Transportation for a Livable City





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-DAVE SNYDER

 $Executive \ Director, \ Transportation \ for \ a \ Livable \ City$

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Executive Summary: The Path to a Livable City

TRANSPORTATION FOR A LIVABLE CITY (TLC) IS THE

grassroots arm of the alternative transportation movement. We aim to coordinate the energy and passion of the San Francisco Bicycle Coalition, Rescue Muni, Walk San Francisco, and City CarShare. We are dedicated to improving San Francisco transportation and land use policies, for a safer, healthier and more accessible city.

This document is our vision statement, an agenda for positive change in San Francisco. As we make progress, the city will become more livable in tangible ways:

- It will be easier to get where you need to be.
- Fewer pedestrians will be killed. Kids will be able to walk or bike to school safely. And senior citizens will live more independently, walking in their neighborhood without fear of being run over.
- Housing will be more affordable, making the city more welcoming to immigrants.
- People will spend less money on transportation.
- As housing becomes more affordable, and accessibility increases, the city will be more economically competitive.
- Neighborhoods will be stronger. Every neighborhood will have attractive, comfortable local shopping streets. A culture of sidewalk cafes and strolling will flourish.
- The air will be cleaner. And people will be healthier, get-

ting moderate exercise as a normal part of daily life.

This document presents some of the policy changes we must accomplish to create a more livable city. Its recommendations build on our strengths: the city's diverse neighborhoods and dense, walkable land use patterns. Every recommendation in here has been proven to work in other cities.

This executive summary presents some of the most important ideas from each chapter. If you share our vision of a more livable San Francisco, join us!

1. Define livability. There are five fundamental aspects of great, livable cities: strong neighborhoods, walkability, a network of attractive public spaces, affordability, and regional connections.

2. Prioritize walking. The city should make walking a joy—safe, comfortable, *interesting.* The quality of sidewalks, parks, and plazas—life "between" build-

ings—is one of the ultimate signs of a healthy city. We recommend measures such as buffering pedestrians from traffic, reducing the speed of traffic on residential streets, and widening sidewalks.

3. Get Muni out of traffic. The best way to attract people to public transit is to make it the fastest way to get

around. That means getting transit out

of traffic. Imagine an express network of rapid transit buses and trains that took only 20 minutes to get all the way across town and came every five minutes! Muni should focus on a set



RESCUE MUN

of core routes and then upgrade these lines to rapid and frequent service, using transit priority techniques such as busonly lanes and bus-controlled traffic signals.

4. Improve our connections to the Bay

TRANSPORTATION And Dand USE GOALITION

Area. There are incredible opportunities all around the region to make cost-effective

investments in public transit. We should convert a lane in each direction on the Bay Bridge to a rapid bus corridor. We should bring Caltrain downtown and build the new Transbay Terminal. We should be planning for future increases in transit capacity across the Bay. Such changes will start to provide choices in mobility to everyone in the region, laying the ground for a future when it will actually be easy to get around the Bay Area.

5. Finish San Francisco's bike net-

work. In a compact city where most trips are under five miles, bicycling

could be a much more useful and popular mode of transportation. We just need safe places to ride and secure bicycle parking. San Francisco should build a comprehensive network of bicycle lanes, paths, and traffic-calmed bike-priority streets.

6. Accommodate the car gracefully. All over the world, cities have found ways to provide everyone with access to a car when they need one, without letting cars ruin neighborhoods. We must accommodate the car, but let's do it gracefully. That means managing the supply of parking to make sure that cars don't overwhelm the capacity of the streets. We can use the market to allocate spaces for cars, instead of giving away



BICYCLE COALITION

parking "free." And we can design streets so cars can move efficiently, while still creating a good environment for the pedestrian.

7. Promote car-sharing and taxis.

Many people need a car for just a few trips each week. But if they own a car,

they tend to use it far more than they have to, creating traffic congestion and occupying parking spaces. Car-sharing organizations and taxicabs make it possible for people to enjoy the benefits of car use without the burdens of car ownership. The beauty of these car "for hire" solutions is that when you're not actually using the car, you don't have to pay for it. Individuals save money, and fewer people compete for parking. The cab system should be expanded and City CarShare locations spread throughout the city.





8. Redesign our streets for livability. Streets have a dual role, as both infrastructure to move people, and as social space. Where current traffic engineering practice tries to do one thing—move vehicles quickly—livable street design pays attention to all modes of transportation and to the qual-

ity of urban space that the transportation system supports. By adopting street design techniques from great cities around the world, especially European ideas of traffic management, we can make transit faster, walking safer, and public life more pleasant.

9. Build more housing of all kinds. San

Francisco's housing shortage can be solved. First, we need to spend a lot more money on affordable housing. And second, we need to encourage the construction of much more



housing at all income levels. The city should up-zone around major transit nodes, re-zone industrial lands for housing, and conduct in-depth neighborhood planning efforts. The city's cultural diversity and livability hinge on our ability to build a pro-housing culture in San Francisco.

10. Plan for a future better than today.

In many ways, the city is gripped by pessimism, only able to imagine things getting worse. Official city plans predict that congestion will increase and mobility will decrease. We can do better. We can ensure that over time, the city



grows more healthy and livable. Comprehensive neighborhood planning can build consensus democratically about how to manage physical change. Transportation planning can help us make informed choices about what future we want.

11. Use creative funding options. Transportation is expensive, but there are many untapped resources that the city can turn to. These range from user fees to make sure cars pay their own way, to development impact fees, to joint development on top of public facilities. Investments in our transportation system will be repaid many times over in the increased economic competitiveness and livability of the city.

Chapter 1

Elements of a Livable City

WE ARE MOTIVATED BY A VISION OF CITY LIFE IN SAN

Francisco that pushes the boundaries of what is possible in America—a city that strives for social justice and ecological balance, a city that is capable of thriving in a global economy while nurturing neighborhoods with integrity, a city that welcomes immigrants from all over the world while maintaining a sense of community. Building on San Francisco's unique strengths, we can learn from the successes of the great cities of the world. This first chapter presents five basic elements of a livable city.

First, a livable city is composed of **strong neighborhoods.** These are the building blocks of the city, each one with its own special character. A healthy neighborhood has a commercial center that provides the amenities of city life close at hand, including shops, restaurants, laundromats, and cafes. Many neighborhood centers are lucky enough to have a park, public library, police station, or school in them as well.

Every San Franciscan should be within easy walking distance of a neighborhood shopping street, with all the amenities needed for a well-rounded daily life.

Second, a livable city is **walkable**, maximizing the number of trips which can be made on foot and making the walking experience a joy. Everyone, at some point in the day, is a pedestrian. The pedestrian deserves precedence over all other modes of transportation.

The quality of the pedestrian experience is intimately connected to the third element of a livable city: **a vital public realm**, consisting of places in which people can share space without having to share anything else. This idea is close to the heart of what a democracy is about. Cities foster social interaction that crosses boundaries of class and culture. These interactions, which provide the underpinnings for values of respect, compromise, and solidarity, take place in public institutions such as schools. They also take place in public spaces—in parks, plazas, and sidewalks.

We cannot dictate what kinds of interactions people have. But we can make sure the city is welcoming to spontaneous exchanges, at least inviting people to spend time in public. Parks and plazas should be gorgeous. So should streets, which comprise the largest piece of the city's open space network.

The quality of the public realm—which is one and the same with the pedestrian realm—is the ultimate test of a city. A livable city is one which promotes sociability.

Fourth, a livable city is **affordable**. San Francisco has always been a haven for people wanting to start a new life and people willing to experiment. Whether you're talking about immigrants from the third world seeking economic opportunity, gay kids seeking cultural tolerance, or artists attracted by the magic of city life, the only way the city can remain a welcoming place is if people can afford to live here. The high cost of housing—and its simple unavailability—threaten this fundamental dimension of city life.

Healthy Community Design

There is a direct connection between community design and public health. Simply put, in places where it's hard to walk, people exercise less and are less physically healthy. Public health officials are increasingly recognizing this connection.

Walking as a normal part of daily life—the way that societies all around the world maintain healthy lifestyles—is one of the great joys of cities. Suburbs are so spread out that few trips are within walking distance. You see people walking the dog or walking for exercise, but you do not see people walking to the store or walking to a friend's house—real destinations are simply too far away. It's no surprise, given the prevalence of suburban land use patterns, that in the past 50 years, lack of exercise has become one of the nation's leading health problems.

There is a long history to the relationship between the planning profession and the public health profession. The profession of city planning grew out of the public health profession at the end of the 19th century, as doctors and engineers concerned about community sanitation developed a set of tools to manage urban growth. The 1926 U.S. Supreme Court case which established the legality of zoning, *Village of Euclid v. Ambler Realty Company*, justified the regulation of private development largely in terms of protecting public health. Today, the connections remain clear, as our society becomes more aware of the way that auto-dependency leads to air pollution and lack of exercise.

The Director of the Center for Disease Control's National



Center for Environmental Health says, "It is dishonest to tell our citizens to walk, jog, or bicycle when there is no safe or welcoming place to pursue these life-saving activities."¹ The CDC cites data that shows a rise in adult obesity in the U.S. from 47% in 1976 to 61% in 1999.² Meanwhile, the prevalence of overweight children and adolescents doubled in the same period.

Respiratory disease due to air pollution; heart disease, depression, and the whole set of health problems that correlate with obesity; and deaths from traffic accidents—all of these problems can be helped by a focus on community design, to make it easier for people to get out of their cars and walk.

TLC is excited to deepen the partnership between the alternative transportation movement and the public health community.

2. See www.cdc.gov/nchs/products/pubs/pubd/hestats/obese/obse99.htm.

Richard Jackson and Chris Kochtitzky, "Creating A Healthy Environment: The Impact of the Built Environment on Public Health," available from the Sprawlwatch web site, www.sprawlwatch.org.

If we want our children and grandchildren to be able to live here, we have to place affordability high up on the livability agenda. That means building a lot more housing for all income levels. Fortunately, we have the room. And welldesigned housing is a wonderful tool to strengthen neighborhoods.

TLC's work will make San Francisco affordable in two main ways: first, it will make housing itself less expensive, and second, it will make it possible, for people who wish it, to not own a car.

Finally, a livable city **connects people to the entire region.** Getting to live in a healthy neighborhood is only part of the story of a livable city. If that was all we had, it would be a small town—a perfectly fine thing, but something altogether different from a city. Living in San Francisco, we have access to a much broader world than can be fit into one neighborhood: the jobs, cultural events, schools, social groups, and recreational opportunities that take place in the rest of the city and the broader Bay Area.

Every San Franciscan should be able to get easily to any other part of the city and the broader region. We can have the best of both worlds: living in a neighborhood, with many of the conveniences of a small town, while at the same time living in a world metropolis that gives us a huge array of options for work and play.

A Walkable City

THE EXPERIENCE OF WALKING IS AT THE HEART OF

what makes a good city. Everyone is a pedestrian. Changes that make San Francisco more walkable do more than just improve mobility; they make the city a joy to be a part of.

Pedestrian improvements also make the city safer, especially for children and seniors. But even for the young and able-bodied, it will have a dramatic effect on the quality of life. Our goals are to maximize the number of trips that are within walking distance, and to give people a greater sense of safety and comfort when they walk. TLC seeks to strengthen Walk San Francisco's voice on these goals.

Walking Distance

If people are going to walk as a regular part of their daily life—to work, to the grocery store, to the movies—these destinations have to be relatively close. Most people are only willing to walk between a quarter and a half mile as a matter of course. For this reason, there is an intimate **connection between walkability and density:** high residential densities are the only way to ensure that there are plenty of people to support local stores and frequent transit service. Compact, high-density neighborhoods gather people together in sufficient numbers that local stores can find customers and bus lines can find passengers within easy walking distance.



When people can get where they want to be without the need to travel far distances, we say they have "access by proximity."

For these reasons, more density means greater quality of life. New housing, if well designed and well located, could strengthen local stores and attract new ones, while allowing Muni to increase service.

Pedestrian Safety and Comfort

First of all, pedestrians need **safety from traffic.** This can be accomplished through extra-wide sidewalks, as on Market Street. Or it can be accomplished with buffers—objects in between the pedestrians and the moving cars. If there must be towaway lanes that remove the buffer of parked cars, some other buffer must protect people on the sidewalk. Safety from traffic at intersections is also critical. If streets are too wide, or if turning cars are encroaching on the crosswalk, the walking experience starts to feel hazardous and uncomfortable. In general, the faster the cars are moving, the more a buffer is needed.

Second, pedestrians need to feel safe from crime. This sense of safety on the streets, which is particularly important at night and for women, is related to the overall health of our society, but there is an important urban design component. Improved safety comes from what Jane Jacobs called **"eyes on the street"**—from other people who are around, paying attention. The most dangerous places are deserted: highway underpasses, parking lots, parks, empty stretches of road. The building blocks of a livable city—high densities and mixed land uses—tend to mitigate the biggest safety concerns simply by ensuring that there are people around to provide a sense of safety. Buildings with store windows and front doors that face the sidewalk help. Good sidewalk lighting is also important.

Third, having interesting things to look at makes for a better walking experience. **Good urban buildings face the**

street with active uses, not parking. San Francisco is lucky in this regard: much of the city was built before the car, and it was built over time, with buildings constructed by thousands of different people in hundreds of styles. These provide extraordinary variety and visual interest, but there are still problems with the visual streetscape. The tendency for modern buildings to put parking on the first floor is deadly for streets. The curb cuts, garage door openings, and blank walls all create an inhospitable walking environment. This is one of many reasons why new buildings should be constructed without much parking; if parking is built, at a minimum it should be hidden from the street.

We should also note that many of the things that make for a good walking environment make for a good *sitting* environment. Comfort, security, and visual interest help make the public realm a living place—so that people will spend time out of doors, in public space, enjoying city life together.¹

Density and Sustainability

Cities are an inherently efficient way for people to live. Instead of spreading all over the land, cities build upwards, conserving land. "Smart growth environmentalists"—including those of us at TLC—believe that stopping sprawl is inherently linked to increasing densities within existing built-up areas.

And it turns out that there are a lot more benefits to density than simply minimizing the footprint of built-up areas. When density is designed correctly to mix activities into compact centers, it enables people to walk and it enables public transit to work.

Comparing cities internationally, there is a strong correlation between density and the type of transportation people use. As densities increase, more people are able to get to work by transit, walking, and bicycling.



Walkability Recommendations

- Gradually add new development to create mixed use, walkable neighborhoods.
- Reduce traffic speeds on dangerous streets to allow for efficient flow of vehicles while reducing the deadliness of pedestrian/car accidents.
- Get rid of tow-away lanes, so that cars stay on the streets, buffering pedestrians from traffic.
- Widen sidewalks almost everywhere. Make this an ongoing part of the city's public works budget.²
- At intersections, make the sidewalk extra-wide (what's known as a "sidewalk bulb") to shorten the crossing distance across the street.
- Eliminate traffic movements that are especially dangerous for pedestrians such as double turning lanes (which tell cars not to stop) and right turns on red (which kill pedestrians while they are in crosswalks).
- Plant street trees where they are missing, and get a lot better at maintaining them.
- Strictly enforce the law against parking cars on sidewalks, to make sure there is a clear passage for pedestrians.
- Turn one-way streets (which encourage drivers to speed) back into two-way streets.

Chapter 3 Fast and Frequent Local Transit

SAN FRANCISCO'S GREAT PUBLIC TRANSIT SYSTEM IS

one of the reasons for our success as a city. Our Transit-First policy, first introduced in 1973, is cited around the world as one of the best.

Between 1970 and 1990, San Francisco added 57,000 new jobs to the downtown core.³ The only way this was possible is that fully 66% of the people who work in the greater downtown get to work without driving alone.⁴ Our success with downtown development should be expanded throughout the city.

The Transit-First policy was revised and expanded in 1999 to include all forms of alternative transportation. It remains an unfinished project, a principle that can guide change in the city over time.

For local transit to work better, it has to be **faster**. For most people, the thing they care most about is overall trip time, from door-to-door. The best way to attract people to transit is to make it faster.

That means doing everything possible to **get Muni out of traffic.** People take Muni or BART to downtown because it runs underground, on reliable schedules, stopping only to let people on or off. TLC's agenda for Muni is to gradually eliminate all sources of delay. There are many techniques that can be used to speed up transit; some are expensive, and some are cheap. The techniques comprise a "rapid transit toolbox."

Designate Core Lines for Rapid Transit

Currently, Muni provides good coverage, meaning that when you look at a Muni map, all parts of the city have a bus line or a rail line fairly close. The problem is that many of those lines don't run very often.

Muni needs to focus on core routes, and make the service there frequent and fast. Each of these lines should be comprehensively upgraded (see Rapid Transit Toolbox sidebar). Some core lines will have rail; others will be dedicated rapid busways; others will run on streets with cars, on which the bus gets priority at the traffic lights. Most routes will need a combination of treatments.

Buses on these core routes will come every five minutes. Riders will be able to walk to any of the rapid transit routes without having to check a schedule. These routes will run all night.

A Comprehensive Network that Serves Neighborhoods

Historically, the public transit system evolved as a system of lines feeding into downtown. This is often called a "hub and spoke" model. Because so many lines feed downtown, most people are able to get to work without a car. This is what enables San Francisco to have such a high density, walkable downtown. BART was built to continue the hub and spoke model, bringing workers from the East Bay into downtown San Francisco.

Transit armature



Transit for downtown commuters is extremely important, and in need of serious reinvestment. But since the mid-1970s, there has been a partial move to add Muni service between neighborhoods. This represents one of the most important potential markets for transit trips, if Muni finds a way to serve it better. The idea is to establish a "grid" of

Rapid Transit Toolbox

The key to making transit work is to make sure the transit vehicles don't get stuck in traffic. This goes for buses as well as rail cars. We have many techniques at our disposal to accomplish this, depending on how much money is available, how dense the land uses are, and how wide the street is.

Subways: Running trains underground is absolutely the way to ensure the fastest travel time. There is no waiting at street lights, no crossing intersections. However, subways are extremely expensive. They are only worthwhile in the most heavily traveled corridors and places where high-intensity development is going to happen.

Dedicated right-of-way: When transit is running on surface streets, the ideal scenario is for it to have its own lane, protected from cars. The city has "diamond lanes" for transit in some places already, but other vehicles still block the lanes. It may be possible to make them work through focused law enforcement. Techniques of physical separation are more promising, like creating raised curbs to protect the right of way for transit (partially implemented on Judah Street). On streets such as Market, with a high volume of both buses and light rail vehicles, this step is essential. In other places, "counter-flow" lanes, which have buses running in a diamond lane against the flow of car traffic, would work well and keep cars from invading the transit-only lane.¹

Signal preemption: Allow Muni vehicles to control stop lights so they get through intersections more quickly.



Stop spacing: On many bus routes, Muni has a bus stop on almost every block. This creates enormous delays. By spacing stops further apart, overall trip time can be cut dramatically. Although some people will have to walk an extra fraction of a block, the overall speed of the trip will be much faster.² **Bus bulbs:** Bus bulbs are extra-wide sidewalks at bus stops. They allow buses to stay in the traffic lane when letting people on and off. This saves buses time because they don't have to fight with traffic to merge back into the moving lane. Bus bulbs also give pedestrians more room.

Queue jump lanes: These are a technique for allowing buses to jump ahead of cars at a light. They work as right turn-only lanes for cars, but buses are allowed to use them and then go straight,



cutting to the front of the line. This technique would work on a street like Mission, where it won't be possible to give the buses dedicated right of way, but the volume of buses is still heavy. **Low floor vehicles:** Buses and trains lose a lot of time from people walking up the steps to get on. Low floor vehicles allow everyone to walk straight across. They also allow people in wheelchairs and walkers to board without special procedures. **Proof of payment:** Boarding can also be sped up by having people buy their tickets in advance, so they don't have to pay as they get on. Underground stations accomplish this by having people buy tickets to enter the station. Surface stations can accomplish the same thing by having people buy tickets, board through all doors, and then instituting spot-checks to make sure people have paid.



Removal of stop signs: Stop signs are popular because they slow down cars, but they are hard on Muni. Because buses and trains are so heavy, every stop causes a disruption, lurching, and delay. It would be much better for the city to adopt more sophisticated traffic-calming measures, that slow cars but allow transit to move at a steady pace.

- Zurich, Switzerland has been a leader in dedicating space on surface streets to buses and trams in the service of a comprehensive Transit-First policy. See Robert Cerrero's chapter on Zurich in *The Transit Metropolis*, Island Press, 1998.
- LA Metro's test of a rapid bus system, which consisted of more frequent service, visually attractive buses and signs, and less frequent stops, resulted in immediate ridership increases of 33%. Source: *Final Report, Los Angeles Metro Rapid Demonstration Program,* July 2001.

transit lines that cross each other at regular intervals. This allows people to make their way between neighborhoods with, at most, one transfer. The rail lines are the backbone of this grid, crossed at intervals by bus lines.

It's a sensible approach, but for it to work, Muni must be able to provide service that is reliable enough for timed transfers. This can only happen if Muni gets more dedicated right of way and other transit-priority treatments.

TLC will work with Rescue Muni and the Municipal Transportation Agency to build the political support to make these changes happen as soon as possible. It will take political courage to replace car-traffic lanes with transit-only lanes. But there is no other practical way to improve transit service. Eliminating traffic lanes, even if it causes a little bit of local congestion, is preferable to the current trend of worse, long-term, citywide congestion. We know from local experience, international experience, and common sense that when transit is faster, people prefer it to driving.

Local Transit Recommendations

- Concentrate service upgrades on core routes using the Rapid Transit Toolbox.
- Move towards a transit grid that serves the neighborhood-to-neighborhood market.
- Give Muni dedicated right of way on city streets.

Chapter 4 Effective Regional Transit

BEING PART OF A METROPOLITAN REGION LIKE THE

Bay Area, we benefit from a diversity of people, jobs, cultural institutions, and stores. But in order to take advantage of these opportunities, we have to be able to get there, and that's often hard today.

Most of the Bay Area is suburban, which means that most people don't have a choice but to drive. The suburbs are built at such low densities that traditional transit doesn't work very well. Instead of coherent neighborhoods with retail centers, there are housing tracts and shopping malls. Instead of walkable downtowns, there are low rise office parks. While there are some "city centers" in the suburbs—often remnants of towns that were built before the age of the automobile they are surrounded by a sea of low density sprawl. But **over time, these patterns can change.**

In the short run, we need to provide ways for people to get around given the current reality of low densities. In the long run, we can change land use patterns in the suburbs to have higher densities and more mixed uses.⁵ This doesn't mean turning every place into downtown San Francisco; it means finding appropriate ways to introduce elements of urbanity, often modeled more on small towns than on large cities. In particular, the region should try to promote redevelopment around major transit centers. It's in our interest to support better transit throughout the Bay Area. TLC supports the Bay Area Transportation and Land Use Coalition and its counterparts throughout the region as we work together to create a vision of coherent, walkable communities linked by transit.

The Transbay Terminal

There are plans to build a new Transbay Terminal—the regional hub of bus operators—at First and Mission Streets in downtown San Francisco. Coupled with the extension of Caltrain into the new Terminal, this is perhaps the most important transportation project in the region. If done correctly, this project could create a magnificent urban space that expresses the dignity of public transit and city life, **our own Grand Central Station**.

The neighborhood around the Terminal is designated in the city's General Plan as a primary location for new high-rise office development. The Redevelopment Agency is working on a comprehensive neighborhood plan to encourage new office and housing development. This adds up to an extraordinary opportunity to link the region's many transit services. It could be a textbook model of transit-oriented development.

Caltrain

Caltrain, the commuter rail service that connects San Francisco to the Peninsula, may be one of the most under-appreciated assets we have. Plans now call for service to be increased from 80 trains per day to 220. Such easy accessibility will change the way the South Bay and San Francisco relate to each other. Caltrain needs to take full advantage of this opportunity:



- Electrification, which allows for fast acceleration and deceleration.
- **Extend underground into the Transbay Terminal**, allowing people from the Peninsula and South Bay to get into the heart of the city without transferring.
- Comprehensive station planning both to locate stations where they are most needed and to make it easier to access the stations.
- The addition of express service, which could cut time between San Francisco and San Jose from 90 minutes to fewer than 60.
- Upgrading stations to ensure faster boarding, ideally with high platforms and ticket machines.

After these upgrades are completed, Caltrain is positioned to become **the Bay Area segment of the state's High Speed**

Regional Planning

The Metropolitan Transportation Commission (MTC) funds regional transportation in the Bay Area, allocating all regional, state, and federal money to specific projects. The biannual Regional Transportation Plan allocates \$81.6 *billion* over the next 25 years.

By national standards, MTC is considered quite progressive. The agency has been a strong supporter of public transit in many cases. However, MTC is under enormous political pressure to allocate its funding according to the population in each county, allowing every county to spend the money on its own priorities. This makes sense politically, but it has problems from a planning perspective. We need to spend regional transportation dollars more carefully, with an eye towards a) cost effectiveness; and b) reinforcing center-oriented growth instead of sprawl.

TLC's regional transportation agenda is to work with MTC to tie regional funding more strongly to sound planning objectives. We urge MTC to use something like the following four-step process for allocating regional funds to transportation:

1. Map areas of the region that are high density "centers" or are already zoned to become such centers. These are the only locations that should receive regional transportation dollars.

2. Develop performance criteria to prioritize projects. These performance criteria should be measurable and objective. For example: the density of the surrounding area; transit riders per dollar of investment; or projected mode-split to and from a transit station.

3. Develop a plan for an integrated regional transportation **network.** The goal is to develop rapid transit connections between all centers in the region. Instead of each county proposing projects on its own, MTC would help frame a more coherent strategy that could identify gaps and opportunities from a regional perspective.

4. Direct regional money to projects with the best performance or projects that complete the regional network.

Projects that are in low-density areas, and are peripheral to the core network should not be funded with regional money. If a city wants to spend its own locally generated money on infrastructure in other places, the city is free to do so. There is a finite amount of regional funding, and it needs to be spent where it will have the most impact.

To get more involved in regional transportation issues, check out the Bay Area Transportation and Land Use Coalition at www.transcoalition.org. **Rail network.** This was the way high speed rail was built in Europe: instead of creating a new technology from scratch, European countries just kept making their rail lines faster and faster until one day, they called them "high speed." Caltrain, if we continue to upgrade it, will attain that same status.

BART

BART is the region's most popular and expansive transit provider. Unfortunately, it is approaching capacity in the corridor between the East Bay and San Francisco during the commute hours. TLC supports a renewed emphasis on the basic BART system, before more expansions. BART should redesign train interiors to allow more people on, make station improvements to allow people to clear the platforms more quickly, install more fare gates to cut down on delays at peak times, and put roofs over escalators so they aren't chronically broken. BART should invest in a new train control system that permits more trains on the existing tracks.

BART's next major investment should not be in new extensions, but in express service on existing routes. Sections of extra tracks so that express trains can bypass local trains would reduce travel time.

If BART is to expand down the Peninsula, one option is to take over Caltrain's service, upgrading Caltrain to BART levels of service, and integrating it seamlessly where BART intersects with Caltrain at Millbrae and in downtown San Francisco.

BART needs to focus on the areas around its stations. It was built in the 1960s on the promise that it would help con-

trol sprawl by attracting development near the stations. This has barely happened outside of downtown San Francisco. Virtually every BART station should be viewed as a potential site for a transit village.

BART also needs to improve **access to its stations.** In the suburbs, the parking lots are full early in the morning, so BART is turning people away. In the cities, the BART stations are often unappealing. BART should spend money on station redesigns. It should make sure that there are feeder buses timed with the trains to bring people to and from the stations. It should charge for parking, so that urban riders aren't paying for suburban parking lots. This will encourage car-pooling and fund parking garages. It should establish City CarShare pods at stations. And of course every BART station should have plenty of bicycle parking.

The Express Bus Network

The most efficient, least expensive way to add transit capacity is with express buses. This idea is taking off all over the world. It involves deploying buses in ways that **mimic rail**—dedicated right of way, comfortable seats, low-floor vehicles, proof of payment—but using rubber tires on pavement. The beauty of this model is that in congested corridors, the buses can be given their own lanes to run in, and then they can break away and provide service to communities that don't have the densities (or the good luck) to have rail.

First and foremost, the Metropolitan Transportation Commission (MTC) needs to fund a comprehensive express bus network.



Second, the region needs to provide an interconnected network of express bus and HOV lanes. This includes **converting a traffic lane in each direction on the Bay Bridge** to this higher and better use. The Bay Bridge is full, and BART is full. Our only answer in the short run is express buses. This lane on the Bay Bridge would, incidentally, have enormous benefits for ridesharing, which already represents 13% of commuters into San Francisco. It would also reduce traffic on San Francisco's streets.

Coordination

The Bay Area has more than two dozen transit providers. All of them need more money. All of them need to provide better and expanded service. And we need to find some way of coordinating them, so that it's possible for riders to cross service boundaries without awkward transfers. Either we need to consolidate providers or we need contracts between existing operators to ensure **seamless service** that gets people where they need to go.

Regional Transit Recommendations

- Reinforce historic town centers throughout the region as the best places for new development and new transportation investments.
- Introduce more urbane town centers into the suburbs over time.
- Adopt a regional Transit-First policy which ends all highway expansion projects and dedicates the region to growth through transit.
- Build a new Transbay Terminal that will serve as the hub of the region's transit network and be an international model of transit-oriented development.
- Extend Caltrain into the Transbay Terminal, and eventually across the Bay into Oakland. Upgrade it into the Bay Area's segment of the California High Speed Rail network.
- Build transit villages around BART stations.
- Create a comprehensive regional express bus network, supported by a network of express bus and high occupancy vehicle (HOV) lanes. This means converting some highway lanes to HOV status, most importantly a lane in each direction on the Bay Bridge.

Chapter 5

Safe and Comfortable Bicycling

BICYCLING IS THE MOST EFFICIENT FORM OF TRANS-

portation ever invented, in terms of the energy burned to cover a given distance. Bikes are very compatible with cities. They do not pollute, they do not cause noise, and they don't take up a lot of space. All they require is a safe space for people to ride and park. And the gentle exercise that bicycle commuters get twice each day is precisely the kind of workout that health professionals recommend for a longer and healthier life.

The same conditions that attract more bicyclists slower traffic, fewer cars—will improve safety for pedestrians, and reduce the high number of car-related injuries and fatalities that this city suffers. As bicycling becomes easier, the market for bike deliveries may expand. And finally, like all transit improvement, if more people bicycle, fewer people will be driving on the roads.

For all of these reasons, TLC supports the San Francisco Bicycle Coalition in its work to make bicycling a core part of our urban transportation system. TLC's bicycle agenda has three components:

1. **Build the bike network.** A citywide network of safe bike lanes and paths that link every neighborhood and every major destination could triple the number of people who can bike on a practical basis. Every street on the network should provide a clearly designated (but not necessarily exclusive) right of way for bicycle traffic. Bikes would either be in separate lanes, or else cars would be going slow enough that they can safely share the street with bikes. Anyone, from the age of eight to 80, should feel safe and comfortable riding their bike to any neighborhood within San Francisco.

2. Provide secure **bicycle parking** wherever needed.

• Sidewalk bike racks should be omnipresent.

• Employee bicycle parking, protected from the elements, at or very close to the workplace, should be guaranteed. New buildings already require indoor bike parking. Existing law requires bike parking in all parking garages that store ten or ore cars; this should be strictly enforced.

• Every major transit station should have secure



bicycle parking.⁶ Increasing bicycling to transit is one of the easiest ways to increase transit ridership.

- At home, residents should enjoy buildings designed with attention paid to the need for bicycle parking. New rental apartments should provide nooks for bikes.
- 3. **Promote bicycling** as fun, safe, healthy, and easy. Fully 75% of the respondents to a Bay Area RIDES survey said they don't bike because they "didn't even consider it." Another prominent reason people didn't bike was because they "had to get in better shape first." These results indicate that in San Francisco, where many trips are just a few miles over mostly level ground, promotion might be very effective.

According to the U.S. Census, bicycling in San Francisco doubled from 1990 to 2000. TLC calls on the city to increase the percentage of trips from today's three to four percent of work trips and five percent of all trips to 10% of work trips and 20% of all trips. This could easily be done in San Francisco, providing a model to other cities in the country about how to promote this gentle form of transportation.

Bicycling Recommendations

- Complete the city's comprehensive bicycle network.
- Provide parking for bicycles, which require just a fraction of the space needed to park cars.
- Promote bicycling so people realize it's an option.

Chapter 6 Living Gracefully with the Car

CARS ARE A WONDERFUL CONVENIENCE. THEY ALLOW

people to have point-to-point mobility, without having to wait for anyone else. They get places that are hard to get to any other way. TLC recognizes the usefulness of the automobile.

The problem is that if too many people use cars and own cars, congestion and parking problems frustrate everybody, and even the alternatives to driving are impaired by too many cars. That's the case in San Francisco today; cars are out of control.

- Many of our public spaces are dominated by the automobile. Sidewalks are often too noisy for sidewalk cafes, and unpleasant to stroll down.
- We spend a large amount of public money on the infrastructure that supports cars, to the detriment of other social priorities.
- Our streets are too dangerous for kids to walk to school or old folks to walk to the park—necessitating a whole system of chauffeurs to get non-drivers around town.
- Car owners are forced to spend far too much of their personal money on transportation, to the detriment of other personal priorities.
- Cars take up a lot of space in a city that could be put to other use. Instead of small shops on the ground floor of



buildings—the traditional urban pattern—streets end up being lined with blank walls and garage doors.

None of this has to happen. It is possible to accommodate the automobile gracefully. We can enjoy the benefits of the technology without letting the technology crowd out other values. This section discusses some of the strategies we have at our disposal to make peace with the automobile.

If the ideas in this report are followed, congestion will decrease and so will traffic accidents. Traffic will move at a reliable and even pace. The streets will be safer, everyone's quality of life will be better, and it will be easier to get where you need to be, whether you drive, take the bus, ride a bike, or walk.

Congestion

One of the most visible problems with the transportation system is congestion. Time spent stuck in traffic keeps us from our families and wastes large chunks of our work days. For many people, congestion is the main, or only, problem with our transportation system.

There are fundamentally two ways to reduce congestion: (1) widen the roads or (2) reduce the number of cars. In San Francisco, we've already widened the roads. Hundreds of blocks of sidewalks have been narrowed, taking precious play space from kids and damaging urban life.⁷ We can't widen roads anymore. So here, we have to choose option number two: reduce the number of cars. That requires improving the alternatives to cars, which is what most of this document is about, and managing parking better, which is what this chapter is about.

From one perspective, congestion can be seen as simply an under-pricing of road space. Congestion pricing techniques, which charge higher tolls to drive on roadways at times of day that are most crowded, give people price signals to change their trips to a different time of day, or to switch to public transit. The Bay Bridge and Golden Gate Bridge are the obvious places to try congestion pricing. In the future, San Francisco could experiment with other congestion pricing tools, perhaps modeled on the city of London's plan to charge tolls whenever cars enter the most crowded parts of the city.⁸



Ultimately, we may have to accept some level of congestion as an inherent part of city life. But we need to be smart about how we manage it. We need to make sure that people have options beyond getting into a car and sitting in traffic. A balanced approach to transportation is our best hope for getting people out of traffic.

Parking

It's hard to park in San Francisco—at least in some neighborhoods, and at certain times. But the interesting thing is this: in pretty much every good city in the world, the same thing is true. Places that are friendly to pedestrians, with a lot happening on the street, are hard to park in. It may be easy to park in Houston, but you have to drive several miles and walk across a long parking lot just to get a quart of milk.

San Francisco does need to accommodate the automo-



bile, and part of this means having appropriately-located parking facilities. But too much parking is just as bad as too little. We need to find the right balance.

Today the city has some misdirected policies that exaggerate the true "demand" for parking. The worst offenders are minimum parking requirements and situations in which people receive "free" parking. There is no such thing as truly "free" parking, just subsidies that hide the cost of parking from the user. When you go to a store and don't pay for parking, what that means is that the cost of the parking is bundled into the prices you pay for the things you buy. When you work in an office building and don't pay for the parking that means someone else—your employer or the building owner—is paying for it.

The problem with this so-called "free" parking is that it doesn't allow people to really prioritize how much they value the parking, how much they are willing to pay for it. It's as if the price of long distance phone service were free in an apartment building (meaning that the cost of the phone calls would be bundled into monthly rent): imagine how much the "demand" for long distance phone calls would go up! Free parking exaggerates how much people really value parking.⁹

Employees should be offered a choice: either take the free parking or take the cash equivalent.¹⁰ The same thing is true with housing: instead of bundling the parking space into the rent (or the sales price), **allow people to make the choice about whether or not they want to pay the additional cost to have a parking space.**

In new residential development, developers should not be required to provide parking. Instead of parking minimums, there should be parking maximums. Developers would still be allowed to build parking, but they would not be required to.

Under current regulations, if you have a garage, you are not allowed to convert it for other purposes. The regulations are designed to make it easier for other people who want to park on the street to find a parking space. The city should change this right away: if you want to **convert your garage to a secondary housing unit, or to a storefront,** we should be encouraging you, not putting roadblocks in the way.

The city does need to provide some parking. But we need to be careful about where we locate it. The absolute worst place is in the downtown core. This is where all the public transit converges, where the streets are extremely crowded, and where too many cars clog up everything.

Safe Routes to Schools

Not so long ago, the vast majority of children were able to get themselves to school on foot or on bicycle. Children could wander around their own neighborhoods, gradually expanding the area of autonomy that they could claim as their own domain. But today, according to the U.S. Centers for Disease Control and Prevention, less than 10% of children walk or bike to school in the United States.

This means parents are serving as chauffeurs, driving their kids to every activity, and adding significantly to the morning commute traffic.

The reasons are complex. They include parents' fears about violence and abductions. But the sense of danger from cars is one of the major factors. Paradoxically, the more that traffic increases, the more parents decide it is unsafe to let their children walk, which means even more cars are added to the streets.

One of the top priorities for TLC is to establish a network of safe routes for kids to walk and bike to schools in San Francisco. The only way to give kids back their right to independent mobility—and free parents from the constant need to shuttle their kids between activities—is to create routes that are safe from the dangers of fast-moving traffic. A combination of education, enforcement of speed limits, and traffic-calming along key streets will make a big difference.

For more information about Safe Routes to Schools efforts in California, see the Surface Transportation Policy Project web site at www.transact.org.

Parking and Density

Housing units per acre

The parts of San Francisco that have the highest residential densities are the easiest places to walk. Stores are close by. Transit can be frequent. For these reasons, people own fewer cars in the higher-density neighborhoods, even where incomes are high. Car ownership rates are lowest where densities are highest, for the simple reason that that's where people have the choice not to drive. TLC's agenda is to carefully increase residential densities over time, so that more people will have the option to walk and take transit.

Cars per household

Less than 1 car per household

From 1 to 1.5 cars per household

Greater than 1.5 cars per household





The city's General Plan calls for parking that serves the downtown to be located at the fringes of downtown, in what's called the "downtown parking belt." Parking downtown should be primarily for short-term shoppers and, on the streets, for delivery trucks. In general, parking should be as far away from the center as possible; the best place is in park-and-rides that allow people in the suburbs to drive from their house, and then transfer to transit as they make their way into the city. Our goal should be to **reduce parking downtown over time.**

In the neighborhoods, a lot of the conflicts over parking arise from competition for curb spaces. But this can be solved by limiting the number of permits to the number of cars that can fit on the curb in that neighborhood. Everybody who holds a permit would then be guaranteed a parking space, and the permits would apply 24 hours a day. The city should sell those permits at market rate, a price that would vary from neighborhood to neighborhood. In some neighborhoods, it might be free; in others, parking would sell for hundreds of dollars a month. Permits for compact cars would be cheaper than permits for trucks, because compact cars take up less space. The city's fees could be plowed back into the neighborhood, to make physical improvements.

One of the best places to provide parking is on streets. It serves as a buffer between the sidewalk and moving traffic.

Finally, we need to keep track of the larger transportation context for parking: the best way to solve the parking crunch is to provide alternatives.

Automobile Recommendations

- Use congestion pricing to manage traffic on the bridges and highways leading into the city.
- Offer employees parking cash-out so they can choose between free parking, a transit pass, or the cash equivalent.
- Allow people to use their garages for any legal purpose they want to, including in-law apartments.
- Reduce parking downtown, where the streets are least able to handle high volumes of traffic.
- Prioritize the downtown parking supply for shoppers and delivery trucks.
- Use residential parking permits as a tool to match the number of cars to the supply of curb space.
- Provide people with options so no one is forced to drive for lack of good alternatives.
- With new development, set maximum parking requirements instead of minimums.
- Require active first floor uses for multi-story parking garages.

Chapter 7 Shared Cars

TLC'S WORK WILL MAKE IT EASIER FOR MANY PEOPLE

to live without a car. But there will still be times when we need to drive. One of the most urbane and efficient ways to make use of cars is to support systems that allow multiple people to share them. That way, people get the benefits of a car but the space they take up in the city is reduced. These fall into three categories: ridesharing, car-sharing, and taxis.

Ridesharing

Filling the empty seats in a car is a great way to increase the efficiency of a highway. The Bay Bridge has one of the highest rates of ridesharing in the country (17% during the morning commute) because the bridge is crowded and because we have set aside a High Occupancy Vehicle (HOV) lane for car pools. The system is working. All that's left is to complete the network of HOV lanes throughout the region. To learn more about ridesharing, check out RIDES for Bay Area Commuters at www.rides.org.

Car-Sharing

Pioneered by the Green movement in Western Europe, carsharing has emerged as one of the most exciting ideas in alternative transportation. Instead of owning your own car, you can reserve one on-line, whenever you want, walk to a nearby parking lot, and drive off. The idea is to approximate the convenience of private car ownership, but without the costs and hassle.

City CarShare opened in San Francisco in the spring of 2001. It has cars all over the city, and has already expanded to the East Bay.

From TLC's perspective, there are two core benefits to car-sharing:

1. It reduces the number of cars that have to be parked. Each car serves more than twenty people. For this reason, car-sharing makes it possible for the city to reduce parking and convert it to other, more important uses.

2. It makes the costs of driving variable. With private car ownership, almost all costs are fixed: the insurance, car



payments, and the parking space. People tend to think the only costs of driving are gas and parking. In fact, people in the United States spend an average of \$551 per month on their cars.¹¹ And the fixed costs of *owning* a car are three times the incremental costs of *using* a car. Car-sharing gets people out from under these fixed costs. They pay based on how much they drive. Over time, this encourages people to drive less.

Car-sharing is a practical step away from car dependency.

It lets people use a car when they need one, but makes it easy to not have to own one. As we make the public transit system better and better, the times when people need a car will become more rare. Car-sharing prefigures the sustainable way to use cars. Join at www.citycarshare.org.

Taxis

Taxis are essential for the elderly, disabled people who can't drive, and tourists. They let people drink and get home safely late at night. And they make it easier for people to live without a car, knowing that for quick point-to-point trips within the city they can get a cab whenever they need one.

Taxis need to be viewed as an integral part of the city's transportation system. If we can expand the market for cabs—build up the customer base and add more cab serv-ice—then we create a win-win situation that is good for drivers, good for cab companies, and good for customers.

A few key reforms in San Francisco would go a long way to increasing reliability:

- Collect information about performance of the system how quickly do cabs come when called, and how easy it is to hail one on the street.
- De-politicize the process for establishing the number of cabs. Base it on objective criteria relating to the ability of the current number to meet demand.
- Reward firms that do a good job by allowing them to grow (which means sign up more drivers with a permit to drive); do not allow poor-performing firms to grow.¹²
- Issue peak-period taxi permits so the supply of cabs can expand to meet demand as needed.

Considering the horses which they replaced, cars should have been a great improvement for cities. One car could do the work of ten horses, allowing stables to be converted to other uses, and getting the horse manure off the city streets. We have yet to redeem the promise of this invention. Managing cars in the proper way—viewing them as tools that need to reinforce urban livability rather than giving away our city to serve the needs of cars—is at the heart of making San Francisco more livable.

Shared Car Recommendations

- Promote car-sharing as the way to gain access to a car when needed, while imposing the least impacts on the rest of society.
- Promote taxis as an integral part of the urban transportation system.

Reclaim the Streets

STREETS ARE THE MOST IMPORTANT OPEN SPACE NET-

work in the city. They take up 16% of the total land area of the city—four times as much land as Golden Gate Park. We spend far more time in the "open space" of our streets than in any park. The quality of our lives, therefore, is connected to the quality of our streets. This section describes how we can balance the need for mobility and the need for quality public space.

In the U.S., the vast majority of our efforts have gone into making our streets efficient places to drive through, emphasizing speed for automobiles. Even in San Francisco, in order to provide more room for cars, we have widened streets and narrowed sidewalks. We've rounded the corners at intersections so drivers can speed through turns. We've cut down trees that obstruct drivers' view of traffic. Great minds have worked to develop traffic signals that will allow cars to not stop.

We all know the result—we've turned our streets into traffic sewers: noisy and polluted places that serve an infrastructure purpose, but do not function well as public space. It's not comfortable to go for a stroll or sit at a sidewalk cafe. A pedestrian is killed by a car every ten days. Children can't walk anywhere by themselves. Senior citizens are trapped, afraid to cross the street.

What are Streets For?

We need to make a profound change in our thinking: streets are not just for movement; they also serve as social space. Streets are places for kids to play. They are places for store owners to set out tables and serve coffee, or for people to go window shopping. They are places for lovers to walk holding hands.

For all of these reasons, the movement to reclaim our streets from cars is inherently connected to the movement to constitute a viable public realm, where people who do not know each other can be in the same space. Democracy depends on people gaining an understanding of others who are not like them. This can't happen if everyone is always either in a car or inside a building. People need comfortable, clean, safe, and inviting public spaces in which to spend time.¹³

Calming Traffic

When cars drive too fast, drivers don't have time to react and the force of the impact can be deadly.¹⁴ The human skull can withstand an impact of 20 miles per hour. Only rarely should cars move faster than this in a city. Around the world, people have begun to civilize their streets. A variety of techniques have been developed to welcome cars while slowing them down. Drivers need to know that they are on a street, not a freeway. The term most often used for this set of techniques is "traffic-calming."

It turns out that speed limit signs aren't very effective

at slowing traffic. If a road is designed for cars to move at 50 miles per hour, most drivers will not pay attention to a sign that says to go 25. This is what happens on Cesar Chavez Street and many other wide, straight streets. We need to **design streets for the desired traffic speed.**

Different traffic-calming techniques will be appropriate in different places. Some are appropriate for narrow side streets, others for wide, high volume streets. Think of these measures as part of a "street-design toolbox."

The only neighborhood in San Francisco with comprehensive traffic-calming is Duboce Triangle. Here the city used simple measures like corner bulbouts and tree planting. Parking was converted to angle-in, instead of parallel. Although other techniques might be appropriate in other neighborhoods, we can take inspiration from this livable street design.

TLC believes that traffic-calming has such overwhelming public benefits, from reducing traffic accidents and pedestrian fatalities to raising neighborhood property values, that significant funding should be devoted to it every year. The Department of Parking and Traffic has begun a **Livable Streets Program;** it should be supported and expanded.

Another way to create more livable streets is to get the job done every time a street is repayed. In the normal process of repaying and public works investments, the street can be made into a better living environment with with more trees, wider sidewalks, and slower traffic, at little extra cost.

The worst streets to live on are the ones that should be traffic-calmed first. Traffic-calming must not only focus on

Street Reclaiming

Streets represent the greatest waste of public space in our cities. If we think about them in new ways, we can redesign them so that they still accommodate cars, while also serving as places for residents to hang out and for kids to play. These whimsical drawings convey a sense of the possibilities. Although it would be a radical change from the way we use streets today, reclaiming residential streets in this way would be relatively



The Techniques of Traffic-Calming

All around the world, communities are experimenting with new techniques of street design, which provide access by car, while also maintaining livability. Some of the most popular street improvements include:

Intersection traffic circles: On smaller streets, these traffic circles simply require cars to slow down and drive around them. They can be designed to let bikes through without much loss of speed. For drivers, they can actually speed up the overall trip



because they replace stop signs, while keeping speeds down to a more reasonable level. Seattle's citywide traffic-calming program, which included 700 residential traffic circles, reduced traffic collisons 71–90%.¹ Traffic circles also provide neighborhood beautification: trees, plants, statues, or whatever the neighborhood wants can be placed in the middle of them.

Modern roundabouts: Seen by anyone who has traveled to a European city, roundabouts slow traffic by forcing drivers to go around tight corners. They require real traffic engineering to design, so they are a lot more expensive than intersection traffic circles, but they are a great design solution for streets that carry a higher volume of cars.

Two-way streets: Traffic engineers love one-way streets because they speed up traffic, giving motorists the psychological sense of being on a race track. One of the easiest and most important ways to make a street more livable is to change one-way streets back to two-way streets.

Speed humps: Raised platforms in the middle of a road can be designed to be comfortable only if driven over slowly. Sometimes big speed bumps are called "speed tables." Speed humps are controversial because they are uncomfortable for people with joint pain or muscle tightness in their backs, although more recent designs seem to have fixed this problem. In many cases, they force emergency vehicles to slow down, so care must be taken not to over-use them. On the positive side, speed humps are probably the cheapest and most versatile way to calm traffic.

Raised intersections: These can be thought of as speed tables

that take up whole intersections. They have the benefit of simultaneously slowing cars at intersections and making it easier for pedestrians to cross the street.

Horizontal displacement: Bulging the sidewalk out into the street, so cars drive around it, is a great way to calm traffic. "Chicanes" are pairs of bulbouts on opposite sides of the street that cause drivers to go left, and then right. These mid-block bulbouts provide an excellent opportunity for planting trees, too. They must be designed to accommodate long vehicles. Horizontal displacement is more expensive than vertical displacement, but it's often less controversial.

Corner bulbouts: Extending the sidewalk out into the street to the edge of the moving lane keeps vehicles from speeding around corners. These bulbouts are great for pedestrians because they shorten the distance it takes to cross the street.

Landscaping: Simply planting trees on street edges and in medians has been shown to slow traffic speeds somewhat. The reason is probably that it conveys a subtle message about the surroundings, telling motorists that this is a well-cared for neighborhood, and that they should be respectful of it.

Narrow streets: One of the most universally applicable tools is to make sure that streets are not wider than they need to be.

side streets that are already relatively calm. From a social justice perspective, we need to pay just as much attention to the high volume streets.

Performance Criteria for all Modes

Currently, the city has only one standard for how well a street is working: seconds of delay for cars at intersections. We need to know how our streets are doing for all modes of transportation. And we need to know if the street "fits" with the uses that line the street. Traffic planners should ask two questions:

- First, what modes of transportation need to be accommodated on this street? How many pedestrians? How many bikes? How many buses? Will there be light rail? Is the street part of the core Muni network or part of the core bicycle network? How many cars?
- Second, what is the character of the activities taking place at the street's edge? Is it only houses? If so, is it a place where kids should be able to play in the street? Is it a neighborhood commercial street? Are sidewalk cafes and flower stands to be encouraged? Will there be a lot of deliveries? Will there be a lot of taxis? Is it an industrial street? Will it be serving high volumes of trucks?

We need a new system of street typologies that takes account of all of these complex possibilities. The idea of grouping streets into residential, collector, and arterial misses all of the richness of city life.

San Francisco cannot be more livable until we develop

means to measure our streets' performance on all these complex criteria, not just how long drivers must wait at intersections.

Street Recommendations

- Streets should be designed so that kids can get to school safely and independently.
- Streets should not be designed by traffic engineers. That task should be done by urban designers, with the technical assistance of traffic engineers.
- The city should abandon "level of service" measurements of car congestion as a tool for evaluating street performance. It should instead use multimodal performance measures that take account of pedestrian comfort, the ability of Muni to get through an intersection quickly, and bicycle safety.
- Dramatically expand the city's Livable Streets Program.
- Where streets are wider than they need to be, use the extra space to provide amenities that make the neighborhood more livable, such as trees, benches, angle-in parking, and wide sidewalks.

Chapter 9 Making Housing More Affordable

SAN FRANCISCO HAS A HOUSING CRISIS. THERE'S NOT

enough of it, and it's too expensive. The roots of the problem lie in the simple facts that San Francisco is so attractive to so many people, while at the same time there is political opposition to increasing the supply of housing. We compete with each other for the finite supply of housing units, and in the process we drive up the cost of housing. As prices rise, poor people are forced out. We are losing our cultural diversity, just as we are losing our artists and our families.

TLC's agenda will lead the city to build more housing at all income levels. And it will make sure that the new housing supports a more livable city by directing it to locations where increased density improves the quality of life.

Many of the region's transportation issues are really housing issues in disguise. Because the older cities and towns, which have the majority of the jobs, universities, and cultural activities, are not allowing enough new housing to be built, new arrivals to the Bay Area are forced far away to the suburban fringe. They then make long commutes, which require expensive transportation networks. If more housing can be built close to jobs in San Francisco and Silicon Valley, the region's transportation problems will become much more manageable.

In San Francisco, the severity of our housing deficit is

huge. Between 1980 and 2000, the city added 100,000 new residents, but only 23,400 new housing units.¹⁵ As we compete with each other for this small number of housing units, we drive up the cost.

There are two things the city can do to address this problem. First, the city should provide more subsidies for affordable housing. Second, the city should change regulations to make it easier to build housing. Such changes will help market-rate and subsidized housing alike.

Some important regulatory changes that the city should enact include:

- Make it legal to **create secondary units** throughout the city. Sometimes known as "in-law" housing, these smaller units are at the affordable end of the market-rate housing spectrum. They add housing to neighborhoods without dramatically changing the physical character of the neighborhood, because they fit inside existing buildings. Secondary housing is a painless way to add affordable housing to lower-density neighborhoods.
- Eliminate density restrictions on new housing. Instead, **regulate allowable development with height and bulk restrictions.** This will allow developers to build smaller units if they wish, but to build more of them on a given piece of land.
- Eliminate minimum parking requirements as part of new housing construction, to allow people the opportunity to live somewhere without a parking space in exchange for lower housing costs.
- Encourage housing downtown. It's an ideal place for one

specific type of housing, high rise apartments. Bringing more people downtown will increase activity and pedestrian safety, supporting downtown shops and restaurants. The transit is already the best anywhere. But under current rules, office development almost always out-competes residential development for available land. The city should tip the balance slightly toward housing.

- Increase the acreage of lands zoned for housing. The city contains acres of land set aside for industrial uses that will never materialize. Especially in SOMA and the eastern waterfront there exists plenty of room for large amounts of new housing. Areas for residential development need to be carved out and planned for, even while the need for urban industry must be assessed and accomodated.
- Build with "air rights" development on top of public buildings like post offices, libraries, parking, or even Muni yards. This is done in cities all around the world based on an understanding of the need to make efficient use of valuable urban land.
- **Repeal the gas station preservation ordinance.** It's illegal to develop a gas station into any other use. This is inexcusable. Any land owner who wants to replace a gas station with housing should be given the green light.
- Change the environmental review guidelines so that they assume it's environmentally beneficial to construct housing inside cities. Right now, any proposal to build significant amounts of infill housing requires a time-consuming and costly environmental review. The Planning Department has the authority to streamline this process, based on the

clear logic that it is always better for the environment to build inside existing cities than out at the suburban fringe.

- Reduce situations in which a housing development requires discretionary votes by the Planning Commission or the Board of Supervisors. The thing that most discourages housing is uncertainty. The city should create plans for where it wants housing, and have meaningful, inclusive public debate about those plans. But once the plans are adopted, developers who fulfill the plans should not face uncertainty about whether their projects will be approved.
- **Conduct comprehensive neighborhood planning** in cases where large-scale change is anticipated. If it is done the right way, neighborhood planning efforts will balance citywide needs with local concerns, look comprehensively at opportunities for neighborhood improvement, and educate the participants about good planning. Once a plan is done, designating where development is to occur, the city should remove all possible obstacles, making it as easy as possible for developers to complete the plan.

Housing is a core issue of social justice. TLC believes that a healthy community is one which is welcoming to immigrants, young people, families, and people who want to devote their lives to pursuits other than making money. In order to achieve these goals, San Francisco needs to find places for a lot more housing, and make sure that much of that housing is affordable.

Housing development, when it is well designed and

Affordable Housing

Given the high cost of housing in San Francisco, and given the inequality of wealth that scars our society, there are large numbers of people who cannot afford market-rate housing. It's not just the very poor or the people without jobs who need affordable housing; it's teachers, nurses, service workers, and many others.

There are many misconceptions about what affordable housing is. Many people visualize ugly concrete high rise buildings, often associated with terms like "public housing" and "urban renewal." There certainly were some failed experiments with public housing in this country, but they have been over for decades. Today, below-market-rate housing is largely indistinguishable from market-rate housing. It is subject to the same approval process as any other development, and often it even looks better because the affordable housing in San Francisco is built by community-based, non-profit housing developers.

In 2000–2001, San Francisco budgeted \$104 million on subsidized housing from federal and local sources. The money comes from several main sources:

 Tax increment financing—When the Redevelopment Agency redevelops an area, the eventual increase in the property tax base is diverted from the city's general fund for a period of time. Over the past ten years, San Francisco has spent nearly half of this "tax increment" on affordable housing, far greater than the 20%





developed by Bridge Housing.



state minimum. In 2000, \$5.2 million was generated from this source.1

- The housing bond—In 1996, San Francisco voters passed a \$100 million affordable housing bond. Over the life of the bond, using the local money to leverage state and federal funding sources, it will have resulted in 2,113 affordable housing units and 264 beds in shelters and transitional housing facilities.
- Jobs/housing linkage fees—When a commercial building is built, the developer pays a one-time fee ranging from \$10 per square foot for retail space to \$15 per square foot of office space.² From 1985 until 1999, this fee generated \$9.6 million.

When we spend local money on affordable housing, it brings

in state and federal funds, to magnify the impact. TLC is proud of San Francisco's commitment to affordable housing, and we believe it should be increased.

The other way to fund below-market-rate housing is with "inclusionary" housing, which means requiring developers to set aside some units in a market-rate project at lower prices. San Francisco recently adopted a strong inclusionary housing law, a major victory for affordable housing.

TLC will be a part of the movement to promote below-market-rate housing in San Francisco, and we will work with our allies around the region to urge other communities to follow San Francisco's lead.

1. See www.ci.sf.ca.us/sfra/housing.htm.

2. See www.ci.sf.ca.us/planning/2002fees.pdf.

In-law Housing

One of the easiest ways to help address the city's housing shortage is to encourage home owners to add small, secondary housing units-often called "in-law apartments." These units are paid for by the homeowner, and provide extra income to help pay the mortgage. They fit into existing buildings, so they don't have visual impact on the neighborhood. Just about the only objection to them is that they impact the parking supply because often the most logical place to put them is in the ground floor of a house, where the cars would otherwise go. TLC believes that homeowners should have the right to do whatever they want with their ground floors-use them as extra living space, turn them into an additional housing unit, whatever. They should not be required to maintain them for parking. San Francisco has the lowest car ownership rates in the country outside of Manhattan; it is wrong to require people to maintain a place for a car, which they may not even own.

These drawings provide one illustration of how the ground floor of a typical San Francisco Victorian building could be converted into a garden apartment, while still providing room for a car. It's true that the person living in the garden apartment wouldn't have a parking space, but in a city like San Francisco, with the enormous housing shortage, the lack of a parking space is an utterly trivial reason to object. The city should do everything possible to encourage home owners to add in-law housing units.



located in the right places, is good for neighborhoods. It strengthens local shops, adds to the sense of safety, and makes neighborhoods more walkable. It can help ensure that our children and grandchildren can choose to live here.

Housing Recommendations

- Increase funding for below market-rate housing.
- Upzone along major transit lines.
- Make it legal to create new secondary "in-law" housing units—without dedicated parking spaces—when they can meet standards of health and safety.
- Eliminate minimum parking requirements.
- Create incentives for housing downtown.
- Re-zone underutilized industrial land for housing, especially in SOMA.
- Develop housing on top of public facilities.
- Repeal the gas station preservation ordinance.
- Develop environmental review guidelines which assume it's good for the environment to build housing in San Francisco.
- Reduce situations in which a housing development requires discretionary votes by the Planning Commission or the Board of Supervisors.
- Carry out comprehensive neighborhood plans to build consensus about where housing should go within a neighborhood, and what amenities should be provided along with the housing.

Chapter 10 Planning for a Better Future

THE CORE PRINCIPLE OF SUSTAINABLE CITY PLANNING

is this: we should plan for a better future. This may sound obvious, but it's not what we do now. San Francisco's transportation plans assume that congestion is going to get worse and it's going to be harder to get anywhere. Our housing plans assume that the cost of living is going to get even higher. And our regional land use plans show that we will lose even more farmland to sprawl. It's as if a terrible paralysis has overtaken us all, so that we watch helplessly as San Francisco marches down a path that none of us want to be on.

This document, along with TLC's other work, is intended to break the cycle of passivity. The city government makes future-oriented plans all the time. They include the General Plan (which governs development and overall physical change), capital plans for Muni and other public works agencies, and the Countywide Transportation Plan (which allocates spending over the next 20 years). These plans should result in measurable improvements:

- We should be less car-dependent, with more trips being taken by bikes, transit, and walking.
- Travel time on Muni should decrease.
- The pedestrian environment should get better.
- The cost of housing, relative to wages, should go down.
- Gaps in the bicycle network should be closed.

- The amount of valuable urban land devoted to parking should decrease, as it is converted to housing and jobs.
- Pedestrian fatalities should go down each year.

The major planning documents need to have goals like these that are measurable and realistic. The plans should spell out the steps necessary to move us from here to a more positive future.

Comprehensive Neighborhood Planning

Residents of neighborhoods have a right to help decide what's going to happen in their neighborhoods. This is democratic. And it's also just reality: change in San Francisco is always going to involve the participation of a lot of people.

What this means is that physical change—including street redesigns, transit improvements, and especially infill housing—must be planned in a way that acknowledges the democratic ethos of San Francisco. Probably the best way to plan for change is through comprehensive neighborhood plans. Instead of fighting over specific projects, take a step back, and think about the big picture of how the neighborhood could be improved over time. Try to build consensus around the vision for the future. This vision is codified as a neighborhood plan. And then, when projects come along that are already approved in the plan, they don't have to go through an extensive approval process all over again. Neighborhood planning up front will give everyone more **certainty about what's going to happen.**

Of course neighborhood concerns need to be balanced

against city-wide needs. But TLC believes that the best way to do this is through careful neighborhood planning efforts, which inform the debate with facts about the larger context. Ideally, neighborhood plans would begin with housing production targets; participants would be asked to find appropriate locations within their neighborhood for the necessary number of housing units. In addition, a good neighborhood planning process doesn't just ask participants what they want, but provides education so people become more informed participants.

The Planning Department's Better Neighborhoods process is the model for this. It is conducting comprehensive neighborhood plans around the Market and Octavia area, the Balboa Park transit station, and the Central Waterfront. This program should be continued and expanded.¹⁶ Over time, every neighborhood in the city could undergo a comprehensive planning process. Every resident has a right to live in a healthy neighborhood, where shops and public amenities are convenient, where there is a sense of safety, and where transit connections are excellent. Until we achieve this goal, neighborhood planning remains to be done.

Coordinated Transportation Planning

For many years, the streets have been managed for the benefit of cars, and transit has been starved of money. In 1999 Proposition E merged Muni and the Department of Parking and Traffic into the Municipal Transportation Agency (MTA). The goal was to stop having a department of cars and a department of transit, and instead to empower the new agency

Downtown: A Transit-First Success Story

A healthy economy is an important part of a livable city. From a land use planning perspective, it is important to make sure that jobs are located in places that allow the city to function efficiently.

Within San Francisco, there is only one place that makes sense for office jobs: downtown. San Francisco is fortunate to have one of the best downtowns in the whole country. Fully 57% of people get to work without a car. It is walkable. It works for business, making it easy to get to meetings or to meet someone for lunch.

Many of the people who enjoy working downtown may not understand all of the things that go into making it so successful. For example:

- The office core is concentrated, rather than spread out.
- · It is built on the back of transit. Dozens of transit carriers,



including all of the largest in the region, converge in one place.

 There is very little parking. This makes the streets good to walk on and allows for high densities. It's why our downtown is different from San Jose's or Denver's.

These strengths should be added to. Parking downtown should be reduced over time. The transit infrastructure should be increased. There is a natural alliance between livable city advocates and the business community, based on our shared interest in a healthy economy, and our shared understanding of the need for transit infrastructure to make the city work.



How People Commute to Work

to take a comprehensive look at the transportation system.

TLC is working to help the city realize the promise of coordinated transportation planning. The MTA has only begun to look at this. We call on the MTA to:

- Take responsibility for pedestrians and bikes, not just cars and Muni.
- Create an integrated street design process that grows from a broad understanding of the uses of streets, and not simply continue traffic engineering as usual.
- Adopt mode-split targets that will increase the share of trips taken by transit and bike every year.
- Use parking policies to encourage a more livable city.
- Be much more aggressive about giving Muni the right of way it needs to run on time and reduce overall trip times.

The other major player in local transportation planning is the Transportation Authority. Among other things, the Transportation Authority is responsible for allocating money from the city's sales tax and from regional sources. We call on the Transportation Authority to:

- Measure how well the streets work for everyone, not just how much congestion there is for cars.
- Produce a countywide plan that educates people about the critical issues and trade offs we face as a city. The plan should describe what will happen if we make different choices, and provide a path to a better transportation system than we have today.

Planning Recommendations

- Adopt strategies that will result in measurable improvements to livability so we know if we are making progress.
- Conduct comprehensive neighborhood planning to build consensus about how to manage physical change over time. Require these efforts to address citywide needs.
- Adopt mode-split targets for the city that show a reduced automobile dependence over time.

Paying for It

SAN FRANCISCO IS A WEALTHY CITY, WITHIN A

wealthy country. When we look around the world and see the marvels of Parisian sidewalks or the efficiency of the Curritiba, Brazil, bus system, it becomes clear that we have no excuse for short-changing our city.

Reduce Automobile Subsidies

Cars are expensive to own. But the vast majority of the expenses of driving are not, in fact, borne by drivers. They are paid by other people, or by future generations. Economists have a word for this: externalities. Some of the

most important externalities include:

- The costs of providing police and ambulance services related to traffic accidents.
- The 40% of road construction and maintenance costs not paid for by gas taxes and fees.
- The public health costs of asthma and other diseases caused by air pollution from cars.
- Deterioration of the Bay from automobile pollutants in storm water runoff.
- The impacts of greenhouse gas pollution on the future livability of the planet.
- Some portion of the U.S. military budget which is devoted to maintaining a reliable supply of oil.

Estimates of the total subsidy to drivers in the United States vary widely, depending on what you count, but it is probably in the **hundreds of billions** each year. (See "Automobile Welfare" sidebar.)

Drivers should pay their own way. Road construction and repair, at a minimum, should be funded out of user fees such as gas taxes and parking surcharges.

Creative Funding Options

San Francisco is in the fortunate position of having a variety of options for increasing funding of transportation improvements, in ways that will be equitable, while not hurting the economy:

- A gas tax. A 10-cent regional gas tax would generate \$440 million for San Francisco over 20 years. Or, the city could go on its own and levy a one percent gas tax that would also raise millions.
- The ½ cent **sales tax** is currently one of the main sources of revenue for transportation, bringing in \$65 million each year. It should be reauthorized for 30 years and increased to ³/₄ of a cent. Because the city's sales tax exempts food and rent, it is relatively progressive.
- Increase the **parking tax** from 25% to 35%. This would generate \$25 million a year for Muni, if the current allocation of the tax continues.
- The Transit Impact Development Fee, the fee paid by downtown office development for Muni service, could bring in an additional \$75–\$120 million over the next twenty years if it is applied city-wide and to all commercial devel-



opment. At this level, the fee would still be low enough that it would not displace development to other cities.

• Bridge tolls represent one of the great untapped resources. Adding one dollar to the Bay Bridge toll would generate \$120 million each year for the region. If we implemented "congestion pricing"—charging a higher toll when the Bridge is most crowded, we would also encourage people who are able to switch the time of their trip to do so, thereby easing the Bridge traffic jam.

- **Residential parking permit fees** can be used to better allocate scarce curb space, while generating money for transportation improvements that benefit the neighborhood.
- Joint development with transit improvements is a great source wherever it can work. The Transbay Terminal is a good example. Muni could develop on top of some of its bus yards as well.
- A car tax. Currently, there are about 390,000 registered automobiles in San Francisco.¹⁷ Under state law, there is just a four dollar vehicle registration fee today, paid just once, when the car is first registered. The money is spent by the regional air quality district on programs to improve air quality. But given the magnitude of costs that car owners are imposing on society, perhaps we should explore a much higher fee on car ownership. If we charged just \$100 per year per car that's registered to a person or business with a San Francisco address, we would generate \$39 million every year that could be spent on improving Muni service, making the city more walkable, or any of our pressing needs. State legislation would be necessary to enable the city to charge a car tax.
- Land value recapture. When a major transit improvement is put in place, the value of the property next to the transit is increased. One of the best ways to pay for transit is to channel a portion of that increased land value back into the transit system. Sometimes transit agencies can buy land around

Automobile Welfare

Our society subsidizes cars. If cars were forced to pay their own way, we would have a lot more money to spend on other priorities, and drivers would have an incentive to economize.

Researchers have tried to estimate the magnitude of automobile welfare in America. The results vary, depending on what costs are included and how the estimates are made. Some of the major studies are cited here.

The dollars/gallon figure refers to what a gas tax would need to be per gallon, to make drivers pay the full cost of driving at the pump. European countries have gone much further than the United States in trying to get the prices right, through car taxes and gas taxes that try to give drivers a more accurate signal about what driving really costs. Shouldn't San Francisco try to take some steps towards getting cars off welfare?

	\$/Gallon	Annual Total (\$ Billion)
Ketcham & Komanoff	5.53	730
Litman	7.08	935
MacKenzie, Dower, & C	hen 3.03	400
Moffet & Miller	2.86-5.00	378-660
Vorhees	4.78	631
Office of Technology Assessment	3.39-6.81	447-889
Delucchi	3.13-7.55	413-997

Resources

This compilation is drawn from John Holtzclaw, "America's Autos on Welfare: A Summary of Subsidies," (October 1996), http://www.preservener.com/ATAutoWelfare.html.

Brian Ketcham & Charles Komanoff, "Win-Win Transportation: A No-Losers Approach To Financing Transport in New York City the Region," DRAFT, (9 July 1992) KEA: 270 Lafayette #400, New York 10012, (212) 334-9767.

Todd Litman, "Transportation Cost Survey" (2 Feb 1992) Victoria Transport Policy Institute, 1250 Rudlin Street, Victoria, BC, V8V 3R7, Canada, Phone/Fax: (250) 360-1560, litman@vtpi.org, webpage: www.vtpi.org.

James MacKenzie, Roger Dower & Donald Chen, "The Going Rate: What It Really Costs To Drive" (1992) World Resources Institute, 1709 New York Ave NW, Washington DC 20006.

John Moffet & Peter Miller, "The Price of Mobility" (Oct 1993) Natural Resources Defense Council, 71 Stevenson PI #1825, San Francisco CA 94105, (415) 777-0220.

Michael Vorhees, "The True Costs of the Automobile to Society" (4 Jan 1992); 3131 Bell Dr., Boulder CO 80301, (303) 449-9067.

Office of Technology Assessment, "Saving Energy in U.S. Transportation" (1994) U.S Congress, 0TA-ETI-589.

Mark Delucchi, "A Total Cost Of Motor-Vehicle Use" Access (spring 1996).



station areas, which means that they get increases in value due to their investments in a very straighforward way. BART has the power to do this currently. For Muni, the city would have to be more creative. Could the city issue bonds against future property tax increases around station areas, as a way to fund expansion?

These are just some of the options we have for getting the money San Francisco needs to make its transit system work. But as we have discussed throughout this report, it takes more than money to make a good transit system. It's even more important to be smart about spending the money we have.

Chapter 12

WALKING, BICYCLING, AND PUBLIC TRANSIT ARE SOME-

times called "alternative transportation." But to TLC, this is a misnomer. People walk every day. A majority of San Franciscans get to work without driving. And more to the point, if we do our job right, these modes will become more and more common—the mainstream, normal ways of getting around.

We have tried to present a plan for a more livable San Francisco that is realistic, but also visionary. In order to make change, we want to you to imagine a city that is better than any which has existed before. We want to raise your sights about what is possible. San Francisco could be a pedestrian paradise. Its parks could celebrate the forces of nature and the diversity of its people. It could be as bicyclefriendly as Amsterdam and as transit-intensive as Paris. It could grow each year in cultural richness, evolving along a path that is all its own.

If we dare to be visionary about the future of our city and region, over time we can build communities that are safe, walkable, convenient, and diverse. We can enjoy the richness of city life, while still having intimate neighborhoods that we live in. We can get where we need to be, without sacrificing the places in between.

Notes

- 1. Jan Gehl, in *Life Between Buildings* (New York:Van Nostrand Reinhold, 1987), reminds us that comfortable places to sit are essential for the viability of city life.
- 2. Minimum sidewalk widths should be established throughout the city. Jane Jacobs recommends 30 to 35 feet as ideal, with 20 feet as the minimum width on a street with any activity in *The Death and Life of Great American Cities* (New York: Random House, 1961): 87. Looking around the city today, we find that Market Street has sidewalks 33 feet wide; Van Ness has 16 feet; Upper Fillmore has 15 feet; Haight Street and Valencia have 10 foot sidewalks; and many streets have narrower sidewalks. In general, the more traffic there is, the more pedestrians need to be buffered from it, with both parked cars and a wider sidewalk.
- Chuck Purvis, "Detailed Commute Characteristics in the Bay Area," Metropolitan Transportation Commission, Working Paper Number 7, Table 2.2.
- 4. RIDES for Bay Area Commuters Commute Profile 2001, available at www.rides.org/main/data/commuteresearch/commuteprofile_2001.pdf.
- 5. The distinction between adapting transportation to land uses and adapting land uses to transportation comes from Professor Robert Cervero, in his book, *The Transit Metropolis* (Washington, D.C.: Island Press, 1998).
- 6. While bikes should continue to be permitted on as many transit services as possible, the future high rate of bicycle use will preclude permitting that on an unlimited basis. Indeed, in most of the countries where bike use is very high, bike carriage on transit is limited through fees that are much higher than the fee for parking a bike at the station.
- 7. Guerrero Street, for example, and most of the South of Market

thoroughfares have sidewalks only 10' wide thanks to massive street widening projects in the 1920s through 1950s.

See London's Transportation Plan at www.london.gov.uk/mayor/ strategies/transport/index.htm. Also, see the Bay Area Council's Transportation Action Plan, which calls for variable pricing on bridges, at www.bayareacouncil.org.

8.

9

15.

- This metaphor comes from Donald Shoup. See "An Opportunity to Reduce Minimum Parking Requirements," *American Planning Association Journal* (winter, 1995): 14–28.
- Parking "cash-out" programs would reduce solo driving to work by 20%. See Donald Shoup, *Cashing Out Employer-Paid Parking*. *Final Report*, University of California Transportation Center, Report UCTC No. 140 (1992).
- 11. Bureau of Labor Statistics, 1999 Consumer Expenditure Survey, Report #949 (May 2001): www.bls.gov/cex/csxann99.pdf.
- 12. San Francisco Planning and Urban Research, "Making Taxi Service Work in San Francisco," (2001).
- 13. Copenhagen, for example, has implemented a program to reduce central area parking by 3% each year, adding more housing downtown and investing in pedestrian amenities. As urbanist and professor Jan Gehl described the results: "The city became like a good party." Quoted in Peter Newman and Jeff Kenworthy, Sustainability and Cities: Overcoming Automobile Dependence (Washington, D.C.: Island Press, 1999).
- 14. Force = $\frac{1}{2}$ mass × velocity². Because the velocity is squared, even a light vehicle, if it is moving fast, will kill.
 - San Francisco Housing DataBook, Bay Area Economics 2002. www.bayareaeconomics.com.
- 16. See the Better Neighborhoods web site at www.ci.sf.ca.us/planning/

neighborhoodplans.

 Chuck Purvis, "Auto Ownership in the San Francisco Bay Area: 1930–2010" (July 1997): http://www.mtc.ca.gov/datanet/forecast/ao/ aopaper.htm.

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