

THE HOT EXPRESS

An aerial photograph of a complex highway interchange, likely a diamond interchange, with multiple lanes and overpasses. The image is mirrored vertically, creating a symmetrical pattern of roads and overpasses. The top of the image is a solid blue banner.

Completing California's
Megaregional
Transit Network

A convergence of tipping points indicates we must use our highway network for a greater public benefit



© Greenpeace



Truck Trailer Transit, "the Camel"
Havana, Cuba

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Highway bus rapid transit applications in the San Francisco Bay Area & Los Angeles Basin Area

2011 Adam Garcia

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INTRODUCTION

Highways are networks of productivity demanding vast energy resources. Building a cost effective public transit system demands more efficient use of highways in order to conserve the environment while reducing congestion and pollution in California's megaregions.

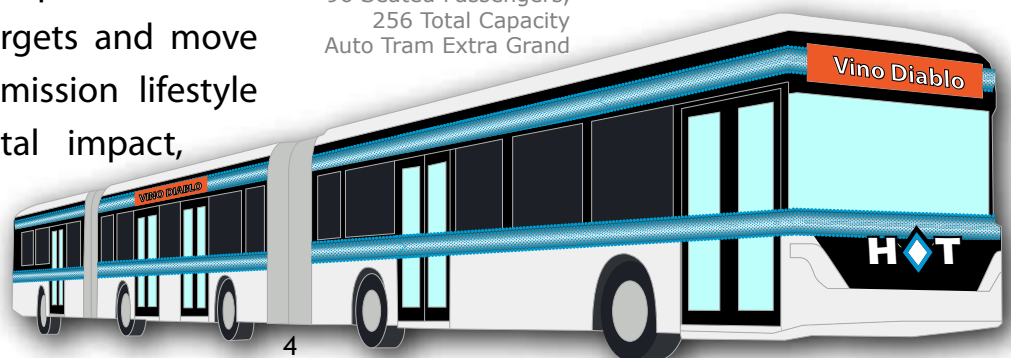
Legislation and innovation are driving a paradigm shift in California's urban planning practice. Across the state's major urban centers, local and regional governments are transitioning to new planning methods that aim to reduce greenhouse gas emissions. Pollution from cars and light trucks (figure 1) will be reduced through improved coordination of housing and transportation plans and by setting regional emission limits. A new high speed rail (HSR) line (figure 4) will join communities from the north and south through the Central Valley and establish a new state-wide transit network. High occupancy/toll (HOT) or express lanes are replacing stretches of carpool lanes through the state's metro areas allowing solo drivers to pay an increased congestion toll for access to the express lane.

Despite these innovations, auto-oriented land use patterns (figure 3) will still require most residents to use cars for work, errands, family and pleasure. In order to meet emission targets and move society towards a lower-emission lifestyle with a lower-environmental impact, a radical approach to our transportation system is necessary.

The car-dependent lifestyle designed into the landscape was developed over decades to maximize individual mobility for a growing population. In this new age of planning, it is imperative to maximize the highway network to move more people through a dedicated right-of-way to enhance regional public transit connectivity to other transit stations, new neighborhoods and major employment and entertainment centers.

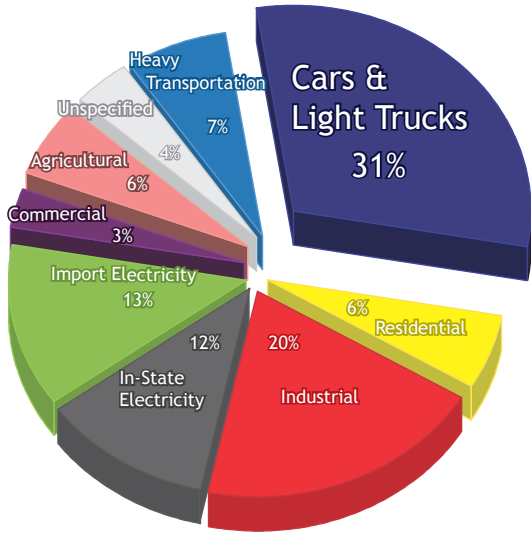
The following proposal recommends the establishment of a rapid regional bus service along the fast lane of freeways into the San Francisco Bay Area's highway infrastructure, with examples applied in Southern California as well. This transit expansion builds upon existing and planned public transportation resources and provides a single regional express bus service building capacity, connectivity and usability for an integrated carfree network.

96 Seated Passengers,
256 Total Capacity
Auto Tram Extra Grand



CA Greenhouse Gas Emissions

Source: California Air Resources Board, 2004 (Figure 1)

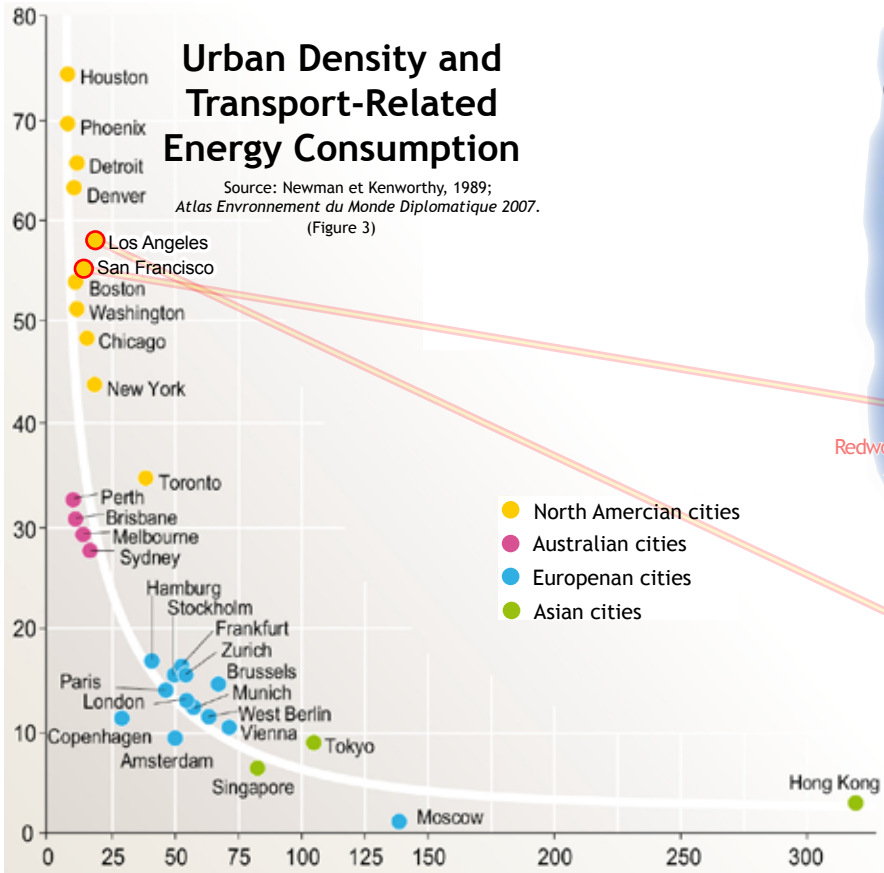


Northern California Megaregion (Figure 2)



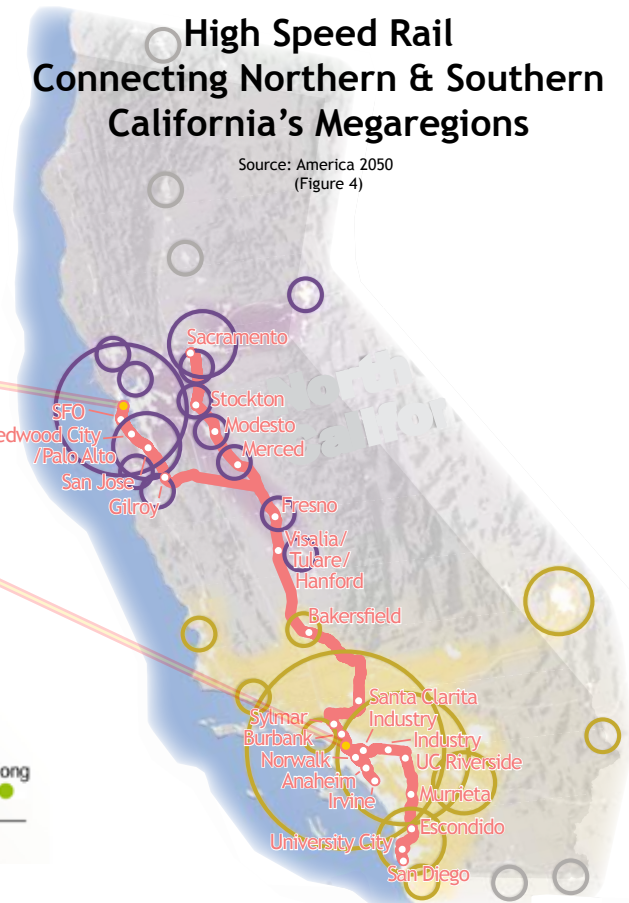
We must build a more efficient transportation system while we have the energy and resources.

Transportation-related energy consumption Gigajoules per capita per year



High Speed Rail Connecting Northern & Southern California's Megaregions

Source: America 2050 (Figure 4)



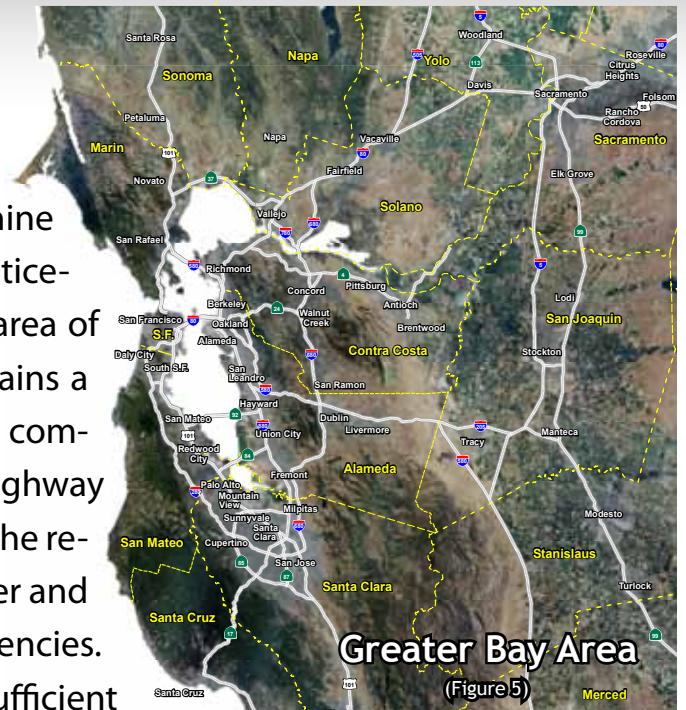
KNOWING THE GREATER SF BAY AREA

The San Francisco Bay Area is comprised of nine diverse counties, each possessing its own unique enticements and demographics (figure 5 & 6). While the area of this region is small, it is highly populated and contains a range of urban attractions, parks, farms and unique communities. Neighborhoods are linked together by a highway system with eight bridges that connect nearly all of the region's cities. Bay Area Rapid Transit (BART), commuter and light rail lines overlap with numerous local bus agencies. However this system does not currently provide a sufficient

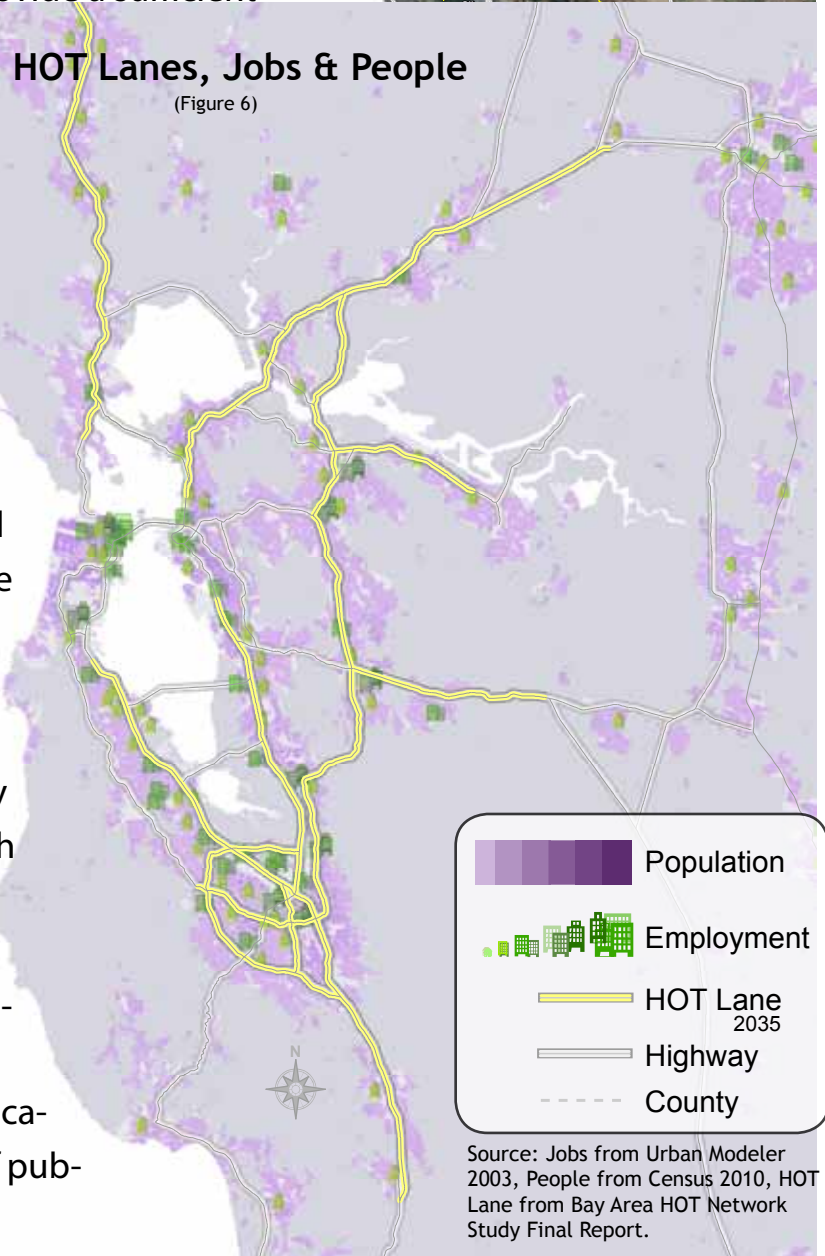
regional transit network to connect people with places and their jobs (figure 10, p. 23).

A new strategy influencing regional driving patterns is the implementation of high occupancy or toll (HOT) lanes. HOT or express lanes are being built in lieu of existing carpool lanes and provide an option for solo drivers to pay an increased toll on certain freeways to gain access to the less congested lanes. In HOT lanes the solo driver is charged a sliding rate, known as congestion pricing, depending upon traffic conditions and the time of day, ideally keeping the lane moving around 55 mph during rush hour. In line with this ideology, the number of persons required per carpool should also vary relative to congestion levels.

Current efforts to expand the road capacity for cars or increase the availability of public



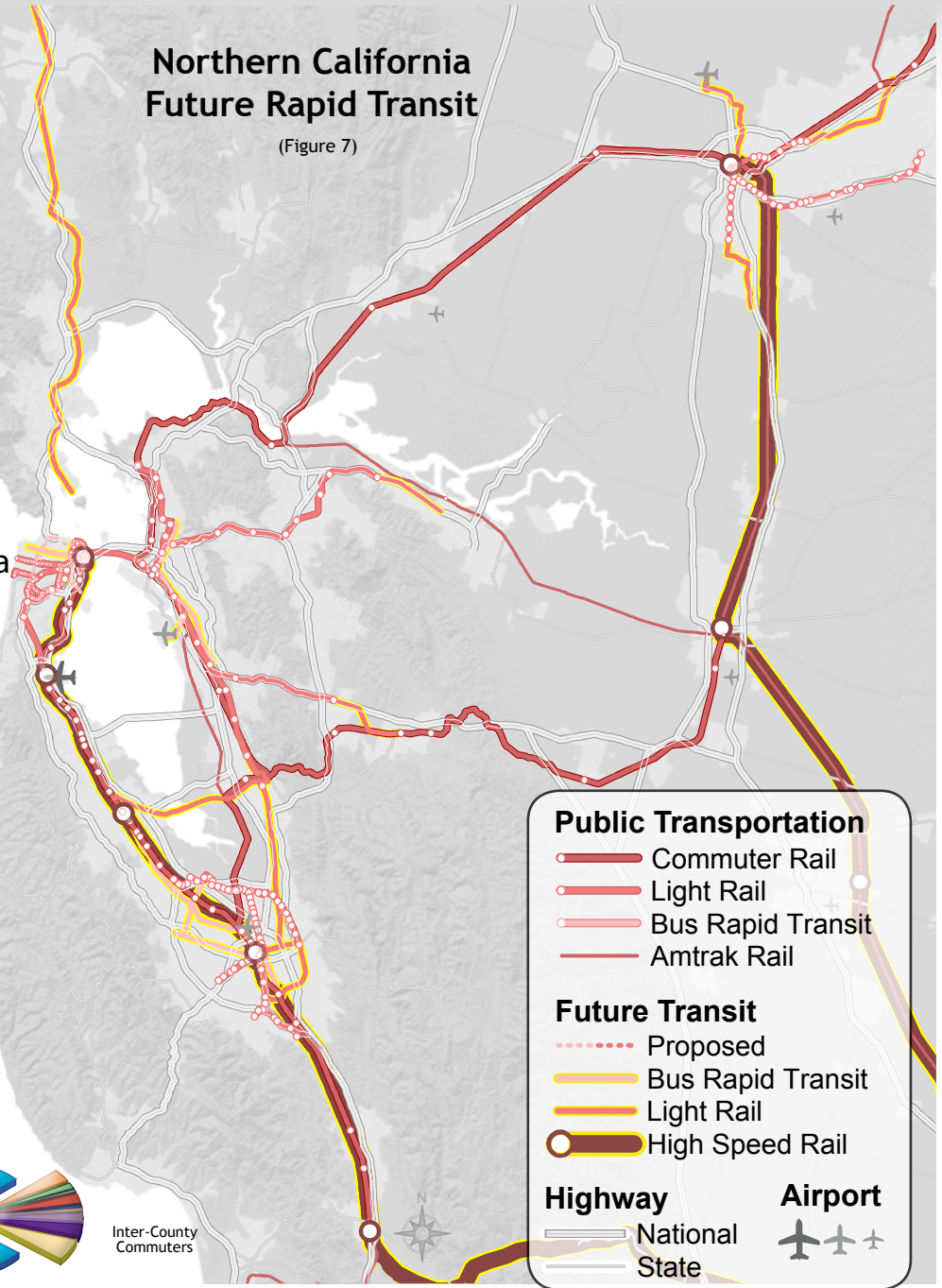
HOT Lanes, Jobs & People
(Figure 6)



transit have not gone far enough in making commutes easier or increasing transit ridership. While congesting pricing begins to address the decision-making process of travelers, a comprehensive solution must include a viable regional transit network. Efficient and effective public transit systems must carry the most people in the fastest method possible for the lowest cost to build.

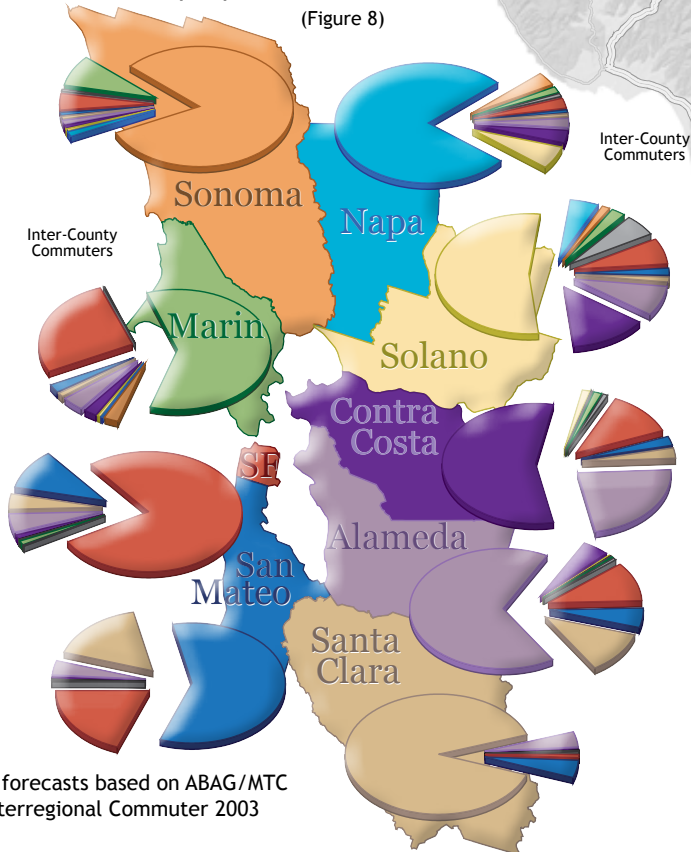
Northern California Future Rapid Transit

(Figure 7)



County-to-County Commuting

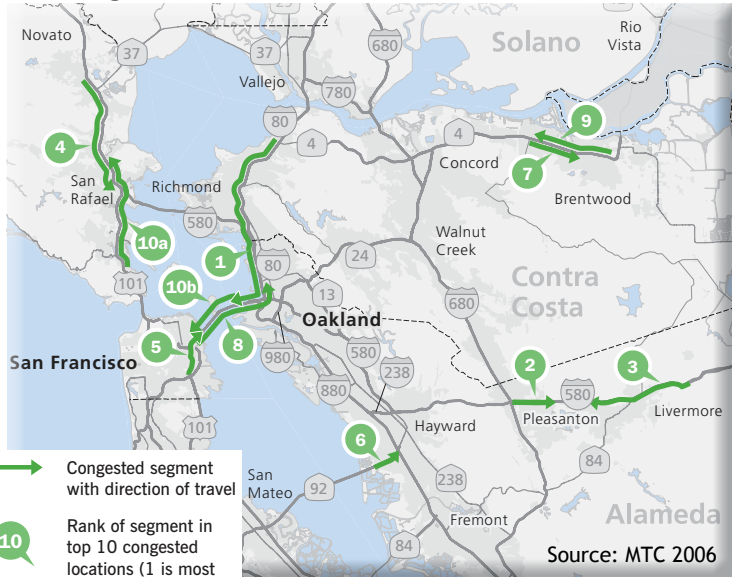
The counties people drive to work (Figure 8)



2010 forecasts based on ABAG/MTC Interregional Commuter 2003

Congested Commuter Corridors

(Figure 9)



→ Congested segment with direction of travel
 10 Rank of segment in top 10 congested locations (1 is most congested)

Source: MTC 2006

KNOWING THE GREATER LA BASIN AREA

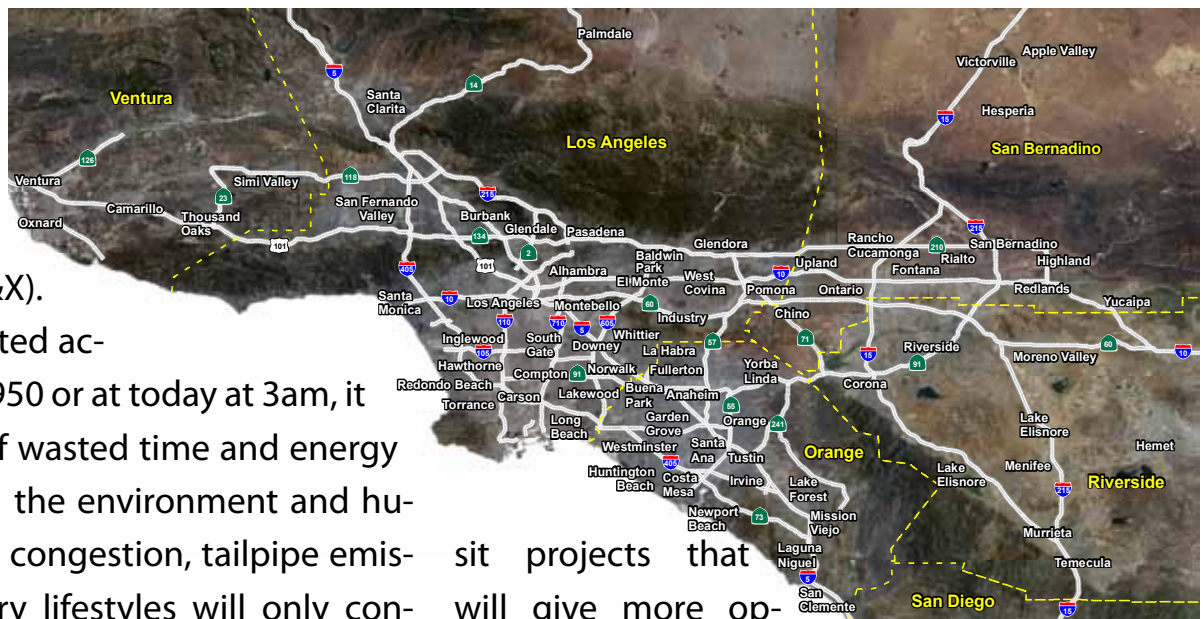
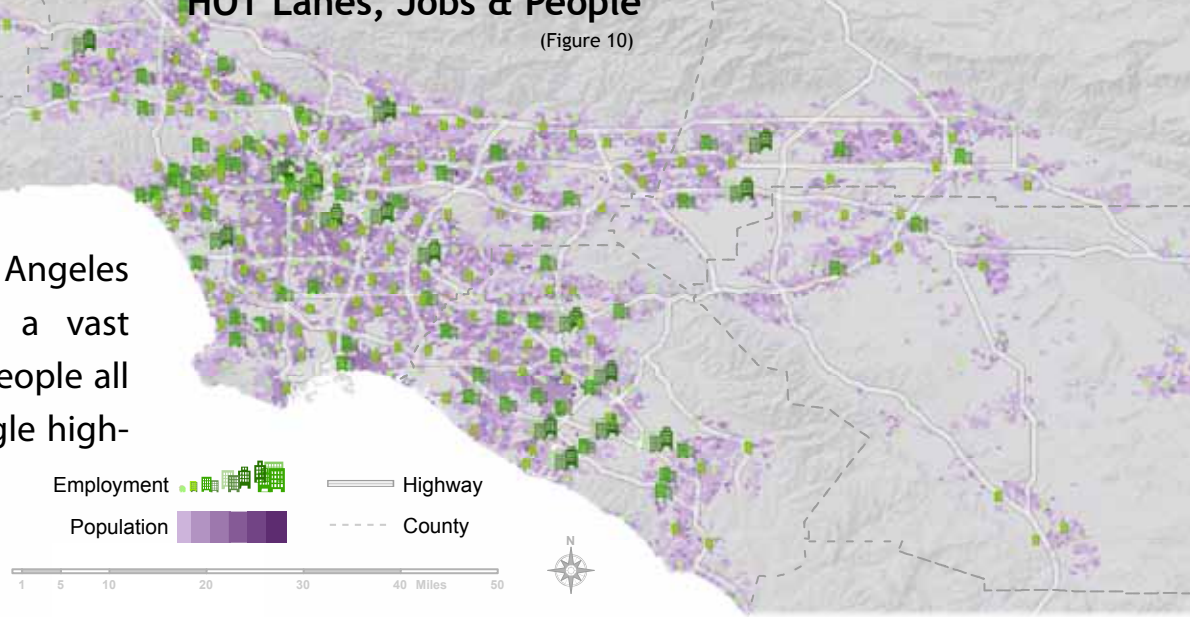
HOT Lanes, Jobs & People

(Figure 10)

The Los Angeles megaregion spans a vast area of 22 million people all connected by a single highway system. This system gives opportunity to any one and everyone with a car to the bountiful amenities, neighborhoods and jobs of the area (figure X&X).

Though this unlimited access was good in 1950 or at today at 3am, it remains a source of wasted time and energy while deteriorating the environment and human health. Traffic congestion, tailpipe emissions and sedentary lifestyles will only continue to increase as the region attracts and supports more people with an overburdened highway system.

Efforts to improve the efficiency of this great highway system can be seen as carpool lanes continue to expand while the LA County Metro and Caltrans install the first HOT (high occupancy or toll) or express lanes along Highway 10 and 110. Rising energy prices and congestion are spurring regional public trans-



sit projects that will give more options for movement of the masses, spurred on by voters approval of Measure M sales tax that supports numerous transit expansions. Even-tual high speed rail will lay out a critical rapid connection between many of the urban centers around the megaregion. Despite the cumulative reductions of all these projects, the fact remains this great landscape is suited and designed for the automobile as the preferred mode of choice, and so the continued dependency on an inef-



**Congested Highway
Corridors in LA County**
LA Metro (Figure 12)



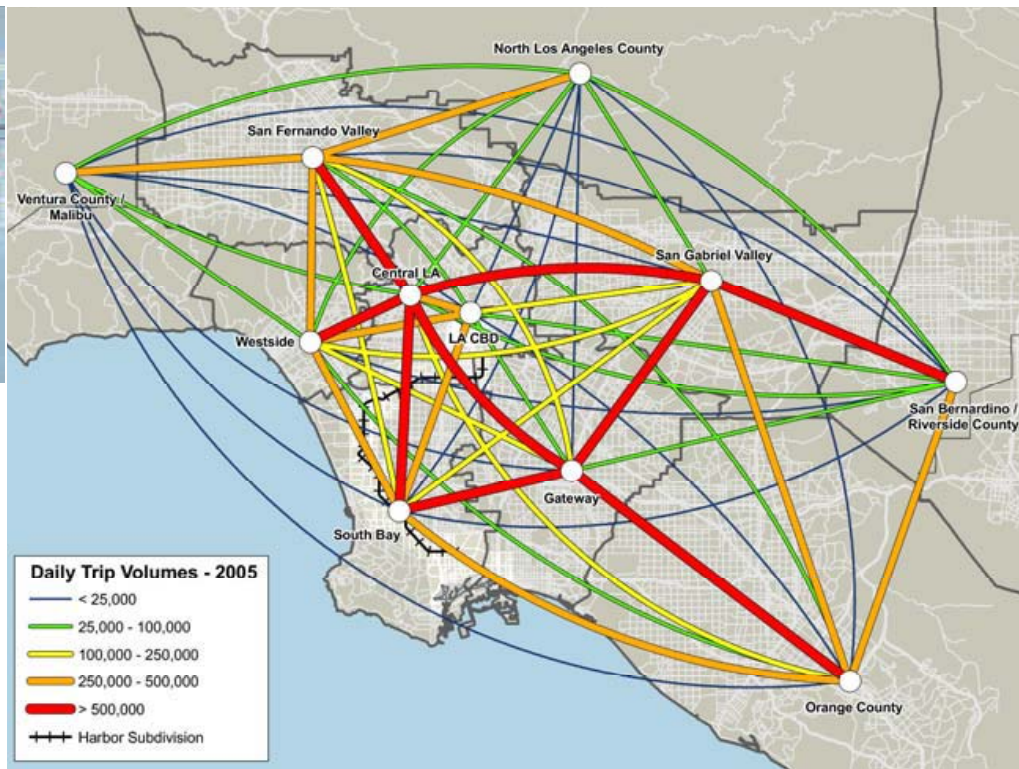
2025 FREEWAY SPEEDS

- Less than 20 miles per hour
- 20 - 35 miles per hour
- Greater than 35 miles per hour

ficent system. The current and pending collatoral damage to the people tand environment will not be averted with patching up a broken sytem. A new

model is nessecary to evolve our transit systems to confront and address the the 21st century challenges, while still maintaining a level of freedom and independence that a

Study Area Travel Patterns
LA Metro,
Harbor Subdivision Transit Corridor (Figure 13)



modern economy and social society depends upon for survival.



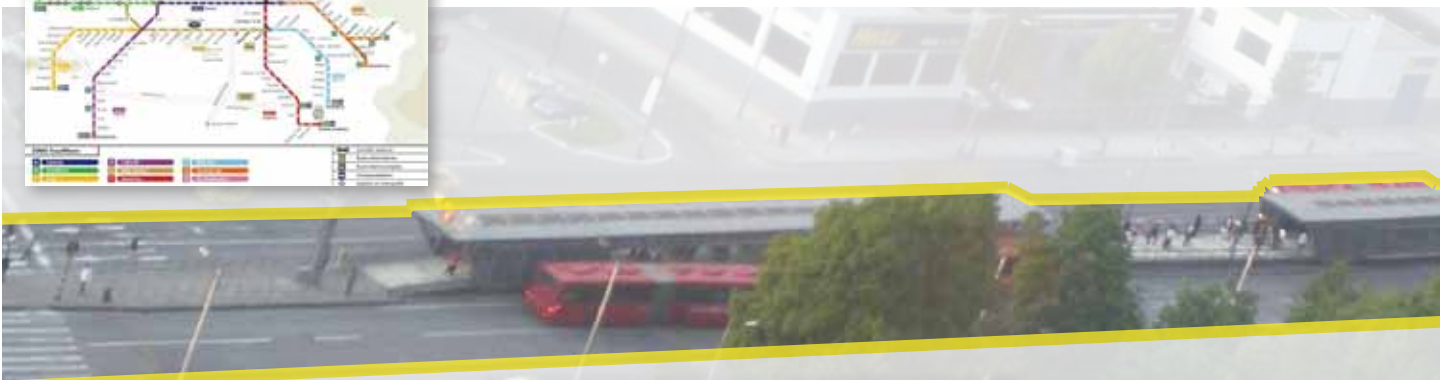
SILVER LINE

Los Angeles Metro



TRANSMILENIO

Bogotá, Colombia



ADAPTED BUS RAPID TRANSIT (BRT)

Bogotá and Los Angeles serve as models for innovative afterthoughts for integrating busways alongside existing traffic flow. Bus rapid transit, when buses have their own dedicated lane apart from other vehicles, serves to move more people per area than spacious private autos and trucks.

LA's Silver Line is a combination of two approaches towards adaptation: building alongside and building above traffic. LA took advantage of a wide transportation corridor from downtown towards El Monte to include a shared bus and carpool lane, while also building a costly aerial bus-only transitway towards the harbor. Combined the 26-mile Silver Line connects with various other rail

lines to help create a truly networked transit system.

Bogotá's wide avenues have allowed the creation of a city wide bus rapid transit network. Formerly stifled by congested roadways, the Transmilenio bus system maximizes the limited avenue space to move more people with stations that allow at-grade boarding for pre-paid customers. These busways are supported by collector buses that bring in people from surrounding neighborhoods with convenient aerial and tunnel walkways into stations, and built along with an extensive network of bicycle pathways.

Highway BRT FOR California



This proposal is an expanded application of what has already been accomplished in California's cities. A new regional BRT transportation plan must address the auto-dependency inherited by California's megaregions including the more efficient use of the highway network spreading across the vast basins, valleys, mountain ranges and bays.

PLANNING A HIGHWAY DIET

Evaluation for a Highway Bus Rapid Transit Network

Goal Locate a regional rapid transit stop within ¼ mile of 75% of the region's population by using the highway network as potential bus rapid transit corridors

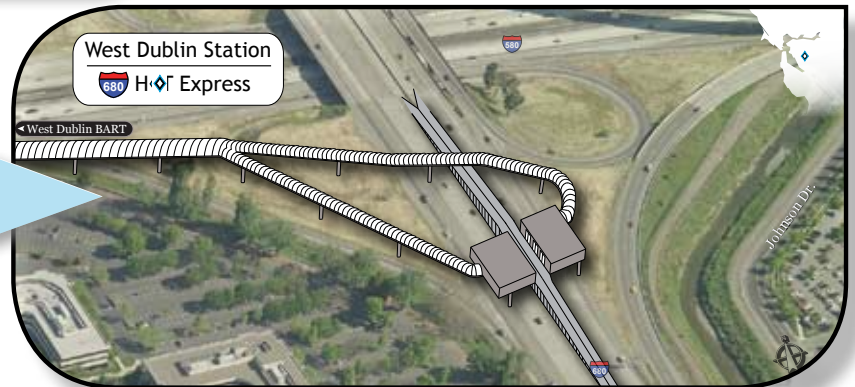
1 Examine congestion levels for major commuter and shipping corridors of the regional highway network

2 Identify communities inaccessible by the regional public transit system, particularly in underserved corridors and highway-adjacent cultural/entertainment/educational centers

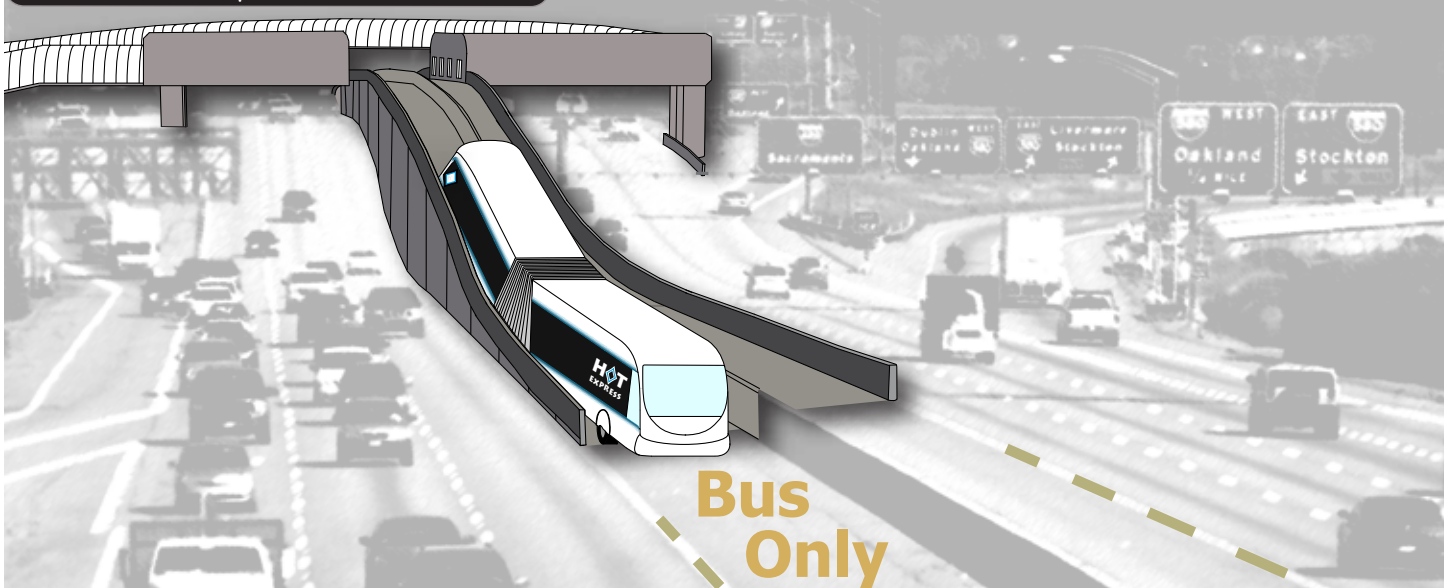
3 Identify existing and future rapid transit connections, including High Speed Rail

4 Determine congested highway corridors that intersect these key locations to overlay a complimentary regional rapid transit system

5 Use creative infrastructure and traffic control measures to interweave bus routes and stations into highway traffic flow

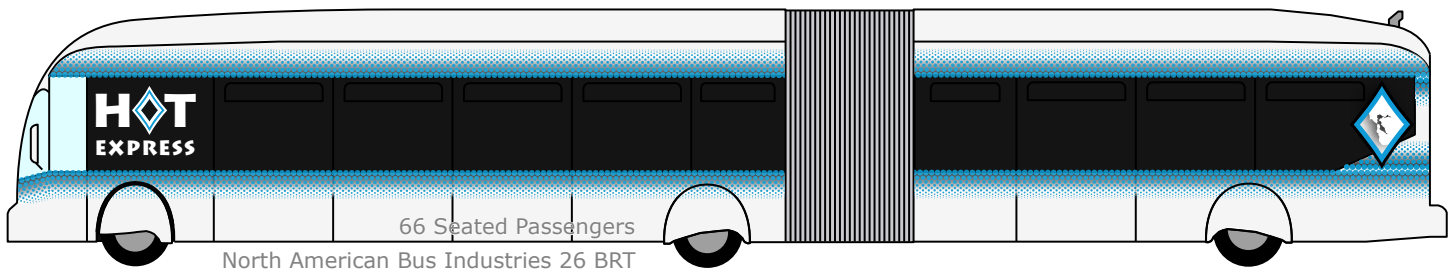


← Pedestrian Walkway to West Dublin BART



Diablo Express Bus with connection to the West Dublin BART station

THE HOT EXPRESS



***The HOT Express* is an innovative plan for a regional rapid bus network strategically located to maximize the public benefit of our highway infrastructure.**

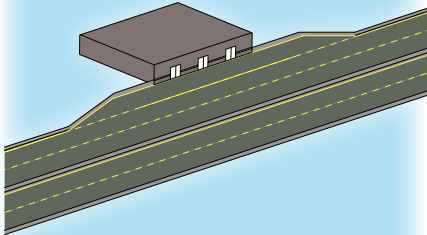
The HOT lane introduces an important pricing measure and, if applied properly could create a social tool to inform the decisions of our everyday travel patterns. Combined with highway bus rapid transit already in practice elsewhere, the HOT Express puts the highway to its greatest public use. The new bus system would follow under-served corridors and build off existing and planned rail and transitway lines, with each enclosed station requiring careful consideration in placement, traffic control measures, pedestrian access, and local community impacts. The HOT Express proposes a bus-only lane to ensure a reliable transportation during rush hour, while off-peak hours allow shared access by moderating carpool and solo-driver requirements.

STATION DESIGNS

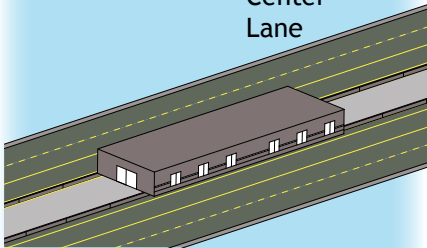
Examples of highway bus service exist throughout America. The HOT Express promotes permanent infrastructure to prioritize the movement of buses along highways and roads, especially during peak commute hours.

Arterial

Curbside



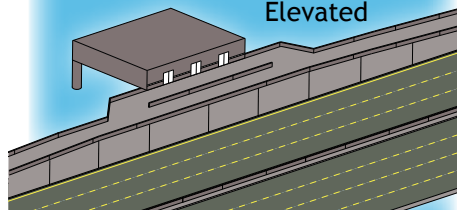
Center Lane



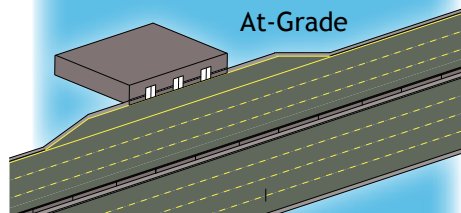
Bus only lanes are emerging in cities across the world as an efficient and cost saving method to maximize the available street space for moving people around.

Highway Shoulder

Elevated

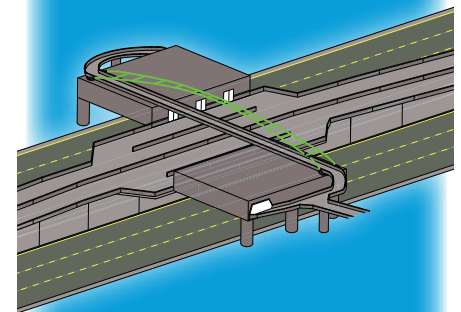


At-Grade



Highway bus service exists today with stops adjacent to the freeway. In some cases they share the roadway with carpoolers and others maintain their own right of way.

Highway Center



The center lane highway stop protects bus passengers by entering a pull-off lane separated from regular traffic. At this stop passengers board from elevated platforms linked to aerial walkways.

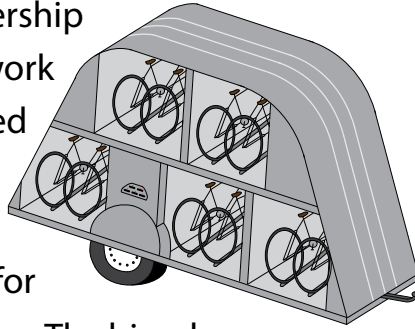
Ideal Station Placement

- Connect with rail and transitway lines
- Construct on solid ground, avoiding bridges
- Connect employment, cultural, and entertainment centers
- Connect communities lacking access to regional transit system
- Connect corridors underserved by existing or planned rapid transit
- Construct near pedestrian overpass or underpass to avoid added cost

SUPPORTING INFRASTRUCTURE

Expanded Bicycle Capacity

A holistic bicycle ridership program provides a network of local bicycle lanes, shared bicycle programs at stations, ample bicycle parking and an optional bicycle trailer for regional and peak-hour bus trips. The bicycle trailer can be loaded on either side with an electronic or manual loading system to assist bicycle commuters.



Bus Size & Demand

Appropriately sized buses respond to the anticipated ebb and flow of travelers, with reserve buses placed along the route to meet demand for popular destinations with higher surges in ridership, such as for games and events.

Vehicle Share

The first and last mile on a transit trip can be connected with the larger transportation network through a variety of vehicles including rentable bicycles, pod cars and hybrid cars.



© General Motors EN-V

Traffic Control

Interweaving a rapid bus system into the flow of highway traffic demands a systemic redesign. This proposal is dedicated to ensuring a reliable, comfortable, convenient and safe experience for travellers.. The HOT lane is best utilized as an optional **BRT lane** during peak commute hours and **shared access lane** during off-peak hours.



Casual Carpool



HOT lanes should include a minimum carpooler limit in addition to solo driver tolls to encourage ride sharing and maximize communal automobile capacity. Casual carpool locations are located adjacent to transit hubs that provide numerous regional travel options.

HOT Lane Access

4 Persons Vehicle (or max capacity)

\$ 5 for solo drivers

Brand Ride it!

SF's
HOT
EXPRESS

(1) I-680 Express Lane is expected to operate 24/7 and will be separated by double yellow lines and a chevron area.

(2) Electronic signs display the current toll for solo drivers with FasTrak. Toll will vary based on the level of congestion in the I-680 Express Lane and will be adjusted to maintain a minimum speed of 55 mph.

(3) Signs and lane striping at access points provide drivers safe entry and exit.

(4) For solo drivers who choose to use the I-680 Express Lane, an overhead antenna reads your FasTrak transponder and the correct toll is automatically deducted from your prepaid FasTrak account. No toll booths, no slowing.



TRAFFIC CONTROL

Building bus lines and stations into the highway's free flow of cars and trucks necessitates a novel system of traffic design. This proposal utilizes the two center lanes of traffic to move highway users across different levels of access for people and goods most efficiently depending on congestion.

Highway Users

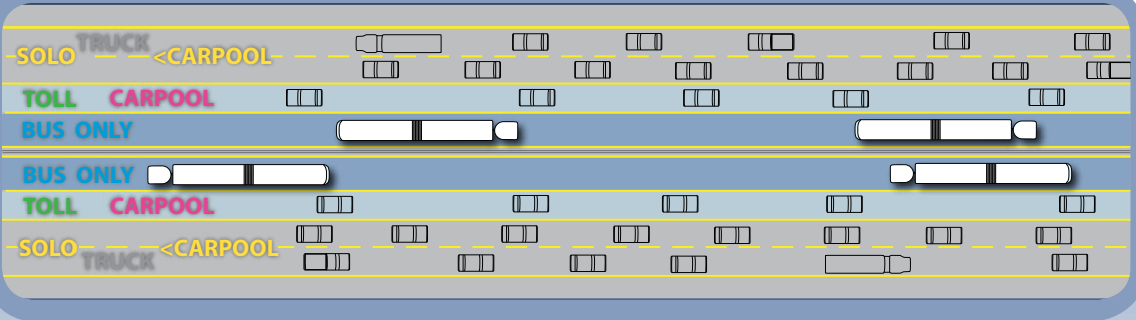
- TRUCKS** Impacts on highway shipping corridors
- SOLO** Automobiles below the carpool minimum
- <CARPOOL** share the common road with truck traffic
- TOLL** Solo drivers paying their way to a faster lane
- CARPOOL** Carpoolers use all shared access lanes
- BUS ONLY** Priority access for highway bus rapid transit

Lane Access

- Bus Rapid Transit** Allow only buses in center lane
- Shared Access** Mixing buses and priority car traffic
- Free Access** Non-priority cars and trucks

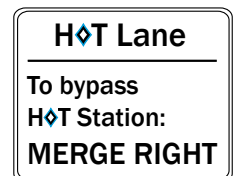
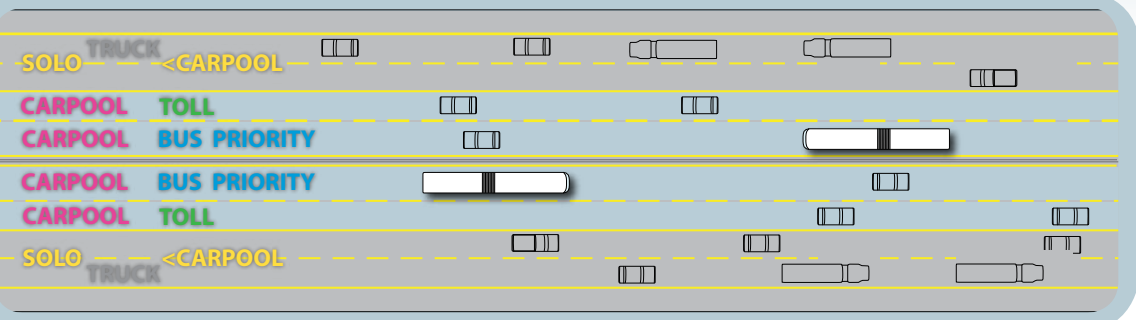
BRT Lane Rush Hour

Utilizing the center lane as the bus priority lane avoids conflicts with merging vehicles, thereby increasing bus speed and decreasing commute time.



Shared Access Off Peak

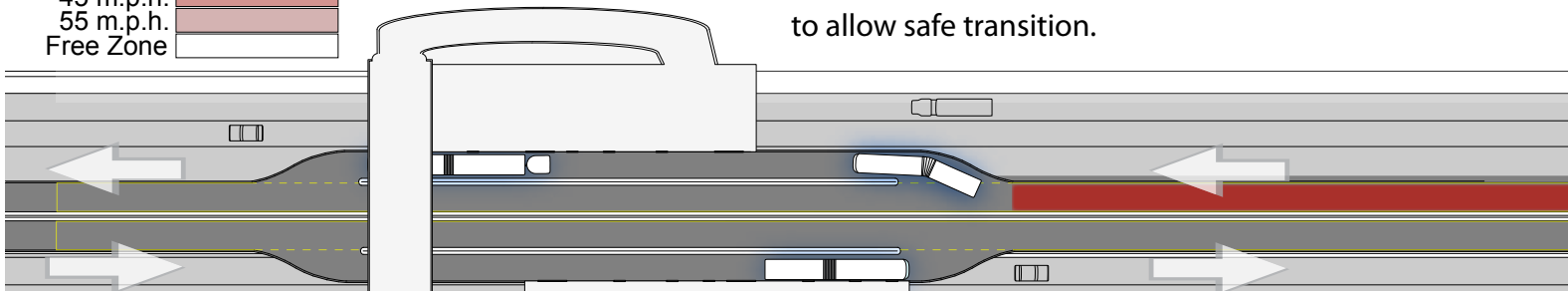
Opening the center lane to automobiles during off peak hours requires traffic control measures to facilitate the shared access of buses and vehicles



Shared Access Speed Zones

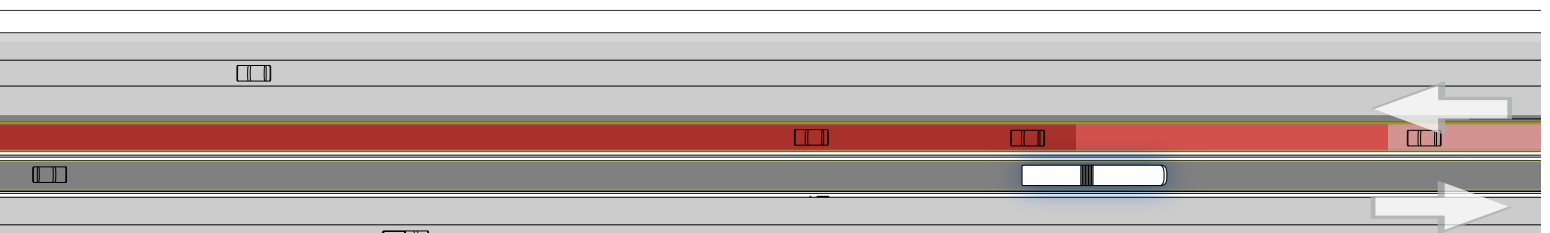
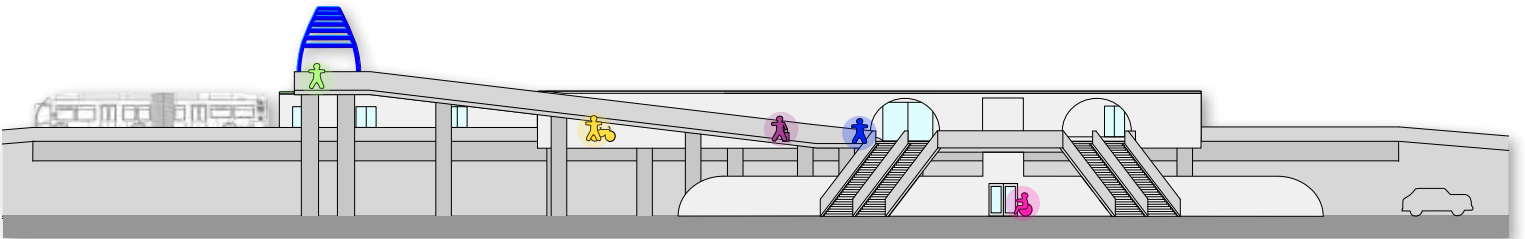
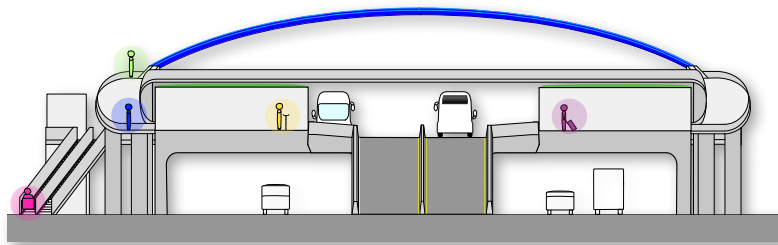
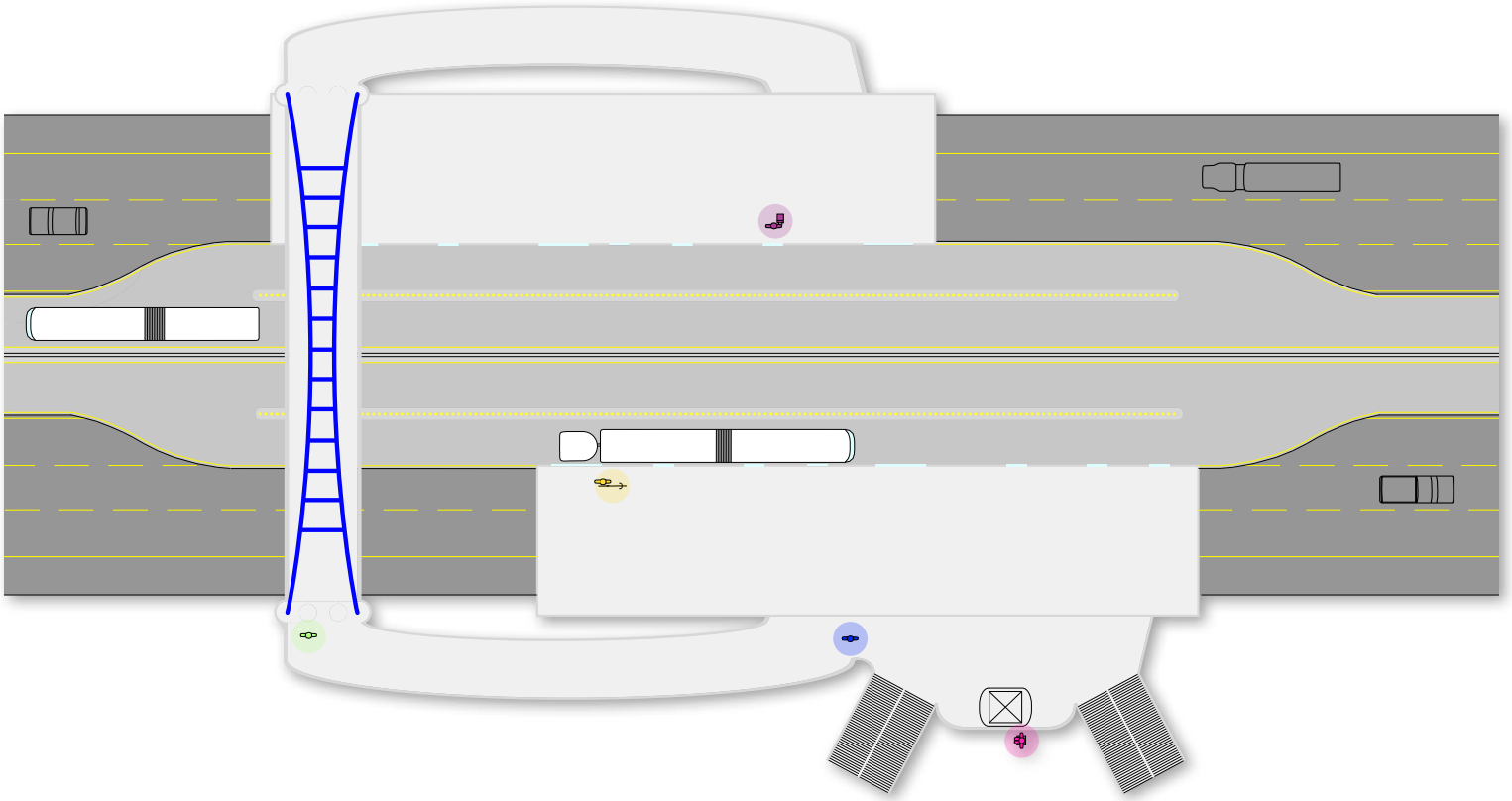
- 25 m.p.h.
- 35 m.p.h.
- 45 m.p.h.
- 55 m.p.h.
- Free Zone

in the same lane. A bus moving between a station and the center lane will notify oncoming traffic through adjusting speed limit signs or eventually through computer-controlled cars to allow safe transition.



CENTER LANE BUS STOP

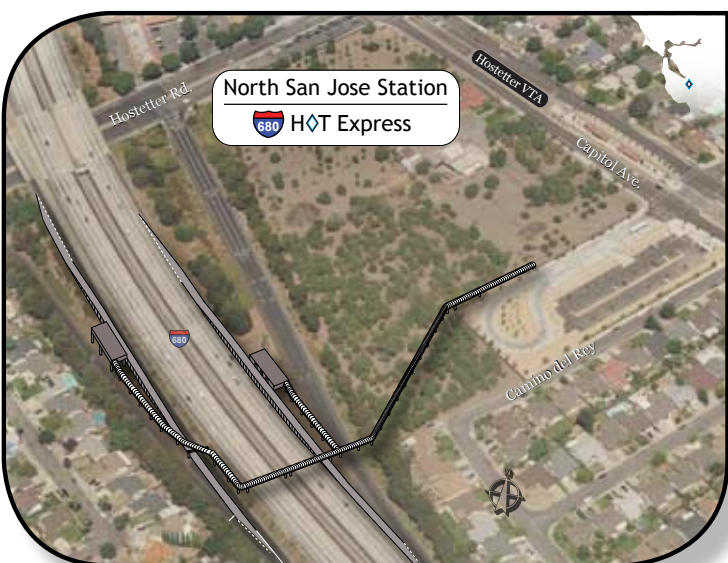
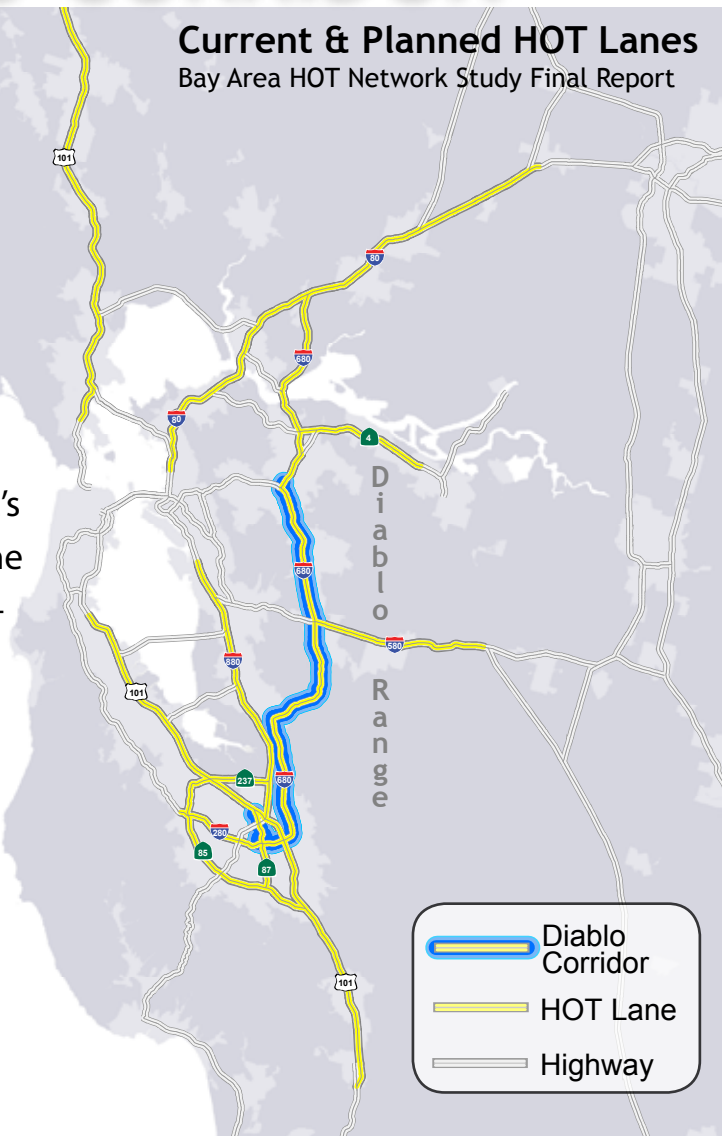
This model bus stop is a replicable design that provides universal access to all types of travellers and designed to withstand earthquakes.



An Opportunity Presented: I-680 Sunol Expressway

THE DIABLO CORRIDOR

The communities east of the Diablo Range live along a corridor lacking continual transit access and a vital missing link in the East Bay's future rapid transit network. The congestion generated at the 680-580 juncture gives credence to the need for an efficient alternative to single occupant drivers wasting time and gas as they creep along the interchange. Implementing the Bay Area's first HOT or express lane along the center lane of the Sunol Grade would serve as an important first step to establishing an infrastructure that offers more choices to travellers. The Diablo Corridor connects communities to job centers, Mineta Airport, BART and Valley Transportation Authority (VTA) lines. An initial low cost implementation strategy could approve highway shoulder stations along the corridor to reduce construction costs while still providing a regional highway bus line.



Hostetter (North San Jose)

Express highway bus service at this VTA light rail stop connects neighborhoods in east San Jose to employment and recreational opportunities located north along 680. This shows a highway shoulder station design.

San Jose Mineta Airport

Including the Mineta Airport to this line opens up San Jose air travel options to more East Bay residents.



Population

Employment

A northerly job-rich elbow of the BART line that connects to other neighborhoods of the East Bay.

Highway Bus Rapid Transit

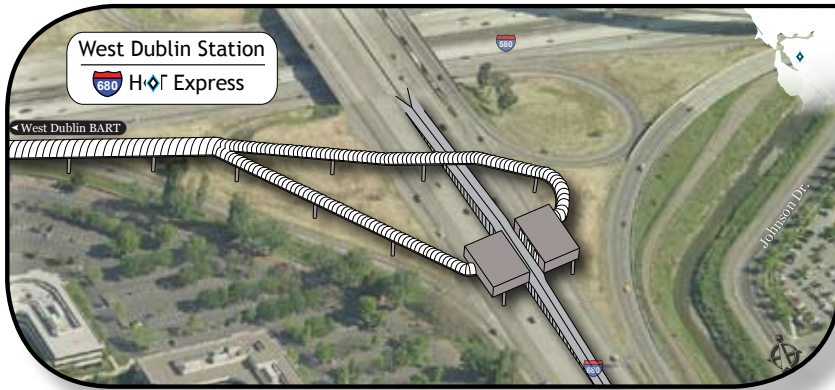
- Hwy BRT Station
- Light Rail Connection
- Commuter Rail Connection
- High Speed Rail Connection

San Ramon

Bishop Ranch holds major offices Chevron, AT&T and 550 other companies, a job center better served by a regional transit access.

West Dublin

A West Dublin BART connection is a short walk between the HOT Express and BART stations, also an important connection to nearby jobs and the Stoneridge Mall.



Public Transportation

- Commuter Rail
- Light Rail
- Bus Rapid Transit
- Amtrak Rail

Future Transit

- Proposed regional line to this station could help develop a transit village on the nearby 157 acres of developable open space.
- Bus Rapid Transit
- Light Rail
- High Speed Rail

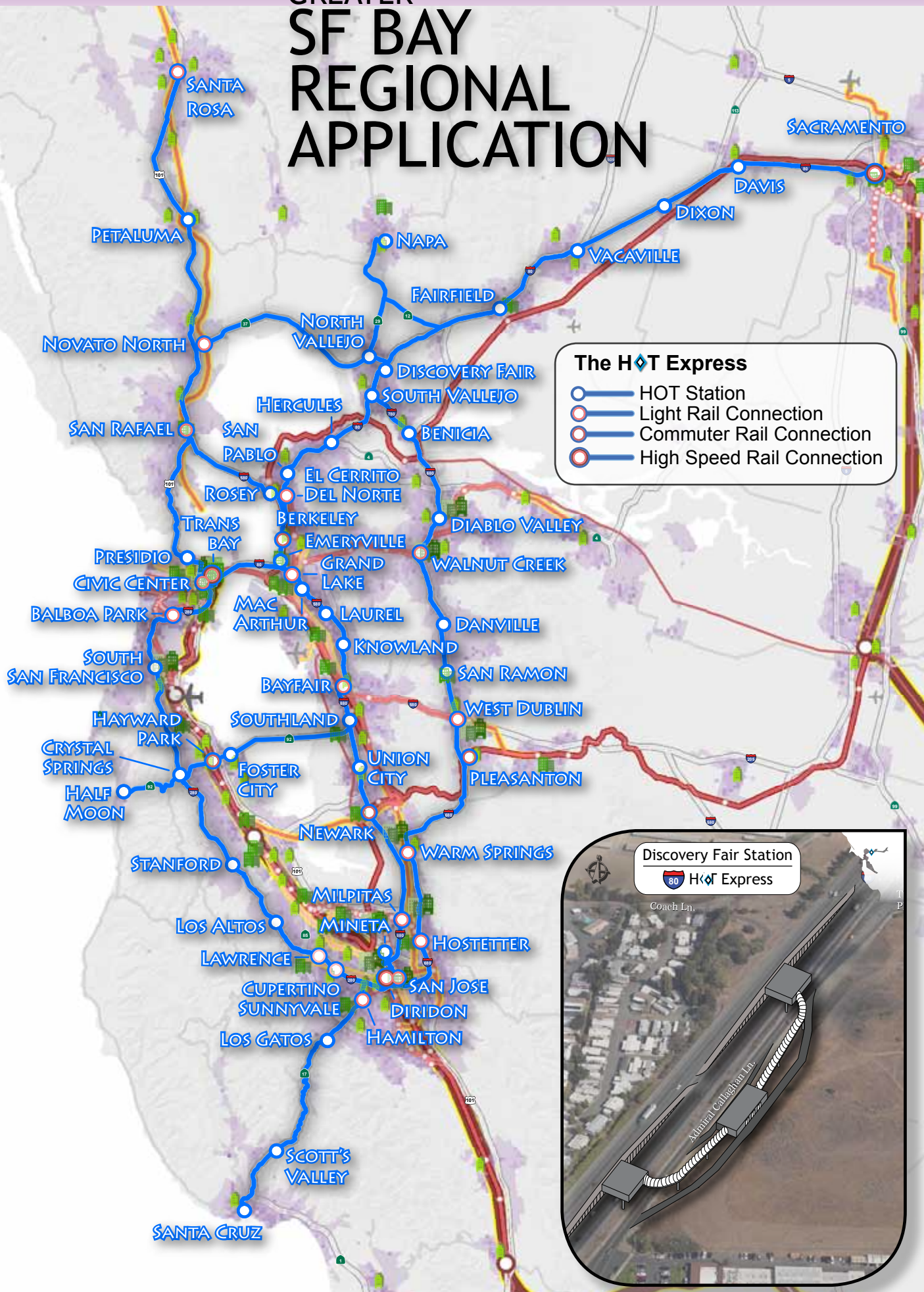
Bay
National
State

The H&T Express

- HOT Station
- Light Rail Connection
- Commuter Rail Connection
- High Speed Rail Connection



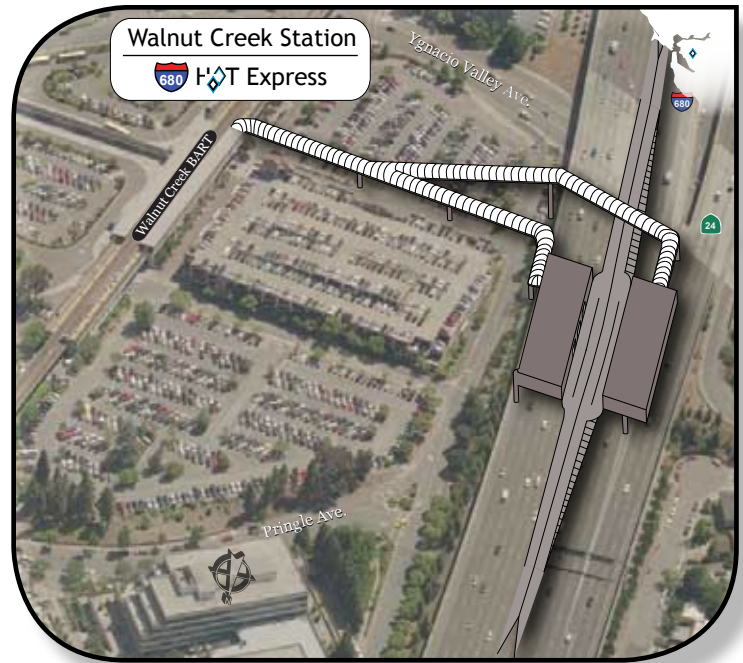
GREATER SF BAY REGIONAL APPLICATION



The H&T Express

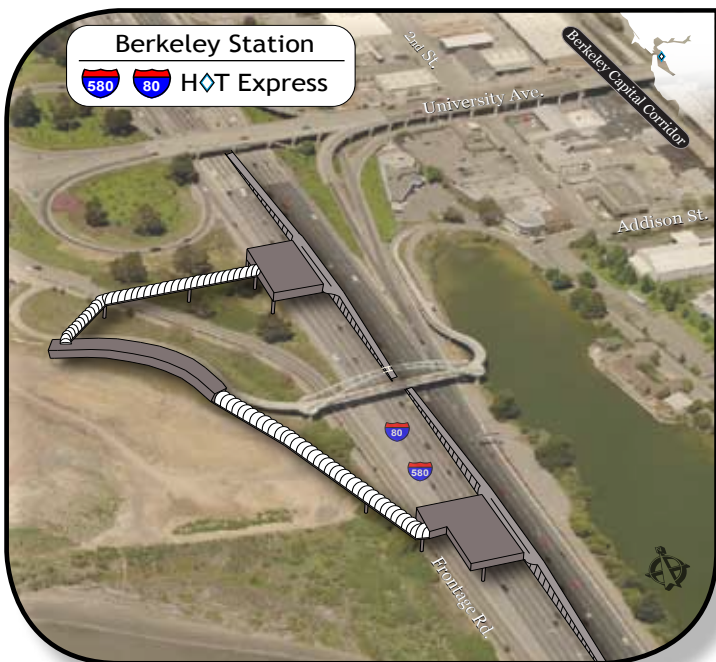
- HOT Station
- Light Rail Connection
- Commuter Rail Connection
- High Speed Rail Connection






















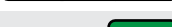



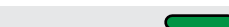



































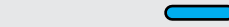
























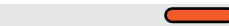



























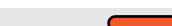






















Opening the possibilities of bus rapid transit into the freeway infrastructure demands shirking the infallible notion of maximized mobility offered by personal cars and trucks. The Highway Diet offers the benefit of increased opportunity for people to plug into the regional transit system by limiting space for the abundant solo drivers whose emissions are targeted for reduction. Creative opportunities exist when the mold of traditional highway design incorporates a demand to include facilities for prioritized bus passenger service. Using common freeway

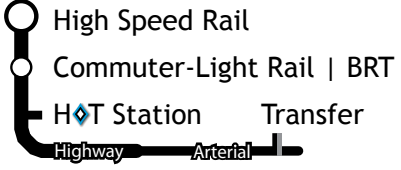
driving routes, the HOT Express brings passengers to and from important city centers, suburban neighborhoods and connects into the local and regional rail systems to form a complete Bay Area transportation network.



Corridor	Station	Highway	Regional Transit
	Balboa Park (SF)		 
	Bayfair (Hayward)		
	Benicia		
	Civic Center (SF)		 
	Cupertino / Sunnyvale		
	Danville		
	Davis		
	Diablo Valley		
	Discovery Fair (Vallejo)		
	Dixon		
	Downtown San Jose		
	El Cerrito Del Norte		
	Emeryville		
	Fairfield		
	Grand Lake (Oakland)		
	Half Moon Bay		
	Hamilton (Campbell)		
	Hercules		
	Hostetter (San Jose)		
	Laurel (Oakland)		
	Lawrence (San Jose/Santa Clara)		
	Los Altos		
	Los Gatos		
	MacArthur (Oakland)		
	Milpitas		
	Mineta San Jose Airport		
	Napa		Napa Valley Rail
	Newark		 
	North Novato		
	North Vallejo		Napa Valley Rail
	Oakland Zoo		
	Petaluma		
	Pleasanton		
	Presidio (SF)		
	Rosey (Richmond)		
	Sacramento		    
	San Jose Diridon		    
	San Pablo		
	San Rafael		
	San Ramon		
	Santa Cruz		
	Santa Rosa		
	Scotts Valley		
	South San Francisco		
	South Vallejo		
	Southland (Hayward)		
	Stanford		
	Transbay Terminal (SF)		 
	Union City		
	University (Berkeley)		
	Vacaville		
	Walnut Creek		
	Warm Springs (Fremont)		
	West Dublin		

HOT EXPRESS

Connections














Routes






-  **EIGHTY**
-  **REDWOOD**
-  **SANTA CRUZ**
-  **VINO DIABLO**
-  **SERRA SOUTHERN**
-  **EASTSHORE**
-  **MOON FAIR**
-  **SOLANO VALLEY**
-  **MINETA**

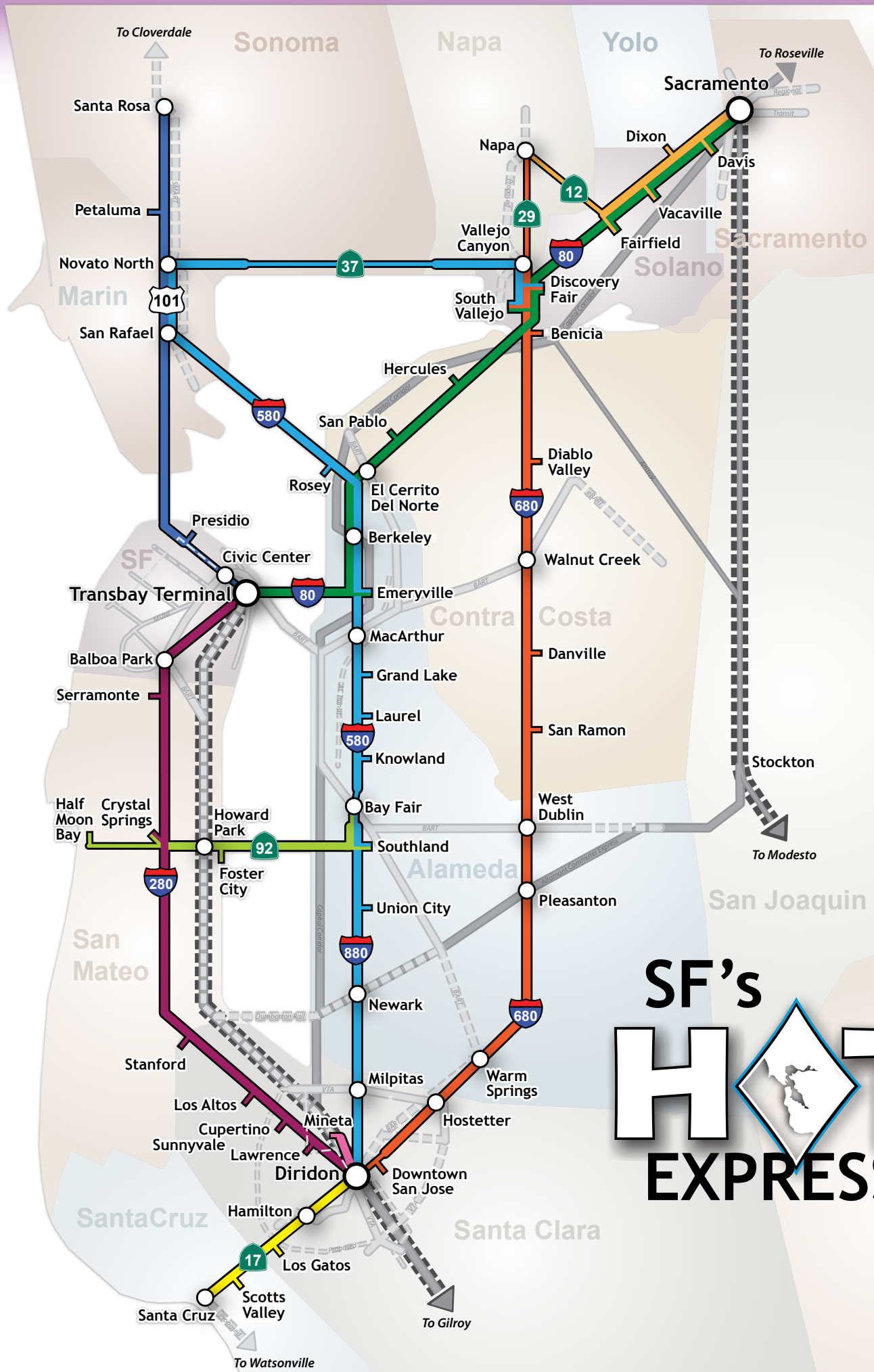
Public Transit

Regional Rapid Transit

-  AC Transit
-  Altamont Commuter Express
-  Amtrak
-  Bay Area Rapid Transit
-  California High Speed Rail
-  Caltrain
-  Dumbarton Rail Project
-  SF MUNI
-  Regional Transit
-  Sonoma Marin Area Rail Transit
-  Valley Transportation Authority

Today | Planning

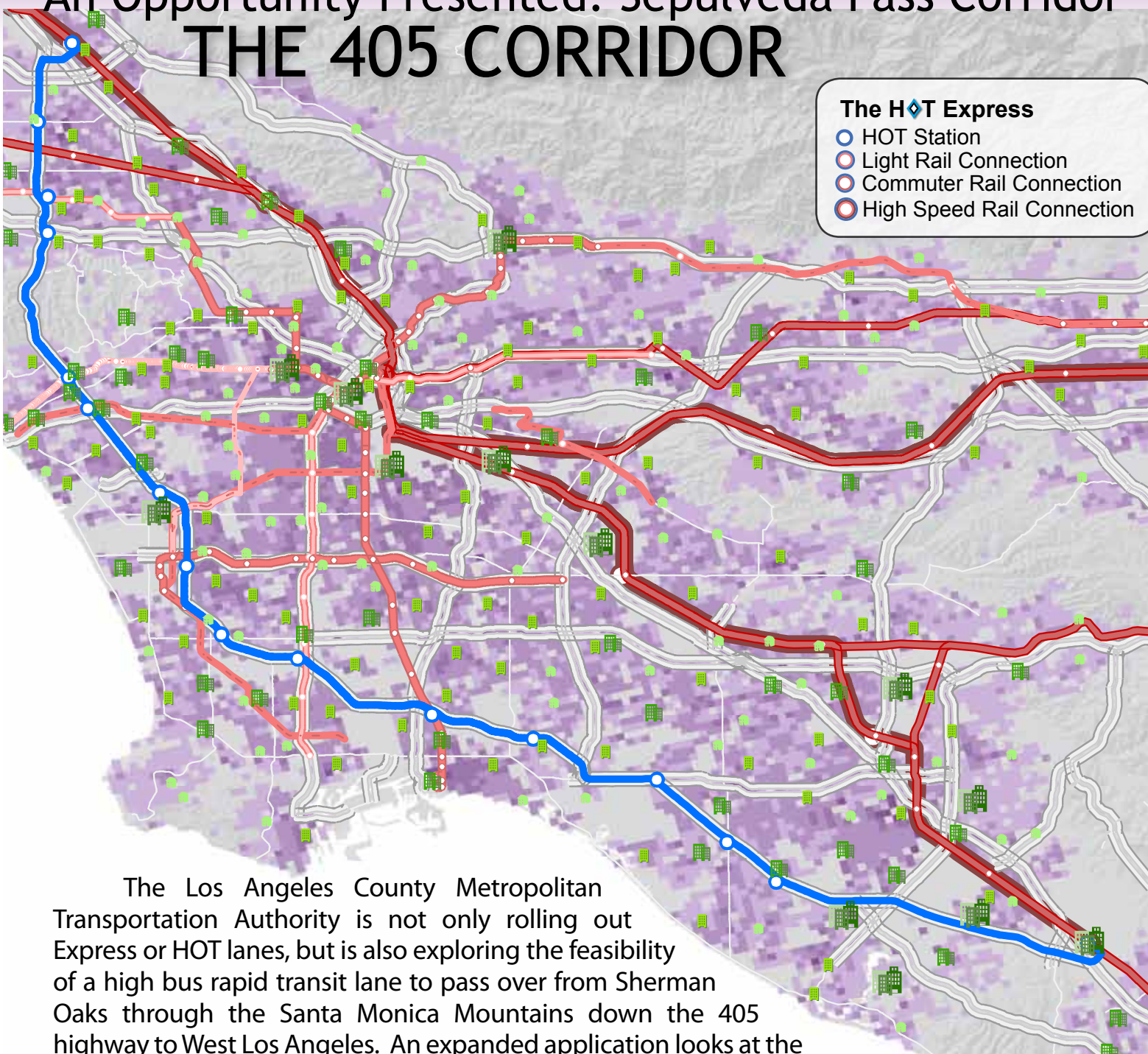
-  Bus Rapid Transit
-  Amtrak
-  Light Rail
-  Commuter Rail
-  High Speed Rail



SF's HOT EXPRESS

An Opportunity Presented: Sepulveda Pass Corridor

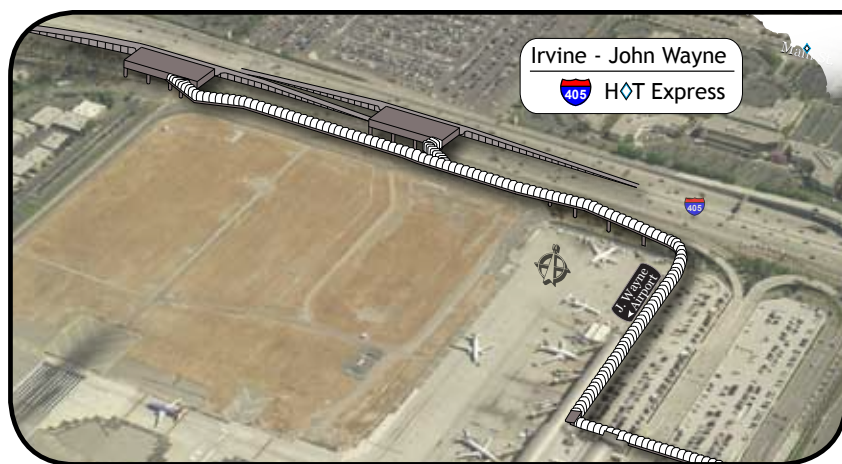
THE 405 CORRIDOR



The Los Angeles County Metropolitan Transportation Authority is not only rolling out Express or H₂O lanes, but is also exploring the feasibility of a high bus rapid transit lane to pass over from Sherman Oaks through the Santa Monica Mountains down the 405 highway to West Los Angeles. An expanded application looks at the entire 405 corridor as a regional transportation connector to new and existing lines, the backbone of a coastal rapid transit route.

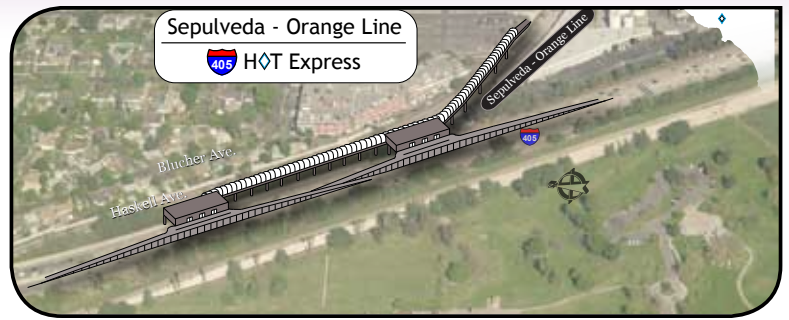
John Wayne Airport (Irvine)

Combining regional transit to airports is a proven contributor to creating an effective and convenient car free network. John Wayne, LAX and Long Beach airports lie close to the 405 and demand regional service to meet a pedestrian's prerogative.



Sepulveda (Los Angeles)

Crossing the length of the San Fernando Valley, the Orange Line uses a bus-only lane to quickly move people along Valley destinations and connects with Metro's Red Line nearby. A station connecting travellers to a southerly rapid transit route to the numerous opportunities along the 405 could meet the needs of many people.



Westwood (Los Angeles)

The Wilshire BRT line and someday a Subway-to-the-Sea will cross the 405 and provide opportunity to a quick connection to Santa Monica Harbor or by a local UCLA campus shuttle. Closer nearby are major office (including federal) buildings and the Veteran Affairs Hospital.

Fox Hills- Galleria - Playa Vista (Los Angeles)

New high density housing in Playa Vista and large retail, office and educational establishments nearby bring workers, students and residents to this area.

Wardlow (Long Beach)

The 405 highway bus rapid transit route continues to connect lines and expand regional transit choices by placing a stop at Metro's Wardlow Blue line stop. People coming and going to Long Beach can scoot up or down the coast on the 405 HOT Express with ease.

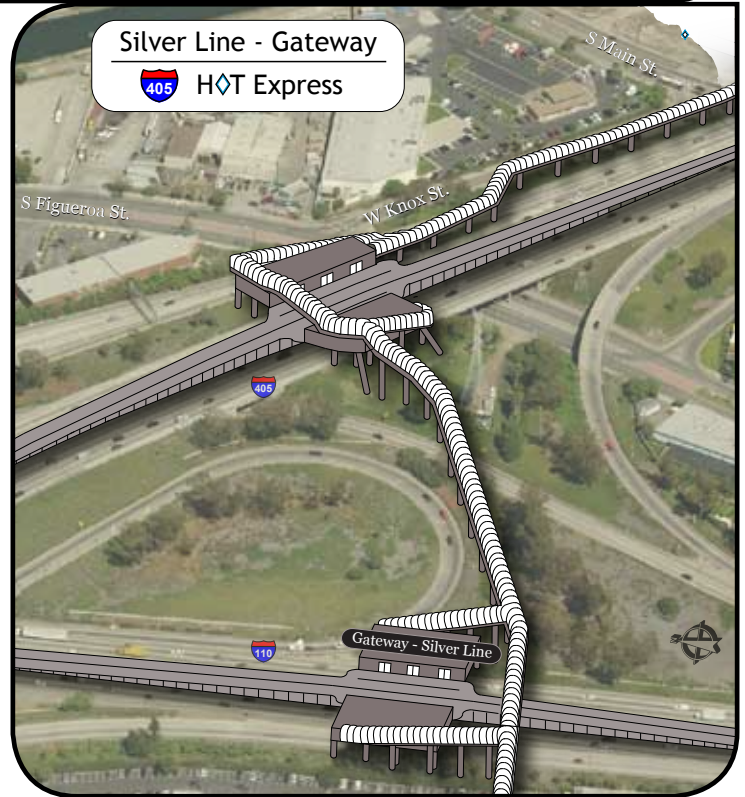
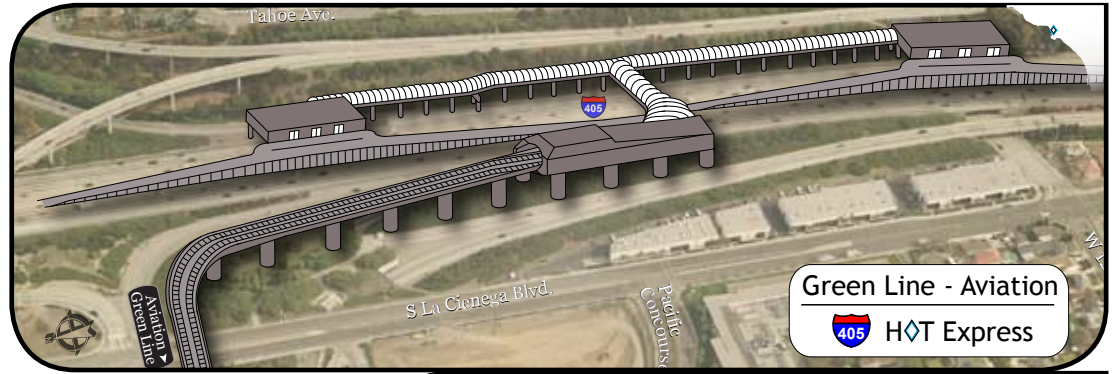


GREATER LA BASIN REGIONAL APPLICATION

Driving through this region it's no mystery that livelihood and prosperity is increased with access to a car. Try to eat at a good restaurant, see a show, get to a distant job, or to pick a friend

up at the airport often requires you have a car. A city that once pioneered the street car before fully marrying to the automobile now finds itself using creative methods to adapt a highway-oriented cityscape away from its auto-dependency.

The HOT Express proposes to build upon the highway foundation to expand the opportunity for efficient movement of the masses. Reducing driving requires regions to reduce opportunity for solo-drivers while vastly increasing opportunity for rapid public transit. Applied to areas of Los Angeles, Orange, Riverside, San Bernadino and Ventura Counties connects pedestrians and bicyclists to larger transit network as well as new destinations previously isolated from public transit.



Corridor	Station	Highway	Regional Transit
	7th St / Metro Center		
	Agoura Hills		
	Alta Loma		
	Anaheim		
	Artesia Blue (Compton)		
	Artesia Transit Center (Gardena)		
	Aviation (LA)		
	Avocado Heights (La Puente)		
	Baldwin Park (Irwindale)		
	Bellflower		
	Brea		
	Buena Park		
	Burbank Downtown		
	Camarillo		
	Canyon Arts (Santa Clarita)		
	Cerritos		
	Claremont		
	Costa Mesa		
	Disneyland (Anaheim)		
	Dodger		

Corridor Station Highway Regional Transit

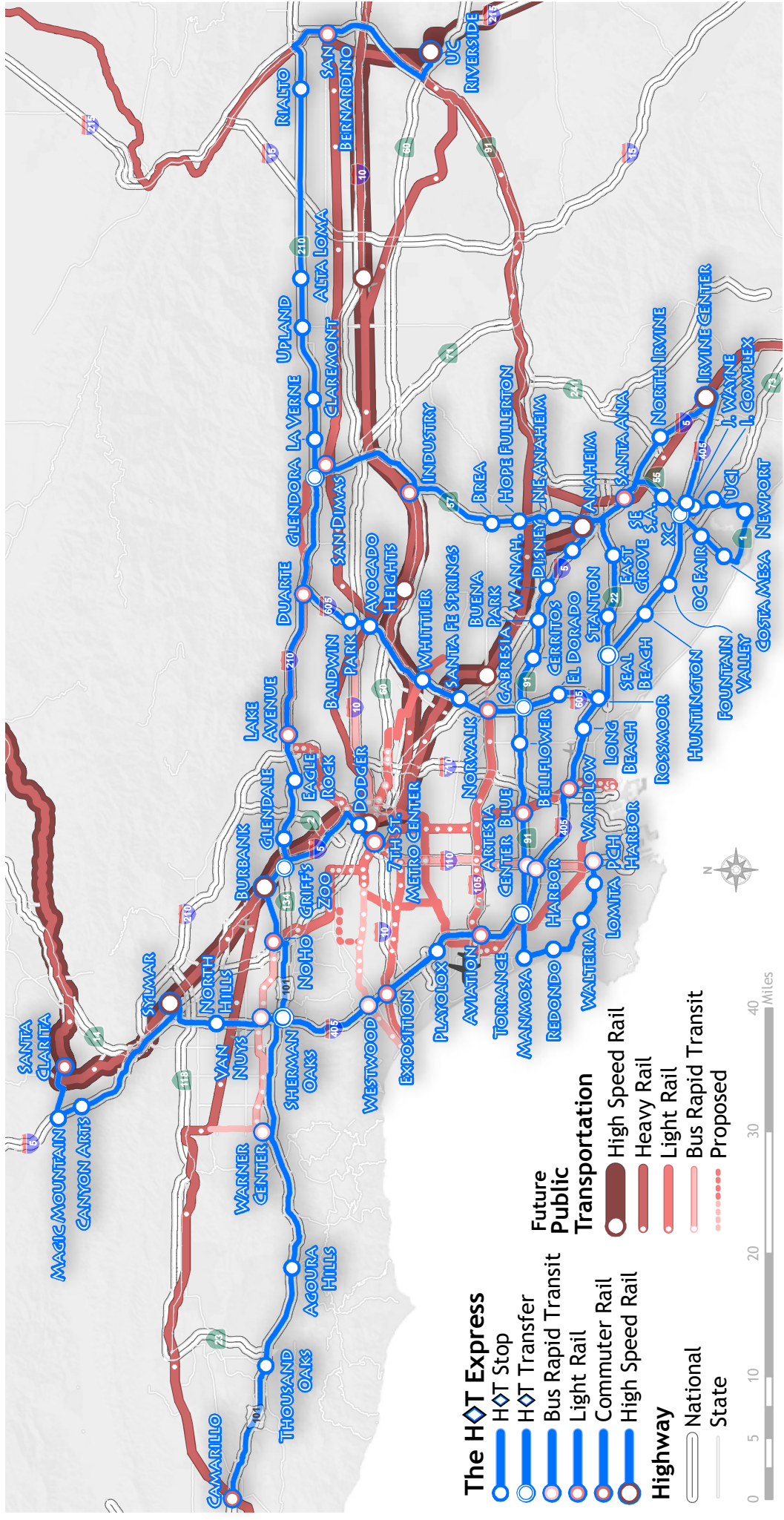


Corridor	Station	Highway	Regional Transit
	Duarte		
	Eagle Rock		
	East Grove (Garden Grove)		
	El Dorado Center (Long Beach)		
	Exposition (LA)		
	Fountain Valley		
	Gabresia (Cerritos)		
	Glendale Downtown		
	Glendora		
	Griffith's Zoo (LA)		
	Harbor (LA)		
	Hope Fullerton		
	Huntington Beach		
	Industry		METROLINK
	Irvine Center		METROLINK
	Irvine Complex		
	Irvine Xchange		
	John Wayne Airport (Santa Ana)		
	La Verne		
	Lake Avenue (Pasadena)		
	Lomita Harbor		
	Long Beach		
	Magic Mountain (Santa Clarita)		
	Manmosa (Hermosa Beach)		
	NE Anaheim		
	Newport Fashion (Newport Beach)		
	North Hills (LA)		
	North Hollywood (LA)		
	North Irvine		
	Northwest Torrance		
	Norwalk		
	OC Fair (Costa Mesa)		
	PCH Harbor (LA)		
	Playolox (LA)		
	Redondo Beach		
	Rialto		
	Rossmoor (Los Alamitos)		
	San Bernardino		METROLINK
	San Dimas		
	Santa Ana		METROLINK
	Santa Clarita		METROLINK
	Santa Fe Springs		
	SE Santa Ana		
	Seal Beach (Westminster)		
	Sherman Oaks (LA)		
	Stanton		
	Sylmar (LA)		METROLINK
	Thousand Oaks		
	UC Irvine		
	UC Riverside		
	Upland		
	Van Nuys (LA)		
	Walteria (Torrance)		
	Wardlow (Long Beach)		
	Warner Center (LA)		
	West Anaheim		
	Westwood (LA)		
	Whittier		

Public Transit

Regional Rapid Transit

- Amtrak
- California High Speed Rail
- LA County Metro
- Metrolink
- Orange County Transportation Authority



The HOT Express

- HOT Stop
- HOT Transfer
- Bus Rapid Transit
- Light Rail
- Commuter Rail
- High Speed Rail

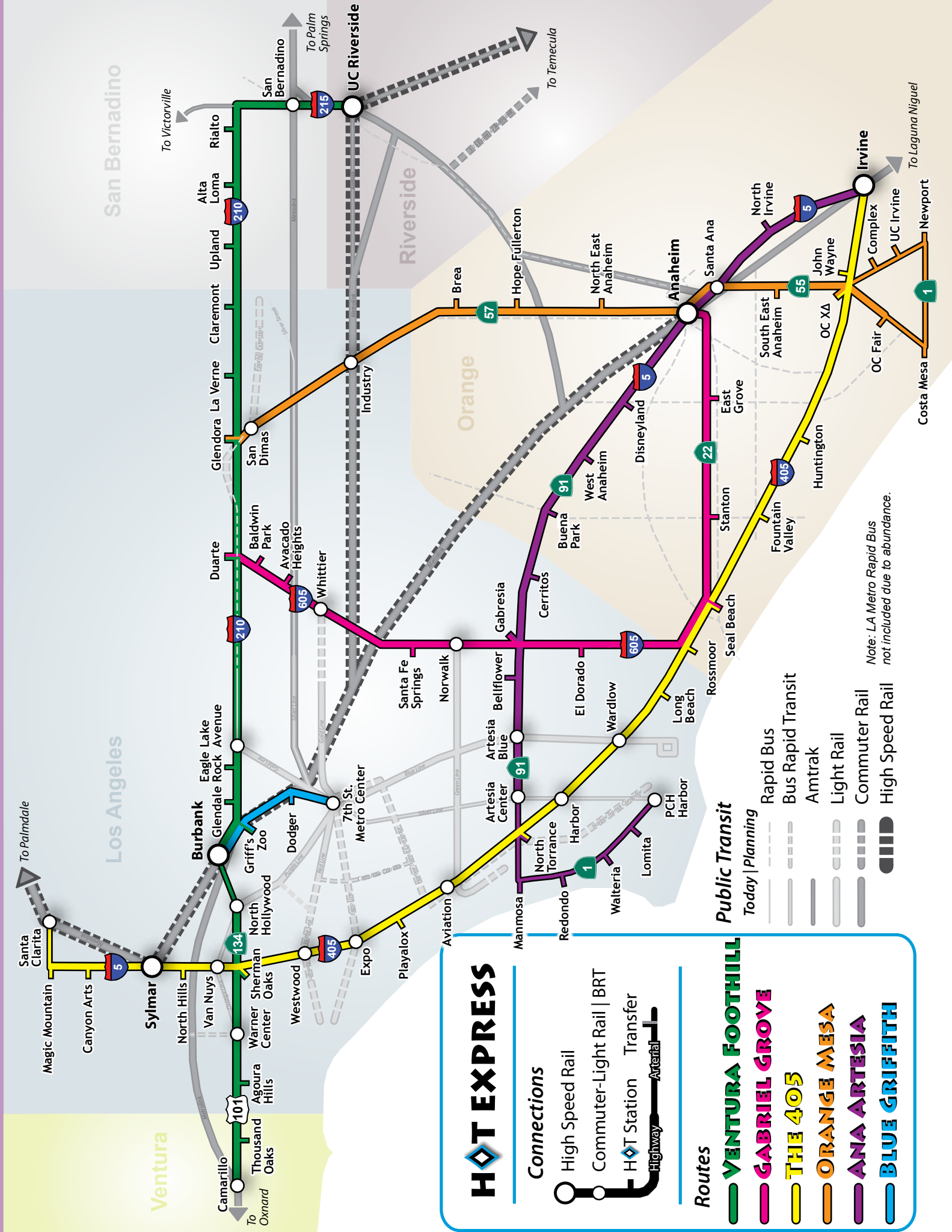
Highway

- National
- State

Future Public Transportation

- High Speed Rail
- Heavy Rail
- Light Rail
- Bus Rapid Transit
- Proposed





HOT EXPRESS

Connections

- High Speed Rail
- Commuter-Light Rail | BRT
- HOT Station Transfer
- Highway Arterial

Routes

- VENTURA FOOTHILL**
- GABRIEL GROVE**
- THE 405**
- ORANGE MESA**
- ANA ARTESIA**
- BLUE GRIFFITH**

Public Transit

Today | Planning

- Rapid Bus
- Bus Rapid Transit
- Amtrak
- Light Rail
- Commuter Rail
- High Speed Rail

Note: LA Metro Rapid Bus not included due to abundance.

OPPORTUNITIES & COSTS

Greater public benefit of highway space

The valuable highway corridors are underutilized in their capacity for moving people. Maximizing individual automobile mobility has debilitated the highway system and unless more efficient means of transportation are used this trend will only continue with increased congestion projections.

Liberate pocket books of automobile ownership

American cities mandate the use of a car to participate in the countless opportunities provided throughout the land. Releasing people from this requirement could free hard earned money for more fruitful purposes.

Offer healthy low-impact transit to all travelers

Expanding rapid public transit opportunities in coordination with improved bicycle and pedestrian infrastructure provides an avenue for people to exercise while also diminishing demand for limited resources in automobile production.

Meet mandated emission reduction targets

Climate change is threatening to alter humanity's balance with nature and the atmosphere. In order to combat this inequality, anthropogenic emissions must be reduced. Achieving California's legislation (SB 375) aimed to reduce carbon dioxide from cars and light trucks requires new thinking and bold actions to overcome generations of automobile oriented city design.

Expand opportunities for transit-adjacent growth

Creating communities conveniently located next to regional transit stations is currently limited to rail stations. Building new neighborhoods capable of handling higher density housing and employment centers reduces the demand for development on distant open spaces.

Reduce individual vehicle mobility on freeways

Altering the free movement of vehicles to prioritize highway bus service will require new measures of traffic control that will likely limit speeds of drivers and truckers. While this proposal creates an impact on individual mobility, it also achieves the driving reductions an auto-dependent society must strive to achieve.

FINANCE & IMPLEMENTATION

Partnerships

Beyond the benefits to the individual commuter and traveler, this proposed bus system will improve accessibility to business parks, cultural and educational centers, airports, urban transit hubs and many other locations. Planning and financing support should be sought amongst all stakeholders to distribute costs associated with the benefits of this proposal.

Sustainable Communities Strategy (SB 375)

Metropolitan Planning Organizations must meet targets set by the California Air Resources Board to reduce greenhouse gas emissions through the regional Sustainable Communities Strategy. Providing a framework for a new public transit system is possible through Regional Transportation Plans.

Bond Measure

As with the High Speed Rail initiative, California voters could choose to pass a bond measure to help finance construction of new transportation infrastructure, recognizing the large savings in personal transportation costs that could be accrued without the dependency of auto ownership.

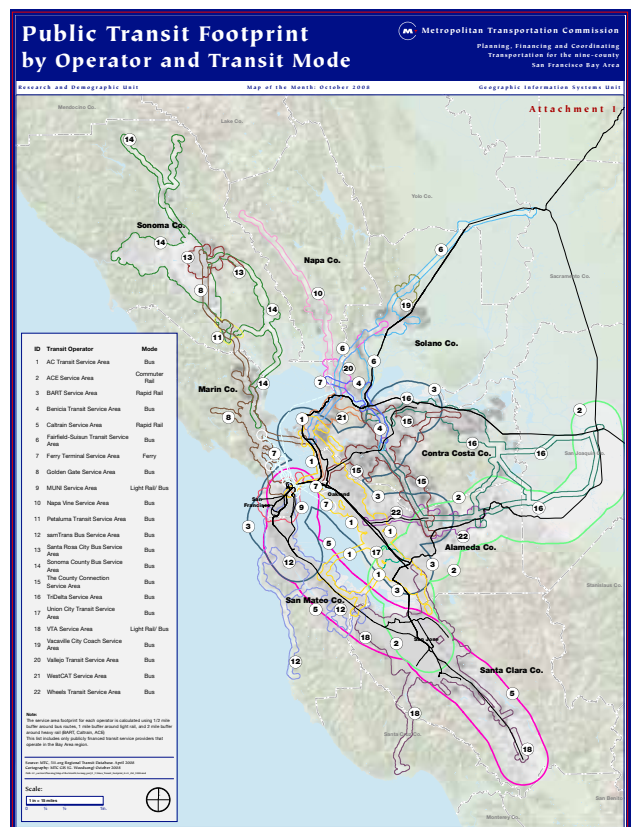
Toll Revenue

The funds generated from solo drivers in the Express Lanes can play a supplemental role in delivering necessary funds for the construction of facilities of a highway rapid bus network.

Maximize Bus Routes, Service and Infrastructure

There are over twenty-two transit agencies servicing in the Bay Area (figure 10). Establishing a unified system that maximizes regional transit routes while retaining local service would cut down inefficiencies in service and costs of multiple providers. Greyhound and Amtrak bus stations should also coordinate routes and future station locations better integrated with local transit.

(Figure 10)



THE HOT EXPRESS

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