



Innovate 680

PROJECT # 8009

Innovate 680 aims at providing travelers with efficient, modern, and sustainable transportation system along the I-680 Corridor. With AM traffic volumes increasing 68% between 2000 and 2012, *Innovate 680* provides for the corridor of the future with data driven technology to efficiently manage congestion. The program promotes an integrated approach to redefining mobility and addressing the increasing mobility challenges in the corridor through seven key strategies:

- No. 1: Completing HOV/Express Lanes
- No. 2: Cooling Corridor “Hot Spots”
- No. 3: Increasing Efficiency of Bus Service
- No. 4: Enhancing Travel Demand Management Strategies
- No. 5: Providing First Mile/Last Mile Connections
- No. 6: Implementing Innovative Operational Strategies
- No. 7: Preparing the Corridor for the Future

Did You Know?

In Contra Costa, I-680 spans approximately 25 miles, connects to three major freeways (SR 24, SR 242 and SR 4), has 55 on-ramps, and serves the largest business park in Contra Costa which employs more than 30,000 people and has over 9 million square feet of office space.



Scope

Implement the following strategies:

Strategy No. 1: Complete HOV/Express Lanes

Eliminate the gap in existing carpool lanes in the NB direction and convert to an express lane to increase efficiency.

Strategy No. 2: Cool Corridor “Hot Spots”

Improve congestion “hot spots” caused by high-volume weaving areas around N. Main St., Lawrence Way, Treat Blvd, and other locations south of SR 24 (Livorna Rd, etc.). This strategy will be completed with Strategy 1 since they are interdependent.

Strategy No. 3: Increase Efficiency of Bus Service

Increase bus service efficiency by improving express bus service, implementing *bus operations on shoulder (BOS)*, and increasing technology-based intermodal transit centers/managed park and ride lots.

Strategy No. 4: Enhance TDM Strategies

Provide enhanced 511 mobile app providing options to make informed decisions about mode choice, travel time, and cost per trip.

Strategy No. 5: Provide First Mile/Last Mile Connections

Implement Shared Autonomous Vehicles (SAVs) to improve transit connectivity and to shift travelers from Single Occupant Vehicles (SOVs).

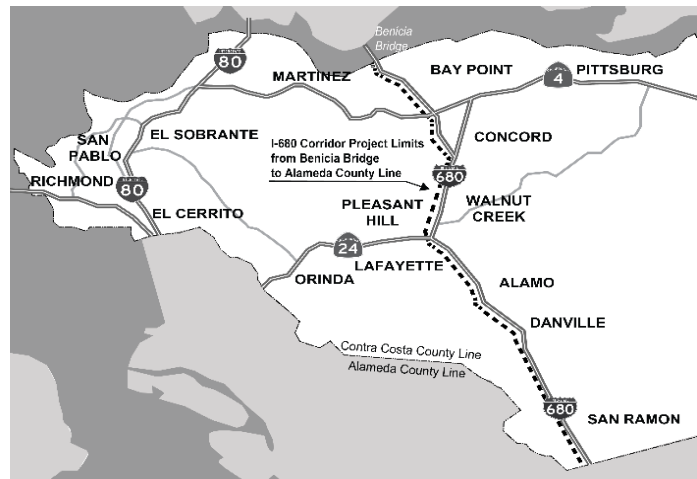
Strategy No. 6: Innovative Operational Strategies

Deploy a suite of technology-based solutions to maximize the efficiency of the roadway system integrating adaptive ramp metering, integrated corridor management, incident management, and decision support systems.

Strategy No. 7: Prepare Corridor for the Future

Prepare corridor to accommodate the evolution of CV applications and AV technologies for improved traffic flow by building new and upgraded vehicle-to-infrastructure and vehicle-to-vehicle communications.

Location



Schedule

	NB HOV Strategy 1-2	BOS Strategy 3a	Technology Strategy 4-7	Bus Service Strategy 3b
Planning	2017-2018	2017-2018	2017-2018	2017-2018
Environ. Clearance	2018-2020	2018-2020	2018-2020	2018-2020
Design	2020-2022	2019-2020	2019-2020	2019-2020
Right of Way/Utilities	2021-2022	2020-2021	2020-2021	2020-2021
Construction	2023-2025	2021-2022	2021-2022	2021-2022
Post Construction	N/A	N/A	N/A	N/A

Estimated Cost by Phase (\$ 000s)

	NB HOV Strategy 1-2	BOS Strategy 3a	Technology Strategy 4-7	Bus Service** Strategy 3b
Project Management	\$4,500	\$200	\$900	\$600
Planning	600	400	1,000	600
Environ. Clearance	15,450	500	2,900	1,000
Design	28,325	900	5,400	1,500
Right of Way/Utilities	5,000	—	—	12,000
Construction Mgmt.	38,625	1,100	6,500	3,500
Construction	257,500	6,000	36,000	39,000
Total	\$350,000	\$9,100	\$52,700	\$58,200

** operations costs estimated at \$18 million/year not included

Funding by Source (\$ 000s)

	NB HOV Strategy 1-2	BOS Strategy 3a	Technology Strategy 4-7	Bus Service Strategy 3b
Measure J	\$6,660	\$9,100	\$24,240	—
STMP (TVTD)	—	—	1,000	—
MTC (CMAQ)	8,000	—	—	—
Measure J (TLC)	—	—	—	\$1,500
TBD (shortfall)	335,340	—	27,460	56,700
Total	\$350,000	\$9,100	\$52,700	\$58,200

The above seven strategies are proposed to be implemented through the following **project packages**:

- #1 Northbound I-680 HOV Gap Closure/Express Lanes and Cooling Hot Spots (Strategies 1 and 2)
- #2 Express Bus Operations on Shoulder (BOS) – Strategy 3a
- #3 Enhanced Bus Service – Strategy 3b
- #4 Advanced Technologies - Strategies 4-7

Status

#1 Northbound I-680 HOV Gap Closure/Express Lanes – Strategies 1 and 2

A Design Alternative Assessment (DAA) to study reducing or eliminating the HOV lane gap along I-680 in the vicinity of SR-24 interchange was completed on June 15, 2016. Nine alternatives were analyzed with three alternatives recommended for further study including adding a Collector-Distributor (C-D) road system to eliminate weaving between Lawrence Way on-ramp and Treat Blvd off-ramp, and auxiliary lanes between Livorna Road and Rudgear Road. Preliminary Cost estimates (in 2016 dollars) for the three alternatives ranged from \$179 million to \$363 million.

#2 Express Bus Operations on Shoulder (BOS) – Strategy 3a

An assessment of feasibility and cost was completed in May 2017 for the segment on I-680 between Ygnacio Valley Road and Alcosta Blvd in both directions. Study concluded BOS operations are feasible with minor improvements to the shoulder (mainly to reinforce drainage inlets) with cost around \$7 million (in 2016 dollars). Travel time savings to buses along NB I-680 in the PM Peak Period were estimated to exceed 13 minutes (or 47% reduction).

#3 Enhanced Bus Service – Strategy 3b

The I-680 Transit Investment/Congestion Relief Options Study was completed in December 2015. In addition to BOS, the Study recommended adding 1100 parking spaces along the corridor, increased shuttle service between Park and Ride lots and BART stations, increased school bus service, and additional buses.

#4 Advanced Technologies – Strategies 4-7

An assessment of adaptive ramp metering in the corridor was completed in May 2017. Study estimates total cost around \$34 million (in 2016 dollars). Based on congestion levels, the study prioritized implementation of adaptive ramp metering along 1) I-680 NB segment between Bollinger Canyon Road and Treat Blvd (total cost \$12 million) 2) I-680 SB segment between SR242 and Stone Valley Road (total cost \$4.7 million). In addition, a Concept of Exploration document was completed.

Issues/Areas of Concern

- Significant funding is needed for all projects.
- BOS may require special legislation and will need CHP approval
- Cooperative agreements with Caltrans are needed to begin development of the project initiation documents (PIDs) for the various packages.