Metropolitan Transportation Commission
Policy Advisory Council

May 13, 2020 **Agenda Item 8**

Bay Area Express Lanes Network for Plan Bay Area 2050

Subject: Presentation on trade-offs between express lane planning scenarios to inform a future recommendation of the Regional Express Lane network for Plan Bay Area 2050 (Plan), including synergy with express buses. Update on the Express Lanes Strategic Plan.

Background: The attached item is going to the MTC Operations Committee for information in May. Staff seeks input from the Policy Advisory Council on this topic before returning to the Operations Committee in June for approval. The purpose of the item is to facilitate consideration of tradeoffs in defining a Regional Express Lane Network proposed for inclusion in Plan Bay Area 2050, and to share progress in identifying a complementary network of Regional Express Bus service.

Please note that, due to deadlines for defining the investments in Plan Bay Area 2050, this item focuses on the definition of the express lanes network. Staff is concurrently developing white papers for the Express Lanes Strategic Plan to address policy issues including equity, express bus, greenhouse gas emissions and vehicle miles traveled reductions, cost saving measures and others. Staff plans to engage the Equity and Access Subcommittee and Policy Advisory Council in the coming months in the development of the white paper on equity.

Recommendation: Information

Attachments: Agenda Item 6a from the May 8, 2020 Operations Committee meeting

Metropolitan Transportation Commission
Operations Committee

May 8, 2020 **Agenda Item 6a**

Bay Area Express Lanes Network for Plan Bay Area 2050

Subject: Presentation on trade-offs between express lane planning scenarios to inform a future recommendation of the Regional Express Lane network for Plan Bay Area 2050 (Plan), including synergy with express buses. Update on the Express Lanes Strategic Plan.

Background: For the last year, a working group consisting of Bay Area Express Lane providers and Caltrans has met to work on the Strategic Plan. In December 2020 staff presented to this Committee a two-track effort to advance the express lane network. Using agreed upon program goals, Track 1 identified recommendations for the California Transportation Commission's (CTC) 2020 Senate Bill (SB) 1 project endorsements and initial programming of the Regional Measure 3 Express Lanes Program to be presented to the Programming and Allocations Committee in May. Track 2 was to develop a 10-year strategy for implementing express lanes reflecting key policies from the Plan.

Based on the January 2020 Commission workshop feedback staff has augmented Track 2 to encompass: 1) an express lane network that fits into the Plan; 2) a strategic plan to implement an express lane network consistent with the Plan and based on agreed upon goals, policies, and strategies; and 3) a Regional Express Bus system for the Plan that works in concert with the Regional Express Lane network.

1. Express Lane Network for Plan Bay Area 2050

The Plan's Project Performance Assessment found three deficiencies in the Regional Express Lane network originally submitted: does not advance equity, increase in green house gas (GHG) emissions, and a low benefit-to-cost ratio. The working group is addressing these deficiencies through a combination of white paper research through 2020, as outlined in its commitment letter to Plan Bay Area (Attachment A), and network scenarios to aid in deciding the express lane scope for the Plan.

For equity, the working group is exploring options over the next several months, via a white paper, to include means-based tolls, targeted incentives, complementary bus service, funds for equity projects using express lane toll revenue, origin-destination connections to jobs and workforce development programs. The group will work closely with San Mateo and San Francisco partners to learn from and collaborate on their ongoing express lane equity studies, scheduled to finish in fall 2021.

To address GHG emissions and low benefit-to-cost ratio deficiencies, the working group plans to revise the Regional Express Lane network for the Plan. To aid in this effort, the group has developed four network scenarios designed to illustrate trade-offs based on regional priorities, including: 1) Minimize GHG emissions; 2) Express Bus Guideway; 3) Complete Pipeline Projects; and 4) Megaregion Connections. Except for the Megaregion, each scenario is financially constrained to approximately $3.0 billion, which the group feels is feasible with toll revenue financing.

2. Express Lane Strategic Implementation Plan
Through 2020 the working group will conduct research on the following topics: equity, bond financing, express bus, consistent policies, GHG and vehicle miles traveled reductions, cost saving measures, and funding principles. The research will form the basis of a Bay Area Express Lane Strategic Implementation Plan which staff will present for adoption at the end of the year.

3. Regional Express Bus System
Regional Express Bus service is an important complement to the Regional Express Lanes Network in large part because it can improve person throughput, decrease GHG emissions and potentially advance equity. TransForm and SPUR submitted a Regional Express Bus (ReX) system proposal for the Plan. Through the Project Performance Assessment, the ReX proposal, which was expansive (with 17 express bus routes and 60+ feeder routes) and highly capital intensive, was found to have deficiencies in equity and benefit-to-cost ratio. The ReX team asked MTC for assistance in responding to its deficiencies. MTC became the sponsor of a more streamlined proposal focused on a phase one of a possible rollout of an express bus system. The new proposal reduces costs, enhances benefits, and complements existing express bus and county proposals.

Based on feedback from both the Operations Committee and Policy Advisory Council in May, staff anticipates returning in June to recommend an express lane network for adoption into the Plan.

Issues:

The region cannot afford the original $6.1B express lanes proposal. Assuming financing with toll revenue, staff believes a network costing between $3.0 billion and $3.5 billion is feasible. Staff anticipates toll revenue will be needed to fund the proposed express bus system and may necessitate trade-offs.

Express lanes add GHG emissions. The challenge is how to minimize emission increases. Adding travel lanes is counterproductive in achieving Plan Bay Area's mandated GHG targets. If the express lane network can include more lane-conversion projects and pair with express bus service, the GHG target is more viable.

Sacramento Area Council of Governments and San Joaquin Council of Governments are beginning environmental review of express lane projects that will connect to the Bay Area. There will be trade-offs for consideration to link to their projects.

While the current COVID-19 emergency will certainly reduce traffic congestion and affect carpooling, express bus and express lanes capital funding and operations in the near-term, the mid- and long-term impacts are not yet clear. As a result, it is currently premature to alter their planning assumptions. However, staff will continue to monitor over the coming months and adjust as needed.

Recommendation: Information

Attachments: Attachment A: Regional Express Lane Commitment Letter Response to Plan Bay Area 2050 Deficiencies
Attachment B: Presentation, Bay Area Express Lanes Strategic Implementation Plan

Therese W. McMillan

ATTACHMENT A
Regional Express Lane Commitment Letter Response to Plan Bay Area 2050 Deficiencies

April 10, 2020

Therese W.
McMillan Executive
Director
Metropolitan Transportation Commission
375 Beale Street Suite 700
San Francisco, CA 94105

RE: Bay Area Express Lanes Project Performance in Plan Bay Area

2050 Dear Ms. McMillan:

This letter is in response to the Plan Bay Area 2050 Project Performance Assessment (PPA) findings for the Regional Express Lanes Network. The PPA indicated a few performance shortcomings for the Regional Express Lanes Network, including underperforming benefit-cost ratios, equity and GHG scores. We are writing to convey the regional plan to address these underperformance issues.

For the last year, a working group consisting of Bay Area Express Lanes partners has met to develop an Express Lanes Strategic Plan. This group is collaborating to shape the future of the Express Lanes Network, consistent with the vision and goals of Plan Bay Area 2050. We believe it shows promising benefits if integrated cost-effectively with transit, affordability, and other PBA programs. The working group recently developed network scenarios that integrate PBA goals. These scenarios will be presented to the MTC Operations Committee in May for Commissioner feedback, following which the working group will submit the revised Regional Express Lane Network for inclusion into Plan Bay Area 2050.

This letter demonstrates the working group's commitment to improving the network's cost effectiveness, equity and GHG reduction performance while meeting Federal and State operational requirements by: prioritizing segments that support transit/carpooling and provide seamless travel, incorporating projects that utilize conversion of existing right of way over expansion where possible, identifying appropriate equity policies, and implementing public engagement best practices. In addition to revising the Network for Plan Bay Area, 2050, the group plans to develop a series of white papers over the summer of 2020 to inform policies and future project development. The outcomes of these white papers along with the revised Regional Express Lanes Network will be documented in a final Regional Express Lanes Strategic Plan at the end of 2020. Some highlights of work to date and upcoming work include:

Increasing Benefits; Decreasing Costs

The working group is revising the Regional Express Lanes Network to reflect:

- Segments that can more realistically be built in the next 15 years as well as the next 30 years based on available funds, including local funding commitments to project development and construction, and financing. For example, the costly 580/680 and 680/80 direct connectors most likely will not fit within the funding envelope for this period.
- Segments that support existing and potential future public transit services that advance the equity and GHG goals outlined in the Strategic Plan.

- Prioritization of HOV lane and general-purpose lane conversions (pending changes in legislation and traffic impact analysis) over construction of new lanes to reduce per-mile capital cost and the risk of induced demand/GHG. For example, Ala-580, SF-101/280, SCL 680/280 and SM-101 will evaluate take-a-lane and/or shoulder lane strategies as potential alternatives during the environmental process to evaluate impacts on GHG emissions and operations. Where new lanes are added, it may be possible to use paved right of way to reduce costs.

Local Funding

Express lanes bring considerable resources to the table to fund their construction, operations and maintenance. This sets them apart from other transportation management strategies.

- The express lanes operating and maintenance costs are covered by express lanes toll revenue and require no regional funds to keep the express lanes in a state of good repair.
- There is $300 million in capital funding set aside for the express lanes network in Regional Measure 3. MTC is proposing a framework for local RM3 express lane funding to leverage state and federal funding to the greatest extent possible.
- The county transportation agencies plan to leverage over $80 million in local funds to build the Regional Express Lanes Network.
- Express lane toll revenue can be used to finance the buildout of the network. The financial analysis used in Plan Bay Area 2040 demonstrated the ability to finance up to 60% of the total capital cost. In addition, several projects already in operation and under construction have financed a share of their capital costs with future toll revenue.

Green House Gas

To decrease GHG emissions, the working group is focusing on projects and programs that increase mode shift and average vehicle occupancy, including:

- Focusing on early delivery of projects with a high potential for express bus ridership and identifying policies that support future express bus service.
- Exploring the use of express lane revenues to support investments in express buses, mobility hubs and other investments to increase bus ridership and carpooling.
- Prioritizing projects that convert existing travel lanes (general-purpose and HOV lanes) to mitigate induced vehicles miles traveled and achieve GHG reduction goals. A white paper will be developed that looks in more detail on the impacts of interregional express lanes segments and dual express lane segments on VMT/GHG.

Equity

Advancement of equitable transportation alternatives is a key priority for the Express Lanes Network and is addressed in part by the measures listed above to integrate express bus service and support complementary investments. In addition:

- VTA, Alameda CTC and MTC have previously performed equity studies to understand the user profile of corridors they serve.
- San Mateo and SFCTA are undertaking equity studies, which include engagement with communities of concern and low income travelers to better understand and advance equity. The partners will leverage the findings of these studies to lay the foundations for a regional approach to promote equity.

- The working group will explore equity strategies including the following:
    - Means-based tolls/affordability programs
    - Targeted incentives (i.e., toll credit for transit use)
    - Complementary transit services that serve low-income travelers
    - Active mobility projects/programs funded through express lanes toll revenue
    - Improve access to jobs for communities of concern

Plan Bay Area Concepts

In addition, the express lane partner agencies support high-performing policies and projects in the Plan Bay Area 2050 Draft Blueprint:

- Eventual transition to congestion pricing on all freeway lanes in corridors with robust transit options. Express lanes can be a stepping stone to more extensive congestion pricing strategies. Prior to such implementation, further investigation is needed to better understand how congestion pricing on freeways may be implemented and the potential impacts on express lane operations as well as local roadways and transit.
- Lowering the speed limit to 55 miles per hour on freeways to improve safety. During congested periods the general-purpose lanes typically flow well below that speed, and so the express lanes could still offer a travel time and reliability advantage.
- Expansion of local bus services and non-motorized modes that serve shorter trips of all types and thus complement express lanes and express bus service, which tend to serve longer, largely commute trips.
- Integrated transit fares and payment platforms, which can help implement affordability policies and provide incentives for using transit, ridesharing and first and last mile services.

As a region, we are committed to implementing an Express Lane Network that serves the community and the surrounding environment equitably, cost-effectively and sustainably in order to advance the goals of Plan Bay Area 2050. We look forward to hearing your thoughts and discussing this further. If you have any questions about this format, please contact Jim Macrae at jmacrae@bayareametro.gov.

Sincerely,

ALAMEDA COUNTY
TRANSPORTATION COMMISSION

DocuSigned by:
Tess Lengyel
1D1305B42F4441E...

Tess Lengyel, Executive Director

Date: 4/7/2020

BAY AREA INFRASTRUCTURE FINANCE
AUTHORITY

DocuSigned by:
8584B49D6DE64E9...

Andrew B. Fremier, Deputy Executive Director, Operations

Date: 4/7/2020

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY

DocuSigned by:
Tilly Chang
FFD2528AB8BE49B...

Tilly Chang, Executive Director

Date: 4/8/2020

SAN MATEO CITY/COUNTY ASSOCIATION OF GOVERNMENTS (C/CAG)

DocuSigned by:
Sandy Wong
CC7597C653274F6...

Sandy Wong, Executive Director

Date: 4/7/2020

SAN MATEO COUNTY TRANSPORTATION AUTHORITY

DocuSigned by:
Jim Hartnett
5C7389EB374B4E3...

Jim Hartnett, Executive Director

Date: 4/9/2020

SAN MATEO COUNTY EXPRESS LANES JOINT POWERS AUTHORITY (SMCEL-JPA)

DocuSigned by:
Jim Hartnett
5C7389EB374B4E3...

Jim Hartnett, Executive Council

Date: 4/9/2020

SAN MATEO COUNTY EXPRESS LANES JOINT POWERS AUTHORITY (SMCEL-JPA)

DocuSigned by:
Sandy Wong
CC7597C653274F6...

Sandy Wong, Executive Council

Date: 4/7/2020

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

DocuSigned by:
Deborah Dagang
EA59061FEFD24C2...

Deborah Dagang, Director of Planning and Programming

Date: 4/8/2020

Bay Area Express Lanes Network for Plan Bay Area 2050

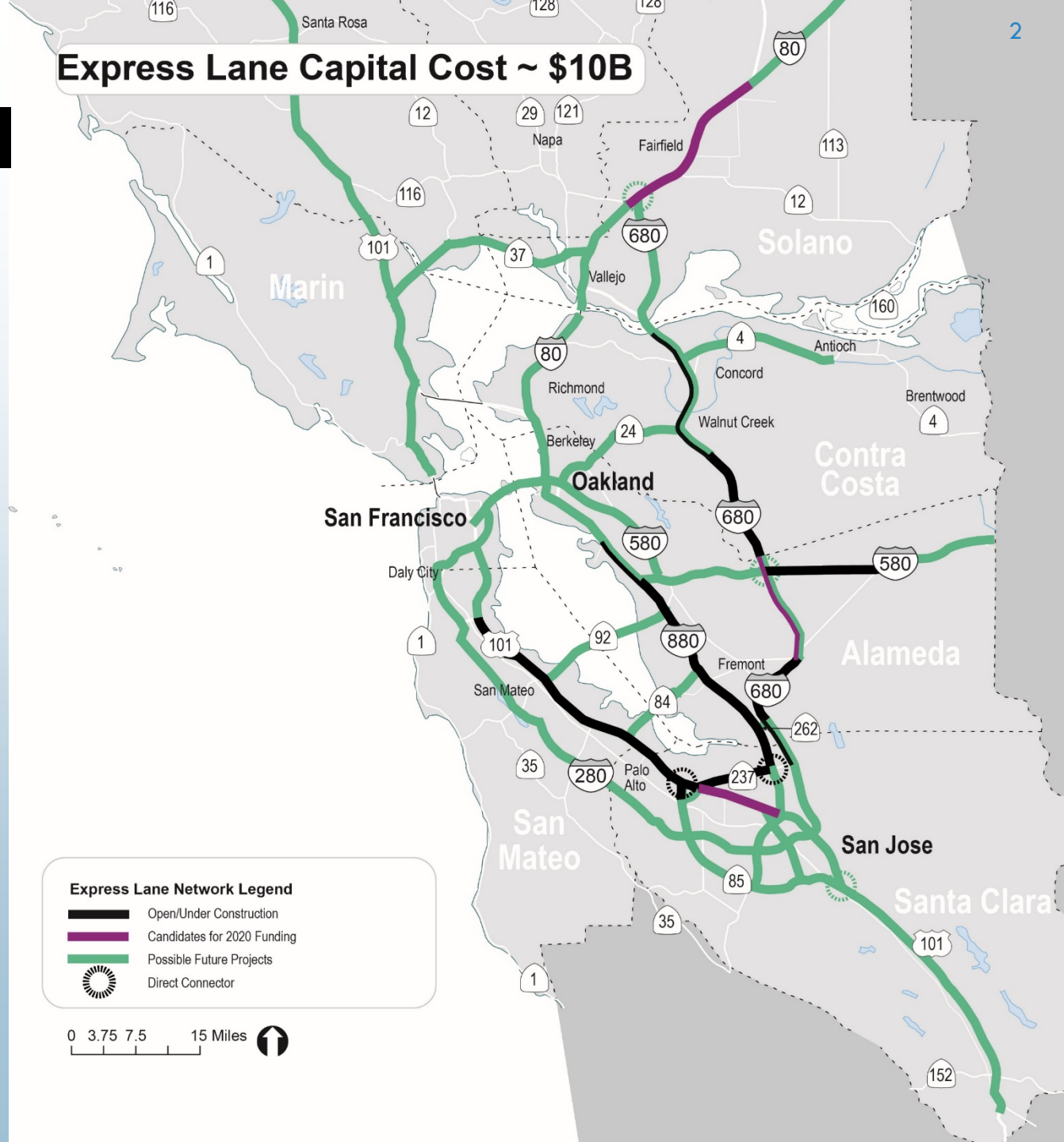
MTC Operations Committee

May 8, 2020

BAY AREA EXPRESS LANES

METROPOLITAN TRANSPORTATION COMMISSION

Vision: Robust Regional Network that Serves Carpools and Buses



BAY AREA EXPRESS LANES

Express Lane / Express Bus Networks Evaluated in the Plan Bay Area 2050 Project Performance Assessment.

Project	Scope	Project Source	Capital Cost (2019$)	Annual O&M Cost (2019$)

Regional Express Lanes Network	• MTC+VTA+ACTC+US101 express lanes
	• Total lane miles: 620
	  ○ Widening: 293
	  ○ Convert HOV/GP: 327
		MTC+VTA+ ACTC+ CCAG+ SFCTA	$6.1B	$170M

Optimized Express Lane Network *(not publicly released)*	• Includes above express lanes • Also fills other gaps for continuous network (e.g.: bridges, SR24, I-238, SR24, US101 Marin/SF) • Total lane miles: 748 • No widening; conversions only	-	$2.2B	$210M
Optimized Express Lane Network + Regional Express Bus (ReX)	• 17 Express Buses routes @ 5 min headways • 62 Feeder routes @ 5 min headways • Capital improvements to improve bus travel times	Trans-formative Project	$19.6B	$900M

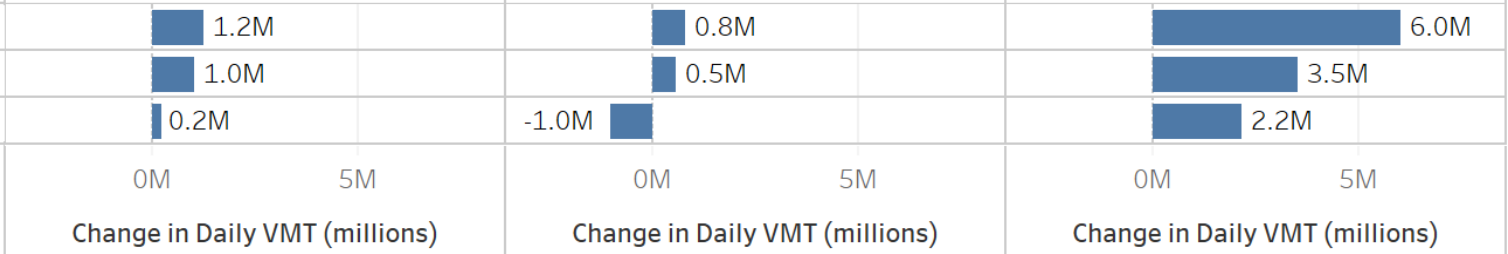
Plan Bay Area 2050 Performance Results

Project ID	Project	Lifecycle Cost	Guiding Principle Flags	Benefit-Cost Ratio			Equity Score		
				Rising Tides Falling Fortunes	Clean And Green	Back To The Future	Rising Tides Falling Fortunes	Clean And Green	Back To The Future
3000	Regional Express Lanes (MTC + VTA + ACTC + US-101)	$12.1B	1	0.5	0.6	2	Challenges	Challenges	Challenges
3020	Optimized Express Lane Network	$7.7B	0	0.7	1	1	Challenges	Challenges	Challenges
6020	Regional Express (ReX) Bus Network + Optimized Express Lane Network	$41.0B	1	<0.5	0.7	0.5	Challenges	Challenges	Challenges

Counterproductive to Plan Bay Area GHG/VMT Targets

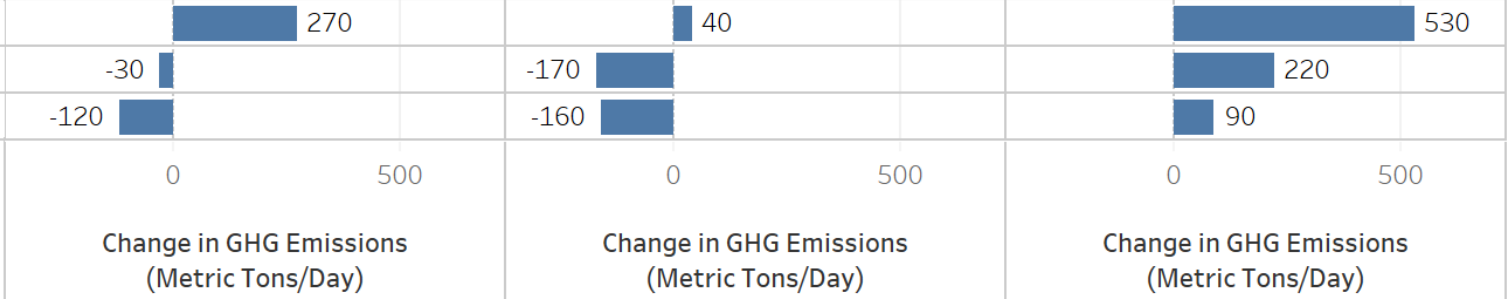
Change in Daily VMT due to Project, by Future

Project ID	Project	Rising Tides Falling Fortunes (2050 Baseline Total Daily VMT: 183M)	Clean and Green (2050 Baseline Total Daily VMT: 222M)	Back to the Future (2050 Baseline Total Daily VMT: 348M)
3000	Regional Express Lanes (MTC + VTA + ACTC + US-101)	1.2M	0.8M	6.0M
3020	Optimized Express Lane Network	1.0M	0.5M	3.5M
6020	Regional Express (ReX) Bus Network + Optimized Express Lane Network	0.2M	-1.0M	2.2M



Change in Daily Emissions due to Project, by Future

Project ID	Project	Rising Tides Falling Fortunes (2050 Baseline Daily GHG: 37,000 tons)	Clean And Green (2050 Baseline Daily GHG: 12,000 tons)	Back To The Future (2050 Baseline Daily GHG: 28,000 tons)
3000	Regional Express Lanes (MTC + VTA + ACTC + US-101)	270	40	530
3020	Optimized Express Lane Network	-30	-170	220
6020	Regional Express (ReX) Bus Network + Optimized Express Lane Network	-120	-160	90



Continuum of Work

Express Lane Vision

- Long-term
- Equitable
- No funding constraint
- Fully multi-modal

Express Lanes Strategic Plan

- Define Express lane network goals
- Define network
  - 0 to 15 years
  - 16 to 30 years
- Consider policy issues

Express Lanes Current Operations

- Projects opening in 2020
- 2020 funding opportunities

Plan Bay Area 2050

- 30-year, financially constrained
- GHG reduction target
- Equitable
- Complementary multi-modal investments

Regional Express Bus

- Complement to Regional Express Lane Network
- Supports existing express bus and county proposals for Plan Bay Area 2050

Bay Area Express Lanes Strategic Plan

Define express lane network goals	✓
Identify potential projects over 30 years	✓
Inform near-term funding opportunities	✓
Develop 15-year priority network	Underway
Integrate into Plan Bay Area 2050	Underway
Explore policy issues & develop recommendations • Express bus interface • Equity • Toll policy consistency • Close gaps & address mega-region travel while considering greenhouse gas reduction goals • Financing, cost reductions & expedited delivery	Underway

Bay Area Express Lane Strategic Plan Goals

Minimize greenhouse gas impacts

Focus on equity to improve transportation access and affordability, especially for communities of concern

Manage congestion and bring reliability to the travelling public

Increase person throughput by incentivizing use of transit, vanpools, and carpools

Deliver Bay Area Express Lanes Network in a timely manner

Be responsible in use of public funds

Considerations for Plan Bay Area 2050

Network Definition

1. Reduce GHG emissions
2. Support a successful express bus network and carpool / vanpool programs to improve person throughput
3. Build a seamless and connected network within the region
4. Connect to the mega-region

Network must be financially constrained!

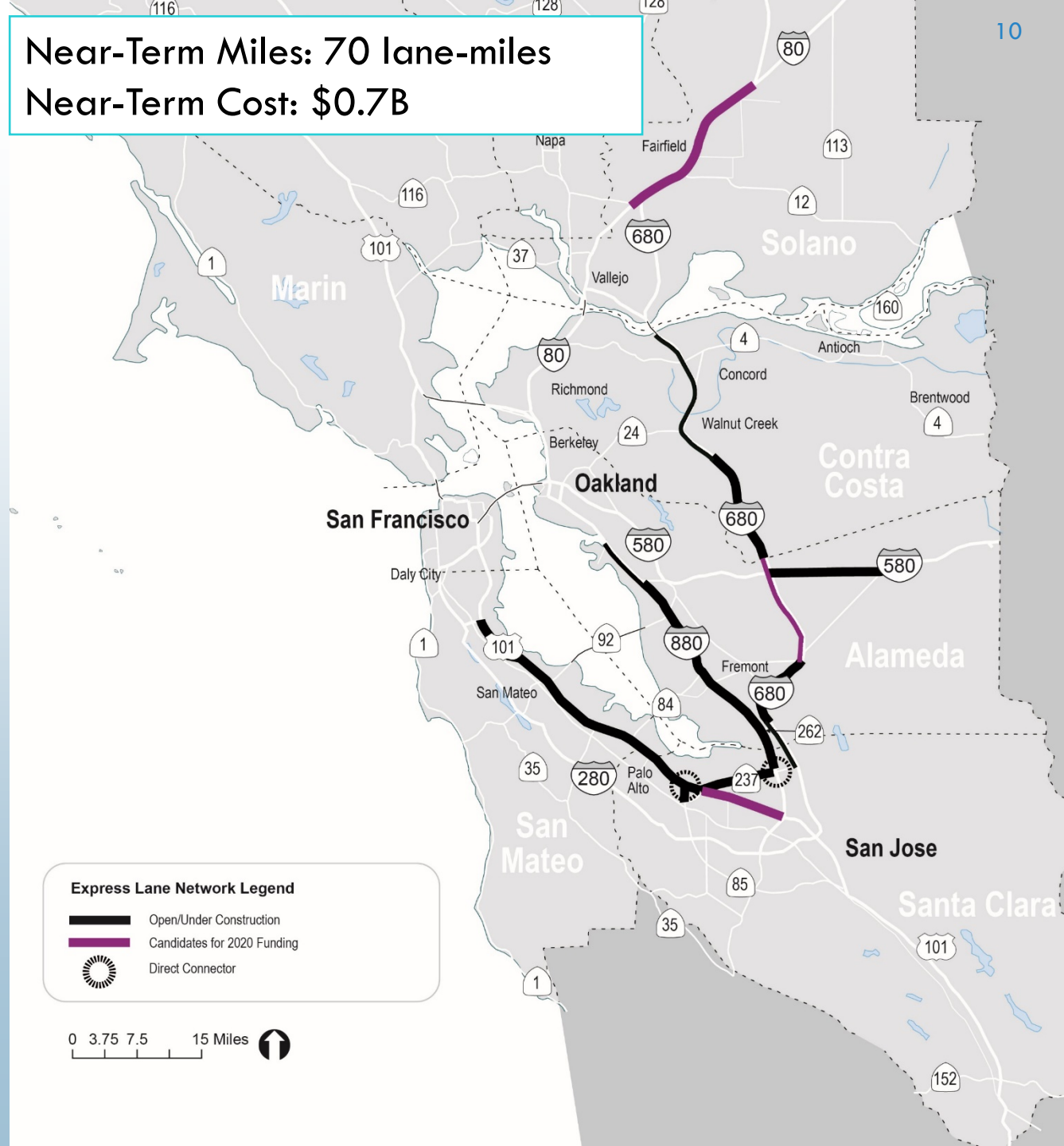
Policy

1. Improve social equity
2. Ensure more consistent rules of the road

Baseline: Current Operations and Near-Term Funding Candidates

Includes express lanes that are:

- Currently operating
- Under construction
- Recommended for state and regional 2020 funding opportunities



A1. Minimize GHG Increase

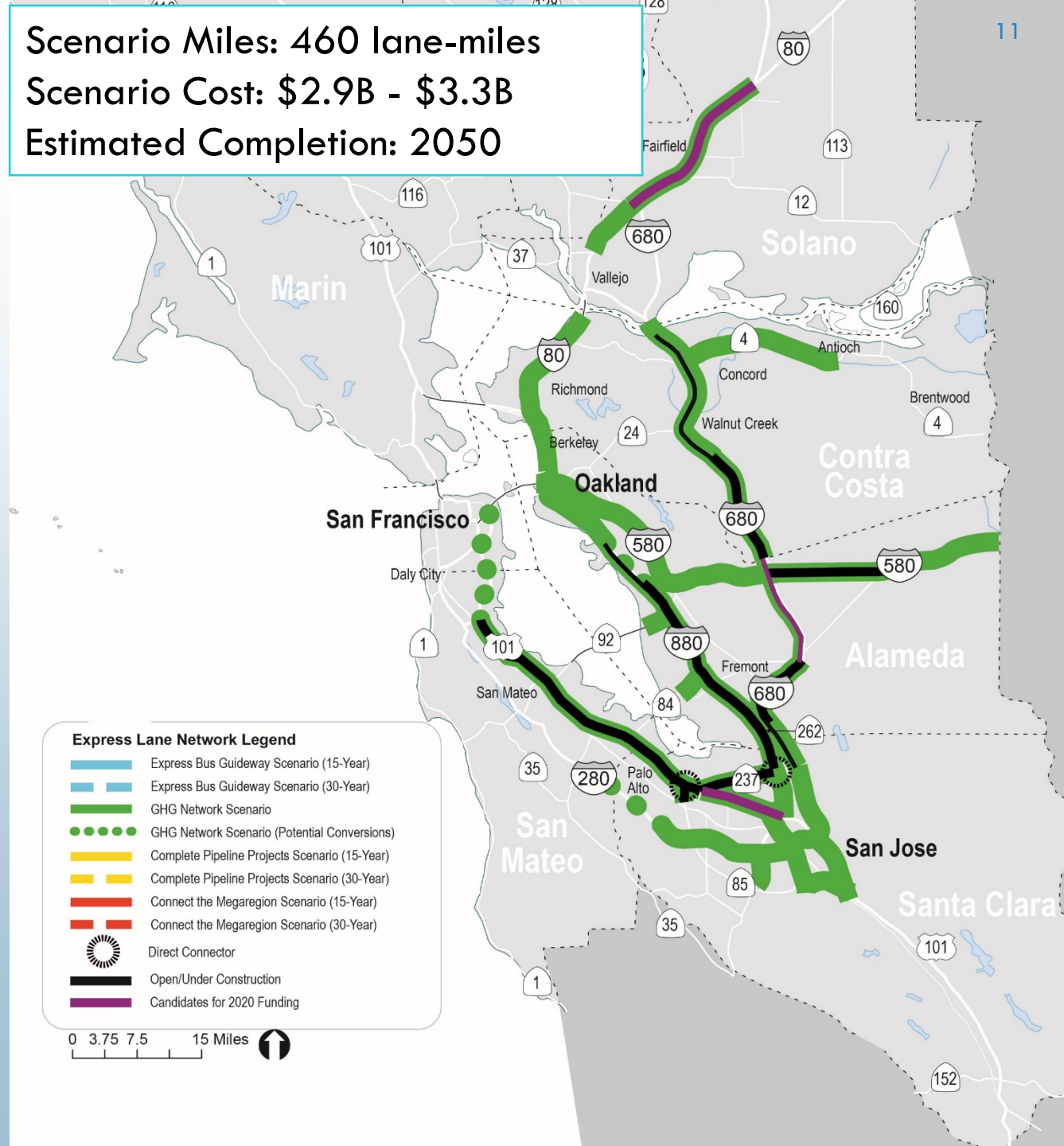
30-Year

Focus on converting existing travel lanes to Express Lanes instead of adding new capacity

Scenario Miles: 460 lane-miles
Scenario Cost: $2.9B - $3.3B
Estimated Completion: 2050

Trade-offs:

- Planned conversions (solid lines) are less connected without adding Potential Conversions (dotted lines)
- Inconsistent support of Strategic Plan goals
- Should be implemented with other GHG strategies



B2. Express Bus Guideway

30-Year

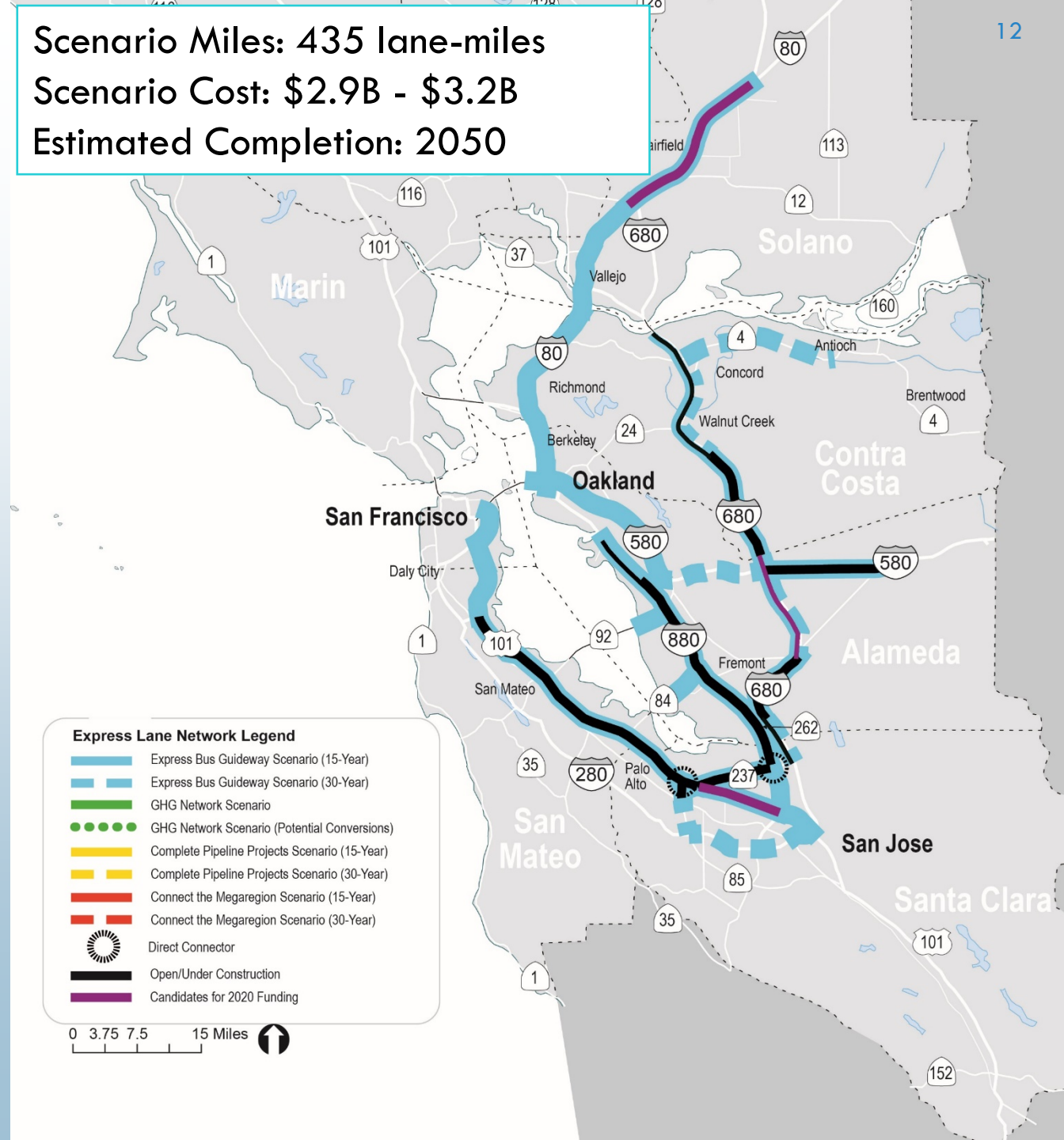
Scenario Miles: 435 lane-miles
Scenario Cost: $2.9B - $3.2B
Estimated Completion: 2050

Reflects intraregional* guideway serving highest performing ReX and Bay Area Forward routes.

Trade-offs:

- Reflects only capital infrastructure costs for Express Lanes which support possible Express Bus routes
- Seamless travel, good connectivity, good scalability
- Possible GHG, equity benefits
- Coincides with other scenarios and Strategic Plan goals

*Express bus routes connecting outside the Bay Area are considered in the D2. Connect the Megaregion scenario



Regional Express Bus

- A robust express lanes network enables scalable regional express bus service
- Regional Express Transit Network (ReX) is a transformative project evaluated in Horizon
- Identify a subset of routes that
  - Are in Express Lane corridors;
  - Have high ridership potential;
  - Serve communities of concern; and
  - Complement existing /planned services
- Marry with county submittals for an express bus system in Plan Bay Area 2050

C2. Complete Pipeline Projects

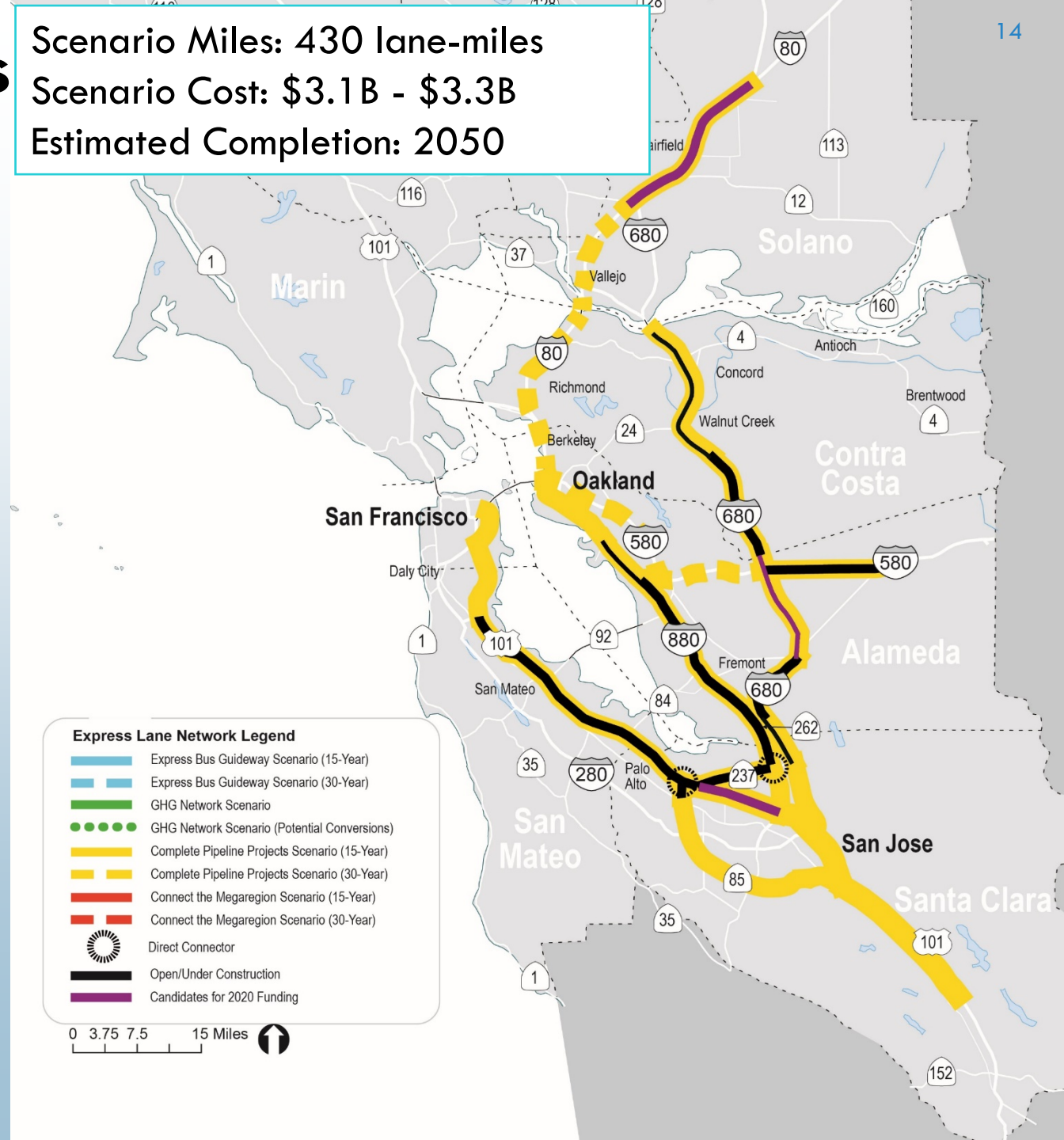
30-Year

Scenario Miles: 430 lane-miles
Scenario Cost: $3.1B - $3.3B
Estimated Completion: 2050

Extends completed corridors to increase connectivity & support other scenarios*

Trade-offs:

- Good connectivity
- Supports multiple other scenarios well, aligns with goals
- Extends work to date
- Achieves multiple county government priorities



* Does not include direct connectors

D2. Connect the Megaregion

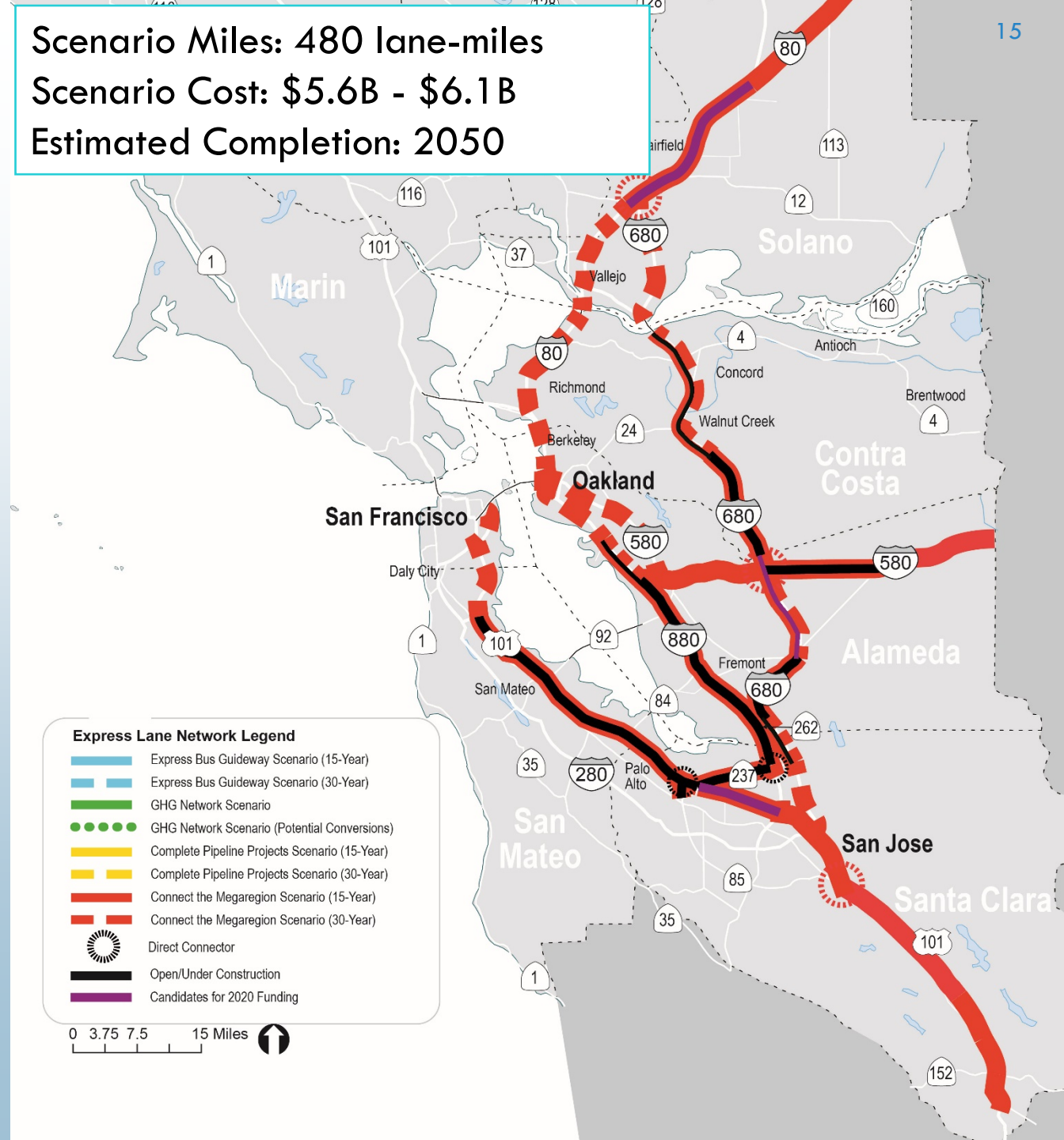
30-Year Budget

Works inward from neighboring regions, supporting travel to major cities

Scenario Miles: 480 lane-miles
Scenario Cost: $5.6B - $6.1B
Estimated Completion: 2050

Trade-offs:

- Completes regional pathways to major cities
- Better connectivity, but expensive
- Freeway widening runs counter to GHG goals
- Requires coordination with other governments



E1. Projects Serving Multiple Outcomes

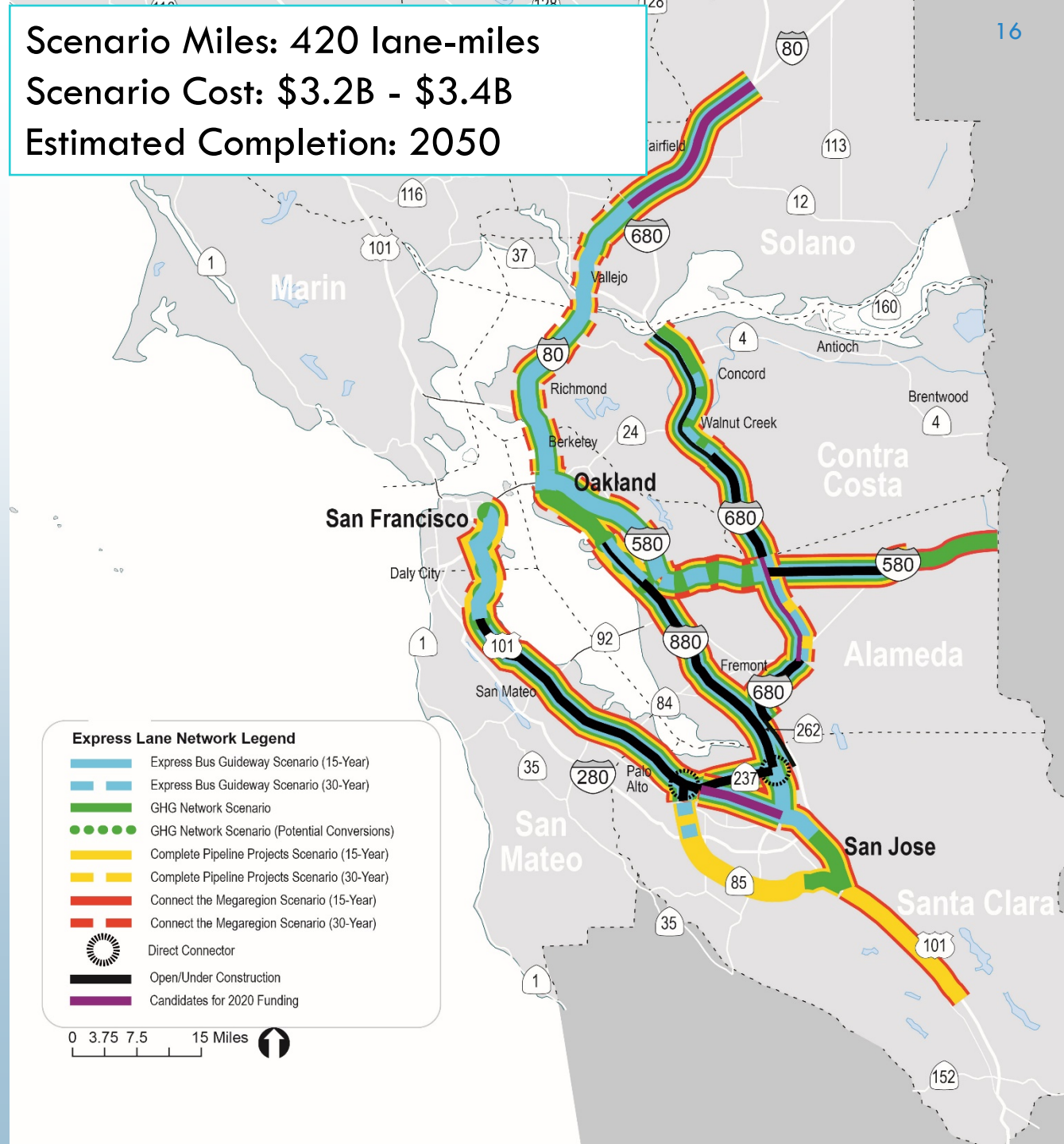
30-Year

Identifies facilities that feature in multiple scenarios

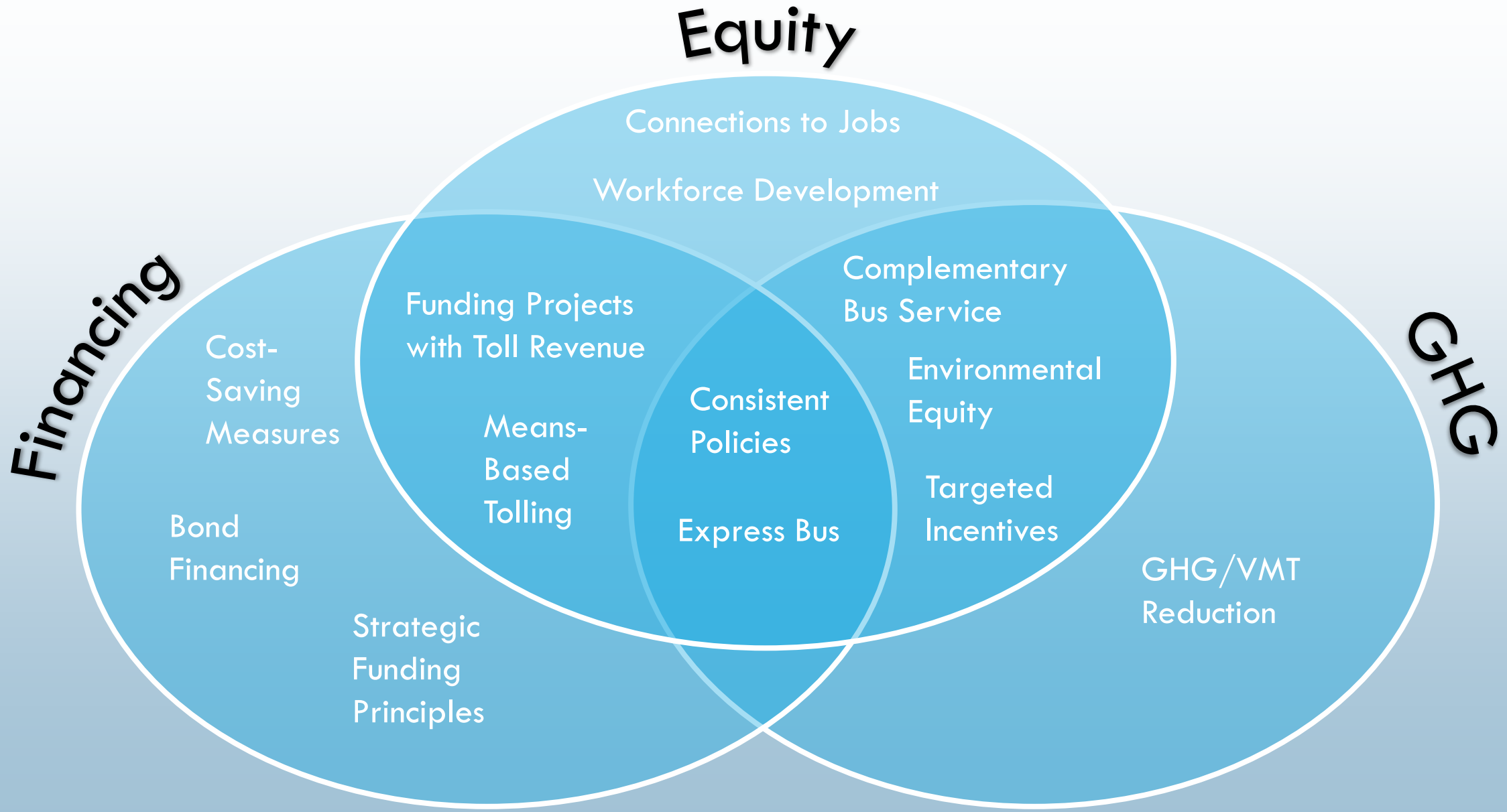
Trade-offs:

- Maximizes multiple outcomes, supports goals
- Maintains financial constraint
- Good connectivity, scalability

Scenario Miles: 420 lane-miles
Scenario Cost: $3.2B - $3.4B
Estimated Completion: 2050



Strategic Plan Research – Inform Policy Commitments



Significant Dates for 2020

May 2020

- **Operations Cmte:** Express Lane Network Scenarios and Strategic Plan update
- **Policy Advisory Cmte:** Express Lane Network Scenarios and Strategic Plan Update

June/July 2020

- **Operations Cmte:** Define final express lane network for Plan Bay Area 2050 (June)
- **Planning Cmte:** Draft Blueprint Results (July)

Aug/Sept 2020

- **Planning Cmte:** Define Final Blueprint - action item (Sept)

Dec 2020

- **Operation Cmte:** Express Lanes Strategic Plan Adoption
- **Planning Cmte:** Advance Blueprint to EIR

White Paper Development