Transportation Improvements

THE COUNTYWIDE PLAN is the City's blueprint to guide and prioritize transportation investment funds and policy initiatives over the next 30 years. In previous chapters, we identified existing conditions and future needs in several areas. Each need relates to one of the major policy goals of the Countywide Plan, which are to:

- enhance mobility and accessibility throughout the city,
- improve safety for all transportation system users,
- support the city's economic development and the vitality of our neighborhoods,
- sustain environmental quality,
- promote the equitable distribution of benefits, and
- direct the efficient and effective use of transportation investments.

This chapter identifies a set of strategies to respond to existing and future needs in each policy goal area. The strategies are supported by an investment plan, the New Expenditure Plan, that aligns available funding with projects and programs that respond to needs and opportunities. The chapter concludes with a performance evaluation of the proposed Plan investments.

Part A.

Strategies for Transportation Development

The Countywide Plan strategies identified in Figure 4-1 build upon San Francisco's existing, sound approach to transportation system maintenance, management and development. San Francisco's Transit First policy has been an effective way for the city to support economic growth while maintaining a high quality of life, and should be re-enforced through citywide policies and investments particularly in the new growth areas. System maintenance and management are critical to maintaining safe operations. New investment efforts are warranted in specific areas such as traffic calming, security and seismic safety. The city's historical development of multi-modal transportation networks should also be continued, with an emphasis on developing attractive options and alternatives to automobile use. Finally, as discussed in Chapter 5 and 6, policy initiatives that complement and support the infrastructure investments are needed, to further integrate the city's land use and transportation policies, and to address transportation needs that exceed what can be achieved with currently available funds.

Part B.

Revenue Estimates

Revenue estimates for the Countywide Plan start with a review of existing and potential funding sources for transportation investment. Forecasting revenues 30 years into the future is a difficult task, especially given the uncertainties introduced by the current economic downturn. Fortunately, the Authority has over a decade of experience in managing the city's most important source of funding for transportation capital investment, the Prop B 1/2-cent local transportation sales tax program. Using conservative projections of future sales tax growth, and applying assumptions about the leveraging of other available local, regional, state and federal sources using the sales tax, the Authority forecasts a total of $12.4 billion in revenues available for transportation investment in San Francisco over the next 30 years (see Figure 4-2).

The majority of the $12 billion in expected revenues will come from regional, state, and federal funds already accounted for in MTC's 2001 RTP, as well as from the reauthorized Prop K sales tax, which will account for approximately $2.6 billion (see Figure 4-3). Other new sources of funding assumed for the Countywide Plan are the passage of revenue bonds for BART seismic improvements and the $1 toll increase on state-owned Bay Area bridges (known as Regional Measure 2) approved by Bay Area voters in March 2004. [1]

One of the major challenges in designing a Countywide Plan investment program is to ensure that local transportation revenues leverage as much funding from other sources as possible (e.g. discretionary regional, state and federal funding), while honoring pre-existing commitments (e.g. RTP) and supporting local priorities, including those that are not as competitive for outside funding (e.g. street trees and curb ramps).The next section describes how the Countywide Plan will achieve this.

1 San Francisco shares only.

Figure 4-1a.
Countywide Transportation Plan Goals

Mobility & Access Support economic vitality by maintaining local and regional accessibility to key employment, cultural, recreation and community activity centers, investing in the multi=modal network to ensure efficient movement of people and goods.

Public Health & Safety Promote safety and security for all people sharing the streets, including pedestrians and cyclists, by reducing conflicts, accidents, and seismic vulnerability through improved facility design, education and enforcement.

Neighborhood Vitality Support community vitality by supporting good land us planning, improving neighborhood access and enhancing neighborhood livability, particularly through promotion of pedestrian activity to support neighborhood commercial activity.

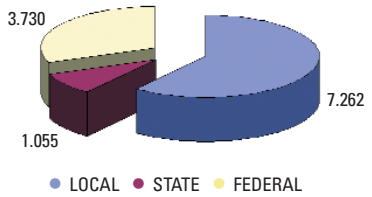
Healthy Environment. Sustain environmental quality by observing federal, state, and regional air quality standards, minimizing and mitigating the negative environmental impacts of transportation projects and activities, and promoting the beautification and greening of the city.

Equity. Ensure equity in transportation investments through a broad distribution of benefits among all city residents; minimizing the negative impacts of transportation investments; and encouraging appropriate pricing strategies to promote efficient use of the system.

Investment Efficiency. Invest wisely in the transportation system by maintaining the city's transportation infrastructure in a state of good repair; ensuring the cost-effective use of funds; promoting financially sustainable approaches to transportation service provision; protecting committed funding and maximizing leverage of outside funds; advocating for new revenue sources; and facilitating the timely delivery of projects.

Figure 4-2

Expected Funds (FY03/04-FY32/33)
Billions of 2003 $'s



Total Expected Funds: 12 billion.

Figure 4-3

Expected Funds

Source	$ Billions
Existing Revenues - RTP Revenues - Other Existing Sources	$9,795
Transportation Sales Tax - 1/2 cent for 30 years	2,600
BART General Obligation Bond (SF Share)	230
3rd Dollar Toll on Bay Bridge	219
Total	$12,844

Figure 4-1 **Countywide Plan Response to Needs**

Transportation Needs	Countywide Plan Strategies	CWTP Goals
Maintain the existing system. Maintain the existing system in a state of good repair, and manage it efficiently.	Maintain the city's transportation system systematically. Manage and optimize existing capacity through real-time traffic management tools; transit connectivity and expansion, and congestion/ demand management programs. Maintain sidewalks, staircases and paths in good, clear condition.	
Provide better options for everyone. Stem the projected decline in transit's mode share, to manage congestion and connect neighborhoods. Close transit connectivity gaps between local and regional service. Reduce the performance gap between transit and autos with faster, less crowded, more frequent, more reliable transit.	Increase the efficiency, accessibility and connectivity of the public transportation system as a way to improve connections among San Francisco's neighborhoods and links between San Francisco and the region. Improve the speed, reliability, and ridership of transit in San Francisco and the region, particularly through cost-effective transit priority treatments.	
Mobility for seniors and the disabled. Provide good mobility options for seniors and people with disabilities.	Enhance mobility and safety for all San Franciscans, including seniors and people with disabilities, through pedestrian improvements, transit system improvements and sustainable paratransit services.	
Support economic vitality. Facilitate smooth traffic flows along key corridors, to support economic vitality and maintain good local (neighborhood, cross-town) and regional connectivity.	Facilitate the safe movement of people and goods through multimodal corridor development (auto and transit trunk and reliever routes), using traffic management tools to optimize travel throughput in key corridors.	
Security and Safety. Improve safety and amenities for pedestrians and cyclists. Improve traffic safety in the neighborhoods. Improve security of transportation facilities and systems.	Implement traffic calming, pedestrian and bicycle safety projects citywide. Develop and manage freight routes to reduce the incidence of goods movement vehicle conflicts in the neighborhoods. Promote the use of streets as public spaces. Facilitate security-related improvements.	
Mobility for the disadvantaged. Provide attractive transportation options for all residents, particularly for underserved or disadvantaged populations. Prevent new growth areas from becoming auto dependent.	Increase transit connectivity and temporal coverage. Develop attractive walking and cycling facilities. Maximize transportation/ land use coordination by prioritizing transit projects that support infill and other transit-oriented development. Promote geographic equity in investment criteria.	
Improve our environment. Reduce the negative effects of motorization on air quality, energy consumption, and the environment.	Promote alternatives to solo driving. Support the conversion to cleaner vehicle technologies and fund neighborhood streetscape improvements including street trees and other amenities.	
Optimizing funds. Optimize the use of scarce transportation funding resources.	Develop clear and equitable methods for prioritizing transportation investments. Improve coordination between transportation agencies. Use local funding to leverage state, federal, and regional matching funds for transportation projects.	

Investment Alternatives

Although the Countywide Plan fund estimate is a large amount, it is insufficient to cover the extensive investment needs of the system. A survey of likely eligible project-sponsoring agencies (including City departments and regional transit providers) in the winter of 2003 yielded a $20-$22 billion inventory of transportation investment needs for over 400 separate maintenance and expansion projects over the next 30 years. A portion of the inventory was either duplicative or did not pass screening evaluations for need or cost-effectiveness. Even after accounting for this, the demand still reached $18 to $20 billion, outstripping the projected Countywide Plan revenues by $6 - $8 billion. In addition to emphasizing the importance of continued advocacy for new transportation revenues, this funding gap forced a look at alternative ways to prioritize competing needs.

In March 2003, the Authority organized the inventory of over 400 projects that were submitted by sponsoring agencies and groups into three alternative programs. Each alternative was based on a common baseline of "committed" projects, and reflected a different policy approach:

1. **Maintenance & Efficiency (MAE):** In addition to maintaining and rehabilitating existing roadways and transit infrastructure, this alternative concentrated investment in cost-effective operational improvements designed to enhance the efficiency of the existing system.
2. **Enhanced Transit Corridors (ETC):** Building on the MAE concept, this alternative included development of San Francisco's network of Transit Preferential Streets, through cost-effective rapid transit treatments that reduce travel time and improve reliability by giving priority to buses and surface rail transit.
3. **Major Rail Transit (MRT):** This alternative emphasized development of new rail transit and other capital-intensive investment options.

In April 2003, the Authority Board directed the preparation of a New Expenditure Plan (NEP) for the 1/2-cent transportation sales tax, with the goal of placing the reauthorization of the tax on the San Francisco ballot in November, 2003. The Board also appointed a 21-person citizens committee, known as the Expenditure Plan Advisory Committee (EPAC) to oversee the development of the NEP.

Based on the policy strategies described above and on affordability considerations, the Enhanced Transit Corridors approach emerged as the preferred option for the NEP. Programming considerations (color-of-money) and timing (early pay-off) of benefits played a role as well. The ETC and a version of the MRT alterative were evaluated in Spring and Summer of 2003 as part of the environmental review of the NEP, which is the basis for the Countywide Plan investment program. This system performance evaluation supported the ETC alternative, which would deliver comparable performance benefits much more cost effectively than a version of the MRT alternative. Ultimately, the EPAC's work helped to shape the final policy approach and details of the Plan. These included specific policy direction for further prioritization during downstream planning activities and programming decisions. The next section describes the NEP, its components and its expected performance.

Transportation Investment: The New Expenditure Plan

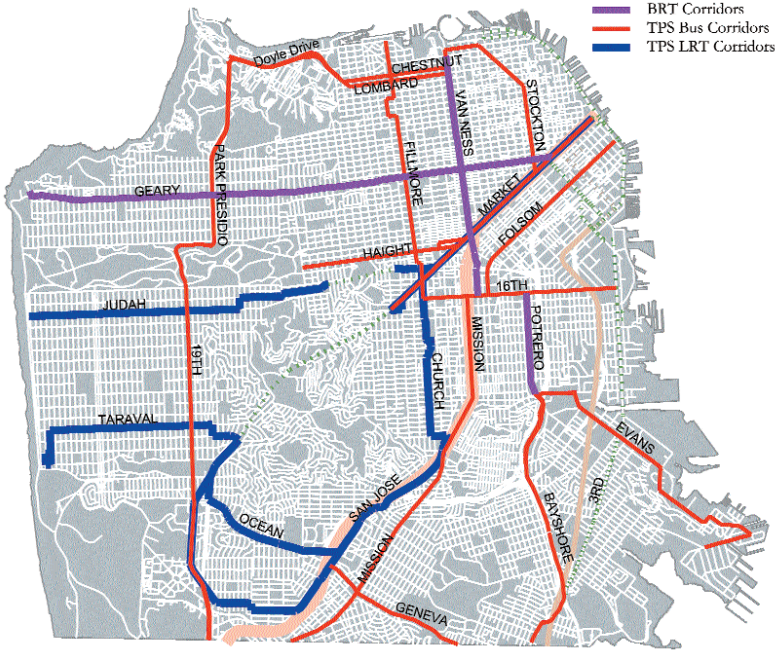
The NEP is a transportation investment strategy tailored specifically to San Francisco. As such, it takes into account the historic development of San Francisco as a pedestrian-scaled city whose urban form and character have evolved together with its transit system, and with a street network that provides open space and accessibility for pedestrians and cyclists, in addition to providing for the movement of cars. In order to maintain the city 's livability and character, the NEP supports an efficient, accessible, and integrated transit system as part of a balanced transportation strategy for the city. Accessibility, cost effectiveness, and compatibility with existing and planned land uses, especially housing, are to be required of projects receiving funds under the Countywide Plan.

The NEP is organized into 4 major categories, similar to the 1989 Prop B Expenditure Plan, but with a few important differences (see Figure 4-4 for a Summary and Appendix G for the full text of the New Expenditure Plan Description).

In keeping with San Francisco 's Transit First policy, the NEP continues strong support for Transit (65.5%, or 74% if paratransit is included). Transit funds are allocated not just to MUNI, but also to regional operators like BAR T, Caltrain, and ferries.

Figure 4-4a

Transit Priority Network



Commitments to paratransit and system rehabilitation and replacement are maintained in the NEP. The NEP also addresses paying for the local share of deferred transit and roadway maintenance. This is a very significant commitment – over half the total revenues expected for the Countywide Plan – but it is inevitable if we are to maintain the existing system and avoid the much larger rehabilitation tab which would result from lack of regular maintenance. This commitment includes ADA improvements.

The Streets and Traffic Safety category of the NEP includes pedestrian and bicycle funding. The total amount of funding dedicated to bicycles and pedestrian projects increased dramatically over the levels devoted to these purposes in the 1989 Prop B sales tax plan. This reflects both rapidly expanding public demand, and a continuum of efforts to

Figure 4-4 **SF Prop K Expenditure Plan Summary**

2003 $ Millions	Total Prop K[1]	% of Prop K Funding[2]	Other Expected Funds	Total Expected Funds[3]	
A. Transit	1,781.1	65.5%	8163.2	9,944.3	
I. Major Capital Projects	689.6		3059.1	3,748.7	
a. MUNI	361.0		1041.0	1,402.0	
Bus Rapid Transit/MUNI Metro Network	110.0		490.0	600.0	
3rd Street Light Rail (Phase 1)	70.0		30.0	100.0	
Central Subway (3rd St. LRT Phase 2)	126.0		521.0	647.0	
Geary LRT	55.0		0.0	55.0	
b. Caltrain	313.1		1827.9	2,141.0	
Downtown Extension to a Rebuilt Transbay Terminal	270.0		1615.0	1,885.0	
Electrification	20.5		162.0	182.5	
Capital Improvement Program	22.6		50.9	73.5	
c. BART Station Access, Safety and Capacity	10.5		89.5		100.0
d. Ferry	5.0		100.7		105.7
ii. Transit Enhancements	52.5		148.2		200.7
iii. System Maintenance and Renovation	1,039.0		4955.9		5,994.9
a. Vehicles	575.0		2911.0		3,486.0
b. Facilities	115.7		830.0		945.7
c. Guideways	348.3		1214.9		1,563.2
B. Paratransit[4]	291.0	8.6%	105.3	396.3	
C. Streets and Traffic Safety	714.7	24.6%	1318.3	2,033.0	
I. Major Capital Projects	117.5		422.2	539.7	
a. Golden Gate Bridge South Access (Doyle Drive)	90.0		330.0	420.0	
b. New and Upgraded Streets	27.5		92.2	119.7	
ii. System Operations, Efficiency and Safety	60.6		94.9	155.5	
a. New Signals and Signs	41.0		14.5	55.5	
b. Advanced Technology and Information Systems (SFgo)	19.6		80.4	100.0	
iii. System Maintenance and Renovation	281.6		605.9	887.5	
a. Signals and Signs	99.8		70.7	170.5	
b. Street Resurfacing, Rehabilitation, and Maintenance	162.7		517.5	680.2	
c. Pedestrian and Bicycle Facility Maintenance	19.1		17.7	36.8	
iv. Bicycle and Pedestrian Improvements	255.0		195.3	450.3	
a. Traffic Calming	70.0		72.0	142.0	
b. Bicycle Circulation/Safety	56.0		21.6	77.6	
c. Pedestrian Circulation/Safety	52.0		17.7	69.7	
d. Curb Ramps	36.0		30.0	66.0	
e. Tree Planting and Maintenance	41.0		54.0	95.0	
D. Streets Transportation System Management/Strategic Initiatives	33.2	1.3%	29.3	62.5	
I. Transportation Demand Management/Parking Management	13.2		15.7	28.9	
ii. Transportation/Land Use Coordination	20.0		13.6	33.6	
TOTAL	2,820	100%	9616.1	12,436	
Total Prop K Priority 1 (conservative forecast)	2,350				
Total Prop K Priority 1 + 2 (medium forecast; most likely to materialize)	2,626				
Total Prop K Priority 1+2+3 (optimistic forecast)[5]	2,820				

1 The "Total Prop K" column fulfills the requirements in Section 131051(d) of the Public Utilities Code.

2 Percentages are based Prop K Priority 1 and 2 forecasts of $2.626 billion.

3 Total Expected Funding represents project costs or implementable phases of multi-phase projects and programs based on a 30-year forecast of expected revenues from existing federal, state and local sources, plus $2.82B in reauthorized sales tax revenues, $230M from a BART General Obligation Bond, and approximately $199M from the proposed 3rd dollar toll on the Bay Area state-owned toll bridges. The amounts in this column are provided in fulfillment of Sections 131051 (a)(1), (b) and (c) of the Public Utilities Code.

4 With very limited exceptions, the funds included in the 30-year forecast of expected revenues are for capital projects rather than operations. Of all the funding sources that make up the $12.4B in expected funding, paratransit operating support is only eligible for Prop K and up to 10% of MUNI's annual share of Federal Section 5307 funds (currently about $3.5 M annually). Therefore, total expected funding for Paratransit only reflects Prop K and Section 5307. The remaining paratransit operating costs for the next 30-years will be funded using other sources of operating funds, such as those currently included in MUNI's $460M annual operating budget.

5 Priority 3 projects will only be funded if the revenues materialize under the optimistic scenario for sales tax revenues. They are also included in case Priority 1 or 2 projects realize costs savings, identify other unanticipated sources of funding, experience delays or are canceled.

make better use of the entire street right-of-way, from property line to property line, which is shared by all modes of transportation: pedestrians, buses, cars, and cyclists.

The Plan takes a programmatic approach, which ensures some flexibility to respond to future unknowns. However, the Plan does affirm funding for a few already committed major capital projects: the Third Street Light Rail Line/New Central Subway, the extension of Caltrain to a rebuilt Transbay Terminal, and the replacement of the south access to the Golden Gate Bridge (Doyle Drive) through the Presidio.

"Rapid transit corridors both at street level and underground will create an integrated citywide network of high speed transit performance, decreased travel times, and better seamless connectivity between transit services provided by multiple operators throughout the city."

The centerpiece of the NEP is the development of a Network of Rapid Bus and Rail Transit corridors. Together, rapid transit corridors. both at street level and underground, will create an integrated citywide network of high speed transit, resulting in increased service reliability, shorter travel times and better, seamless connectivity between transit services provided by multiple transit operators throughout the city. The network approach to transit investment, combined with development of Bus and Rail Rapid Transit, is intended to ensure broad distribution of benefits through cost-effective projects that will improve system performance in the short to medium term.

The NEP establishes a new category of traffic calming and pedestrian safety funds citywide, to respond to safety concerns. These projects reflect the public's outcry for an answer to the street safety problems caused by cut-through traffic in neighborhoods or on major arterials such as 19th Avenue, which has experienced 5 pedestrian fatalities since 2001 on the 2-mile stretch between San Francisco State University and Golden Gate Park. This category specifically targets 19th Avenue, and other major arterials where traffic safety is a major concern, and promotes the development of safer pedestrian routes to schools. San Francisco's first Pedestrian Master Plan and the projects prioritized in it will be funded from this category.

The NEP creates a new category to pay for strategic initiatives, in particular funding for neighborhood planning and coordination of land use and transportation, including parking management and street trees. It is intended to implement small scale, cost-effective solutions in the neighborhoods.

Finally, the NEP emphasizes the use of local transportation sales tax revenues to leverage large amounts of regional, state, and federal funding.

Part E.

New Expenditure Plan Performance Measurement

As mentioned above, the investment program was developed from an ETC investment philosophy and refined by the Expenditure Plan Advisory Committee. This section demonstrates the benefits of implementing the Countywide Plan, which include stemming and reversing the decline in transit mode shares in the future, compared with the 2025 baseline conditions described in Chapter 3. This is an important achievement of the Countywide Plan, and one that requires complementary policy further described in Chapter 4.

The Countywide Plan networks evaluated for performance in this section include the committed RTP investments and a number of assumptions for less defined programmatic categories, such as transit enhancements and service extensions. Although the Countywide Plan contains numerous projects and programs, there are limitations to what can specifically

be represented in the computerized San Francisco Travel Demand Model. For example, traffic signal coordination and other signal projects – which have multimodal benefits for drivers, transit users, and pedestrians alike – are not representable in the SF Model at the specific intersection level. As a result, the Model tends to under-represent benefits where these projects occur.

Project details must often be approximated, since final designs are note yet available for future projects. Conservative project assumptions were used, so that any potential modelable impacts are reflected in the performance measures. For example, in some cases, as a proposed project condition for transit corridor improvements, the model assumed that one traffic lane would be removed, although this may ultimately not be required once the design is finalized.

Figure 4-5a **All Growth In Future Trips - with and without Plan** Source: SF Model

	2025 Base	2025 Plan	Increase	% Growth
Auto	3,063,000	3,063,000	-27,000	-0.9%
Transit	986,000	1,009,000	23,000	2.3%

Figure 4-5b **Mode Share Changes - Future Trips with and without Plan** Source: SF Model

	2025 Base	2025 Plan	Difference	% Growth
Auto	60.8%	60.4%	-0.4%	-0.7%
Transit	19.6%	20.1%	0.5%	2.5%

Figure 4-6a **Growth in Internal Trips - Future with and without Plan** Source: SF Model

	2025 Base	2025 Plan	Difference	% Growth
Auto	1,779,636	1,753,350	-26,286	-1.5%
Transit	531,204	558,063	22,860	4.3%

Figure 4-6b **Mode Share Changes - Future Internal Trips with and without Plan** Source: SF Model

	2025 Base	2025 Plan	Difference	% Growth
Auto	54.4%	53.7%	-0.7%	-1.2%
Transit	16.2%	16.97%	0.7%	4.6%

Figure 4-6c **Mode Share Changes - Year 2000 vs Plan** Source: SF Model

	2000 Base	2025 Plan	Difference	% Growth
Auto	62.1%	60.4%	-1.7%	**-2.8%**
Transit	17.2%	20.1%	2.8%	**16.5%**

"Housing, jobs, and shopping opportunities are more accessible when more modes of transportation can serve the location. The spatial distribution of activities and destinations–land uses–also determines how convenient different choices of transportation are, and how mobile people are in reaching a desired location with a variety of transportation modes."

E.1. Travel Demand

Compared with the 2025 Baseline, the Countywide Plan alternative and it's heavy emphasis on transit investment results in overall growth of transit person-trips by 2.3% (see Figure 4-5a). In terms of mode share, transit shares gain 2.5% while auto shares remain unchanged (see Figure 4-5b). When examining internal trips only, transit person trips are projected to increase by 4.3%. (see figure 4-6a). This growth in internal transit trips outstrips growth in all internal trips and results in a total transit mode share of 17.0%, and a mode share growth rate of 4.6% (see Figure 4-6b). Thus, the Countywide Plan alternative reverses the projected decline (-1.3%) in transit mode forecast for the 2025 Baseline. The results is a 6.1% swing in the growth rate for transit mode shares between the Baseline and Countywide Plan alternative.

Under the Plan between 2000 and 2025, the overall mode share of auto trips will decline by 2.8%. Transit's mode share will increase by an impressive 16.5%, for an overall transit mode share of all person-trips of 20% (Figure 4-6c). Thus, the Plan effectively slows down the growth of auto trips and accelerates the growth of transit mode share. In addition, the Countywide Plan succeeds in reversing the disturbing decline anticipated in transit shares of internal San Francisco trips during the same period.

Another measure of system efficiency is person-throughput, as reflected in average vehicle occupancy for auto and transit trips combined. The Countywide Plan network reverses the decline in occupancy that is predicted in Chapter 3, increasing vehicle occupancy from 1.62 in the 2025 base network to 1.64 persons per vehicle in the 2025 Plan.

E.2. Mobility

Proposed Countywide Plan results in a 109 second reduction in average transit travel times as compared to the 2025 baseline conditions, while average auto trip times are expected to increase over and above the 2025 base by less than 2 seconds (see Figure 4-7). It is not anticipated that auto travel will be affected to this degree, however, because the model does not fully reflect the benefits of signal coordination on travel times, which can improve average speeds by up to 10%.

Through the implementation of the Countywide Plan alternative, transit begins to narrow the gap in average speeds, which are the inverse of travel time. The system-wide average 7% advantage in transit speeds belies greater differences of 10% - 15% in key corridors where priority treatments are proposed. This is achieved without degrading automobile speeds, which will further benefit from signal coordination, an improvement which is not captured in the San Francisco Travel Demand Model's estimates.

E.3. Corridor Analysis

Transit Demand and Level of Service. The transit ridership and crowding impacts of the Countywide Plan invest-

Figure 4-8

Transit LOS - CWTP

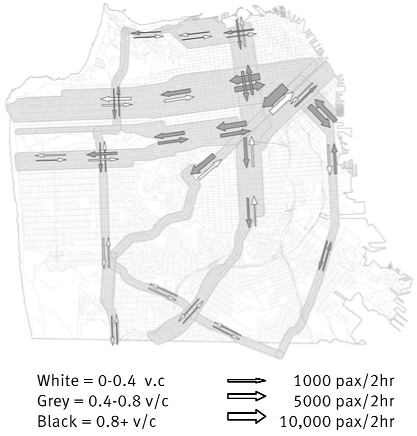


Figure 4-7 **CWTP Alternative Trip Measures (Internal SF Trips only)** Source: SF Model

Average Travel Time (minutes)	2025 Base	2025 Project	% Growth
Transit	33.85	32.04	-5.3
Auto	11.32	11.34	0.2
Average Trip Distance (miles)			
Transit	3.47	3.53	1.6
Auto	3.31	3.30	-0.4
Average Trip Speed (mph)			
Transit	6.16	6.61	7.3
Auto	17.56	17.46	-0.5

ments are shown in Figure 4-8. The highest demand for transit still occurs on the Bay Bridge corridor and on Market Street near downtown. Other major transit corridors include the BART corridor along Mission Street, the Haight street corridor and the N-Judah MUNI line, and the Geary corridor, particularly at the intersection with the Van Ness corridor. The heaviest MUNI transit flows of 4,000 to 7,700 persons per hour can be observed in the Market Street, Geary Boulevard, Haight/Fulton and Van Ness corridors, followed by the Third Street, Mission Street, and Park Presidio/19th Avenue corridors. The Third Street/Central Subway, Mission, and Upper Market Muni bus and light rail corridors also carry heavy transit loads. The greatest absolute increases in transit ridership are expected to occur on the Van Ness, Geary, Mission, Market, and Lombard corridors.

Transit crowding along the key corridors decreases somewhat under the Countywide Plan. The greatest improvements to crowding problems are expected in the Haight Street corridor, the Third Street corridor, and the Mission corridor. Despite heavy future demand on San Francisco 's transit network, transit crowding levels are fairly good in 2025, due to the planned investments. All of the transit corridor screenlines will operate above crowding standards (v/c = 0.8). [1]

Auto Demand and Level of Service. The Countywide Plan is intended to relieve key load points and delays on the roadway network. Figure 4-9 depicts system performance taking into account proposed auto and transit improvements that can be modeled. The benefits of signal timing projects are not reflected. [2] As expected, the major auto trip volumes are at the county interfaces with the regional highway network, such as on the Bay Bridge, US 101 and I-280, which will probably carry between 400,000 – 490,000 auto-based person-trips per day by 2025, with the Countywide Plan investments. The Geary and Van Ness corridors will continue to experience the highest auto volumes of arterial streets in San Francisco, together accounting for over 200,000 auto based person trips daily. Other high traffic routes will be Mission Street and Lombard Street.

The high volumes notwithstanding, implementation of the Countywide Plan is expected to result in a decrease in the volume of auto traffic along major high-volume arterials. The Van Ness and Geary corridors are expected to experience the greatest decreases in auto traffic under the Plan – over 2,500 fewer vehicles during the peak period on Van Ness, and close to 2,000 fewer vehicles on Geary. These volume figures refer to the entire corridor, not just Geary Blvd and Van Ness Ave; therefore, the decrease is not simply a shift of cars to the parallel streets, but a shift from driving to the rapid bus transit services planned for these corridors.

Figure 4-9 shows the anticipated Countywide Plan levels of service, calculated as p.m. peak hour volume-to-capacity ratios along these corridors at key locations. By this measure, the Countywide Plan reduces congestion along the key high-volume arterials in San Francisco, most notably Geary, Third Street, Lombard, Mission, and 19th Avenue. This decrease results from slower growth in vehicle trips on that corridor, relative to the growth in transit trips. Because freeway capacities are built out, congestion on regional highways will not be significantly improved by implementation of the Countywide Plan unless demand management schemes such as pricing are added.

Our streets and roads and bridge gateways have a finite capacity for vehicles in the future, even as future trips increase. We also recognize that the streets in neighborhoods such as SOMA do not have infinite capacity to absorb the spillover traffic to and from the Bay Bridge, US 101, and I-280, and that these local streets bear the brunt of the regional traffic impacts. Some of the corridors are historic bottlenecks that have operated under congested conditions for over a decade. Clearly, effective management of these facilities is a regional challenge.

San Francisco will to our part continue tracking the performance of bridges and freeways through the Countywide Plan updates and the biennial CMP Level of Service Monitoring reports. The Countywide Plan and the NEP also provide funding under several categories that address conditions on the county gateways. Management of local bridge and freeway access and egress operations will be improved through implementation of the DPT 's SfGo program, which incorporates dynamic operations management tools. The demand for Single-Occupant-Vehicle

Figure 4-9

Auto LOS - CWTP Alternative

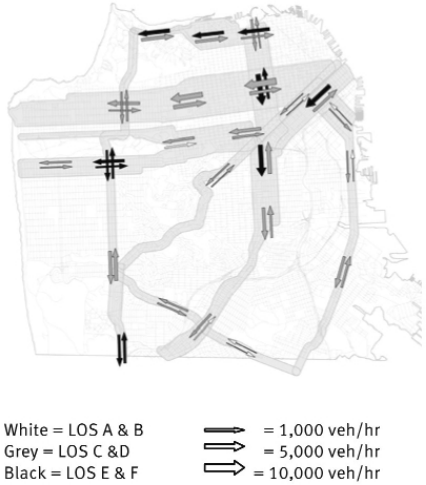
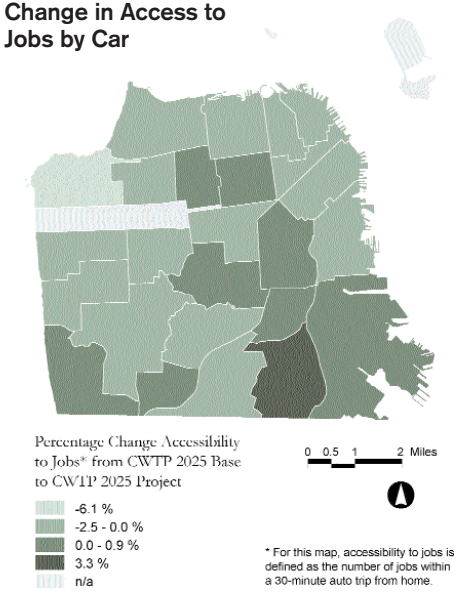


Figure 4-10

Change in Access to Jobs by Car

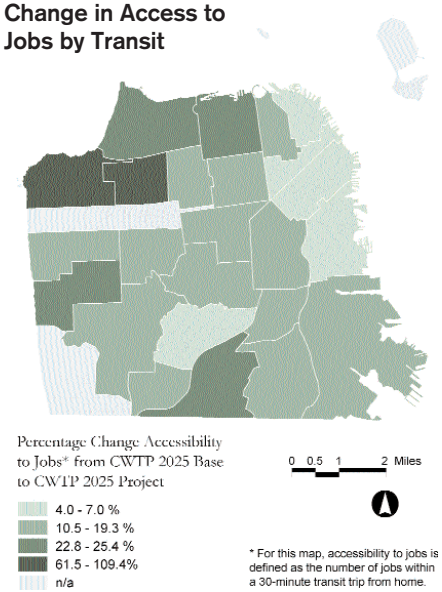


1 Where "V" is volume, or number of passengers, and "c" is capacity, or number of seats [plus theoretical standing room.]

2 DPT's SFGo! program receives significant funding in the NEP for new signals that allow better coordination along corridors, transit signal priority, and real-time management of traffic conditions. Signal timing improvements that are planned or already funded include projects on: Lombard Street, 19th A venue, Geary Boulevard , Mission Boulevard, and Third Street (to be implemented with the opening of the Third Street LRT) and Oak Street/Fell Street and Octavia Blvd. (to be implemented with the completion of the Central Freeway touchdown at Market Street.

Figure 4-11

Change in Access to Jobs by Transit



access to and from San Francisco will be reduced by upgrading the transit service options into the city via BART, Caltrain, and regional express buses. New facilities, such as the Caltrain extension to the Transbay Terminal, will close major regional transit connectivity gaps. Future updates to the Countywide Plan will consider the effectiveness of these first-tier approaches and also explore the potential for more direct demand-management techniques.

Beyond these improvements in person-throughput, there will likely be improvements from traffic management techniques to maintain smooth vehicle flows and manage conflicts with pedestrians and other road users. Implementation of the Countywide Plan offers potential to improve the management of the existing capacity through technology and a balancing of modal needs.

E.4. Accessibility

Accessibility is a concept similar to connectivity (discussed) in Chapter 3, with one important difference. Accessibility is determined by two key factors: transportation system performance and land use patterns, whereas connectivity generally refers only to transportation-related factors. Housing, jobs, and shopping opportunities are more accessible when more modes of transportation can serve them. The spatial distribution of economic activities – land uses – strongly influences how convenient different choices of transportation are, and how much mobility people have to reach a desired destination with a variety of transportation modes. The spatial distribution of activities also determines how efficient and effective various transportation modes and services will be in responding to travel demands.

The Countywide Plan accessibility measures are defined similarly to those used in the 2001 RTP, as indicators of accessibility to jobs and shopping opportunities. The measures calculate the total number of jobs or shopping opportunities available within specified time-bands for each mode, and compare these across alternatives. For example, to measure overall access to jobs, the average amount of employment available to workers traveling 30 minutes by auto and 30 minutes by transit during the AM peak was summed.

Implementation of the Countywide Plan will generally maintain current levels of accessibility for drivers but significantly improve accessibility for transit users (see Figure 4-10 and 4-11). On average, it is expected that the average number of jobs accessible to workers traveling30 minutes by car from their homes in San Francisco will increase by approximately 9.4% between the 2000 baseline and 2025 Countywide Plan. For transit users, the average number

Figure 4-12 **Equity Results: Time Savings for Target Populations** Source: SF Model

	Time Savings (Avg. min)	Transit Time Savings (Avg. min)	Change Transit Share
All	0.11	1.74	0.08%
Zero Vehicle	0.37	1.69	1.2%
Not Zero Vehicle	0.06	1.79	0.7%
Low Income	0.16	1.48	0.7%
Not Low Income	0.10	1.79	0.8%
Female Head w/Children	0.04	1.39	1.1%
Not Female Head w/Children	0.11	1.77	0.8%
Single Parent	0.02	1.25	1.0%
Not Single Parent	0.11	1.79	0.8%
Female	0.09	1.69	0.8%
Male	0.12	1.78	0.8%

of jobs accessible to workers within 30 minutes will increase even more dramatically, by over 35%.

Unlike the accessibility changes between the 2000 baseline and the future scenarios, the change in accessibility between the 2025 baseline and the Countywide Plan are significantly driven by major projects included in the Plan, and by related changes in transportation conditions, not just by the growth in jobs and housing.

Future Countywide Plan updates will measure the performance of alternate land use scenarios as well as transportation investment packages. This will enable fuller elaboration of how land use and transportation decisions, together, can promote accessibility, and will help us to measure an investment plan's performance in supporting the city's growth and development goals.

E.5. Safety

While no adequate way to model future safety conditions exists, the NEP dedicates significant funding to projects that improve the safety of streets in San Francisco for all modes, and especially for pedestrians and cyclists.

Public outreach clearly identified traffic calming as a desired safety improvement. In response, the NEP includes $7.2 exclusively for traffic calming. Pedestrian safety treatments on streets and arterials throughout the entire city are also critically important, and the need for these treatments has been clearly articulated by the public. These needs include countdown signals, intersection bulb-outs, bicycle lanes, and highly visible crosswalks. To address this significant need, $3.6 in pedestrian and bicycle safety funding is dedicated in the NEP. Some specific areas of concern, such as 19th A venue, are targeted for improvements.

E.6. Environmental Quality

Growth in vehicle trips, especially the total miles and hours traveled by vehicles in San Francisco, is a good indicator of the environmental impacts of transportation patterns.

The total number of vehicle trips generated within San Francisco is anticipated to grow by 6% between 2000 and 2025, with implementation of the Countywide Plan. However, this increase in trips is not primarily attributable to implementation of the Countywide Plan, but rather to anticipated growth in population and economic activity. The Countywide Plan in fact is expected to reduce vehicle trips by 1.4%, relative to the future 2025 conditions

Figure 4-13 **Equity Results: Accessibility Impacts on Target Populations** Source: SF Model

	% Change Jobs by Auto	% Change Jobs by Transit	% Change Shopping by Auto	% Change Shopping by Transit
All	-0.3	13.9	-0.7	19.1
Zero Vehicle	-0.6	9.1%	-1.5	19.1
Not Zero Vehicle	-0.2	15.9	-0.5	18.5
Low Income	-0.1	9.3	-0.8	14.1
Not Low Income	-0.3	14.6	-0.6	20.2
Female Head w/Children	-0.1	13.1	-0.5	17.1
Not Female Head w/Children	-0.3	14.0	-0.7	19.3
Single Parent	0.0	13.1	-0.5	17.0
Not Single Parent	-0.3	14.0	-0.7	19.3
Female	-0.3	14.1	-0.7	19.3
Male	-0.3	13.8	-0.6	18.9

without Countywide Plan investments. Similarly, vehicle hours traveled will increase 28% even as the Countywide Plan is implemented. However, when compared to the future without the Plan investments, the Countywide Plan does result in a slight reduction of vehicle hours traveled (largely because vehicle trips are projected to decrease 1.4% under the Countywide Plan scenario), which amounts to a decrease of about 4,000 hours a day.

The aggregate vehicle miles traveled are only projected to grow by 13% with the Countywide Plan investments. However, VMT on roadways with congestion - defined as Level of Service F – is anticipated to grow by 117% with the Countywide Plan projects. Much of this traffic is the result of forecast population and employment growth in San Francisco and throughout the Bay Area. With the Countywide Plan investments, however, overall VMT in San Francisco reduces by 0.8% and VMT at LOS F reduces by 2%, compared with the future 2025 Baseline.

Improvements in transit's environmental scorecard are also anticipated. Measure I, the Healthy Air Enforcement Act of 2004, was passed by San Francisco voters in March 2004. It requires that the Municipal Railway replace all pre-1991 diesel buses by the end of 2006. These will need to be replaced by alternative fuel buses [3] as the older buses are phased out in order to prevent service cuts; however, as long as cleaner buses are available to replace the phased-out buses, this step will result in cleaner air along Muni routes currently served by diesel buses.

E.7. Equity

The City can help advance equity goals in several ways through its transportation policies and projects. First, it is important to ensure that the planning stage of any project includes wide participation by stakeholders as early in the process as possible. This not only helps to ensure that concerns raised about project design and impacts are addressed effectively in the design process, but also facilitates a more broad and fair distribution of benefits.

In addition, the Plan targets areas with historic under-investment, such as the Third Street Corridor and the Bayview/Hunter's Point and south county areas (Visitation Valley Watershed Improvements).[4] Future Bus Rapid Transit network improvements will also enhance transit connectivity citywide, in particular for residents along the Geary, Van Ness, and Potrero corridors. Finally, the Authority is leading a feasibility study to locate a Caltrain station at Oakdale Avenue.

In order to assess the effectiveness of these investments, and the distribution of benefits of the overall NEP, the Authority analyzed the mobility and accessibility benefits under the Plan for four important populations: low income households; zero car households; female-headed households with children; and minority households. This approach is similar to the one used in the 2001 RTP.

The Countywide Plan decreases average travel time in general, and these savings accrue both to target and non-target populations (see Figure 4-12). Zero vehicle households and low income households enjoy the most time savings on average. This is probably because female and single parent households have a more inelastic demand for auto use than zero vehicle and low-income households in general (due to trip-making involving children).

The Countywide Plan performs fairly well for both target and non-target populations in terms of providing accessibility benefits (see Figure 4-13). Access to jobs by transit increases dramatically overall under the Countywide Plan, and this conclusion applies to both target populations and non-target populations. Households without cars and low- income households fare better than non-target populations and other target populations. Female and single parents see greater accessibility improvements by transit than do low income and zero vehicle households. Both target and non-target groups alike also gain increased access to shopping by transit. In general, access to jobs and other activities by auto stays flat or declines slightly with the Countywide Plan, and this effect is shared among target and non-target populations alike. ●

3 Muni prefers hybrids, which were recently approved by CARB

4 It should be noted that any measurements of benefit to these groups are an underestimate because they compare results from the Countywide Plan Scenario and the Baseline Future Scenario. The Baseline Future Scenario already includes several large investments that are targeted to these populations, such as the Caltrain downtown extension to a rebuilt Transbay Terminal, and completion of the Third St. light rail Phase 2 (New Central Subway). The benefits that result from those projects are not reflected in this analysis, though they would almost certainly accrue to the target populations. Future updates of the Plan can expand the analysis by