest Hill	Transit-Rich
San Francisco	San Francisco	Richmond District	Transit-Rich
San Francisco	San Francisco	Lombard	Transit-Rich
San Francisco	San Francisco	Central City Neighborhoods	Transit-Rich
San Mateo	Pacifica	Sharp Park	Connected Community (HRA)
San Mateo	Pacifica	Skyline	Connected Community (HRA)
Santa Clara	Santa Clara	Freedom Circle	Transit Rich
Santa Clara	Santa Clara	Lawrence Station Phase II	Transit Rich
Santa Clara	Santa Clara	Patrick Henry Drive	Transit Rich
Santa Clara	Santa Clara	Related Santa Clara/City Place	Transit Rich
Santa Clara	Santa Clara	Tasman East	Transit Rich
Santa Clara	San Jose	South DeAnza	Connected Community (HRA)
Santa Clara	Sunnyvale	Moffett Park Specific Plan	Transit Rich
Santa Clara	Palo Alto	Downtown/University	Transit Rich
Santa Clara	Milpitas	Midtown Specific Plan	Transit Rich
Solano	Rio Vista	Airport/Church Roads PDA	N/A (Does not meet transit criteria)
Solano	Vallejo	Carquinez Heights	Connected Community (Outside HRA)
Solano	Vallejo	Mare Island	Connected Community (Outside HRA)
Solano	Vallejo	Solano 360/I-80/SR-37 Gateway	Connected Community (Outside HRA)
Solano	Vallejo	Central Corridor West	Connected Community (Outside HRA)
Solano	Vallejo	Central Corridor East	Connected Community (Outside HRA)
Sonoma	Sonoma County	Springs	Connected Community (Outside HRA)
Sonoma	Sonoma County	Santa Rosa Avenue	Connected Community (Outside HRA)
Sonoma	Sonoma County	Sonoma County Airport Area	Connected Community (Outside HRA)
Sonoma	Petaluma	Petaluma SMART North (Corona Road Station Area)	Connected Community (HRA)
Sonoma	Cotati	Gravenstein Corridor	N/A (Does not meet transit criteria)

2019 Regional Growth Framework Update: Submitted Proposed PCAs

County	Jursidiction	Proposed PCA Name	PCADesignation
Alameda	Livermore	Arroyo Las Positas Trail	UG, RR
Alameda	Livermore	First Street	UG, RR
Contra Costa	Pittsburg	Northwest Waterfront	RR
Marin	Tiburon	Tiburon Open Space	NL, RR
Marin	Ross	Bald Hill	NL
Santa Clara	Palo Alto	Palo Alto Baylands	NL, RR
San Francisco	San Francisco	Excelsior/OMI Park Connections	UG, RR
San Francisco	San Francisco	Crosstown Trail	UG, RR
San Francisco	San Francisco	India Basin	NL, UG, RR
San Francisco	San Francisco	Lake Merced/Ocean Beach	NL, UG, RR
San Francisco	San Francisco	Central Waterfront	UG, RR
San Francisco	San Francisco	Northern Waterfront	RR
San Francisco	San Francisco	Treasure Island/Yerba Buena Island	NL, UG, RR
Solano	unincorporated Solano	Dixon Agricultural Service Area	AL
Solano	unincorporated Solano	Cache Slough	NL, AL, UG, RR
Sonoma	Santa Rosa	Southeast Greenway	NL, UG, RR

Designation Guide: UG: Urban Greening; RR: Regional Recreation; NL: Natural Landscapes; AG: Agricultural Land

2019 Regional Growth Framework Update: Proposed PPA Submissions

County	Jurisdiction	Proposed PPA Name
Alameda	Fremont	Bayside Industrial Priority Production Area
Alameda	Fremont	Pacific Commons Priority Production Area
Alameda	Hayward	Hayward PPA
Alameda	Livermore	Eastside PPA
Alameda	Livermore	Westside PPA
Alameda	Oakland	Port PPA
Alameda	Oakland	Airport PPA
Alameda	San Leandro	San Leandro PPA
Alameda	Union City	Union City PPA
Contra Costa	Antioch	Northern Waterfront Industrial Corridor
Contra Costa	Concord	Northern Concord PPA
Contra Costa	Concord	Western Concord PPA
Contra Costa	Oakley	Employment Area
Contra Costa	Pittsburg	Northern Waterfront
Contra Costa	Unincorporated Contra Costa	Pacheco Manufacturing Zone
Contra Costa	Unincorporated Contra Costa	Byron Airport
Contra Costa	Unincorporated Contra Costa	Baypoint Industrial Sector
Napa	American Canyon and Napa	American Canyon and Napa PPA
San Francisco	San Francisco	Bayshore/Central Waterfront/Islais Creek
San Mateo	Pacifica	Northern Palmetto PPA
Santa Clara	Milpitas	Central Manufacturing Area
Santa Clara	Milpitas	McCarthy Ranch Industrial Area
Santa Clara	Milpitas	Southwestern Employment Area
Santa Clara	Morgan Hill	Morgan Hill PPA
Santa Clara	San Jose	Monterey Business Corridor
Solano	Benicia	Benicia Industrial PPA
Solano	Dixon	Northeast Quadrant
Solano	Fairfield	Train Station Employment Center
Solano	Fairfield	Fairfield PPA
Solano	Rio Vista	Rio Vista PPA

2019 Regional Growth Framework Update: Proposed PPA Submissions

County	Jurisdiction	Proposed PPA Name
Solano	Suisun City	Suisun City Gentry (westside)
Solano	Suisun City	Suisun City East Side PPA
Solano	Vacaville	Vacaville Industrial Priority Production Area
Solano	Vallejo	Vallejo PPA Mare Island
Solano	Vallejo	Vallejo PPA South Vallejo
Sonoma	Cotati	Cotati PPA
Sonoma	Rohnert Park	Northwest Business Park